Phase I Geoenvironmental Site Assessment
Pitsford Road, Miles Platting

Reference:16-148-R1-1
Date: October 2022

PHASE I GEOENVIRONMENTAL SITE ASSESSMENT

Pitsford Road,
Miles Platting,
Manchester,
M40 8GS

Prepared for:

Bellway

Report Ref: 16-148-R1-1
Date Issued: October 2022

E3P

Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

+ 44 (0) 161 707 9612
https://e3p.co.uk

Registered in England
CRN: 08725262

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PREPARED BY	M Dimes		
QUALIFICATIONS	BSc (Hons)		
CHECKED BY	R Walker		
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AUTHORISED BY	A Edgar		
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EXECUTIVE SUMMARY

Site Address	Land off Pitsford Road, Miles Platting, Manchester, M40 8GS.	
Grid Reference	E 386174, N 400168	
Site Area	2.57 Ha.	
Proposed Development	Bellway Homes Manchester intends to construct a low-rise residential development comprising of 89 residential dwellings with associated gardens, estate roads and infrastructure.	
Current Site Use	The subject site is rectangular in shape and located to the northeast of Manchester city centre. It is currently unoccupied but bound to the north and east by a national rail access road. The site is predominantly vegetated brownfield land with the only structures present appearing to be metal fencing sporadically around the site, and a brick retaining wall along the southwest boundary. No further structures have been identified within the site boundary. The whole site has been artificially raised and levelled where historical railway sidings were previously located which has created an embankment and steep slope on all sides. Street lighting is present along the northwest boundary of the site along Pitsford road.	
Site History	A review of the pertinent Ordnance Survey mapping suggests that the site comprised agricultural land circa 1848 until circa 1891 when the site was raised and levelled and had railway sidings installed with associated small buildings in the south of the site. Further development to the sidings continued in circa 1908. Various small structures were erected and removed between 1908 and 1980 particularly in the west of the site. The railway sidings were fully removed from the site in circa 1985. The site has been left vacant to the present day with dense self-seeding vegetation growing during this time.	
Environmental Setting	Drift Geology	Till of CLAY and GRAVEL.
	Bedrock Geology	Pennine Middle and Upper Coal Measures Formation– MUDSTONE, SILTSTONE AND SANDSTONE.
	Faults	The nearest geological fault is located >200m from the site and not considered a risk.
	Hydrogeology	Secondary A bedrock aquifer with secondary undifferentiated superficial aquifer recorded. Two groundwater abstraction licences are recorded within 1 km of the site located 97 m and 473 m southeast west for general cooling uses.

Environmental Setting	Hydrology	No surface water features are present within 25 m of the site. Based on the local topography within the site boundary, it is considered likely that shallow groundwater, if present, will flow in a westerly direction, following the topographical gradient towards the adjacent lower-lying Pitsford Road.
	Flood Risk	Unaffected by flooding from rivers.
Utility Locations	A formal drainage survey has not been completed, however, a number of inspection chambers were noted along the western boundary of the site on Pitsford Road and are assumed to run northeast-southwest along this boundary. Street lighting is present along the western boundary and as such electricity is anticipated to be present in the west of the site.	
Landfill Sites and Ground Gases	No landfill sites (current or historic) are located within 250 m of the site. The site has undergone some historic development and ground working, the Made Ground associated with the historic development may produce hazardous ground gases such as methane and carbon dioxide.	
Radon	Less than 1% of houses above the 'Action Level' – no special precautions required.	
Coal Mining/Land Stability	The site is located in a coal mining reporting area but not within a development high-risk area. No shafts, mine entries or adits are present within the site or within 20m of the site. There is however a conjectured seam crossing the northeast of the site as per the CA report though is unlikely to be worked at a shallow depth <30m. Confirmatory boreholes may be required to demonstrate that the coal is not of workable thickness.	
Hazardous Installations	No hazardous installations that could potentially prejudice the proposed construction of highly sensitive residential dwellings have been identified within influencing distance of the subject site.	
Initial Conceptual Site Model	**Contaminant Sources:** • Made Ground (historical residential/farm buildings/railway sidings) – Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPHs), heavy metals, Asbestos containing materials (ACMs), SVOC, VOC • Ash – Heavy Metals , PAHs • Offsite, - Residential, Tank Farm, Iron Works, Brewery – Heavy Metals, TPHs, SVOC, VOC, Asbestos, PAHs **Pathways:** • Direct contact and ingestion • Volatilisation/indoor explosion • Vapour inhalation • Dust inhalation • Vertical and lateral migration • Direct uptake by flora and fauna •	

Initial Conceptual Site Model	**Receptors:** • Future site users (end-users and construction workers) • Buildings (proposed residential units) • Underlying aquifer (Secondary A bedrock aquifer) • St Augustine's Primary School • Residential properties • Flora and fauna
Recommendations	A detailed Phase 2 Site Investigation is required to confirm the findings of the initial CSM and provide detailed geotechnical design information to ensure safe and economic future development.

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DRAWING LIST

16-148-001 - Site Location Plan
16-148-003 - Historical Features Plan
16-148-004 - Site Features Plan

1. INTRODUCTION

1.1. BACKGROUND

E3P has been commissioned by Bellway Homes (the client) to undertake a detailed Phase I Geoenvironmental Site Assessment for a parcel of land off Pitsford Road, Miles Platting, Manchester, M40 8GS.

This report is required to determine potential contaminated land liabilities and geotechnical constraints as part of a proposed site redevelopment.

1.2. PROPOSED DEVELOPMENT

Bellway Homes Manchester intends to construct a low-rise residential development comprising of 89 residential dwellings with associated gardens, estate roads and infrastructure.

1.3. OBJECTIVES

The objectives of the geoenvironmental investigation are as follows:

- Review historical plans, geology, hydrogeology, site sensitivity, floodplain issues, mining records and any local authority information available in order to complete a desk study in line with Environment Agency (EA) document Land Contamination: Risk Management (LC:RM) (2019)
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors.
- Assess the desk-study information and, where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs.
- Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

1.4. SOURCES OF INFORMATION

Background information was sought from the following sources:

- Groundsure Search;
- Historical mapping dated 1848 to 2022. A selection of historical maps are reproduced in Appendix V;
- On-line planning records held by Manchester City Council;
- Consultations with representatives of Manchester City Council;
- Magic Map Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007);
- British Geological Survey Map;
- Groundsure IO database;

- https://zeticauxo.com/downloads-and-resources/risk-maps/; and,
- https://flood-map-for-planning.service.gov.uk.

1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

1.6. CONFIDENTIALITY

E3P has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

1.7. RISK CLASSIFICATION

E3P has utilised the available data to classify the site on the basis of its likely contaminated land liability and potential for geotechnical constraints in relation to the site development. The risk classification definitions are summarised in Table 1.1.

TABLE 1.1 RISK CLASSIFICATION

RISK	DEFINITION
Low	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property.
Low Moderate	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use. However, minor issues may require further consideration in the event of future redevelopment of the site.
Moderate	Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue, but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the site will likely require further site investigation.
Moderate High	Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that requires further assessment, including intrusive ground investigations.
High	Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine the level of risk and associated liability.

2. SITE SETTING

2.1. SITE DETAILS

Site Address	Land off Pitsford Road, Miles Platting, Manchester, M40 8GS.
National Grid Reference	E 386174, N 400168
Site Area	2.57 Ha.

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 16-148-001.

2.2. CURRENT SITE USE

E3P has not undertaken a site walkover, however, a description of the key findings based on areal and street imagery of the entire site is summarised in Table 2.1.

TABLE 2.1 SITE DESCRIPTION

Occupancy/Use	The subject site is rectangular in shape and located to the northeast of Manchester city centre. It is currently unoccupied but bound to the north and east by a National Rail access road. The site is predominantly vegetated brownfield land with the only structures present appearing to be a perimeter metal fencing around the site, and a brick retaining wall along the southwest boundary. No further structures have been identified within the site boundary. The whole site has been artificially raised and levelled where historical railway sidings were previously located which has created an embankment and steep slope on all sides. Street lighting is present along the northwest boundary of the site along Pitsford Road. Slope and lighting along Pitsford road can be seen below: 

Surface Cover (%)	**Buildings**	0%
	Hardstand	5%
	Soft Cover	95%
Structures	No above ground structures have been identified within the site boundary with the exception of the retaining wall at the western end of the site.	
Access	Both pedestrian and vehicular access can be gained in the northeast of the site via a narrow lane off Pitsford Road. Pedestrian access is also possible at a number of breaks in the fence along Pitsford Road.	
Slope	Determining the topography of the site is difficult due to the presence of dense vegetation. The site is elevated above Pitsford Road and a significant slope present on all sides. In some areas the slope is estimated to be ca. 2.50m higher than surrounding features.	
Retaining Structures	There is a ca. 3.00m brick wall forming the western boundary of the subject site that appears to act as a retaining wall for the site and Queens Road. The wall is showing some evidence of cracking suggesting possible movement.	
Vegetation/Ecology	Very dense mature trees and scrub vegetation is present across the entire site in an even distribution. Localised stands of Japanese knotweed have been identified at the site . It is understood that specialist reports have been commissioned.	
Hazardous Material Storage	During the site walkover no above-ground storage tanks (ASTs) or underground storage tanks (USTs) were evident.	
Asbestos-Containing Material (ACM)	No structures have been identified at the site, though the presence of ACM within any Made Ground cannot be entirely discounted given the site history.	
Polychlorinated Biphenyls (PCBs)	There is no equipment identified that may contain PCBs within the site boundary. Although, given the site history this cannot be ruled out at this time.	
Waste Storage	Potentially hazardous waste streams are unlikely to be generated at the site and none were noted in the virtual site walkover.	
Drainage	A formal drainage survey has not been completed. It is considered likely that Pitsford road supports utility infrastructure.	

2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

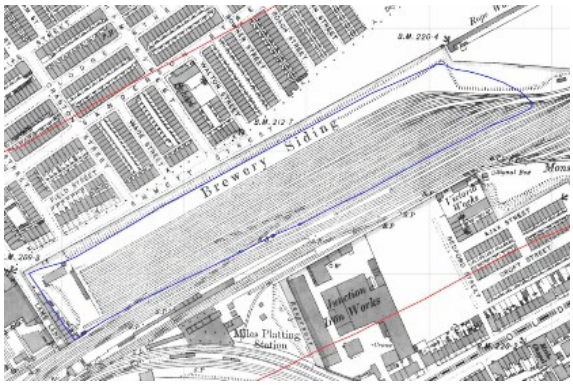
DIRECTION	LAND USE
North	Residential units and St Augustine's Primary School
East	Commercial units
South	Railway line
West	Residential units and Village Park

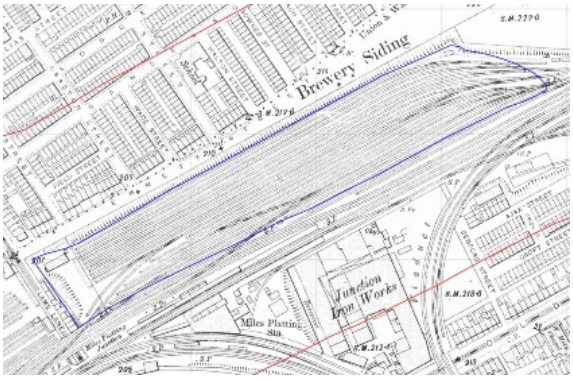
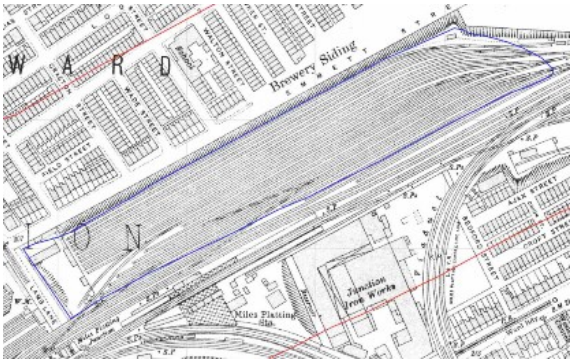
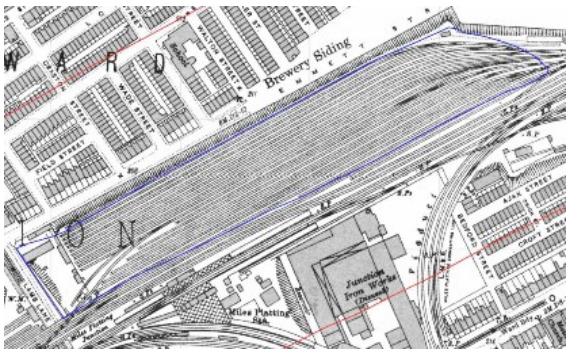
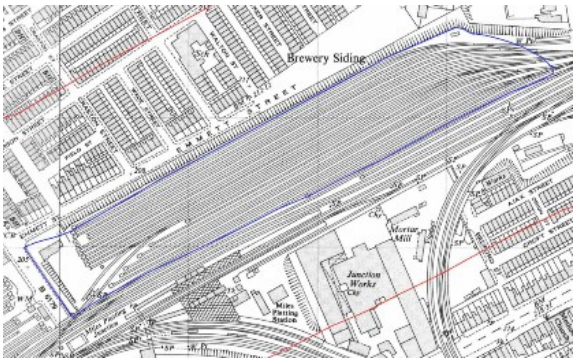
3. SITE HISTORY

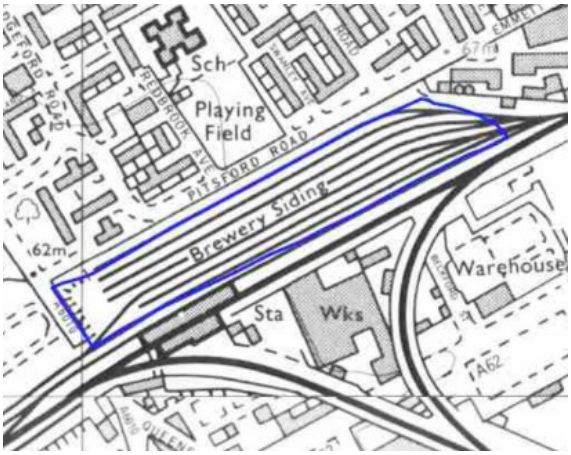
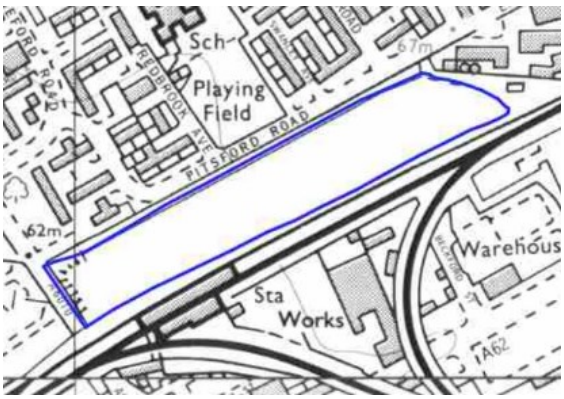
3.1. ON-SITE HISTORICAL DEVELOPMENT

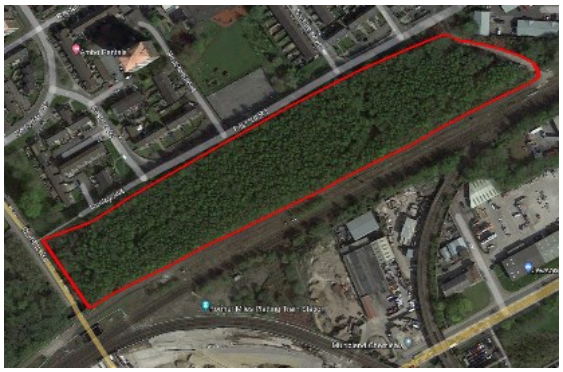
A review of historical mapping and historical aerial imagery pertinent to the site is summarised in Table 3.1. In addition, historical site features are presented on Drawing No 16-148-003 in Appendix III.

