PATRICK PARSONS

Phase I Site Appraisal

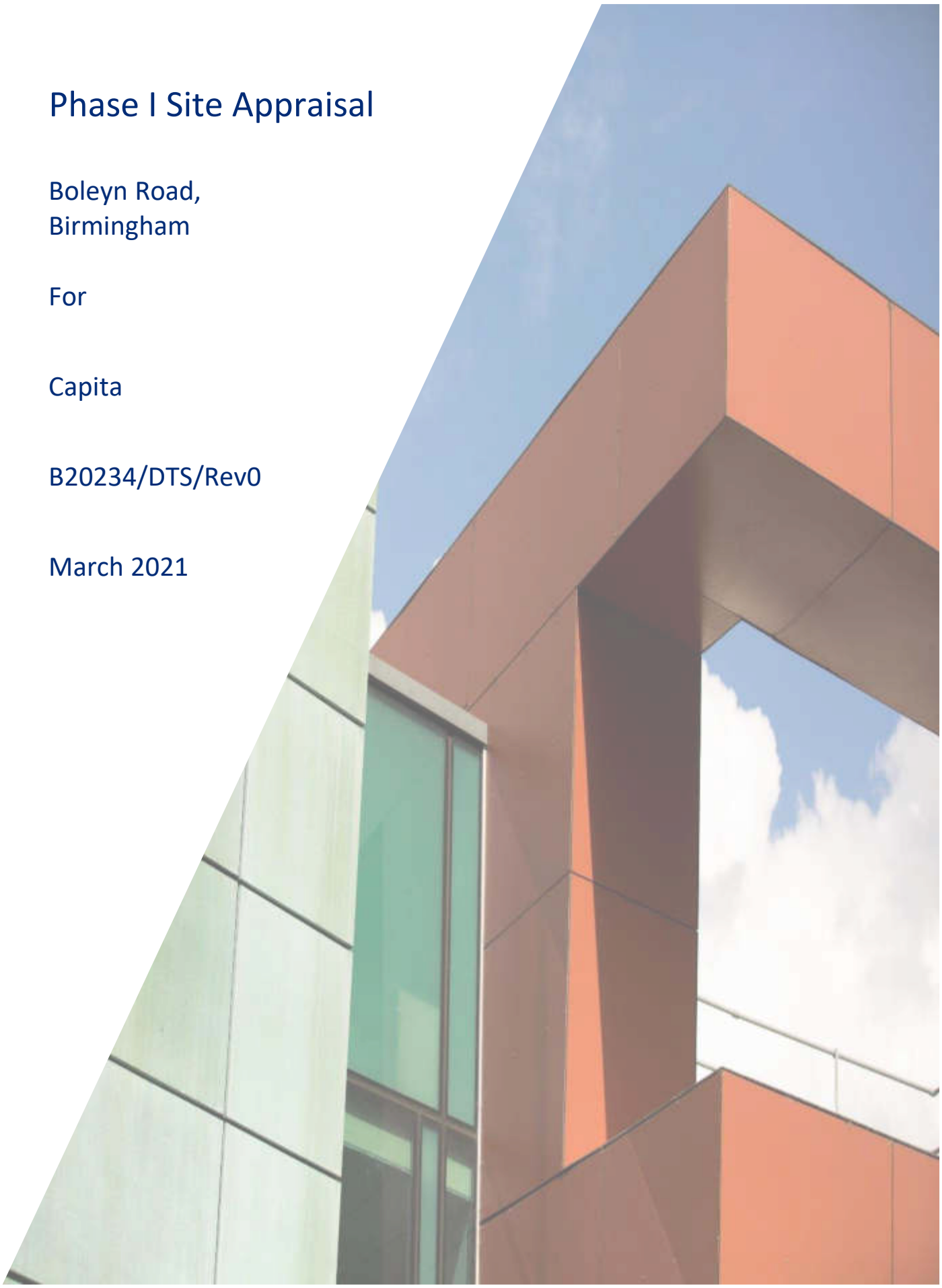
Boleyn Road,
Birmingham

For

Capita

B20234/DTS/Rev0

March 2021



Phase I Site Appraisal

Boleyn Road, Birmingham

for

Capita

Revision	Date of issue	Comments	Prepared By	Checked By
0	19/03/2021	1st Issue	TW	CIK

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Contents

1.0 Introduction

1.1 Commission

Patrick Parsons (PP) has been appointed by Capita (client) to produce a Phase I Site Appraisal for a site known as Boleyn Road, Birmingham.

1.2 Proposed Development

It is understood that the site is to be developed for residential end-use comprising approximately 71 units (comprising detached and semi-detached houses with private gardens and apartments), soft landscaping, and access roads. A proposed development plan is included in Appendix A.

1.3 Limitations

This report has been prepared for the client and their appointed agents only and should not be relied upon by any third party without the written permission of Patrick Parsons. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill. This report is based on the searches made of third party records and PP cannot be responsible for any inaccuracies contained therein.

1.4 Aim of Phase I Site Appraisal

The client's specific requirements were to provide a Phase I Site Appraisal for the site to support a planning application to clear any contaminated land or geotechnical related planning and/or warranty provider conditions. The principal objectives are as follows:

- Obtain information about the likely soil and groundwater conditions within the area of the site.
- Determine the possible ground related geotechnical and contamination hazards within the site boundaries that may affect any future proposed development.
- Provide preliminary development recommendations.
- Provide advice on further works required for the cost-effective reduction of risks to the development and procedures likely to satisfy regulators.

1.5 Information Sources

This Phase I Site Appraisal is based on published geological and environmental information supplemented by historical mapping (Appendix B), an environmental data report (Appendix C) and a Preliminary UXO Risk Assessment (Appendix D).

2.0 Phase I Desk Study

2.1 Site Description

The site approximately a rectangle, however, the northern and western boundaries are curved being defined by Boleyn Road and is situated in the Rubery area, approximately 12km southwest of central Birmingham. The site is approximately 2.18ha in surface area. The site is centred on OS grid reference SO 98602 78693 and the nearest postcode to the site is B45 0ND. A site location plan is presented in Appendix A.

The site is currently undeveloped with complete grass and vegetation cover and makes up the western half of a larger field area south of Boleyn Road. The site is confined to the north by the pavement running along Boleyn Road and by intermittent saplings and semi mature trees that run along the same boundary. The southern boundary is marked by a footpath running southeast and then east along the line of trees and bushes at the south of the site. The eastern boundary is marked by a green metal fence with sparse trees separating the site from the communal field playing area to the east. A solitary mature tree is situated towards the northern boundary. The surrounding area slopes to the south east and the land to the east and west of the site is similar in level to the site. The site is at a lower elevation to Boleyn Road to the north by approximately 2 metres, but at a similar level in the west. The land to the south is approximately 2m lower than the site. However, the site is relatively level with a drop of some 2m from the north west to south east, the difference of levels with the surrounding land being accommodated with slope to the north and south. There are no vertical access restrictions and access to the site is gained from the southwest corner of the site off Boleyn Road.

2.2 Site History

The earliest reviewed mapping (1882) shows the site to be undeveloped in an agricultural landscape with minimal residential or industrial development. The site is confined to the south by the Halesowen and Bromsgrove Railway. The site to the north is surrounded by agricultural fields. A field boundary, bifurcating in the south, is marked in the centre of the site and a footpath marked in the southern end of the site (1882). There is no significant development on site or any change to the site layout in subsequent mapping other than a drainage ditch marked in the centre of the site, and issues around 20m off the south east corner (1966). By 1983 slopes into the site are shown adjacent to the northern boundary and slopes away from the site are shown on the southern boundary, strongly suggesting the site has been levelled as part of its development as a playing field. The surrounding area becomes residentially developed to the south and southeast and Boleyn Road is shown confining the site to the north and west and with steep slopes running from the roadside into the site. There is raised ground shown in a form of embankment in the southwest corner of the site, nearest the junction from Boleyn Road to Dorset Close. This appears to be associated with the construction of the road over the railway cutting, now abandoned, and developed into a footpath. The 2003 edition map is similar to that of present day.

The wider vicinity of the site is shown in the earliest mapping (1882), this shows the agricultural landscape around the site with the railway running just south-west of the site towards Holly Hill. Earthworks are shown associated with the site of the historical manor, at the closest 100m to the south of the site. There are two farms within 500m north and

southeast of the site but that is the only residential or industrial buildings near the site (1882). The River Rea is shown on the map within 300m south of the site across the railway line. There is an old gravel pit marked approximately 400m northwest of the site (1904). The site and surrounding area stays very similar until 1954, a sewage pumping station is shown within 500m of the site to the southwest and further residential development of Rubery to the southeast (1954). By 1967, the railway to the south is dismantled and unused and a section of the M5 has been constructed to the northwest. By 1982, the main town of Frankley has been developed and Boleyn Road has been constructed around the site to the west and north. The residential development is mainly in the south and southeast of the site, there is a large school to the east and another school to the south among the residential streets within 500m of the site (1982). The site and surrounding area are in a very similar layout in all subsequent mapping (2021).

The historical maps reviewed are represented in Appendix B.

2.3 Geology

The bedrock geology of the Aveley Member underlies the entire site comprising mudstones. There are superficial deposits across the northern part of the site which comprise of diamicton (boulder clay). Made ground is mapped approximately 120m to the east of the site, but is not associated with any features seen of the OS mapping and worked ground is mapped of the south western corner of the site in the area of the former railway cutting.

There are no BGS borehole records on site, however there are three in the surrounding area within 150m south and east of the site. All three boreholes suggest that the site is underlain by silty and sandy clay to a maximum depth of 1.50m begl. The shallow clays are underlain by interbedded sands, silts, and clays to a maximum depth of 4.50m begl. Sandstone and siltstone are encountered below 4.00m begl to 6.10m begl. Groundwater was recorded around 2m begl.

2.4 Mining and Quarrying

The site is not within a Coal Authority Reporting Area and also is not within a Development High Risk Area. As such, a Coal Authority Coal Mining Report will not be required as part of this appraisal.

There is two records of vein mineral extraction within 1000m of the site, the nearest being 415m southeast of the site, probably associated with the outcrop of the Lickey Quartzite Formation of Ordovician age and will not affect the site.

The site is recorded to be 343m northwest of a BritPit sand and gravel pit that worked near Lower Farm Hill. The only other recorded surface workings near the site relate to cuttings from the railway within 100m of the site and a fish pond and five unspecified heaps recorded within 100m of the site.

2.5 Radon

The site is not within a Radon Affected Area, less than 1% of properties are above the action level; radon protection measures are therefore not required for the development.

2.6 Unexploded Ordinance (UXO)

The site is within an area classified as a low of UXO. The summary of the Preliminary UXO Risk Assessment is presented below. A Preliminary UXO Risk Assessment has been appended in Appendix D.

- Given the findings of the of the preliminary report, the risk from UXO on site is not considered to be higher than the "background risk" of encountering UXO within this outer area of Birmingham.

- It is anticipated that any further research would not alter the findings of the UXO report. It is therefore recommended that no further action is taken at this time.

2.7 Hydrogeology and Hydrology

The site is underlain by the Aveley Member which is recorded to be a Secondary A Aquifer. The superficial deposits of the diamicton deposits that cover the northern end of the site are recorded as a Secondary (undifferentiated) Aquifer. The rest of the site is not covered by any superficial deposits.

The site is approximately 180m north of the River Rea.

The site is not located within a Flood Zone 2 or 3 and there is no risk to the site from flooding from rivers or seas (RoFRaS).

However, the southern area of the site is determined to be at a 1 in 250 year risk of flooding, between 0.1 and 0.3m according to Ambiental Risk Analysis.

The site does not lie within a Source Protection Zone and is not within 2000m of any potable groundwater abstraction licences.

There are two groundwater abstraction licences within 2000m of the site, the nearest being 1832m west of the site and is a historical abstraction licence of Manor Farm.

2.8 Environmental Data

There are eight records of historical industrial land uses within 250m of the site. The nearest ones all relate to cuttings from the railway line that ran just south of the site. The others are unspecified ground workings (heaps and pits) that also relate to the railway.

There is one record of an unspecified tank within 20m southwest of the site.

There is one electrical substation within 250m of the site, it is 160m southwest of the site.

There is one recorded EA/NRW landfill site within 500m of the site, it is recorded to be 466m southeast of the site and received unknown waste.

There are no other records of past or present waste sites, waste exemptions or any other type of land fill within 500m of the site.

There are two current industrial land uses within 250m of the site, the nearest is an electrical substation and a wind turbine that is located 204m southeast of the site.

There are two records of licenced discharges into controlled waters within 500m of the site, both relate to surface water discharges from housing developments south of the site.

There are two recorded EA/NRW pollution incidents within 250m of the site, the nearest was 153m northwest of the site and both had no significant impact on the environment or controlled waters.

As previously mentioned, there is recorded a historical railway within 50m south of the site.

2.9 Contaminants of Concern

Based on the desk study information, it is considered that the site has been undeveloped since 1882, however there is indications of cut and fill works. The surrounded area did not contain any significant industrial development except for the historical railway so the risk of gross contamination on the site is considered very low. However, it is recommended that the site is fully investigated to confirm this. Contaminants of concern could include heavy metals, PAHs, inorganics, and asbestos.

3.0 Phase I Conceptual Model

The preceding desk study data has been assessed and a conceptual model produced following current relevant guidance.

There is little evidence for development of the site apart from the potential for cut and fill works to provide a level area for its use as playing fills. There is a potential for made ground across the southern area of the site, however, it is likely to be re-worked natural materials. As such the potential for significant contamination to be present at the site is considered to be very low.

In terms of human health, the primary receptors are end-users of the proposed residential development and construction workers. The pathways include direct contact with contaminated soil and soil dust, ingestion of contaminated soil, dust and the indoor/outdoor inhalation of ground gas and soil vapour and consumption of home grown produce (end users only). Given the site history and the features noted, it is considered that the site poses a very low risk to end users and a negligible risk to construction workers (due to their lower exposure period).

There are no significant potential sources of ground gases, such as landfills, recorded to be within influencing distance of the site. There is likely to be made ground across the southern half of the site, however, this is likely to have been derived from natural soils in the north. The BGS record made ground to the west of the site, however, there is no indication as to what activity this may have been associated with. Therefore the risk of harmful ground gas impacting the proposed development is assessed as very low.

In terms of controlled waters, the primary receptor will be the bedrock aquifer in the Aveley Member (Secondary A Aquifer), however it is not considered to be a sensitive receptor especially given the absence of a source protection zone or potable water abstractions in the vicinity of the site. The primary pathway to the aquifer would be through leaching and downwards migration within the strata. There is a surface water feature (River Rea) within 200m south of the site, it is downslope of the site by at least 10m. The primary pathway to the surface water feature is through lateral migration and surface run off. The soils underlying the site area likely to be low permeability and therefore lateral and vertical migration of possible leached contaminants will be attenuated. The risk of a potential contaminative source on the site is very low. Therefore, the overall risk to controlled waters is considered to be very low.

The Phase I conceptual model is illustrated on the next page.

Human Health		
Source	**Pathway**	**Receptor**
Potential made ground; heavy metals, PAHs, inorganics and asbestos.	Indoor and outdoor inhalation of ground gas and soil vapours, the ingestion of contaminated soil and soil dust, direct contact with contaminated soil and soil dust and consumption of homegrown produce	End users of the completed residential development
Potential made ground; heavy metals, PAHs, inorganics and asbestos.	Indoor and outdoor inhalation of ground gas and soil vapours, the ingestion of contaminated soil and soil dust and direct contact with contaminated soil and soil dust	Construction workers
Infilled ground or localised made ground; heavy metals, PAHs, inorganics.	Inhalation	End users of the completed residential development
Controlled Waters		
Potential made ground; heavy metals, PAHs and inorganics.	Leaching and vertical migration Surface run off and lateral migration	Aveley Member (Secondary A Aquifer - bedrock) River Rea (Surface water feature)

4.0 Preliminary Recommendations

4.1 Contamination and Remediation

The risk of significant contamination being present at the site is considered very low and as such the risk posed to human health (end users) is considered very low, and negligible in respect of construction workers. The risk to controlled waters has been assessed as very low. Given the presence of an offsite potential source of ground gas the risk of ground gases is assessed as very low. However, a ground investigation will be required to confirm this assessment, the scope of which is outlined in Section 5.

It should be noted that the following comments are based on the findings of this desk study and should be confirmed by intrusive investigation and chemical analysis. At this stage, it should be assumed:

- Any proposed soft landscaping and garden areas may require a clean capping layer.
- Allowance should be made for hotspot removal should grossly contaminated soils be encountered.
- At this stage gas precautions to proposed dwellings should be allowed for.

4.2 Geotechnical Considerations

It should be noted that the following comments and recommendations are based on the findings of this desk study and the findings of the environmental data report. Generally, it is considered:

- The ground conditions are likely to comprise cohesive and granular strata overlying the bedrock Aveley Member comprising siltstone and mudstones. There are some superficial strata in the very northern extent of the site made up of boulder clays and made ground is likely over the southern portion of the site.
- Traditional foundations maybe appropriate for the proposed buildings, but they would need to extend through any made ground or soft/loose soils into competent natural strata.
- Specialist foundations such as piling, or rafts may be necessary if significant thicknesses of soils of poor bearing capacity or deep made ground are present.
- Due to the anticipated presence of predominantly low permeability soils or made ground, it is considered unlikely that surface water disposal by the means of soakaway drainage will be feasible.

5.0 Further Work and Conclusions

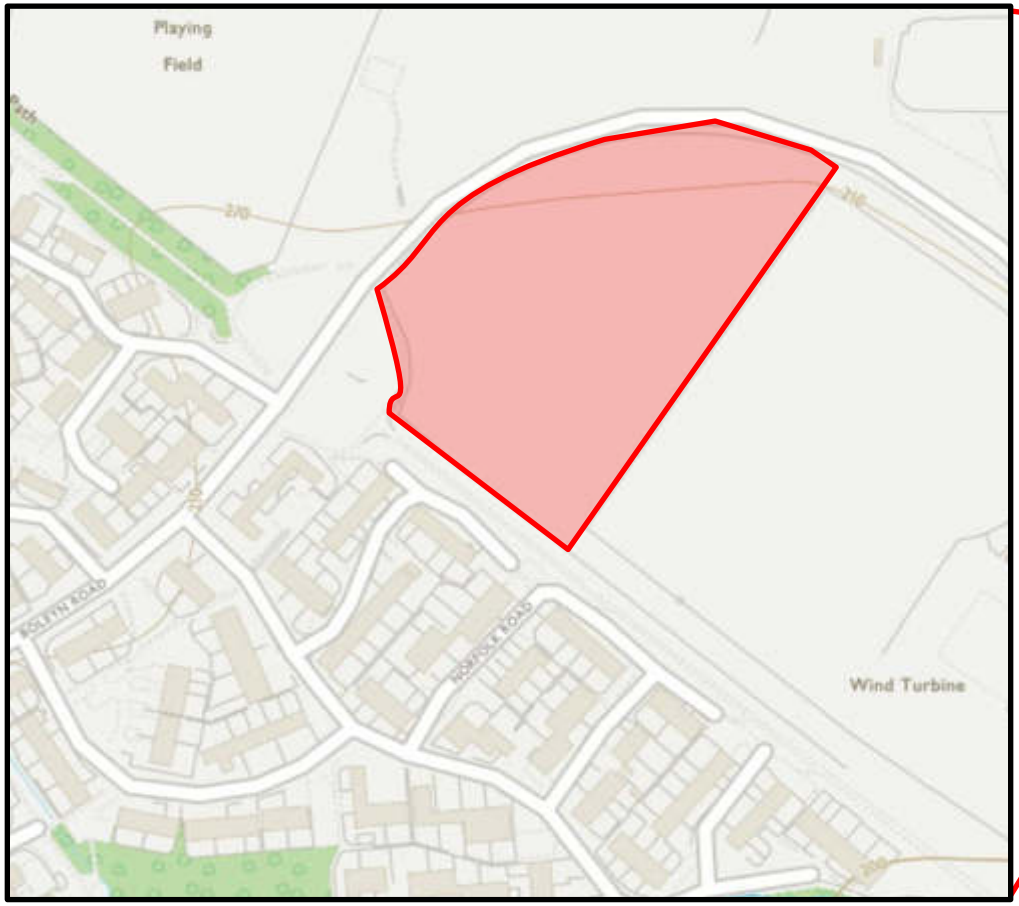
Further works will be necessary to establish a conclusive model and confirm the ground conditions detailed in Section 4 and should generally comprise:

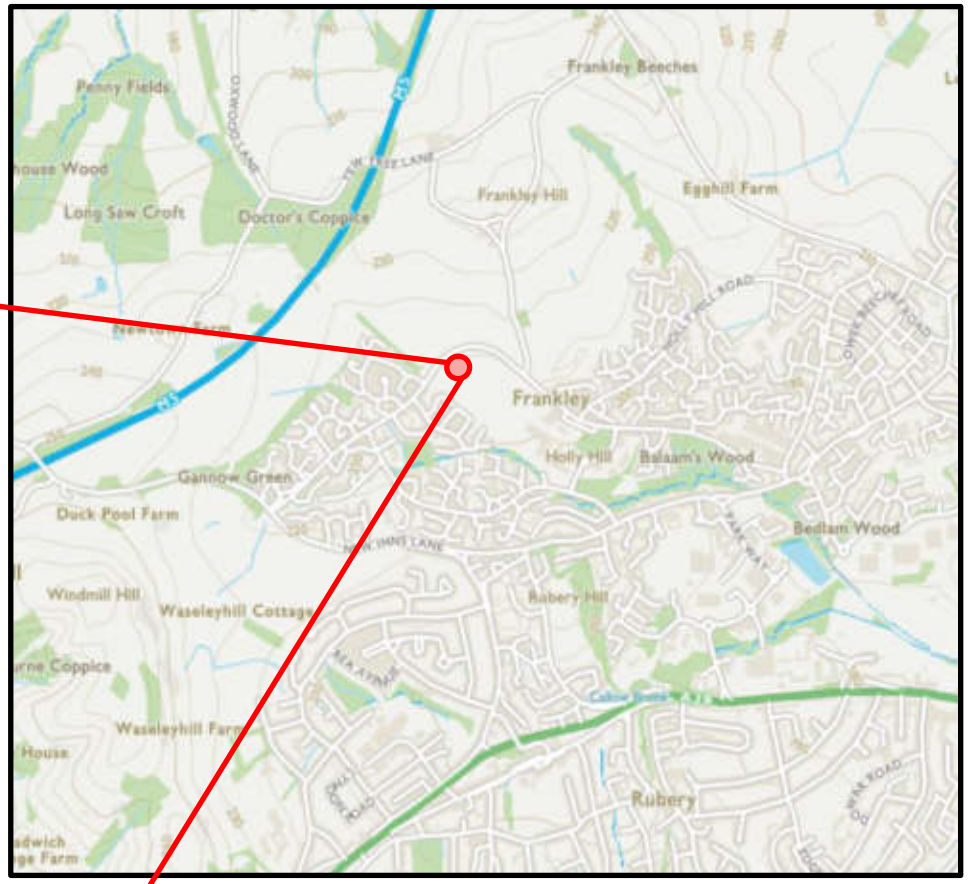
- A day of window sampling borehole investigation to establish the sub-surface conditions, complete in situ testing and collect samples for analysis.
- A day of mechanical trial pitting investigation to establish the sub-surface conditions, complete in situ testing and collect samples for analysis.
- Chemical analysis of soils followed by risk assessment so that the risk to human health and controlled waters can be determined.
- Geotechnical and geochemical soils testing of the founding strata to assess strength and suitable grade(s) of buried concrete.

