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Phase 1 Desk Study

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1. Introduction

Civic Earth Limited was appointed on 27 September 2023 by Civic Engineers Limited on behalf of PJ Livesey Holdings Limited to undertake a Phase 1 Desk Study and Preliminary Risk Assessment for the proposed "Chorlton Precinct" development in Manchester (herein referred to as "the site").

The aim of this report is to evaluate potential human health, environmental and geotechnical risks and constraints associated with the proposed development, including:

- Information obtained from a review of available historical mapping, an environmental disclosure report for the site;
- A summary of the anticipated ground conditions and associated geotechnical and geoenvironmental constraints based on review of available published and unpublished sources;
- A preliminary qualitative contamination source-pathway-receptor risk assessment based on the available desk study information and the current proposed redevelopment plans; and
- Recommendations for ground investigation and further assessment, if required.

This document is intended to support the planning application for the development.

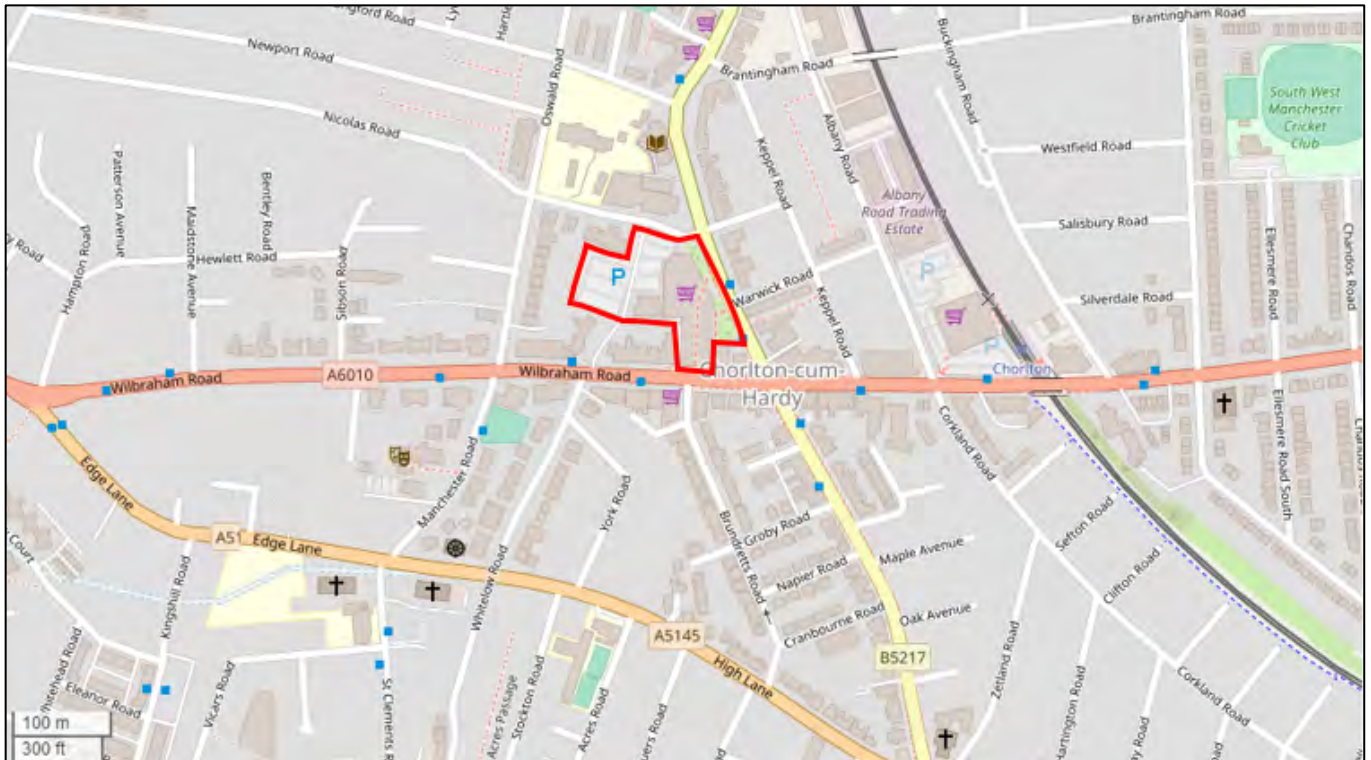
2. Site Context

2.1 Site Location

The site is located off Wilbraham Road in Chorlton-cum-Hardy, Manchester. The approximate postcode for the site is M21 9AQ.

The National Grid coordinates for the approximate centre of the site are 381562E, 394096N and the site is approximately 1.27 ha in size. A Site Location Plan is included in Plate 1.

Plate 1: Approximate Site Location Plan (©OpenStreetMap Contributors)



2.2 Site Description

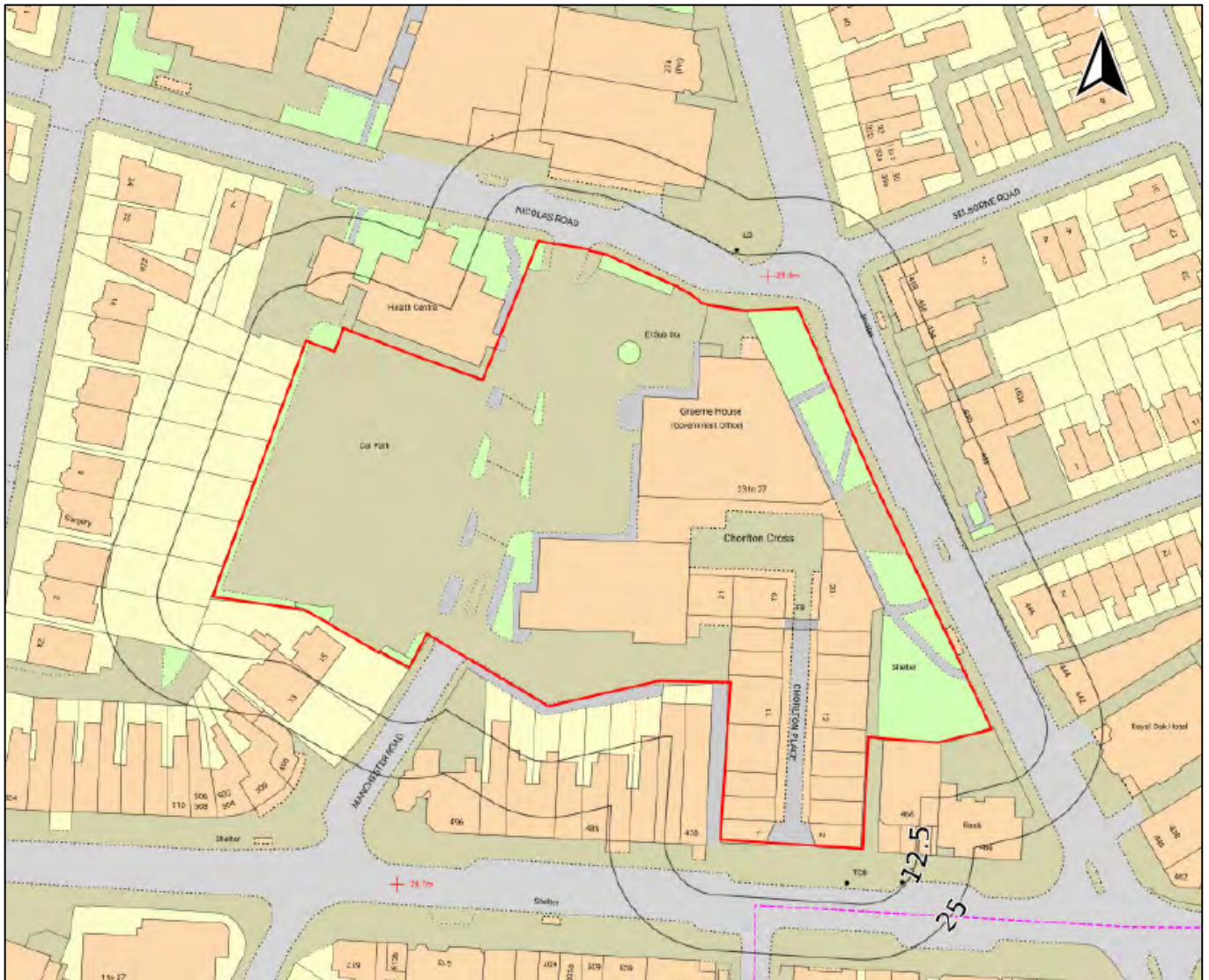
The site is irregular in shape and can broadly be divided into three areas; the car parks, Graeme House and the Chorlton Precinct shopping complex; a summary of the areas is provided below. A site walkover survey was carried out by an Engineer from Civic Engineers on 18 October 2023 and full details and photographs are included in Appendix A.

Two areas of car parking are present in the west and northwest of the site, dissected by Manchester Road. The western car park is bounded to the west and south by private gardens of residential properties and to the north by Chorlton Health Centre. The northwest car parking area is bound to the north by Nicholas Road and to the east and south by Graeme House and the shopping complex. A smaller area of additional car parking is located within the south of the site, between a single storey brick structure adjoined to Graeme House and the off-site rear gardens of properties fronting onto Wilbraham Road.

Graeme House is an irregularly shaped, red brick, nine storey office building located within the northeast of the site which is connected to a series of single to double storey buildings which occupy the majority of the east area of the site. The shopping complex and Graeme House are bound to the east by Barlow Moor Road (B5217), to the southeast and southwest by properties fronting onto Wilbraham Road (A6010), and to the south by Wilbraham Road. Chorlton Cross square is located within the centre of the east area of site, and Chorlton Place leads to Chorlton square from the southeast of the site. A small substation is located adjacent to the north of the main building within to a small service courtyard and a small area of soft landscaping is present in the east

of the site between the shopping complex and Barlow Moor Road. The site layout is indicated on the OS MasterMap site plan illustrated in Plate 2.

Plate 2: OS MasterMap Site Plan (excerpt from Enviro + Geo Insight Report)



2.3 Proposed Development

It is understood that the proposed development comprises the deconstruction of the existing buildings and structures and the construction of a residential led mixed-use development with apartments, townhouses, retail units and public open space. The currently development layout includes three plots with a basement level proposed at two of the three plots. The proposed development site plan is illustrated in Plate 3.

Plate 3: Proposed Development Site Plan (FCB Studios 2104-5-SKETCHB-06-STAGE0&1-WS1 Synopsis)



3. Historical Development

3.1 Sources of Information

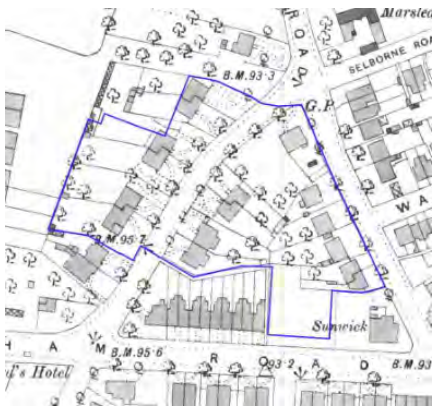
The historical development of the site has been traced from Ordnance Survey mapping (included in Appendix B) and historical aerial photography included in the Groundsure Enviro + Geo Insight report (included in Appendix C).

3.2 Site History

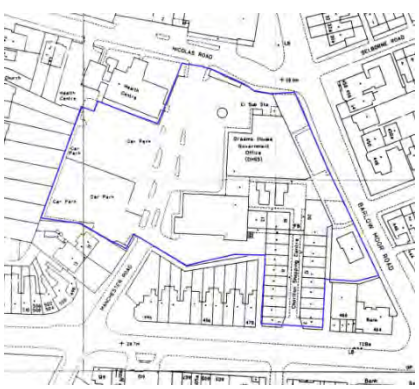
3.2.1 On-Site

The pertinent history of the site is presented in Table 1 along with relevant excerpts from historical maps and aerial photographs.

Table 1: Summary of Site History

1849 – 1:10,560	1881 – 2:5,000	1894 – 1:2,500
		
The site is part of agricultural land with a road dissecting the site roughly in the same location as present day Manchester Road. A <i>Marl Pit</i> is indicated within the north of the site and a second feature, potentially another marl pit or pond or building, in the east of the site.	Four sets of semi-detached residential properties with gardens and glass-houses are indicated across the west and centre of the site. Further long rectangular glass-houses are present in the south of the site, associate with a <i>Nursery</i> which extends across the eastern area of the site.	The area to the west of the roadway remains relatively unchanged. Eight additional residential properties have been constructed on the grounds of the former <i>Nursery</i> with private gardens and glasshouses. There are two empty plots of land in the north and south of the site, which could be public open space.

1905 – 10:5,600	1922 – 1:2,500	1933 – 1:2,500
		
Terraced properties have now been constructed in the south of the site fronting onto Wilbraham Road. Another building has been constructed in part of the previously empty plot in the north of the site with one empty plot left. Four smaller structures have also been constructed in the south of the site behind the terraced buildings.	No significant changes from the 1905 mapping.	Minor reconfiguration and addition of small structures in the west and central areas of the site.
1951 – 1:2,500	1959 – 1:2,500	1981 – 1:2,500
		
The structures to the rear of the terraced properties in the south of the site have been demolished and four garages-like structures and a larger rectangular building are now present.	Three <i>Surgeries</i> are indicated within the site, one within the west area, one in the north and one in the southeast of the site.	The majority of the site is indicated in its present day layout with <i>Car Parks</i> to the west and north, an <i>Electrical Substation</i> in the north, <i>Chorlton Shopping Centre</i> across the southeast area and <i>Graeme House Government Office (DHSS)</i> across the central and northeast areas.

1992 – 1:2,500	2009 – Aerial Photography	2022 – Aerial Photography
		
An additional building is now present in the southeast corner of the site.	The site is a similar layout to the 1992 mapping.	The site is a similar layout to the 2009 aerial photography.

The earliest mapping dated 1849 indicates the site is predominantly occupied by farmland with two possible buildings, pond-like features or *Marl Pits* in the north and southeast of the site until c.1881 when residential properties and a *Nursery* occupy the site. Further residential properties were developed within the site across the former nursery area with terraced properties constructed in the south of the site c.1905. Various minor reconfiguration and redevelopment of residential properties and small structures took place across the site until the site was redeveloped into the present day layout of *Car Parks*, *Substation*, *Graeme House* and *Chorlton Shopping Centre*. It is noted that whilst the available mapping indicates that this redevelopment occurred by c.1981, the historical borehole records (see Section 4.2) indicate that redevelopment of the site into the present day layout had commenced by 1969.

The same remained predominantly unchanged until the present day with the exception of an additional building constructed in the southeast of the site c.1992.

3.2.2 Off-Site

The earliest available map dated 1849 indicates the site to be located within a predominantly agricultural area. *Marl Pits* recorded within 100m to the north of the site (and potentially on-site) and *Brick Kiln Pits* indicated 250m northwest of the site. Various small pond-like features are recorded between 200m and 500m to the west and northwest of the site, with a *Spar Pit* indicated 500m northwest of the site. The watercourse of *Longford Brook* is present approximately 350m north of the site (orientated east-west). A smaller unnamed watercourse is indicated 250m north of the site (broadly orientated east-west). Two watercourses are recorded to the south of the site, *Rough Leech Gutter* approximately 150m south of the site and *Chorlton Brook* approximately 750m south of the site. Both watercourses are orientated east-west.

By c.1881 residential development surrounding the site had started to take place and *Chorlton-cum-Hardy Station* and *Railway Line* were recorded approximately 250m to the east of the site. A *Goods Yard* is indicated approximately 140m west of the site adjacent to the railway line, the latter of which is orientated north-southeast. The *Marl Pits* to the north of the site are no longer indicated; however, pond features are still present. Mapping of 1907 indicates *Redgate Farm* 100m north of the site and *Brick Works* 400m to 500m northwest of the site. The small watercourses 250m north and 150m south of the site are no longer indicated suggesting that they may have been culverted. In addition, an *Electrical Substation (Manchester Corporation)* is recorded 500m southwest of the site.

Mapping of 1923 indicates *Allotment Gardens* approximately 400m northwest of the site adjacent to the *Brick Works*. The *Brick Works* 400m northwest and *Goods Yard* 140m of the site are no longer indicated from c.1956, the latter developed into *Allotment Gardens*. *Works* are indicated 200m northeast of the site on mapping dated

1959 until c.1981. Mapping of 1981 also indicates a *Depot* 10m north of the site on the north side of Nicolas Road (until c.1992), a *Garage* 240m northeast of the site and a second *Depot* 130m northeast of the site.

3.3 Planning History

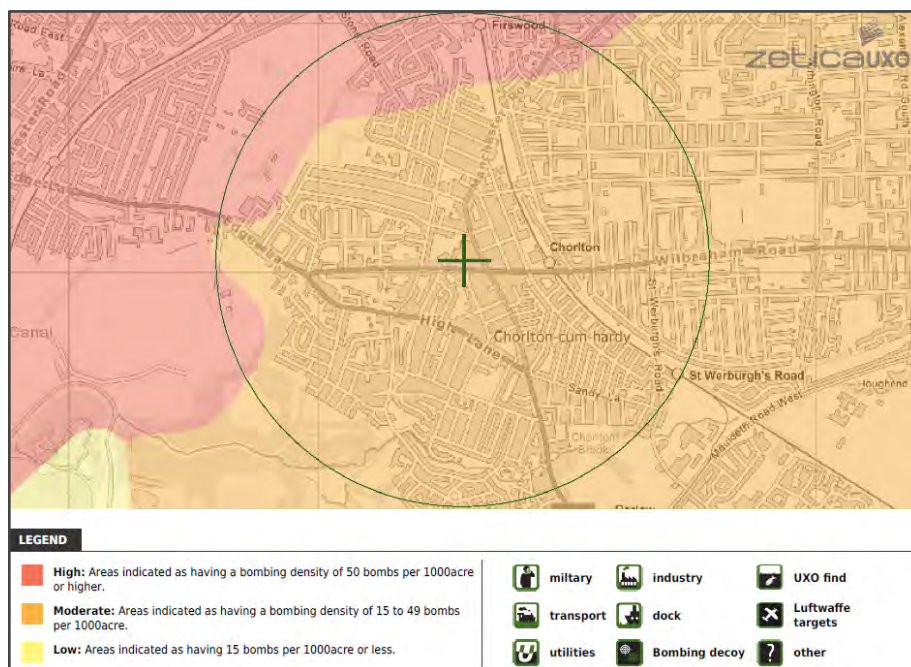
A review of the Manchester City Council planning portal¹ does not highlight significant planning applications at the site. Various minor planning applications have been submitted for the erection of signage, gates, pay and display machines and commercial / shop alterations.

Due to the generally residential and commercial nature of the area, a full review of the planning history for the surrounding area has not been undertaken. It is noted however that a planning application for the erection of a four storey building for residential apartments was submitted in May 2023 for a development 500m northeast of the site on the former *Works* site. A Phase 1 desk study² was submitted as part of the application which identified the historical land uses and Made Ground including infilled pond as a potential source of contamination, and a detailed Phase 2 ground investigation was recommended.

3.4 Unexploded Ordnance

A review of publicly available online risk mapping³ indicates that the site is located within an area of moderate risk from unexploded ordnance (UXO). A preliminary UXO risk assessment has been produced for the site and is included in Appendix D. The assessment concluded that given the lack of evidence of the site being affected by bombing, and the anticipated high levels of access at the time, the likelihood of encountering an unexploded ordnance is not considered to be elevated above the 'background level' for the region. The report concludes that a Stage 2 Detailed Risk Assessment is not considered necessary prior to site investigation and/or construction works commencing. However, it was recommended that a UXO safety briefing be provided to all personnel conducting ground works.

Plate 4: UXO Risk Mapping (Zetica Online)



¹ <https://www.manchester.gov.uk/info/200074/planning/5865/planning/1>, accessed 2 October 2023.

² E3P (2023) *Albany Road, Chorlton. Phase 1 Geoenvironmental Site Assessment*. Reference 15-843-R1-2. March 2023.

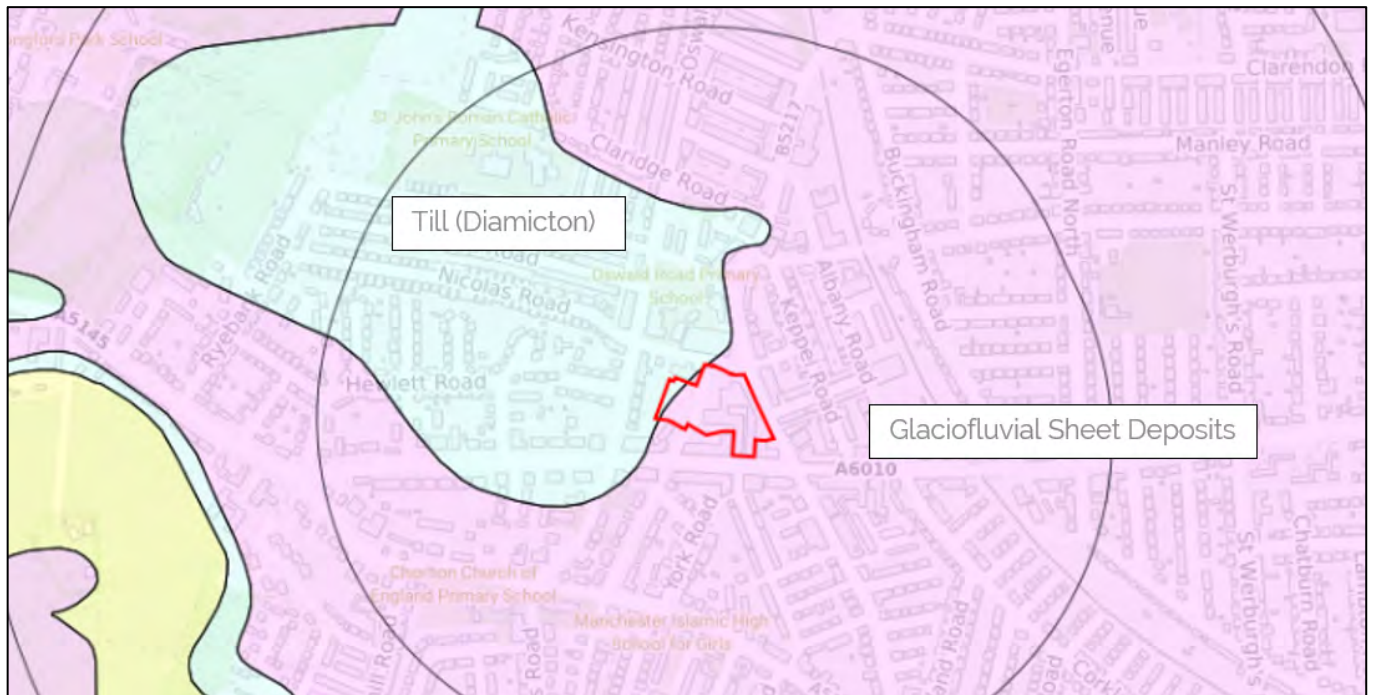
³ www.zeticauxo.com, accessed on 12 September 2023.

4. Anticipated Ground Conditions

4.1 Published Geology

With reference to the British Geological Survey (BGS)⁴ website, BGS Sheet 85⁵ and the Groundsure Enviro + Geo Insight report obtained for the site (see Appendix C), the majority of the site is anticipated to be underlain by Glaciofluvial Sheet Deposits, with Till (Diamicton) potentially present within the western extent of the site (see Plate 5). The superficial deposits are anticipated to be underlain by the Wilmslow Sandstone Formation (typically red-brown, fine to medium grained, cross-bedded sandstones with sporadic siltstones)⁴.

Plate 5: Superficial Deposits (based on Excerpt from Groundsure Enviro + Geo Insight Report)



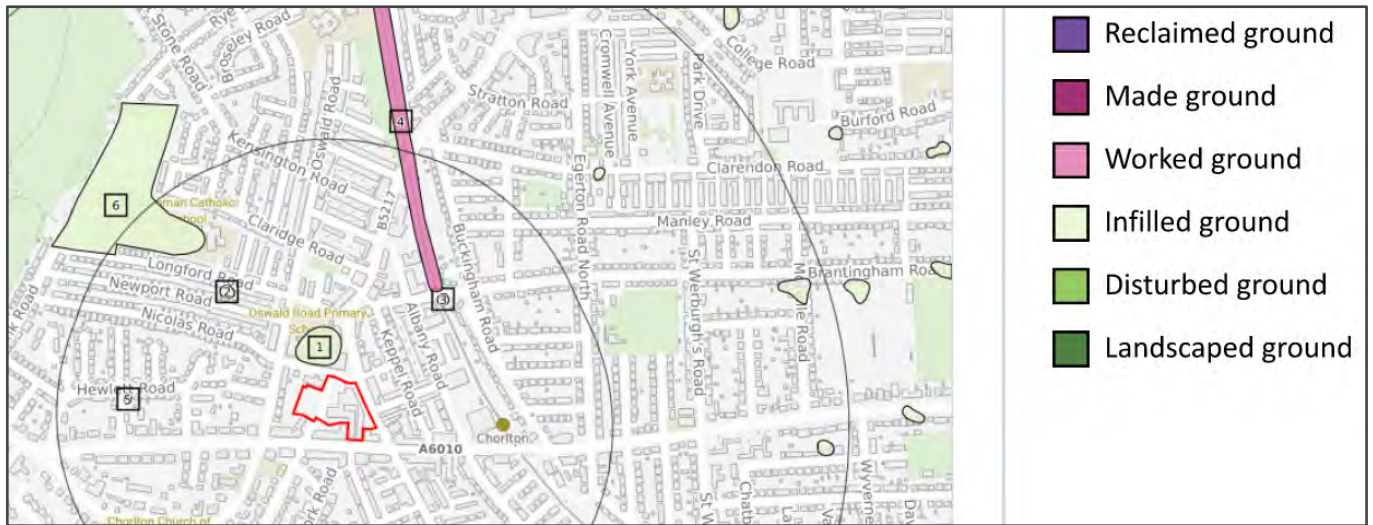
With reference to the Groundsure Enviro + Geo Insight report obtained for the site (see Appendix C), there are three records of Artificial Ground within 250m of the site, as illustrated in Plate 6. The nearest record is located approximately 20m north of the site for 'infilled ground'. It is anticipated that this record relates to the *Marl Pits* identified on the historical mapping in Section 3.2.1. It is noted that the historical mapping indicated a marl pit in the north of the site and a pond-like feature or potential marl pit in the east of the site.

The two further records for infilled ground are approximately 240m to 245m northwest and northeast of the site respectively. In addition, it is considered likely that Made Ground is present across the site due to the site's historical development.

⁴ British Geological Survey (BGS), www.bgs.ac.uk (12 September 2023)

⁵ BGS (2011) *Manchester, Sheet 85. Bedrock and Superficial*. 1:50,000.

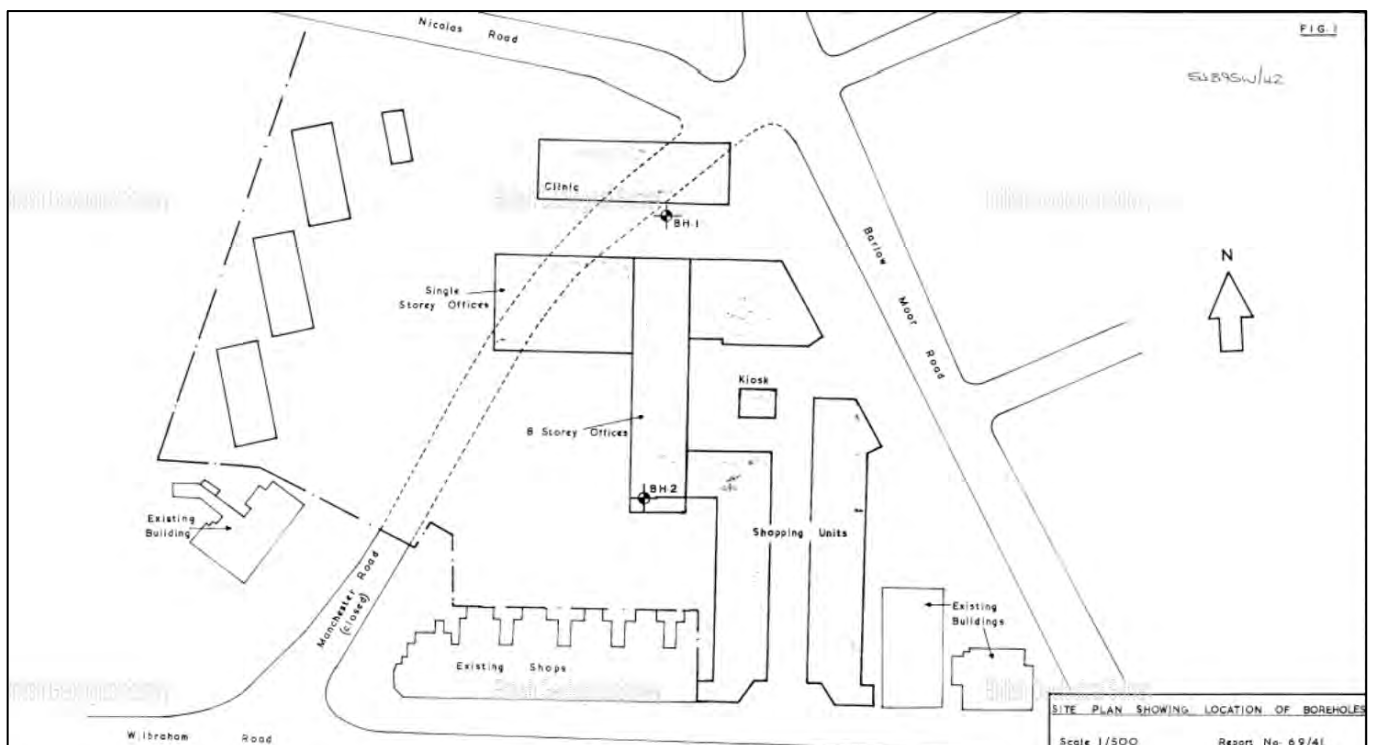
Plate 6: Excerpt from Groundsure Enviro + Geo Insight Report illustrating Worked Ground / Made Ground



4.2 Unpublished Geology

Based on the Groundsure Enviro + Geo Insight report in Appendix C, two publicly accessible borehole records are located within the site boundary, and two off-site boreholes within 250m of the site. Copies of the logs are included in Appendix C. The locations of the two on-site historical boreholes are illustrated in Plate 7; the boreholes were drilled in March 1969.

Plate 7: Locations of Historical On-Site BGS Boreholes (BGS Reference SJ89SW42)



The first historical borehole record within the site (Borehole No. 1) identified topsoil to approximately 1.0m below ground level (mbgl) followed by firm to very stiff, brown sandy clay with stones and occasional fissures and bands of silty clay to a depth of 10.7mbgl. A thin 0.9m horizon of "compact brown sand with coal dust" was subsequently recorded followed by very stiff to hard, brown, sandy clay with "stone inclusions and very sandy pockets" to a depth of 16.4mbgl. Groundwater was encountered at the top of the brown sand with coal dust layer at 10.7mbgl. The second historical recorded within the site (Borehole No. 2) identified topsoil to

approximately 0.9mbgl followed by Made Ground to 1.5mbgl. The Made Ground was undertaken by firm to stiff brown sandy and silty clay with stone inclusions and sand pockets, becoming hard sandy clay at 12.2mbgl, with a band of red sand between 7.6mbgl and 7.8mbgl. Groundwater was struck at the base of the red sand horizon.

The two off-site historical borehole records are located approximately 210m and 240m north of the site at 'Chorlton Service Station'. The ground conditions comprised 0.6m to 0.9m of tarmac on brick rubble and old foundations onto very sandy clay, sand and sand and gravel deposits (one location contaminated with fuel). These superficial deposits were encountered to depths of 2.7m and 4.5mbgl, overlying firm red-brown boulder clay to the maximum borehole penetration depth of 5.0mbgl.

4.3 Surface Mining and Ground Workings

There are 15 records of surface ground workings within 250m of the site, one of which relates to Marl Pits within the north of the site. The record is dated 1851. Six of the 15 records are located between 50m and 200m of the site and relate to ponds, brick kiln pits and cuttings. The remaining eight records relate to ponds.

There is one record of a British Pit (BritPit) associated with Longford Brick Works approximately 450m northwest of the site. The BritPit was a clay and shale surface working. A record of potential stone mining has also been identified 240m northwest of the site.

There are no records for underground workings or natural cavities within 500m of the site and the site is not located within a Coal Mining Reporting Area as defined by the Coal Authority (CA).

4.4 Hydrology and Hydrogeology

The Environment Agency (EA) has produced an aquifer designation system consistent with the requirements of the Water Framework Directive. The designations have been set for superficial and bedrock geologies and are based on the importance of aquifers for potable water supply and their role in supporting surface water bodies and wetland ecosystems.

The Glaciofluvial Sheet Deposits are designated a Secondary A aquifer whilst the Till (potentially present within the west of the site) is designated a Secondary (undifferentiated) aquifer. The bedrock geology of the Wilmslow Sandstone Formation is designated a Principal Aquifer.

The site is not located within a groundwater Source Protection Zone (SPZ) and there are no groundwater or potable abstraction points located within 1km of the site.

There are no current surface water bodies (rivers, streams and/or lakes) recorded within 250m of the site. As noted in Section 3.2.2, two historical watercourses were mapped in 1849 250m north of the site and 150m south of the site; however, these watercourses are believed to be either culverted or infilled and are no longer indicated on present day mapping. Chorlton Brook is located approximately 750m south of the site. The watercourse is anticipated to flow west into the River Mersey and groundwater flow is therefore expected to be towards the south/southwest into Chorlton Brook and the River Mersey.

4.5 Ground Hazards

The risks associated with potential geological hazards within 50m of the site have been assessed using the Enviro + Geo Insight report (Appendix C) and are summarised in Table 2.

Table 2: Geological Hazards

Hazard	Risk
Shrink-swell clays	Negligible to very low
Landslides	Very low
Ground Dissolution	Negligible

Hazard	Risk
Compressive Deposits	Negligible
Collapsible Deposits	Very low
Running Sands	Very low

5. Environmental Setting

5.1 Environmental Disclosure Report

The Groundsure Enviro + Geo Insights report (included in Appendix C) been used to provide information on the environmental setting of the site and to assist in identifying possible sources of ground contamination. A summary of the pertinent records generally within 250m from the site is set out below in Table 3. It is noted that the distances stated are approximate.

Table 3: Summary of Pertinent Information from the Environmental Disclosure Report

Environmental Record	Record Details	Distance from Site
Historical Industrial Land Uses	1 record dated 1851 of Marl Pits in the north of the site. 39 records within 250m from the site including railway buildings, railway stations, goods sheds, cuttings, railway sidings, unspecified works and brick kiln pits.	Various
Historical Tanks	1 record dated 1981-1992 of an unspecified tank within the north of the site. 5 records of unspecified tanks and tanks or trough between 20m and 250m from the site.	Various
Historical Energy Features	2 records dated 1981-1992 and 1985 of historical electricity substations within the north of the site. 4 records of historical electricity substations between 200m and 250m of the site.	Various
Historical & Active Petrol Stations	No records of historical petrol stations within 250m 1 records of a current petrol station (Esso).	450m northeast
Historical Garages	2 records of garages within 100m of the site. 8 records of garages between 150m and 250m from the site.	60m south 180m north, 215m north, 245m east
Historical Military Land	No records within 250m.	
Active or Recent Landfills	No records within 250m.	
Historical Landfills	No records within 250m.	
Waste Sites / Licenced Waste Sites / Waste Exemptions	3 records of waste exemptions for sorting and de-naturing of controlled drugs for disposal (two records) and use of waste in construction.	30m southwest, 145m northwest
Current Industrial Land Uses	1 record of an electricity substation within the north of the site. A further 22 records between 40m and 250m of the site including baking/confectionary, electrical substations, catering, vehicle repair and servicing, recording studios, unspecified works or factories, electronic equipment, telecommunications and published goods.	Various
Part 2A Contaminated Land	No records within 250m.	

Environmental Record	Record Details	Distance from Site
Hazardous Substance Storage / Use	No records within 250m.	
Licensed Pollutant Release	2 records within the site for dry cleaning. 2 records between 50m and 250m of the site relating to dry cleaning and unloading of petrol into storage at service stations.	60m northeast, 235m north
Licensed Discharge Consents	No records within 250m.	
List 1 Dangerous Substances	No records within 250m.	
Pollution Incidents to Controlled Waters	No records within 250m.	
Environmental Designations	No records within 250m.	
Listed Buildings	4 records within 250m of the site: Former Temperance Bulliard Hall Chorlton Library Lloyd and Platts Hotel Chorlton War Memorial	45m north 90m north 100m southwest 200m southwest

5.2 Radon

The environmental disclosure report has identified that the site does not lie within a Radon Affected Area as less than 1% of properties are above the action level, and no radon protective measures are considered necessary. It is noted however that if basements are incorporated into the development which shall be occupied or part occupied, current guidance requires monitoring for radon, irrespective of the initial risk assessment.

6. Preliminary Risk Assessment

6.1 Introduction

Historical contamination of land may present harm to human health and the environment. Current UK legislation stipulates that the risk associated with potential land contamination is assessed and remediated, if necessary. Under the Town and Country Planning Act 1990 (as amended), potential land contamination is a "material planning consideration" together with the National Planning Policy Framework⁶ (revised in July 2021), which means that a planning authority must consider contamination when they prepare development plans or consider individual applications for planning permission. It is the responsibility of the developer to carry out the remediation where it is required and satisfy the Local Authority that the remediation has been carried out as agreed.

Additionally, Part 2A of the Environmental Protection Act 1990 requires that a significant source-pathway-receptor linkage exists to determine a site as contaminated land. This means that there has to be a contaminant present, a receptor that could be harmed by this contaminant, and a pathway linking the two. Part 2A deals with the contamination risk from a site in its current use, however, the planning system requires that the proposed use is considered. Where remediation is carried out under the planning system, it should be ensured that the site is in such a condition that it would still not meet the definition of contaminated land under Part 2A.

6.2 Preliminary Conceptual Site Model

A preliminary conceptual model has been compiled for the site with respect to the proposed development to identify the potential sources of contamination and the associated potential contaminant linkages. This model also informs the potential need for further investigation at the site.

6.2.1 Potential Sources

Potential contamination sources can include both current and historical activities on site and in the surrounding area. The potential sources outlined in Table 4 have been identified at the site.