TABLE 3.1 HISTORICAL DEVELOPMENT

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1848 **1:10,560**	The site consists of agricultural land adjacent to the Lancashire and Yorkshire Railway Line.	
1891 **1:10,560**	The site has been developed into Brewery Sidings with associated buildings in the southwest. Markings also suggest the presence of embankments to the north and west of the sidings. A structure is present in the west of the site.	
1893 **1:2,500**	No significant changes recorded since the last map edition.	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1908 **1:2,500**	Further sidings have been added to the north with associated ground levelling. A small structure has been added in the north, along with redevelopment of lines in the south of the site.	
1922 **1:2,500**	A structure have been added in the southwest of the site.	
1931 **1:2,500**	No significant change noted.	
1949-1950 **1:2,500**	Small structures in the southwest of the site have been removed.	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1951-1953 1:2,500	No changes recorded.	
1980-1985 1:10,000	No changes recorded.	
1985-1988 1:10,000	Railway sidings and associated small structures have been removed. An embankment is still noted to the west.	
2001 1:10,000	No significant features are noted beyond the site now being vegetated in its entirety.	

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
2003	Aerial imagery indicates that the land has become partially overgrown with self-seeding vegetation.	
2021	Vegetation is shown to be dense across the site.	

3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250 m radius of the site is summarised in Table 3.2.

TABLE 3.2 SURROUNDING HISTORICAL DEVELOPMENT

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Railway Sidings Then: marked as Lancashire and Yorkshire Railway Then: marked as L. & Y. R Newton Heath Loop Then: no longer marked	7 m	Pre 1848–Pre 1891 Pre 1891–Pre 1956 Pre 1956–Present	Southeast
Brewery Then: marked as Newton Heath Brewery Then: marked as Brewery Then: no longer marked Then: marked as Newton Heath Brewery Then: marked as Brewery Then: marked as Depot Then: no longer marked	10 m	Pre 1848–Pre 1891 Pre 1891–Pre 1938 Pre 1938–Pre 1956 Pre 1956–Pre 1966 Pre 1966–Pre 1985 Pre 1985–Pre 2022 Pre 2022–Present	Northeast

SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Iron works Then: not present Then: unmarked Then: marked as Iron Works Then: no longer marked Then: marked as Works Then: no longer marked	32 m	Pre 1848–Pre 1891 Pre 1891–Pre 1906 Pre 1906–Pre 1956 Pre 1956–Pre 1966 Pre 1966–Pre 2001 Pre 2001–Present	Southeast
Iron Works Then: not present Then: unmarked Then: marked as Iron Works Then: no longer marked Then: marked as Works Then: marked as Depot Then: no longer marked	196 m	Pre 1848–Pre 1891 Pre 1891–Pre 1906 Pre 1906–Pre 1933 Pre 1933–Pre 1966 Pre 1966–Pre 2001 Pre 2001–Pre 2022 Pre 2022–Present	East
Carriage and Wagon Works Then: not present Then: marked as Carriage & Wagon Works Then: marked as Newton Heath Carriage & Wagon Works Then: marked as Works Then: marked as Depot Then: no longer present	240 m	Pre 1848–Pre 1891 Pre 1891–Pre 1933 Pre 1933–Pre 1966 Pre 1966–Pre 1972 Pre 1972–Pre 2001 Pre 2001–Present	Northeast

3.3. PLANNING HISTORY

E3P has undertaken a review of online planning records held by Manchester City Council and no environmentally pertinent information has been obtained for the site.

3.4. ANECDOTAL INFORMATION

A web-based search for detail in and around the subject site features Brewery Sidings in a number of historical Railway websites. The main detail obtained (from *http://www.prestonstation.org.uk/lineclear/brewerysidings.html*) suggests that 'Brewery Sidings Signal Box closed on the 15th of September 1998 in connection with stage one of the Manchester north signalling works'.

A web-based search of the subject site has recovered the following photographs, courtesy of Britain From Above:

FIGURE 3.1 – BRITAIN FROM ABOVE 1939

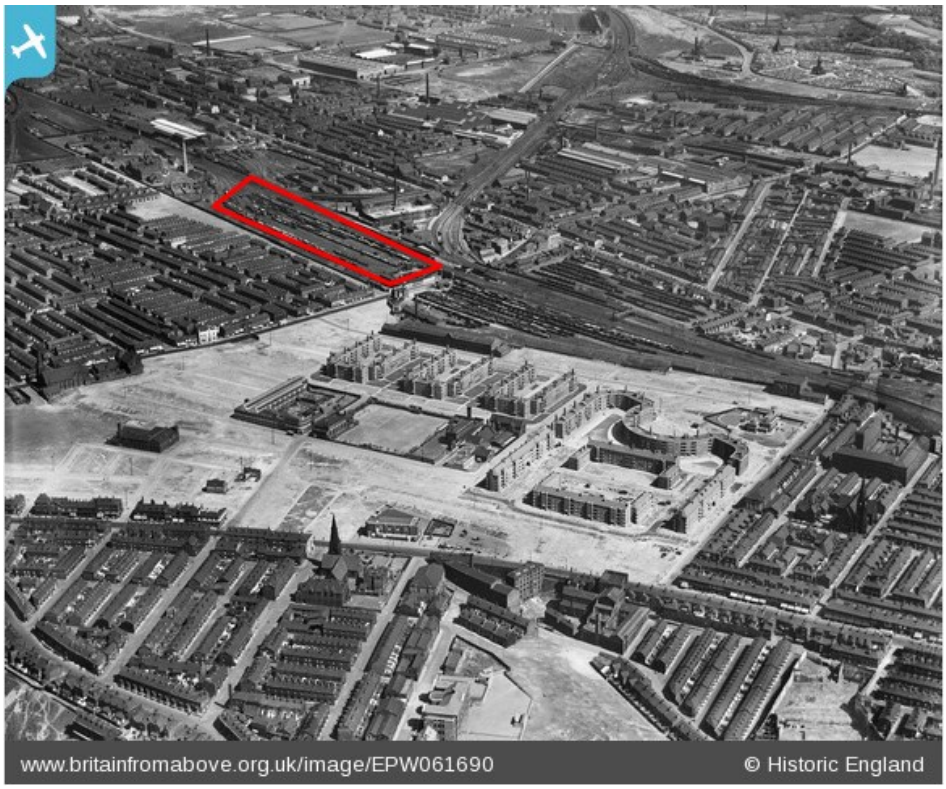


FIGURE 3.2 – BRITAIN FROM ABOVE 1952

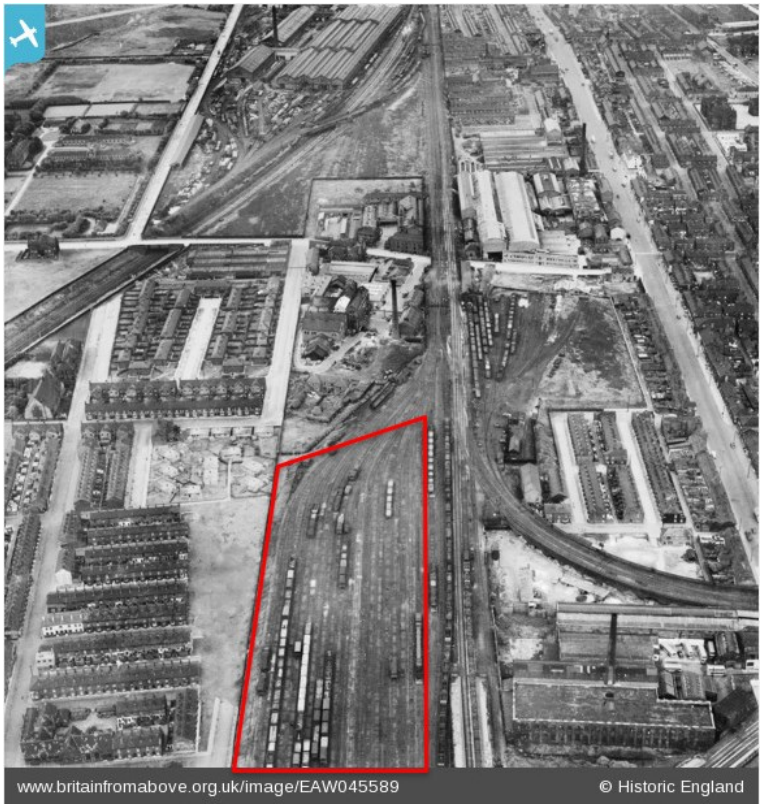
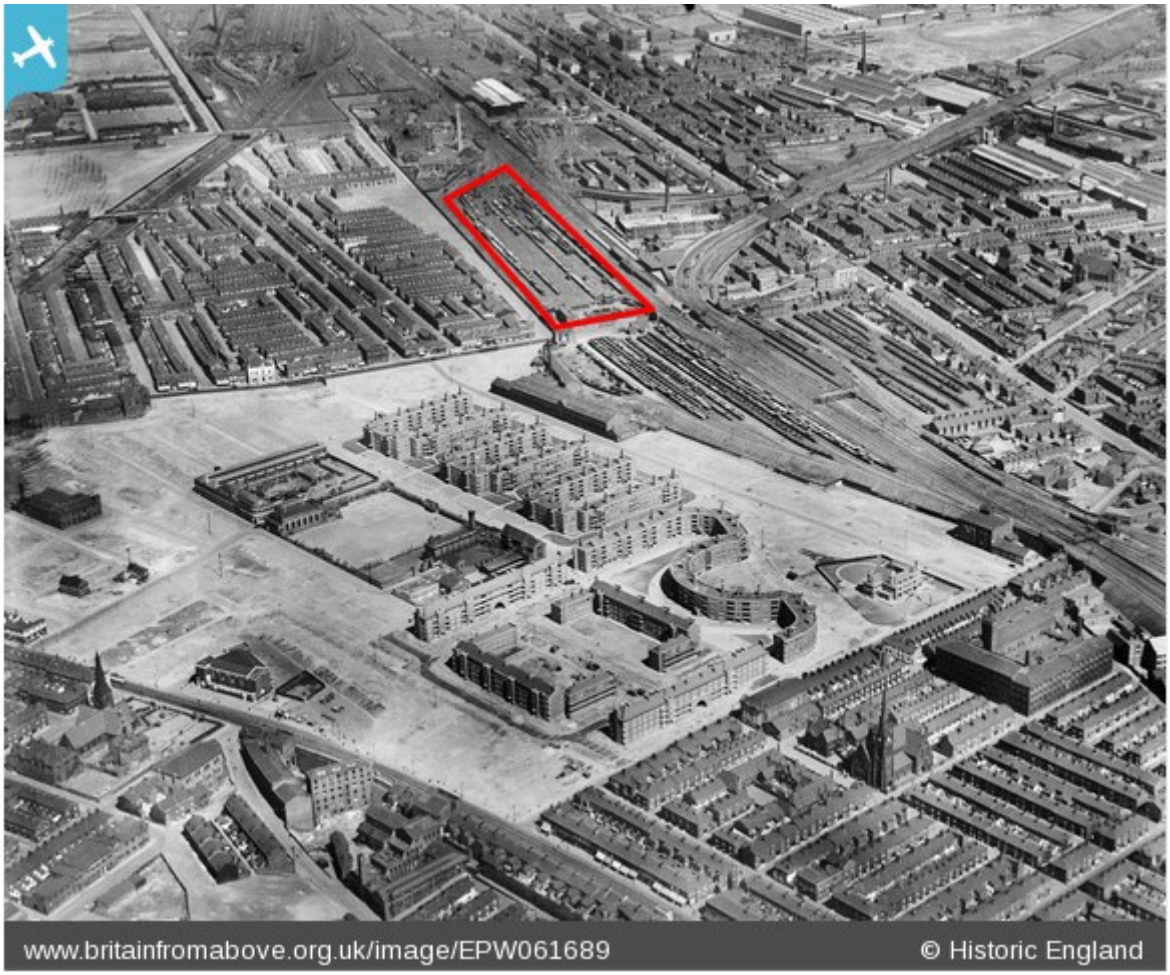


FIGURE 3.3 – BRITAIN FROM ABOVE 1939



3.5. PREVIOUS REPORTS

No previous site investigation reports have been provided to E3P for review.

Following a review of the planning portal no reports on the site historically are apparent.

4. ENVIRONMENTAL SETTING

4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map (Sheet 85) for the site, (1:50,000, Solid and Drift editions) and online records indicate the site is underlain by the geological sequence presented in Tables 4.1, 4.2, and 4.3.

TABLE 4.1 SUMMARY OF UNDERLYING GEOLOGY

GEOLOGICAL UNIT	LOCATION	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Drift	Whole of site	Till - Devensian	Diamicton – CLAY, GRAVEL	Secondary undifferentiated
Solid	North (Majority of site)	Pennine Middle Coal Measures Formation - Westphilian	MUDSTONE, SILTSTONE, SANDSTONE	Secondary A aquifer
	Southern corner of site	Pennine Upper Coal Measures Formation - Westphilian	MUDSTONE, SILTSTONE, SANDSTONE	

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

LOCATION	DEPTH	MADE GROUND	DRIFT	SOLID
139 m NE	29.26 m	N/A	CLAY with stones and GRAVEL < 24.38 m	Black Shale > 29.26 m

The nearest recorded faulting is circa 250m to the northeast of the site. This is not considered to be within influencing distance of the subject site.

The Groundsure report indicates that the site is not located within a groundwater source protection zone. However, there are two groundwater abstraction points within 1 km of the site shown in Table 4.3.