This document should be submitted to the Planning Department of the Local Authority for comment and approval.

Appendix A

Figures





Approximate site boundary

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Project: Boleyn Road, Birmingham		Title: Site Location Plan	Design/drawn: TW	Checked: JPB
			Drawing no: B20234-701	Rev. 0

PATRICK PARSONS 40 St Pauls Square Birmingham B3 1FQ T. +44 (0) 121 592 0000 E. info@patrickparsons.co.uk W. www.patrickparsons.co.uk	Client: Capita	Project No. B20234-702	Scales: Not to scale / Issue:
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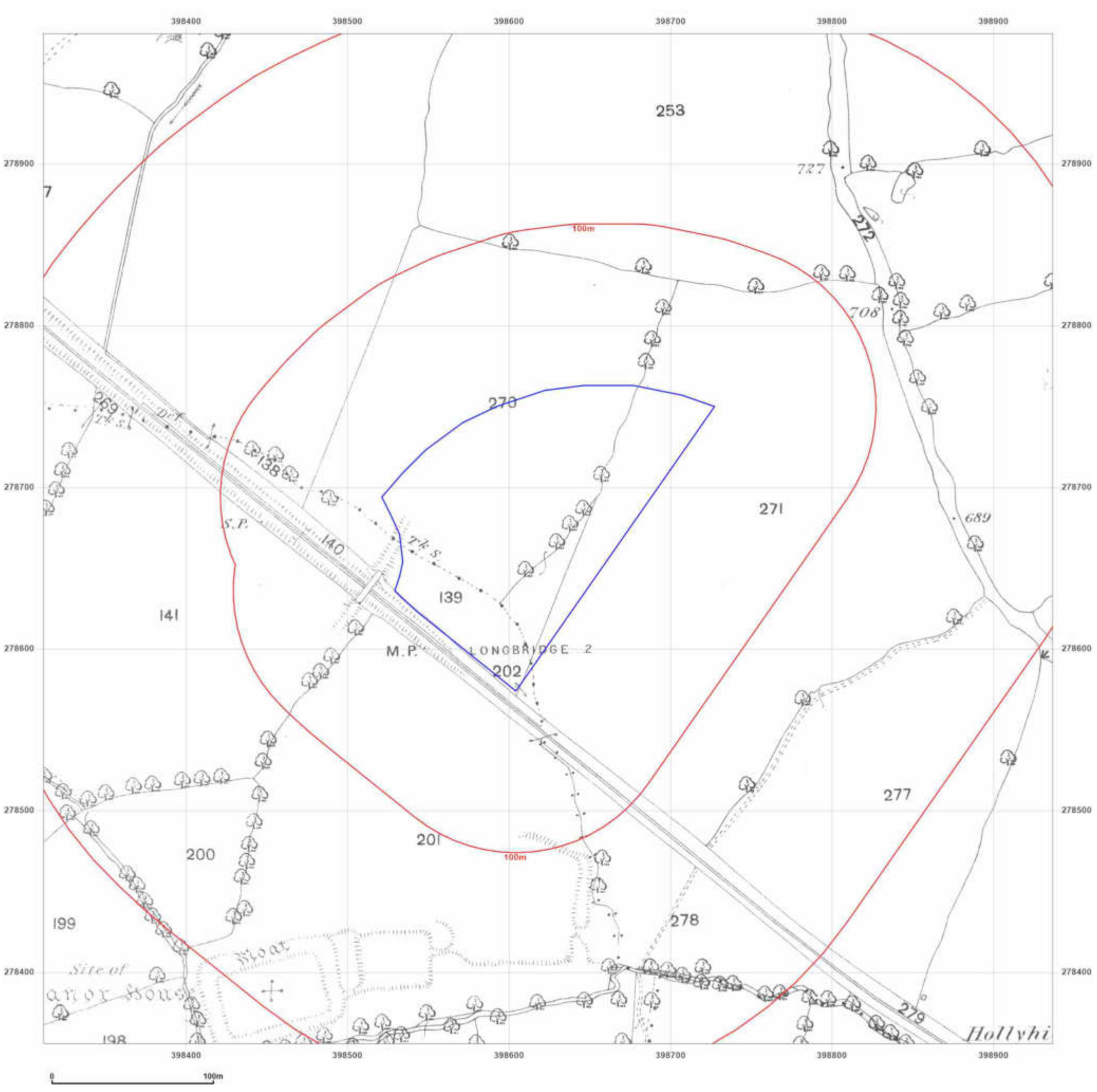
Appendix B
Historical Maps



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Printed at: 1:2,500

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Surveyed 1885
Revised 1885
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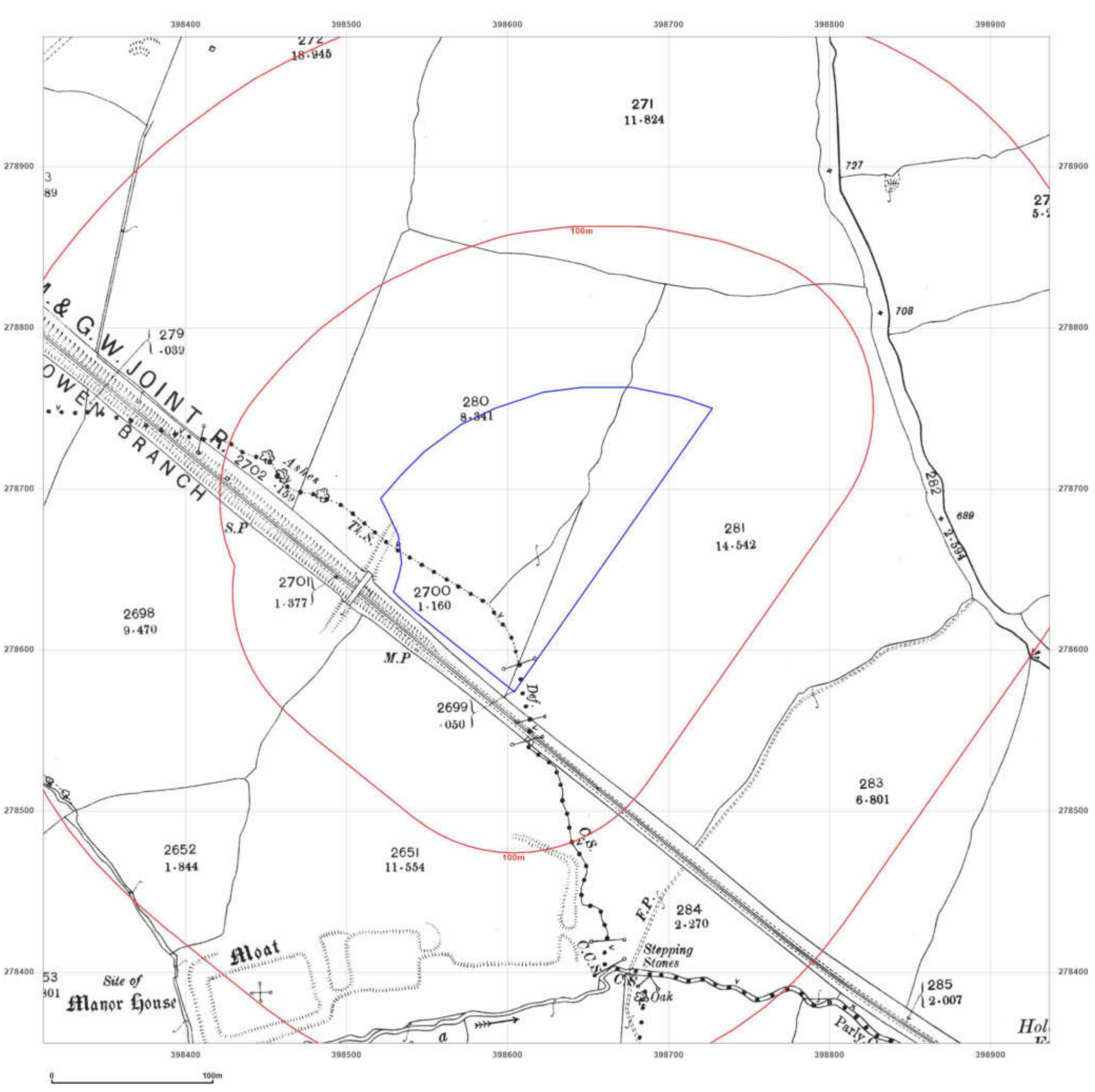

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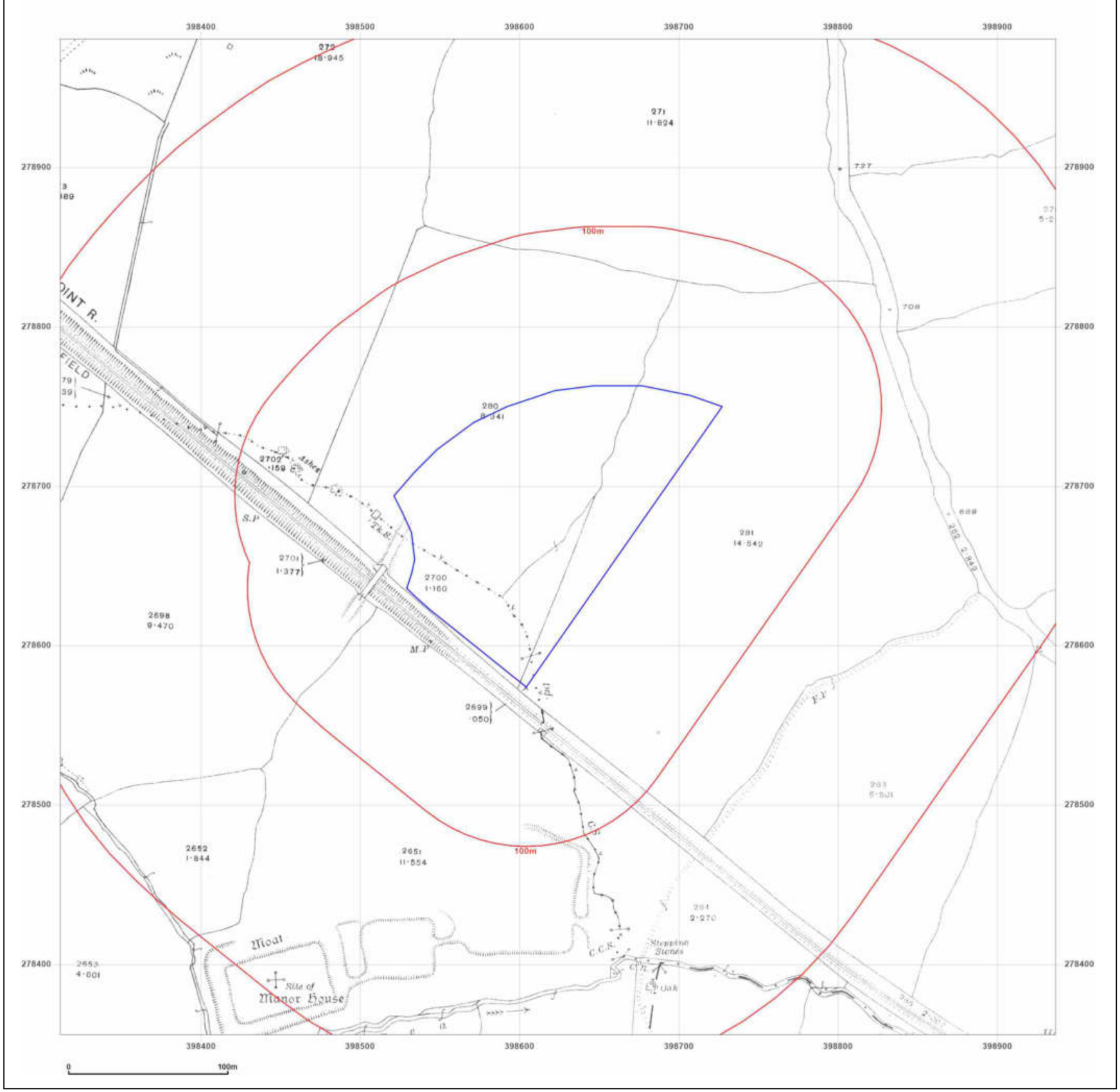

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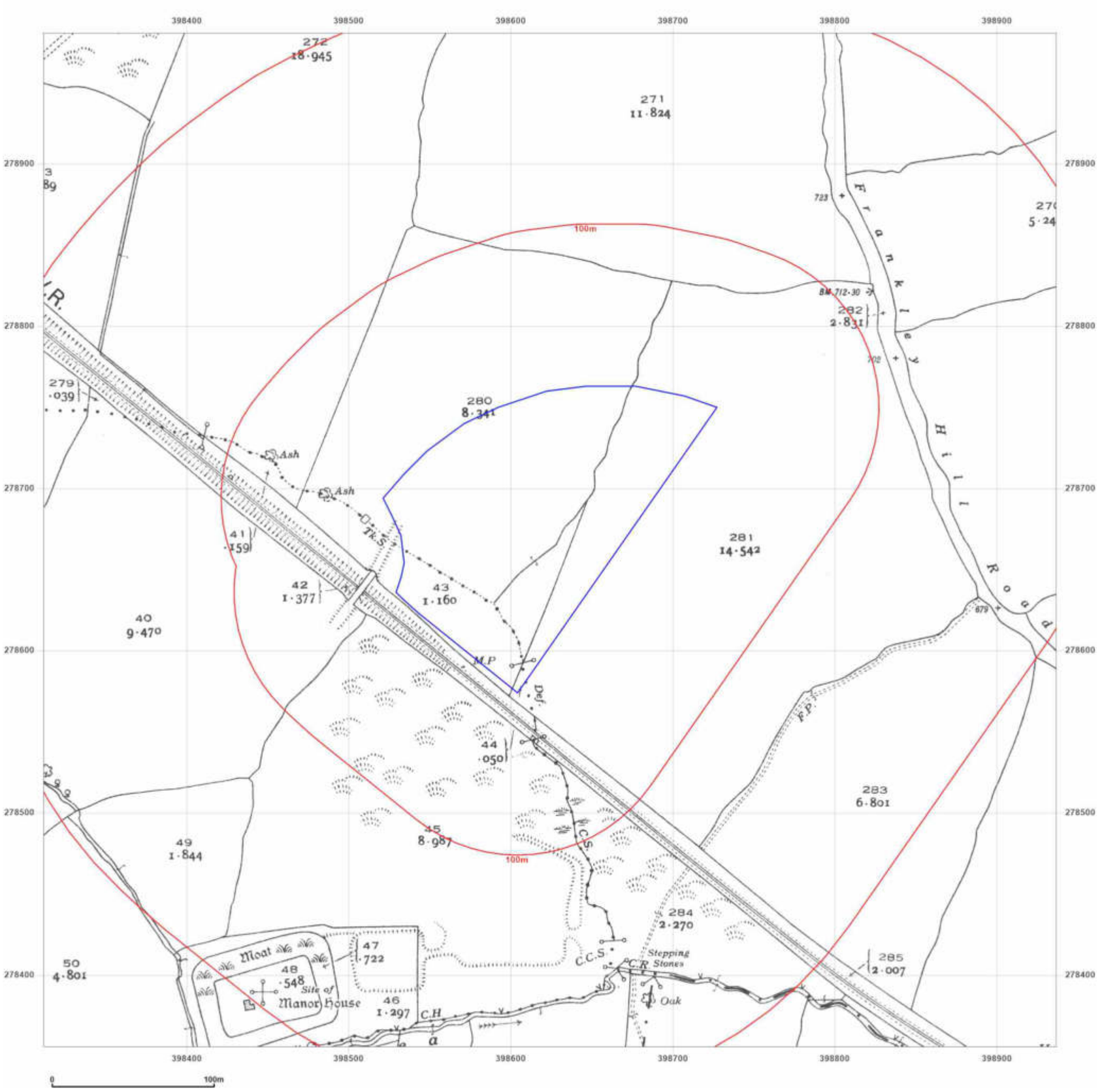

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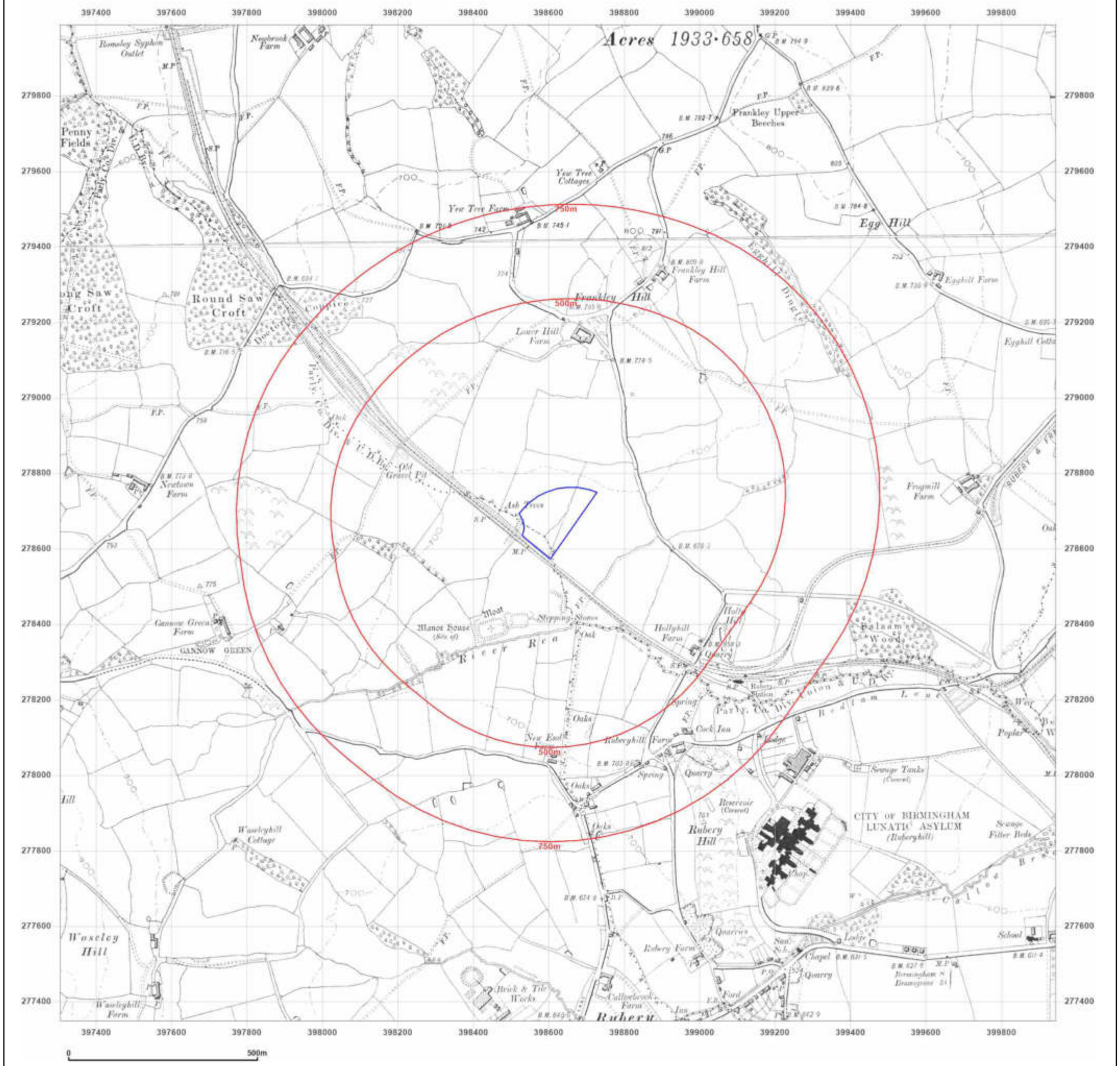