Table 4: Potential Sources

Hazard	Description
Historical and current on-site land uses	Historical and current uses include a nursery, electrical substation, unspecified tank, dry cleaners and residential properties (for example fire pits or bonfires in gardens), which could be potential sources of a wide range of contaminants including heavy metals, polychlorinated biphenyls (PCBs), hydrocarbons, chlorinated solvents and asbestos materials. Coal dust was encountered within a historical borehole within the north of the site within the natural ground at 10.7mbgl.
On-site Made Ground	There is likely to be some Made Ground on site associated with the historical development, which could be a potential source of a wide range of contaminants including metals, hydrocarbons and asbestos material due to historical redevelopment and storage of unknown materials of the site. In addition, the marl pits to the north of the site are indicated to have encroached onto the northern extent of the site, and a second potential pit/pond feature in the east of the site and there is therefore the potential for infilled ground within these areas.
Off-site historical land uses	Historical off-site land uses include marl pits, garages, electrical substations and railway activities. These could be potential sources for a wide range of contaminants including hydrocarbons, PCBs, metals and asbestos.

⁶ Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework.

Hazard	Description
Ground gases / vapour	Made Ground including infilled land associated with the potentially on-site marl pit(s) can be a source of ground gas where an appreciable organic content is present. If present, degradation of hydrocarbons/organic chemicals can also produce organic vapours and ground gases.
Groundwater	Perched water in the Made Ground and shallow groundwater in the superficial deposits may be a source of contamination resulting from impacts from the current and previous on and off-site sources. Potential contaminants in perched water are similar to those present in the soils, as discussed above.

6.2.2 Potential Pathways

The potential migration pathways that may be present at the site are outlined in Table 5.

Table 5: Potential Pathways

Hazard	Description
Ingestion and inhalation	Contamination within the Made Ground and/or shallow natural soils can result in the ingestion or inhalation of contaminated soils (and asbestos fibres if present) where soil is exposed, and inhalation of ground gases/vapours.
Direct / dermal contact	Direct/dermal contact with contaminated soils or shallow groundwater can result in the uptake of contaminants through the skin (where soil is exposed) or permeation of contaminants through structures.
Root uptake	Uptake of phytotoxic contaminants by plants and vegetation within areas of soft landscaping. Given the historical and current site uses, it is anticipated that planting areas will be require a growth medium.
Lateral and vertical migration	Leaching from potential contamination in the soils may impact the groundwater and off-site controlled waters features.
Ground gas / vapour migration	Lateral migration of ground gases and/or vapours through the soil matrix could lead to accumulation within buildings, posing a risk of asphyxiation or explosion.
Drainage and services	Could provide a preferential pathway for dissolved phase contaminant migration and/or ground gases/vapour transport.
Foundation works	Potential creation of contaminant pathway to deeper aquifers via piling as part of the foundation works.

6.2.3 Potential Receptors

The potential receptors have been identified based on the proposed residential end use of the site and are outlined in Table 6.

Table 6: Potential Receptors

Hazard	Description
Future site occupants / users	Considered to be at risk from possible contamination associated with the identified potential sources and ground gas/vapour accumulation within buildings.
Construction workers	Considered to be at risk from potential contamination within soils and groundwater during groundworks. Such persons are likely to be in close contact with potentially contaminated materials on site associated with the current and historical uses of the site and surrounding area.
Off-site residents	Potentially at risk from potential contaminants in wind-blown dust and potential odours/vapours.
Controlled waters	The surrounding aquifers (Secondary A Glaciofluvial Sheet Deposits aquifer, Secondary (undifferentiated) Till aquifer and Principal Wilmslow Sandstone Formation aquifer) are potentially at risk from the leaching of contaminants from potentially contaminated soils. No significant surface water bodies present within 500m of the site.
Buildings / Infrastructure	Potentially at risk from ground gas migration, aggressive ground conditions and contaminants that may permeate through underground services such as water supply pipes.
Plants and vegetation	Primarily at risk from phototoxic contaminants such as boron, copper, nickel and zinc.

6.2.4 Preliminary Risk Assessment

A preliminary qualitative risk assessment has been undertaken based on the findings of the conceptual site model and the potential contaminant linkages that may exist at the site in accordance with the October 2020 Land Contamination Risk Management Guidance (LCRM)⁷. The magnitude of the risk associated with potential contaminant linkages has been assessed using criteria broadly based on those presented in CIRIA Report C552⁸, and is summarised in Table 7. The risk assessment methodology is presented in Appendix F. An illustrative Conceptual Site Model is presented in Appendix G.

⁷ Environment Agency (2020). *Land Contamination Risk Management (LCRM)*.

⁸ CIRIA (2001) Contaminated Land Risk Assessment. A guide to good practice. C552.

Table 7: Preliminary Qualitative Risk Assessment

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
Explosive/ asphyxiating gases/vapours from underlying soils (Made Ground and infilled marl pit(s)) and potential on and off-site sources	Migration of gases and vapours through the surface via permeable soils and drainage & services	Internal building spaces & future occupiers	Medium	Likely	Moderate	Potential for variable thickness of Made Ground on site based on historical development including as a nursery and potential infilled marl pit(s) in north of site. However, it is noted that if basements are incorporated into the design, then this will result in removal of the majority of the potential source i.e. Made Ground. Assessment of underlying geology and ground gas monitoring recommended to assess ground gas regime for the site.
Organic/ inorganic contaminants such as asbestos, hydrocarbons, SVOCs and VOCs, and metals within underlying soils and perched groundwater within the Made Ground (based on historical on-site and off-site sources)	Direct/indirect ingestion of soil and dust, inhalation of particle vapours and asbestos fibres and dermal contact	Construction workers	Medium	Likely	Moderate	Potential for shallow soils to be impacted with contaminants. However, anticipated that risk would be mitigated by use of appropriate PPE. Chemical analysis and assessment of shallow soils required to assess risk.
		Future site users	Medium	Likely	Moderate	Potential for shallow soils to be impacted with contaminants. Considered likely soft landscaping will require growth medium / capping layer to mitigate risk to receptor. Chemical analysis and assessment of shallow soils required to assess risk.
		Off-site residents	Medium	Unlikely	Low	Buildings and hardstanding present across the majority of the site, which will act as a barrier between source and receptor and reduce potential for windblown dust, along with an anticipated clean growth medium/capping layer in soft landscaping. Assumes site appropriate site practices are adopted to prevent dust generation during construction e.g., dampening down and covering stockpiles etc.
	Direct contact with underground structures and services	Buildings and structures	Mild	Likely	Moderate/Low	Buried concrete to be designed as appropriate for ground conditions. Potential for contamination within Made Ground where new buried water supply pipes will be laid. Chemical assessment of soils required to assess risk.
	Root uptake	Plants and vegetation	Minor	Likely	Low	Likely that there will be limited soft landscaping, and that this will require a growth medium or be in

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
						raised planters. Chemical analysis and assessment of shallow soils required to assess risk.
	Vertical migration	Shallow Secondary A aquifer (Glaciofluvial Sheet Deposits) and Secondary (undifferentiated) aquifer (Till)	Medium	Likely	Moderate	Potential for contaminants within the soil to leach to the underlying aquifers within the superficial deposits. Presence of buildings and hard standing across majority of proposed development will limit leaching potential. Analysis and assessment of soils including leachate testing required to assess risk.
		Local surface water bodies (Chorlton Brook)	Medium	Unlikely	Low	Potential for contaminants within the soil to leach and migrate to the local rivers. However, presence of buildings and hard standing will limit leaching potential and the nearest significant surface water body is approximately 750m south of the site.
		Principal aquifer (Wilmslow Sandstone Formation)	Medium	Low likelihood	Moderate/Low	Potential for contaminants within the soil to leach and migrate to underlying aquifer; however, presence of buildings and hard standing will limit leaching potential. On-site historical boreholes indicate presence of cohesive superficial deposits which mitigate downwards migration of potential contaminants from Made Ground. Analysis and assessment of soils including leachate testing required to assess risk.
Organic/inorganic contaminants within groundwater (shallow Secondary A and undifferentiated aquifer)	Direct contact and ingestion of contaminated groundwater	Future site users	Medium	Unlikely	Low	Buildings and hardstanding are proposed across most of the site, limiting the exposure to future site users. Construction workers may come into contact with groundwater during excavation works. Assessment of groundwater contamination is required to assess risks.
		Construction workers	Medium	Likely	Moderate	
		Off-site residents	Medium	Unlikely	Low	
	Inhalation of vapours	Future site users	Medium	Low Likelihood	Moderate/Low	
	Lateral migration	Local surface water bodies (Chorlton Brook)	Medium	Unlikely	Low	Potential for contaminants within the groundwater to migrate to the local rivers. However, nearest significant surface water body is approximately 750m south of the site.

<i>Potential Source/Medium</i>	<i>Potential Exposure Route</i>	<i>Potential Receptor</i>	<i>Severity</i>	<i>Probability</i>	<i>Risk Rating</i>	<i>Comments</i>
	Vertical migration	Principal aquifer (Wilmslow Sandstone Formation)	Medium	Low likelihood	Moderate/Low	Potential for contaminants to migrate to underlying Principal aquifer; however, cohesive superficial deposits may limit downwards migration of potential contaminants from shallow aquifers. Assessment of groundwater contamination is required to assess risks.
	Direct contact with underground structures and services	Buildings and structures	Mild	Likely	Moderate/Low	Buried concrete to be designed as appropriate for ground conditions. Chemical assessment of groundwater required to assess risk.

6.3 Geotechnical Preliminary Risk Assessment

Based on the desk study review of the ground model for the proposed development of the site, the potential geotechnical risks are outlined in Table 8 below.

Table 8: Preliminary Geotechnical Risk Assessment

Geotechnical Hazard	Consequence and Impacted Parties	Risk Rating	Comments
Existing buildings and structures	Access restrictions for ground investigation, below ground obstructions and voids including existing and historical foundations	Moderate	The existing buildings provide a constraint for ground investigation, meaning that some ground investigation may be required following demolition. Existing and historical foundations will need to be grubbed out if they are unable to be reused. Hard material could potentially be processed and reused as engineered fill. Depending on formation levels, voids will need to be backfilled with engineered fill.
Variable thickness of Made Ground including potential infilled marl pit on north of site	Damage to infrastructure through settlement, insufficient bearing capacity, potential for differential settlement	Moderate	Various construction and demolition of buildings has historically taken place across the site. Therefore, there is the potential for a variable thickness of Made Ground that will need to be considered in terms of foundation and pavement design. Potential for localised infilled ground in north of site where marl pit has been historically mapped. Thickness, extent and composition will need to be considered. Investigation required to obtain geotechnical data on underlying ground conditions to determine geotechnical design parameters for proposed structures, pavements, car parks and roads.
Aggressive ground conditions	Structural damage to foundations	Moderate	Investigation required to obtain soil and groundwater samples for sulphate and pH analysis, to allow concrete design assessment to be undertaken.
Unknown ground conditions	Damage to infrastructure, unsafe or uneconomic design, reduced bearing capacity of shallow foundations/piled foundations.	Moderate/Low	The superficial deposits and bedrock beneath the site are anticipated to be variable, based on the published geology and planning application/ local BGS borehole records. Investigation of shallow and deep soils and groundwater level required to obtain information for geotechnical design.
Shallow groundwater	Reduced bearing capacity, groundwater entering excavations during construction.	Moderate/Low	Excavations may extend into shallow water table which will require dewatering during construction. Investigation of shallow groundwater conditions required to confirm groundwater profile although noted that groundwater was encountered at approximately 8m to 11mbgl.
Unexploded Ordnance	Damage to infrastructure, utilities and loss of life	Low	The Preliminary UXO Risk Assessment carried out for the site concluded that a Stage 2 Detailed Risk Assessment is not considered necessary prior to site investigation and/or construction works commencing. It was recommended that a UXO safety briefing be provided to all personnel conducting ground works.

7. Conclusions and Recommendations

7.1 Conclusions

This Phase 1 Desk Study Report has been produced to evaluate the potential risks to human health and the environment, and to identify potential geotechnical constraints associated with the proposed development.

The preliminary qualitative risk assessment indicates there is a low to moderate risk to identified receptors from potential contaminants associated with the current and former uses of the site and surrounding area and potential Made Ground associated with the former development of the site and potential infilling of Marl Pit(s). In addition, the assessment has identified a number of potential geotechnical constraints associated with the potential for below ground obstructions, infilled marl pit(s) in the north (and potentially east) of the site, variable thickness of Made Ground associated with the development history of the site and potential variability of the underlying superficial deposits.

7.2 Recommendations

Based on the findings of this report, it is recommended that an intrusive ground investigation is undertaken to assess for the identified contaminants of concern, to evaluate the potential contaminant linkages through soil, leachate and groundwater sampling, and enable a robust remediation strategy to be developed, if required. This investigation should include laboratory analysis of soil and groundwater samples for the identified contaminants of concern and a ground gas monitoring programme to confirm the ground gas regime at the site.

In addition, the ground investigation can be used to obtain information to inform the geotechnical design of the project.

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Leeds

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+44 (0)113 2025 130

Glasgow

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Glasgow G1 2TN
+44 (0)141 370 1829

Appendix A
Site Walkover Record and Photographs

Project Name: Chorlton Precinct

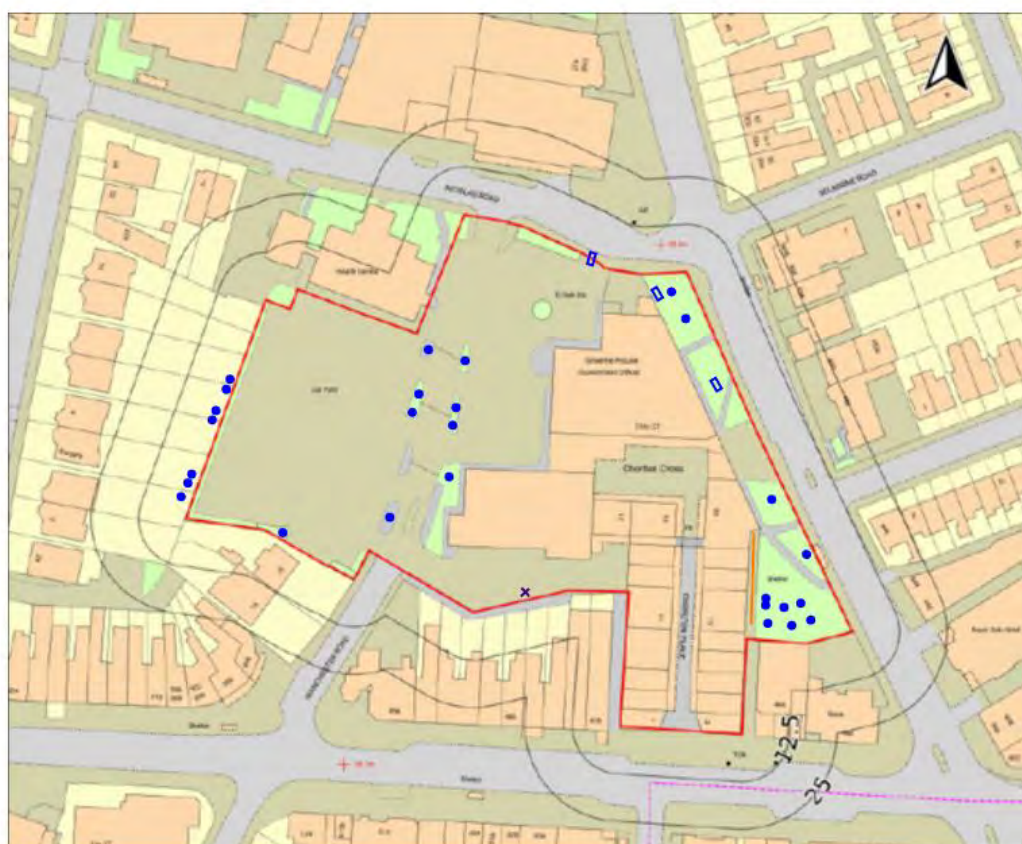
Address: Wilbraham Road, Chorlton-cum-Hardy,
Manchester, M21 9AQ

Job Number: E1013

Date: 18 October 2023

Engineer: J. Bruce

Weather: Sunny, light cloud cover, mild, dry

Site Layout Plan


- Mature tree
- Chamber cover
- Services scar in surface finish
- × Overhead cables post

Site Access

Pedestrian Access	Most of the site is publicly accessible on foot (externally)
Vehicular Access	Access to the rear is good to the public car park and roads
Parking Arrangements	Public parking in west and north of site

Restrictions	West of site around shopping precinct has restricted vehicular access as well as the soft landscaping areas to the east. No internal access to buildings during the walkover.
Access for Site Investigation (Drilling Rigs, Excavators etc.)	Existing building covers eastern-most half of the site, although there is access within the precinct pedestrianised space for drilling rigs – bollards / gates likely to require removal to gain access for drilling plant that cannot pass through bollards/doorways.
Surface Covering	
Type of Cover	Mostly hardstanding and building footprint, soft landscaping areas in east of site and limited areas in car parking areas.
Quality of Cover	Predominantly good. Quite a few scars from services over the years.
Evidence of Existing Boreholes	None witnessed.
Topography	
Flat / Sloping / Stepped etc.	Mostly flat. Minor fall towards the building from Manchester Road towards west elevation of the building.
Evidence of Subsistence	None witnessed.
Significant Slopes	None witnessed.
Local Depressions	None witnessed.
Vegetation	
Trees (Type & Estimated Height)	Numerous mature trees across the site. Refer to site layout plan.
Other Vegetation	Grassed areas to the east boundary.
Japanese Knotweed	None witnessed.
Giant Hogweed	None witnessed.
Himalayan Balsam	None witnessed.
Signs of Stressed Vegetation / Poor Growth / Disease	None witnessed.
Services	

Location and Details of Manhole Covers, Wells, Marker Pegs	Numerous across site – see site layout plan for those witnessed.
Utility Scar Features	Multiple across site.
Overhead Services	Phone cables to rear of shops facing onto Wilbraham Road.
Water Supply	None witnessed.
Buildings and Structures	
Number, Height, Construction Material, Roof Construction Material	Existing precinct and Graham House on site. Precinct = 2 storeys Graham House = 9 storeys
Current Uses	Shopping precinct/retail, offices
Evidence of Subsistence / Cracking / Water Damage	None witnessed.
Presence of Potential Asbestos Containing Material (ACM)	None witnessed.
Surface Water and Groundwater	
Evidence of Flooding	None witnessed.
Evidence of High Water Table	None witnessed.
Rivers, Springs, Wells, Ponds, Ditches, Streams (incl. Flow Direction and Size)	None witnessed.
Potential Sources of Contamination	
Fly Tipped Material	None witnessed.
Evidence of Filled Ground	None witnessed.
Evidence of Tanks (USTs, ASTs, Interceptors, Pipework) incl. Fuel Spillages	None witnessed although noted that no internal access available at time of site walkover.
Stored Substances	None witnessed externally.
Electricity Substations	Substation to north of precinct.

Other Identified Potential Sources	None witnessed.
Surrounding Land Use	
Residential / Commercial / Industrial incl. Type of Industry / Commercial Activity	Residential and retail Multiple residential dwellings to the west Health centre to north west Shops/cafes/bars backing onto site from south
Railways / Viaducts / Bridges	None
Tunnels	None
Anecdotal Information	
Tenants / Landowners / Client	Existing tenants in precinct have been served notice on their lease. Vacant possession of the site after Christmas 2023.
Other Comments	

Project Name: Chorlton Precinct

Address: Wilbraham Road, Chorlton-cum-Hardy,
Manchester, M21 9AQ

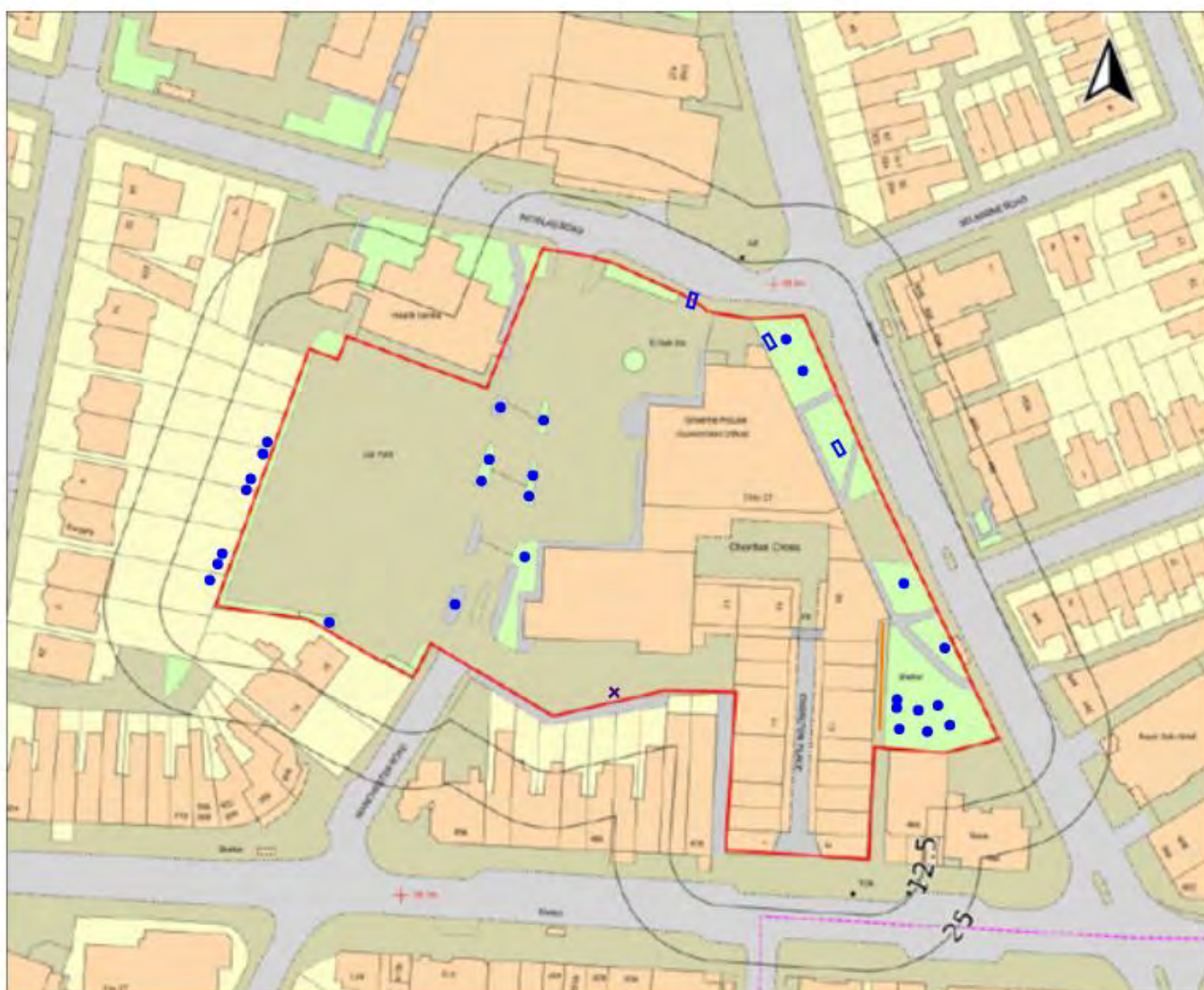
Job Number: E1013

Date: 18 October 2023

Engineer: J. Bruce

Weather: Sunny, light cloud cover, mild, dry

Photo Location Plan



Site Photos



1. Soft landscaping / gardens in east of site.



2. Soft landscaping / gardens in east of site.



3. Electrical substation in north of site behind Graeme House.



4. Refuse area in north of site behind Graeme House.



5. Car parking across west of site.



6. Graeme House in northeast of site.

Site Photos



7. Residential properties to west of site.

8. Residential properties to south of site.



9. Car parking in northwest of site.

Appendix B
Historical Maps

Site Details:

CHORLTON PLACE,
MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1881

Scale: 1:2,500

Printed at: 1:2,500



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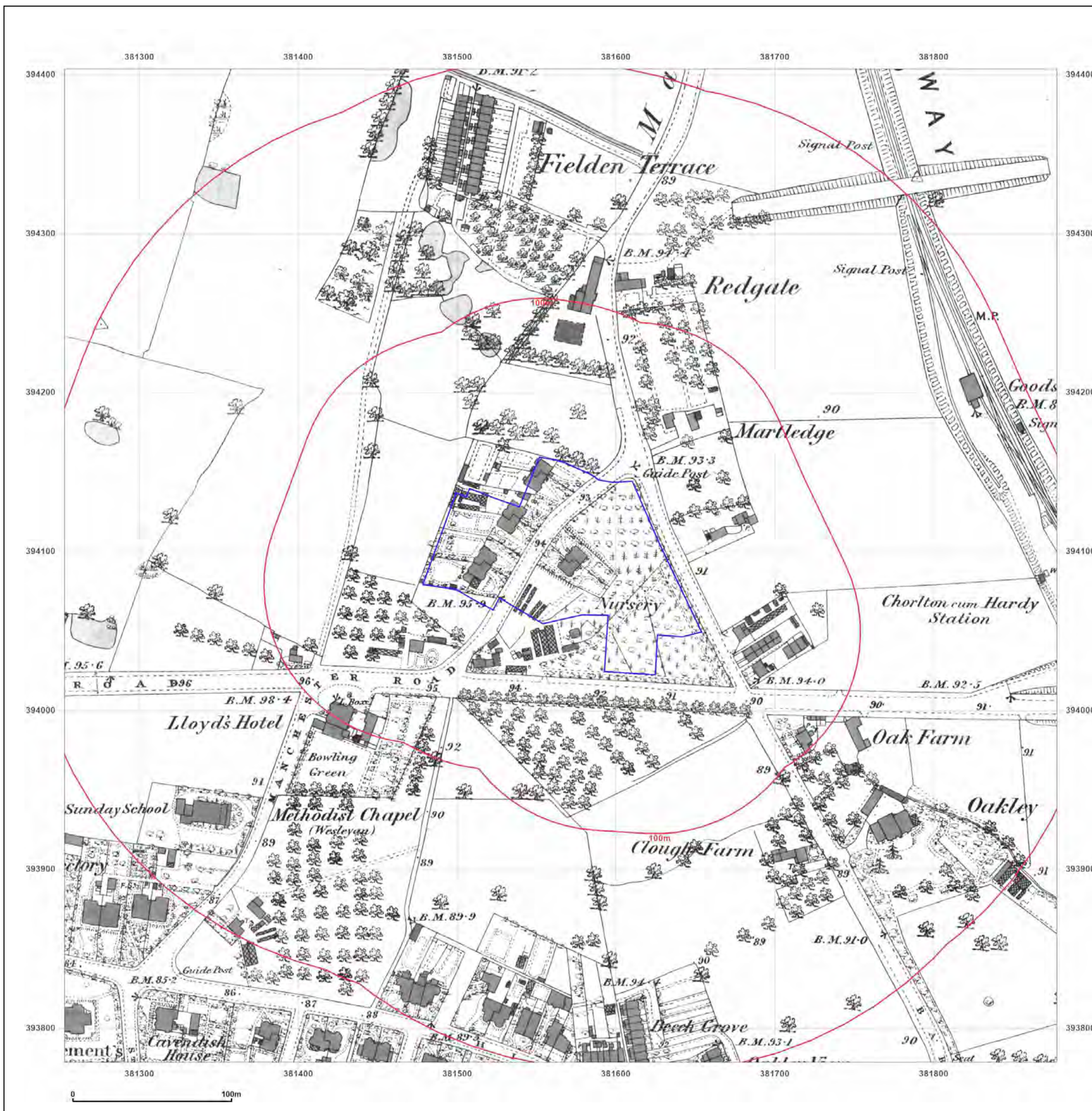


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Map legend available at:
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Site Details:

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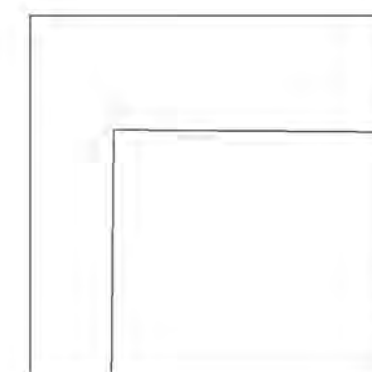
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Grid Ref: 381565, 394091

Map Name: County Series Town Plan

Map date: 1893

Scale: 1:500

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394200

381600

394200

394000

381600

394000

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Site Details:

CHORLTON PLACE,
MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1894

Scale: 1:2,500

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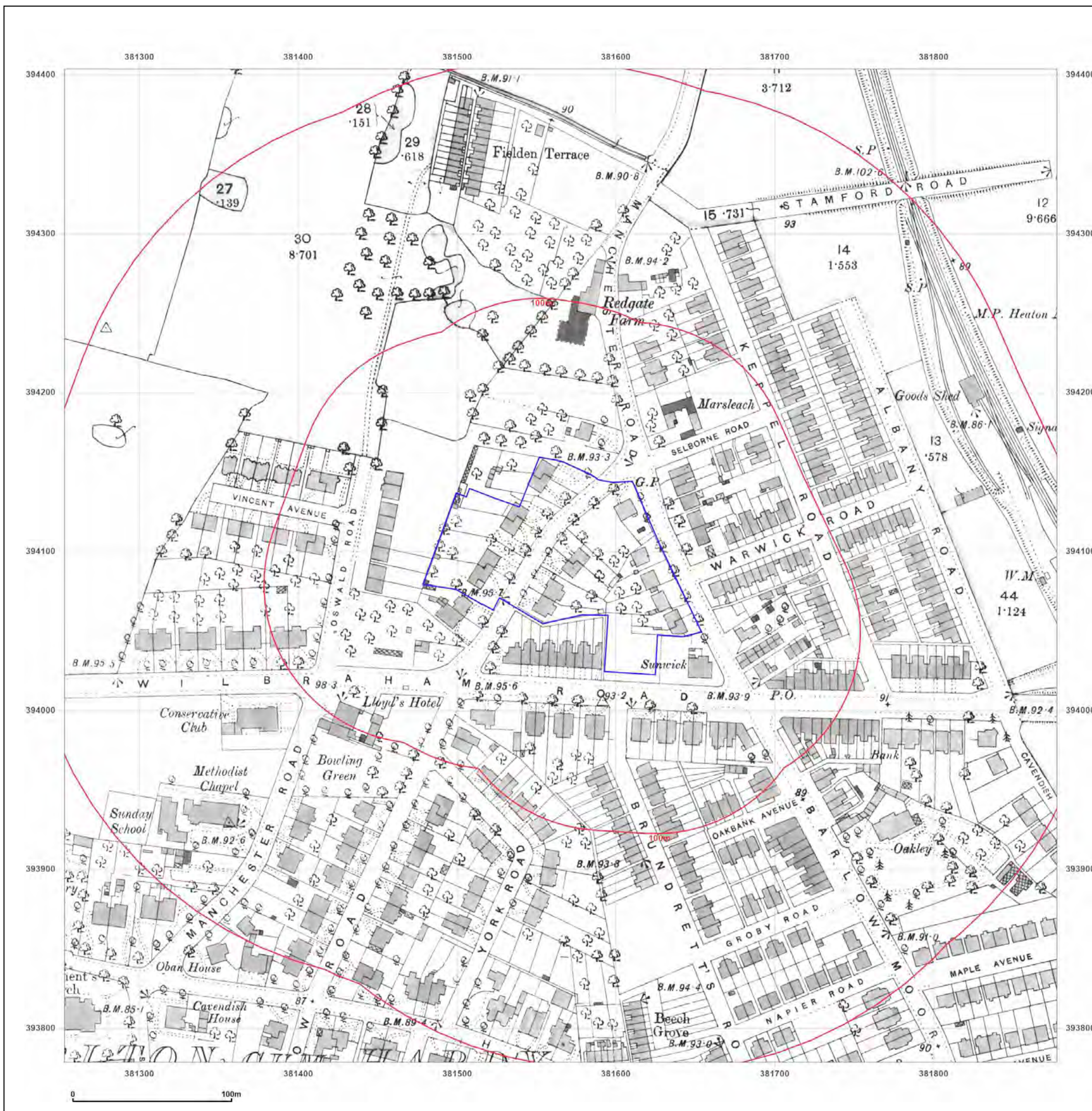


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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
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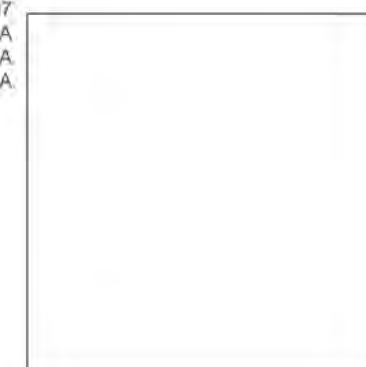
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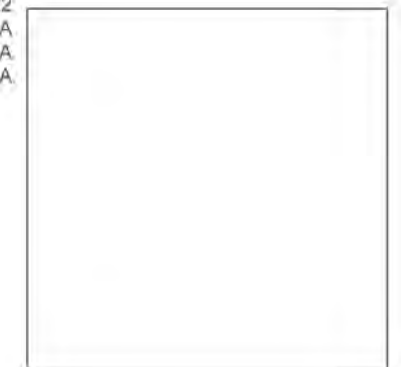
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Map Name: County Series

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 1951

Scale: 1:1,250

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 1950-1955

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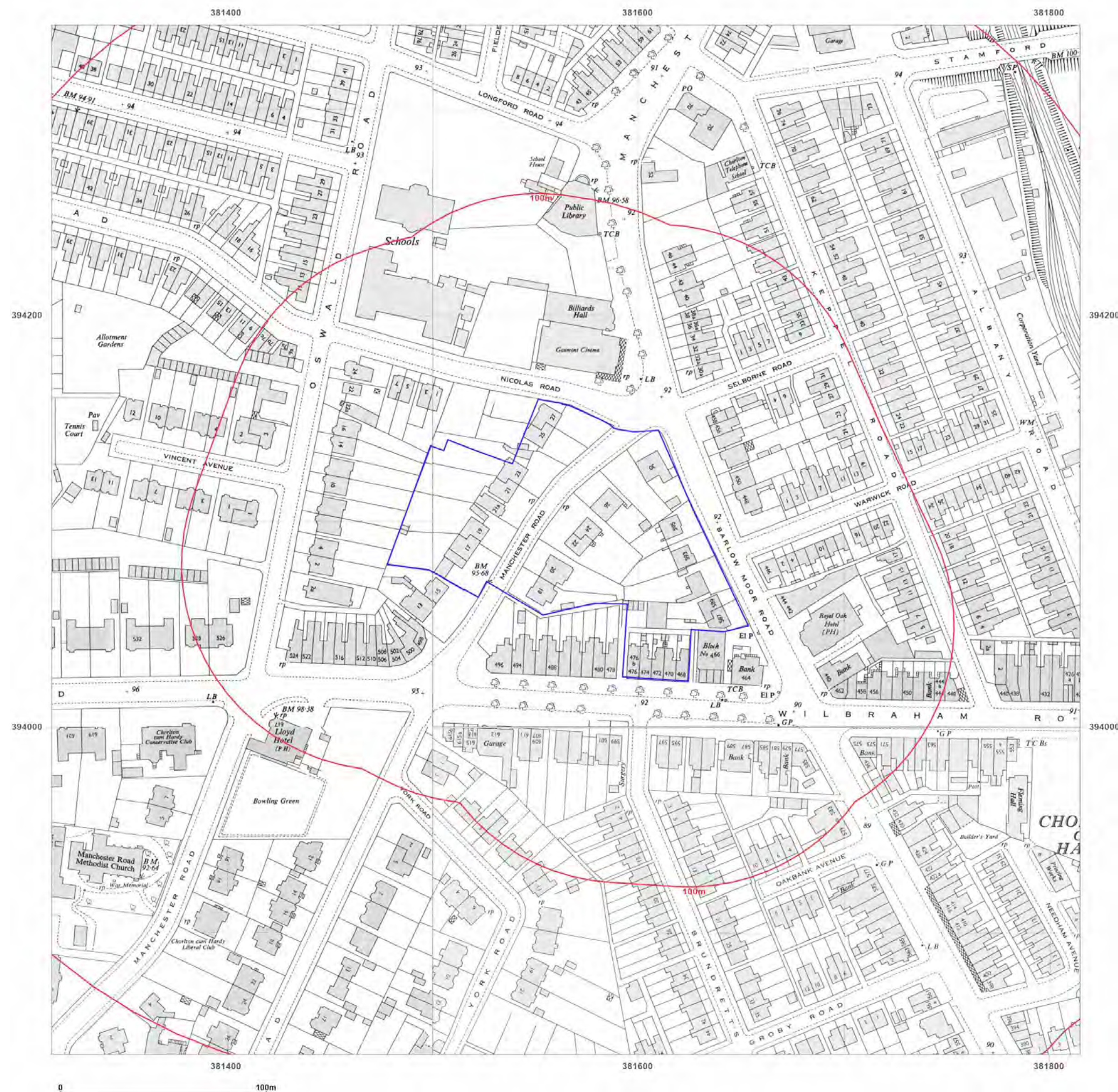


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Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