TABLE 4.3 GROUNDWATER ABSTRACTION POINTS

LOCATION	STATUS	NAME	USE
473 m SE	Active	Hanson Quarry Products Europe Ltd	General use relating to secondary category
972 m W	Active	Packaging Products (Coatings) Ltd	General Cooling

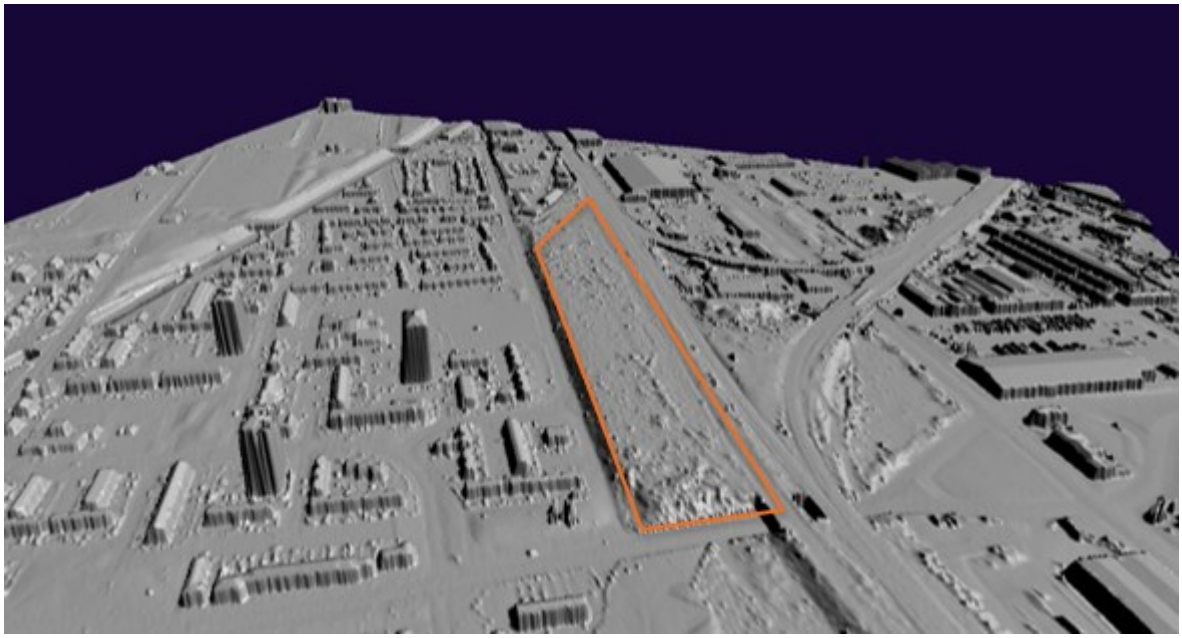
Based on the local topography within the site boundary, it is considered likely that regional groundwater, if present, will flow in a westerly direction, following the topographical gradient towards the River Irk. Perched groundwater is likely to be controlled by the depth of the Glacial Till/Made Ground.

4.2. NATURAL LANDFORM AND GEOMORPHOLOGY

Based on the initial geological assessment, a review of available topographic data and pertinent mapping, E3P has undertaken a preliminary geomorphological assessment of the landform and its possible mechanism for formation.

The site has undergone historical level raising above the more natural lower-lying landform by the placement and upfill of material during the construction of the railway siding. It is likely therefore that relatively thick deposits of Made Ground may be present.

FIGURE 4.1 SURFACE LIDAR DATA (LOOKING EAST)



4.3. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.4.

TABLE 4.4 SUMMARY OF GEOTECHNICAL DATA

HAZARD	DESIGNATION
Shrink-Swell Clay	Very low risk
Landslides	Very low risk
Ground Dissolution	Negligible
Compressible Ground	Negligible
Collapsible Deposits	Very low risk
Running Sand	Very low risk

4.4. COAL MINING

The Groundsure report states the site is in an area that may be affected by coal mining.

A CA mining report was obtained (Ref: 51003314104001) dated 27th September 2022.

The CA operates a risk-based approach to the assessment of potential instability issues associated with future development of land located within the predefined CA consultation areas. This risk-based approach subdivides the potential risk into “low” and “high” risk categories.

The risk categories can be defined as:

Low-Risk Sites – Deemed to be land where coal mining has taken place, however, it was at such depth not to pose a risk to new development and it, therefore, contains no known recorded risks and as such no further assessment is required.

For low-risk sites, the CA categorically states:

> *If your proposed development is within the Development Low Risk Area there is no need for you to submit any coal mining information with your planning application and The Coal Authority will not be consulted by the LPA. The LPA will include our Standing Advice as an informative note within the decision notice.*

High-Risk Sites – Deemed to be landholdings located within an area known to contain legacy risks that include:

- Mine entries (shaft or adit);
- Shallow coal workings (recorded and probable);
- Workable coal seam outcrops;
- Mine gas sites and areas;
- Recorded coal-mining-related hazards;
- Geological features (fissures and break lines); and
- Former surface mining sites (sometimes using historic opencast extraction methods).

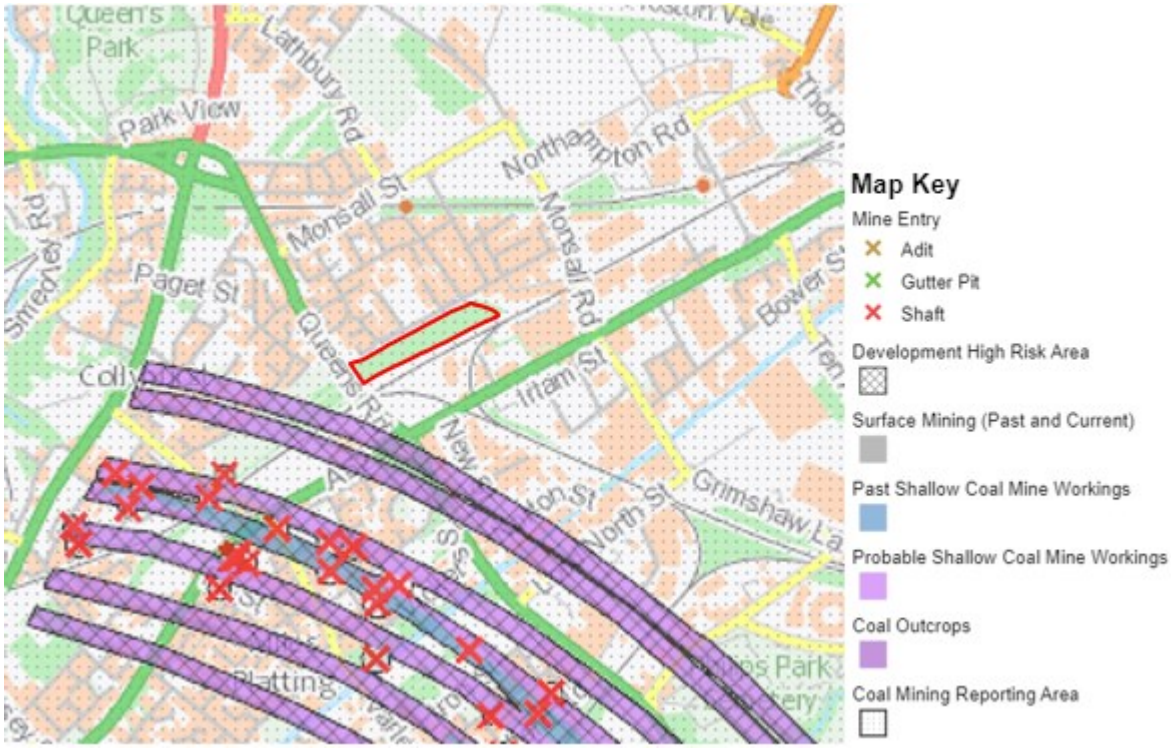
4.5. COAL MINING INFORMATION

Prior to the enactment of the Coal Mines Regulation Act (1872), which came into force on the 1st January 1883, there was no statutory requirement to record the extent of abandoned mine workings and as such the CA has no knowledge of extensive workings throughout the UK Coal Fields where shallow workings are present at a depth that could result in a subsidence event in the future (through successive cavitation) associated with failure of support mechanism.

To determine if a site may have unrecorded or recorded coal mine workings requires the consideration of a wide range of information and E3P has completed a review of relevant information in relation to potential coal mining activities.

In the first instance, E3P has reviewed the Coal Authority Online Viewer and an excerpt of this is presented as Figure 4.2. This map shows that the site does not lie within a development high-risk area. Furthermore, there are coal seams to the south which appear to dip away from the site. The map also indicates that no shallow workings beneath the site and there are no mine shafts on the site.

FIGURE 4.2 EXCERPT OF THE COAL AUTHORITY ONLINE VIEWER



As the site is within an area affected by Coal Mining E3P has obtained a Coal Authority Consultants Coal Mining Report for the site (Ref: GS-9081814).

Table 4.5 provides a summary of pertinent coal mining information with this report.

TABLE 4.5 COAL MINING INFORMATION

SOURCES OF INFORMATION	SUMMARY
Known Past Underground Mining	See below
Probable Unrecorded workings	No
Spine Roadways at Shallow Depth	No spine roadway recorded at shallow depth.
Mine Entries within 100m of the site	None recorded within 100 metres of the enquiry boundary.
Mine Abandonment plans	No

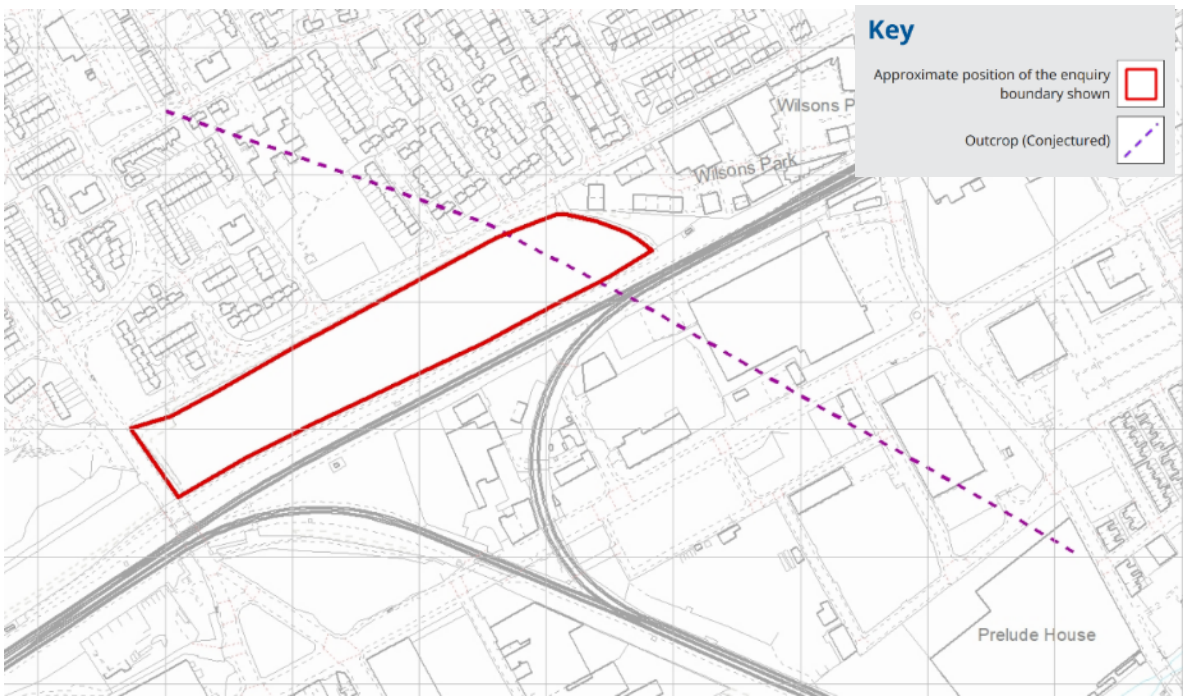
SEAM	ANGLE OF DIP	EXTRACTION THICKNESS	DEPTH	YEAR LAST MINED
Parker	17.9	80	137	1935
Roger	16.2	180	524	1964
Crombouke	16.9	120	540	1936
Roger	17.2	180	542	1964
Crombouke	21.0	120	607	1924
Roger	16.1	180	622	1961
Roger	17.4	180	630	1967
Roger	20.8	180	636	1963

SOURCES OF INFORMATION	SUMMARY
Known outcrops	One conjectured seam was identified crossing the site. The CA provided the following information related to this: Seam Name: Doctor Workable: No
Faults / Fissures	No faults, fissures or breaklines recorded.
Opencast mines	None recorded within 500 metres of the enquiry boundary.
Coal Authority Managed Tips	None recorded within 500 metres of the enquiry boundary.
Remediated Sites	None recorded within 50 metres of the enquiry boundary.
Coal Mining Subsidence	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
Mine Gas	None recorded within 500 metres of the enquiry boundary.
Mine Water	None recorded within 500 metres of the enquiry boundary.
Future Underground Mining	None recorded.
Coal Authority Development Advice	None.
British Geological Survey Mapping	The 1:50,000 scale geological mapping for the area does not note the presence of any coal seams underlying the site.
Review of Coal Authority Archive	No CA archives/mine abandonment plans have been reviewed.
Historical Ordnance Survey Mapping	A review of the 1:10,000 Ordnance Survey mapping from circa 1848, which has records of mine workings that predate the Mining & Regulation Act of 1872, identified the following features indicative of historical mine workings in proximity to the application site: - Coal pit – 500 m southwest. - Coal pit – 500 m south - Three separate coal pits 750 m south In consideration of the historical mining features in proximity to the site and the potential for coal close to the surface, it is considered unlikely that coal extraction has occurred, underlying the site at shallow depths.
Historical Site Investigations	E3P has not been provided with any historic site investigation reports.

4.5.1. COAL AUTHORITY PLAN

The Coal Authority plan referenced: GS-9081814_Large Plot shows the conjectured coal seam beneath the site and this is presented in Figure 4.3.

FIGURE 4.3 COAL AUTHORITY PLAN FOR THE SITE



Given the potential presence of a seam at the site confirmatory boreholes may be required to demonstrate that the coal is not of workable thickness.

4.6. PRELIMINARY MINE GAS ASSESSMENT

If coal mining is present below the site then this may be a potential source of ground gas that could pose a risk to site end users. A preliminary mine gas assessment is provided within Table 4.6

TABLE 4.6 PRELIMINARY MINE GAS ASSESSMENT

SCENARIO	DISCUSSION	RATING
Are there known coal seams beneath the site?	Yes – three known coal seams are below the site.	Moderate
Are there coal seams within 150m of the top of bedrock?	Yes – there is a coal seam beneath the site known to be 137 m bgl.	Moderate
Are there any known workings below the site?	Yes – there are known workings from > 137 m bgl	Moderate
Are the underlying drift deposits impermeable?	Yes – the site is underlain by approx. 20 m of clay	Low

SCENARIO	DISCUSSION	RATING
Are there any mine entrances within the site boundary or within 50m of the site?	No	Low
Are there any faults below the site or in close proximity?	No faults, fissures or breaklines recorded.	Low
Are there any records of mine gas emissions on or within 50m of the site?	No	Low
Are there any records of historical mine stabilisation works?	No	Low
Evidence of rising groundwater in flooded mine workings?	Not known	Low
OVERALL MINE GAS RISK **(IF MODERATE/ HIGH THEN FURTHER ASSESSMENT IS REQUIRED)**		Low
Source: The site is underlain by known coal workings at moderate depth, which are a potential source of ground gas. **Pathway:** The site is underlain by approx. 20 m of low-permeable clay therefore the likelihood of mine gas migration through the clay to the ground surface is low. There are also no known faults below the site which eliminates a preferential pathway for mine gasses to reach the ground surface. **Recommendations:** Further assessment is required is likely to be required in relation to the presence of ground gas more generally associated with the presence of Made Ground but the risk associated with coal mine related gas is likely to be low given the depth of the known seams.		

4.7. COAL MINING RISK ASSESSMENT

This risk assessment comprises a desk-based review of all available information on coal mining issues that are relevant to the application site deemed to be located within a high-risk area. This includes:

- Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrating how coal mining issues have influenced the proposed development; and
- Demonstrating to the local planning authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

The coal mining risk assessment is summarised in Table 4.7

TABLE 4.7 SUMMARY OF COAL MINING RISK ASSESSMENT

COAL MINING RISK ASSESSMENT	YES/NO	RISK ASSESSMENT
Recorded Underground Coal Mining at Shallow Depth (< 30 m)	No	Low
Recorded Underground Coal Mining at Shallow Depth (> 30 m)	YES	Low
Evidence of Unrecorded Surface Extraction of Coal Outcrop	No	Low
Unrecorded Underground Coal Mining at Shallow Depth (< 30 m)	No	Low
Mine Entries (Shaft/Adits)	No	Low
Coal Mining Geology – Fractures/Fissures	No	Low
Recorded Gas Emissions	No	Low
Recorded Mining Surface Hazard	No	Low
Surface Mining (Opencast)	No	Very Low/Low

Based on the above, the coal mining risk assessment is determined to be low risk.