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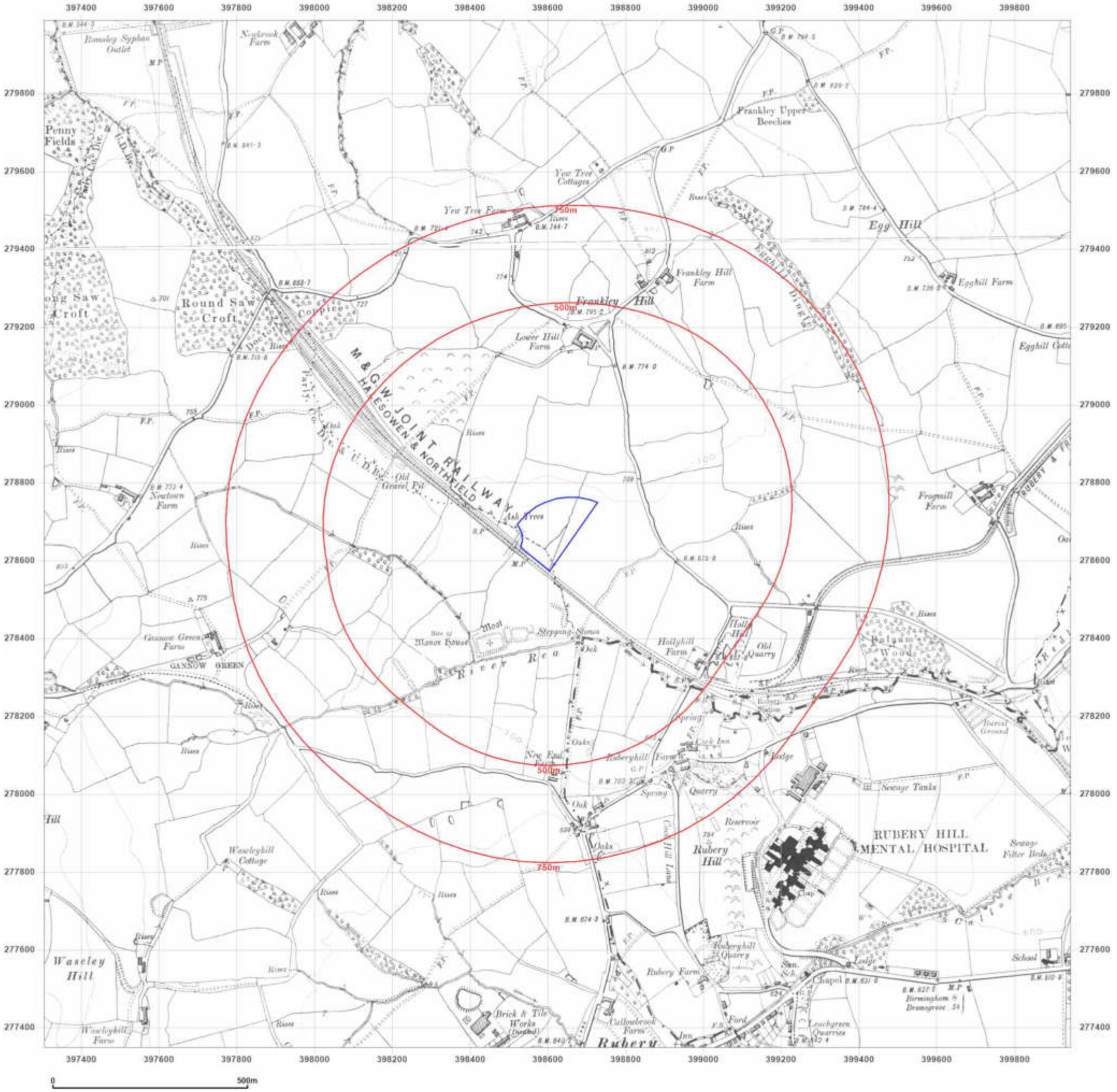

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Site Details:

B20234,Boleyn Road,Birmingham,B45 0NJ

Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: County Series

Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1882
Revised 1914
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1914
Edition N/A
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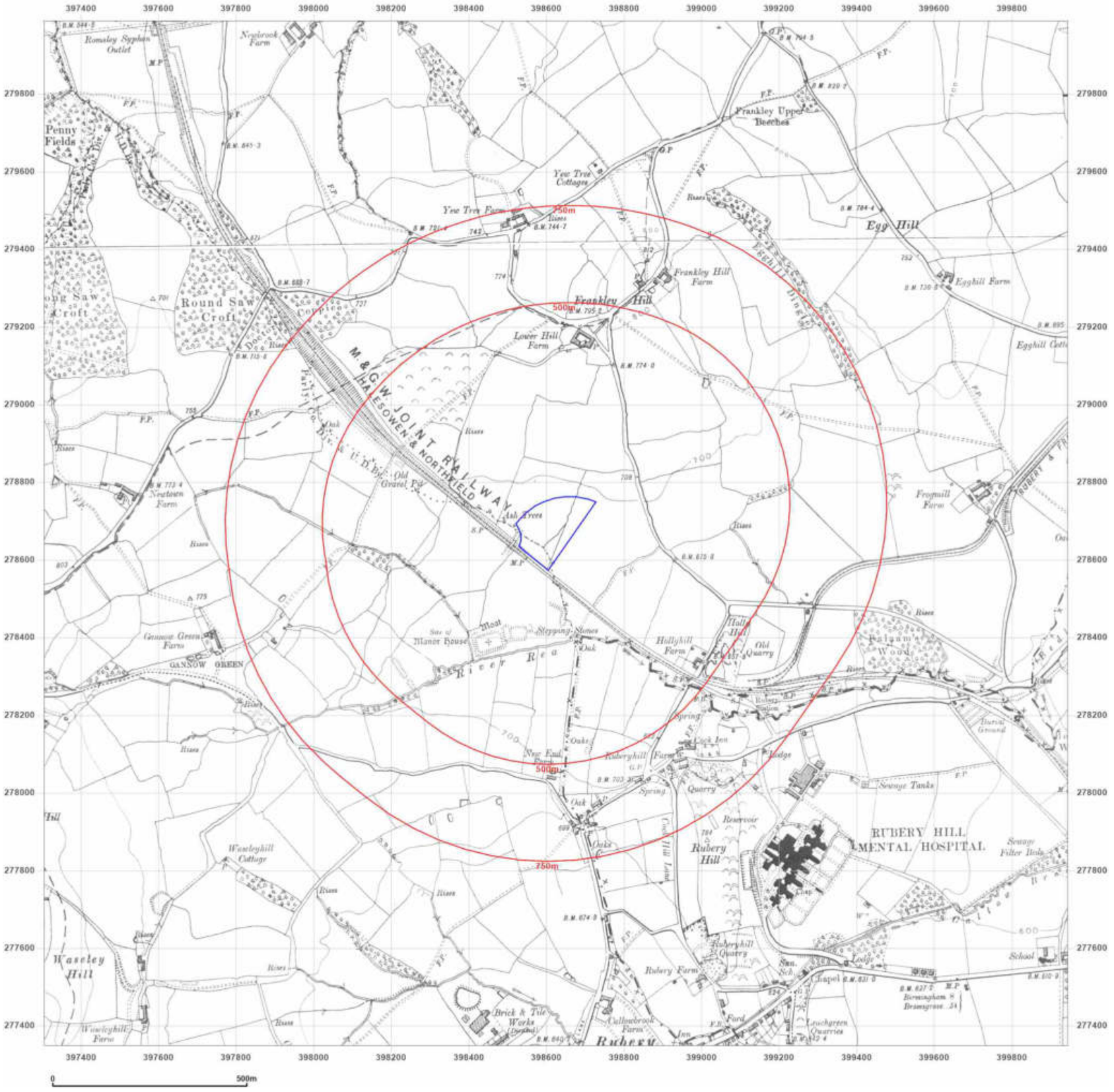

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: County Series

Map date: **1921**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1882
Revised 1921
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Revised 1921
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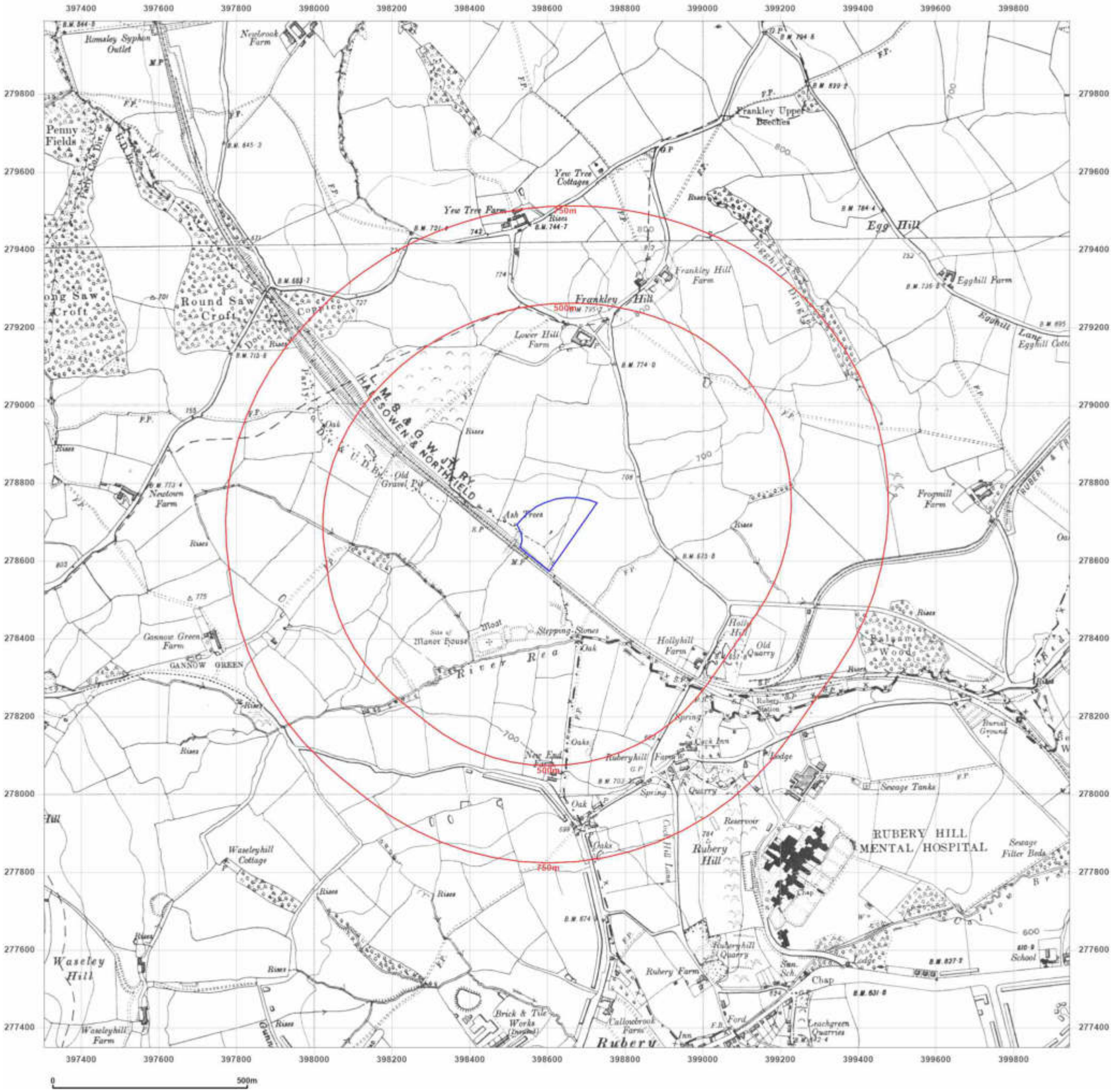

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1882
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1882
Revised 1938
Edition N/A
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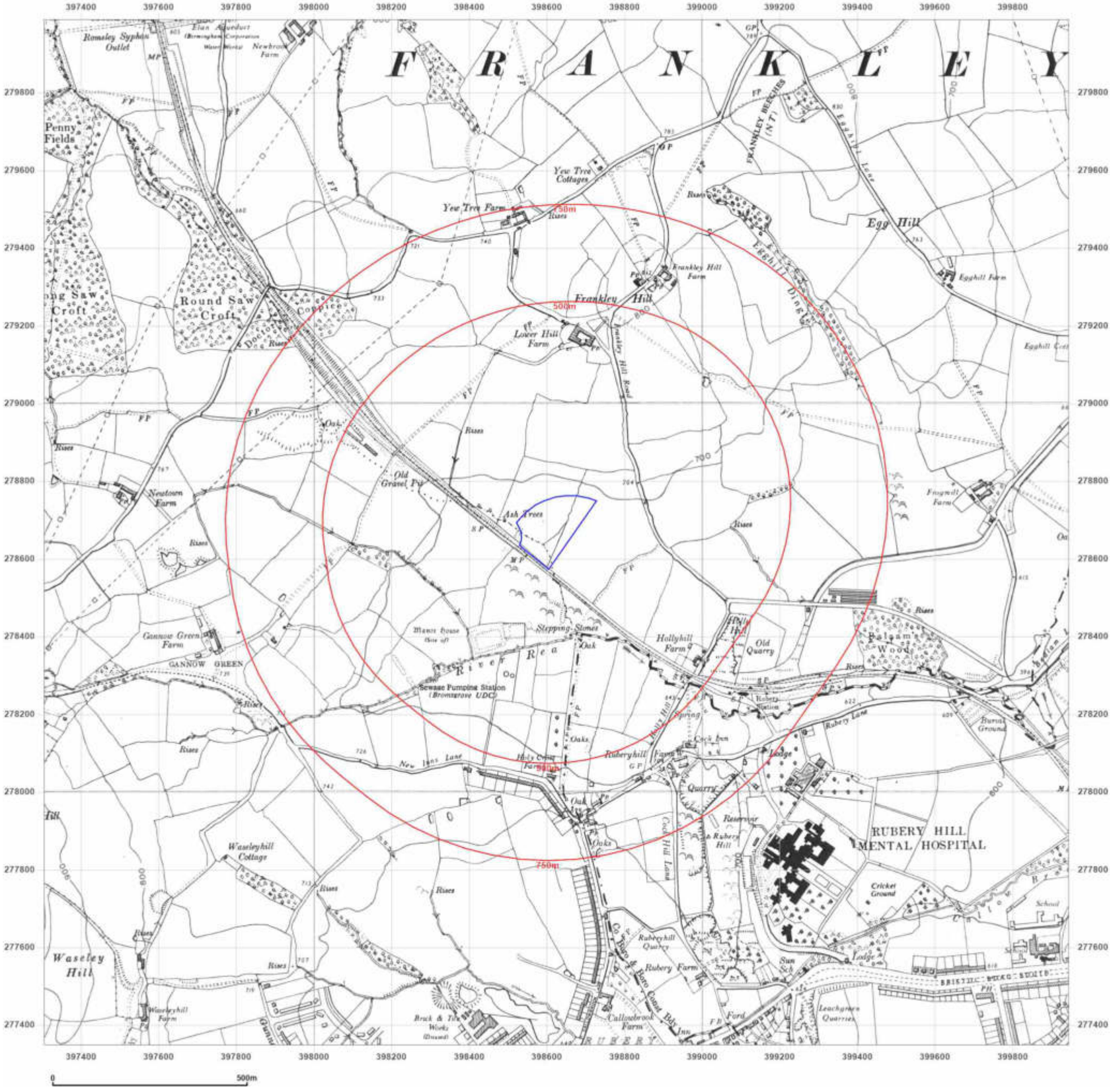

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Site Details:

B20234,Boleyn Road,Birmingham,B45 0NJ

Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: Provisional
Map date: **1954**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed N/A
Revised 1954
Edition N/A
Copyright 1955
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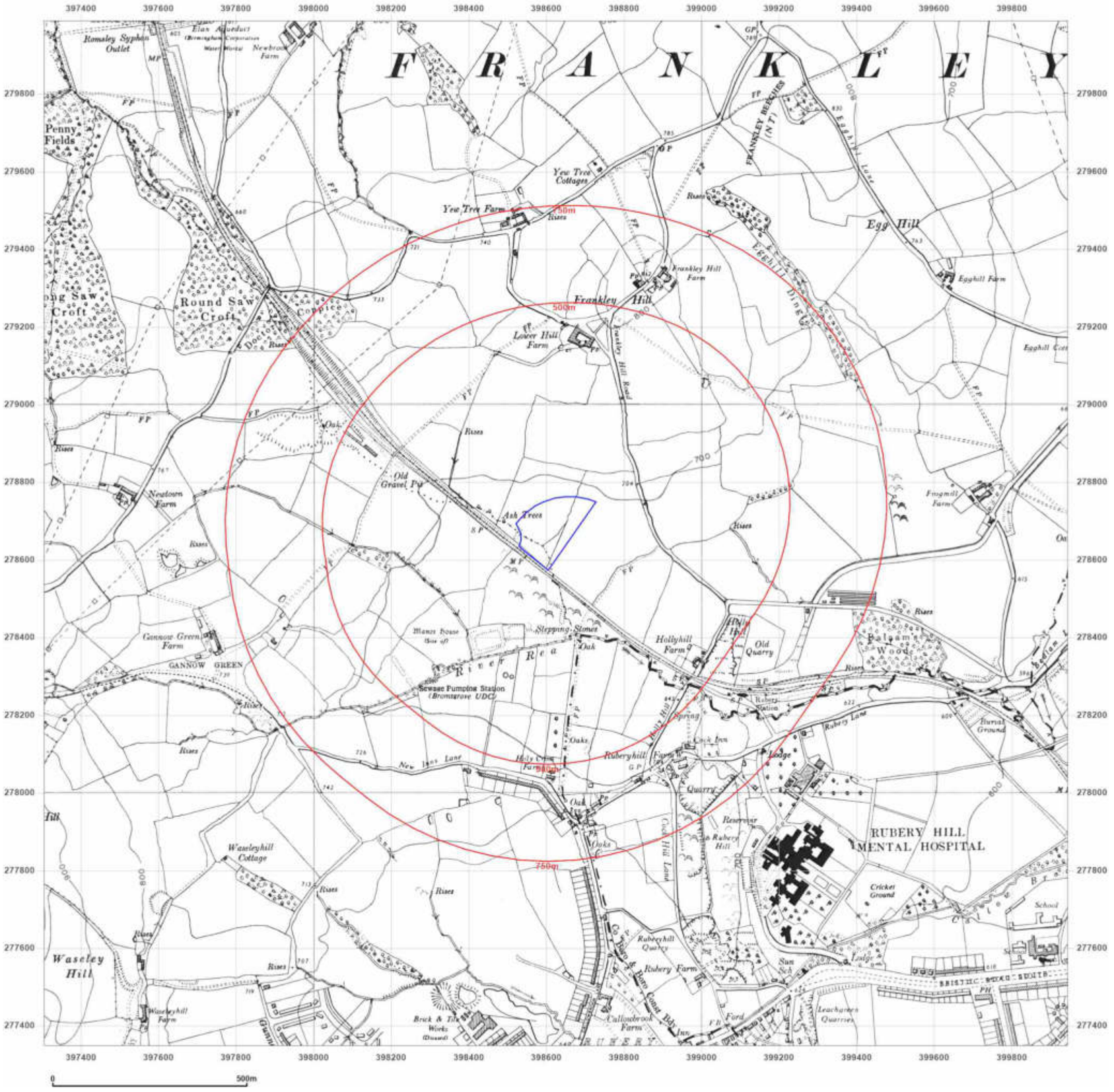

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: Provisional
Map date: **1961**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed N/A
Revised 1961
Edition N/A
Copyright 1955
Levelled N/A

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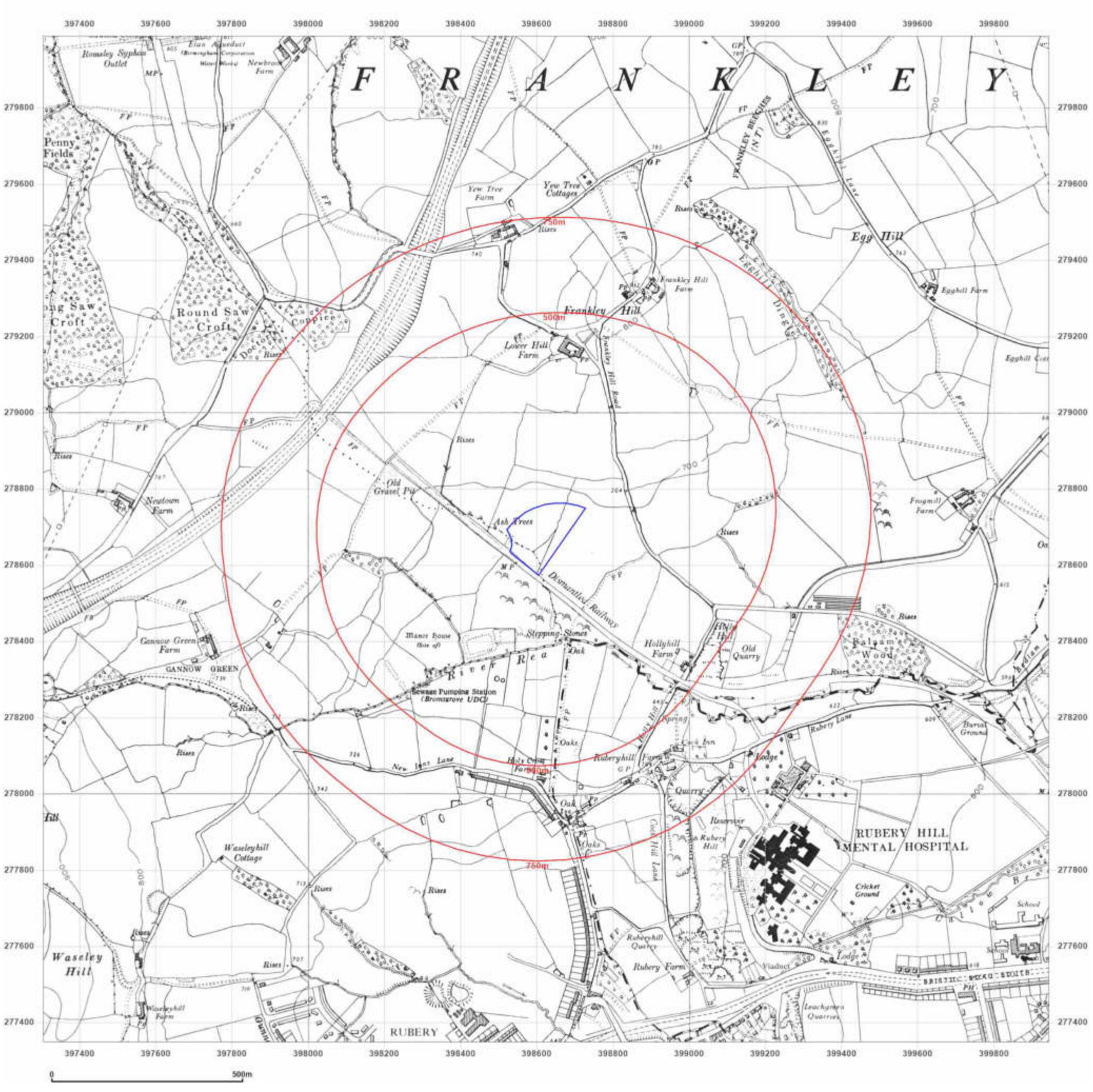