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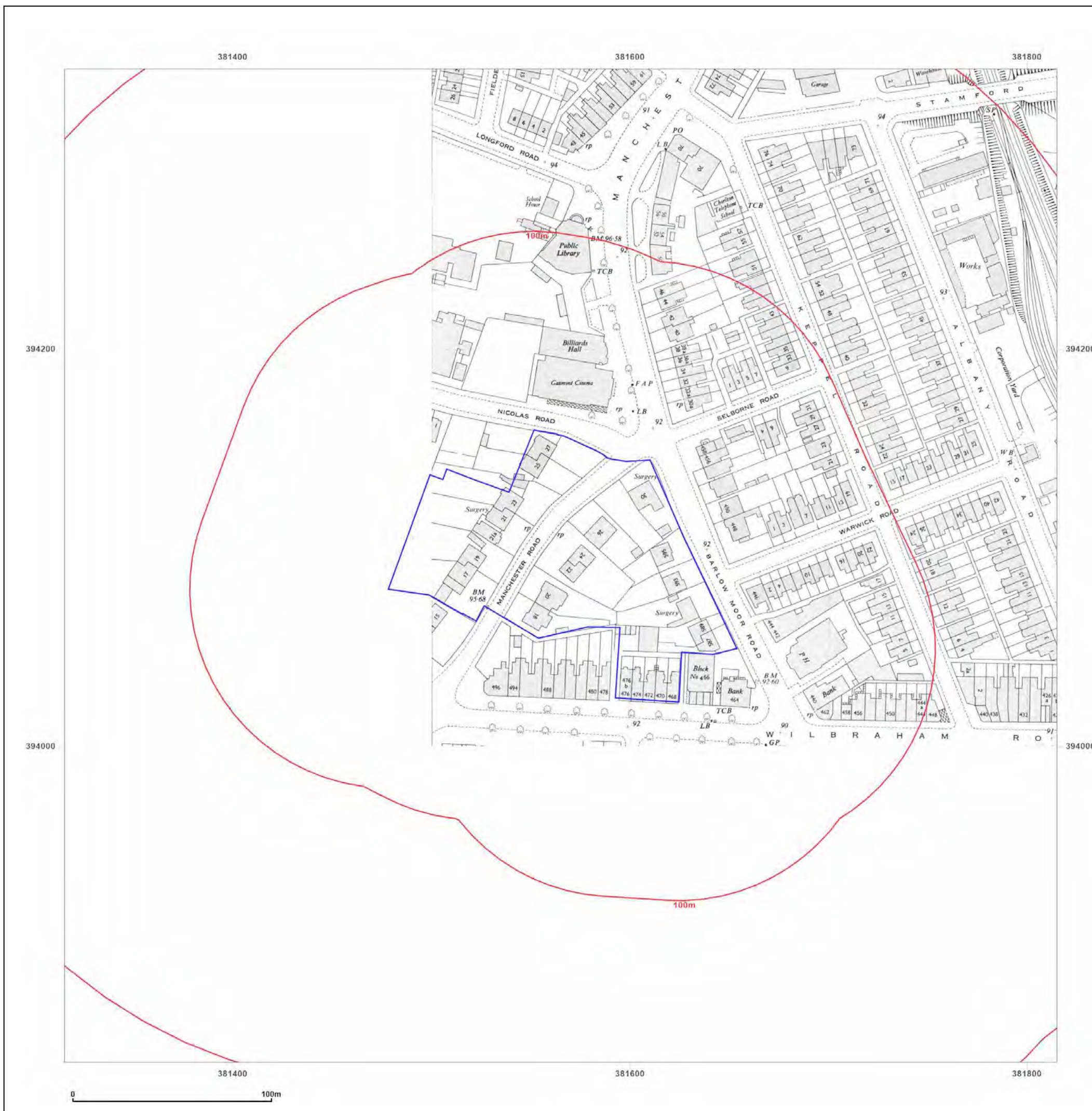


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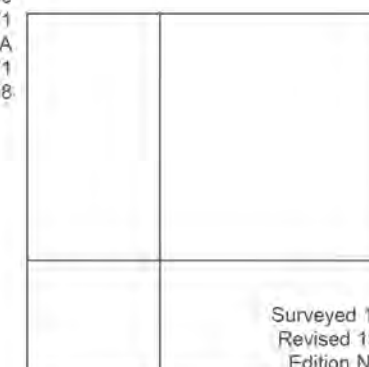
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Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 1979-1981

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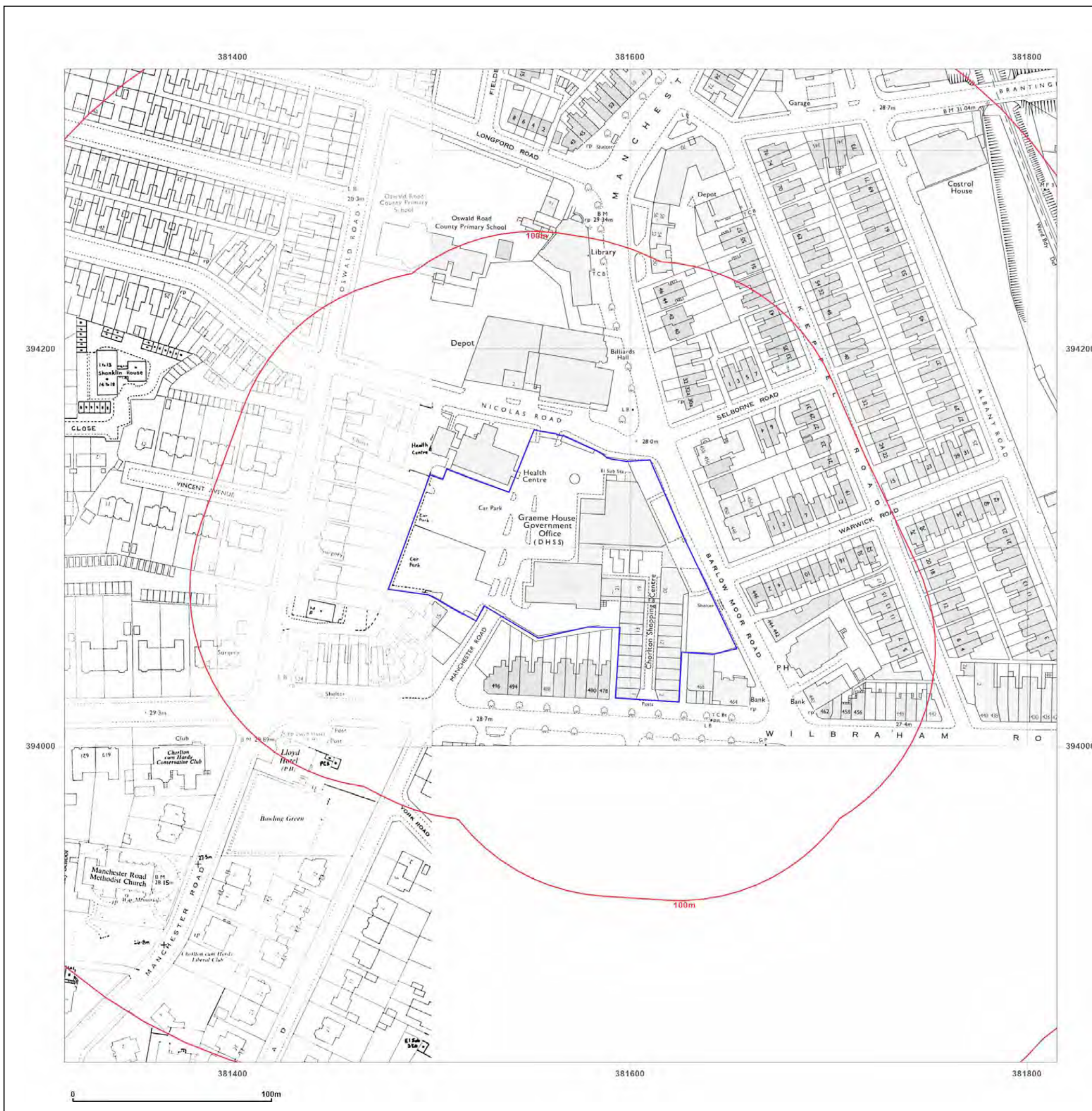


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Map date: 1984-1985

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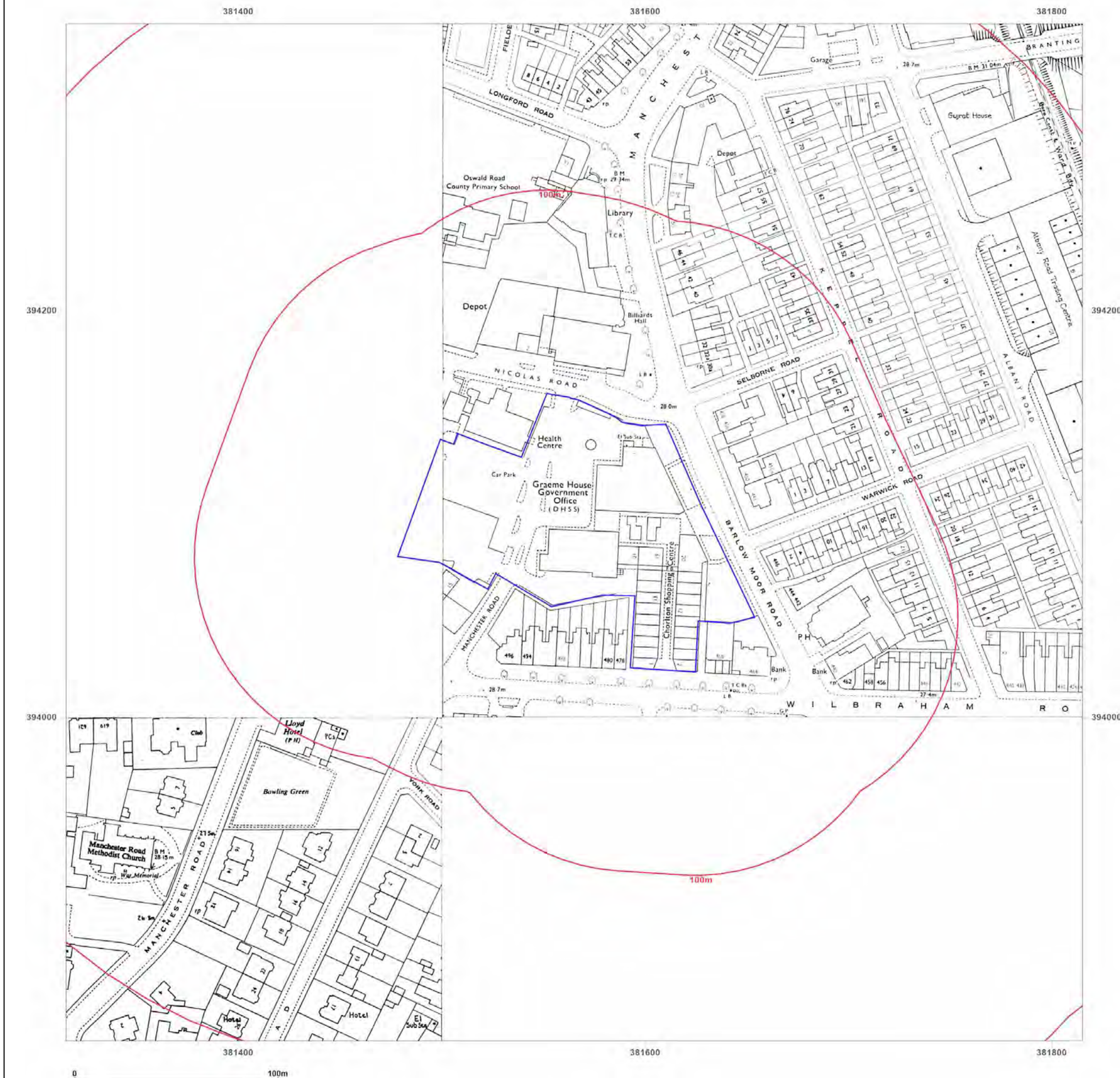


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Map Name: National Grid

Map date: 1990-1992

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Copyright 1992
Levelled N/A

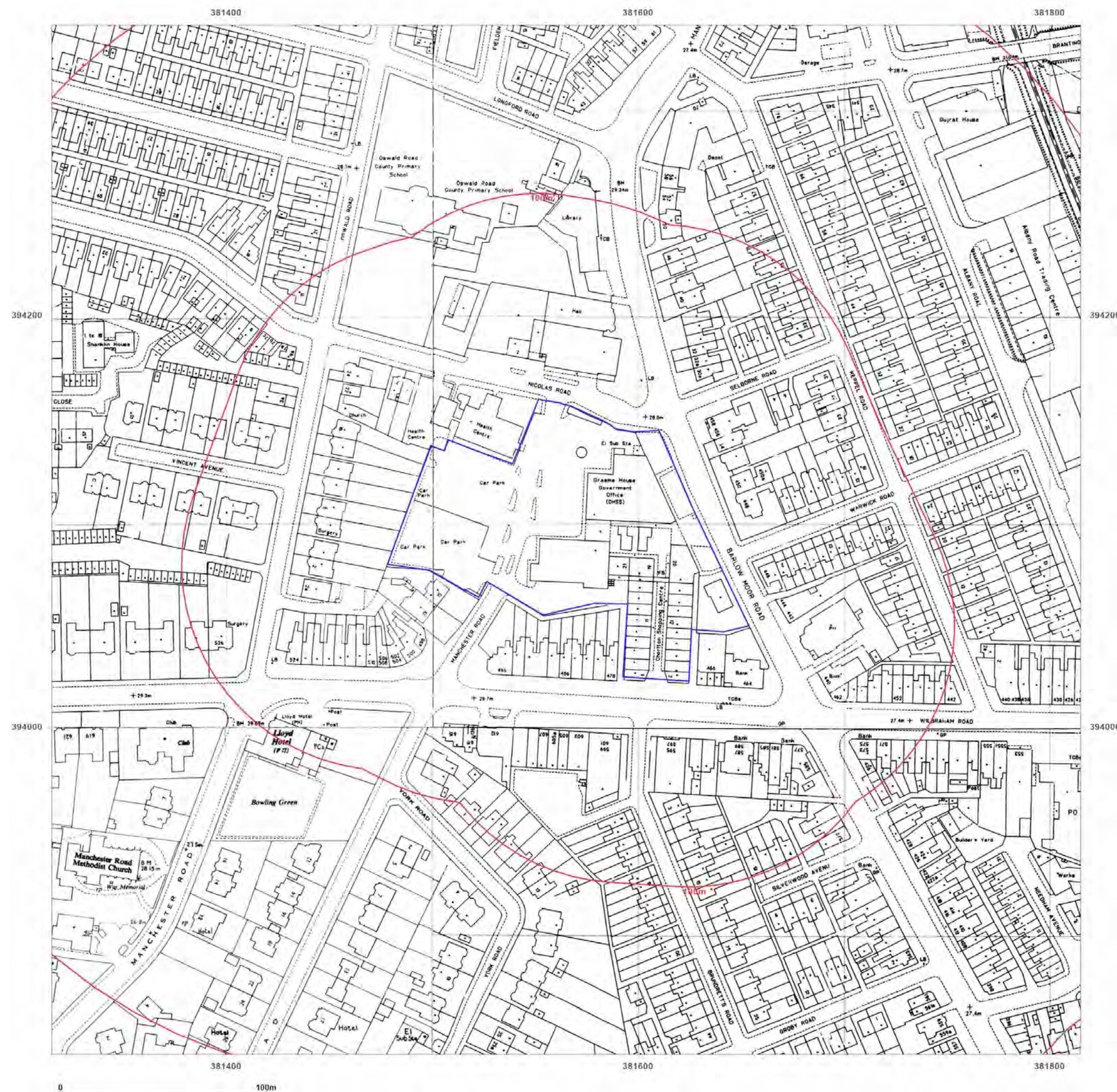


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Production date: 29 September 2023

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Site Details:

CHORLTON PLACE,
MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

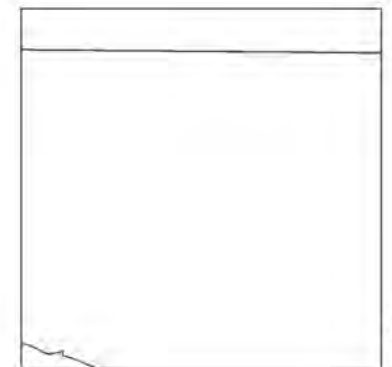
Map date: 1848-1849

Scale: 1:10,560

Printed at: 1:10,560



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



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

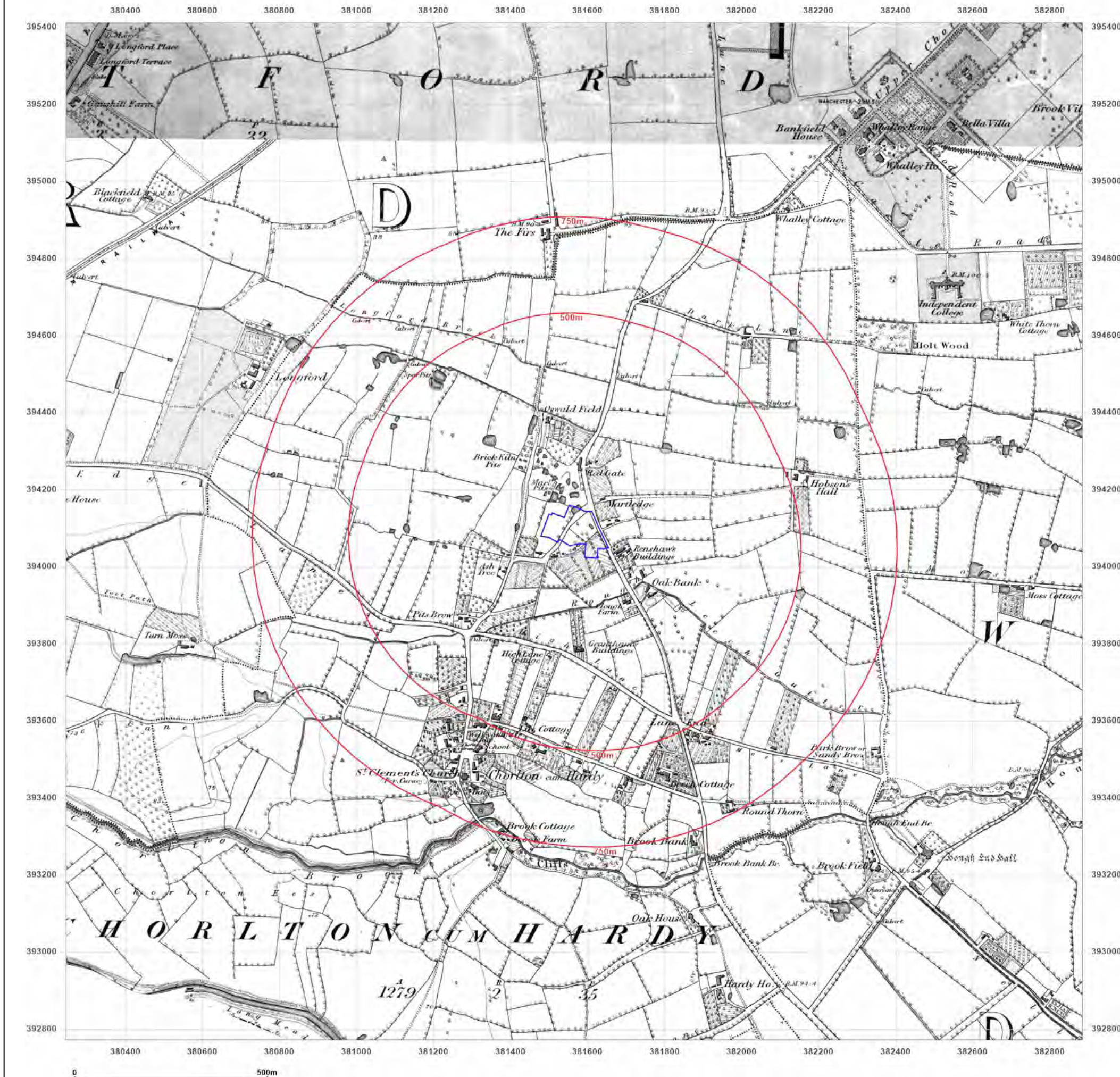


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1892-1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1894
Revised 1896
Edition 1896
Copyright N/A
Levelled N/A

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

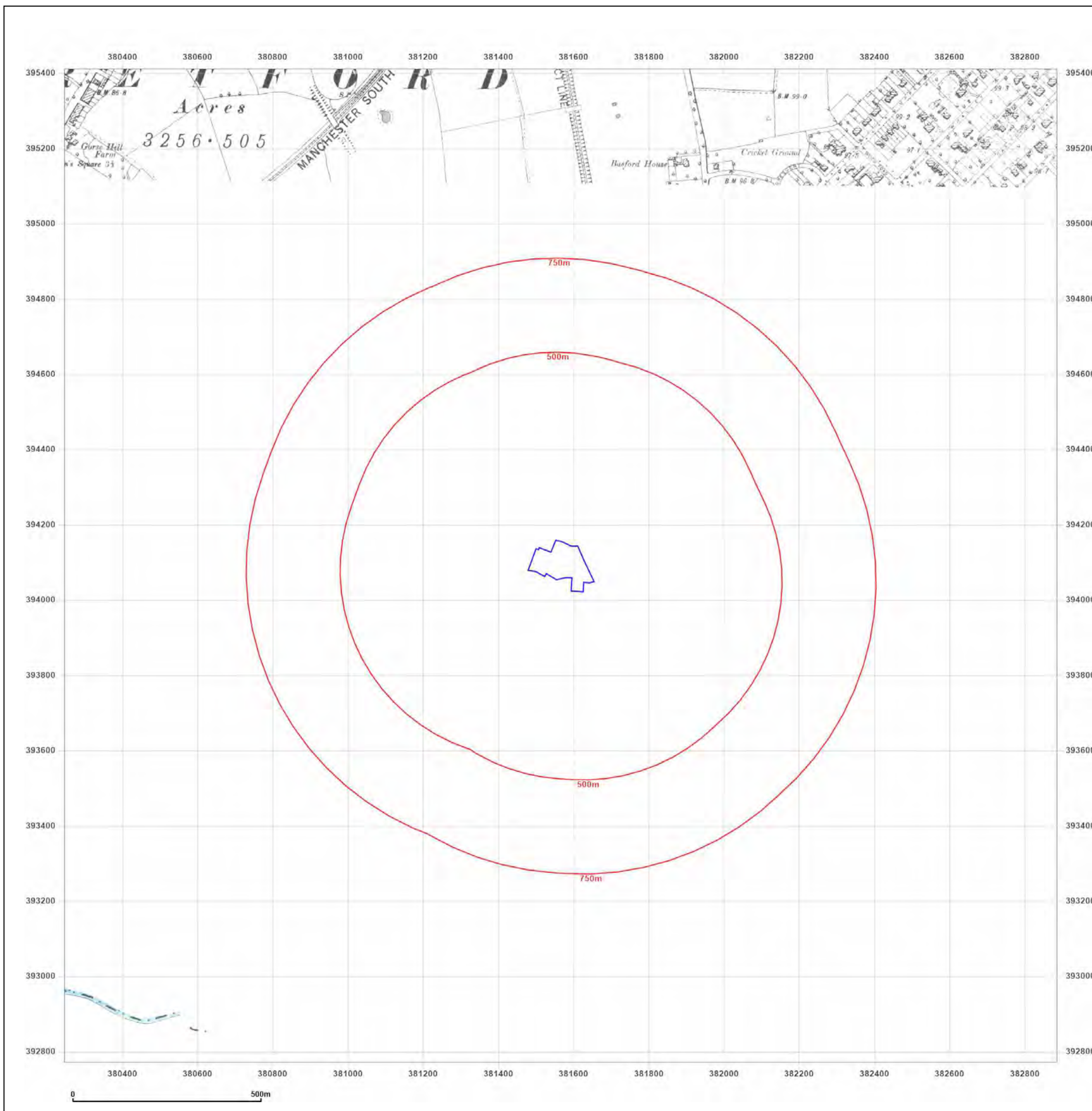


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1897

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1874
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A

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

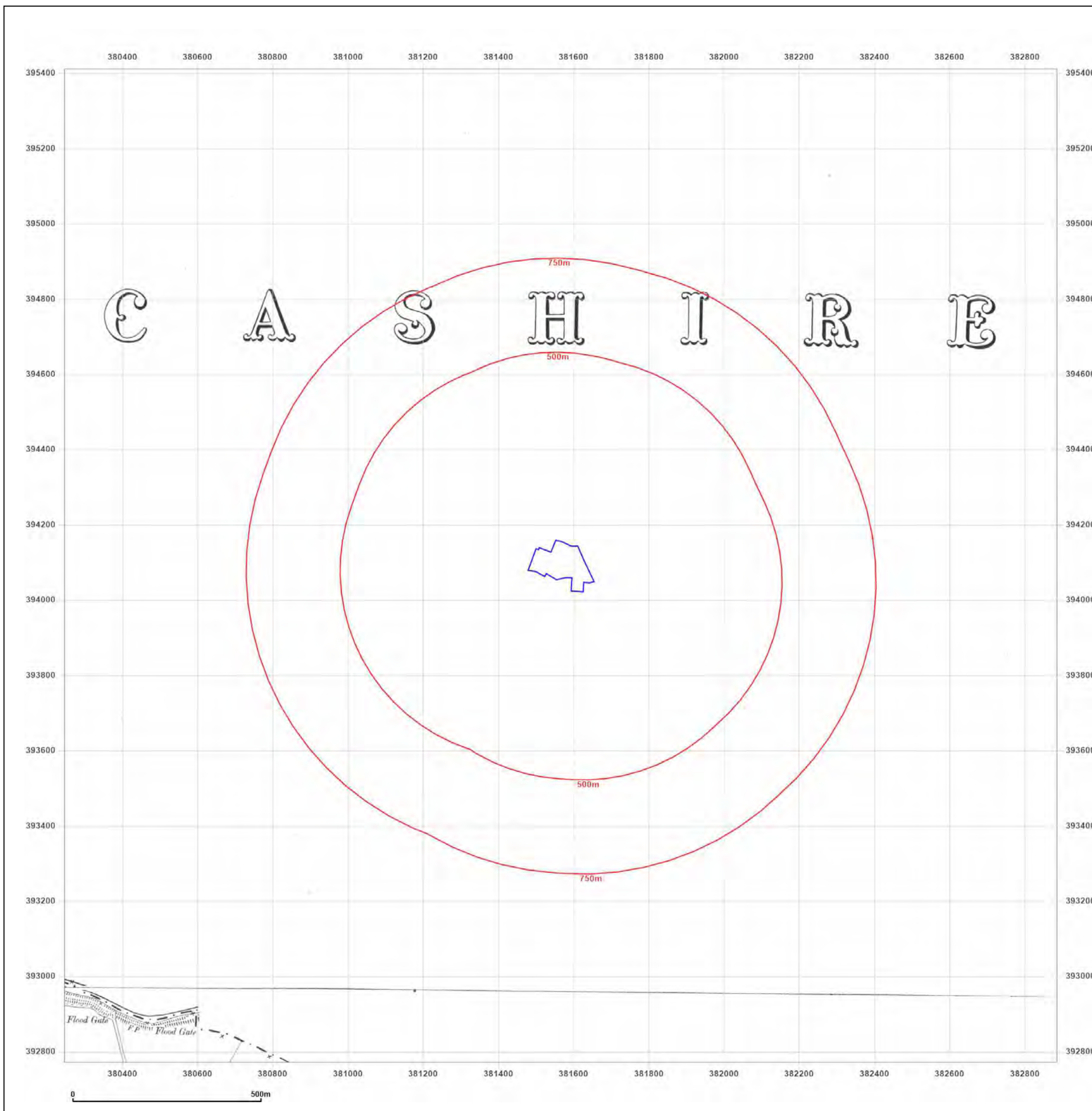


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1905

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1892
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

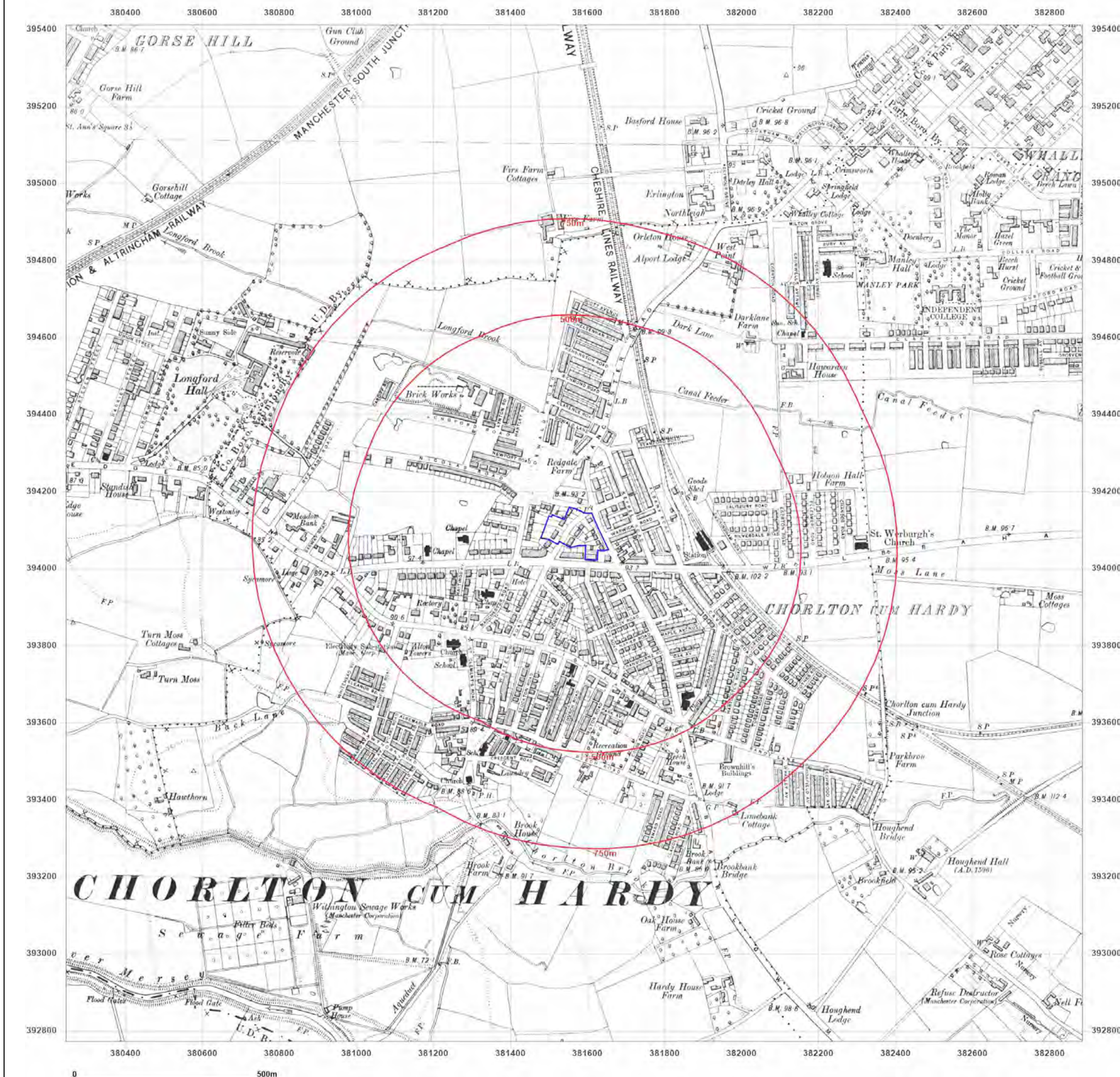


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1908-1911

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1873
Revised 1908
Edition 1908
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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1923

Scale: 1:10,560

Printed at: 1:10,560



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

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



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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1923

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1932-1934

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1844
Revised 1932
Edition 1932
Copyright N/A
Levelled 1927

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

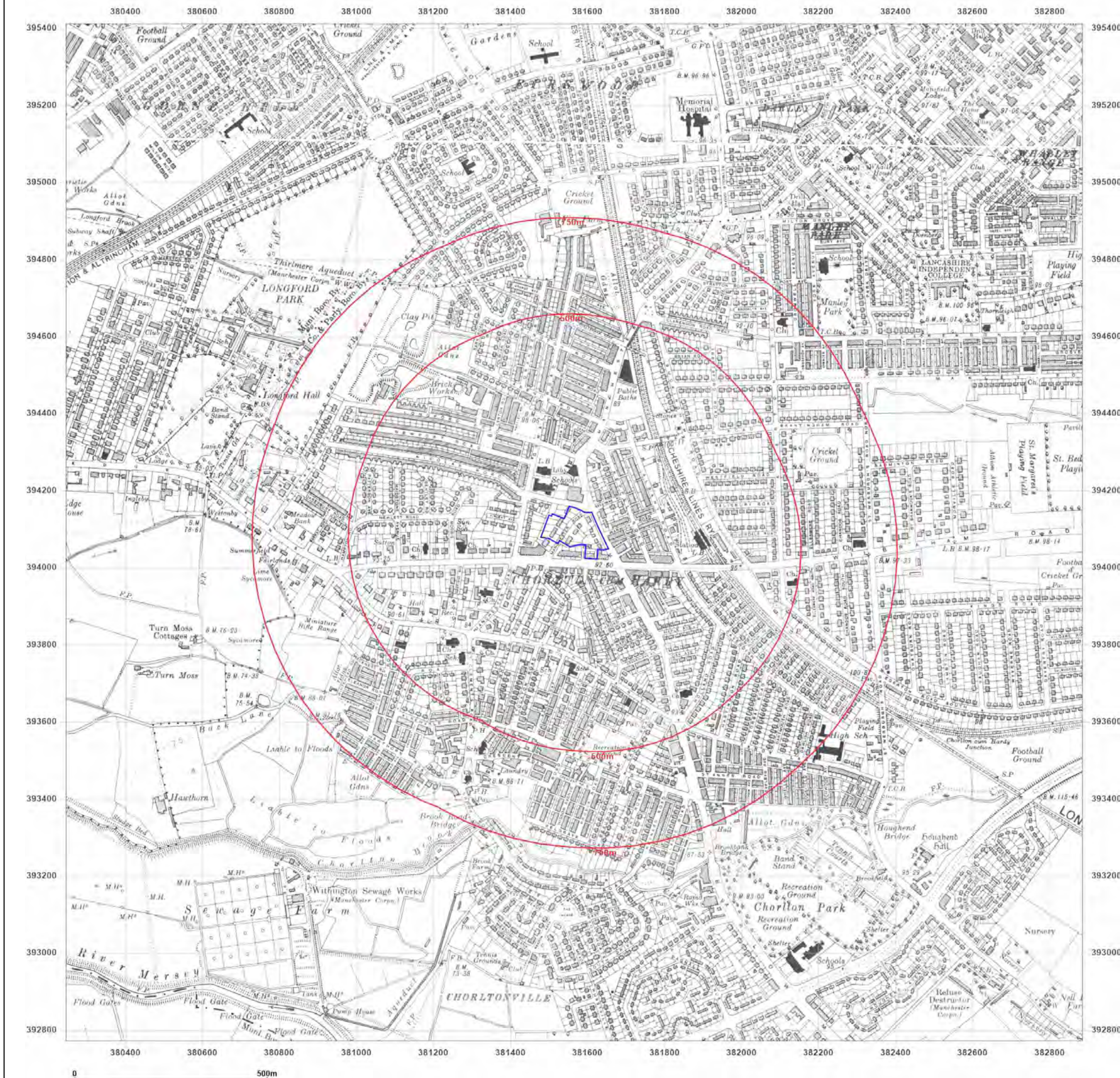


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

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

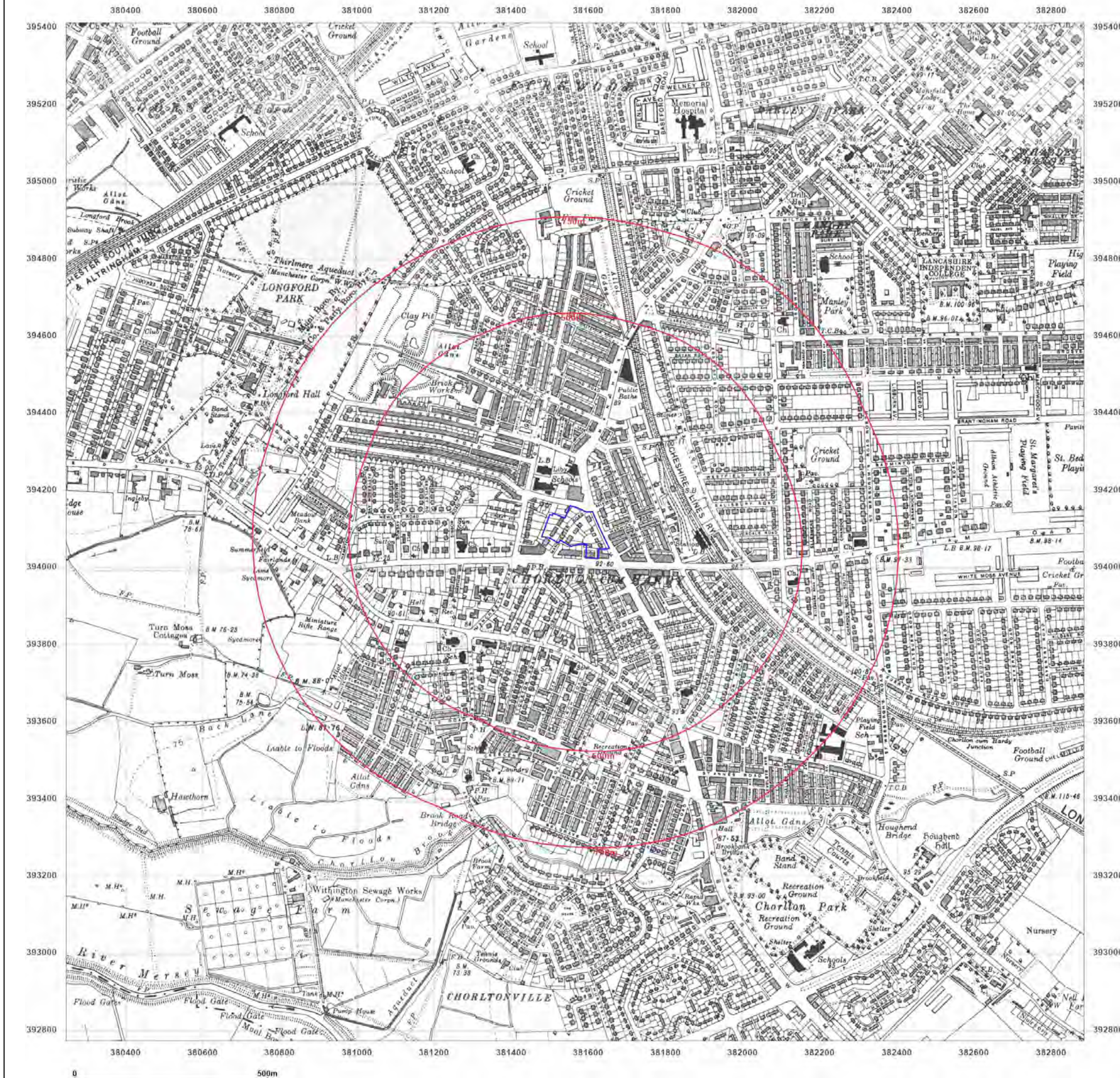


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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