4.8. RADON RISK POTENTIAL

The Groundsure report indicates the site is situated in an area where less than 1% of homes are above the "Action Level" and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions.

4.9. PRELIMINARY GEOTECHNICAL ASSESSMENT

Based on the desk-study information, the following geotechnical assessment has been made:

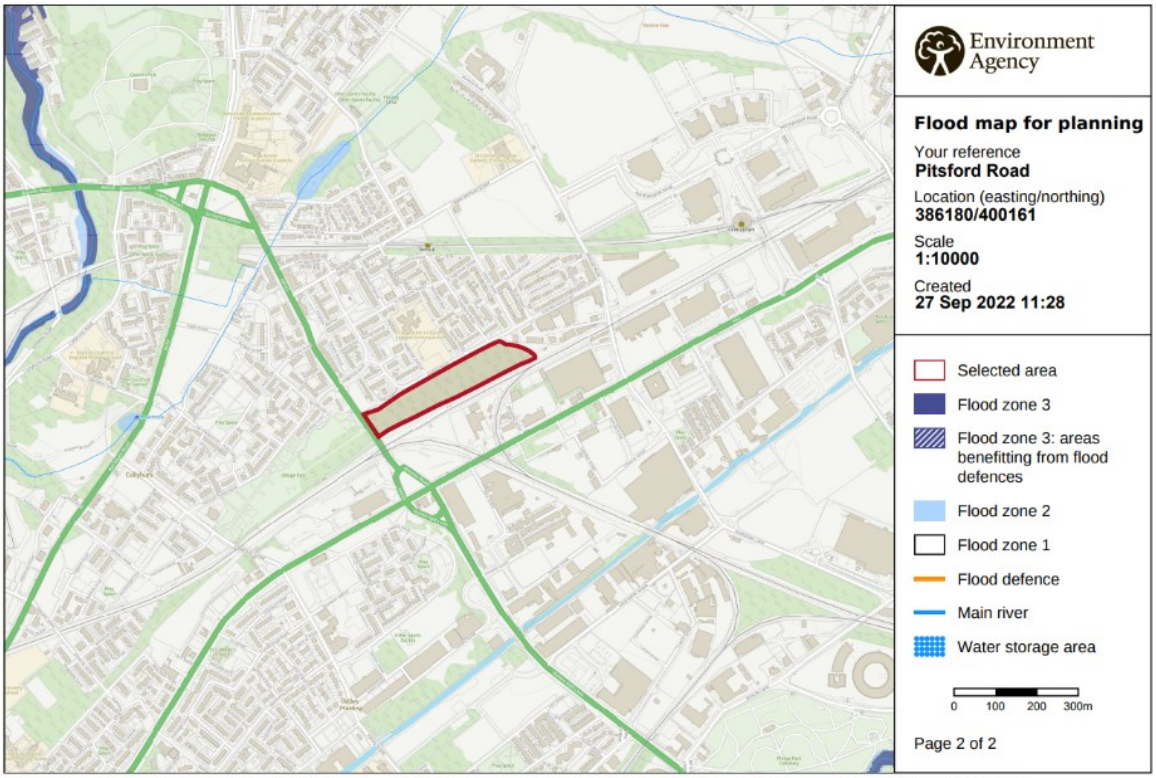
- Given the historic development on the site, it is likely there will be extensive Made Ground fill deposits and obstructions. Any potential existing structures will require demolition, with all relict foundations grubbed out, prior to the construction of the proposed development.
- The western boundary is steeply sloped to Pitsford Road. In order to construct low-rise residential development, some earthworks may be required to create the development platform.
- The site is covered with dense vegetation including mature trees and stands of Japanese knotweed. The interaction of trees upon clay strata will need to be determined and the knotweed will need to be delineated, treated and/or removed from any areas of proposed development.

4.10. HYDROLOGY

There are no surface water features within 250 m of the subject site.

The site is located within a currently defined "Flood Risk Zone 1"; defined as land assessed as having less than 1 in 1,000 annual probability of river or sea flooding (< 0.1%), and as such is considered to be unaffected by river flooding. In addition, the Groundsure report states there is a Low risk for groundwater flooding to occur at the site. The Environment Agency (EA) Flood Risk Map for the site is presented in Figure 4.4.

FIGURE 4.4 EA FLOOD RISK MAP



Source - https://flood-map-for-planning.service.gov.uk/

4.11. INDUSTRIAL LAND USES

The site is located between a residential and commercial area, therefore there are a number of entries within the trade directory for industrial land uses. The closest included a lifting and handling equipment company 22m north of the site. Industrial uses beyond this include: fruit and veg growers, vehicle servicing, electrical equipment, industrial repairs, colours, chemicals and waters softeners and suppliers, photographic and optical equipment.

4.12. SENSITIVE LAND USES

The closest residential properties are located adjacent to the northern boundary of the site. St Augustine's Primary School is also located adjacent to the northern boundary. Additionally, the site is within an SSSI impact risk zone.

No other environmentally sensitive land uses have been identified within close proximity to the site.

4.13. SITE SENSITIVITY ASSESSMENT

The site is assessed to be located within a "Moderate" sensitivity setting as discussed within Table 4.8.

TABLE 4.8 SITE SENSITIVITY ASSESSMENT

SENSITIVITY PROFILE	DISCUSSION	RATING
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The site is not located within a Groundwater Source Protection Zone or Drinking Water Safeguard Zone	**Negligible**
Distance to the Closest Groundwater Abstraction Point	473 m Southeast located to Norton Street, Miles Platting – Groundwater source for general use.	**Low**
Aquifer Classification in Superficial Drift Deposits	Secondary Undifferentiated aquifer	**Low**
Aquifer Classification in Bedrock	Secondary A aquifer	**Low / Moderate**
Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?	The underlying superficial deposits are likely to comprise gravelly CLAY to depths in excess of 10.00 m bgl which may reduce the potential for mobile phase contaminants to migrate towards the bedrock aquifer or gasses from worked coal seems to migrate towards the surface.	**Low**
Is the Site Located Within 50 m of a Surface Watercourse?	The risk of surface water is negligible given the absence of a viable receptor within the influencing distance of the site.	**Negligible**
Sensitive Land Uses	Residential properties and primary school.	**Moderate**
OVERALL SITE ENVIRONMENTAL SENSITIVITY		**Low / Moderate**

5. REGULATORY DATA

5.1. LANDFILL SITES AND WASTE TREATMENT SITES

There are no landfills located within 250 m of the site boundary.

5.2. REGULATORY DATABASE

The information summarised in Table 5.1 has been obtained from a commercially available environmental database. The summary table only includes records from within 250 m of the subject site and not otherwise detailed in the report.

TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

RECORD	ENTRIES WITHIN 250 m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified
Authorised Industrial Processes (IPC/IPPC/LAPPC)	0	None Identified
Fuel Stations Entries	1	144 m SE: Shell – for road and rail use
Licensed Radioactive Substances	0	None Identified
Enforcements, Prohibitions or Prosecutions	0	None Identified
Discharge Consents	1	185 m SW: Licence assigned to Work 6/ Work 5 Sewer Const for a sewerage discharge due to storm overflow
Pollution Incidents	3	108 m SE: 06/09/2002 – (Smoke) Minor air impact 211 m SE: 05/04/2001 – (Not identified) No impact 224 m E: 13/03/2003 – (Acids) Minor water impact
Consents Issued Under the Planning (Hazardous Substances) Act 1990	0	None Identified
Control of Major Accident Hazard (COMAH) Sites	0	None Identified

5.1. UNEXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area at moderate risk from possible unexploded ordnance (UXO) resulting from the Second World War. The Zeticia UXO Risk Map is presented as Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP



Source - https://zeticauxo.com/downloads-and-resources/risk-maps/

5.2. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 5.2.

ON-SITE SOURCES OF CONTAMINATION

The following potential on-site sources of contamination have been identified:

- Made Ground (historical residential/farm buildings/railway sidings) – Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPHs), heavy metals, Asbestos containing materials (ACMs), SVOC, VOC
- Ash – Heavy Metals , PAHs

OFF-SITE SOURCES OF CONTAMINATION

The following potential off-site source of contamination have been identified:

- Made Ground deposits – containing PAHs, ACM, heavy metals, asbestos and ground gas (carbon dioxide and methane).
- Historic Iron Works – heavy metals and ash, Oils and lubricants (TPHs, VOC, SVOC).
- Railway – TPHs, ACM, Heavy Metals and PAHs
- Brewery – PAHs
- Carriage and Wagon Works – PAHs, hydrocarbons, heavy metals

5.3. CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 5.2 has been prepared for the site.

TABLE 5.2 CONCEPTUAL MODEL

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL1 PL2	Heavy Metals, non-volatile PAH (Made Ground)	▪ Dermal contact. ▪ Dermal contact and ingestion.	▪ Future site users. ▪ Construction Workers. ▪ Off-site receptors.	Moderate	Moderate	LOW
Assessment: Given the sites use as railway sidings including some associated builds there are numerous points at which spills, leaks, storage of TPHs, lubricants, fuels, ash could have originated and as such there is a likely presence of Heavy metals, TPHs, SVOC, VOC, ACMs and PAH throughout the Made Ground. **Recommendation:** An intrusive ground investigation is required to confirm this aspect of the CSM but where Made Ground is present, this may pose a short-term risk to construction workers who may come into contact with impacted soils during earthworks. All construction works must be undertaken using the appropriate Personal Protective Equipment (PPE) to remove this potential risk. Future site users may come into contact with impacted soils within any garden and landscaped areas. If impacted soils are identified then localised remediation or an appropriate cover system, designed in accordance with best practice will be required to remove the exposure pathway and therefore risk to future site users.						
PL3	ACM in Made Ground (Historical development)	▪ Inhalation of dust.	▪ Future site users. ▪ Construction Workers. ▪ Off-site receptors	Moderate	Moderate	LOW
Assessment: Former buildings may have contained asbestos and dust associated with former rail trucks and materials imported to level the site can also be a source of asbestos, which may potentially be present within the Made Ground. **Recommendation:** Intrusive ground investigation is required to assess the presence of any potential sources of ACM and to undertake further analysis and quantification. Risks from ACM can be mitigated through the development of a detailed enabling works strategy following guidance and protocol specified within the Control of Asbestos Regulations (2012) and industry best practice as detailed in CIRIA733 (Asbestos in Soil and Made Ground: A guide to understanding risk). Construction works completed with appropriate RPE, PPE and provision of welfare. WM3 analysis will be required for any waste soils removed off-site.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL4	Volatile contaminants such as hydrocarbons.	▪ Inhalation of vapours. ▪ Migration through permeable strata and preferential pathways.	▪ Future site users. ▪ Off-site receptors.	Low/Moderate	Moderate	LOW
Assessment: Oils and fuel may have been stored at the sidings and the presence of localised hydrocarbon impact cannot be entirely discounted. Where hydrocarbons are present, these may pose a risk to future site users via the inhalation of vapours indoors. The risks to construction workers will be mitigated through the use of appropriate PPE/RPE and welfare. **Recommendation:** An intrusive investigation is required to confirm this aspect of the conceptual site model and if a risk is identified, it can be mitigated through either in-situ/ex-situ treatment or delineation and excavation of impacted soils for subsequent off-site disposal.						
PL4 PL5	Methane, carbon dioxide (coal measures and Made Ground)	▪ Inhalation of gas. ▪ Migration through permeable strata and preferential pathways. ▪ Explosion in confined spaces.	▪ Future site users. ▪ Buildings. ▪ Off-site land users.	Moderate	Low/Moderate	LOW
Assessment: Thick Made Ground deposits are likely to be present beneath the site and these may give rise to locally elevated levels of methane and carbon dioxide which may pose a risk to future site users if they were allowed to accumulate within proposed buildings and structures. There is not considered to be a significant risk associated with coal measures gas as there is a significant thickness of Glacial Till that would prevent vertical migration. **Recommendation:** Further assessment of ground gas would be necessary to confirm this aspect of the CSM but it is likely that some form of mitigation measures will be required within proposed buildings.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL5	Mobile contaminants such as metals, PAH and hydrocarbons, compounds	▪ Surface runoff. ▪ Migration through permeable strata and preferential pathways. ▪ Perched waters migration.	▪ Groundwater (secondary A aquifer).	Low/Moderate	Low/Moderate	LOW
Assessment: Potential sources of mobile contamination cannot be entirely discounted, however, its migration is likely to be reduced due to the presence of low permeability Glacial Till above the secondary A aquifer. **Recommendation:** Sample of soils and perched groundwater is recommended in order to confirm this aspect of the conceptual site model.						
PL6	Sulphate (potential ash within Made Ground)	▪ Sulphate attack on concrete.	▪ Building structure.	Low/Moderate	Low	LOW
Assessment: Assessment must be undertaken to confirm the levels of pH and sulphate within Made Ground deposits and thus determine the concrete classification. **Recommendation:** Intrusive investigation is required to confirm the conceptual site model.						
PL7	Organic contaminants such as hydrocarbons.	▪ Ingestion of tainted water supply.	▪ Future site users. ▪ Water pipes.	Low/Moderate	Low	LOW
Assessment: Low likelihood probability as some contamination is anticipated across the site at pipeline depth. **Recommendation:** Intrusive investigation required to confirm the conceptual site model.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL8	Phytotoxic contaminants (Made Ground)	▪ Direct Contact (plant uptake).	▪ Flora	Likely	Low	LOW
Assessment: Unlikely probability as no significant contamination identified on site **Recommendation:** Intrusive investigation is required to confirm the conceptual site model.						

Main exposure pathways:
PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plants;

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. SITE SUMMARY

Current Site Use	The subject site is rectangular in shape and located to the northeast of Manchester city centre. It is currently unoccupied but bound to the north and east by a National Rail access road. The site is predominantly vegetated brownfield land with the only structures present appearing to be a perimeter metal fencing around the site, and a brick retaining wall along the southwest boundary. No further structures have been identified within the site boundary. The whole site has been artificially raised and levelled where historical railway sidings were previously located which has created an embankment and steep slope on all sides. Street lighting is present along the northwest boundary of the site along Pitsford Road.	
Historical Site Use	A review of the pertinent Ordnance Survey mapping suggests that the site comprised agricultural land circa 1848 until circa 1891 when the site was raised and levelled and had railway sidings installed with associated small buildings in the south of the site. Further development to the sidings continued in circa 1908. Various small structures were erected and removed between 1908 and 1980. The railway sidings were fully removed from the site in circa 1985. The site has been left vacant to the present day with dense self-seeding vegetation growing during this time.	
Site Sensitivity	Low / Moderate.	
Environmental Data	Drift Geology	Till of CLAY and GRAVEL.
	Bedrock Geology	Pennine Middle and Upper Coal Measures Formation– MUDSTONE, SILTSTONE AND SANDSTONE.
	Faults	The nearest geological fault is located >200m from the site and not considered a risk.
	Hydrogeology	Secondary A bedrock aquifer with secondary undifferentiated superficial aquifer recorded. Two groundwater abstraction licences are recorded within 1 km of the site located 97 m and 473 m southeast west for general cooling uses.