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: Provisional
Map date: **1967**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed N/A
Revised 1967
Edition N/A
Copyright 1955
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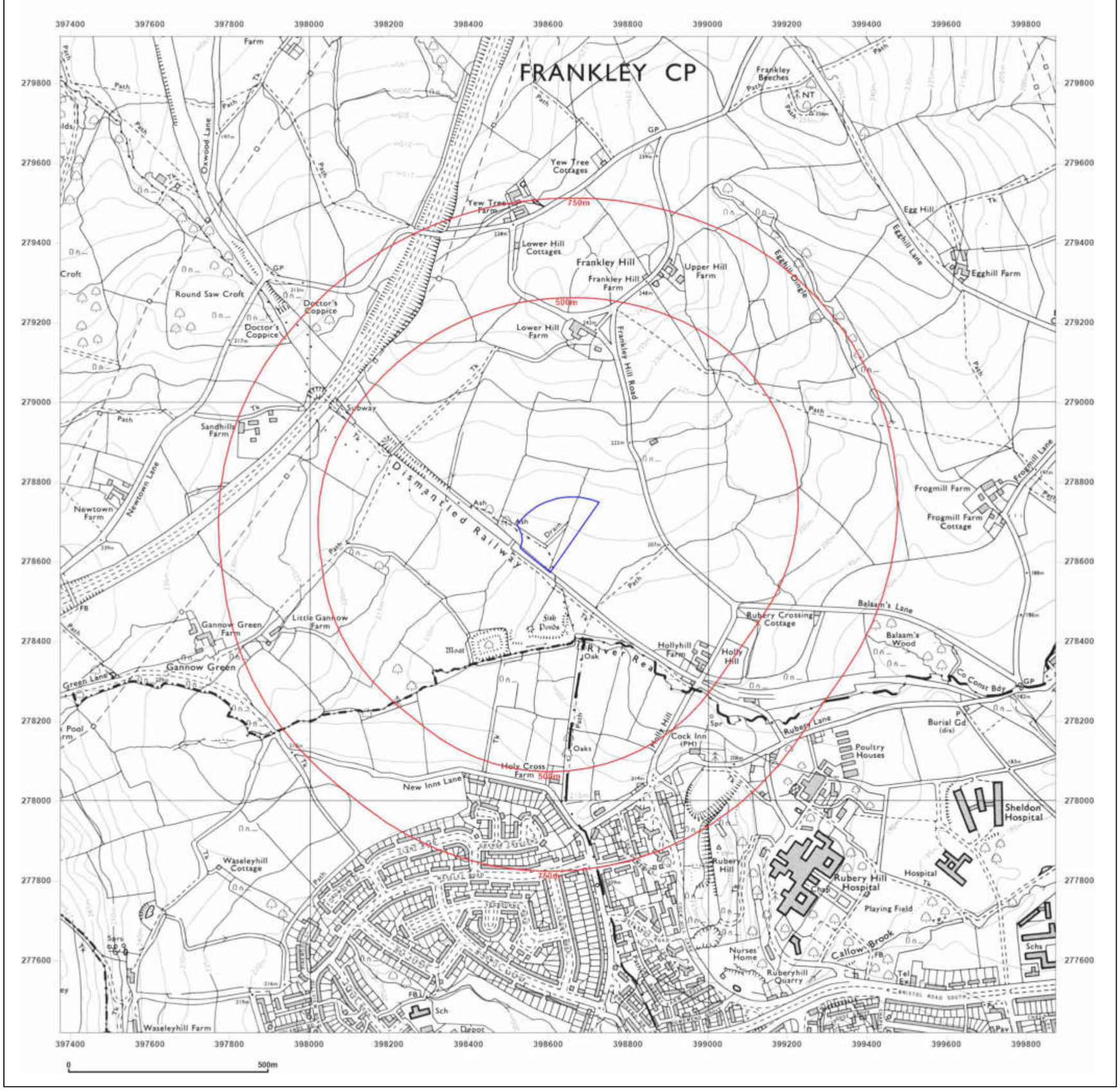

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: National Grid

Map date: **1972**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1971
Revised 1972
Edition N/A
Copyright 1972
Levelled 1969

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Production date: 22 February 2021

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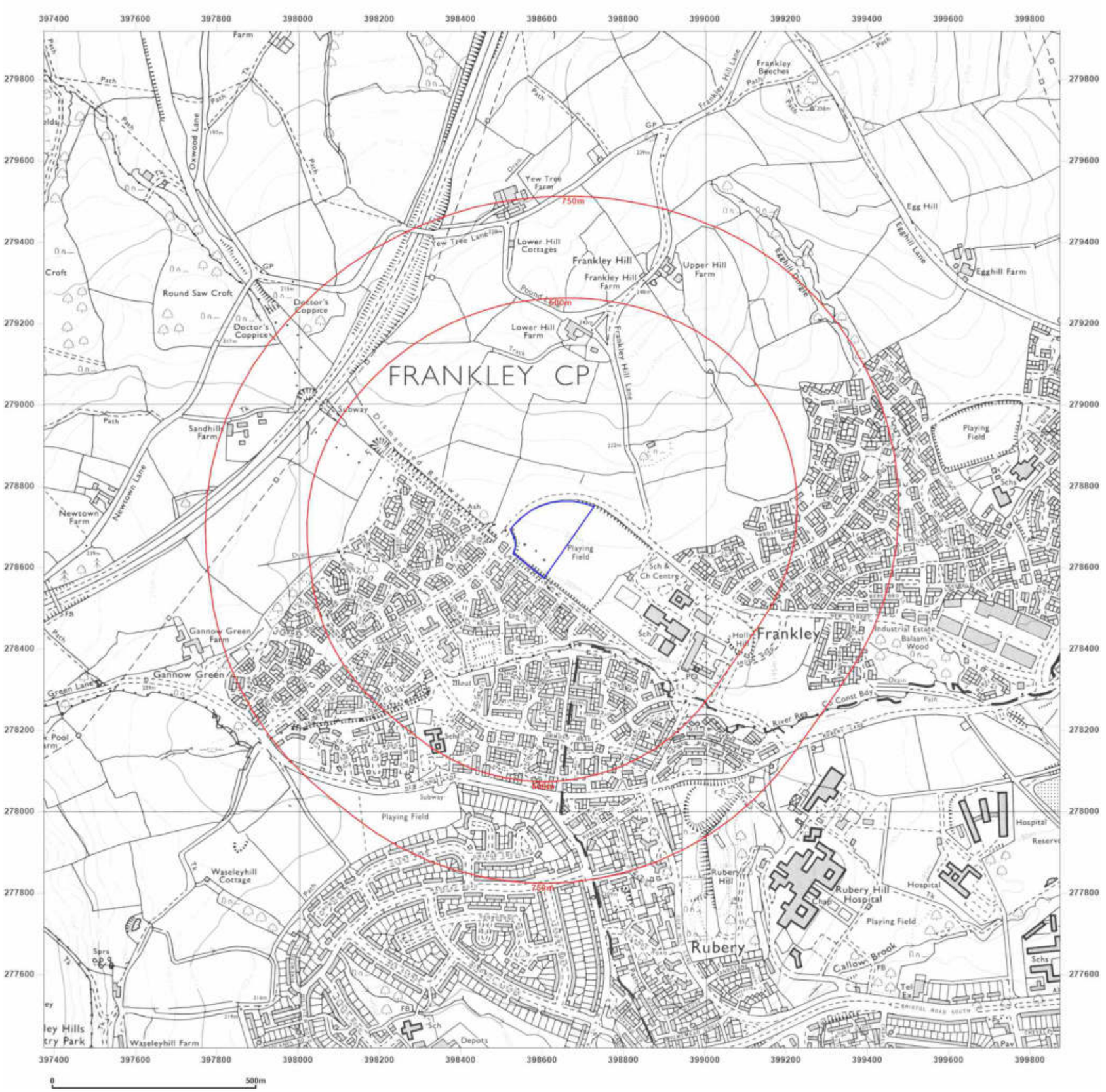

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Site Details:

B20234,Boleyn Road,Birmingham,B45 0NJ

Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: National Grid

Map date: **1982**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1980
Revised 1982
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 22 February 2021

Map legend available at:
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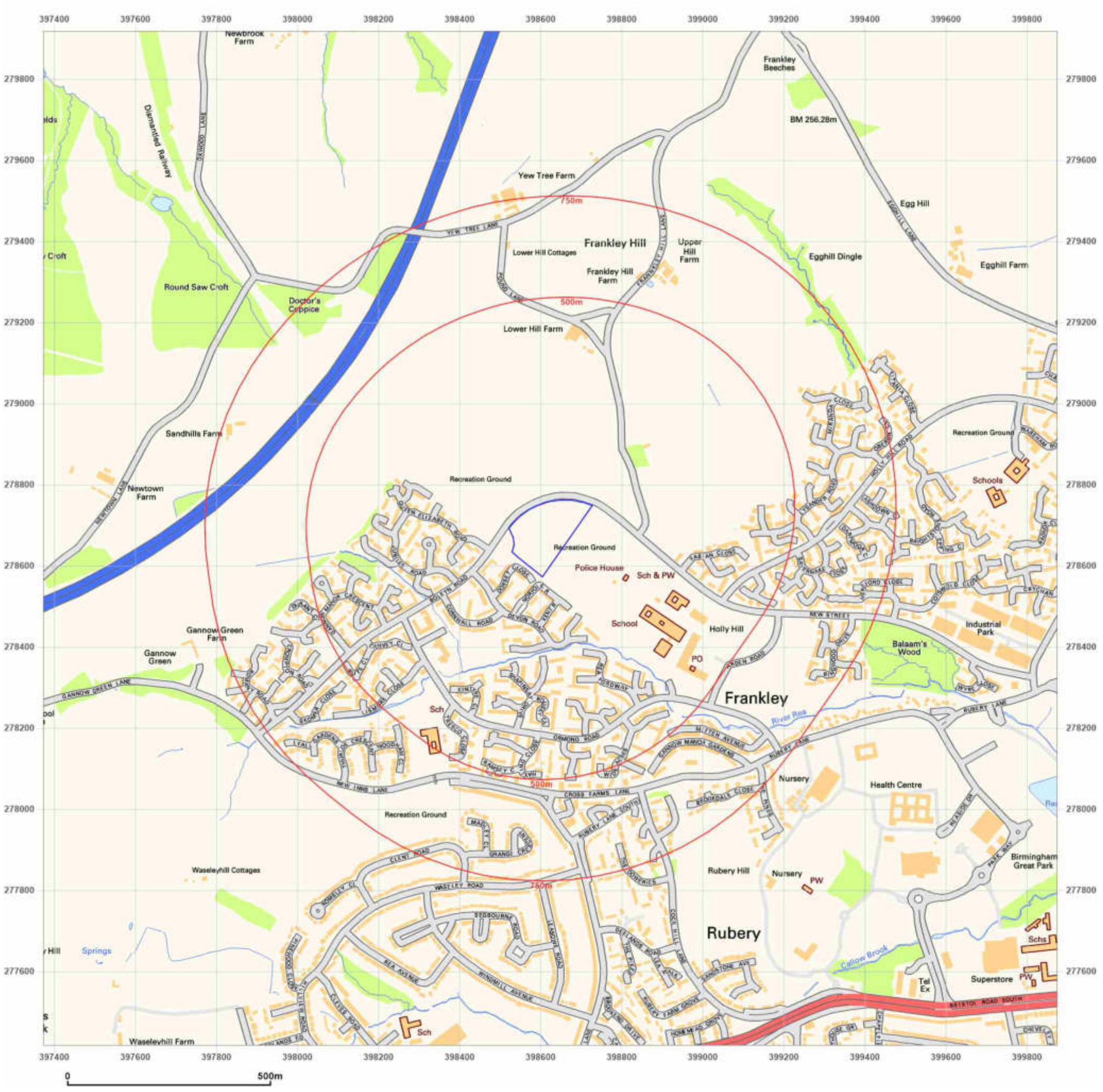

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Site Details:

B20234,Boleyn Road,Birmingham,B45 0NJ

Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

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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Production date: 22 February 2021

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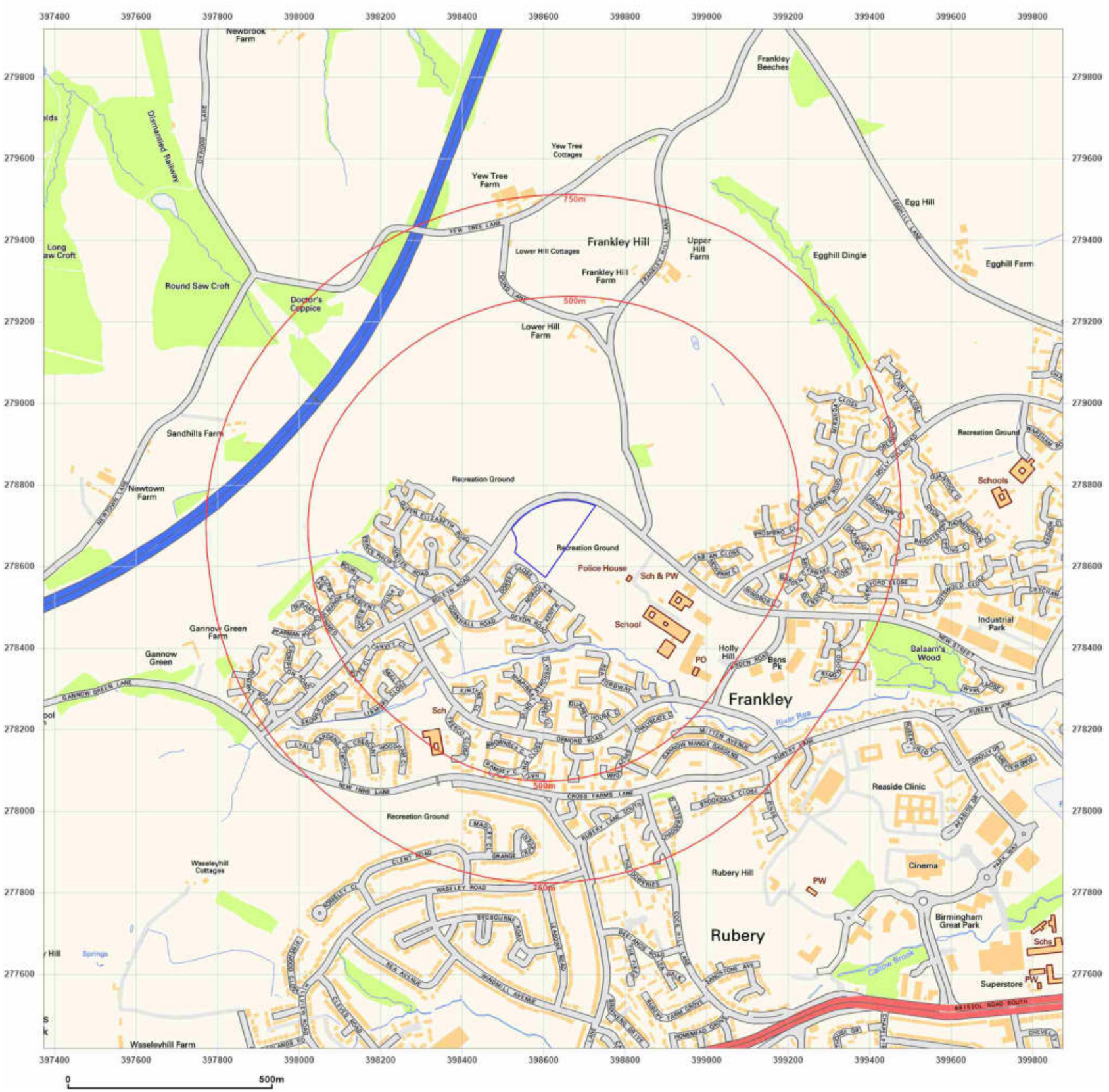

Site Details:

B20234,Boleyn Road,Birmingham,B45 0NJ

Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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Production date: 22 February 2021

Map legend available at:
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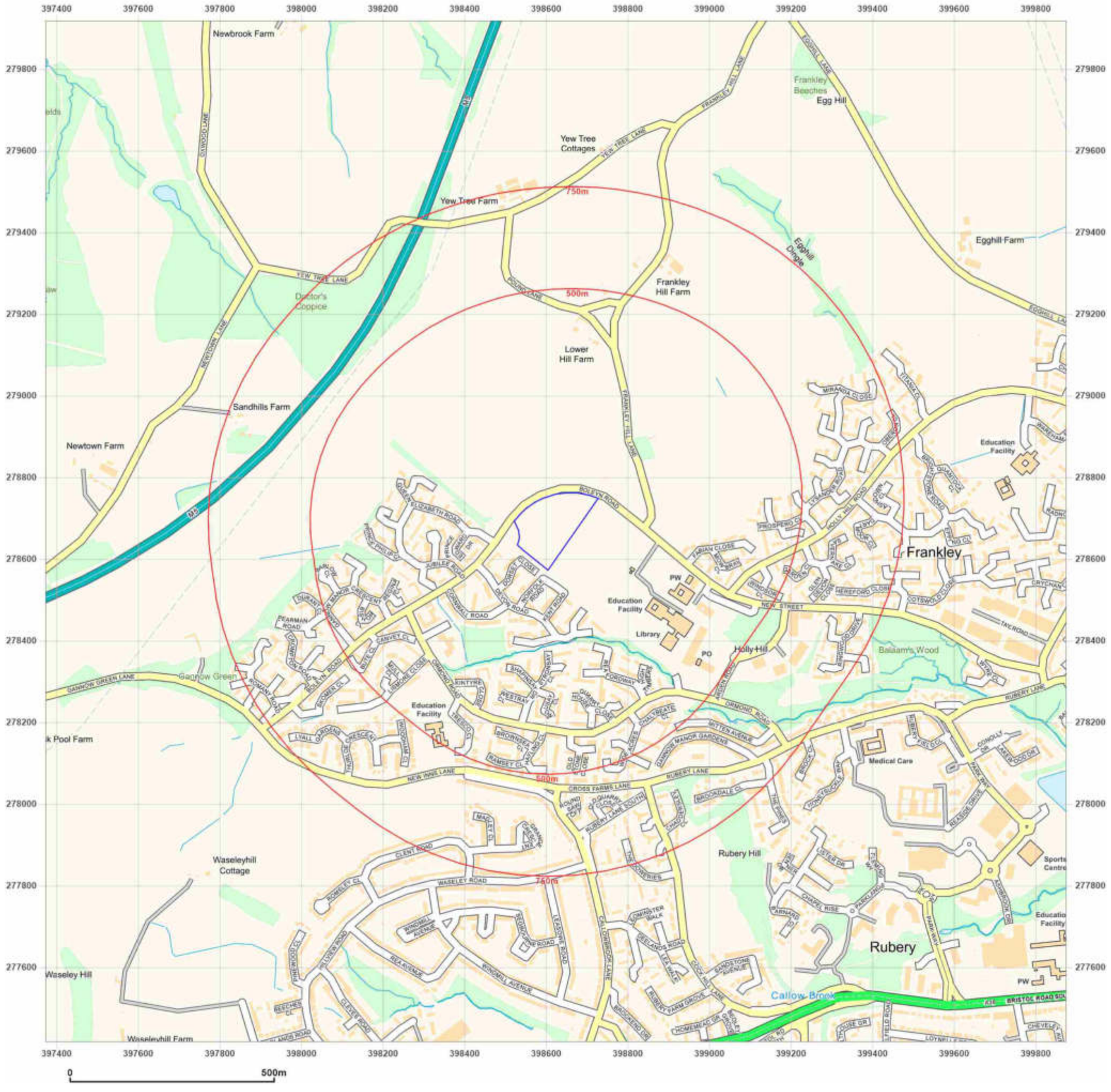

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Site Details:

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Client Ref: EMS_670843_883664
Report Ref: EMS-670843_883664
Grid Ref: 398624, 278668

Map Name: National Grid

Map date: **2021**

Scale: 1:10,000

Printed at: 1:10,000

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2021

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Production date: 22 February 2021

Map legend available at:
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Appendix C
Environmental Data Reports

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

B20234, Boleyn Road, Birmingham, B45 0NJ,

Order Details

Date: 22/02/2021

Your ref: EMS_670843_883665

Our Ref: EMS-670843_883665

Client: emapsite

Site Details

Location: 398613 278684

Area: 2.18 ha

Authority: Bromsgrove District Council, Birmingham City Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	**1.1**	**Historical industrial land uses**	3	4	4	27	-
16	**1.2**	**Historical tanks**	0	1	0	3	-
17	**1.3**	**Historical energy features**	0	0	1	4	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	1.5	Historical garages	0	0	0	0	-
18	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
19	**2.1**	**Historical industrial land uses**	3	6	7	37	-
21	**2.2**	**Historical tanks**	0	1	0	3	-
22	**2.3**	**Historical energy features**	0	0	2	9	-
23	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	**3.4**	**Historical landfill (EA/NRW records)**	0	0	0	1	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
26	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	**4.1**	**Recent industrial land uses**	0	0	2	-	-
28	4.2	Current or recent petrol stations	0	0	0	0	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-

28	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
29	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	**4.13**	**Licensed Discharges to controlled waters**	0	0	0	2	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	2	2	-
32	4.19	Pollution inventory substances	0	0	0	0	-
32	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
33	**5.1**	**Superficial aquifer**	Identified (within 500m)				
35	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
37	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
38	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
38	5.5	Groundwater vulnerability- local information	None (within 0m)				
39	**5.6**	**Groundwater abstractions**	0	0	0	0	2
40	5.7	Surface water abstractions	0	0	0	0	0
40	5.8	Potable abstractions	0	0	0	0	0
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	**6.1**	**Water Network (OS MasterMap)**	0	0	6	-	-

43	6.2	Surface water features	0	0	3	-	-
43	6.3	WFD Surface water body catchments	1	-	-	-	-
44	6.4	WFD Surface water bodies	0	0	0	-	-
44	6.5	WFD Groundwater bodies	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
48	8.1	Surface water flooding	1 in 100 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
50	9.1	Groundwater flooding	Low (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	1
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	Local Nature Reserves (LNR)	0	0	0	0	4
53	10.7	Designated Ancient Woodland	0	0	0	0	15
54	10.8	Biosphere Reserves	0	0	0	0	0
54	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
55	10.11	Green Belt	0	1	0	0	1
55	10.12	Proposed Ramsar sites	0	0	0	0	0