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

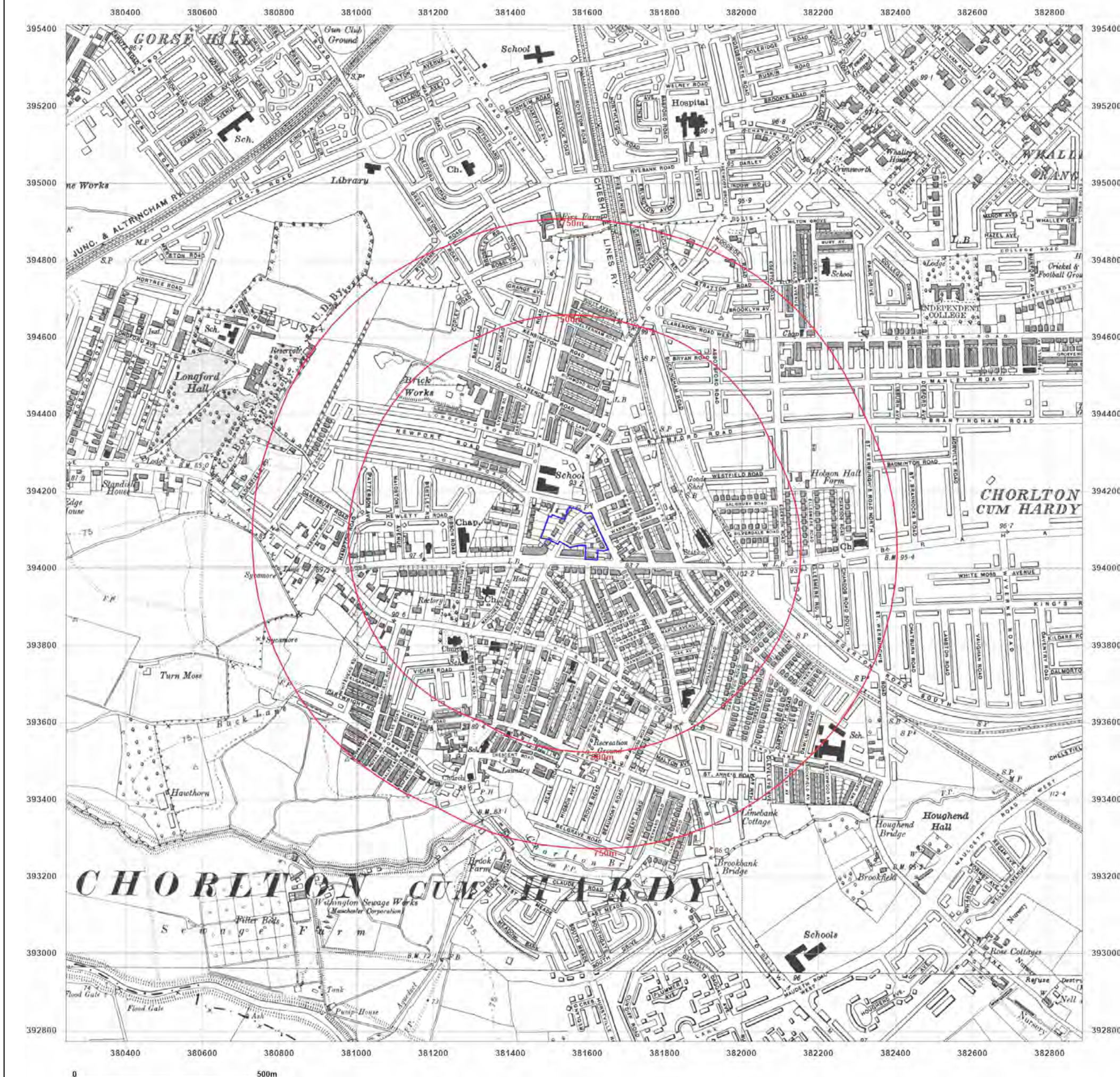


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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: Provisional

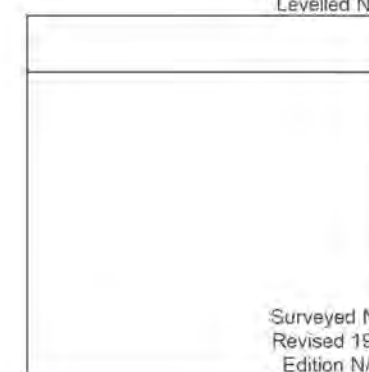
Map date: 1955-1956

Scale: 1:10,560

Printed at: 1:10,560



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



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

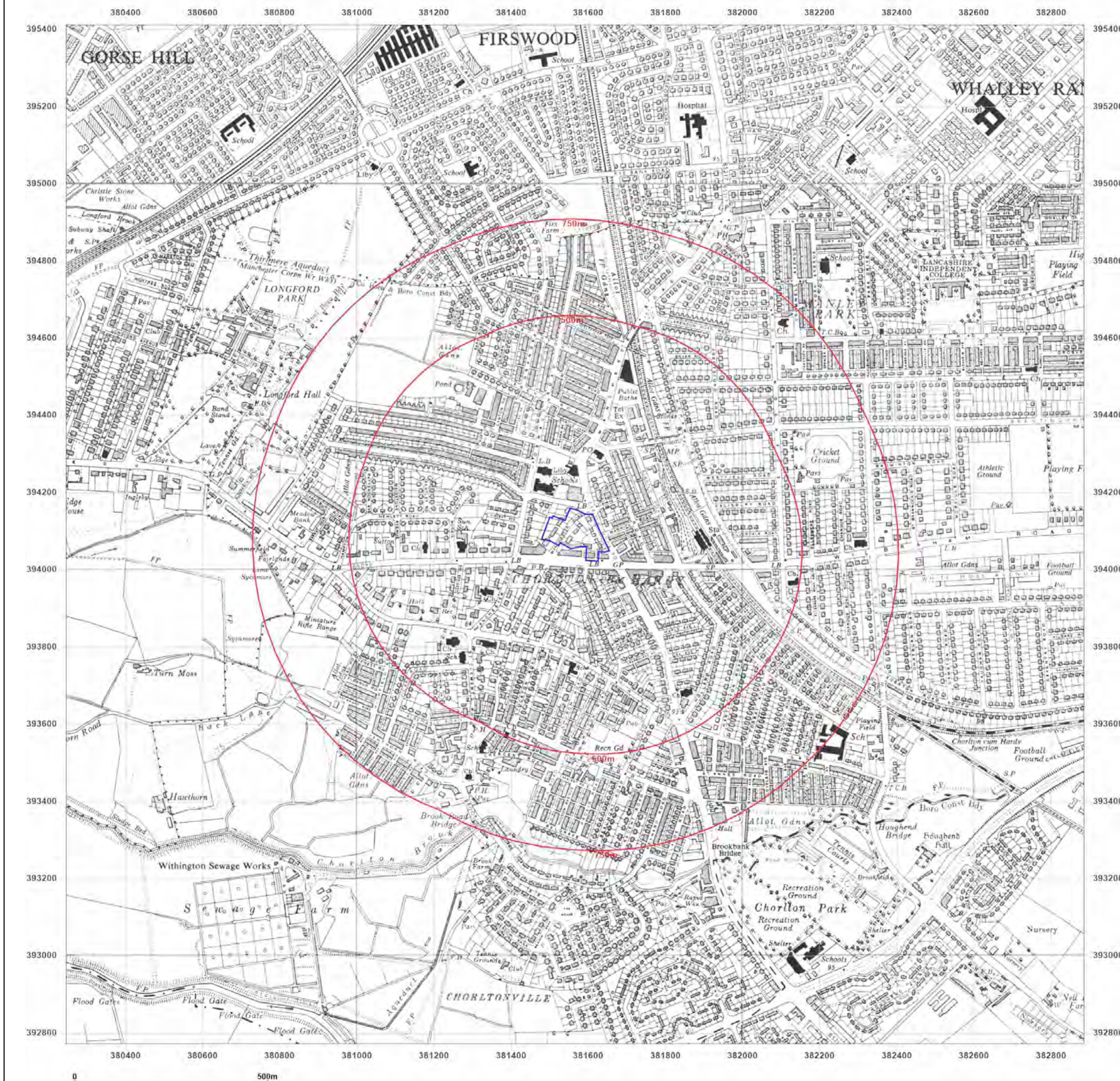


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Production date: 29 September 2023

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MANCHESTER, M21 9AQ

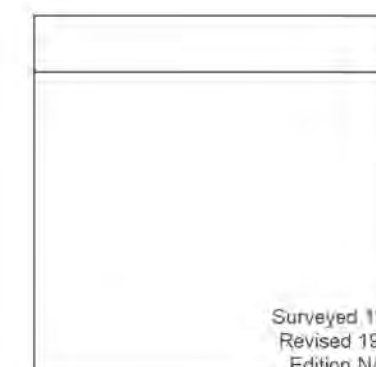
Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: Provisional

Map date: 1966

Scale: 1:10,560

Printed at: 1:10,560



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

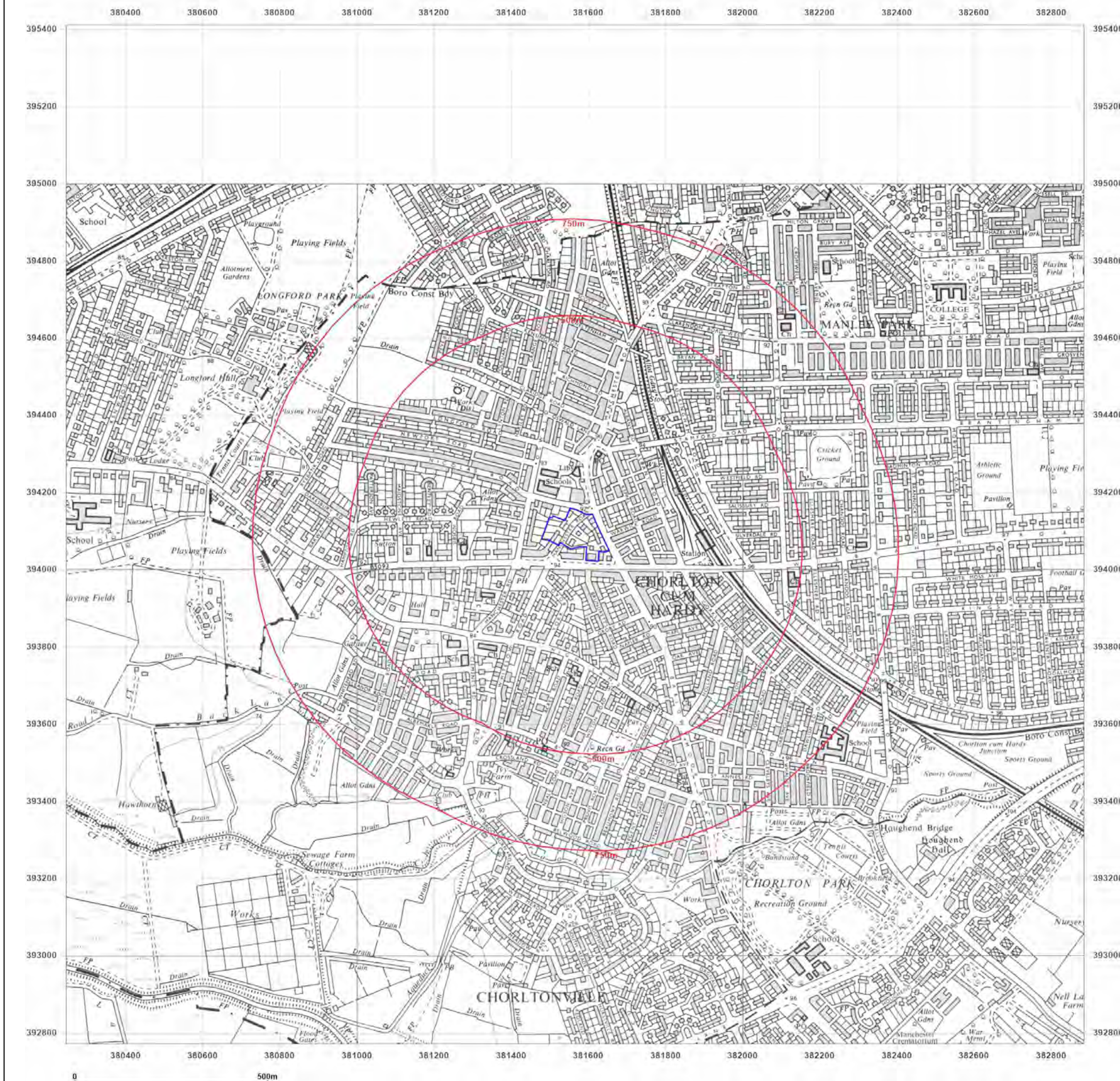


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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

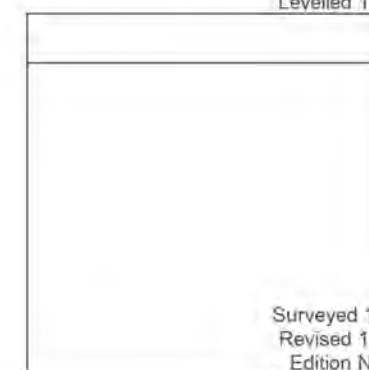
Map date: 1980-1981

Scale: 1:10,000

Printed at: 1:10,000



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



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

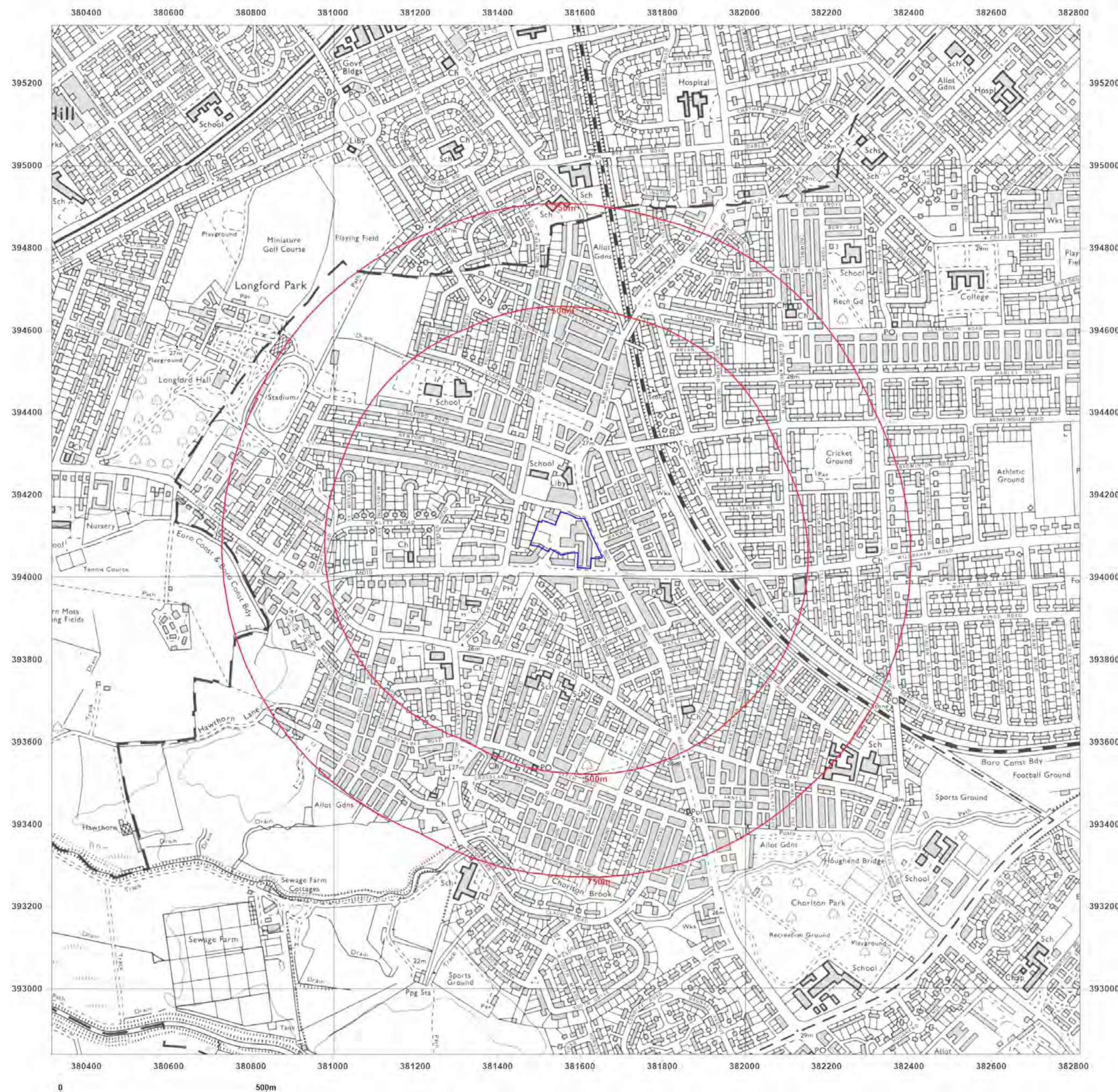


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Production date: 29 September 2023

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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 1985-1988

Scale: 1:10,000

Printed at: 1:10,000



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

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

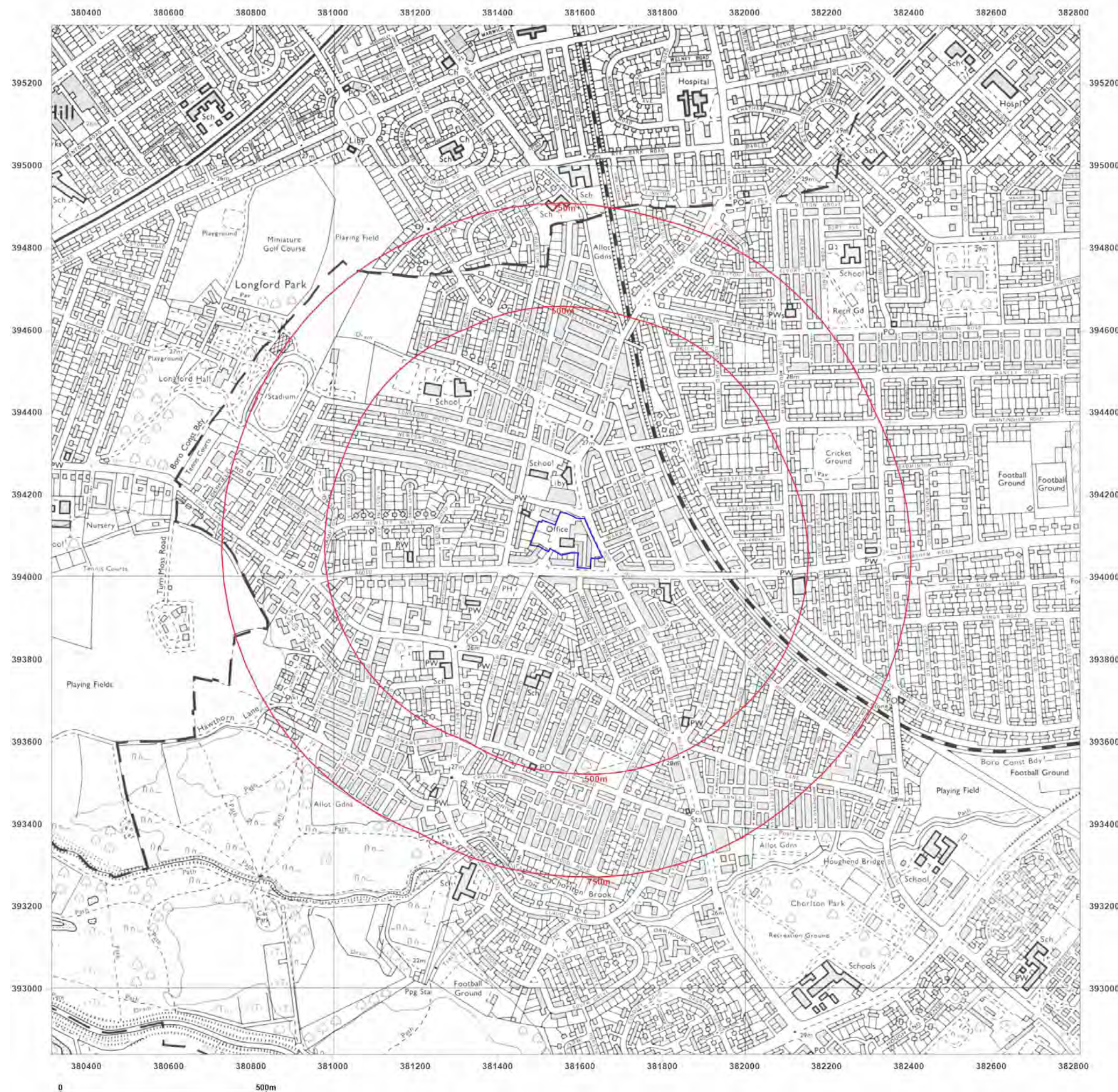


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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

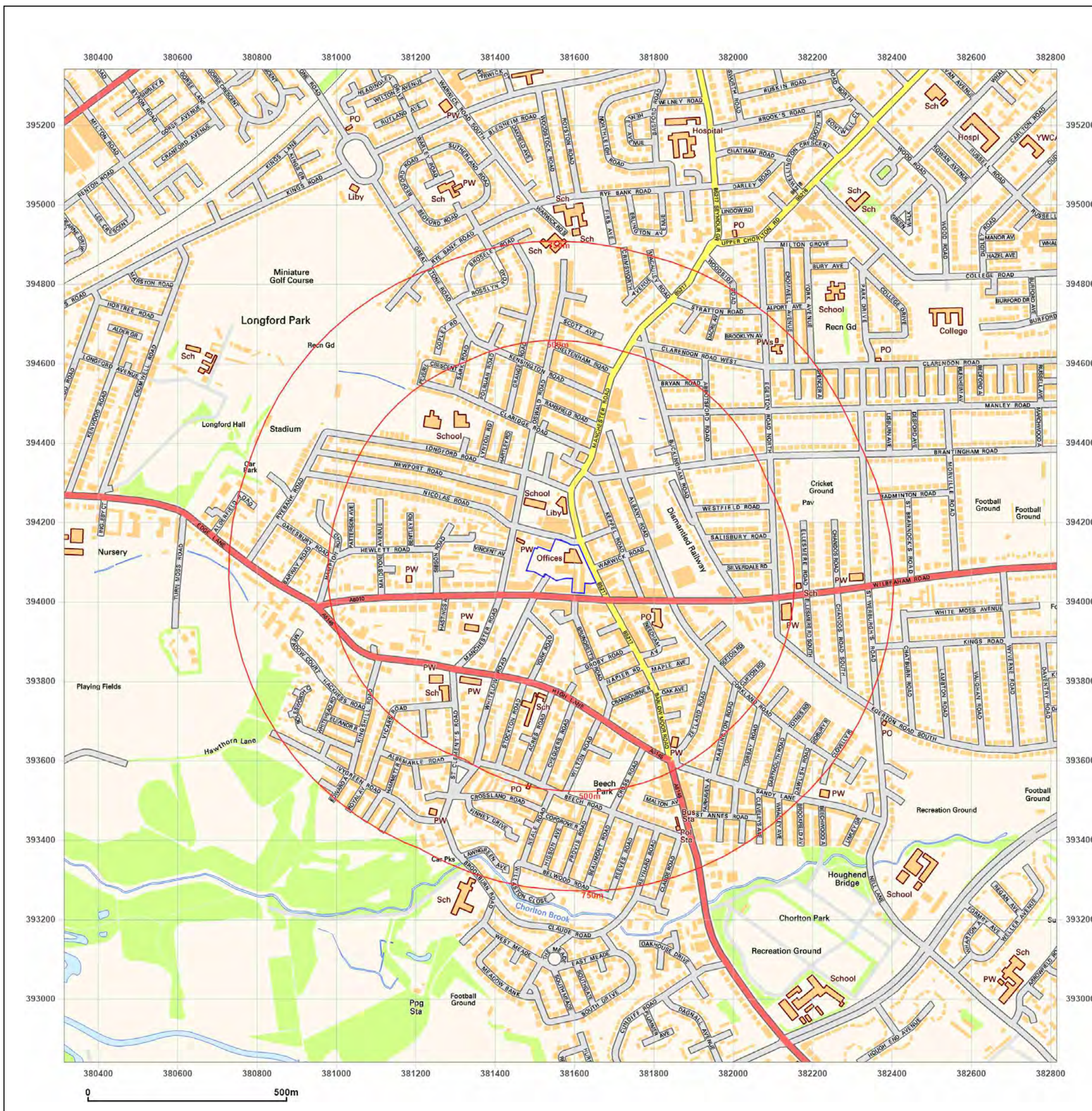


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Site Details:

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Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

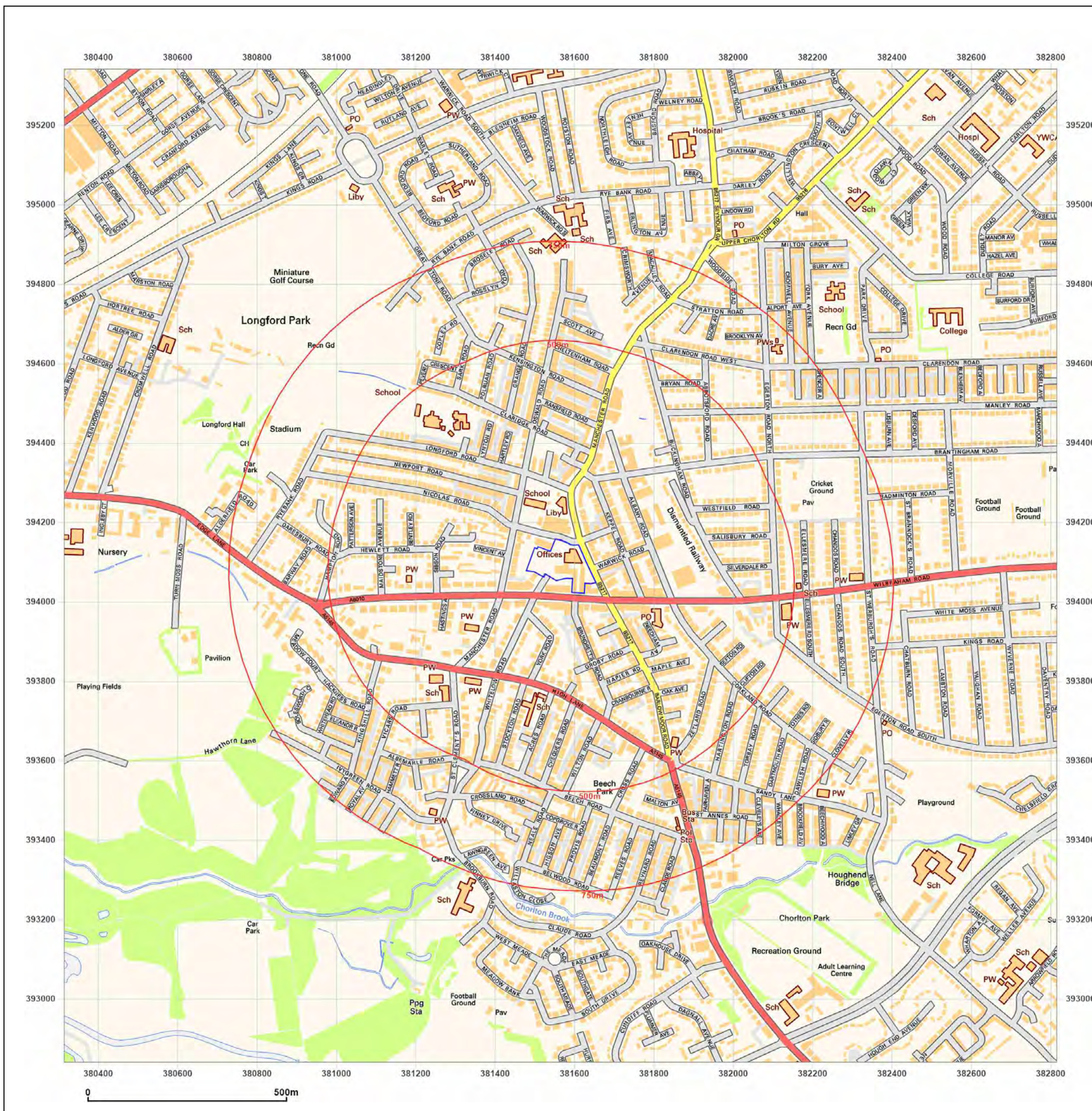


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Site Details:

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MANCHESTER, M21 9AQ

Client Ref: E01016_3079
Report Ref: GS-E16-S3O-BEC-V6I
Grid Ref: 381565, 394091

Map Name: National Grid

Map date: 2023

Scale: 1:10,000

Printed at: 1:10,000

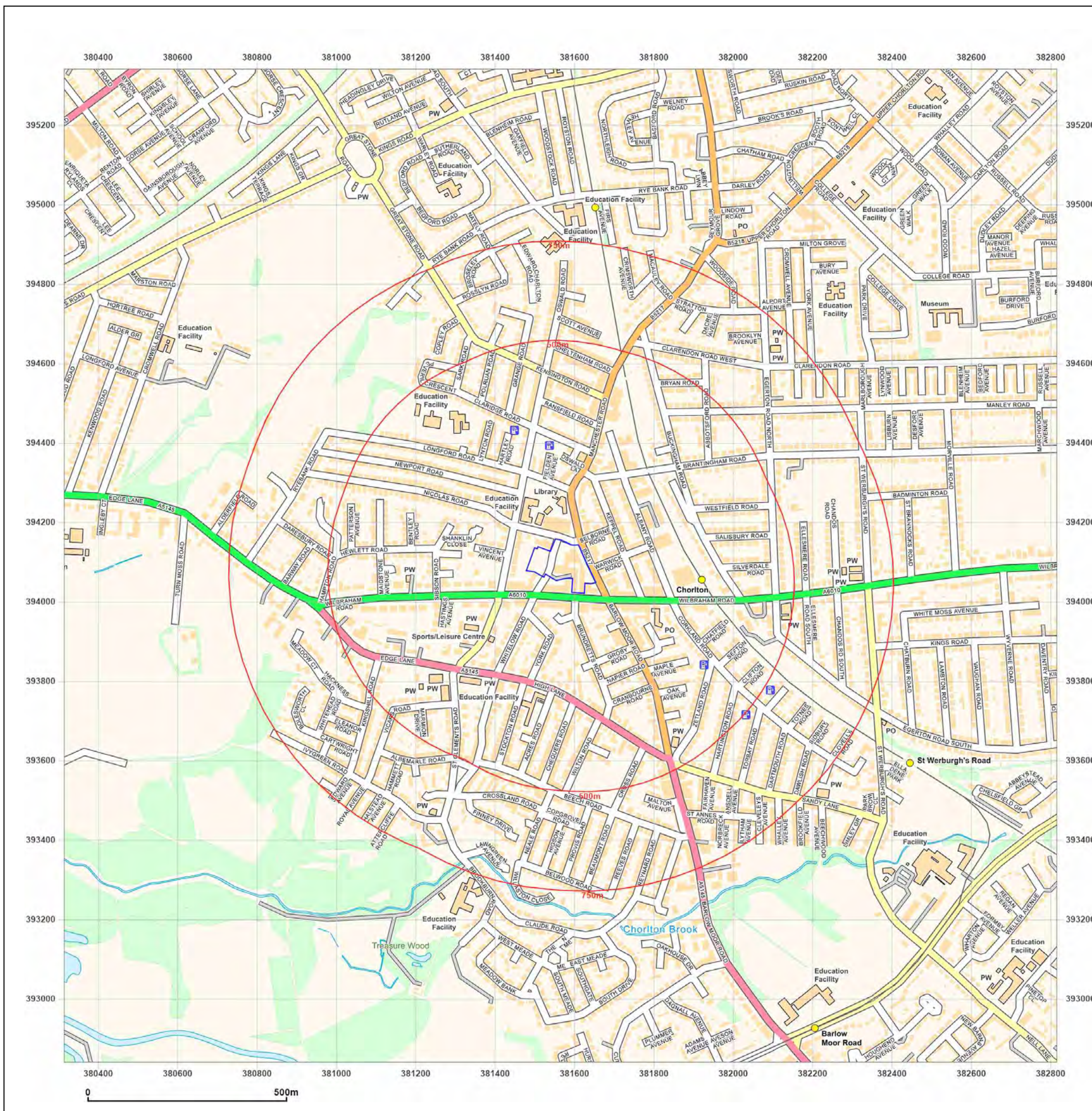


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Appendix C
Groundsure Enviro + Geo Insight Report

CHORLTON PLACE, MANCHESTER, M21 9AQ**Order Details**

Date: 29/09/2023
Your ref: E01016_3079
Our Ref: GS-XW3-LKK-JXX-XYD

Site Details

Location: 381562 394096
Area: 1.27 ha
Authority: [Manchester City Council](#) ↗

[Summary of findings](#)[p.2 >](#)[Aerial image](#)[p.9 >](#)[OS MasterMap site plan](#)[p.14 >](#)groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	39	36	-
18 >	1.2 >	Historical tanks >	1	1	4	3	-
19 >	1.3 >	Historical energy features >	2	0	4	12	-
20	1.4	Historical petrol stations	0	0	0	0	-
20 >	1.5 >	Historical garages >	0	0	10	5	-
21	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
22 >	2.1 >	Historical industrial land uses >	1	0	55	47	-
26 >	2.2 >	Historical tanks >	4	1	4	4	-
27 >	2.3 >	Historical energy features >	4	0	8	24	-
29	2.4	Historical petrol stations	0	0	0	0	-
29 >	2.5 >	Historical garages >	0	0	13	8	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
31	3.1	Active or recent landfill	0	0	0	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
32	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
32	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
32	3.5	Historical waste sites	0	0	0	0	-
32	3.6	Licensed waste sites	0	0	0	0	-
32 >	3.7 >	Waste exemptions >	0	2	1	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
34 >	4.1 >	Recent industrial land uses >	1	1	21	-	-
36 >	4.2 >	Current or recent petrol stations >	0	0	1	1	-
36	4.3	Electricity cables	0	0	0	0	-
37	4.4	Gas pipelines	0	0	0	0	-
37	4.5	Sites determined as Contaminated Land	0	0	0	0	-



37	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
37	4.7	Regulated explosive sites	0	0	0	0	-
37	4.8	Hazardous substance storage/usage	0	0	0	0	-
38	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
38	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
38 >	4.11 >	<u>Licensed pollutant release (Part A(2)/B) ></u>	2	0	2	3	-
39	4.12	Radioactive Substance Authorisations	0	0	0	0	-
39	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
39	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
40	4.15	Pollutant release to public sewer	0	0	0	0	-
40	4.16	List 1 Dangerous Substances	0	0	0	0	-
40	4.17	List 2 Dangerous Substances	0	0	0	0	-
40	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
40	4.19	Pollution inventory substances	0	0	0	0	-
41	4.20	Pollution inventory waste transfers	0	0	0	0	-
41	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
42 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
44 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
45 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
46	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
46	5.5	Groundwater vulnerability- local information	None (within 0m)				
47 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	0	0	3
48 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	4
50	5.8	Potable abstractions	0	0	0	0	0
50	5.9	Source Protection Zones	0	0	0	0	-
50	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
51	6.1	Water Network (OS MasterMap)	0	0	0	-	-



51	6.2	Surface water features	0	0	0	-	-
52 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
52 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
53 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
54	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
54	7.2	Historical Flood Events	0	0	0	-	-
54	7.3	Flood Defences	0	0	0	-	-
55	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
55	7.5	Flood Storage Areas	0	0	0	-	-
56	7.6	Flood Zone 2	None (within 50m)				
56	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
57 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
59 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
60	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
61	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
61	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
61	10.4	Special Protection Areas (SPA)	0	0	0	0	0
61	10.5	National Nature Reserves (NNR)	0	0	0	0	0
62 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	3
62 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	2
62	10.8	Biosphere Reserves	0	0	0	0	0
63	10.9	Forest Parks	0	0	0	0	0
63	10.10	Marine Conservation Zones	0	0	0	0	0
63 >	10.11 >	Green Belt >	0	0	0	0	2
63	10.12	Proposed Ramsar sites	0	0	0	0	0



64	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
64	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
64	10.15	Nitrate Sensitive Areas	0	0	0	0	0
64	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
65	10.17	SSSI Impact Risk Zones	0	-	-	-	-
65	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
66	11.1	World Heritage Sites	0	0	0	-	-
67	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
67	11.3	National Parks	0	0	0	-	-
67 >	11.4 >	Listed Buildings >	0	1	3	-	-
68 >	11.5 >	Conservation Areas >	1	0	0	-	-
68	11.6	Scheduled Ancient Monuments	0	0	0	-	-
68	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
70	12.2	Open Access Land	0	0	0	-	-
70	12.3	Tree Felling Licences	0	0	0	-	-
70	12.4	Environmental Stewardship Schemes	0	0	0	-	-
70	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
71	13.1	Priority Habitat Inventory	0	0	0	-	-
71	13.2	Habitat Networks	0	0	0	-	-
71	13.3	Open Mosaic Habitat	0	0	0	-	-
71	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
72 >	14.1 >	10k Availability >	Identified (within 500m)				
73 >	14.2 >	Artificial and made ground (10k) >	0	1	2	3	-
75 >	14.3 >	Superficial geology (10k) >	2	0	0	0	-



76	14.4	Landslip (10k)	0	0	0	0	-
77 >	14.5 >	Bedrock geology (10k) >	1	0	0	0	-
78	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
79 >	15.1 >	50k Availability >	Identified (within 500m)				
80 >	15.2 >	Artificial and made ground (50k) >	0	0	0	1	-
81	15.3	Artificial ground permeability (50k)	0	0	-	-	-
82 >	15.4 >	Superficial geology (50k) >	2	0	1	0	-
83 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
83	15.6	Landslip (50k)	0	0	0	0	-
83	15.7	Landslip permeability (50k)	None (within 50m)				
84 >	15.8 >	Bedrock geology (50k) >	1	0	1	0	-
85 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
85	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
86 >	16.1 >	BGS Boreholes >	1	0	3	-	-
Page	Section	Natural ground subsidence >					
88 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
89 >	17.2 >	Running sands >	Very low (within 50m)				
90 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
91 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
92 >	17.5 >	Landslides >	Very low (within 50m)				
93 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
95 >	18.1 >	BritPits >	0	0	0	1	-
96 >	18.2 >	Surface ground workings >	1	0	14	-	-
97 >	18.3 >	Underground workings >	0	0	0	0	2
97	18.4	Underground mining extents	0	0	0	0	-
97	18.5	Historical Mineral Planning Areas	0	0	0	0	-