Environmental Data	Hydrology	No surface water features are present within 25 m of the site. Based on the local topography within the site boundary, it is considered likely that shallow groundwater, if present, will flow in a westerly direction, following the topographical gradient towards the adjacent lower-lying Pitsford Road.
	Flood risk	Unaffected by flooding from rivers.

6.2. CONTAMINATED LAND ASSESSMENT

Human Health	Due to the previous historical developments on the site, Made Ground is likely to be present across the site. Due to the association with railway sidings, the Made Ground could be a potential source of heavy metals, asbestos containing material, PAH and hydrocarbon compounds. If present these potential contaminants may pose a risk to future residential site users through dermal contact, ingestion and inhalation of soils and dust.
Controlled Waters	The site is in a low sensitivity setting with respect to controlled waters.
Ground Gas	Made Ground may be a source of hazardous ground gases such as carbon dioxide and methane. These may pose a risk to future site users if they can accumulate within the proposed buildings and structures.
Potable Water	A UKWIR will be required for portable water supply pipework.

6.3. COAL MINING

Coal Mining	Coal mining assessment has indicated that there are unlikely to be shallow mine workings beneath the site and that there are no mine entrances within the site boundary. Given the potential presence of a seam at the site marked on CA mapping, confirmatory boreholes may be required to demonstrate that the coal is not of workable thickness.

6.4. GEOTECHNICAL ASSESSMENT

Geological	Bedrock geology is MUDSTONE, SILTSTONE and SANDSTONE has been proven locally from depths of 29.26 m bgl (BGS Borehole).
Civil and Structural	A retaining wall is present along the southern boundary of the site. A steep slope/embankment is present along the northern boundary. Historical development and demolition may have resulted in the presence of relict foundations.
Abnormal Foundations	Given the presence of trees, steep slopes and likely thick Made Ground deposits, and proposed development is likely to require an abnormal foundation solution.

APPENDIX I
LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the client as indicated in Section 1.3.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II
GLOSSARY

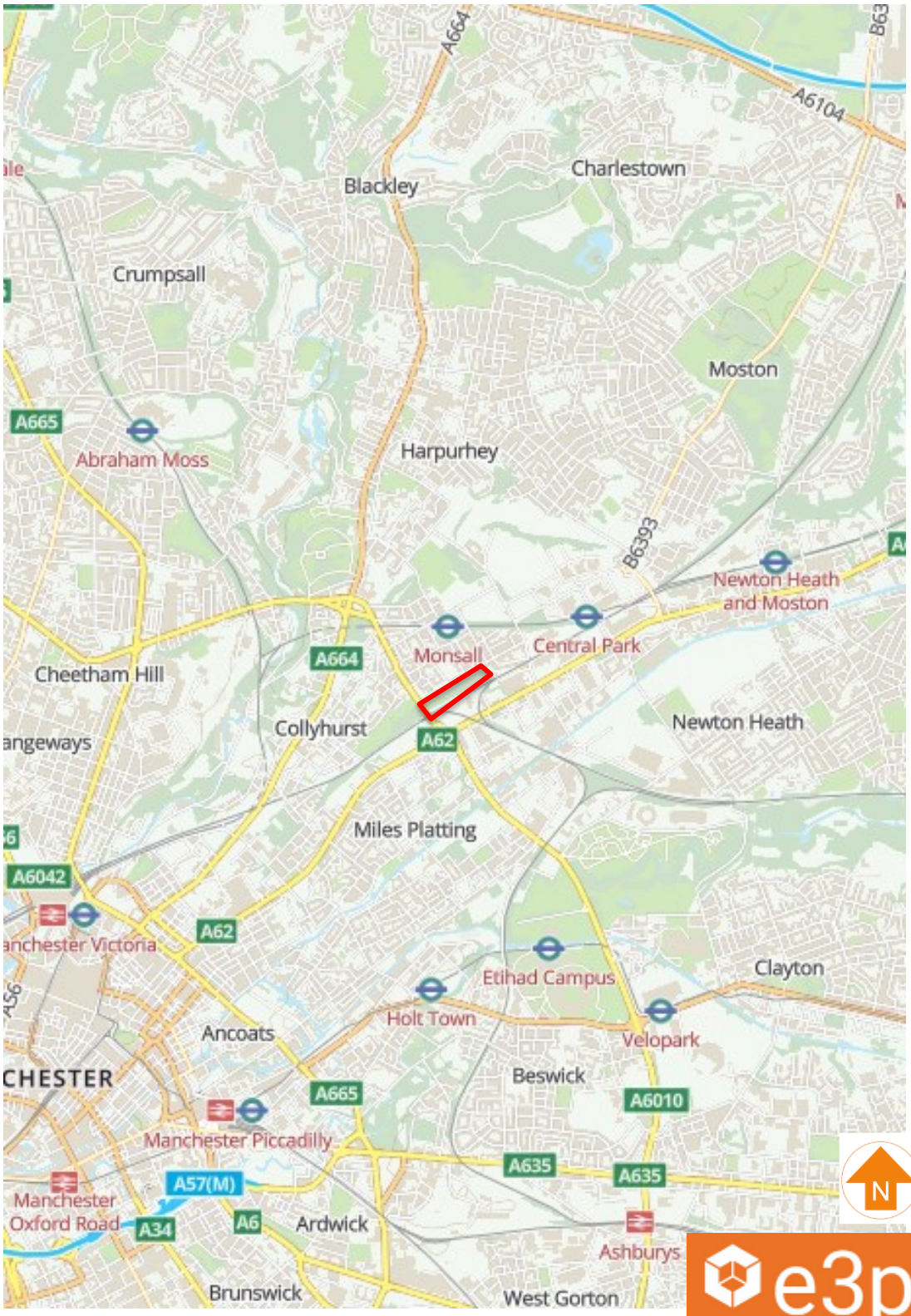
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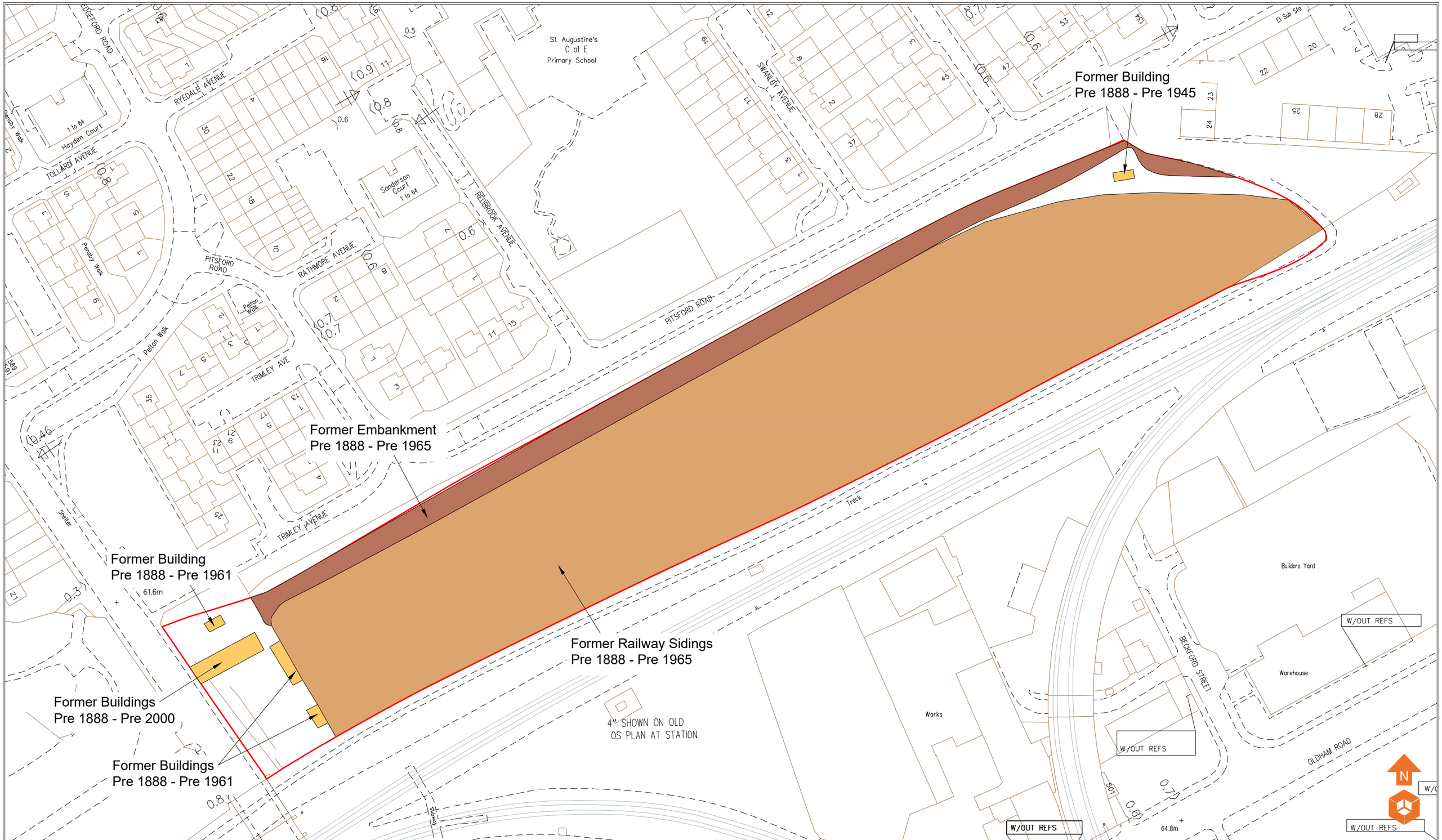
ACM	Asbestos-containing material	**MMP**	Materials management plan
ADS	Acoustic design statement	**ND**	Not detected
AST	Above-ground storage tank	**NDP**	Nuclear density probe
BGS	British Geological Survey	**NMP**	Noise management plan
BSI	British Standards Institute	**NPSE**	Noise policy statement for England
BTEX	Benzene, toluene, ethylbenzene, xylenes	**NR**	Not recorded
CA	Coal Authority	**PAH**	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	**PCB**	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	**PI**	Plasticity index
CIRIA	Construction Industry Research Association	**PID**	Photo ionisation detector
CLEA	Contaminated land exposure assessment	**POS**	Public open space
CML	Council of Mortgage Lenders	**PPE**	Personnel protective equipment
CoC	Contaminants of concern	**ProPG**	Professional practice guidance
CSM	Conceptual site model	**QA**	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	**SGV**	Soil guideline value
DWS	Drinking water standard	**SPH**	Separate-phase hydrocarbon
EA	Environment Agency	**SPT**	Standard penetration test
EQS	Environmental quality standard	**SVOC**	Semi-volatile organic compound
FFL	Finished floor level	**TPH**	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	**TPH CWG**	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	**UKWIR**	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	**UST**	Underground storage tank
HCV	Health criteria value	**VCC**	Vibro-concrete column
ICSM	Initial conceptual site model	**VOC**	Volatile organic compound
LEL	Lower explosive limit	**VRSC**	Vibro-replacement stone columns
LMRL	Lower method reporting limit	**VSC**	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	**WHO**	World Health Organisation
MCV	Moisture condition value	**WRAP**	Waste and Resources Action Programme
MIBK	Methyl isobutyl ketone	**WTE**	Water table elevation

m	Metres	**ppm**	Parts per million
km	Kilometres	**mg/m^3**	Milligram per metre cubed
% v/v	Percent volume in air	**m bgl**	Metres below ground level
mb	Millibars (atmospheric pressure)	**m bcl**	Metre below cover level
l/hr	Litres per hour	**mAOD**	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	**kN/m^2**	Kilonewtons per metre squared
ppb	Parts per billion	**µm**	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	**SSRT**	Site Specific Remediation Target
PSD	Particle Size Distribution	**DD**	Dry Density
CL:AIRE	Contaminated Land: Applications in Real Environments	**Mc**	Moisture Content
ρ	Bulk Density	**GPR**	Ground Penetrating Radar
NDP	Nuclear Density Probe	**FFL**	Finished Floor Level
LEL	Lower Explosive Limit	**UKWIR**	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	**LOD**	Limit of Detection

APPENDIX III
DRAWINGS

DRAWING 16-148-001 – SITE LOCATION PLAN





Historical Features

- Former Buildings
- Former Railway Sidings
- Former Embankment

P1	REVA	25.07.2022	LM	DC
Phase	Issue	Date	Drawn	Checked

Notes:

Client: L&G MH

Job No: 16-148

Date: 25.07.2022

Drawing No: 003

Scale: NTS

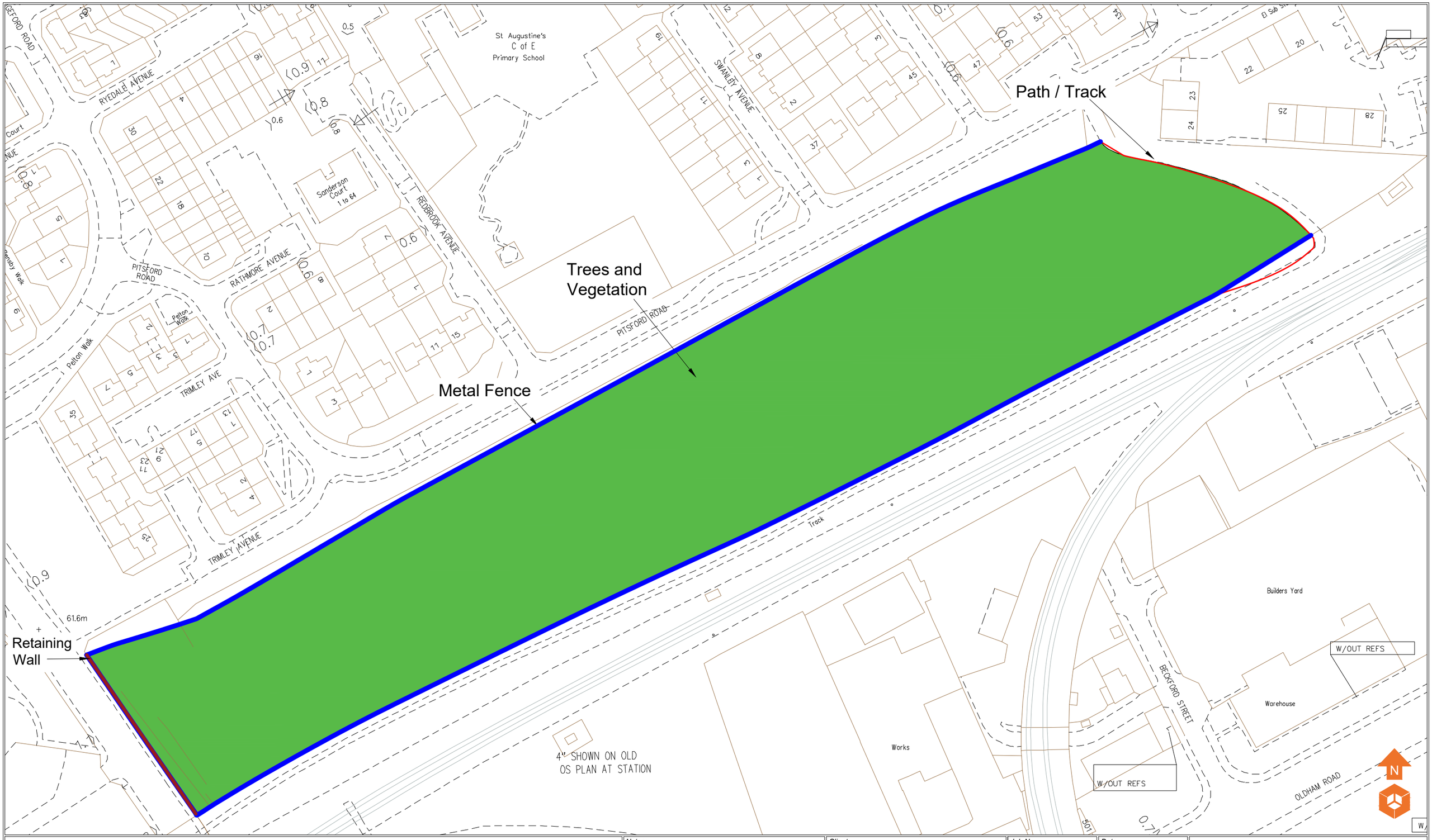
Job Title: Pitsford Road, Miles Platting