55	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
56	10.15	Nitrate Sensitive Areas	0	0	0	0	1
56	10.16	Nitrate Vulnerable Zones	1	0	0	1	2
57	10.17	SSSI Impact Risk Zones	2	-	-	-	-
58	10.18	SSSI Units	0	0	0	0	1
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
59	11.1	World Heritage Sites	0	0	0	-	-
60	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
60	11.3	National Parks	0	0	0	-	-
60	11.4	Listed Buildings	0	0	0	-	-
60	11.5	Conservation Areas	0	0	0	-	-
61	11.6	Scheduled Ancient Monuments	0	0	1	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
62	12.1	Agricultural Land Classification	Grade 3 (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
63	12.4	Environmental Stewardship Schemes	0	0	0	-	-
63	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
64	13.1	Priority Habitat Inventory	0	1	7	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
66	14.1	10k Availability	Identified (within 500m)				
67	14.2	Artificial and made ground (10k)	0	1	3	5	-
69	14.3	Superficial geology (10k)	1	0	1	0	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	14.5	Bedrock geology (10k)	1	0	1	6	-
72	14.6	Bedrock faults and other linear features (10k)	0	0	1	3	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	15.1	50k Availability	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	15.4	Superficial geology (50k)	1	0	1	0	-
76	15.5	Superficial permeability (50k)	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	15.8	Bedrock geology (50k)	1	0	1	5	-
78	15.9	Bedrock permeability (50k)	Identified (within 50m)				
78	15.10	Bedrock faults and other linear features (50k)	0	0	1	4	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
79	16.1	BGS Boreholes	0	0	11	-	-
Page	Section	Natural ground subsidence					
81	17.1	Shrink swell clays	Very low (within 50m)				
82	17.2	Running sands	Very low (within 50m)				
84	17.3	Compressible deposits	Negligible (within 50m)				
85	17.4	Collapsible deposits	Very low (within 50m)				
86	17.5	Landslides	Very low (within 50m)				
87	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
88	18.1	Natural cavities	0	0	0	0	-
89	18.2	BritPits	0	0	0	1	-
89	18.3	Surface ground workings	3	6	8	-	-
90	18.4	Underground workings	0	0	0	0	0
90	18.5	Historical Mineral Planning Areas	0	0	0	0	-

90	**18.6**	**Non-coal mining**	0	0	0	1	1
91	18.7	Mining cavities	0	0	0	0	0
91	**18.8**	**JPB mining areas**	Identified (within 0m)				
91	18.9	Coal mining	None (within 0m)				
92	18.10	Brine areas	None (within 0m)				
92	18.11	Gypsum areas	None (within 0m)				
92	18.12	Tin mining	None (within 0m)				
92	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
93	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
94	**20.1**	**BGS Estimated Background Soil Chemistry**	2	3	-	-	-
94	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
95	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
96	21.1	Underground railways (London)	0	0	0	-	-
96	21.2	Underground railways (Non-London)	0	0	0	-	-
97	21.3	Railway tunnels	0	0	0	-	-
97	21.4	Historical railway and tunnel features	0	0	0	-	-
97	21.5	Royal Mail tunnels	0	0	0	-	-
97	**21.6**	**Historical railways**	1	0	0	-	-
98	21.7	Railways	0	0	0	-	-
98	21.8	Crossrail 1	0	0	0	0	-
98	21.9	Crossrail 2	0	0	0	0	-
98	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 19/09/2019

Site Area: 2.18ha

Recent site history - 2016 aerial photograph

Capture Date: 06/05/2016

Site Area: 2.18ha

Recent site history - 2010 aerial photograph

Capture Date: 02/09/2010

Site Area: 2.18ha

Recent site history - 2005 aerial photograph

Capture Date: 02/09/2005

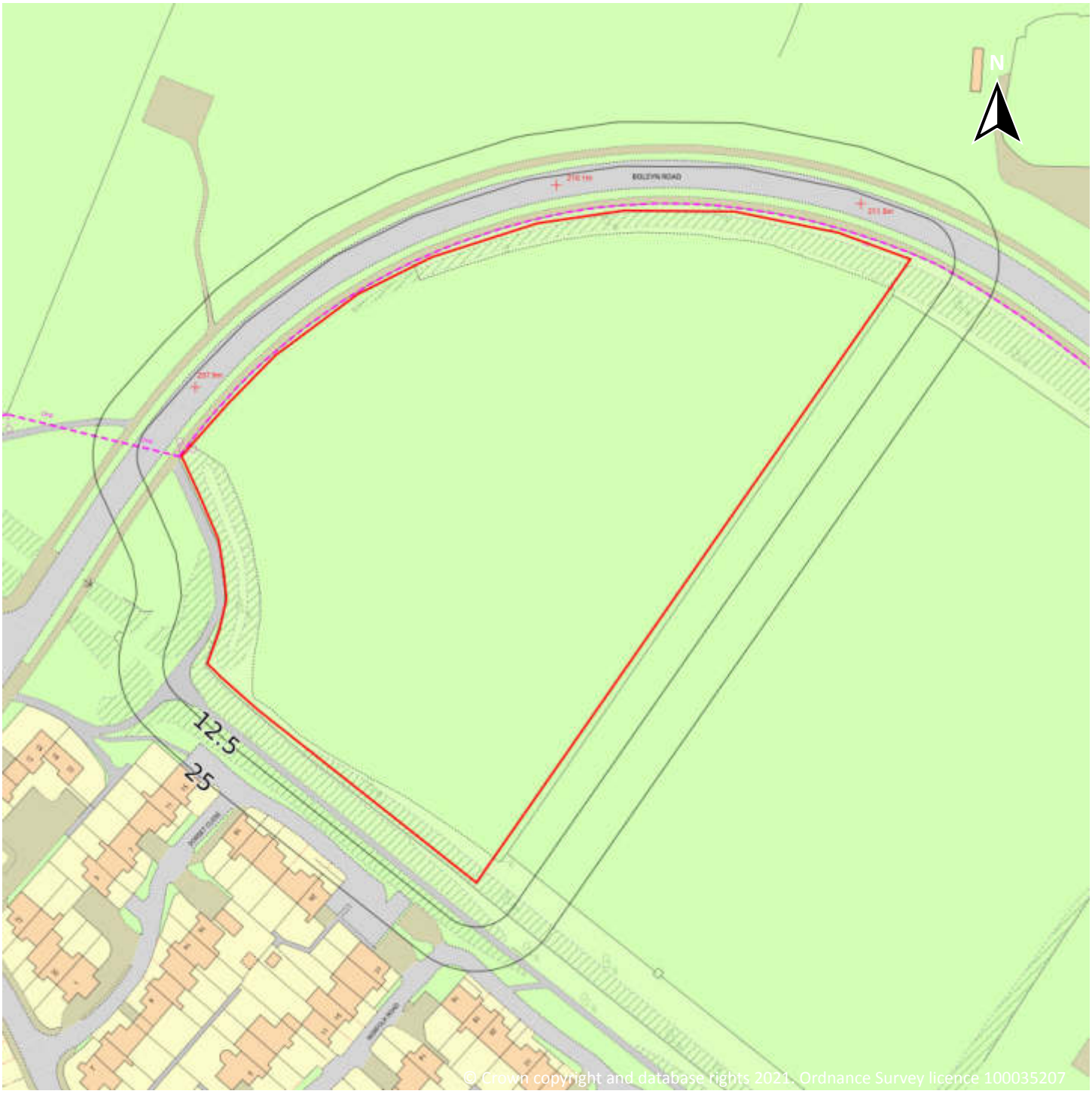
Site Area: 2.18ha

Recent site history - 1999 aerial photograph

Capture Date: 27/07/1999

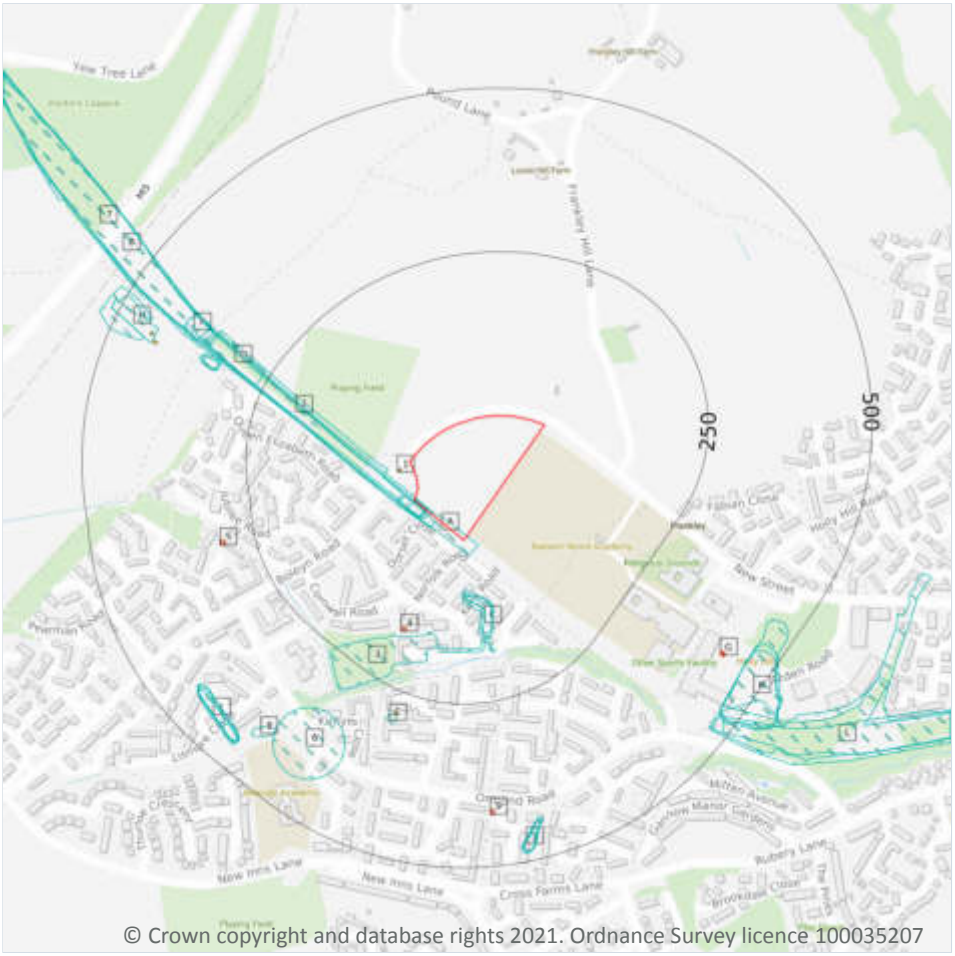
Site Area: 2.18ha

OS MasterMap site plan



Site Area: 2.18ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	38

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 14**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Cuttings**	**1982**	**1050476**

ID	Location	Land use	Dates present	Group ID
B	**On site**	**Cuttings**	**1954**	**1103067**
B	**On site**	**Cuttings**	**1938**	**1145750**
B	1m SW	Cuttings	1921	1110616
A	3m SW	Cuttings	1904	1085236
A	3m SW	Cuttings	1883	1150716
2	20m W	Cuttings	1883 - 1982	1109389
C	76m S	Unspecified Heap	1938 - 1954	1079911
C	81m S	Unspecified Heap	1921	1151831
C	85m S	Unspecified Heap	1883 - 1904	1125336
3	149m S	Unspecified Ground Workings	1883	999907
D	260m NW	Cuttings	1971	1138903
E	286m S	Unspecified Tank	1954	1017899
D	324m NW	Old Gravel Pit	1954	1115042
D	324m NW	Old Gravel Pit	1921 - 1938	1044230
D	327m NW	Old Gravel Pit	1904	1133669
6	336m SW	Sewage Pumping Station	1954	1025016
7	358m NW	Cuttings	1883 - 1904	1097560
F	365m NW	Unspecified Pit	1971	1080169
F	365m NW	Unspecified Pit	1982	1115979
8	405m SW	Cuttings	1883 - 1904	1060841
I	427m SW	Unspecified Heaps	1921	1156580
I	427m SW	Unspecified Heaps	1954	1040511
I	427m SW	Unspecified Heaps	1938	1057420
H	433m NW	Railway Sidings	1954	994178
I	433m SW	Unspecified Heap	1883 - 1904	1106301
J	437m S	Unspecified Pit	1904	1082949
J	442m S	Unspecified Pit	1938	1099647
I	444m SW	Unspecified Heap	1883 - 1904	1141283

ID	Location	Land use	Dates present	Group ID
J	444m S	Unspecified Pit	1921	1074760
H	448m NW	Gravel Pit	1954	1004477
K	452m SE	Unspecified Old Quarry	1954	1106873
J	453m S	Unspecified Pit	1954	1145332
K	458m SE	Unspecified Old Quarry	1921 - 1938	1145607
K	460m SE	Unspecified Quarry	1883 - 1904	1065211
L	469m SE	Railway Sidings	1904	1087130
L	471m SE	Railway Sidings	1921 - 1938	1067794
L	479m SE	Railway Sidings	1954	1057587

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**4**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original 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 14**

ID	Location	Land use	Dates present	Group ID
1	17m SW	Unspecified Tank	1937	154587
E	282m S	Tanks	1937	157853
H	426m NW	Tanks	1937	157850
H	437m NW	Tanks	1937	157848

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	5

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 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 14**

ID	Location	Land use	Dates present	Group ID
4	160m SW	Electricity Substation	1983 - 1992	89177
5	296m W	Electricity Substation	1983 - 1992	90598
9	413m S	Electricity Substation	1983 - 1992	90617
G	419m SE	Electricity Substation	1992	89299
G	419m SE	Electricity Substation	1981 - 1989	94554

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 un-grouped 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	0

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

This data is sourced from Ordnance Survey / Groundsure.

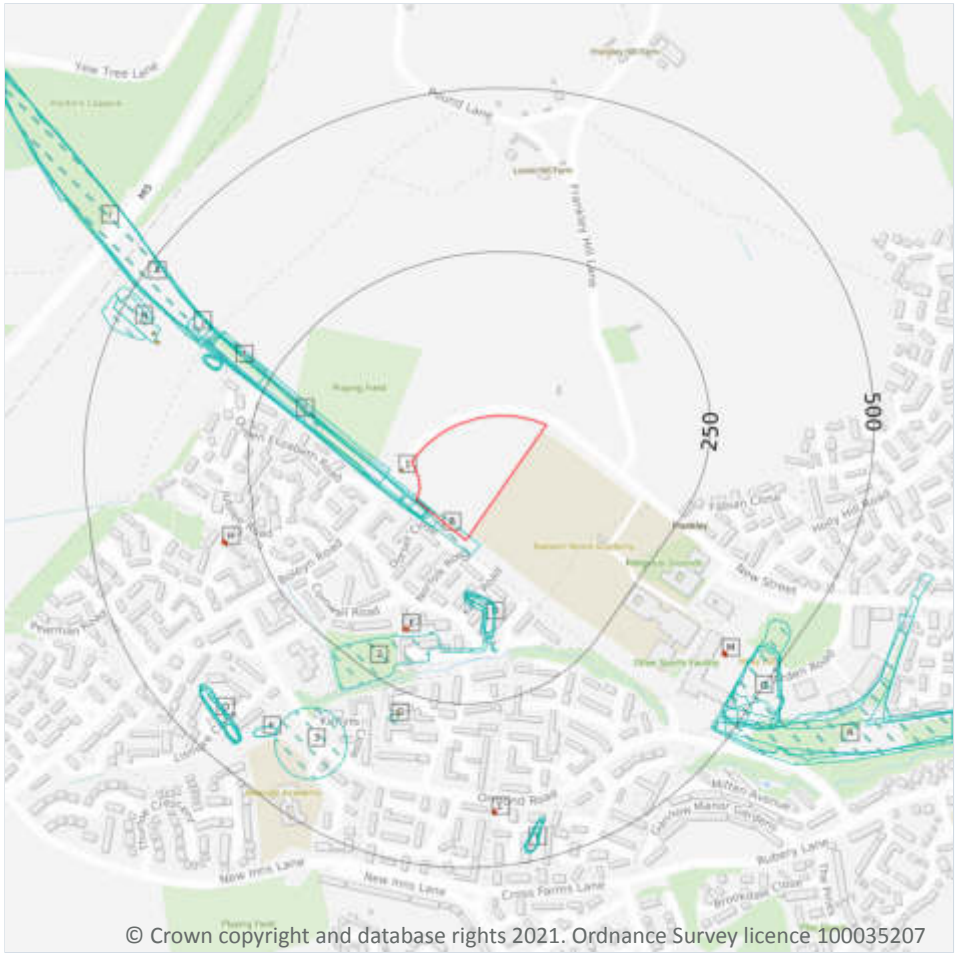
1.6 Historical military land

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

2.1 Historical industrial land uses

Records within 500m	53

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 19**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Cuttings**	**1938**	**1145750**
A	**On site**	**Cuttings**	**1954**	**1103067**
B	**On site**	**Cuttings**	**1982**	**1050476**

ID	Location	Land Use	Date	Group ID
A	1m SW	Cuttings	1921	1110616
B	3m SW	Cuttings	1904	1085236
B	3m SW	Cuttings	1883	1150716
C	20m W	Cuttings	1904	1109389
C	20m W	Cuttings	1883	1109389
C	35m W	Cuttings	1982	1109389
D	76m S	Unspecified Heap	1938	1079911
D	79m S	Unspecified Heap	1954	1079911
D	81m S	Unspecified Heap	1921	1151831
D	81m S	Unspecified Heap	1921	1151831
D	85m S	Unspecified Heap	1883	1125336
D	85m S	Unspecified Heap	1904	1125336
2	149m S	Unspecified Ground Workings	1883	999907
F	260m NW	Cuttings	1971	1138903
G	286m S	Unspecified Tank	1954	1017899
F	324m NW	Old Gravel Pit	1954	1115042
F	324m NW	Old Gravel Pit	1938	1044230
F	325m NW	Old Gravel Pit	1921	1044230
F	327m NW	Old Gravel Pit	1904	1133669
3	336m SW	Sewage Pumping Station	1954	1025016
I	358m NW	Cuttings	1904	1097560
I	358m NW	Cuttings	1883	1097560
J	365m NW	Unspecified Pit	1982	1115979
J	365m NW	Unspecified Pit	1971	1080169
K	405m SW	Cuttings	1904	1060841
K	405m SW	Cuttings	1883	1060841
O	427m SW	Unspecified Heaps	1921	1156580
O	427m SW	Unspecified Heaps	1921	1156580

ID	Location	Land Use	Date	Group ID
O	427m SW	Unspecified Heaps	1954	1040511
O	427m SW	Unspecified Heaps	1938	1057420
N	433m NW	Railway Sidings	1954	994178
O	433m SW	Unspecified Heap	1883	1106301
O	433m SW	Unspecified Heap	1904	1106301
P	437m S	Unspecified Pit	1904	1082949
P	442m S	Unspecified Pit	1938	1099647
O	444m SW	Unspecified Heap	1883	1141283
O	444m SW	Unspecified Heap	1904	1141283
P	444m S	Unspecified Pit	1921	1074760
P	444m S	Unspecified Pit	1921	1074760
N	448m NW	Gravel Pit	1954	1004477
Q	452m SE	Unspecified Old Quarry	1954	1106873
P	453m S	Unspecified Pit	1954	1145332
Q	458m SE	Unspecified Old Quarry	1938	1145607
Q	460m SE	Unspecified Quarry	1904	1065211
Q	461m SE	Unspecified Old Quarry	1921	1145607
Q	467m SE	Unspecified Quarry	1883	1065211
R	469m SE	Railway Sidings	1904	1087130
R	471m SE	Railway Sidings	1938	1067794
R	473m SE	Railway Sidings	1921	1067794
R	479m SE	Railway Sidings	1954	1057587

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**4**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. 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 19**

ID	Location	Land Use	Date	Group ID
1	17m SW	Unspecified Tank	1937	154587
G	282m S	Tanks	1937	157853
N	426m NW	Tanks	1937	157850
N	437m NW	Tanks	1937	157848

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**11**

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 19**

ID	Location	Land Use	Date	Group ID
E	160m SW	Electricity Substation	1992	89177
E	160m SW	Electricity Substation	1983	89177
H	296m W	Electricity Substation	1983	90598
H	296m W	Electricity Substation	1992	90598
L	413m S	Electricity Substation	1983	90617
L	414m S	Electricity Substation	1992	90617
M	419m SE	Electricity Substation	1983	94554
M	419m SE	Electricity Substation	1992	89299
M	422m SE	Electricity Substation	1981	94554
M	423m SE	Electricity Substation	1989	94554
M	423m SE	Electricity Substation	1992	89299

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.

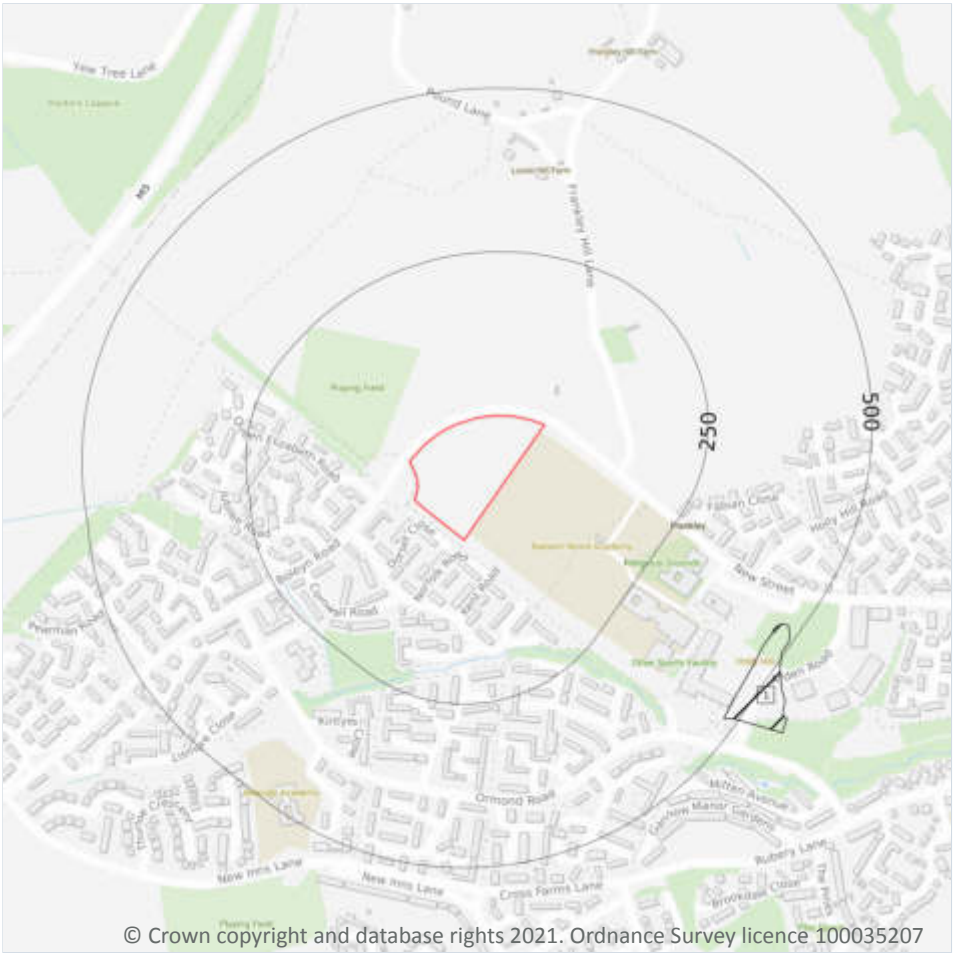
2.5 Historical garages

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	1

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

Features are displayed on the Waste and landfill map on **page 24**

ID	Location	Details		
1	466m SE	Site Address: Holly Hill Landfill Site, Holly Hill, Frankley, Birmingham, West Midlands Licence Holder Address: -	Waste Licence: - Site Reference: 644/1908, LF/75, 4600/9000 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded 01/01/1937 Last Recorded: 31/12/1967

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	0

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.