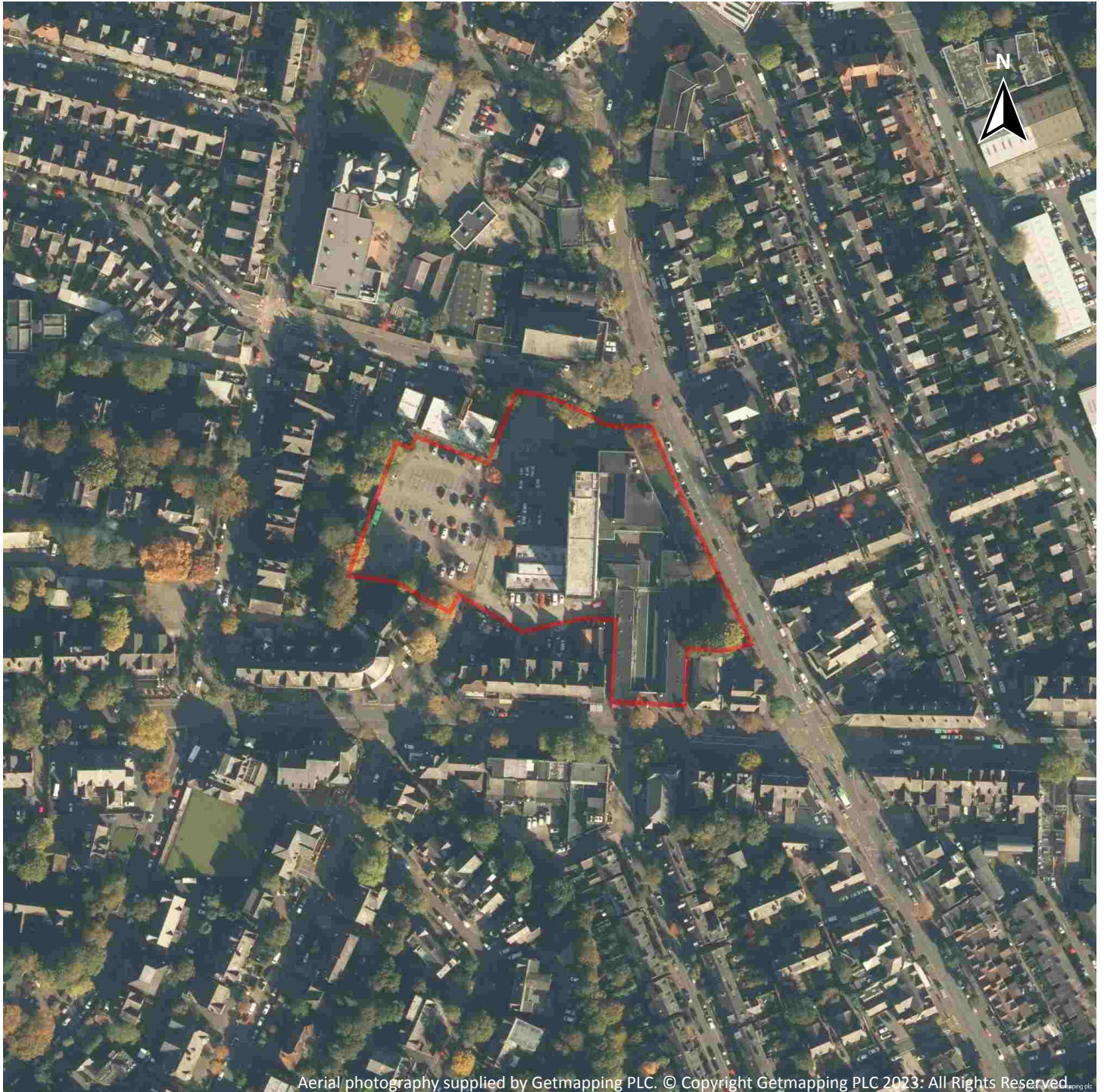


97	18.6	Non-coal mining	0	0	0	0	0
98 >	18.7 >	JPB mining areas >	Identified (within 0m)				
98	18.8	The Coal Authority non-coal mining	0	0	0	0	-
98 >	18.9 >	Researched mining >	0	0	1	0	-
99	18.10	Mining record office plans	0	0	0	0	-
99	18.11	BGS mine plans	0	0	0	0	-
99	18.12	Coal mining	None (within 0m)				
99	18.13	Brine areas	None (within 0m)				
99	18.14	Gypsum areas	None (within 0m)				
100	18.15	Tin mining	None (within 0m)				
100	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
101	19.1	Natural cavities	0	0	0	0	-
101	19.2	Mining cavities	0	0	0	0	0
101	19.3	Reported recent incidents	0	0	0	0	-
101	19.4	Historical incidents	0	0	0	0	-
102	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
103 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
105 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	2	-	-	-
105	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
106	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
107	22.1	Underground railways (London)	0	0	0	-	-
107	22.2	Underground railways (Non-London)	0	0	0	-	-
108	22.3	Railway tunnels	0	0	0	-	-
108 >	22.4 >	Historical railway and tunnel features >	0	0	24	-	-
109	22.5	Royal Mail tunnels	0	0	0	-	-



109 >	22.6 >	Historical railways >	0	0	1	-	-
110 >	22.7 >	Railways >	0	0	3	-	-
110	22.8	Crossrail 1	0	0	0	0	-
110	22.9	Crossrail 2	0	0	0	0	-
110	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 18/10/2022

Site Area: 1.27ha



Recent site history - 2019 aerial photograph

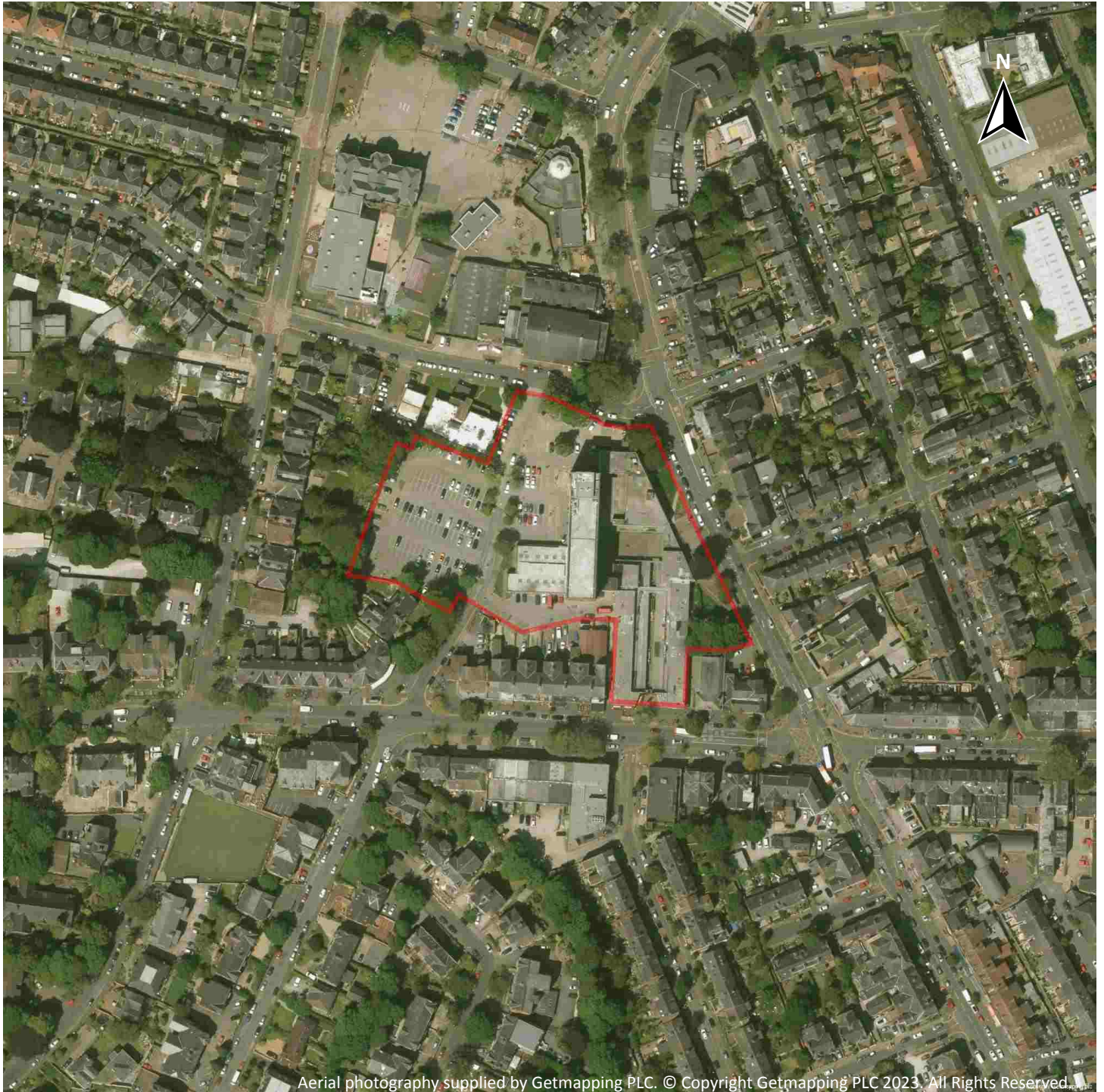


Capture Date: 22/04/2019

Site Area: 1.27ha



Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 1.27ha



Recent site history - 2009 aerial photograph



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

Capture Date: 02/06/2009

Site Area: 1.27ha



Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

Site Area: 1.27ha



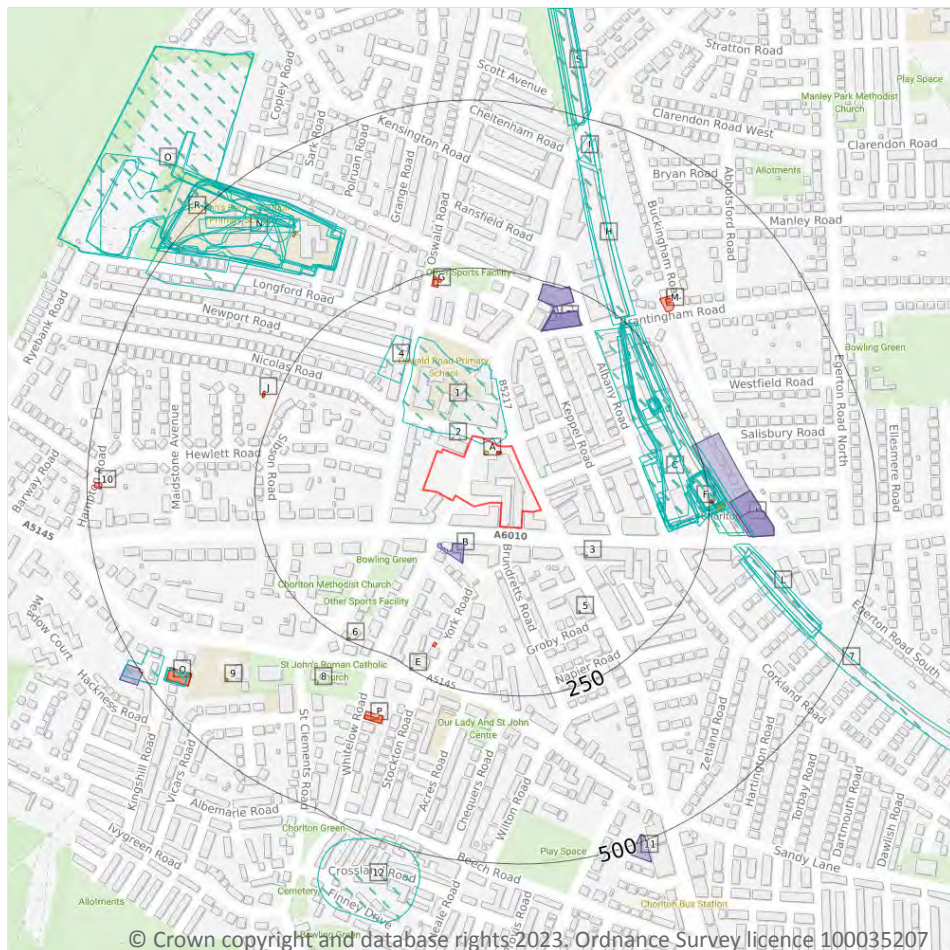
OS MasterMap site plan



Site Area: 1.27ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

76

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

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

ID	Location	Land use	Dates present	Group ID
1	On site	Marl Pits	1851	815786



ID	Location	Land use	Dates present	Group ID
4	115m NW	Brick Kiln Pits	1851	842345
C	164m E	Railway Sidings	1916 - 1934	892336
C	164m E	Railway Sidings	1905	927779
C	167m E	Railway Sidings	1938	903952
C	172m E	Railway Sidings	1955	968469
C	173m E	Railway Building	1923	848469
C	173m E	Railway Building	1905	985043
C	174m E	Railway Sidings	1966	943003
C	174m E	Railway Building	1938	855227
C	176m NE	Unspecified Works	1978	830402
C	176m E	Railway Building	1934	978210
C	177m E	Railway Building	1938	820247
C	181m E	Railway Sidings	1892	918341
C	181m E	Cuttings	1892 - 1978	973917
C	183m E	Railway Sidings	1938	861055
C	185m E	Railway Sidings	1911	978316
C	195m E	Railway Building	1905 - 1938	852300
C	199m E	Goods Shed	1892	834670
C	210m NE	Goods Shed	1916	857619
C	210m NE	Goods Shed	1934	908811
C	210m NE	Goods Shed	1905 - 1911	907952
C	210m NE	Goods Shed	1923	984565
C	211m NE	Railway Building	1955 - 1966	987804
C	213m E	Goods Shed	1938	853553
F	215m E	Railway Station	1892	901681
F	215m E	Railway Station	1905 - 1911	923249
C	216m NE	Railway Building	1934 - 1938	939037
C	218m NE	Railway Building	1955	868296



ID	Location	Land use	Dates present	Group ID
F	219m E	Railway Station	1938	911002
F	222m E	Railway Station	1955	893918
F	224m E	Railway Station	1934	854271
F	224m E	Railway Station	1916	962086
F	224m E	Railway Station	1923	978170
F	225m E	Railway Station	1966	876352
F	226m E	Railway Station	1938	910720
C	233m E	Railway Building	1923	820246
H	235m NE	Cuttings	1892 - 1988	849455
I	245m NE	Cuttings	1938 - 1955	919589
H	246m NE	Cuttings	1934	849675
L	293m E	Cuttings	1955	942337
7	304m E	Cuttings	1892	858432
L	309m E	Cuttings	1938	920496
N	309m NW	Brick Works	1905 - 1911	915334
N	309m NW	Brick Works	1923	935481
N	310m NW	Unspecified Disused Works	1966	813356
O	312m NW	Brick Works	1934	855366
L	312m E	Cuttings	1934	941065
N	312m NW	Brick Works	1938	991649
N	313m NW	Brick Works	1916	960197
O	314m NW	Brick Works	1938	975618
N	359m NW	Unspecified Ground Workings	1938	800613
N	362m NW	Unspecified Pit	1905	903851
N	364m NW	Unspecified Pit	1911	892276
N	386m NW	Pits	1851	794119
N	386m NW	Railway Sidings	1905 - 1911	984769
N	388m NW	Unspecified Pit	1934	847319



ID	Location	Land use	Dates present	Group ID
N	393m NW	Railway Sidings	1923	931012
N	396m NW	Railway Sidings	1938	984277
O	397m NW	Railway Sidings	1934	980527
O	399m NW	Railway Sidings	1938	968199
N	400m NW	Railway Sidings	1916	872137
N	424m NW	Brick Works	1923	896578
N	428m NW	Unspecified Pit	1916	930058
I	435m N	Cuttings	1934	906875
Q	443m SW	Electricity Substation	1916	955416
Q	445m SW	Electricity Substation	1905	856769
Q	445m SW	Electricity Substation	1923	885449
R	449m NW	Clay Pit	1934	827691
R	452m NW	Unspecified Pit	1938	932861
Q	458m SW	Electricity Substation	1911	837772
S	479m N	Cuttings	1938	979668
S	482m N	Cuttings	1905 - 1934	869218
S	482m N	Cuttings	1892	883251
S	486m N	Cuttings	1966 - 1988	952407
12	496m S	Laundry	1938	858769

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

9

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

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



ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Tank	1981 - 1992	147521
2	20m NW	Unspecified Tank	1981	115047
3	95m SE	Tank or Trough	1881	121261
5	150m SE	Tank or Trough	1881	121262
6	245m SW	Tank or Trough	1881	121246
E	246m S	Tank or Trough	1881	121263
8	326m SW	Unspecified Tank	1881	115039
N	383m NW	Unspecified Tank	1950	125518
9	404m SW	Unspecified Tank	1881	115041

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

18

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

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

ID	Location	Land use	Dates present	Group ID
A	On site	Electricity Substation	1981 - 1992	79301
A	On site	Electricity Substation	1985	80211
E	198m S	Electricity Substation	1979 - 1992	84606
G	227m N	Electricity Transformer	1971	63761
G	234m N	Electricity Substation	1992	74032
G	238m N	Electricity Substation	1992	62132
F	252m E	Electricity Substation	1992	68982
F	252m E	Electricity Substations	1985	59888
J	269m W	Electricity Transformer	1971 - 1980	77008



ID	Location	Land use	Dates present	Group ID
J	270m W	Electricity Substation	1992	62131
M	305m NE	Electricity Substation	1950 - 1992	64473
M	313m NE	Electricity Substation	1950 - 1981	82817
P	331m SW	Electricity Substation	1992	65004
P	331m SW	Electricity Substation	1984 - 1990	83981
Q	440m SW	Electricity Substation	1955 - 1990	69394
Q	441m SW	Electricity Substation	1955	71241
Q	455m SW	Electricity Substation	1992	84494
10	478m W	Electricity Substation	1971 - 1992	65754

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

15

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

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

ID	Location	Land use	Dates present	Group ID
B	58m S	Garage	1955	23848
B	58m S	Garage	1955 - 1974	25749



ID	Location	Land use	Dates present	Group ID
D	177m N	Garage	1950	21261
D	177m N	Garage	1959 - 1981	27742
D	177m N	Garage	1992	27766
D	177m N	Garage	1950	21367
D	177m N	Garage	1985	21430
D	216m N	Garages	1950	20522
D	219m N	Garage	1981	20255
F	243m E	Garages	1950	20523
K	281m E	Garage	1981 - 1992	26217
K	281m E	Garage	1985	21834
K	295m E	Garage	1992	21629
11	489m SE	Garage	1974 - 1992	27657
Q	498m SW	Garage	1955	26030

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

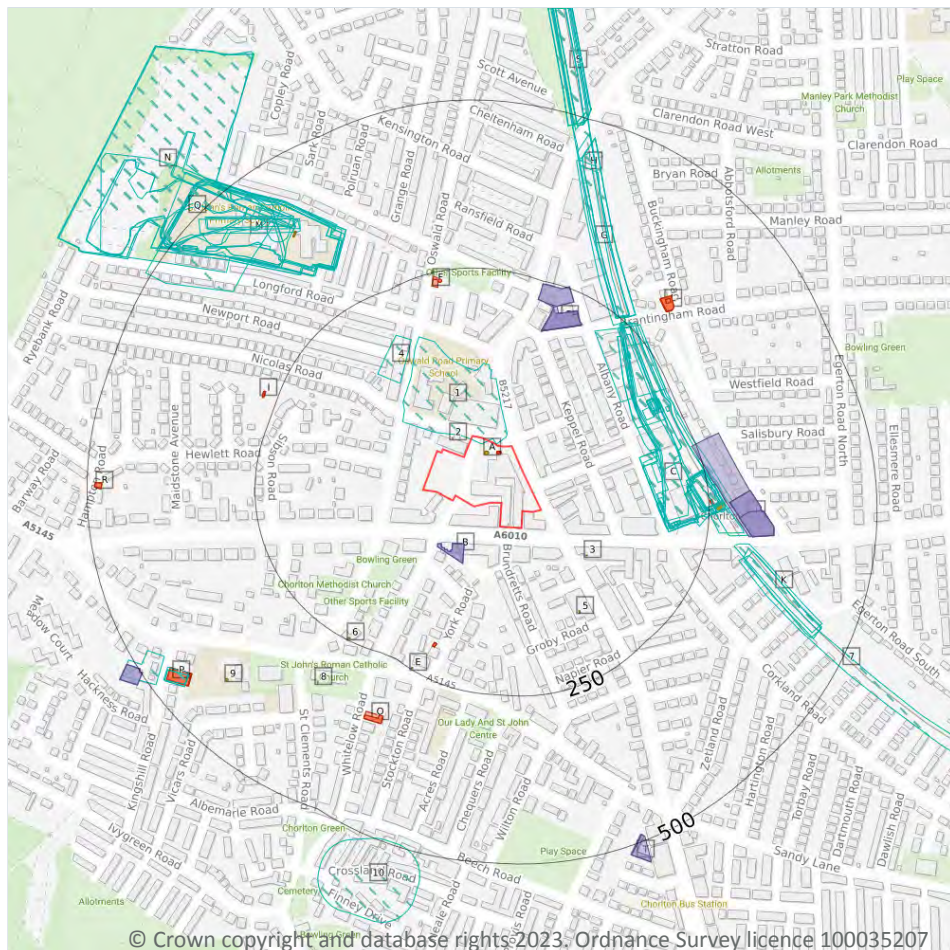
0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

103

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

Features are displayed on the Past land use - un-grouped map on [page 22](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Marl Pits	1851	815786
4	115m NW	Brick Kiln Pits	1851	842345
C	164m E	Railway Sidings	1905	927779



ID	Location	Land Use	Date	Group ID
C	164m E	Railway Sidings	1923	892336
C	164m E	Railway Sidings	1934	892336
C	164m E	Railway Sidings	1916	892336
C	167m E	Railway Sidings	1938	903952
C	172m E	Railway Sidings	1955	968469
C	173m E	Railway Building	1905	985043
C	173m E	Railway Building	1923	848469
C	174m E	Railway Sidings	1966	943003
C	174m E	Railway Building	1938	855227
C	176m NE	Unspecified Works	1978	830402
C	176m E	Railway Building	1934	978210
C	177m E	Railway Building	1938	820247
C	181m E	Railway Sidings	1892	918341
C	181m E	Cuttings	1892	973917
C	183m E	Railway Sidings	1938	861055
C	185m E	Railway Sidings	1911	978316
C	195m E	Railway Building	1934	852300
C	195m E	Railway Building	1916	852300
C	197m E	Railway Building	1905	852300
C	197m E	Railway Building	1923	852300
C	198m E	Railway Building	1938	852300
C	199m E	Railway Building	1911	852300
C	199m E	Goods Shed	1892	834670
C	201m NE	Cuttings	1978	973917
C	210m NE	Goods Shed	1934	908811
C	210m NE	Goods Shed	1916	857619
C	210m NE	Goods Shed	1905	907952
C	210m NE	Goods Shed	1923	984565



ID	Location	Land Use	Date	Group ID
C	211m NE	Railway Building	1955	987804
C	213m E	Goods Shed	1938	853553
C	215m NE	Goods Shed	1911	907952
C	215m E	Railway Station	1905	923249
C	215m E	Railway Station	1892	901681
C	216m NE	Railway Building	1938	939037
C	216m E	Railway Building	1966	987804
C	217m NE	Railway Building	1934	939037
C	218m NE	Railway Building	1955	868296
C	219m E	Railway Station	1938	911002
C	222m E	Railway Station	1955	893918
C	224m E	Railway Station	1934	854271
C	224m E	Railway Station	1916	962086
C	224m E	Railway Station	1923	978170
C	225m E	Railway Station	1966	876352
C	226m E	Railway Station	1938	910720
C	228m E	Railway Station	1911	923249
C	233m E	Railway Building	1923	820246
G	235m NE	Cuttings	1892	849455
H	245m NE	Cuttings	1938	919589
G	246m NE	Cuttings	1934	849675
H	248m NE	Cuttings	1955	919589
G	250m NE	Cuttings	1978	849455
G	250m NE	Cuttings	1966	849455
G	250m NE	Cuttings	1988	849455
K	293m E	Cuttings	1955	942337
7	304m E	Cuttings	1892	858432
K	309m E	Cuttings	1938	920496



ID	Location	Land Use	Date	Group ID
M	309m NW	Brick Works	1905	915334
M	309m NW	Brick Works	1923	935481
M	310m NW	Unspecified Disused Works	1966	813356
M	311m NW	Brick Works	1911	915334
M	311m NW	Brick Works	1911	915334
N	312m NW	Brick Works	1934	855366
K	312m E	Cuttings	1934	941065
M	312m NW	Brick Works	1938	991649
M	313m NW	Brick Works	1916	960197
N	314m NW	Brick Works	1938	975618
N	314m NW	Brick Works	1938	975618
M	359m NW	Unspecified Ground Workings	1938	800613
M	362m NW	Unspecified Pit	1905	903851
M	364m NW	Unspecified Pit	1911	892276
M	364m NW	Unspecified Pit	1911	892276
M	386m NW	Pits	1851	794119
M	386m NW	Railway Sidings	1905	984769
M	388m NW	Unspecified Pit	1934	847319
M	389m NW	Railway Sidings	1911	984769
M	393m NW	Railway Sidings	1923	931012
M	396m NW	Railway Sidings	1938	984277
N	397m NW	Railway Sidings	1934	980527
N	399m NW	Railway Sidings	1938	968199
M	400m NW	Railway Sidings	1916	872137
M	424m NW	Brick Works	1923	896578
M	428m NW	Unspecified Pit	1916	930058
H	435m N	Cuttings	1934	906875
P	443m SW	Electricity Substation	1916	955416



ID	Location	Land Use	Date	Group ID
P	445m SW	Electricity Substation	1905	856769
P	445m SW	Electricity Substation	1923	885449
Q	449m NW	Clay Pit	1934	827691
Q	452m NW	Unspecified Pit	1938	932861
Q	452m NW	Unspecified Pit	1938	932861
P	458m SW	Electricity Substation	1911	837772
S	479m N	Cuttings	1938	979668
S	482m N	Cuttings	1923	869218
S	482m N	Cuttings	1905	869218
S	482m N	Cuttings	1892	883251
S	484m N	Cuttings	1934	869218
S	484m N	Cuttings	1916	869218
S	486m N	Cuttings	1978	952407
S	486m N	Cuttings	1966	952407
S	486m N	Cuttings	1988	952407
10	496m S	Laundry	1938	858769

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

13

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

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Tank	1981	147521
A	On site	Unspecified Tank	1985	147521
A	On site	Unspecified Tank	1992	147521
A	On site	Unspecified Tank	1992	147521



ID	Location	Land Use	Date	Group ID
2	20m NW	Unspecified Tank	1981	115047
3	95m SE	Tank or Trough	1881	121261
5	150m SE	Tank or Trough	1881	121262
6	245m SW	Tank or Trough	1881	121246
E	246m S	Tank or Trough	1881	121263
8	326m SW	Unspecified Tank	1881	115039
M	383m NW	Unspecified Tank	1950	125518
M	383m NW	Unspecified Tank	1950	125518
9	404m SW	Unspecified Tank	1881	115041

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

36

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

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Electricity Substation	1981	79301
A	On site	Electricity Substation	1985	80211
A	On site	Electricity Substation	1992	79301
A	On site	Electricity Substation	1992	79301
E	198m S	Electricity Substation	1992	84606
E	198m S	Electricity Substation	1979	84606
E	198m S	Electricity Substation	1984	84606
E	198m S	Electricity Substation	1990	84606
F	227m N	Electricity Transformer	1971	63761
F	234m N	Electricity Substation	1992	74032
F	234m N	Electricity Substation	1992	74032



ID	Location	Land Use	Date	Group ID
F	238m N	Electricity Substation	1992	62132
C	252m E	Electricity Substation	1992	68982
C	252m E	Electricity Substation	1992	68982
C	252m E	Electricity Substations	1985	59888
I	269m W	Electricity Transformer	1980	77008
I	270m W	Electricity Substation	1992	62131
I	270m W	Electricity Transformer	1971	77008
L	305m NE	Electricity Substation	1992	64473
L	305m NE	Electricity Substation	1992	64473
L	305m NE	Electricity Substation	1985	64473
L	306m NE	Electricity Substation	1950	64473
L	313m NE	Electricity Substation	1950	82817
L	313m NE	Electricity Substation	1981	82817
O	331m SW	Electricity Substation	1992	65004
O	331m SW	Electricity Substation	1984	83981
O	331m SW	Electricity Substation	1990	83981
P	440m SW	Electricity Substation	1979	69394
P	440m SW	Electricity Substation	1984	69394
P	440m SW	Electricity Substation	1990	69394
P	440m SW	Electricity Substation	1955	69394
P	441m SW	Electricity Substation	1955	71241
P	455m SW	Electricity Substation	1992	84494
R	478m W	Electricity Substation	1971	65754
R	478m W	Electricity Substation	1992	65754
R	478m W	Electricity Substation	1992	65754

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

21

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

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
B	58m S	Garage	1955	23848
B	58m S	Garage	1974	25749
B	58m S	Garage	1955	25749
D	177m N	Garage	1950	21261
D	177m N	Garage	1959	27742
D	177m N	Garage	1992	27766
D	177m N	Garage	1992	27766
D	177m N	Garage	1950	21367
D	177m N	Garage	1985	21430
D	178m N	Garage	1981	27742
D	216m N	Garages	1950	20522
D	219m N	Garage	1981	20255
C	243m E	Garages	1950	20523
J	281m E	Garage	1992	26217
J	281m E	Garage	1985	21834
J	282m E	Garage	1981	26217

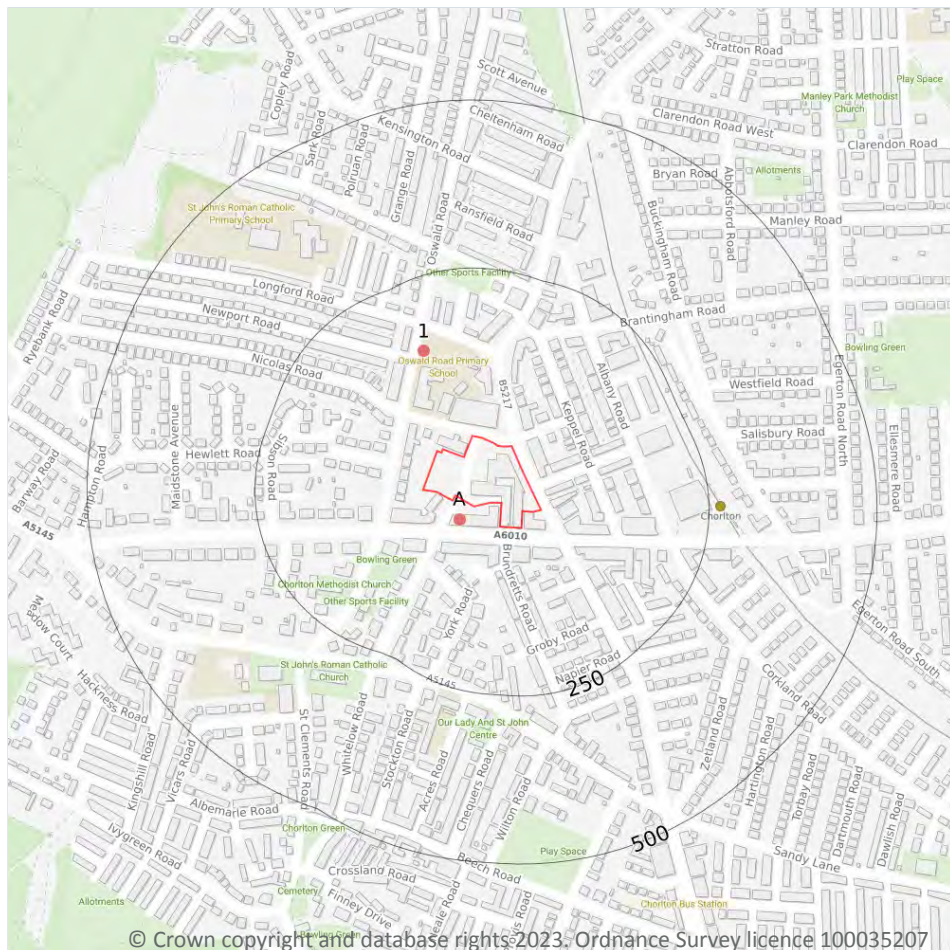


ID	Location	Land Use	Date	Group ID
J	295m E	Garage	1992	21629
T	489m SE	Garage	1974	27657
T	490m SE	Garage	1992	27657
P	498m SW	Garage	1955	26030
P	499m SW	Garage	1955	26030

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

3

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 31](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
A	28m SW	496, WILBRAHAM ROAD, MANCHESTER, M21 9AS	WEX235271	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

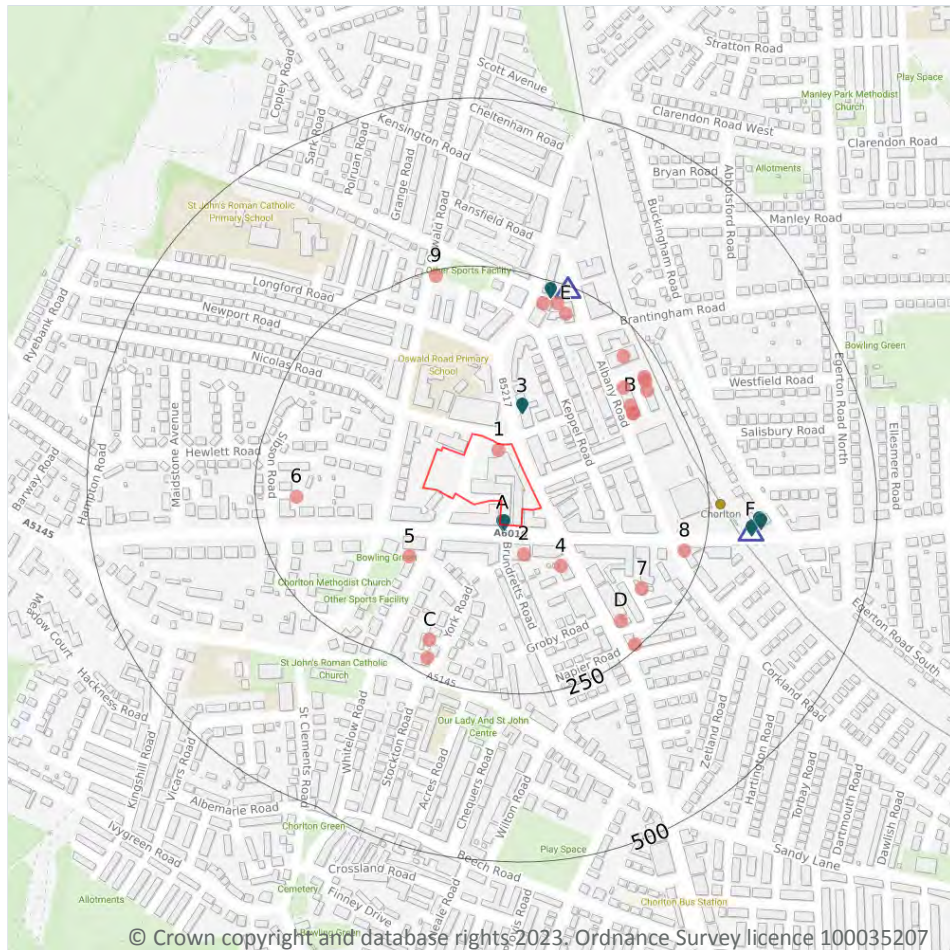


ID	Location	Site	Reference	Category	Sub-Category	Description
A	28m SW	496, WILBRAHAM ROAD, MANCHESTER, M21 9AS	WEX363664	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
1	145m NW	School House Longford Road MANCHESTER M21 9PL	EPR/LH0679XT /A001	Using waste exemption	Non- Agricultural Waste Only	Use of waste in construction

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



4 Current industrial land use



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

4.1 Recent industrial land uses

Records within 250m

23

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 34](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
2	42m SE	Eggfree Cake Box	593, Wilbraham Road, Manchester, Greater Manchester, M21 9AF	Baking and Confectionery	Foodstuffs
4	84m SE	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
5	104m SW	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
B	184m NE	Forest Foods	Unit 12 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Catering and Non Specific Food Products	Foodstuffs
B	185m NE	Albany Auto Services	Unit 11 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	185m NE	Riley's M O T Testing Centre	Unit 10 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	186m NE	Airtight Productions	Unit 16 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
6	189m W	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
7	193m SE	Works	Greater Manchester, M21	Unspecified Works Or Factories	Industrial Features
C	201m S	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
D	204m SE	Vanilla Ice Cakes	400, Barlow Moor Road, Manchester, Greater Manchester, M21 8AD	Baking and Confectionery	Foodstuffs
E	210m NE	Chorlton M O T & Service Ltd	77-79, Albany Road, Manchester, Greater Manchester, M21 0BN	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	211m NE	Autometers Systems	4b, Albany Road, Manchester, Greater Manchester, M21 0AW	Electronic Equipment	Industrial Products
E	215m N	Tesco Petrol Station	Tesco Petrol Station 84, Manchester Road, Chorlton, Manchester, Greater Manchester, M21 9PT	Petrol and Fuel Stations	Road and Rail
B	217m NE	Starco Auto Electrics	Unit 5 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
B	220m NE	Chorlton Cars	Unit 2 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
E	220m NE	Mast (Telecommunication)	Greater Manchester, M21	Telecommunications Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
B	221m NE	Manchester Microwave	Unit 1 Albany Road Trading Estate, Albany Road, Manchester, Greater Manchester, M21 0AZ	Electronic Equipment	Industrial Products
8	223m E	Blue Apple Printing	3 Cavendish Terrace, Wilbraham Road, Manchester, Greater Manchester, M21 0UA	Published Goods	Industrial Products
C	226m S	Grecian Foods Ltd	68, High Lane, Manchester, Greater Manchester, M21 9XF	Catering and Non Specific Food Products	Foodstuffs
9	242m N	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
D	243m SE	Kino a V	388, Barlow Moor Road, Manchester, Greater Manchester, M21 8BH	Electronic Equipment	Industrial Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	2
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Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 34 >](#)