Drawing Title: Historical Features Plan

e3p

Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk

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Site Features

- Trees and Vegetation
- Path and Track
- Metal Fence
- Retaining Wall

P1	REVA	25.07.2022	LM	DC
Phase	Issue	Date	Drawn	Checked

Notes:

Client: L&G MH

Job No: 16-148

Date: 25.07.2022

Drawing No: 004

Scale: NTS

Job Title: Pitsford Road, Miles Platting

Drawing Title: Site Features Plan

Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
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APPENDIX IV
PHOTOGRAPHS

PLATE 1 SITE ENTRANCE



PLATE 2 VIEWSOUTHWEST ALONG PITSFORD ROAD



PLATE 3 VIEW WITHIN THE SITE



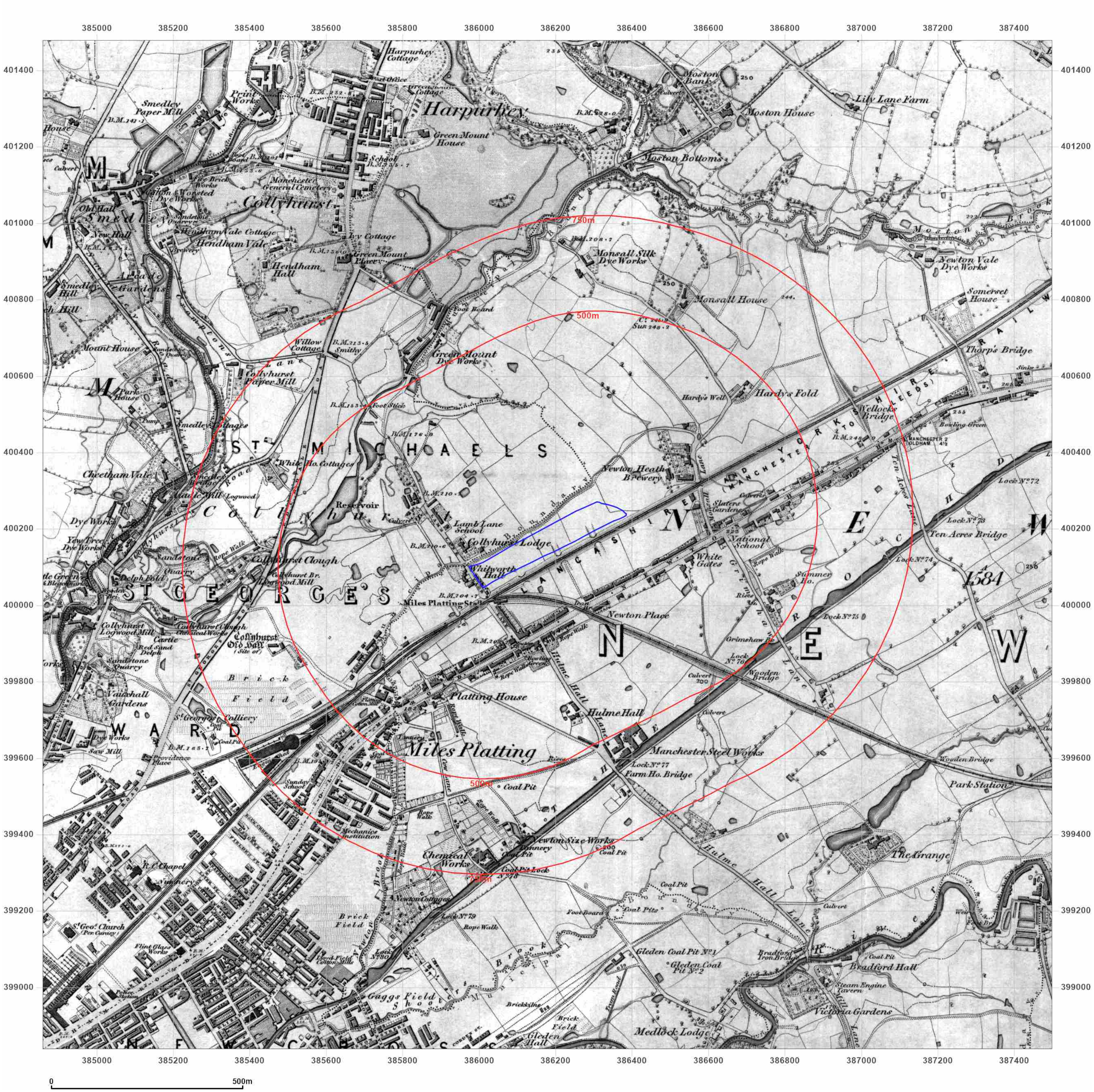
PLATE 4 TIPPED MATERIALS AROUND SITE.



PLATE 5 – RETAINING WALL IN WEST OF THE SITE



APPENDIX V
HISTORICAL MAPS



Groundsure INSIGHTS

Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

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

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Groundsure INSIGHTS

Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1891**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1891
Revised 1891
Edition 1891
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Groundsure INSIGHTS

Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1906**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1906
Edition 1906
Copyright N/A
Levelled N/A

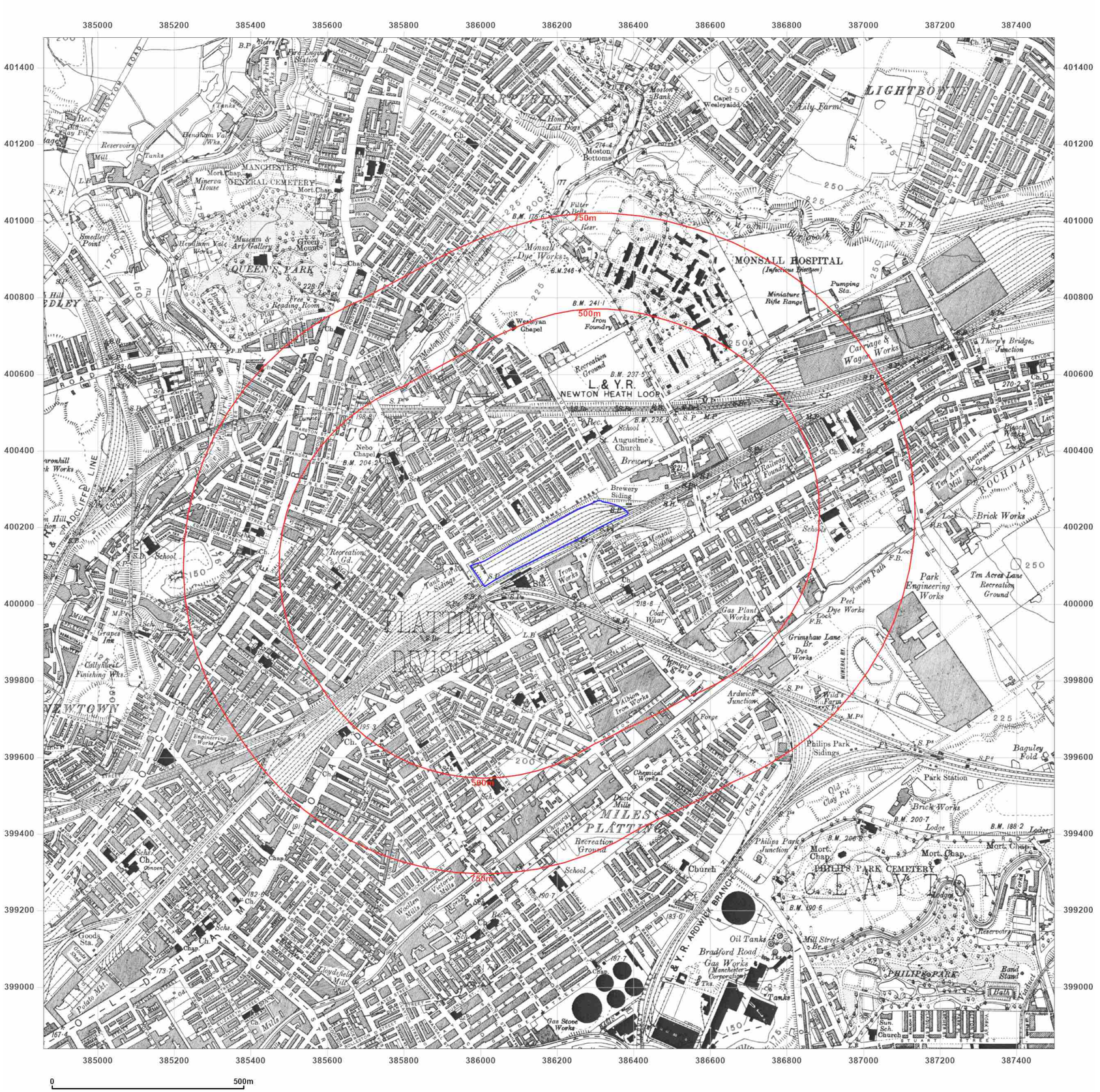
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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

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Site Details:

47, PITSFORD ROAD,
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Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1921
Edition 1923
Copyright N/A
Levelled 1906

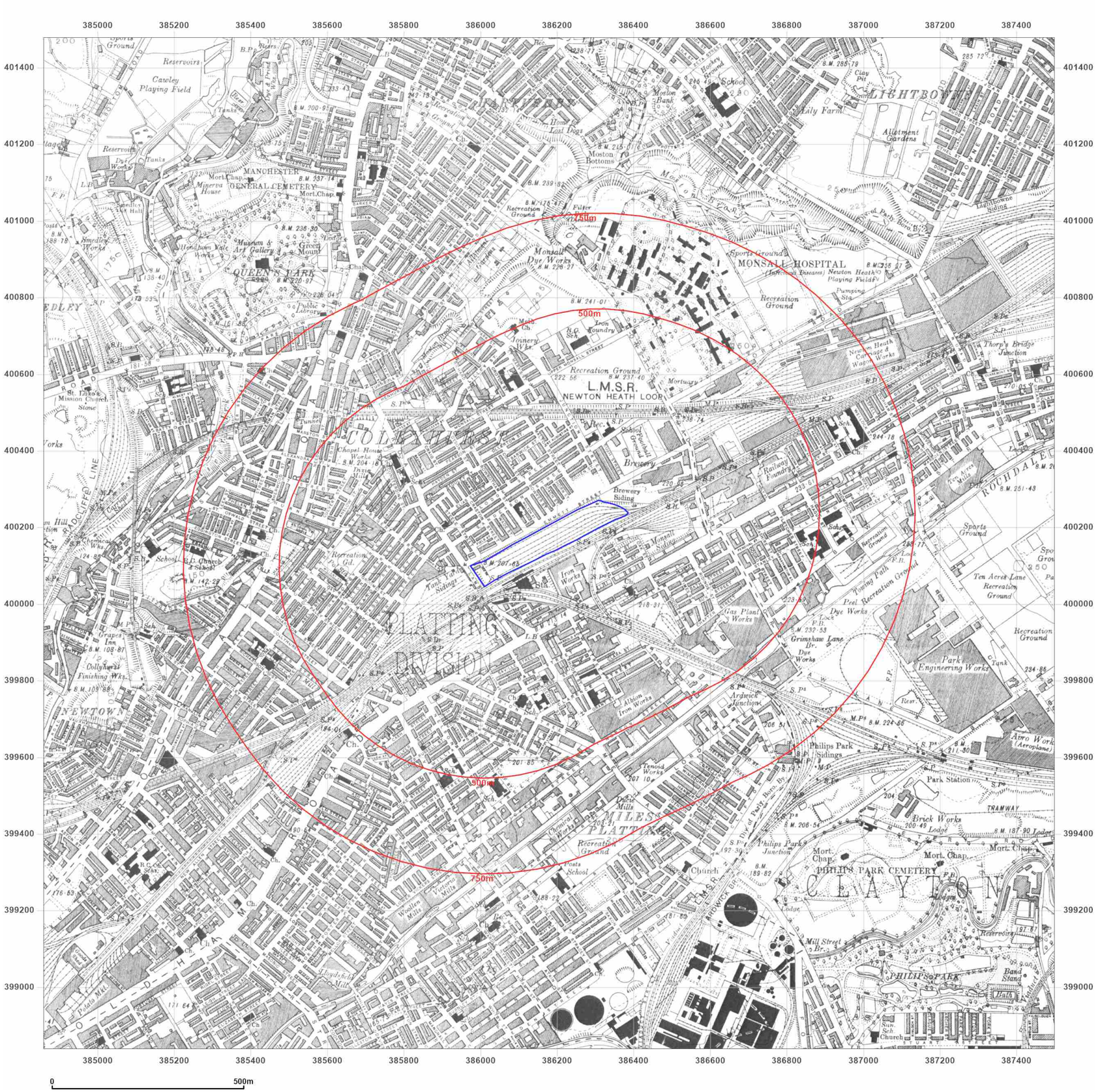
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1933**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1933
Edition 1933
Copyright N/A
Levelled 1927

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Site Details:

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MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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