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

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	2

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
2	164m SW	Electricity Sub Station	West Midlands, B45	Electrical Features	Infrastructure and Facilities
3	204m SE	Wind Turbine	West Midlands, B45	Energy Production	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	0

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.

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	2

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

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

ID	Location	Address	Details	
A	403m SW	FRANKLEY HOUSING DEVELOPMENT, OUTLET J	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: T/09/03762/O Permit Version: 1 Receiving Water: RIVER REA (RIVER TAME)	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 27/06/1974 Effective Date: 27/06/1974 Revocation Date: 27/03/2000
6	421m SE	FRANKLEY HOUSING DEVELOPMENT, OUTLET J	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: T/09/03762/O Permit Version: 1 Receiving Water: RIVER REA (RIVER TAME)	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 27/06/1974 Effective Date: 27/06/1974 Revocation Date: 27/03/2000

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	4

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

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

ID	Location	Details	
1	153m NW	Incident Date: 05/10/2001 Incident Identification: 34943 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	205m SE	Incident Date: 28/02/2002 Incident Identification: 61082 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
5	292m S	Incident Date: 25/04/2002 Incident Identification: 74834 Pollutant: Specific Waste Materials Pollutant Description: Clinical Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	359m SW	Incident Date: 14/01/2002 Incident Identification: 52322 Pollutant: Oils and Fuel Pollutant Description: Gas and Fuel Oils	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

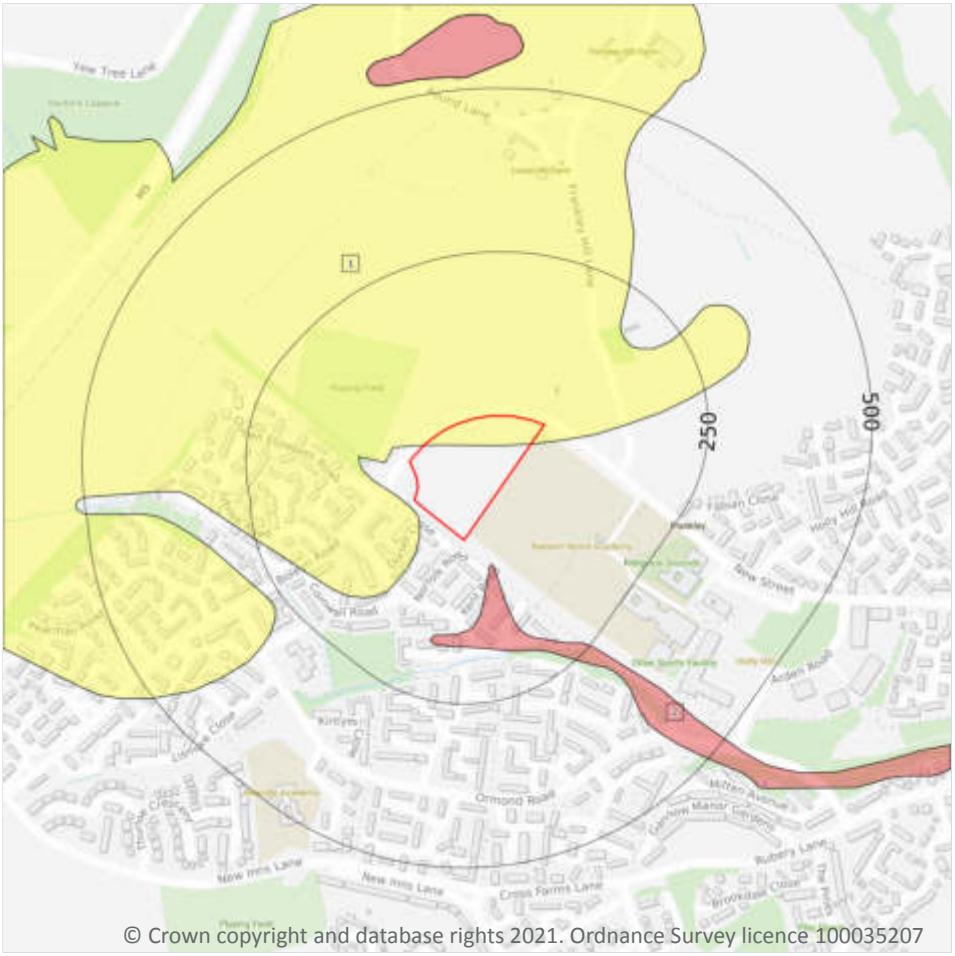
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	2

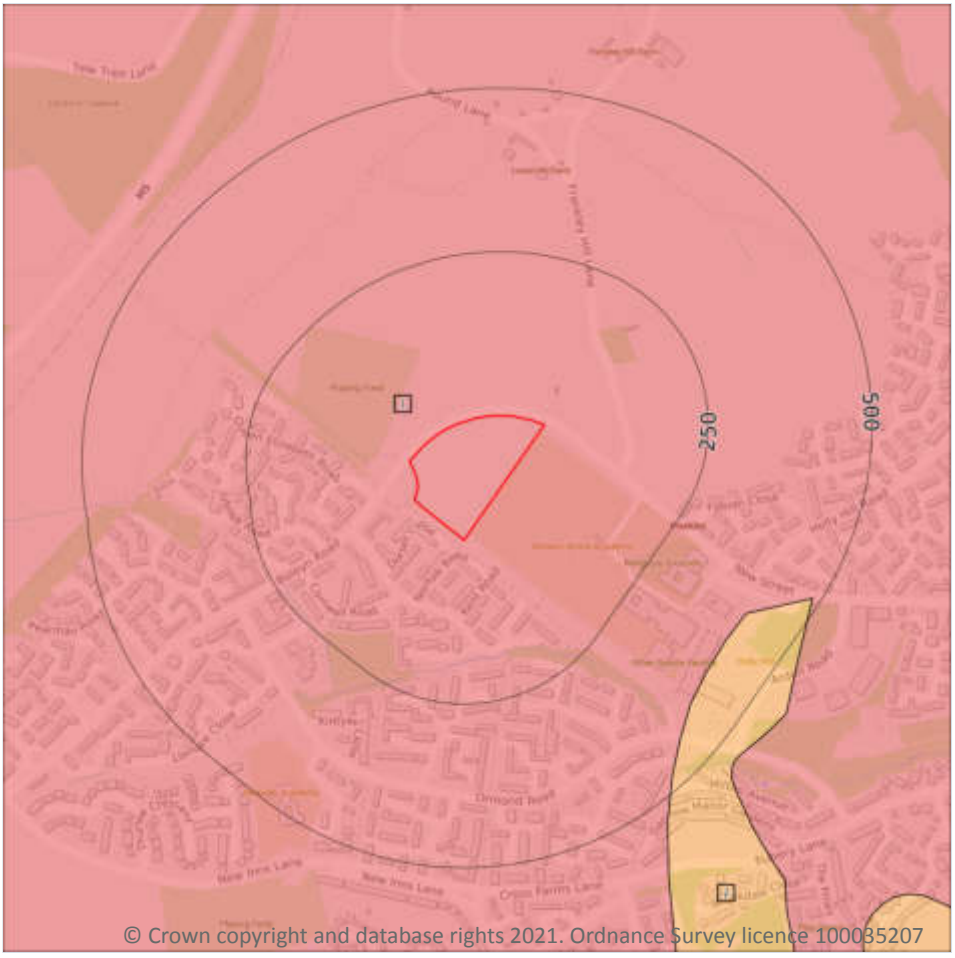
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 33**

ID	Location	Designation	Description
1	**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**
2	56m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	2

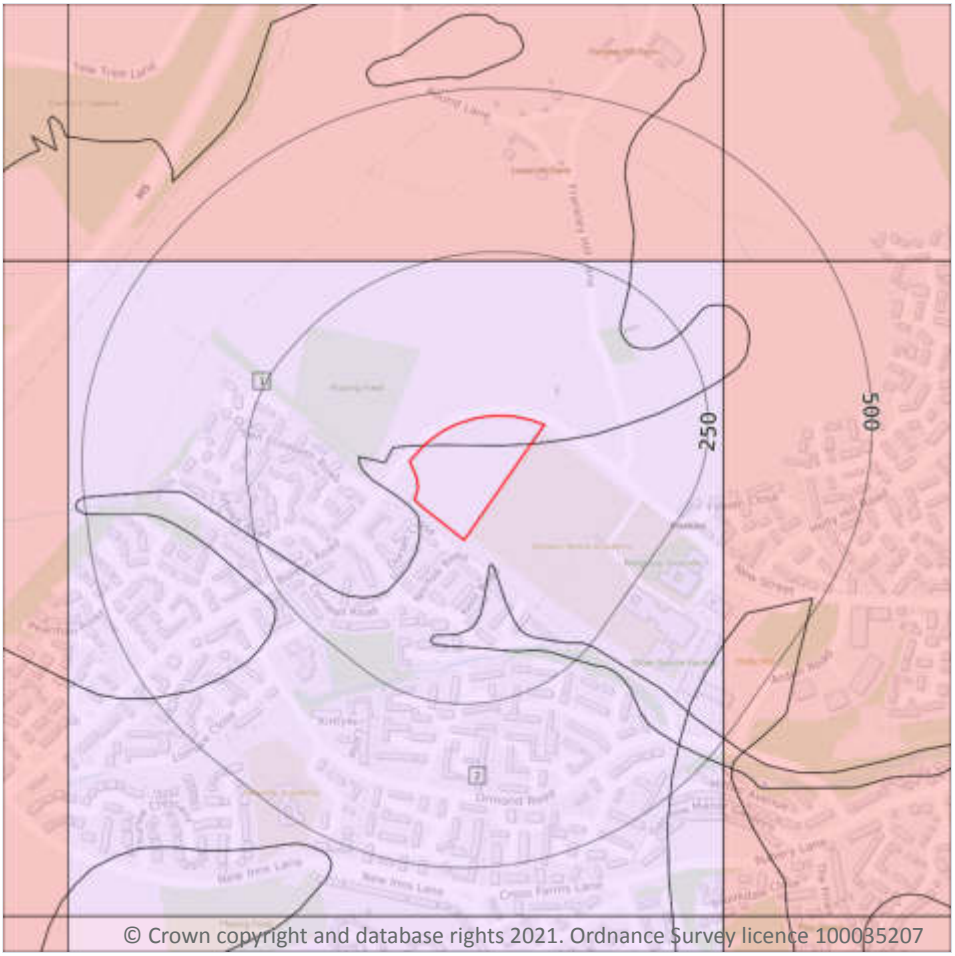
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 35**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	415m SE	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-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	2

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 37**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Medium	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

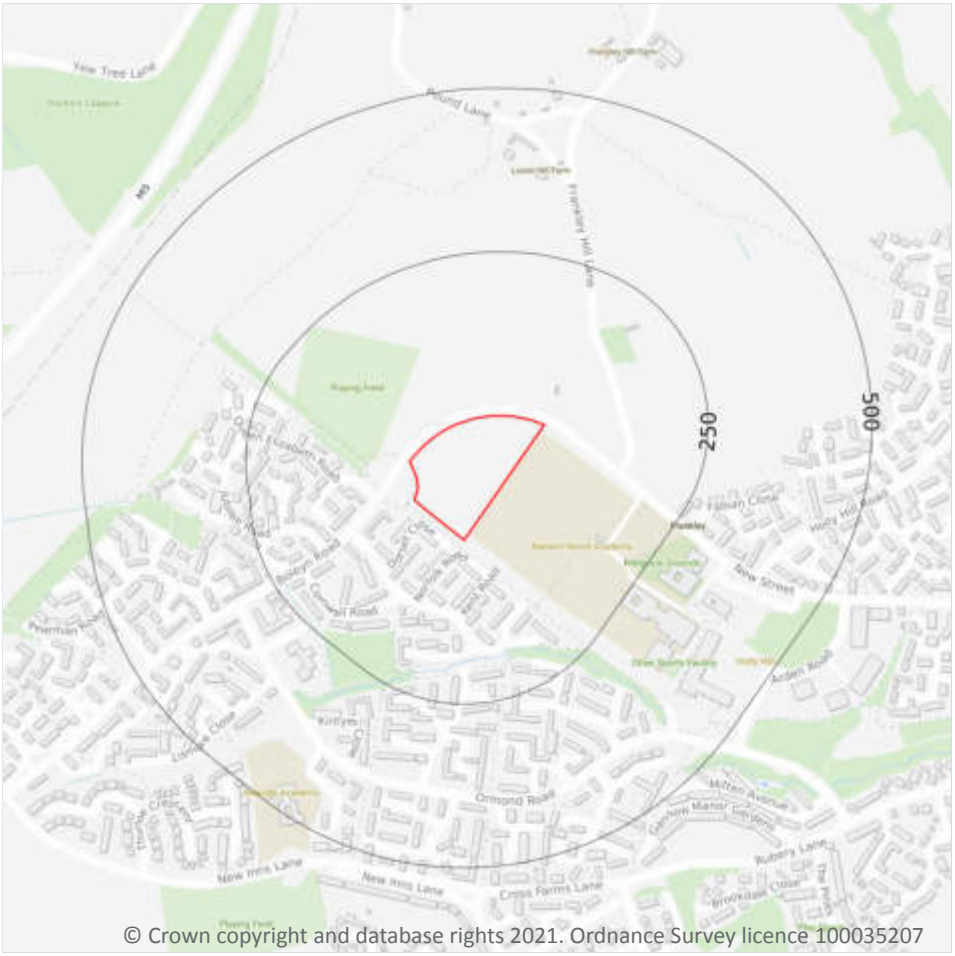
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- 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	2

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 39**

ID	Location	Details	
-	1832m W	Status: Historical Licence No: 18/54/06/0040 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: MANOR FARM,ROMSLEY - RESERVOIR Data Type: Point Name: LOWE Easting: 396700 Northing: 278900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 07/08/1995 Version End Date: -
-	1940m N	Status: Historical Licence No: 18/54/06/0157 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: PARK FARM - UNDERGROUND SPRING Data Type: Point Name: CLARKE Easting: 398800 Northing: 280700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 19/01/1971 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**0**

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

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

5.8 Potable abstractions

Records within 2000m	**0**

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

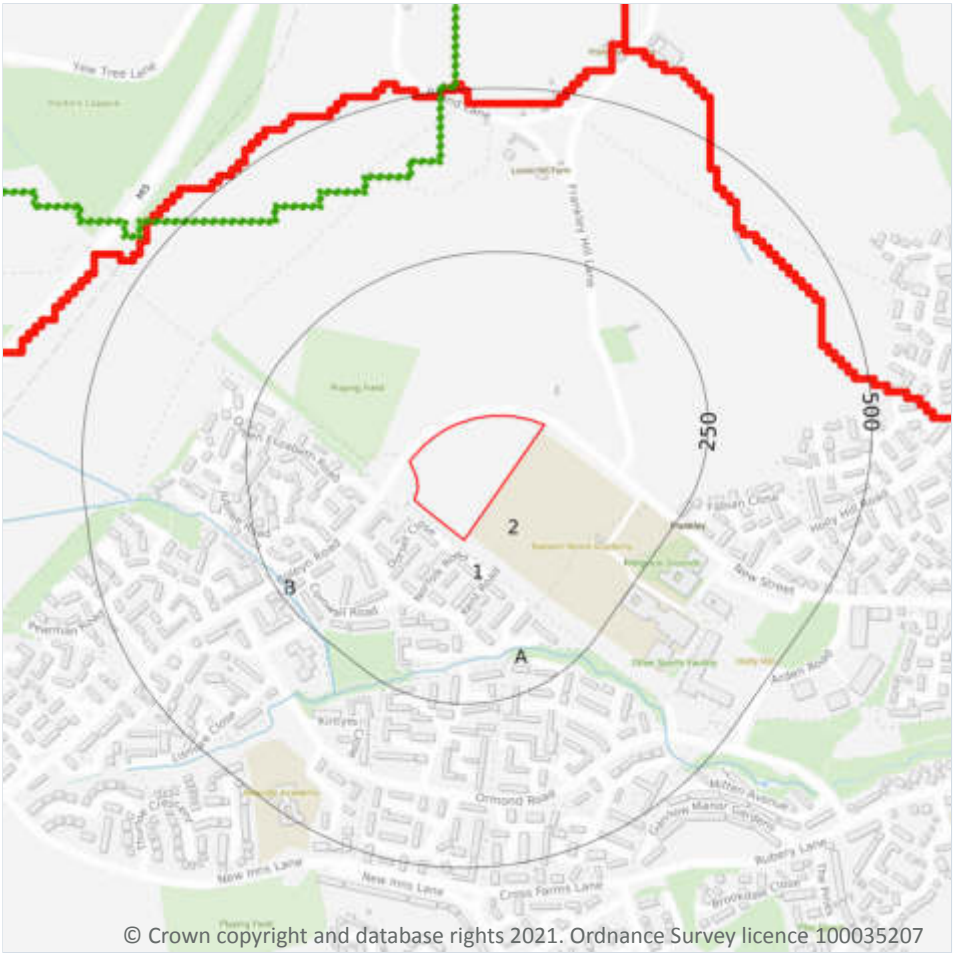
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	**6**

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	181m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Rea

ID	Location	Type of water feature	Ground level	Permanence	Name
B	233m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	233m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	240m SW	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	245m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
B	246m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	3

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

Features are displayed on the Hydrology map on **page 42**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Rea source to Bourn Brook**	**GB104028042510**	**Tame Lower Rivers and Lakes**	**Tame Anker and Mease**

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

6.4 WFD Surface water bodies

Records identified	**1**

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1210m SE	River	Rea source to Bourn Brook	GB104028042510	Moderate	Good	Moderate	2016

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 42**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	**On site**	**Tame Anker Mease - Coal Measures Black Country**	**GB40402G992400**	**Good**	**Good**	**Good**	**2015**

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 Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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.

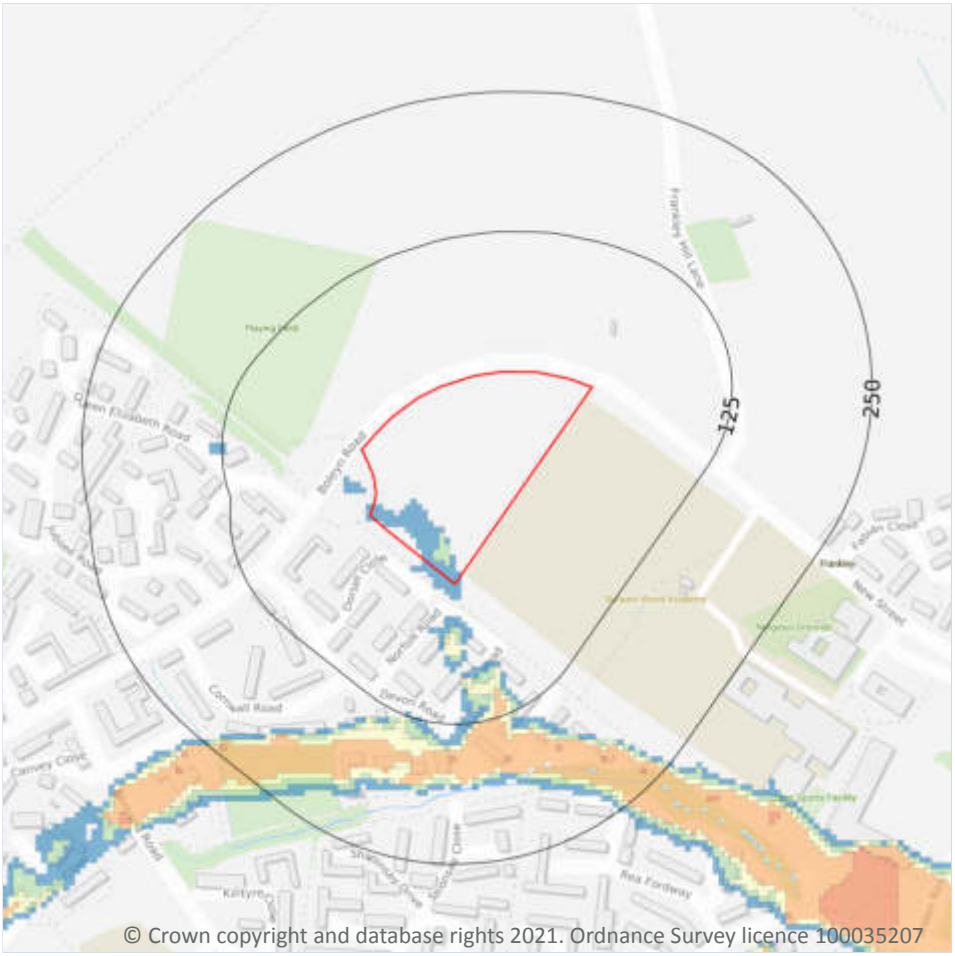
7.7 Flood Zone 3

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 250 year, 0.1m - 0.3m**
Highest risk within 50m	**1 in 100 year, 0.3m - 1.0m**