ID	Location	Company	Address	LPG	Status
E	248m NE	ESSO	84, Manchester Road, Chorlton-Cum-Hardy, Manchester, Greater Manchester, M21 9PT	No	Open
F	313m E	MORRISONS	Wilbraham Road, Chorlton-Cum-Hardy, Manchester, Greater Manchester, M21 0SD	No	Open

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0
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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

7

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 34 >](#)

ID	Location	Address	Details	
A	On site	Johnsons Cleaners UK Ltd, 1a Chorlton Place, Chorlton, Manchester M21 0AF	Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
A	On site	Johnsons Cleaners UK Ltd, 1A Chorlton Place, Chorlton, Manchester, M21 0AF	Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
3	58m NE	Village Dry Cleaners, 38 Manchester Road, Chorlton, Manchester, M21 9PH	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
E	235m N	Chorlton Service Station, 84 Manchester Road, Chorlton-cum-Hardy, M21 9PT	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



ID	Location	Address	Details	
F	314m E	BP Ultra, 418A Wilbraham Road M14 7DW	Process: Unloading of Petrol into Storage at Service Stations Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
F	324m E	Morrisons Petrol Filling Station, 418a Wilbraham Road, Chorlton-cum-Hardy, M21 0SA	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
F	327m E	21st Century Gges, Wilbraham Rd, M21 0SA	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

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**0**

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

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

4.19 Pollution inventory substances

Records within 500m**0**

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

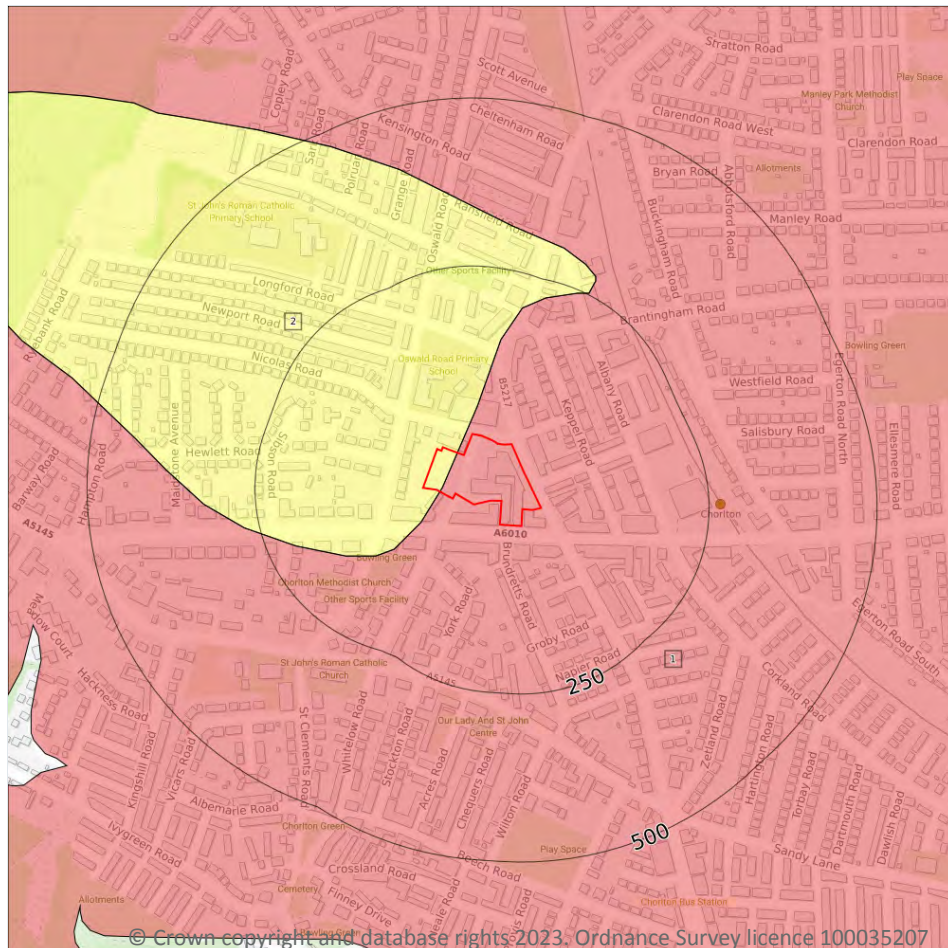
0

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

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



5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 42](#) >

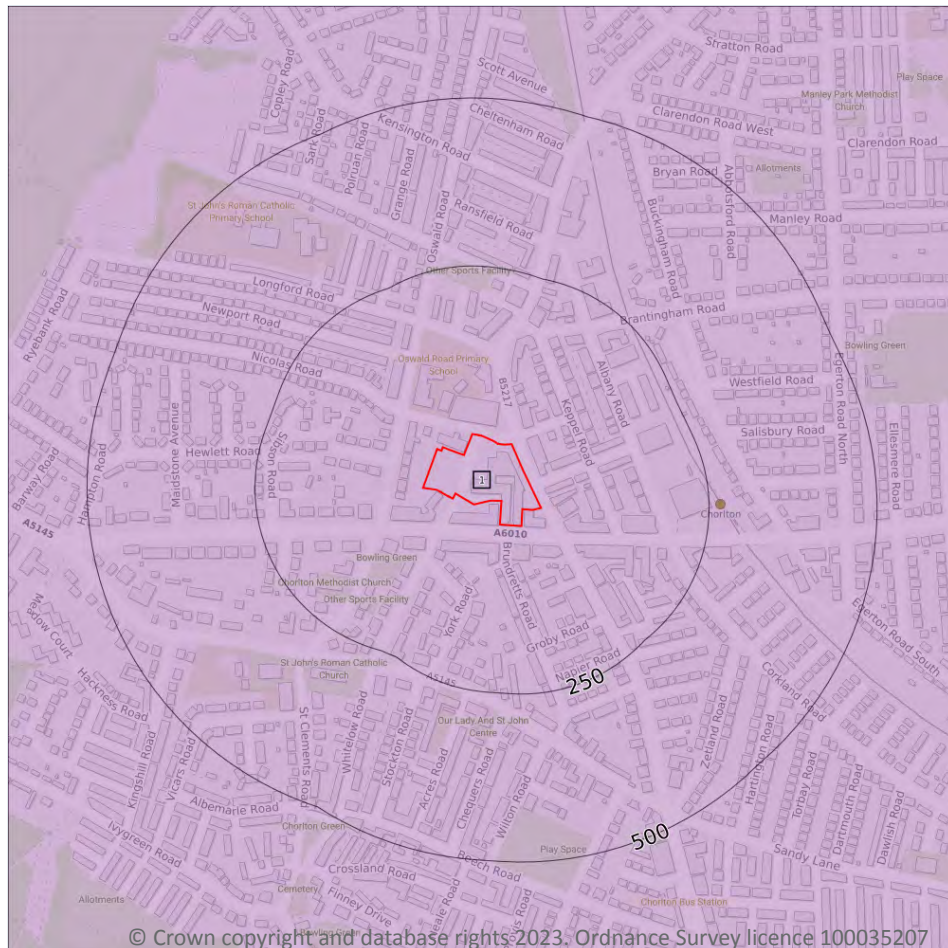
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

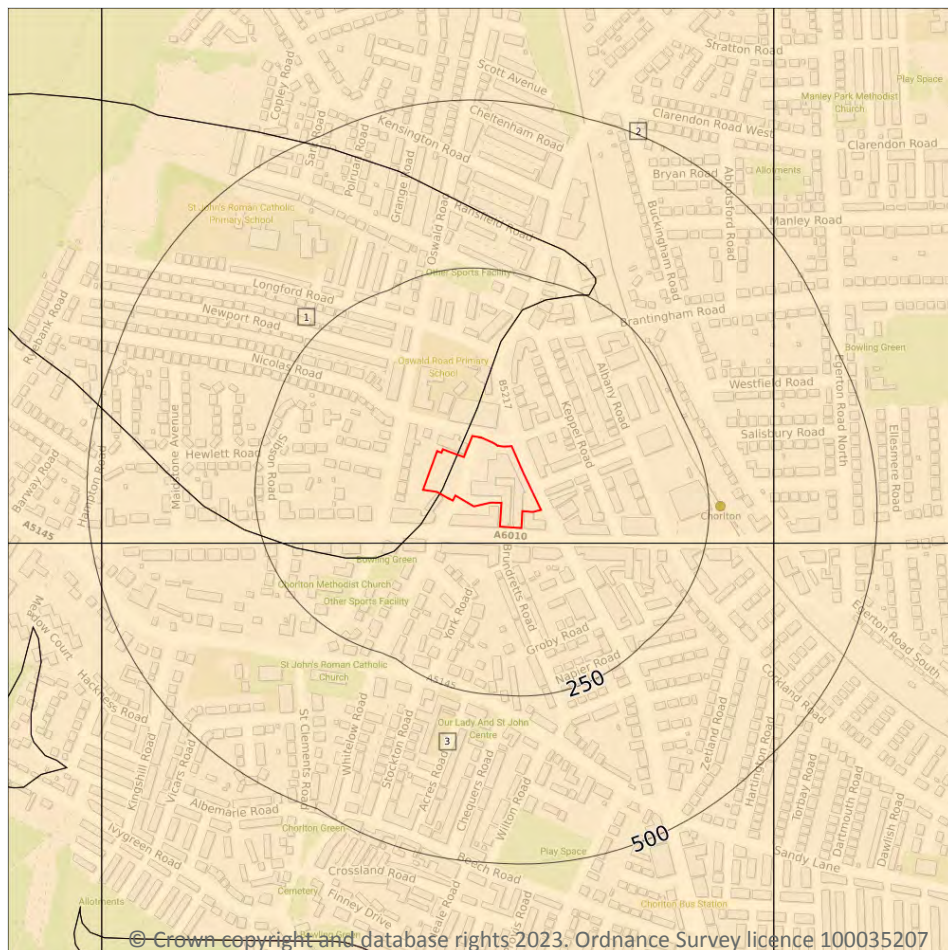
Features are displayed on the Bedrock aquifer map on [page 44](#) >

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

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



Groundwater vulnerability



— Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

3

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

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

Features are displayed on the Groundwater vulnerability map on [page 45 >](#)

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	22m SE	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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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

5.5 Groundwater vulnerability- local information

Records on site

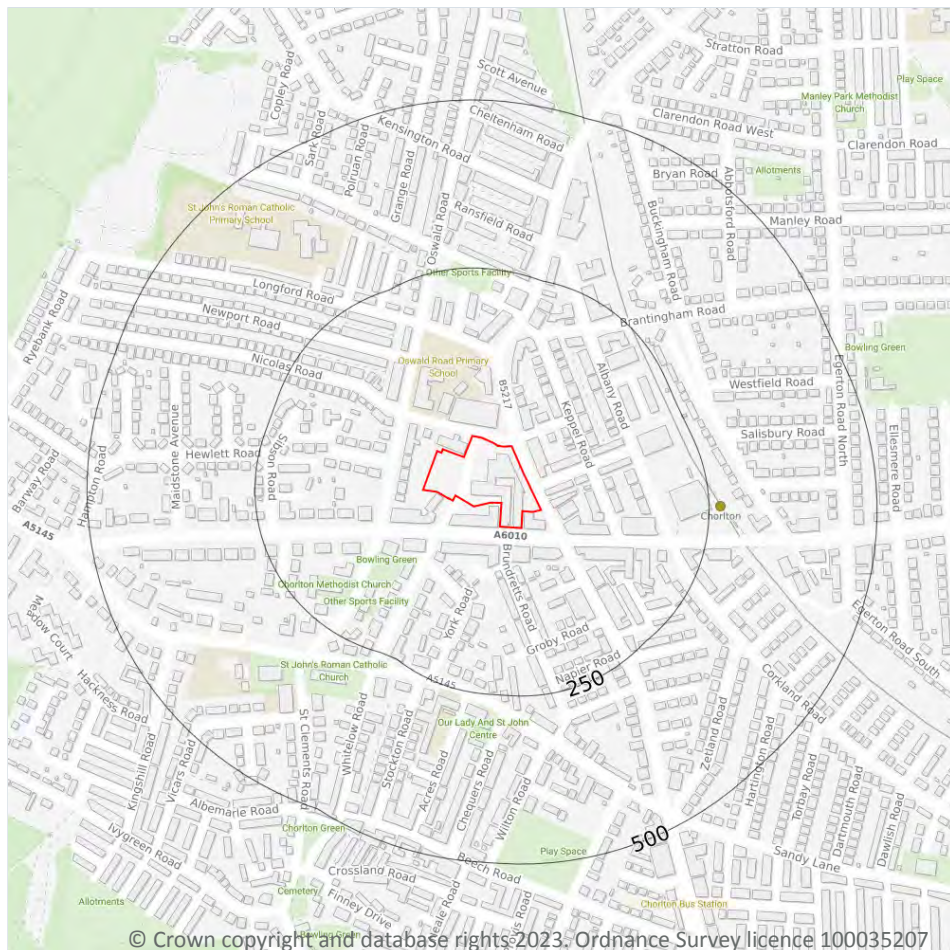
0

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

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



Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

3

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 47](#) >



ID	Location	Details	
-	1189m N	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: -
-	1781m N	Status: Historical Licence No: NW/069/0007/007 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE B - TRAFFORD TOWN HALL, MANCHESTER Data Type: Point Name: Trafford Borough Council Easting: 380940 Northing: 395833	Annual Volume (m ³): 175000 Max Daily Volume (m ³): 1440 Original Application No: - Original Start Date: 02/10/2012 Expiry Date: 31/03/2019 Issue No: 1 Version Start Date: 02/10/2012 Version End Date: -
-	1818m N	Status: Historical Licence No: NW/069/0007/007 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE A - TRAFFORD TOWN HALL, MANCHESTER Data Type: Point Name: Trafford Borough Council Easting: 380999 Northing: 395892	Annual Volume (m ³): 175000 Max Daily Volume (m ³): 1440 Original Application No: - Original Start Date: 02/10/2012 Expiry Date: 31/03/2019 Issue No: 1 Version Start Date: 02/10/2012 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

4

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 47](#) >



ID	Location	Details	
-	1760m SW	Status: Historical Licence No: 2569015012 Details: Lake & Pond Throughflow Direct Source: "Surface, Non-Tidal - North West Region" Point: "BARROW BROOK, SALE EES (KNOWN AS WEST LAKE) AT SALE" Data Type: Point Name: MERSEY VALLEY WARDEN SERVICE Easting: 379900 Northing: 393300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/07/1988 Expiry Date: - Issue No: 100 Version Start Date: 17/05/1996 Version End Date: -
-	1760m SW	Status: Historical Licence No: 2569015012 Details: Lake & Pond Throughflow Direct Source: Surface, Non-Tidal - North West Region Point: BARROW BROOK, SALE EES (KNOWN AS WEST LAKE) AT SALE Data Type: Point Name: ALAN G J BARTON Easting: 379900 Northing: 393300	Annual Volume (m ³): 34096 Max Daily Volume (m ³): 93.41 Original Application No: 2759 Original Start Date: 11/07/1988 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -
-	1992m W	Status: Historical Licence No: 2569015016 Details: Dust suppression Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 379640 Northing: 393310	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 Version End Date: -
-	1992m W	Status: Historical Licence No: 2569015016 Details: General Washing/Process Washing Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 379640 Northing: 393310	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

0

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

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

5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

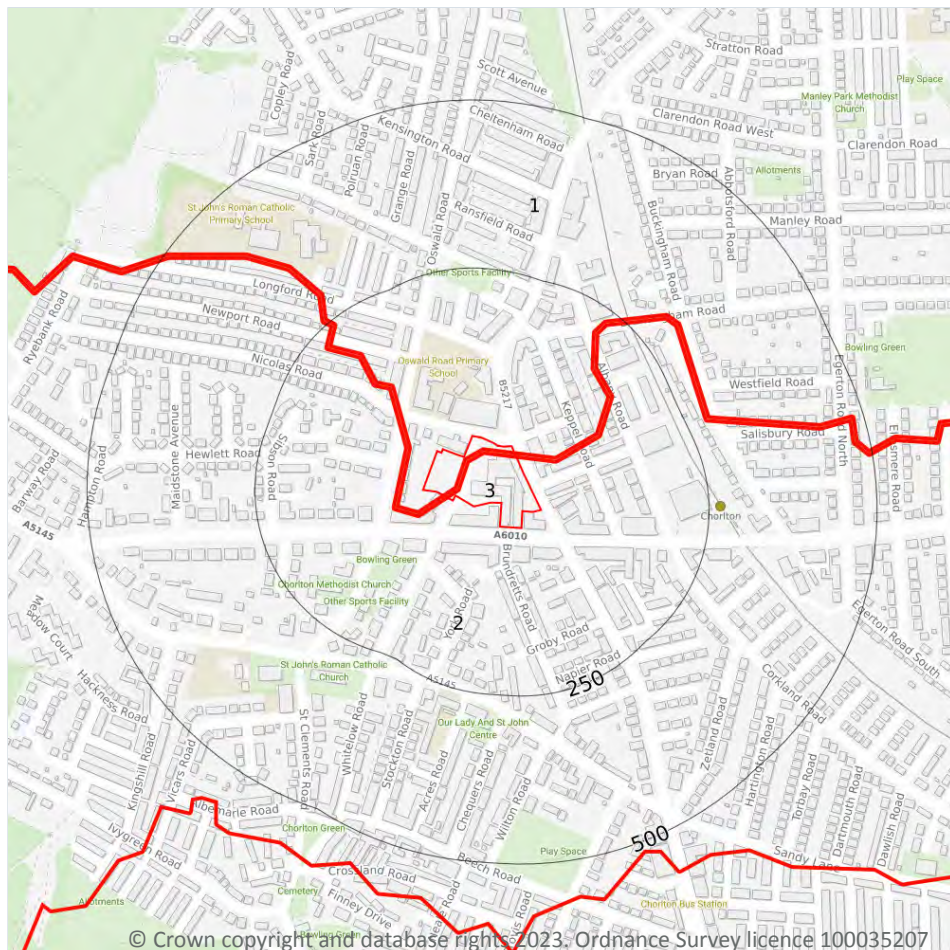
0

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

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	2
------------------------	----------

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 51](#) >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Irwell / Manchester Ship Canal (Irk to confluence with Upper Mers)	GB112069061452	Croal Irwell	Irwell
2	On site	River	Mersey (upstream of Manchester Ship Canal)	GB112069061030	Bollin Dean Mersey Upper	Mersey Upper

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

6.4 WFD Surface water bodies

Records identified	2
---------------------------	----------

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

Features are displayed on the Hydrology map on [page 51](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1370m SW	River	Mersey (upstream of Manchester Ship Canal)	GB112069061030 ↗	Moderate	Fail	Moderate	2019
-	2348m N	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 51](#) >

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

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



7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

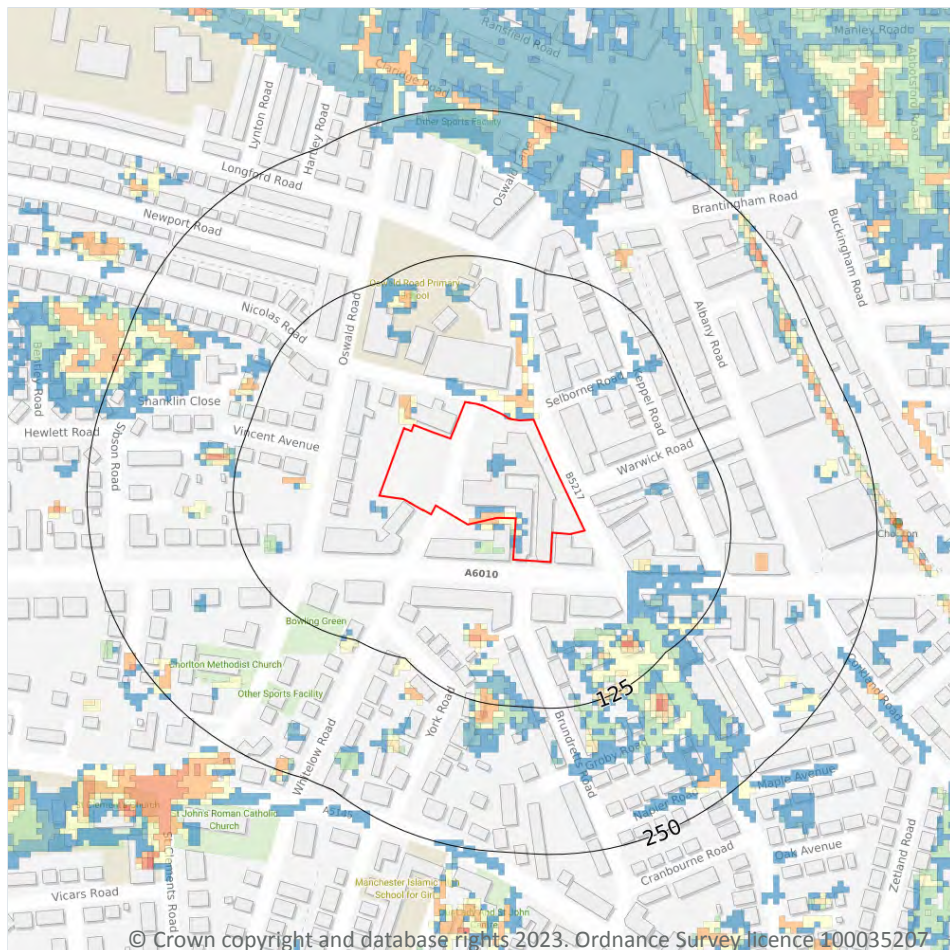
0

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

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

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

1 in 250 return period

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

1 in 100 return period

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

1 in 30 return period

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

8.1 Surface water flooding

Highest risk on site

1 in 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 57 >](#)

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.

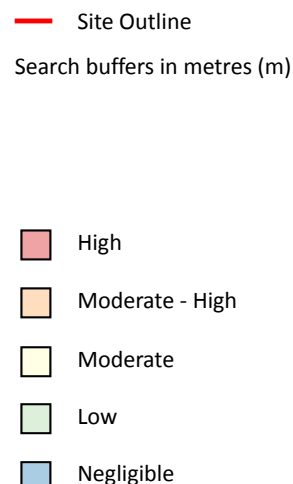
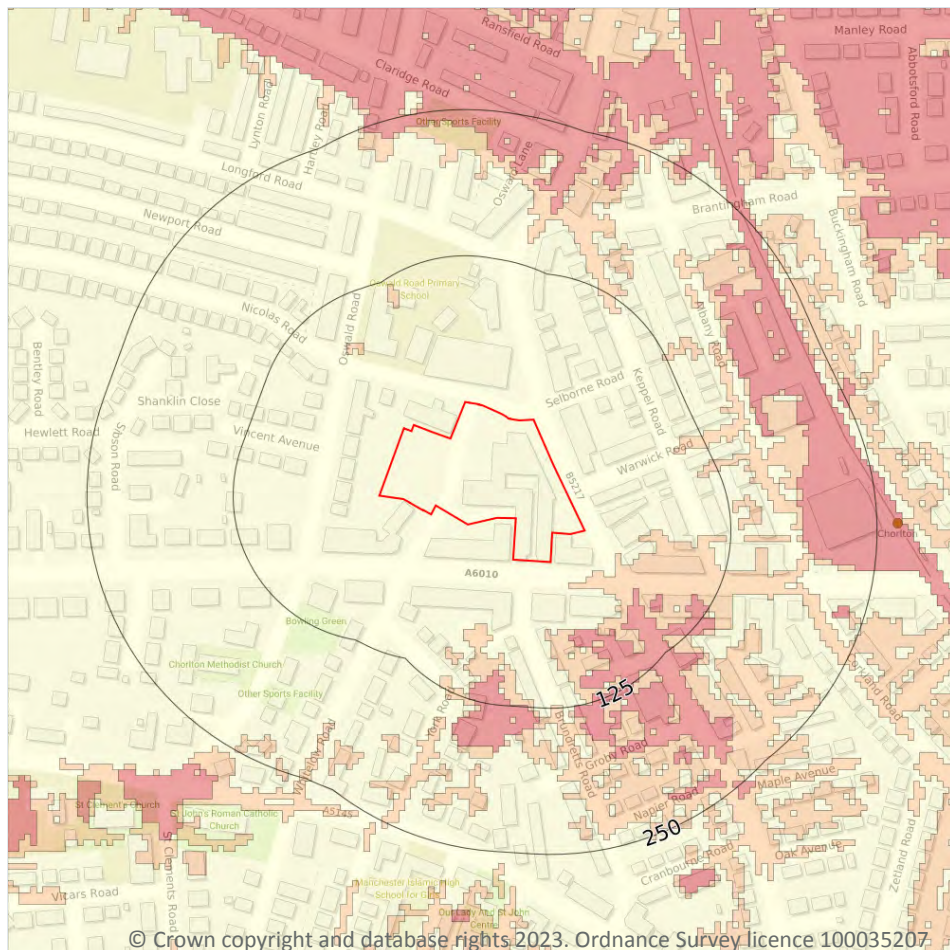
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate-High

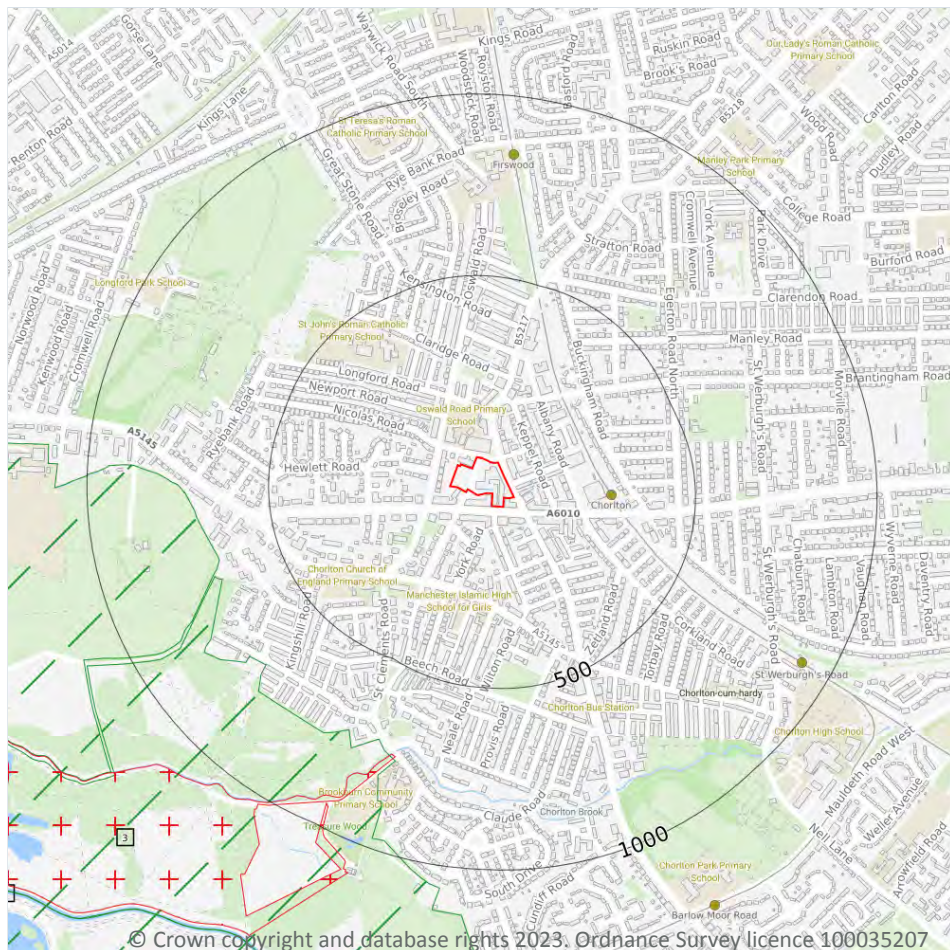
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 59](#) >

This data is sourced from Ambiantal Risk Analytics.



10 Environmental designations



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

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

3

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

Features are displayed on the Environmental designations map on [page 60 >](#)

ID	Location	Name	Data source
3	736m S	Chorlton Ees & Ivy Green	Natural England
-	1468m SW	Broad Ees Dole	Natural England
-	1900m S	Chorlton Water Park	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

2

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

Features are displayed on the Environmental designations map on [page 60 >](#)

ID	Location	Name	Woodland Type
-	1528m E	Hough End Clough	Ancient & Semi-Natural Woodland
-	1777m E	Hough End Clough	Ancient & Semi-Natural Woodland

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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



10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**2**

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

Features are displayed on the Environmental designations map on [page 60 >](#)

ID	Location	Name	Local Authority name
1	667m W	Merseyside and Greater Manchester	Trafford
2	678m W	Merseyside and Greater Manchester	Manchester

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

10.17 SSSI Impact Risk Zones

Records on site	0
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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.

This data is sourced from Natural England.

10.18 SSSI Units

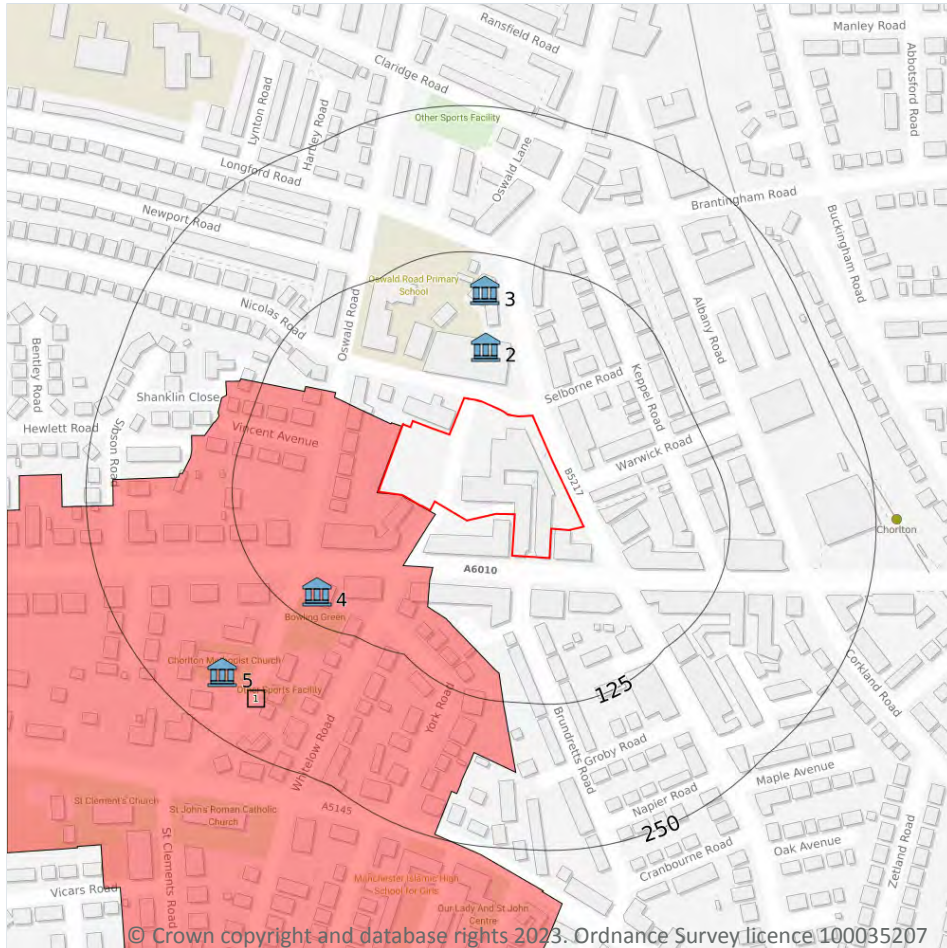
Records within 2000m	0
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Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management 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

4

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

Features are displayed on the Visual and cultural designations map on [page 66 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
2	46m N	Former Temperance Billiard Hall	II	1268311	30/08/1996
3	93m N	Chorlton Library	II	1414760	21/08/2013
4	101m SW	Lloyd And Platts Hotel	II	1096127	03/04/2003
5	204m SW	Chorlton War Memorial	II	1432791	04/03/2016

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 66](#) >

ID	Location	Name	District	Date of designation
1	On site	Chorlton	Manchester	14/09/2005

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 69](#) >

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

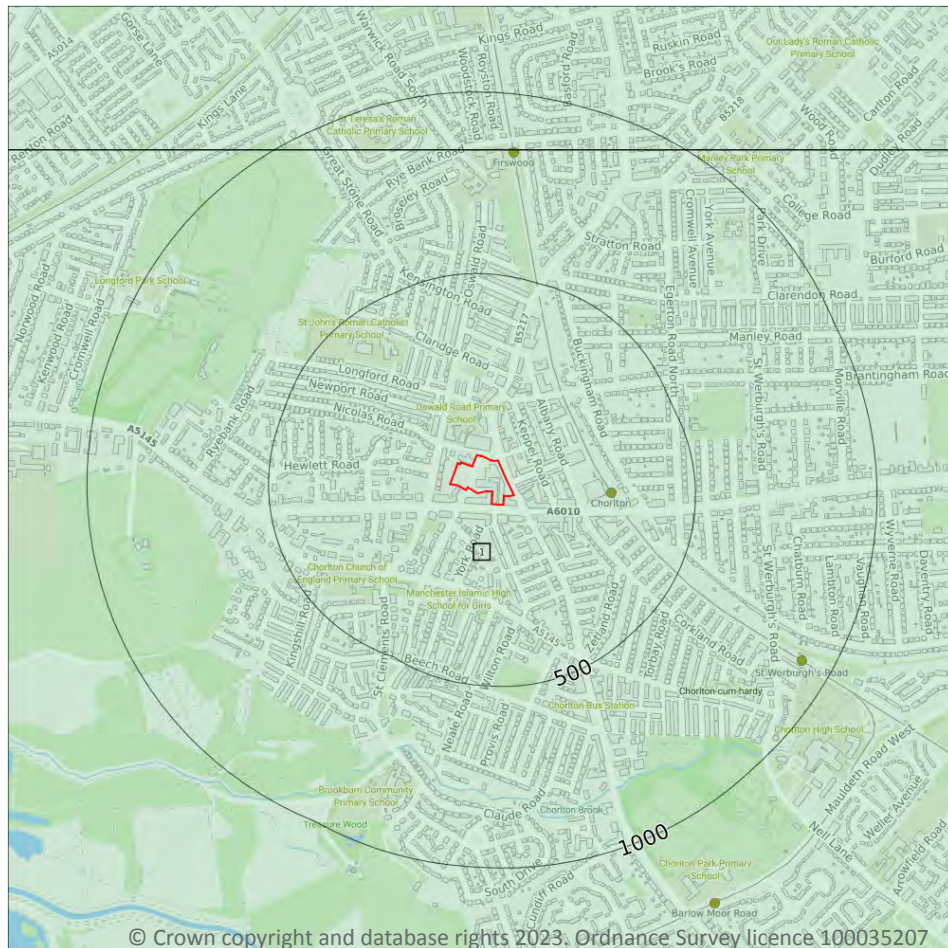
0

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

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14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 72](#) >

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

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

6

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 73](#) >

ID	Location	LEX Code	Description	Rock description
1	22m N	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	241m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	243m NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	252m NE	WGR-VOID	Worked Ground (Undivided)	Void

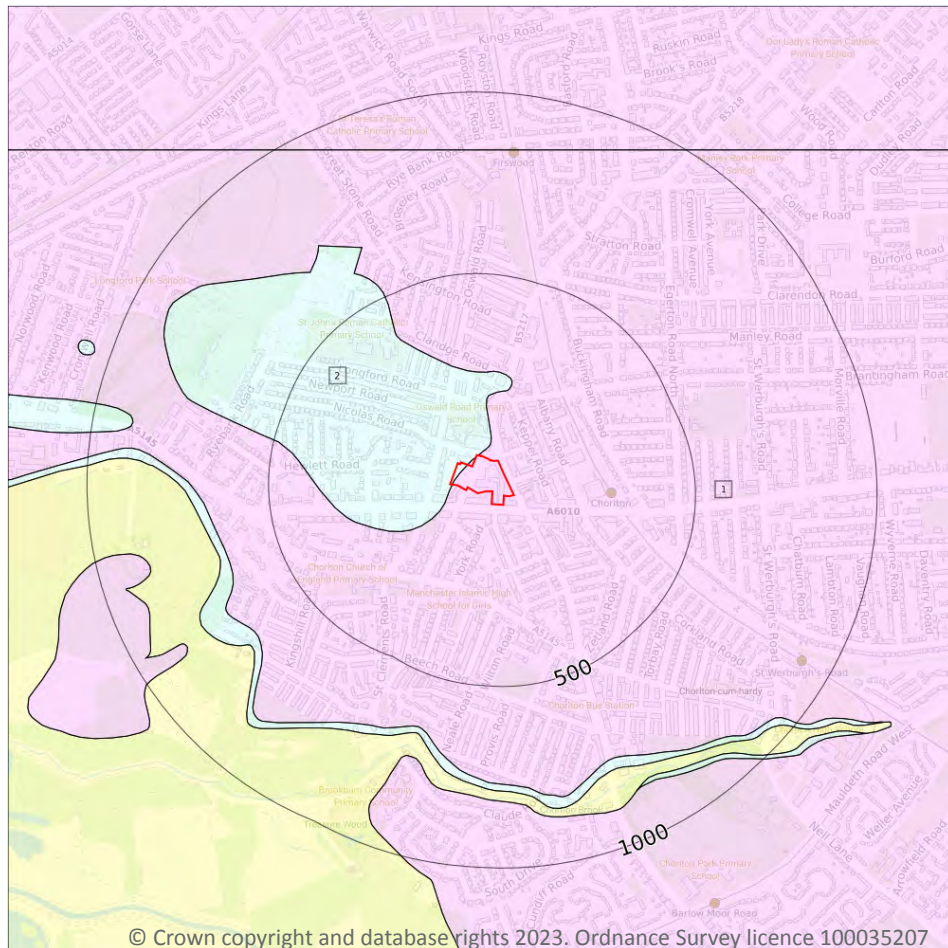


ID	Location	LEX Code	Description	Rock description
5	343m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	363m NW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 75](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