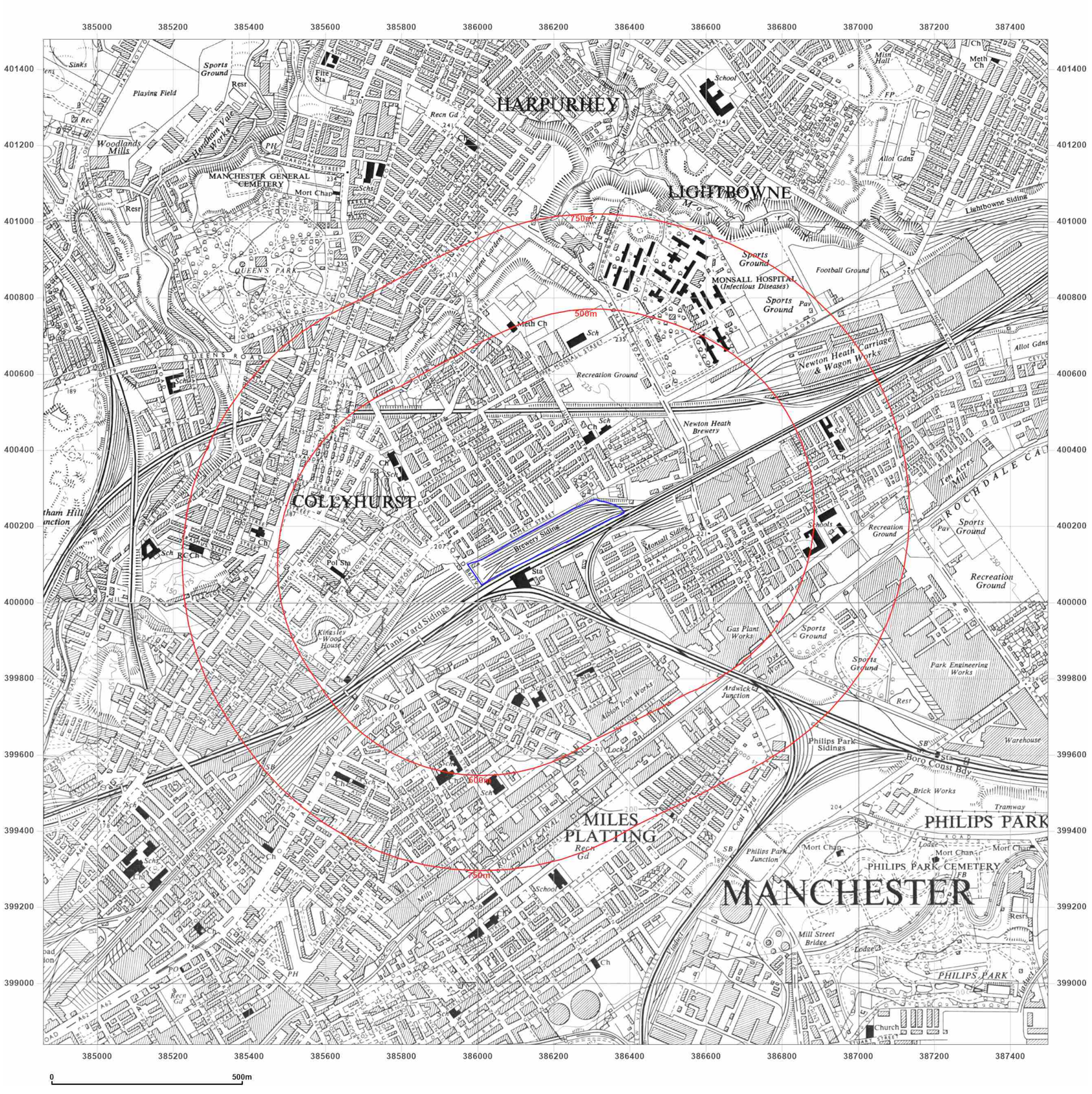
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

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

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Revised 1956
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: Provisional

Map date: **1966-1968**

Scale: 1:10,560

Printed at: 1:10,560

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

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

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

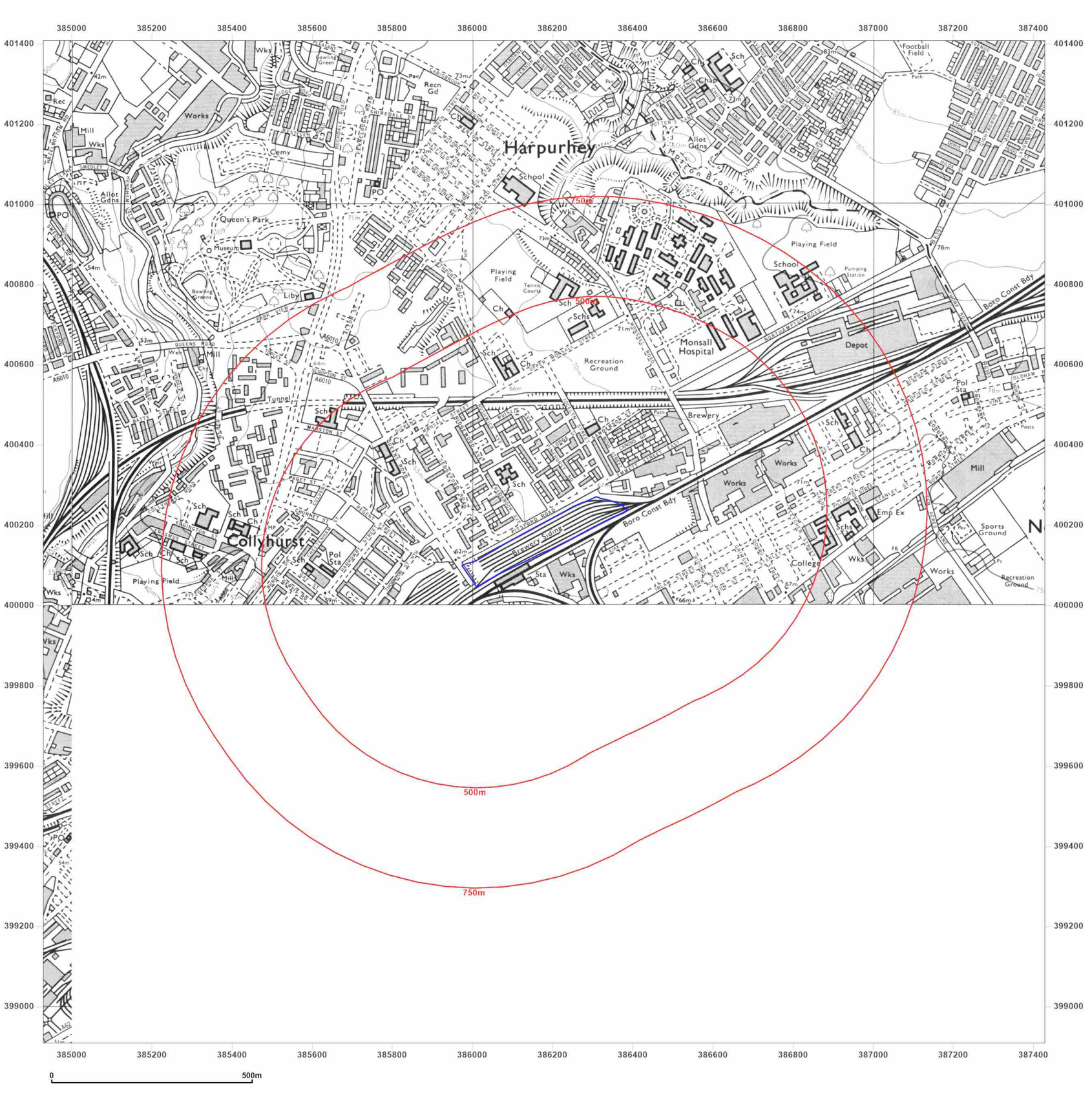
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MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **1972-1977**

Scale: 1:10,000

Printed at: 1:10,000

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

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

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

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Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **1980-1985**

Scale: 1:10,000

Printed at: 1:10,000

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

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

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

Surveyed 1976
Revised 1980
Edition N/A
Copyright 1981
Levelled 1976

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Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **1985-1988**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1987
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

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

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

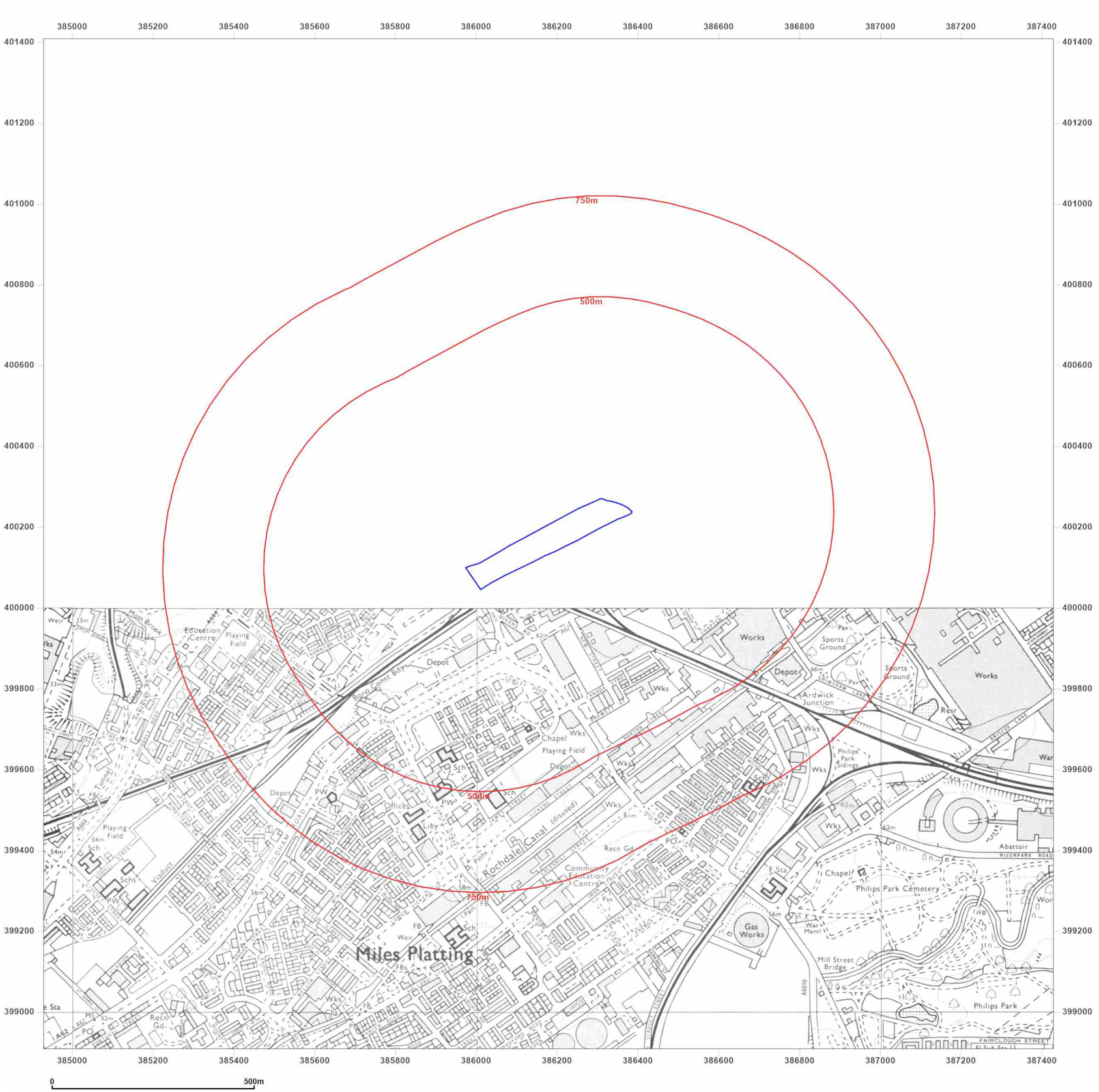
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Site Details:

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Client Ref: 002998
Report Ref: GS-9080628
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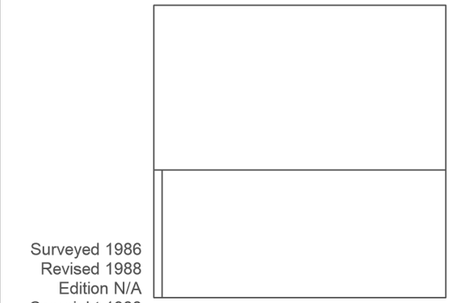
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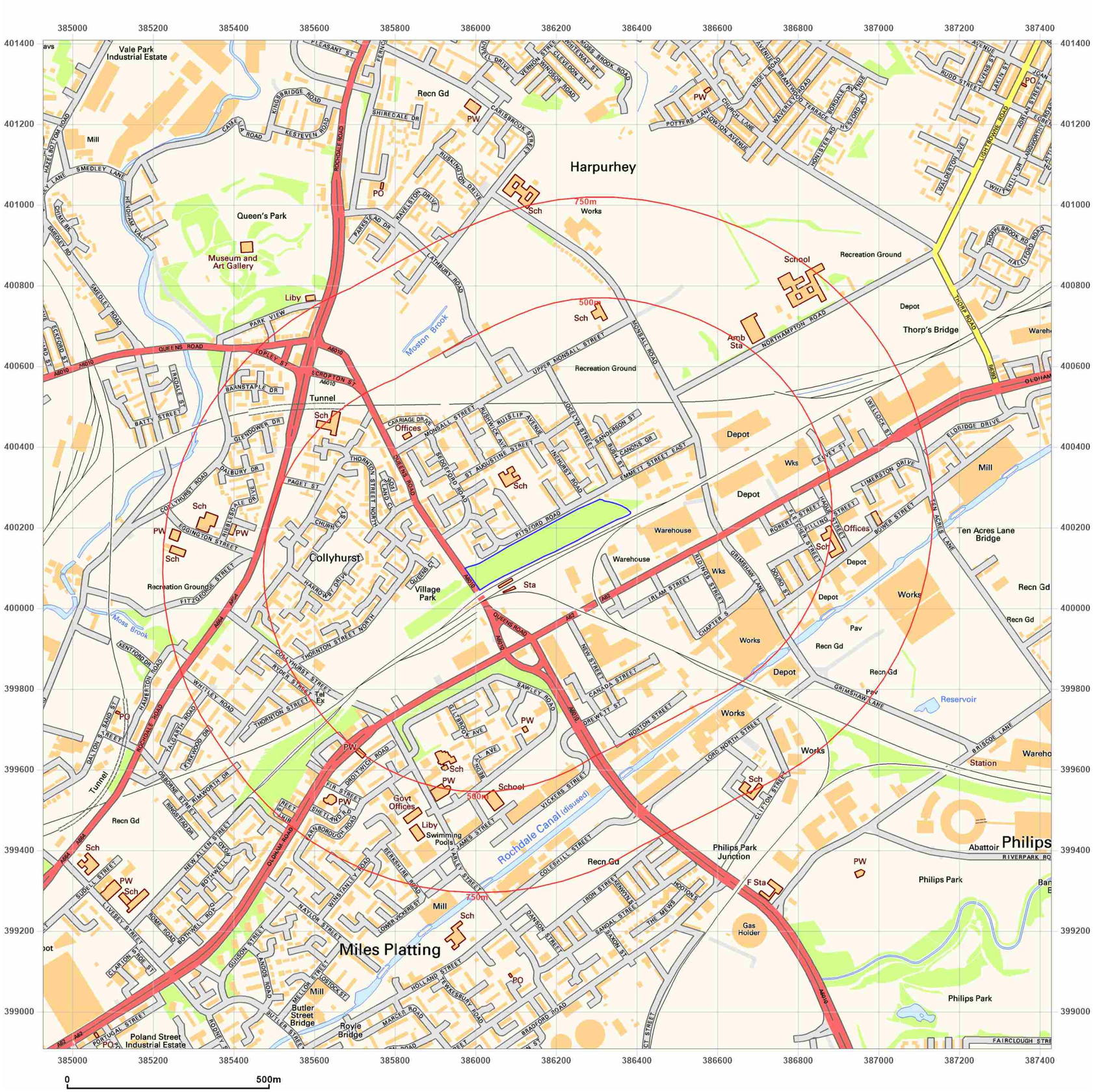
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Site Details:

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Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