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

Features are displayed on the Surface water flooding map on **page 48**

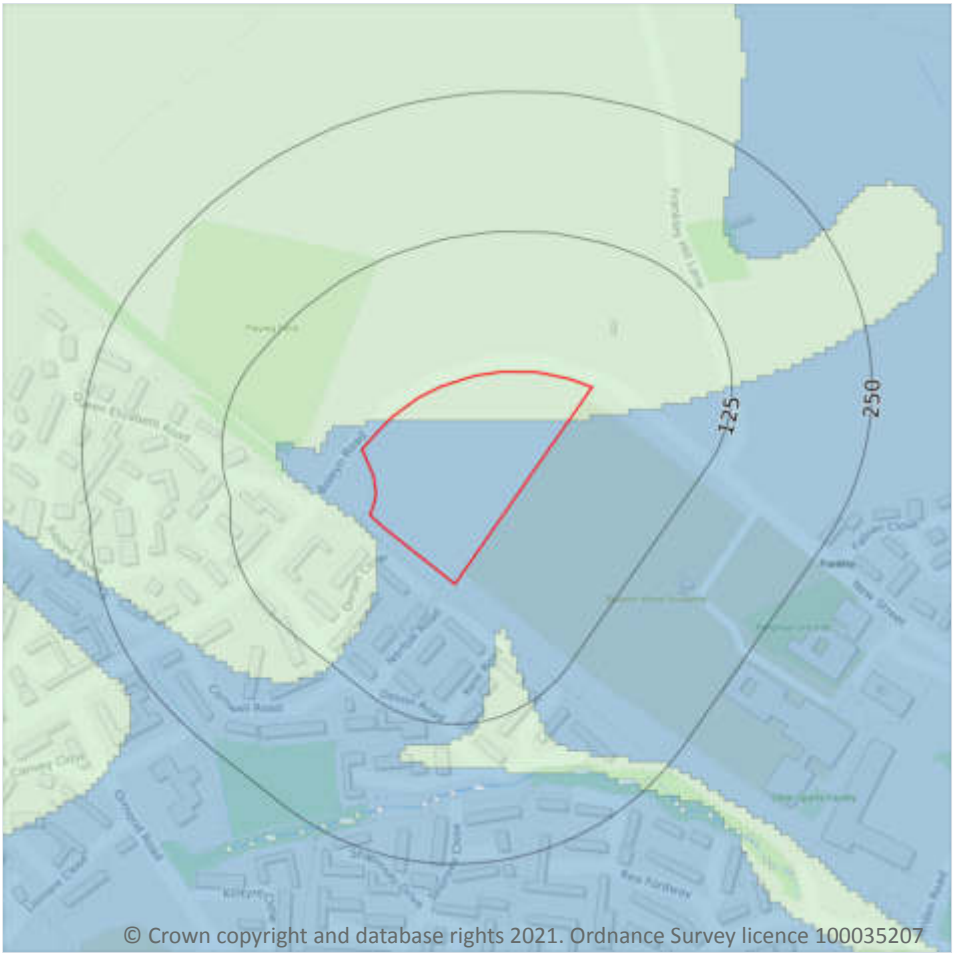
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

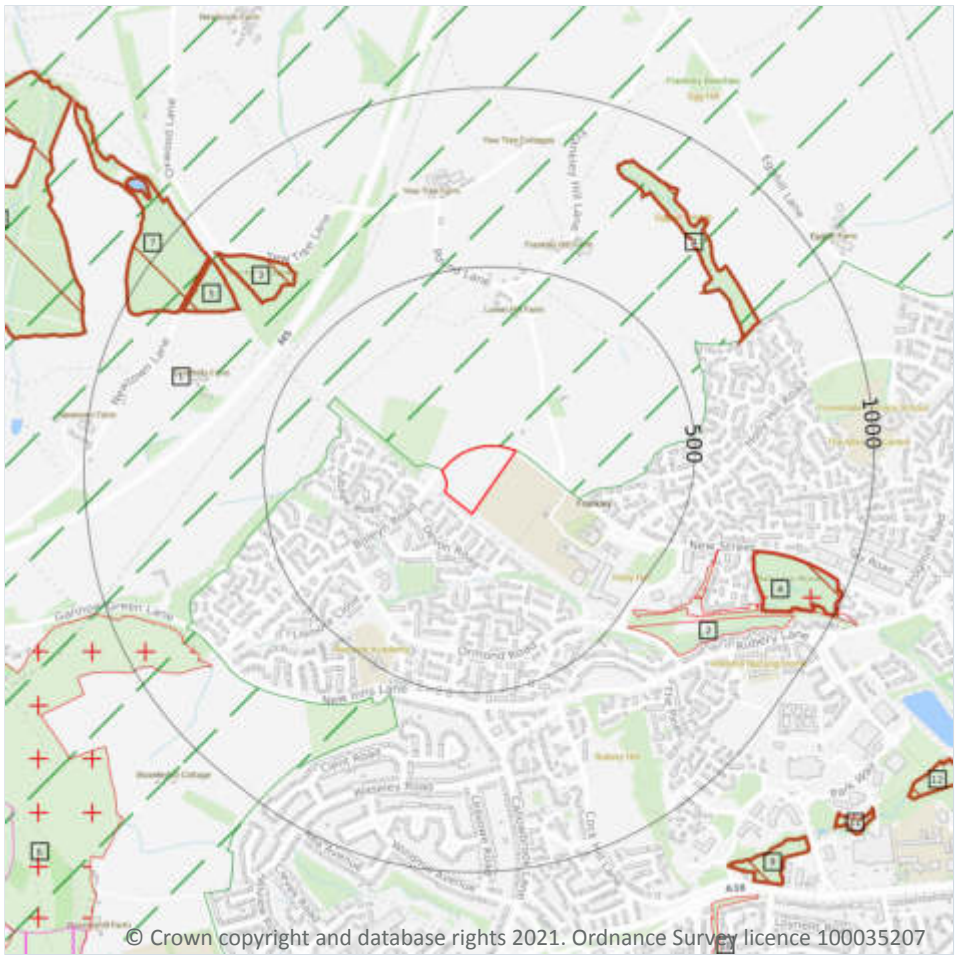
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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 50**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Local Nature Reserves (LNR)

Designated Ancient Woodland

Green Belt

Nitrate Sensitive Areas

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	1

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
-	1827m W	Romsley Manor Farm	Natural England

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	4

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
A	523m SE	Balaams Wood	Natural England
2	537m SE	Balaams Wood	Natural England
6	811m SW	Waseley Hills Country Park	Natural England
10	1278m SE	Rubery Cutting	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m	15

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 51**

ID	Location	Name	Woodland Type
3	660m NW	Frankley Wood	Ancient & Semi-Natural Woodland
4	687m NE	Egghill Dingle	Ancient & Semi-Natural Woodland
A	724m SE	Balaam's Wood	Ancient & Semi-Natural Woodland
5	725m NW	Frankley Wood	Ancient Replanted Woodland
7	859m NW	Frankley Wood	Ancient & Semi-Natural Woodland
8	1070m W	Frankley Wood	Ancient & Semi-Natural Woodland
9	1215m SE	Unknown	Ancient & Semi-Natural Woodland
11	1322m SE	Unknown	Ancient & Semi-Natural Woodland
12	1441m SE	Unknown	Ancient & Semi-Natural Woodland

ID	Location	Name	Woodland Type
-	1640m NW	Frankley Wood	Ancient Replanted Woodland
-	1701m N	Twiland Wood	Ancient & Semi-Natural Woodland
-	1755m NW	Frankley Wood	Ancient & Semi-Natural Woodland
-	1812m N	Raven Hays Wood	Ancient & Semi-Natural Woodland
-	1909m NW	Twiland Wood	Ancient & Semi-Natural Woodland
-	1933m N	Harriss And Kettles Woods	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 51**

ID	Location	Name	Local Authority name
1	1m NW	Birmingham	Bromsgrove
-	1956m NE	Birmingham	Birmingham

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	1

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).

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
13	1493m SW	Wildmoor	Natural England

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

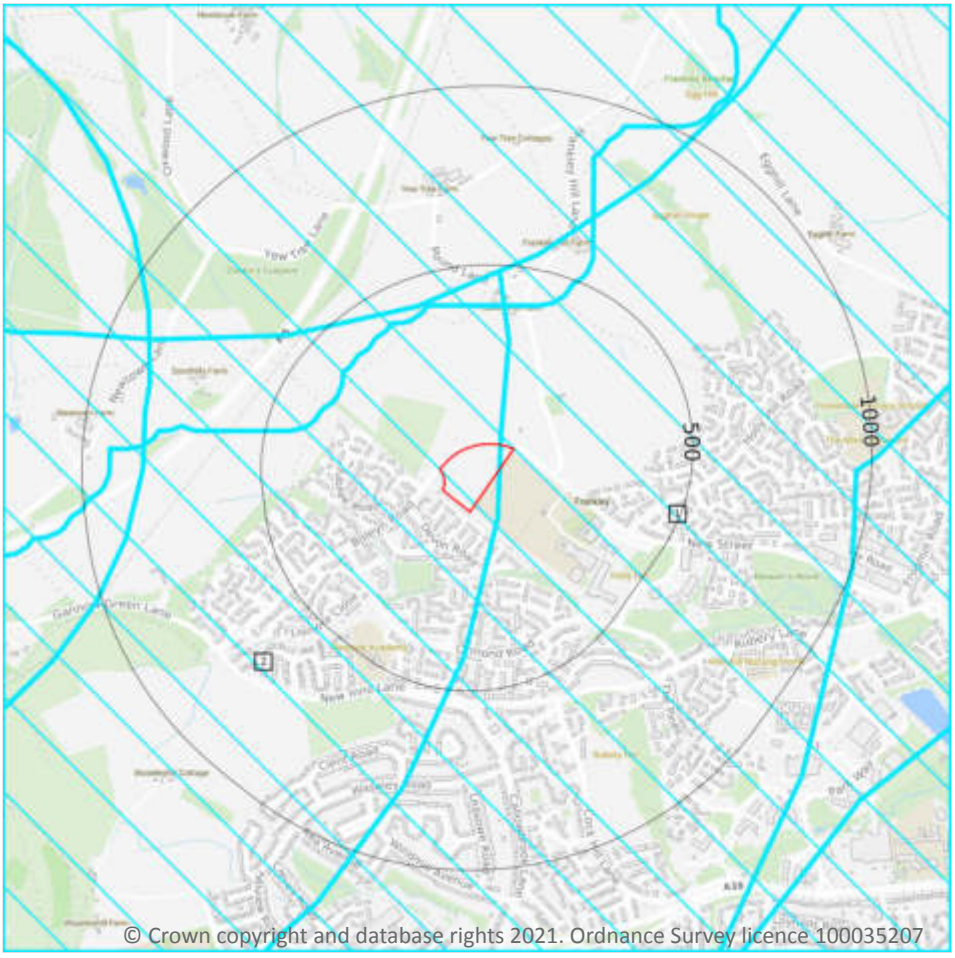
Records within 2000m	4

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.

Location	Name	Type	NVZ ID	Status
On site	**River Trent (source to confluence with Derwent)**	**Surface Water**	**S308**	**Changed**
437m NW	R Stour (Worcs) - conf Smestow Bk to conf R Severn NVZ	Surface Water	S594	Existing
1495m SW	R Salwarpe - conf Elmbridge Bk to conf R Severn NVZ	Surface Water	S586	Existing
1799m SW	West Midlands	Groundwater	G29	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 57**

ID	Location	Type of developments requiring consultation
1	**On site**	**Infrastructure - Airports, helipads and other aviation proposals.** **Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.**

ID	Location	Type of developments requiring consultation
2	**On site**	**Infrastructure - Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Air pollution - Any industrial/agricultural development that could cause AIR POLLUTION (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 200m² & manure stores > 250t). Combustion - General combustion processes >20MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	**1**

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

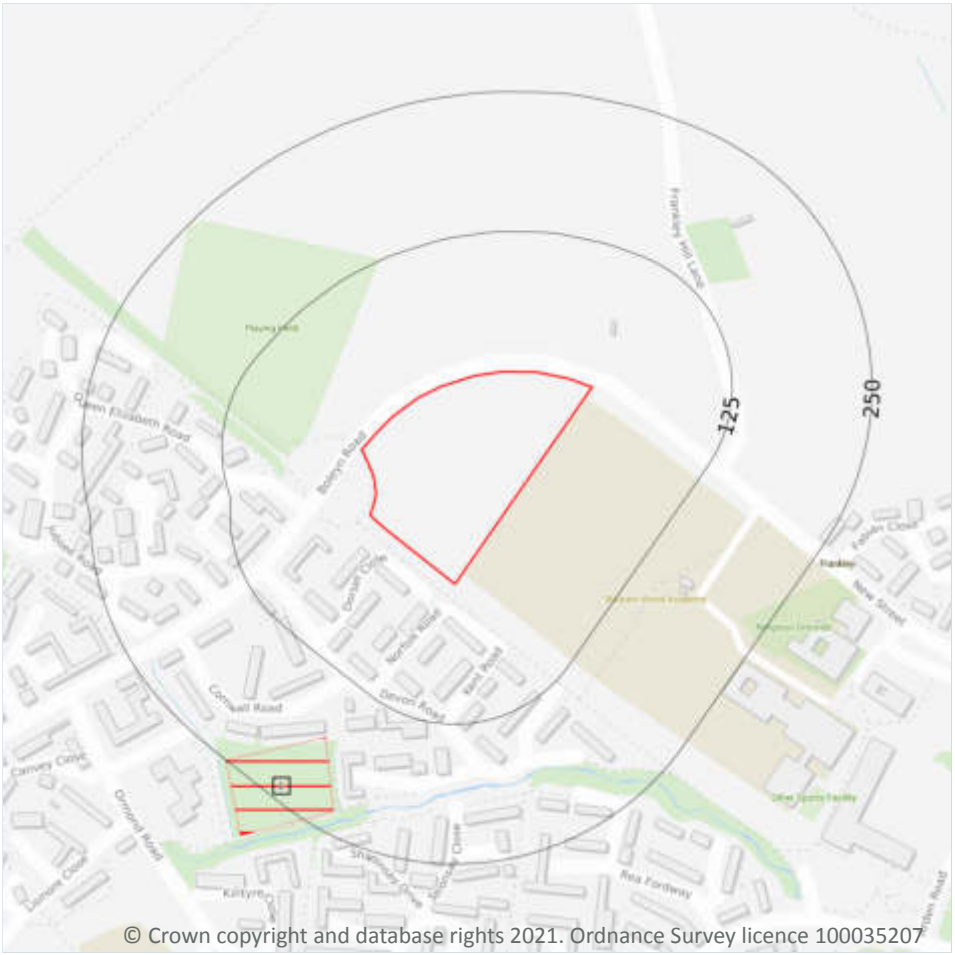
Features are displayed on the SSSI Impact Zones and Units map on **page 57**

ID: -
Location: 1827m W
SSSI name: Romsley Manor Farm
Unit name: 1
Broad habitat: Neutral Grassland - Lowland
Condition: Unfavourable - Declining
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland neutral grassland (MG5)	Unfavourable - Declining	29/06/2011

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	0

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

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

11.5 Conservation Areas

Records within 250m	0

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.

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

11.6 Scheduled Ancient Monuments

Records within 250m	1

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.

Features are displayed on the Visual and cultural designations map on **page 59**

ID	Location	Ancient monument name	Reference number
1	179m SW	Moated site 700m east of Gannow Green Farm	1017810

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

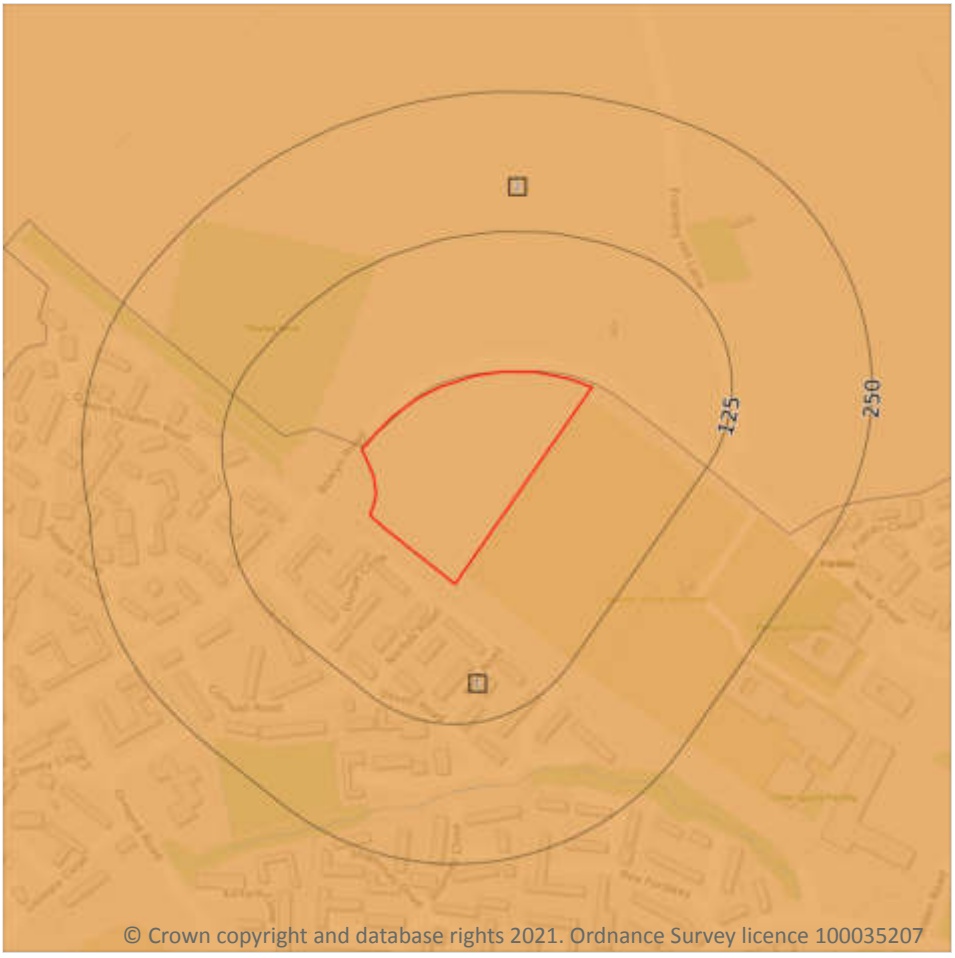
11.7 Registered Parks and Gardens

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 English Heritage, 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	2

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

Features are displayed on the Agricultural designations map on **page 62**

ID	Location	Classification	Description
1	On site	Grade 3	**Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.**

ID	Location	Classification	Description
2	**On site**	**Grade 3**	**Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.**

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.

This data is sourced from Natural England.

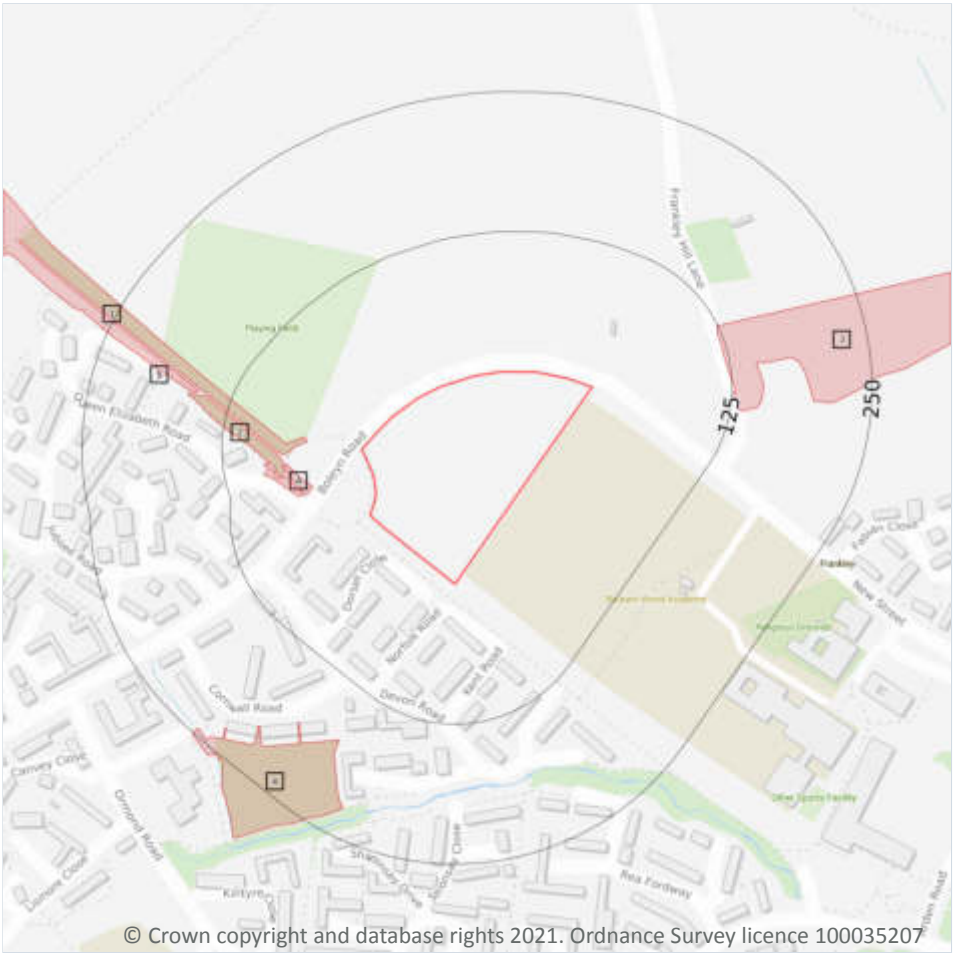
12.5 Countryside Stewardship Schemes

Records within 250m	**0**

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

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	8

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

Features are displayed on the Habitat designations map on **page 64**

ID	Location	Main Habitat	Other habitats
1	50m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	54m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	63m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	72m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
A	84m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	121m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	174m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
5	190m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**0**

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	**0**

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

This data is sourced from Natural England.