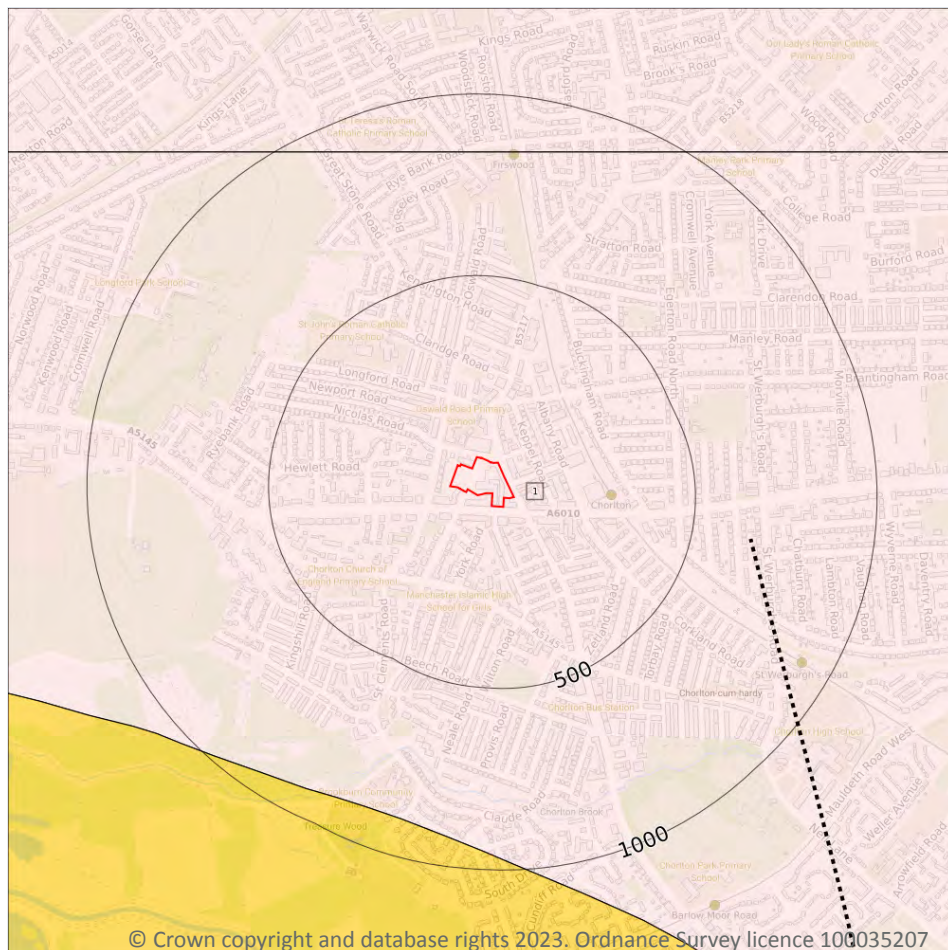
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

1

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 77](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	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

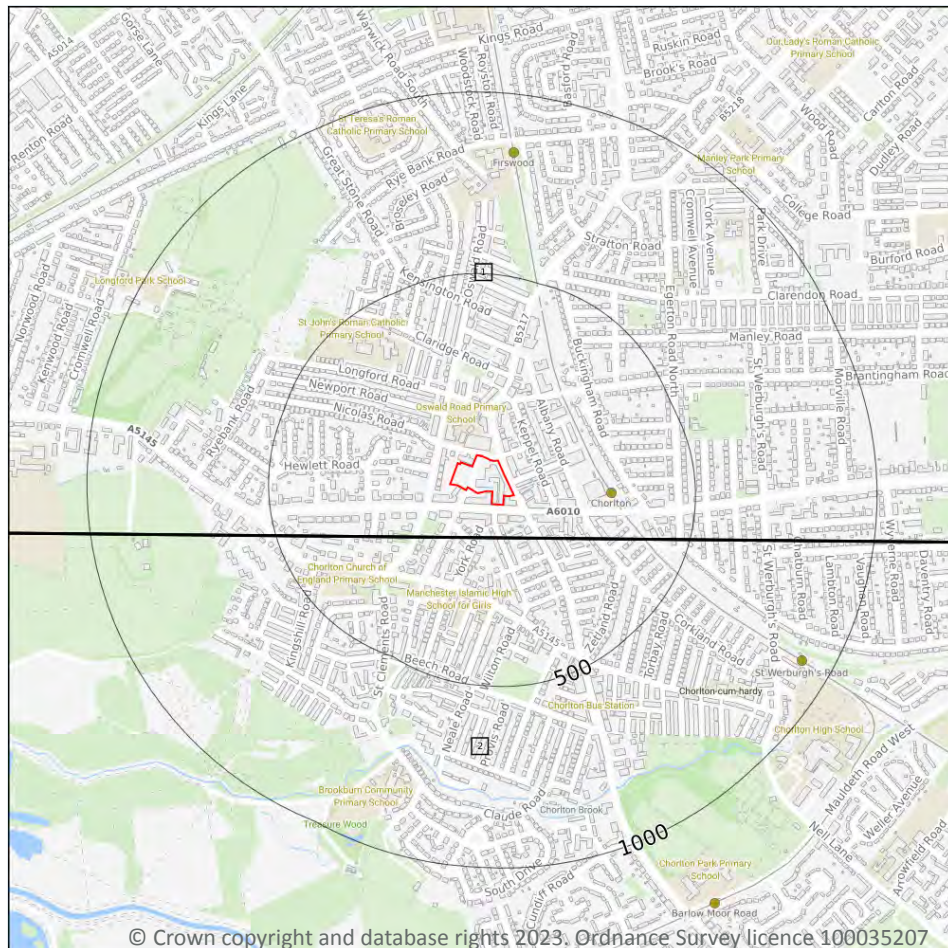
0

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.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

2

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

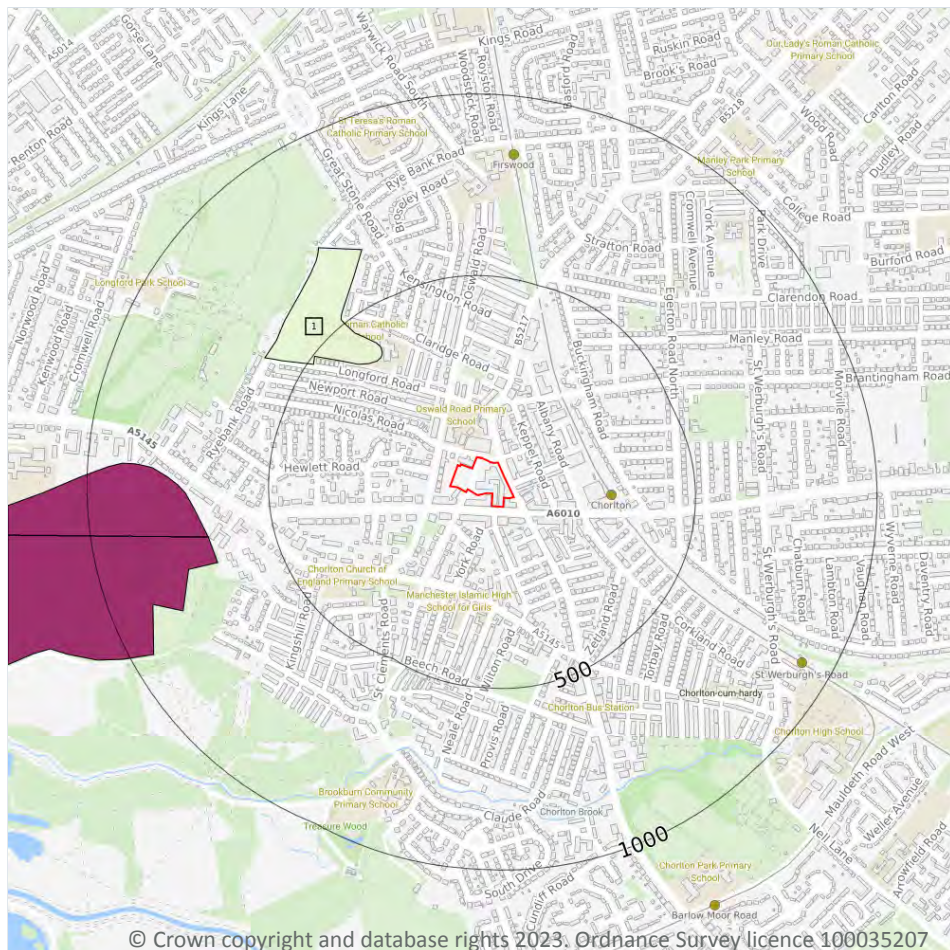
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 79](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4
2	91m S	No coverage	Full	Full	Full	EW098_stockport_v4

This data is sourced from the British Geological Survey.



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



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

15.2 Artificial and made ground (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on [page 80](#) >

ID	Location	LEX Code	Description	Rock description
1	363m NW	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.



15.3 Artificial ground permeability (50k)

Records within 50m

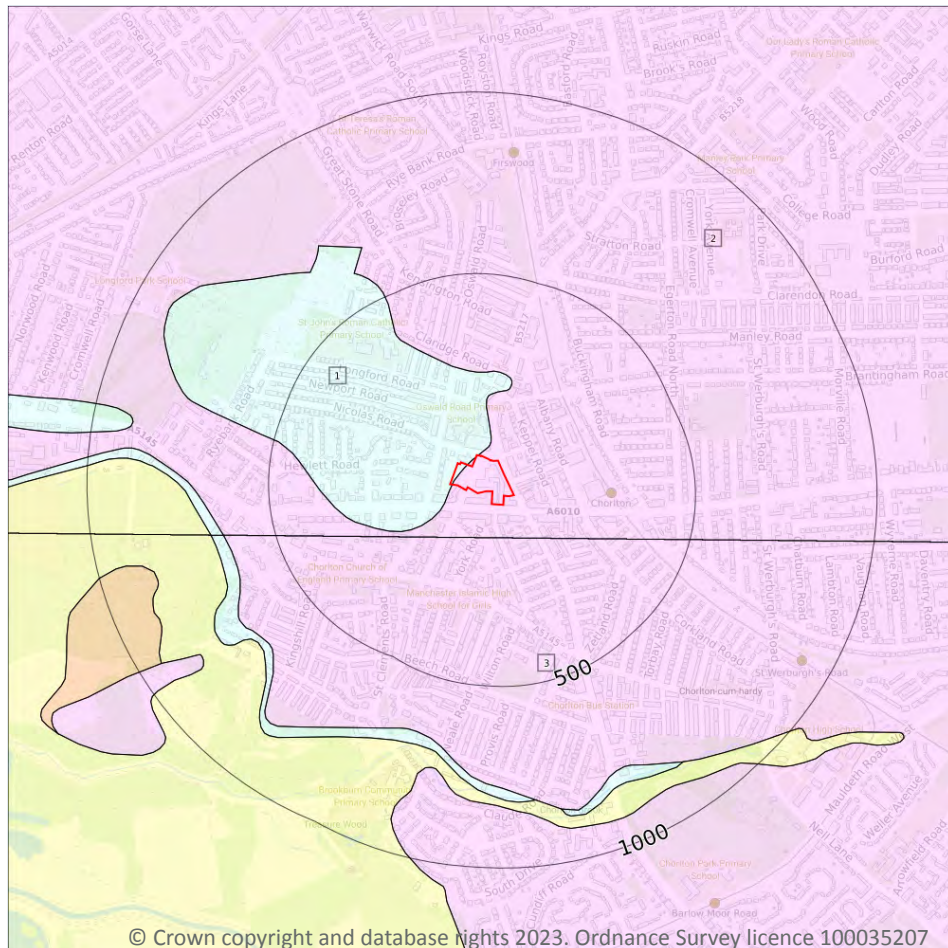
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

3

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 82](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON
2	On site	GFSD-XS	GLACIOFLUVIAL SHEET DEPOSITS, DEVANSIAN	SAND AND GRAVEL
3	91m S	GFSD-XS	GLACIOFLUVIAL SHEET DEPOSITS, DEVANSIAN	SAND AND GRAVEL



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	Mixed	High	Low
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

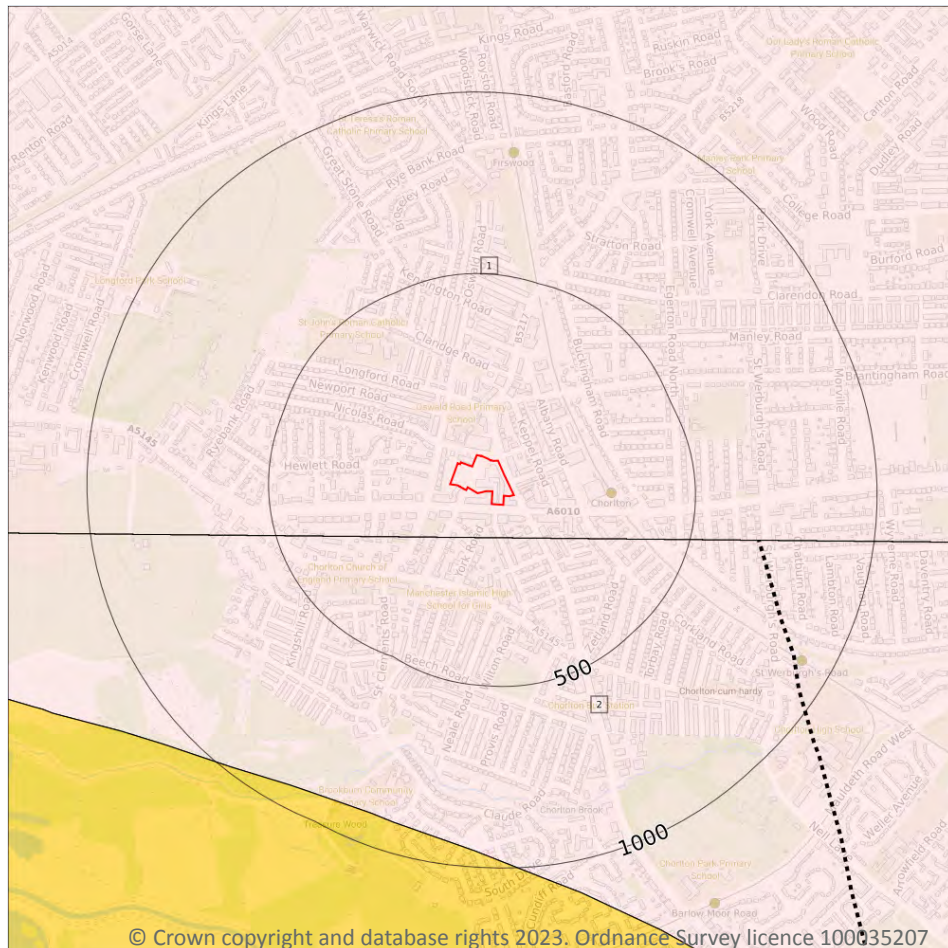
0

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 84](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-
2	91m S	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

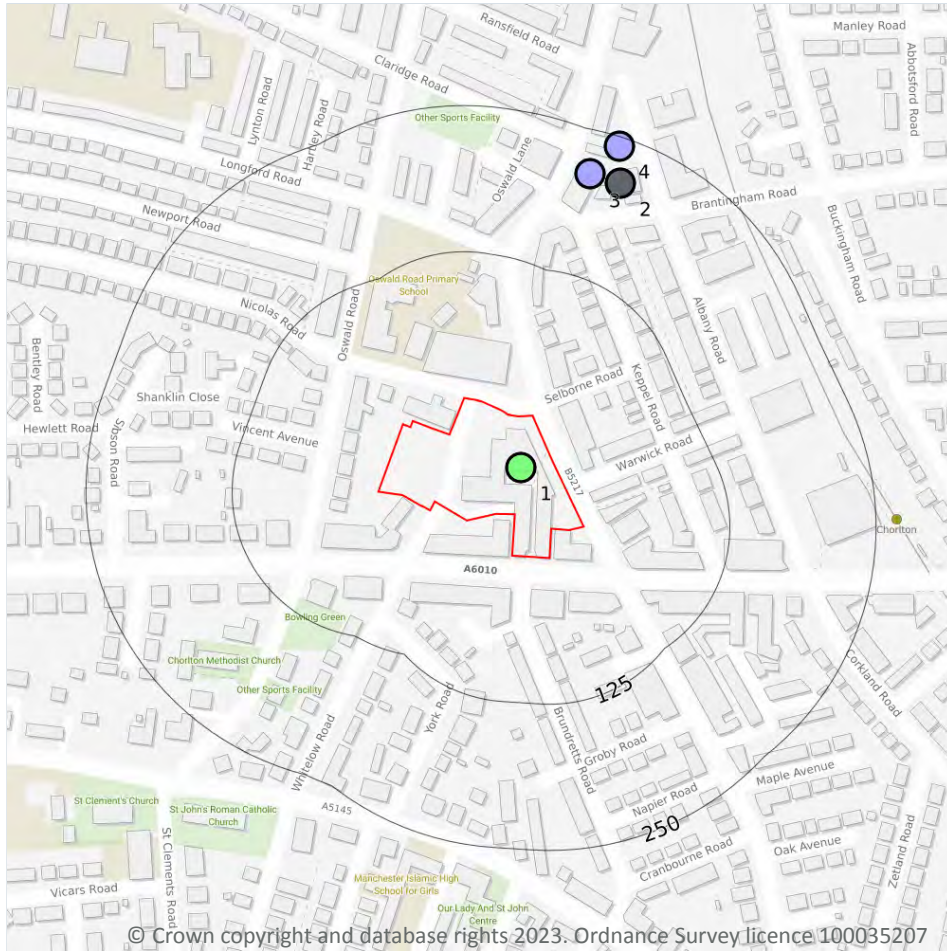
0

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.

This data is sourced from the British Geological Survey.



16 Boreholes



- Site Outline**
- Search buffers in metres (m)**
- Confidential
 - 0 - 10m
 - 10 - 30m
 - 30m+
 - Unknown

16.1 BGS Boreholes

Records within 250m

4

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 86](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	381600 394100	CHORLTON-CUM-HARDY. S/INVS.	28.96	N	864925 ↗
2	212m NE	381685 394343	CELLSITE 1938H CHORLTON CUM HARDY 1	-	Y	N/A

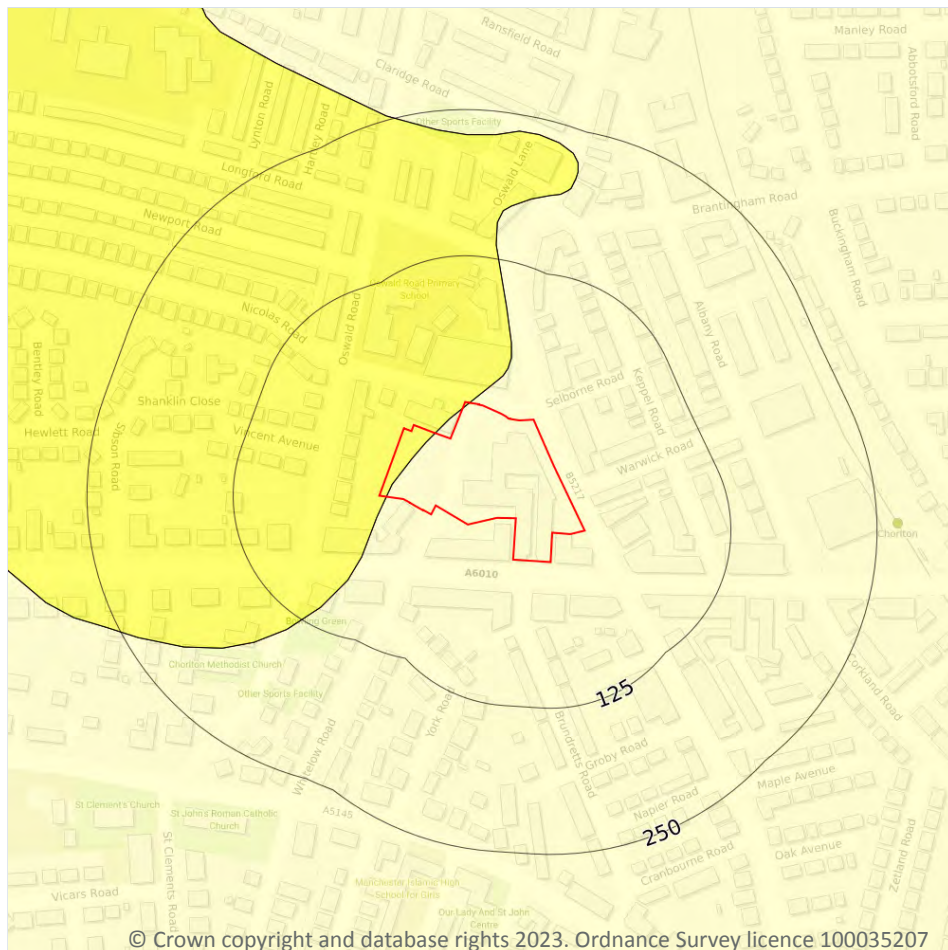


ID	Location	Grid reference	Name	Length	Confidential	Web link
3	212m N	381659 394351	CHORLTON SERVICE STATION, CHORLTON 1	5.0	N	17522172 ↗
4	242m N	381684 394375	CHORLTON SERVICE STATION, CHORLTON 2	5.0	N	17522173 ↗

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

2

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).

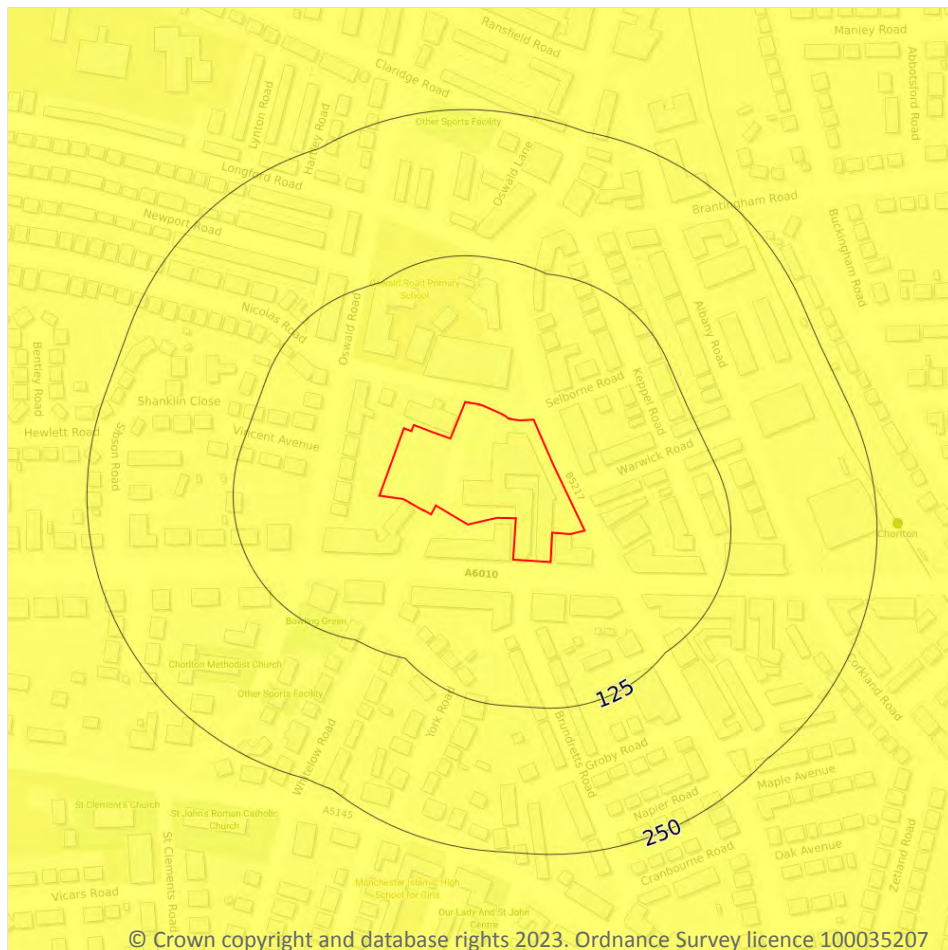
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 88](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

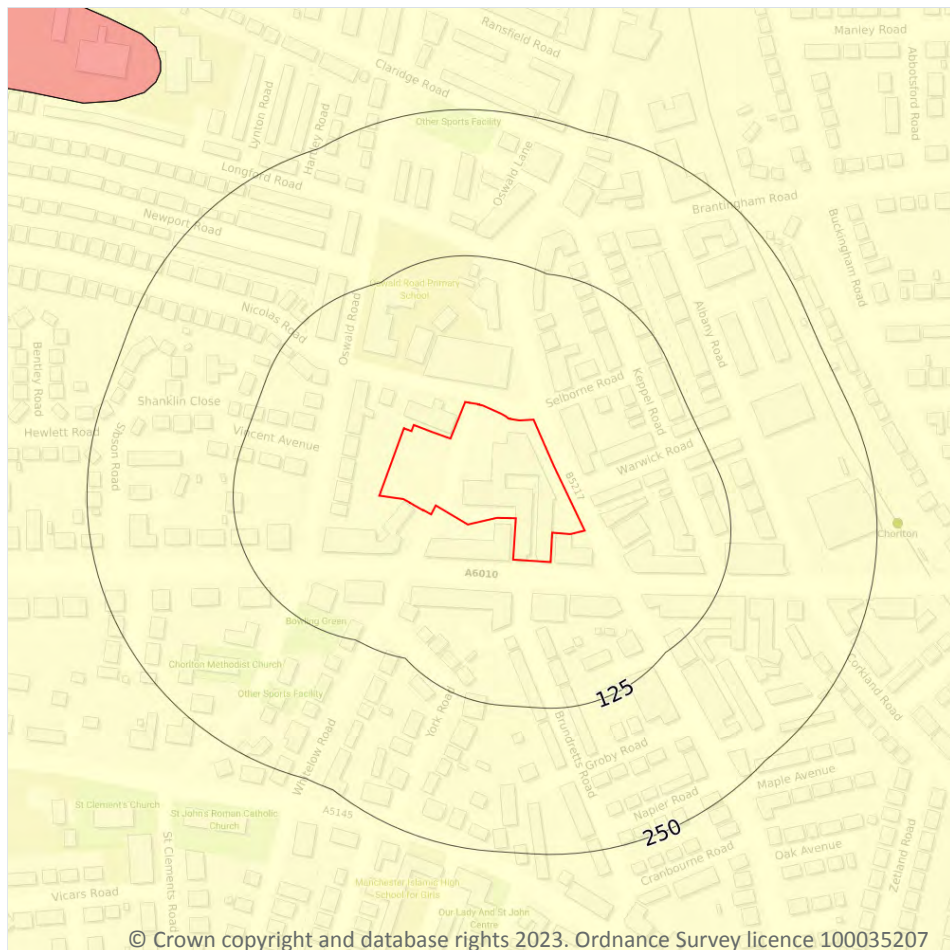
Features are displayed on the Natural ground subsidence - Running sands map on [page 89](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

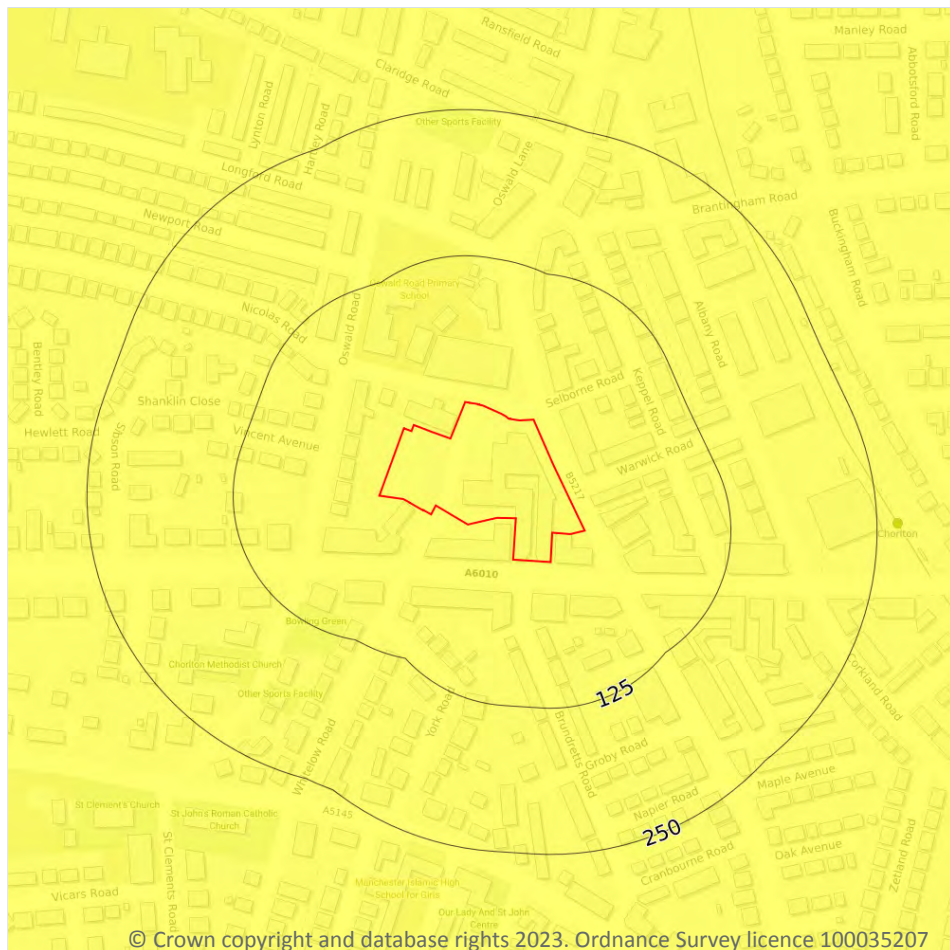
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 90 >](#)

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

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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.

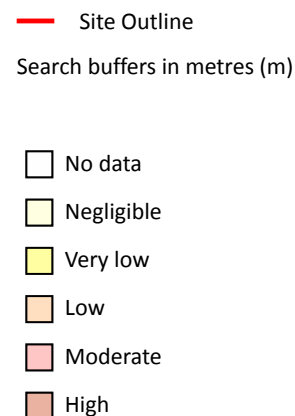
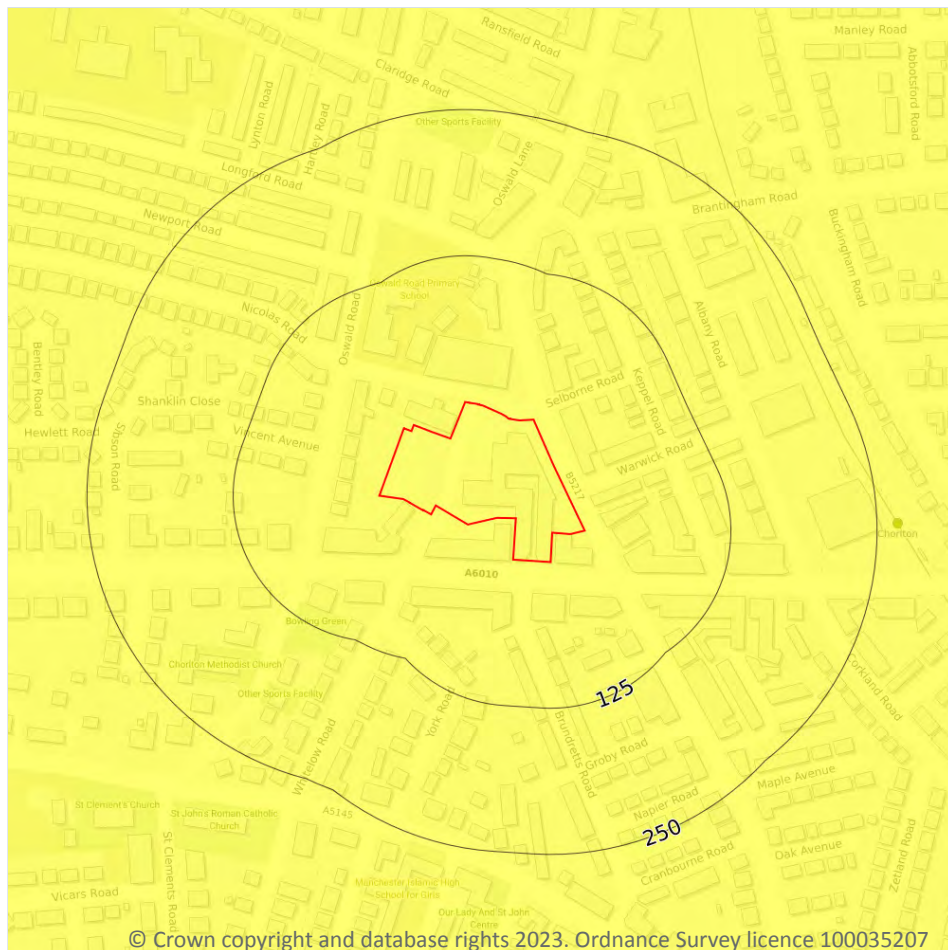
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 91](#) >

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



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.

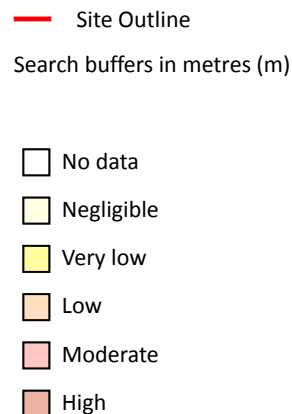
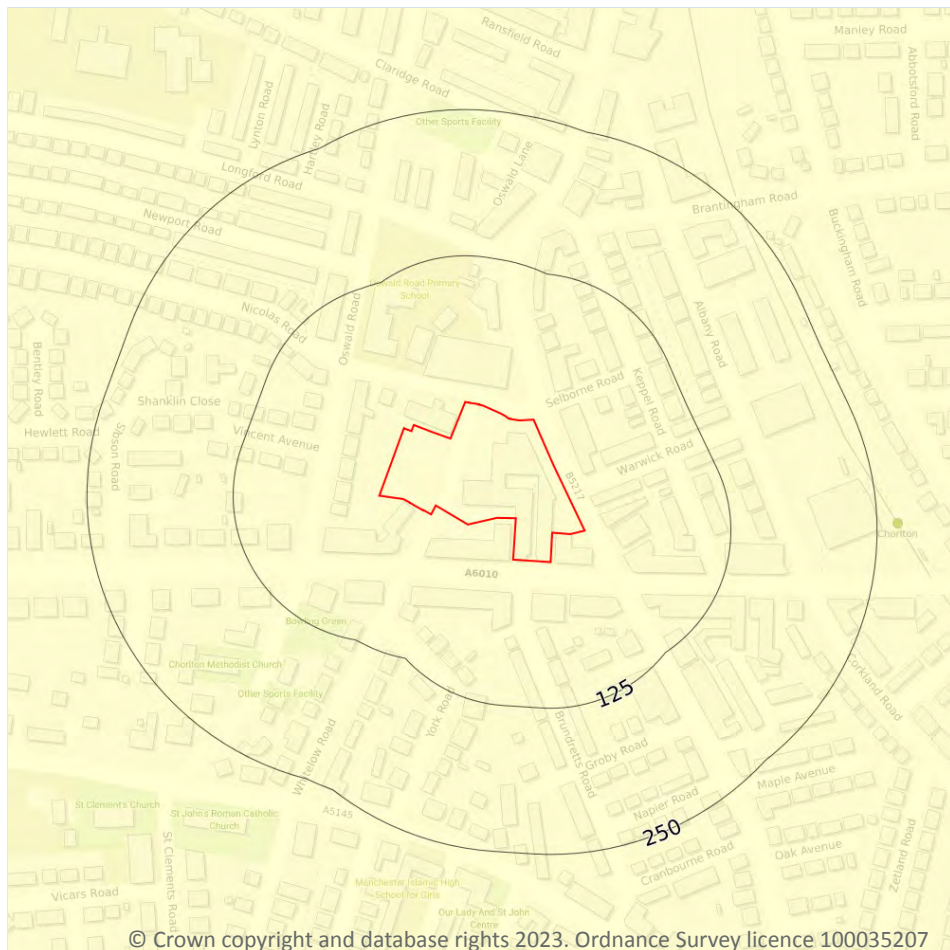
Features are displayed on the Natural ground subsidence - Landslides map on [page 92 >](#)

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 93](#)

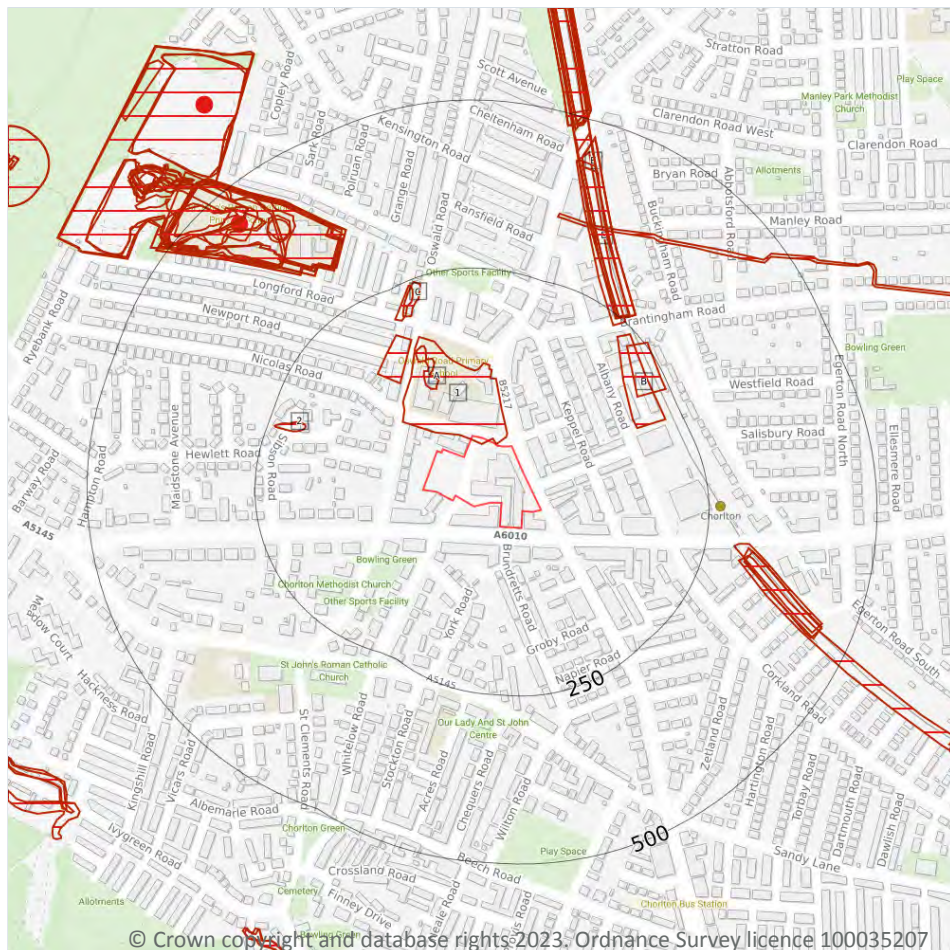
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



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

18.1 BritPits

Records within 500m

1

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

Features are displayed on the Mining and ground workings map on [page 95 >](#)

ID	Location	Details	Description
G	447m NW	Name: Longford Brick Works Address: Chorlton-cum-Hardy, MANCHESTER, Lancashire Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	15
----------------------------	-----------

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

Features are displayed on the Mining and ground workings map on [page 95 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Marl Pits	1851	1:10560
A	88m NW	Ponds	1892	1:10560
A	115m NW	Brick Kiln Pits	1851	1:10560
B	181m E	Cuttings	1892	1:10560
2	196m W	Pond	1851	1:10560
C	200m NW	Pond	1851	1:10560
C	201m NW	Pond	1892	1:10560
B	201m NE	Cuttings	1978	1:10000
D	235m NE	Cuttings	1892	1:10560
E	245m NE	Cuttings	1938	1:10560
D	246m NE	Cuttings	1934	1:10560
E	248m NE	Cuttings	1955	1:10560
D	250m NE	Cuttings	1966	1:10560
D	250m NE	Cuttings	1988	1:10000
D	250m NE	Cuttings	1978	1:10000

This data is sourced from Ordnance Survey/Groundsure.