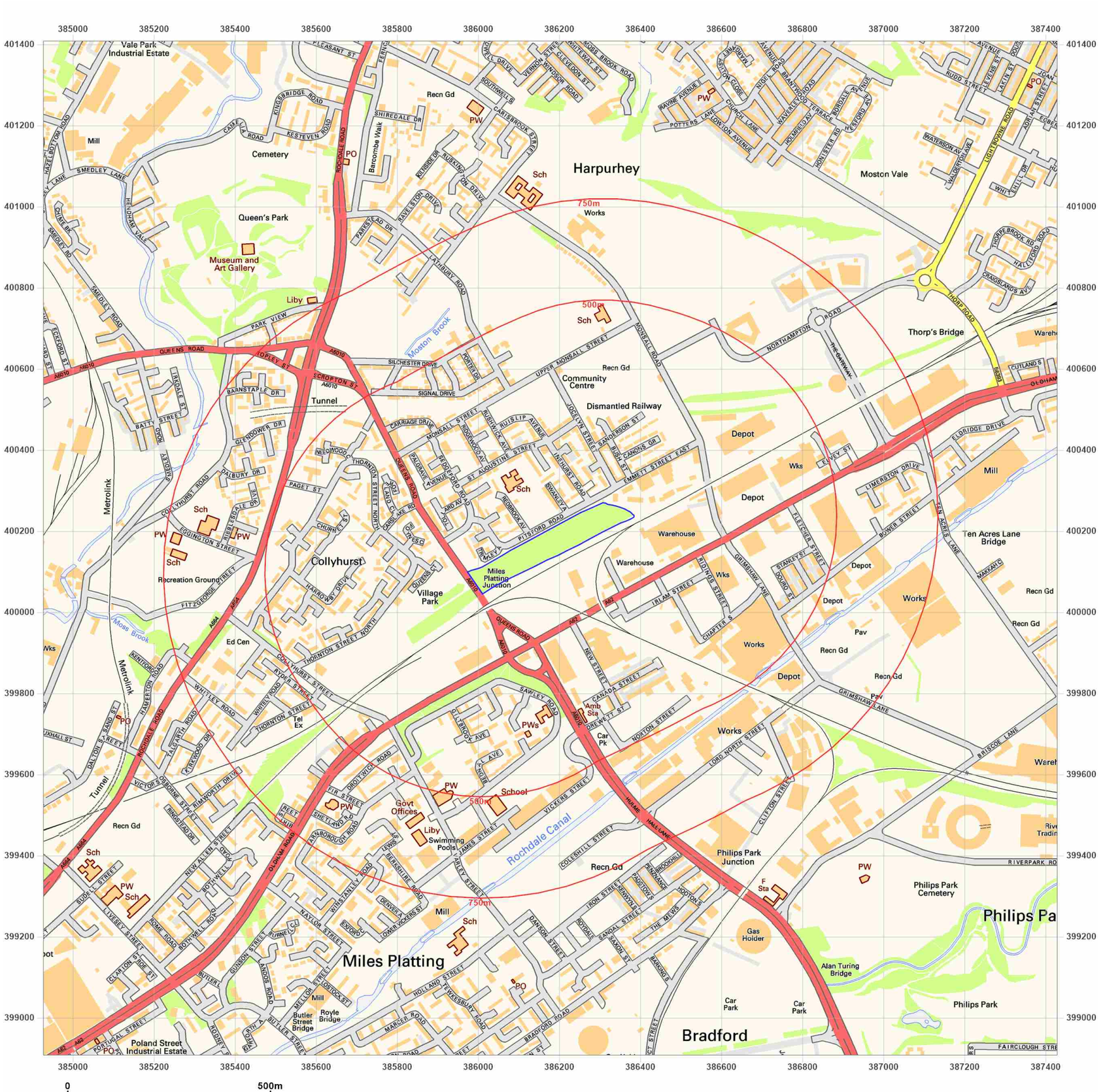
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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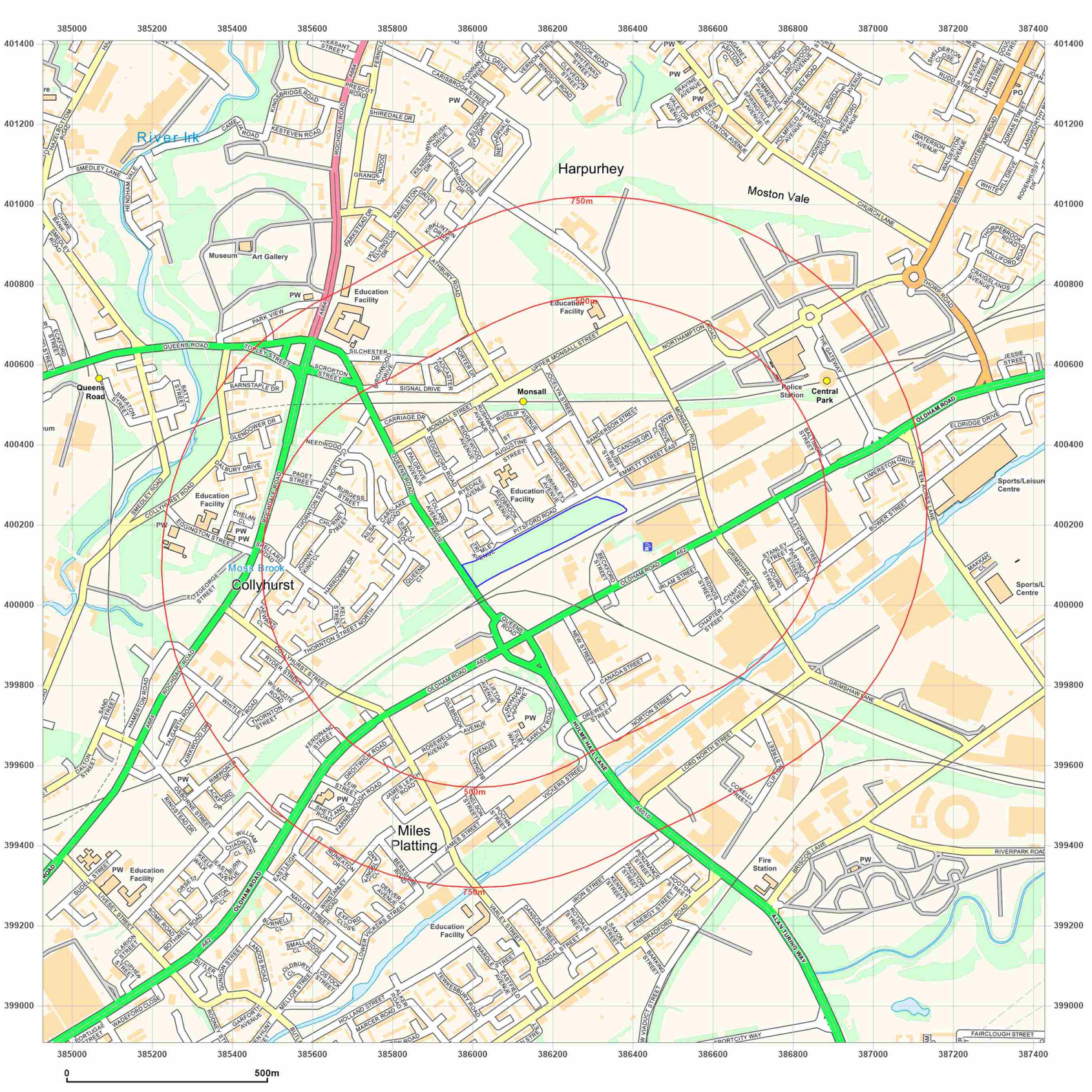
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Site Details:

47, PITSFORD ROAD,
MANCHESTER, M40 8GS

Client Ref: 002998
Report Ref: GS-9080628
Grid Ref: 386178, 400158

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

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2022

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APPENDIX X
COAL AUTHORITY REPORT AND MINE ABANDONMENT PLANS

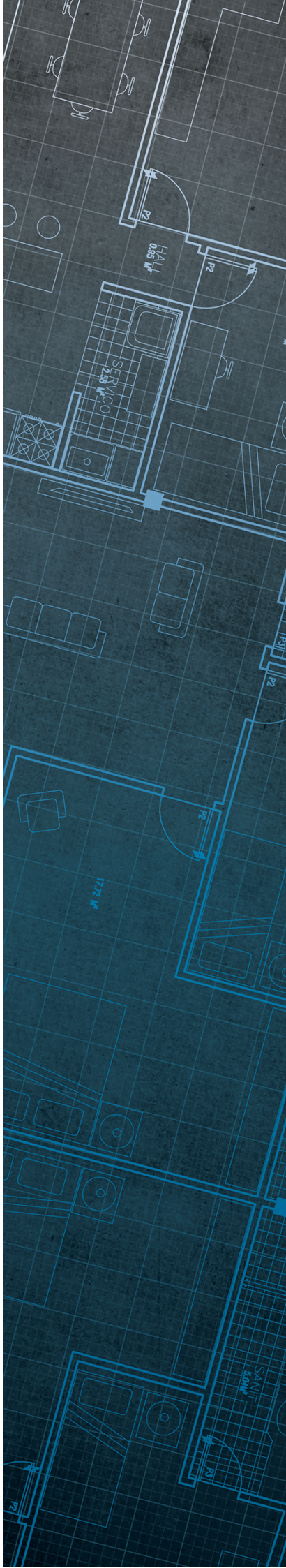
The Coal Authority

Consultants

Coal Mining Report

47, Pitsford Road, Manchester
Greater Manchester
M40 8G

Date of enquiry:	**27 September 2022**
Date enquiry received:	**27 September 2022**
Issue date:	**27 September 2022**
Our reference:	**51003314104001**
Your reference:	**GS-9081814**



Consultants

Coal Mining Report

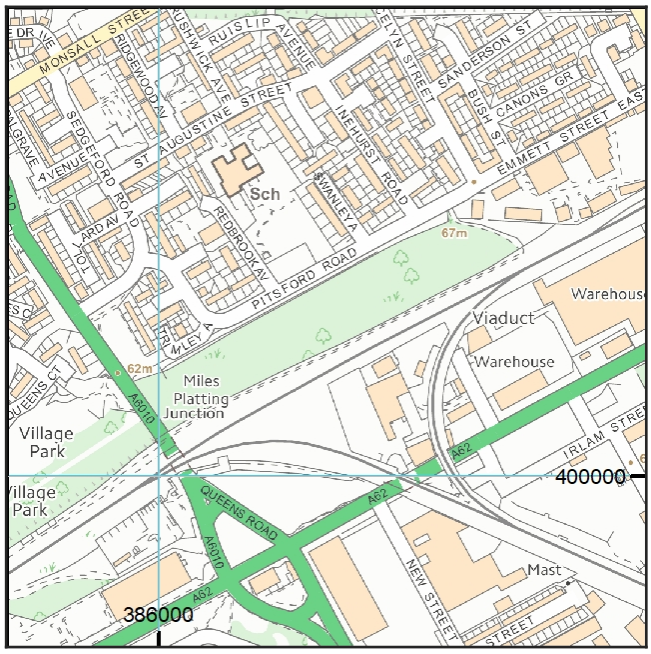
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

47, Pitsford Road, Manchester
Greater Manchester
M40 8G



Approximate position of property

Map data

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+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	PARKER	Coal	35BJ	137	Beneath Property	17.9	South-West	80	1935
unnamed	ROGER	Coal	35AM	524	Beneath Property	16.2	South	180	1964
unnamed	CROMBOUKE	Coal	3597	540	Beneath Property	16.9	South-West	120	1936
unnamed	ROGER	Coal	35AN	542	Beneath Property	17.2	South-West	180	1964
unnamed	CROMBOUKE	Coal	359F	607	South	21.0	South-West	120	1924
unnamed	ROGER	Coal	35AY	622	South-East	16.1	South-West	180	1961
unnamed	ROGER	Coal	35AL	630	South-West	17.4	South	180	1967
unnamed	ROGER	Coal	35AZ	636	South	20.8	South-West	180	1963

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

11471	NW1172	NW645
NW644		

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

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Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
DOCTOR	Coal	No	Within	N/A	117

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

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Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

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Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

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

Withdrawal of support notices
The property is in an area where a notice to withdraw support was given in 1963.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

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Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

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Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

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Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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Summary of findings

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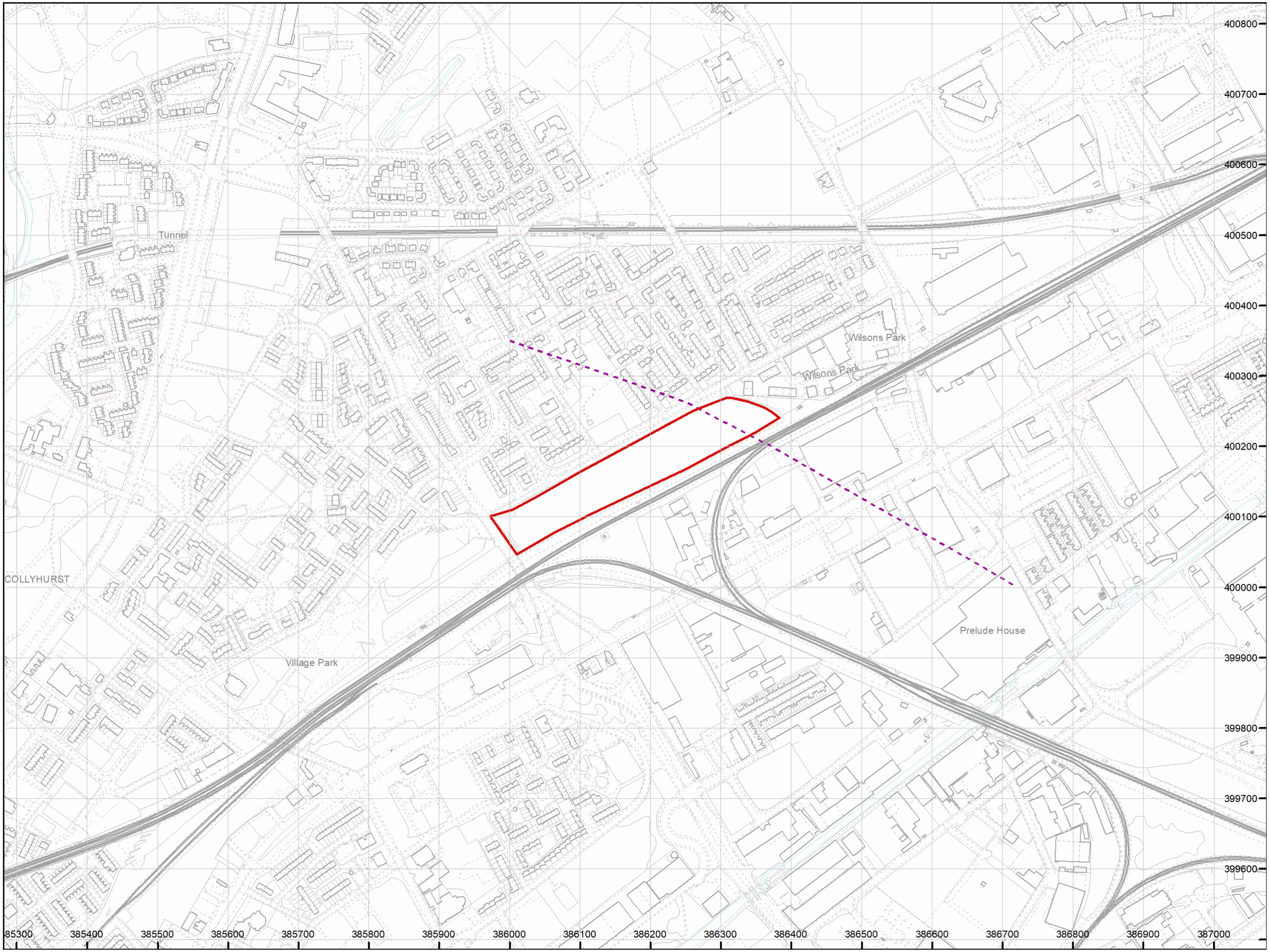
Map data

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Outcrop (Conjectured)



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com