18.3 Underground workings

Records within 1000m

2

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

Features are displayed on the Mining and ground workings map on [page 95](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
-	988m SE	Unspecified Shafts	1916	1:10560
-	991m SE	Unspecified Shafts	1923	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.



18.7 JPB mining areas

Records on site

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.

18.8 The Coal Authority non-coal mining

Records within 500m

0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

1

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

Location	Mineral type
241m NW	Stone

This data is sourced from Groundsure.



18.10 Mining record office plans

Records within 500m**0**

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m**0**

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site**0**

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site**0**

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

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

18.14 Gypsum areas

Records on site**0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.



18.15 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

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

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

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



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

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

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



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

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

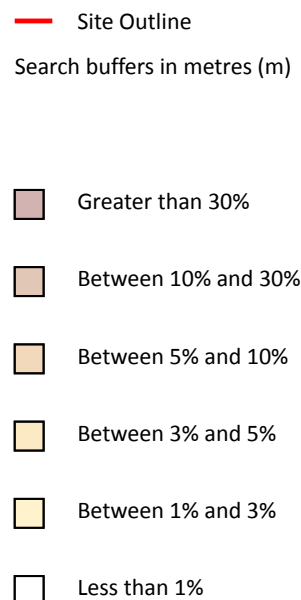
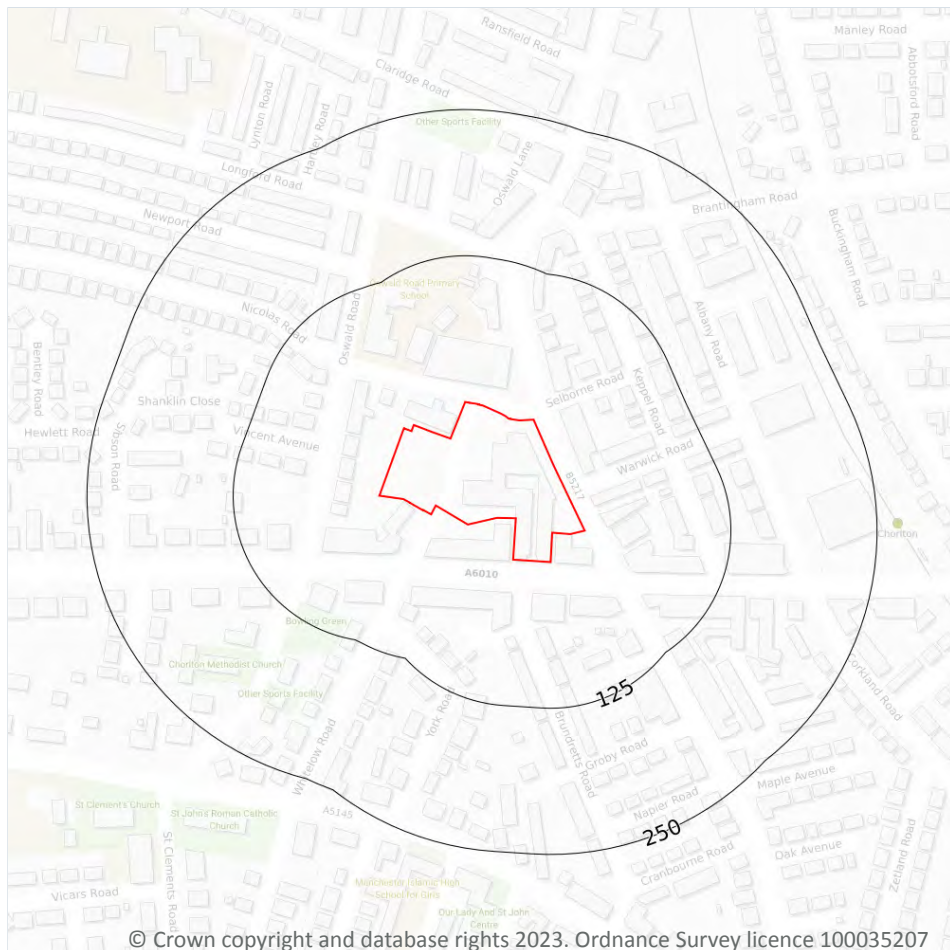
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over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

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

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 103](#) >

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



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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

5

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
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
6m W	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
23m 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.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



21.3 BGS Measured Urban Soil Chemistry

Records within 50m

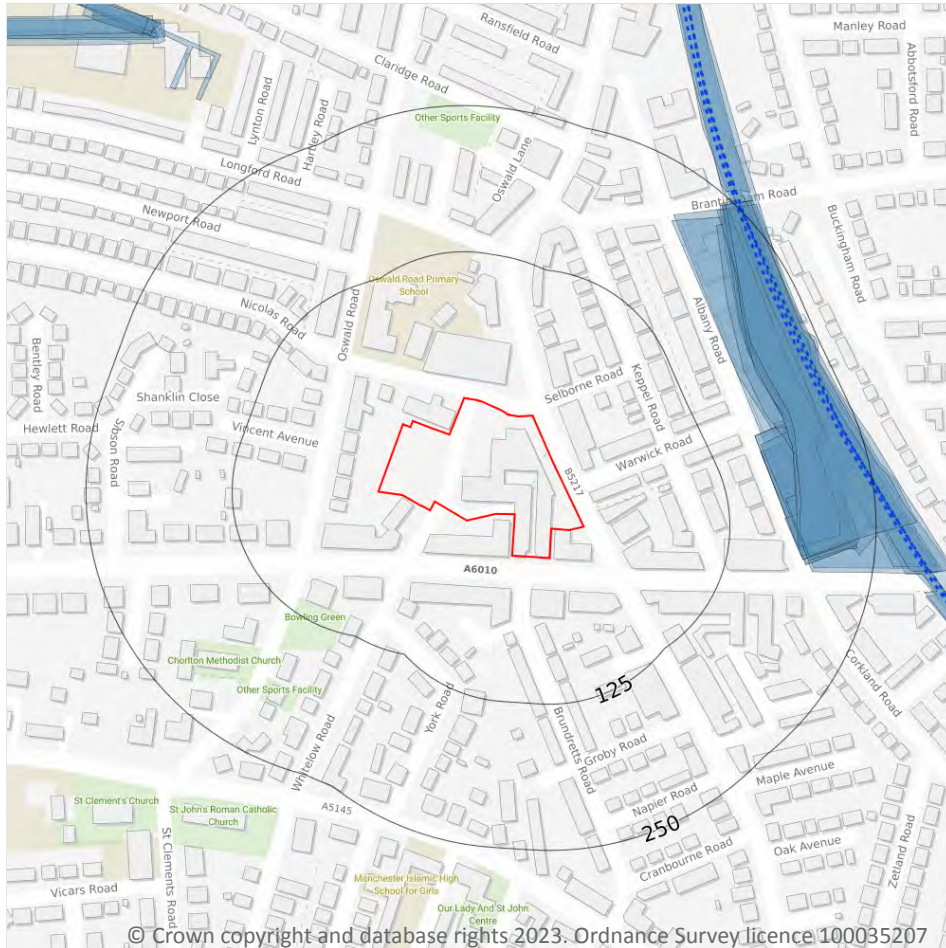
0

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

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



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

22.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

24

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 107 >](#)

Location	Land Use	Year of mapping	Mapping scale
164m E	Railway Sidings	1905	10560
164m E	Railway Sidings	1923	10560
164m E	Railway Sidings	1934	10560
164m E	Railway Sidings	1916	10560
167m E	Railway Sidings	1938	10560
170m E	Railways	1907	-
172m E	Railway Sidings	1955	10560
174m E	Railway Sidings	1966	10560
175m E	Railway	1933	-
181m E	Railway Sidings	1892	10560
183m E	Railway Sidings	1938	10560
185m E	Railway Sidings	1911	10560
186m E	Railway Sidings	1907	2500
186m E	Railway Sidings	1922	2500
192m E	Railway Sidings	1933	2500
193m E	Railway Sidings	1894	2500
193m E	Railway Sidings	1950	1250



Location	Land Use	Year of mapping	Mapping scale
193m E	Railway Sidings	1959	1250
194m E	Railway Sidings	1950	2500
194m E	Railway	1891	-
196m E	Railway Sidings	1881	2500
202m NE	Railway	1881	-
214m E	Railway Sidings	1893	500
222m E	Railway Sidings	1950	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

1

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

Features are displayed on the Railway infrastructure and projects map on [page 107 >](#)

Location	Description
233m NE	Historic

This data is sourced from OpenStreetMap.



22.7 Railways

Records within 250m

3

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on [page 107 >](#)

Location	Name	Type
230m NE	Metrolink	light_rail
233m NE	Metrolink	light_rail
236m E	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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



Appendix D
Preliminary UXO Risk Assessment

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

REPORT REF: PRA-23-2268 | Revision: 0

Client: Civic Earth Limited
Project: Chorlton-cum-Hardy, Manchester
Date: 05/10/2023
Author: WS



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Chatham, ME5 9FD
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INTRODUCTION

The Stage 1 Preliminary Risk Assessment is an initial screening assessment designed to highlight any sources of unexploded ordnance (UXO) with the potential to contaminate a given site.

The aim of the Stage 1 assessment is to identify or discount the need for further detailed research - a Stage 2 Detailed UXO Risk Assessment.

This desktop assessment has been researched and written by a dedicated Researcher / Risk Assessor and produced in accordance with the CIRIA C681 Guidelines: 'Unexploded Ordnance, a Guide for the Construction Industry' (published in 2009).

In preparation for this assessment, original wartime records, historic OS mapping and the *Brimstone UXO Sources Database* have been reviewed. The latter incorporates multiple datasets plotting the positions of a variety of domestic military sites and confirmed historic German bombing targets.

The Stage 1 Preliminary Risk Assessment considers the following:

1. The Proposed Works
2. Enemy Action During WWI and WWII
3. British / Allied Military Activity
4. Historic Site Occupancy
5. Risk Mitigating Factors

THE SITE

The Site (approximately centred on the National Grid Ref: SJ 81577 94084) is located in Chorlton-cum-Hardy, on the outskirts of Manchester, within the county of Lancashire, approximately 260m west of Chorlton tram stop.

The Site comprises the large Chorlton Cross Shopping centre, consisting of a large shopping centre in the south and east, a high rise commercial block in the centre and large area of hardstanding utilised as a car park in the north-west.

The Site is bound to the north by Nicolas Road, to the east by Barlow Moor Road, to the south by the A6010, and to the west by residential structures and associated garden areas on Oswald Road.



THE PROPOSED WORKS

At the time of writing Brimstone was not aware of any planned GI or development works taking place on Site.

ENEMY ACTION DURING WWI AND WWII

Potential Source of UXO	Significant?	Details
WWI German Bombing	✗	Manchester was not subjected to any air raids during WWI
WWII German Bombing	✓	British District Bombing Density Statistics The Site was located in the WWII-era County Borough of Manchester, which sustained 27 bombs / 1,000 acres, a low-to-moderate bombing density.

		Evidence of Bomb Strikes / Damage	A Manchester bomb plot map records 17 Incendiary bombs and one high explosive bomb strike within an approximate 300m radius of the Site; the closest of which was an incendiary bomb approximately 20m west of the Site. The high explosive bomb was approximately 190m south-west. It should be noted that these maps do not cover the entire Luftwaffe bombing campaign. A civilian casualties map for the Manchester 'Christmas Blitz' records the closest civilian casualty as 320m to the north-west. No immediately obvious signs of bomb damage, such as cratering in the open ground or roofing repairs to the structures, are visible on Site in WWII-era aerial photography. No evidence of bomb damage is visible in a comparison of pre- and post-WWII OS mapping.
		Local Bombing Decoy Sites	None within a significant distance of the Site. The closest was recorded approximately 6.6km south-west of the Site.
		Local German Bombing targets	Luftwaffe target photography indicates that Withington Sewage Works, approximately 1km south-west of the Site, was a target. Railway infrastructure approximately 230m east of the Site may have provided a target of opportunity.
WWII German Cross Channel Artillery Shelling	✗	n/a	

BRITISH / ALLIED MILITARY ACTIVITY

Potential Source of UXO	Significant?	Details
WWII Home Guard (HG) Activity	✗	Soldiers of the 48 th , 49 th , 50 th , 56 th , 57 th , 58 th , 59 th , 61 st and 63 rd Lancashire (Manchester) HG Battalions will have been active locally during WWII. However, they are unlikely to have accessed the Site or utilised it in any significant way due to its developed nature.
Site Requisitioned for Wartime Military Use	✗	n/a
Existing or Historic Army or RAF Training Area / Weapons Range	✗	n/a
Existing or Historic Military Bases and Other Installations	✗	n/a
Existing or Historic Munitions or Explosives Factories	✗	n/a
Existing or Historic Military Defensive Fortifications	✗	n/a
WWII Light and / or Heavy Anti-Aircraft (LAA and HAA) Fire	✓	Numerous (>30) permanent HAA batteries were active within range of the Site during WWII. LAA guns also likely defended vulnerable points within the city. Luftwaffe activity in the region was frequent for periods during the war. It is possible that an unexploded AA shell struck the Site.

Pipe-Mined Locations and Beach Minefields	✘	n/a
UXO Finds	✘	n/a

SITE HISTORY

What was the Site occupancy historically, especially during WWI and WWII?	During WWII, the Site comprised residential structures with large garden areas, including small areas of mature vegetation. Manchester Road intersected the centre of the Site.
---	---

RISK MITIGATING FACTORS

Post-Conflict Ground Works	At some point post-WWII all the pre-WWII structures on Site were cleared, and the large Chorlton shopping centre was constructed in the south of the Site, alongside the high-rise commercial block in the centre. Hardstanding has been laid across the vast majority of the Site, with soft landscaping in the east.
Likelihood of UXO Remaining	The risk associated with (any) very shallow (<1m bgl) buried UXO has likely been largely mitigated. The risk associated with (any) shallow (1-2m bgl) or deep (>2m bgl) buried UXO has likely been partially mitigated.

CONCLUSIONS

German UXO:

- Manchester was subjected to medium and small-scale air raids during WWII. Although the wartime figures for the wider borough suggest a low-to-moderate bombing density, the Site was located over 2.5km from both the city centre target area and Salford Docks, and therefore the local bombing density may have been lower than this figure suggests.
- However, Manchester bomb plot mapping records 17 incendiary bomb strikes and one high explosive bomb strike within an approximate 300m radius of the Site, the closest of which was an incendiary bomb 20m west. The high explosive bomb was recorded 190m to the south-west.
- Despite this, no immediately obvious signs of bomb damage in the locations of recorded bomb strikes, such as cratering in the open ground, or roofing repairs to the structures, are visible in post-WWII aerial photography. The same can be said for neighbouring structures to the east, west and south.
- If the structures on / immediately surrounding the Site did not sustain any significant bomb damage (as is thought to be likely), they likely remained inhabited throughout the war, providing a degree of access and monitor to the entire Site, significantly reducing the likelihood any potential UXB strike occurred on Site unnoticed and unrecorded.
- In addition, any UXB strike to these structures would have caused incontrovertible evidence of its occurrence, as it passed through multiple stories into the ground beneath, and so would have been recorded and dealt with at the time.
- It is feasible that a UXB strike to the open ground on Site went unnoticed, its entry hole obscured by vegetation / infilled over time. This is particularly significant due to the large size of the garden areas present on Site during WWII, where it cannot be guaranteed that access was constant throughout the war. However, in available photography the gardens appear well maintained, and as aforementioned, the residents of the structures on Site likely provided a degree of access.
- Therefore, given the lack of evidence the Site was affected by bombing, and anticipated high levels of access, the likelihood of encountering a German UXB on Site is not considered to be elevated above the 'background level' for the region.

British / Allied UXO:

- No evidence of significant military activity specifically on Site has been found and none is likely to have occurred.
- It is possible that an unexploded AA shell struck the Site during WWII and penetrated to a shallow depth, although for the reasons outlined above, such an incident is unlikely to have occurred unnoticed.

RECOMMENDATIONS

SI Works	A Stage 2 Detailed Risk Assessment is not considered necessary prior to works commencing. However, the possibility of UXO remaining on Site cannot be completely ruled out at desktop stage. Therefore, a UXO Safety Briefing to all personnel conducting ground works would be considered prudent.
Development Works	

Appendix E
BGS Borehole Records

BGS ID: 864925 : BGS Reference: SJ89SW42

British National Grid (27700) : 381600,394100

[Report an issue with this borehole](#)

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SUB SOIL SURVEYS LTD.
MANCHESTER.

BOREHOLE No. 1

EXPLORATORY BORING RECORD

British Geological Survey

British Geological Survey

British Geological Survey

SITE Chorlton

Ref.: 69/41

Boring Method Shell

Ground Level 93.5 O.D.

DATE	DIA. OF CASING & DEPTH BELOW G.L.	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW G.L.	STRATA APPROX. SCALE 10 FT. TO ONE INCH	NO. OF SAMP.	TYPE OF SAMP.	PENETRATION OF SAMPLER OR CORE BARREL		NO. OF BLOWS	CORE RECOVERY
							FROM	TO		
22.3.69	8"	Nil	3'6" (1.07m)	Black topsoil and tree roots	1	U	3'0"	4'6"	38	
22.3.69	10'	Nil		Stiff to very stiff brown sandy clay with stone incls: and grey fissures in upper zone	2	O	5'0"	6'6"	37	
23.3.69		Nil			3	U	5'0"	7'0"	40	
					4	O	8'0"	9'0"	40	
			12'0" (3.66m)		5	U	10'0"	12'0"	41	
				Firm to stiff brown sandy clay with stone inclusions and occasional bands of silty clay with laminated zones	6	O	12'0"	13'6"	43	
					7	U	15'0"	17'6"	45	
23.3.69		Nil			8	O	20'0"	21'6"	44	
24.3.69		Nil			9	U	19'0"	23'0"	87	
					10	O	25'0"	26'6"	138	
					11	U	28'0"	31'6"	140	
					12	O	30'0"	33'0"	150	NR
			35'0" (10.67m)	Compact brown sand with coal dust	13	U	35'6"	39'6"		
					14	U	38'0"	40'0"		
			38'0" (11.58m)		15	O	43'0"	44'0"		
					16	U	44'0"	49'0"		
24.3.69	39'6"	46'		Very stiff to hard brown sandy clay with stone inclusions, very sandy pockets	17	X	48'0"	53'9"		
25.3.69		32'			18	O	49'0"			
					19	U	53'0"			
					20	W	40'0"			
25.3.69	39'	33'3"	53'9" (16.38m)		21					
					22					
					23					
					24					
					25					

Samples shown thus: Disturbed O. Undisturbed U. Standard Pen. Test X. Water W. Bulk B.

WATER STRUCK AT THE FOLLOWING DEPTHS	DEPTH OF CASING WHEN SEALED (N.S.—NOT SEALED)	ESTIMATED SEEPAGE	WATER ADDED AT FOLLOWING DEPTHS TO ASSIST BORING	WATER LEVEL IN Cased/UNCASED BOREHOLE ON COMPLETION		
				DATE	WATER LEVEL	DEPTH OF CASING
1. 35'0"	N.S.			26.3.69	28'9"	

2.						
3.						
4.						
5.						
6.						

REMARKS:

i) Chiselling required in hard clay (7 hours)

BGS ID: 864925 : BGS Reference: SJ89SW42

British National Grid (27700) : 381600,394100

[Report an issue with this borehole](#)

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SUB SOIL SURVEYS LTD.
MANCHESTER.**SJ89SW/42**

BOREHOLE No. 2.....

EXPLORATORY BORING RECORD

SITE Chorlton Ref.: 69/41

Boring Method Shell Ground Level 91.3 O.D.

DATE	DIA. OF CASING & DEPTH BELOW G.L.	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW G.L.	STRATA APPROX. SCALE 10 FT. TO ONE INCH	NO. OF SAMP.	TYPE OF SAMP.	PENETRATION OF SAMPLER OR CORE BARREL		NO. OF BLOWS	CORE RECOVERY
							FROM	TO		
11.3.69	8"	Nil	3'10"	Black topsoil	1	X	3'6"	4'6"	8	
			(0.91m)		2	U	5'0"	6'6"	38	
				Brown and grey very sandy	3	O	7'0"			
				clay with stone incls: sand and	4	U	8'0"	9'6"	39	
			5'10"	possible brick-possible fill	5	O	11'0"			
			(1.52m)		6	U	12'0"	13'6"	38	
				Stiff to firm brown sandy and	7	O	15'0"			
				silty clay with stone incls:	8	U	16'0"	17'6"	45	
				and sand pockets and laminated	9	O	18'0"			
				zones. Grey fissures & root	10	U	20'0"	21'6"	47	
				incls: in upper zone	11	O	23'0"			
			15'6"		12	X	25'6"	26'6"	21	
11.3.69	15'6"	Nil	(4.72m)		13	U	27'0"	28'6"	45	
13.3.69		Nil		Firm to stiff brown sandy	14	O	29'0"			
				clay with stone inclusions	15	U	30'0"	31'6"	41	
			25'0"		16	O	33'0"			
			(7.62m)		17	U	35'0"	36'6"	39	
				Red sand	18	O	38'0"			
			25'6"		19	U	40'0"	41'6"	90	
			(7.77m)		20	O	42'0"			
				Firm brown sandy clay with	21	U	45'0"	46'0"	150	
			26'3"	stone inclusions	22	O	47'0"			
			(8.00m)		23	W	27'0"			
				Stiff dark brown sandy clay	24	X	50'6"	51'6"	41	
			27'0"	with stone inclusions	25	U	52'0"	53'6"	61	
			(8.23m)		26	O	55'0"			
				Stiff to very stiff light	27	U	56'0"	57'6"	64	
			30'0"	brown sandy clay with stone	28	O	58'0"			
			(9.14m)	incls: & sand pockets	29	U	60'0"	61'6"	62	
				Stiff brown silty and sandy	30	O	63'0"			
				clay with stone incls: lenses	31	U	65'0"	66'6"	58	
13.3.69	41'0"	Nil	40'0"	of sand & laminated zones	32	O	68'0"			
14.3.69		Nil	(12.19m)		33	U	70'0"	71'6"	6-	
			50'0"	Hard brown sandy clay with						
			(15.24m)	stone inclusions						
						continued				
Samples shown thus: Disturbed O. Undisturbed U. Standard Pen. Test X. Water W. Bulk B.										
WATER STRUCK AT THE		DEPTH OF CASING WHEN SEALED		ESTIMATED		WATER ADDED AT FOLLOWING DEPTHS		WATER LEVEL IN Cased/UNCASED BOREHOLE ON COMPLETION		

FOLLOWING DEPTHS		SEEPAGE	TO ASSIST BORING	DATE	WATER LEVEL	DEPTH OF CASING
1.	25'6"	28'0"				
2.	50'0"	N.S.		26.3.69	19'3"	
3.						
4.						
5.						
6.						

REMARKS:

- 1) Chiselling required in hard clay (2½ hours)

British Geological Survey

British Geological Survey

British Geological Survey

BGS ID: 864925 : BGS Reference: SJ89SW42

British National Grid (27700) : 381600,394100

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SUB SOIL SURVEYS LTD.
MANCHESTER.**SJ89SW/42**

BOREHOLE No. 2....

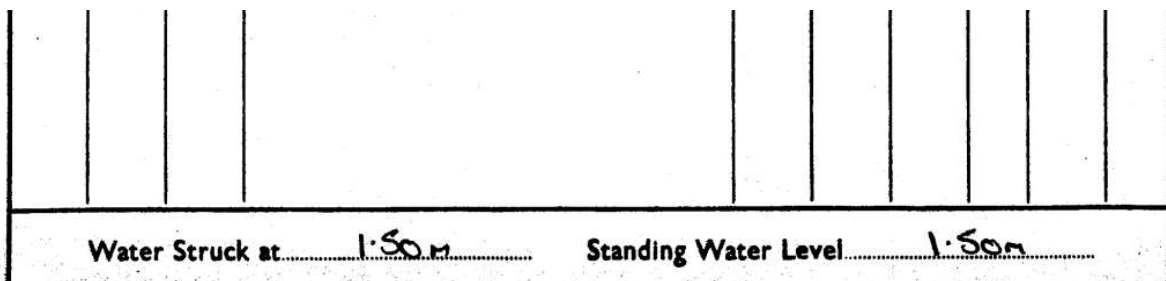
EXPLORATORY BORING RECORD

SITE Chorlton Ref.: 69/41

Coring Method Shell Ground Level O.D.

DATE	DIA. OF CASING & DEPTH BELOW G.L.	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW G.L.	continued STRATA APPROX. SCALE 10 FT. TO ONE INCH	NO. OF SAMP.	TYPE OF SAMP.	PENETRATION OF SAMPLER OR CORE BARREL		NO. OF BLOWS	CORE RECOVERY
							FROM	TO		
14.3.69	8"		50'0"	(15.24m)						
14.3.69	41'0"	59'0"			34	O	73'0"			
15.3.69	6"	48'0"			35	U	75'0"	76'6"	58	
				Stiff grey and brown laminated silty clay with partings and lenses of silt and fine sand, occasional bands of sandy clay with stone inclusions	36	O	78'0"			
15.3.69	41'0"	54'0"			37	U	80'0"	81'6"	61	
18.3.69		48'0"			38	O	82'0"			
					39	U	85'0"	86'6"	63	
					40	O	87'0"			
18.3.69	70'6"	50'1"			41	U	88'6"	90'0"	63	
19.3.69		45'6"			42	O	90'0"			
					43	U	93'6"	95'0"	65	
19.3.69	79'6"	82'1"			44	O	95'0"			
20.3.69		44'9"								
20.3.69	79'6"		95'0"	(28.96m)						
Samples shown thus: Disturbed O. Undisturbed U. Standard Pen. Test X. Water W. Bulk B.										
WATER STRUCK AT THE		DEPTH OF CASING	ESTIMATED	WATER ADDED AT	WATER LEVEL IN Cased/UNCASED					
FOLLOWING DEPTHS		WHEN SEALED		FOLLOWING DEPTHS	BOREHOLE ON COMPLETION					

FOLLOWING DEPTHS	(N.S.—NOT SEALED)	SEEPAGE	TO ASSIST BORING	DATE	WATER LEVEL	DEPTH OF CASING
1.						
2.						
3.						
4.						
5.						
6.						
REMARKS:						
British-Geological Survey						
British-Geological Survey						
British-Geological Survey						



DUNELM DRILLING CO.

BOREHOLE RECORD

Contract No. C 2224

Client: ESSO PETROLEUM CO LTD

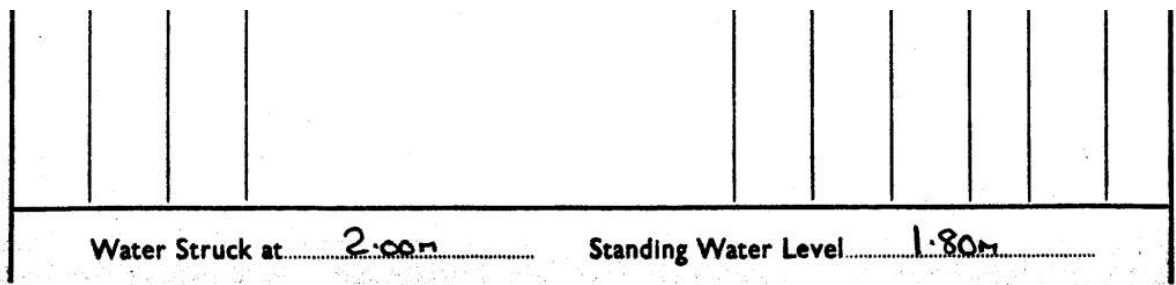
Ground Level.....

Location CHORLTON S/STN - MANCHESTER EN

Date 29 JULY 1983

BOREHOLE No. 2

Depth	Thick- ness	Legend	Description of Strata	Type of Sample	C kN/m ²	M %	Ø	Density Kg/m ³	N
0.60	0.60		TARMAE OR BLACK RUBBLE FILL						
1.60	1.00		BROWN + RUST COLOURED VERY SANDY CLAY (CONTAMINATED WITH FUEL)	P 1.00					6
2.70	1.10		DK BROWN + GREY MEDIUM GRAINED SAND	P 2.00					7
5.00	2.30		FAIRLY FIRM RED/BROWN BOULDER CLAY	U 3.00 U 4.50	115.8 142.4	12.0 11.0	- -	2270 2270	
			1 HR BREAKING OUT + HAND DIGGING FOR SERVICES.						



Appendix F
Risk Assessment Methodology

Civic Earth Risk Assessment Methodology

Civic Earth's risk assessment methodology is based on the CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice¹.

The assessment approach is to quantify the potential risk at Phase 1 Stage via risk estimation and risk evaluation. This defines the overall risk category that can be used to identify likely actions to address the potential risk or undertake further risk evaluation.

The methodology is a qualitative approach and is undertaken for each identified potential contaminant linkage (source-pathway-receptor) identified for the site in accordance with the October 2020 Land Contamination Risk Management Guidance (LCRM)².

The methodology requires the classification of the following:

- The magnitude of the consequence (severity) of a risk occurring; and
- The magnitude of the probability (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at a site are classified in accordance with Table 1 below, which is based on CIRIA guidance¹.

Table 1: Classification of Consequence Ratings

Classification	Definition of Consequence	Examples
Severe	Short-term (acute) risks to human health. Short-term (acute) risk of pollution of sensitive water resource or ecosystem Catastrophic damage to crops/building/property/infrastructure, including off-site soils	High concentration of cyanide on the surface of an informal recreation area Major spillage of contaminants from site into controlled waters Explosion causing building collapse
Medium	Long-term (chronic) risks to human health Long-term (chronic) pollution of sensitive water resource Significant change in an ecosystem/contamination of off-site soils	Concentrations of a contaminant on site exceeding the generic or site specific assessment criteria Leaching of contaminants from a site into a major or minor aquifer Death of species within a designated nature reserve
Mild	Pollution of non-sensitive water resource Significant damage to crops/buildings/property/infrastructure Damage to an ecosystem or sensitive buildings/structures/services	Pollution of a non-classified groundwater Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
Minor	Easily preventable non-permanent effects Harm, although not necessarily significant harm, which may result in financial loss or expenditure resolve Easily repairable effects of damage to	Presence of contamination at concentrations which require the use of personal protective equipment during site work Loss of plants in a landscaping scheme/dischouration of concrete

¹ CIRIA, (2001). Contaminated Land Risk Assessment. A Guide to Good Practice. CIRIA C552.

² Environment Agency (2020). *Land Contamination Risk Management (LCRM)*.

	building/structures/services	
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The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2, which are based on CIRIA guidance¹. It should be noted that where a potential contaminant linkage has not been identified the likelihood is considered to be negligible.

Table 2: Classification of Probability Ratings

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

In accordance with C552, the risk classification for each potential contaminant linkage are classified in accordance with the matrix of consequence and probability set out in Table 3. The definition for the risk classifications are presented in Table 4.

Table 3: Risk Classification Matrix

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

Table 4: Risk Classification Definitions

Classification	Definition
Very High	There is a high probability that severe harm could arise to a designated receptor from the identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from the identified hazard. Realisation of the risk is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
Moderate	It is possible that harm could arise to a designated receptor from the identified hazard. However, it is either relatively unlikely that such harm would be severe or if any harm were to occur it is more than likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the potential risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from the identified hazard, but it is considered likely

	that this harm, if realised, would at worst normally be mild.
Very Low	There is a low possibility that harm could arise to a designated receptor from the identified hazard. In the event of such harm being realised it is not likely to be severe.

Appendix G
Illustrative Conceptual Site Model

Project Name: Chorlton Precinct, Manchester

Potential Sources of Contamination

- Current and historical on-site land uses including nursery, substation, tank, dry cleaners and residential properties (fire pits/bonfires) – potential for organic and inorganic contaminants such as asbestos, hydrocarbons, chlorinated solvents, PCBs and metals.
- Made Ground – potential for organic and inorganic contaminants such as asbestos, hydrocarbons, chlorinated solvents, PCBs and metals based on site's historical redevelopment.
- Made Ground including infilled marl pit – potential for explosive / asphyxiating gases and/or vapours from underlying soils.
- Perched water and shallow aquifers – potential for organic and inorganic contaminants within groundwater due to historical and current on-site and off-site sources.

Pathways for Contaminant Migration

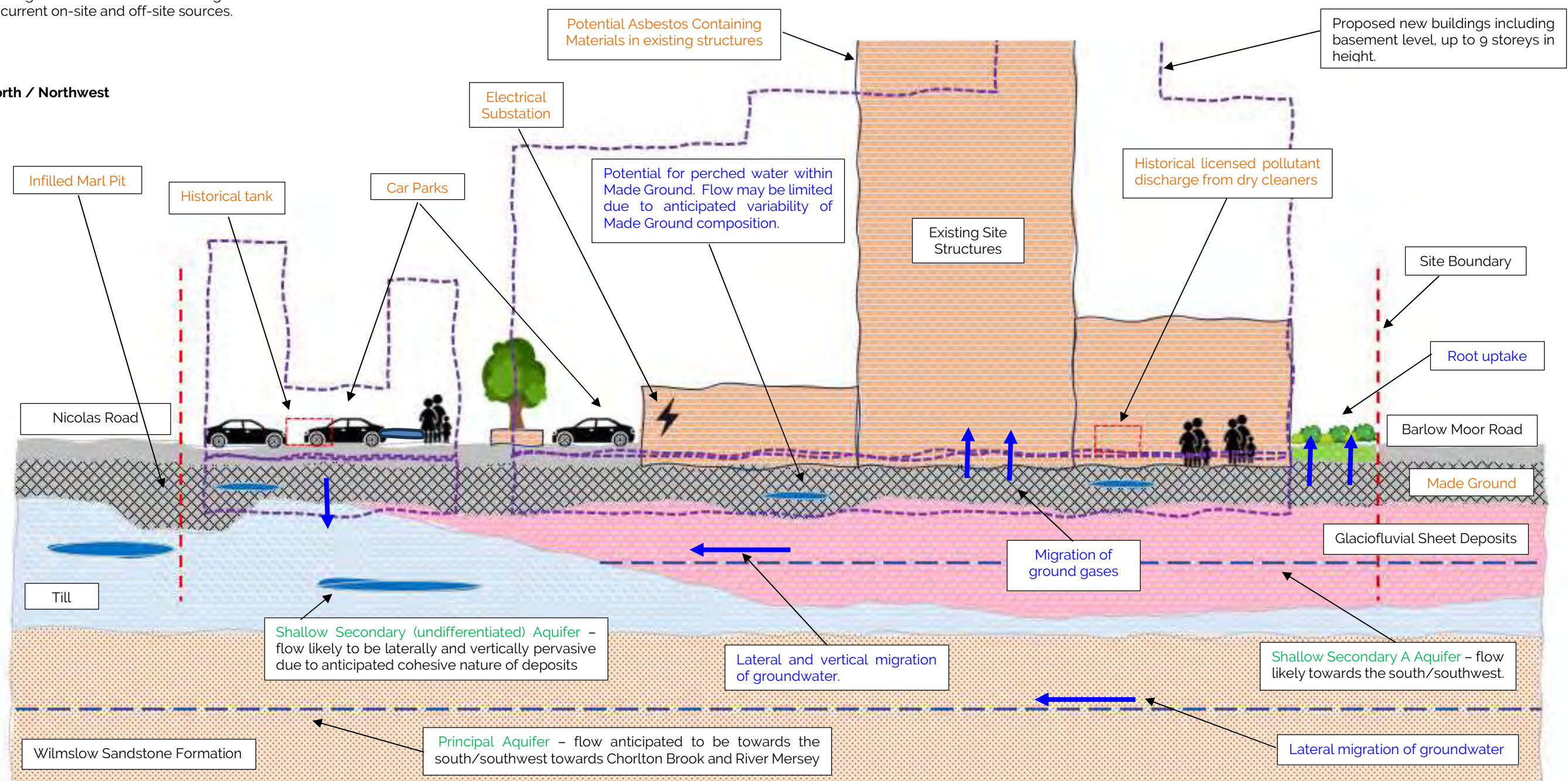
- Direct and indirect ingestion of soil and dust, inhalation of asbestos fibres.
- Migration of gases and vapours to the surface via permeable soils.
- Root uptake.
- Potential lateral and vertical migration of perched water and groundwater.
- Direct contact with underground structures and services.
- Potential creation of contaminant pathways to Principal aquifer via piling as part of development works.

Potential Receptors

- Future site occupants and users – moderate/low risk.
- Construction workers – moderate risk.
- Off-site residents – low risk.
- Local surface water bodies – low risk.
- Secondary A aquifers – moderate risk.
- Principal aquifer – moderate/low risk.
- New buildings and infrastructure – moderate/low risk.
- New plants and vegetation – low risk.

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East/ Southeast



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