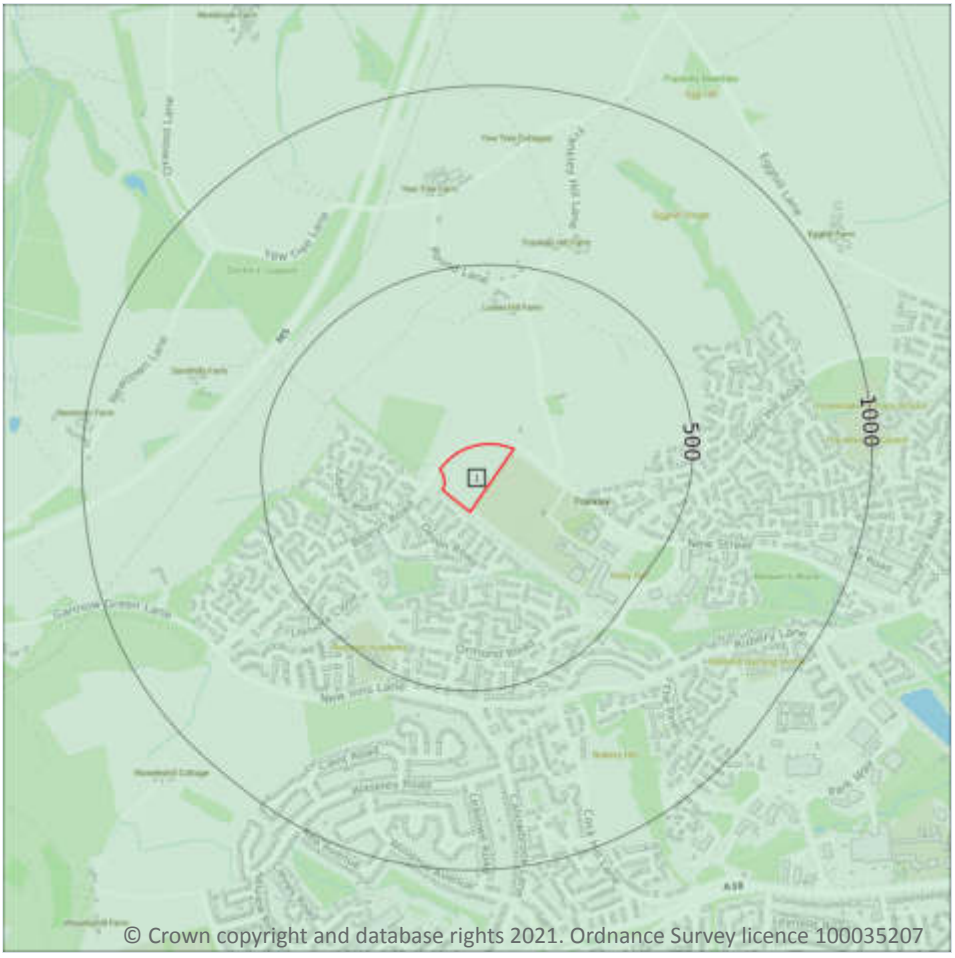
13.4 Limestone Pavement Orders

Records within 250m	**0**

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

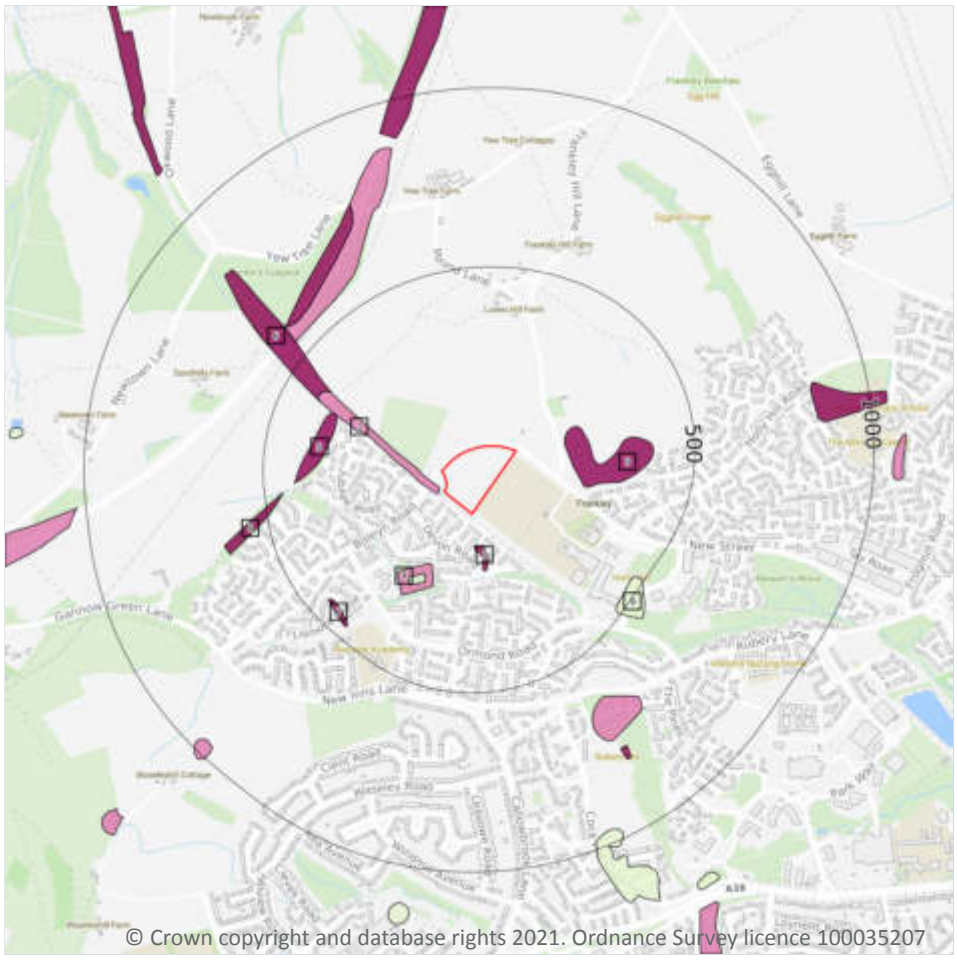
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

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

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SO97NE**

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 **9**

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

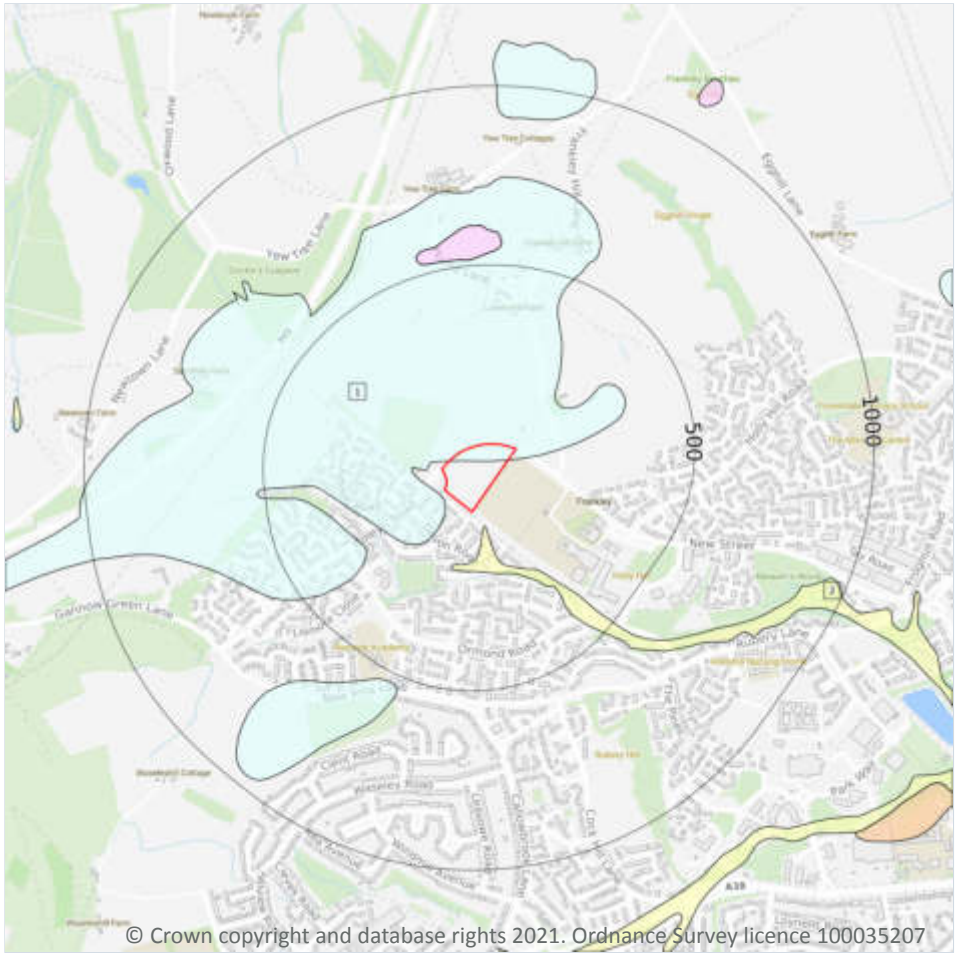
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 67**

ID	Location	LEX Code	Description	Rock description
1	15m W	WGR-VOID	Worked Ground (Undivided)	Void
2	89m S	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	138m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	181m SW	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
5	321m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
6	380m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
7	434m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
8	449m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
9	469m SE	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 69**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**
2	53m SE	ALV-XCZ	Alluvium - Clay And Silt	Clay And Silt

This data is sourced from the British Geological Survey.

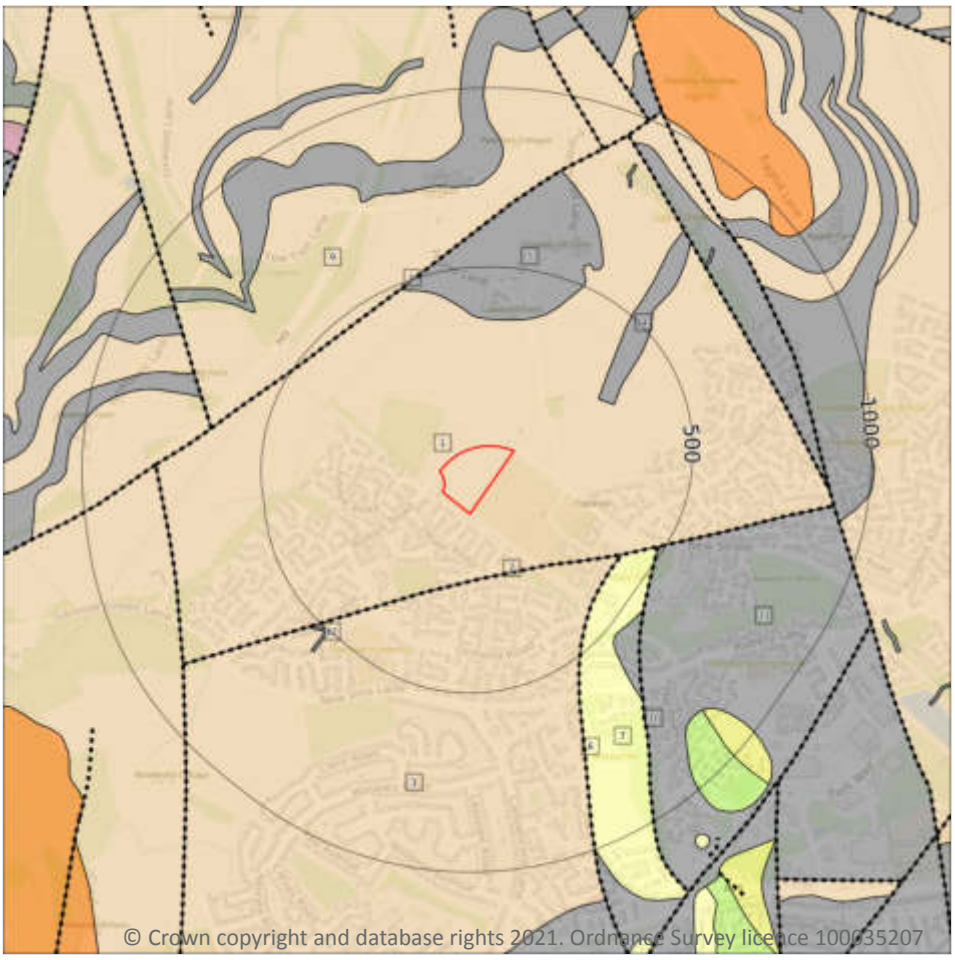
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m **8**

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

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

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SAL-ARSC**	**Salop Formation - Interbedded Argillaceous Rocks And [subordinate/subequal] Sandstone And Conglomerate**	**Cisuralian Epoch - Westphalian D Sub-age**
3	183m S	SAL-ARSC	Salop Formation - Interbedded Argillaceous Rocks And [subordinate/subequal] Sandstone And Conglomerate	Cisuralian Epoch - Westphalian D Sub-age

ID	Location	LEX Code	Description	Rock age
4	277m NE	SAL-SDST	Salop Formation - Sandstone	Cisuralian Epoch - Westphalian D Sub-age
5	354m N	SAL-SDST	Salop Formation - Sandstone	Cisuralian Epoch - Westphalian D Sub-age
7	411m SE	LQ-QZITE	Lickey Quartzite Formation - Quartzite	Ordovician Period
9	465m NW	SAL-ARSC	Salop Formation - Interbedded Argillaceous Rocks And [subordinate/subequal] Sandstone And Conglomerate	Cisuralian Epoch - Westphalian D Sub-age
11	483m SE	HA-CYCCM	Halesowen Formation - Sedimentary Rock Cycles, Coal Measure Type	Westphalian D Sub-age
12	497m SW	SAL-LMST	Salop Formation - Limestone	Cisuralian Epoch - Westphalian D Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m **4**

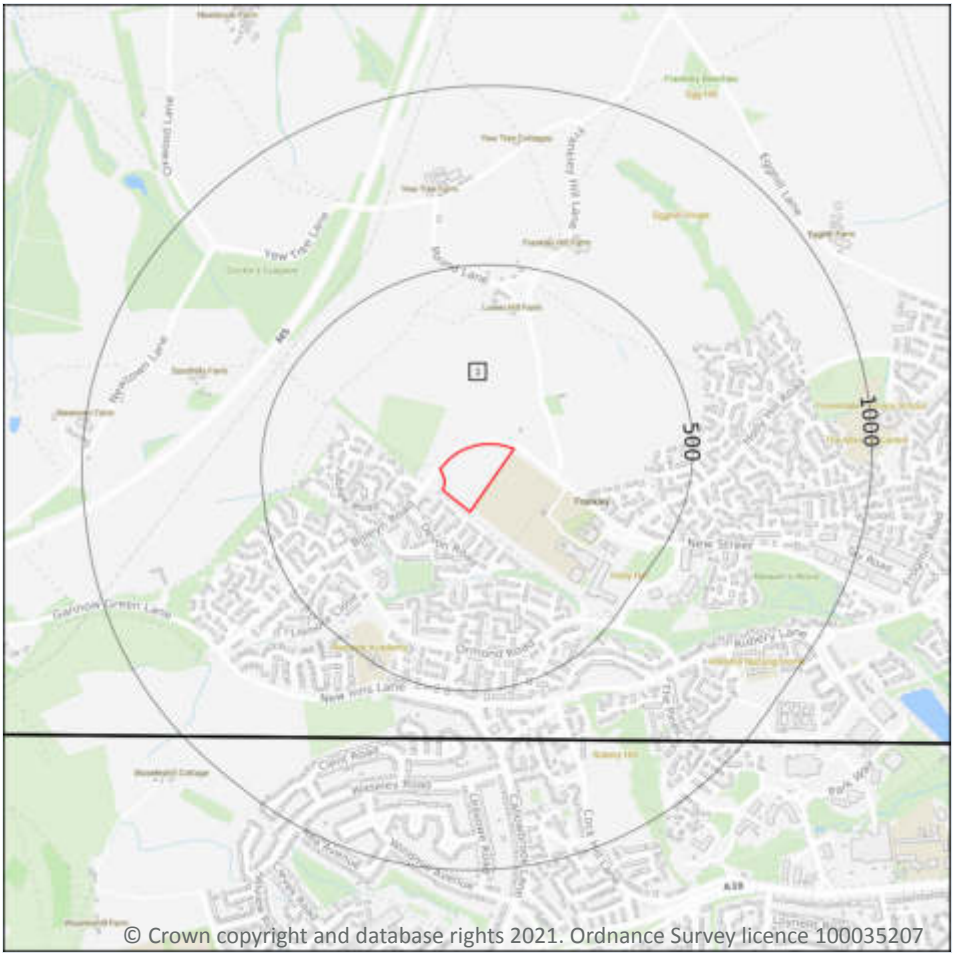
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

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

ID	Location	Category	Description
2	183m S	FAULT	Normal fault, inferred; crossmarks on downthrow side
6	411m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	465m NW	FAULT	Normal fault, inferred; crossmarks on downthrow side
10	483m SE	FAULT	Normal fault, inferred; downthrow not specified

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW168_birmingham_v4**

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

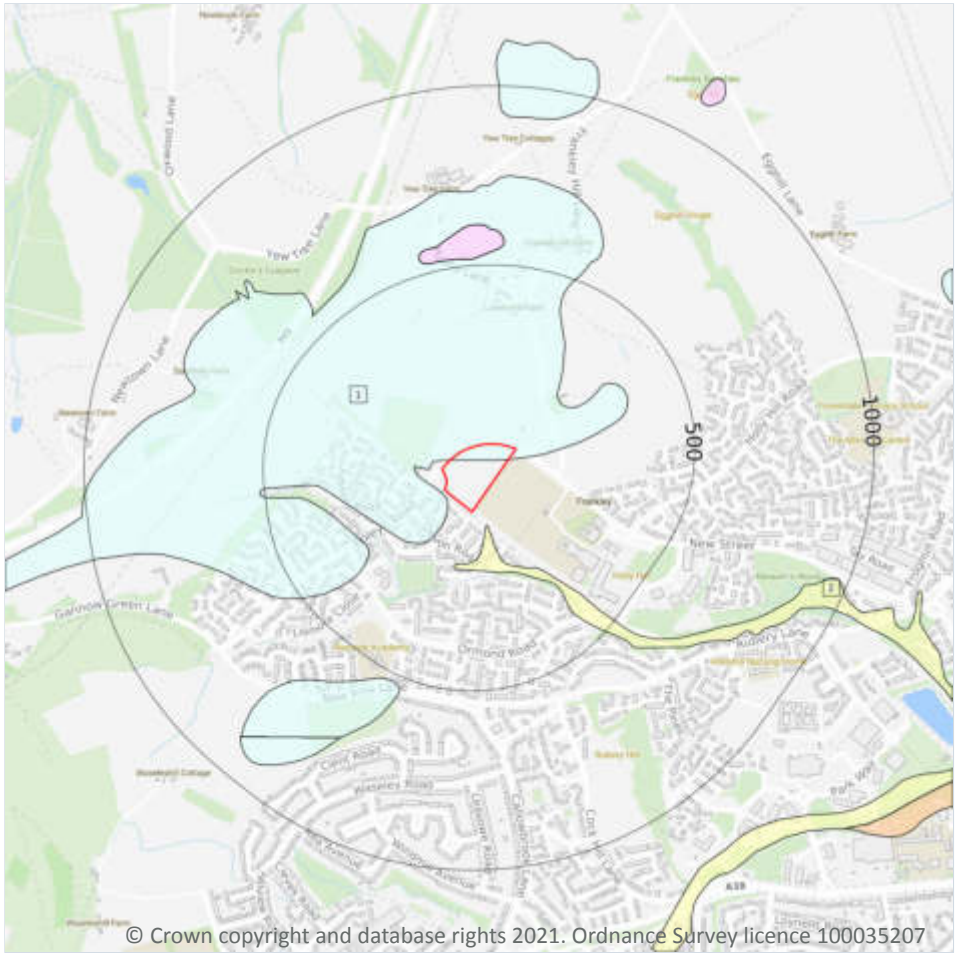
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	2

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

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

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILMP-DMTN**	**TILL, MID PLEISTOCENE**	**DIAMICTON**
2	56m SE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

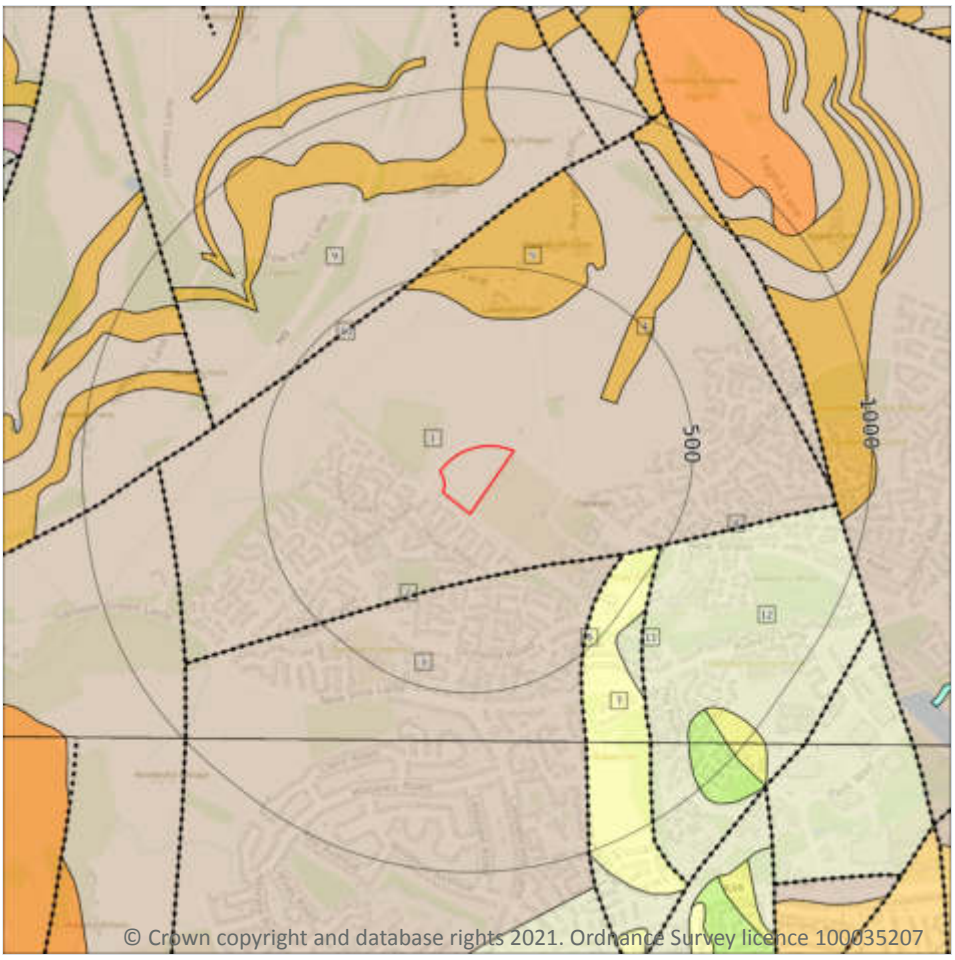
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **7**

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

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

ID	Location	LEX Code	Description	Rock age
1	**On site**	**ALY-MDST**	**ALVELEY MEMBER - MUDSTONE**	**WESTPHALIAN**
3	182m S	ALY-MDST	ALVELEY MEMBER - MUDSTONE	WESTPHALIAN
4	284m NE	ALY-SDST	ALVELEY MEMBER - SANDSTONE	WESTPHALIAN
5	356m N	ALY-SDST	ALVELEY MEMBER - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
7	415m SE	LQ-QZITE	LICKEY QUARTZITE FORMATION - QUARTZITE	-
9	463m NW	ALY-MDST	ALVELEY MEMBER - MUDSTONE	WESTPHALIAN
12	487m SE	HA-MDSS	HALESOWEN FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

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	**Fracture**	**Low**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m **5**

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

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

ID	Location	Category	Description
2	182m S	FAULT	Fault, inferred
6	415m SE	FAULT	Fault, inferred
8	417m SE	FAULT	Fault, inferred, displacement unknown
10	463m NW	FAULT	Fault, inferred
11	487m SE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes

Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	11

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

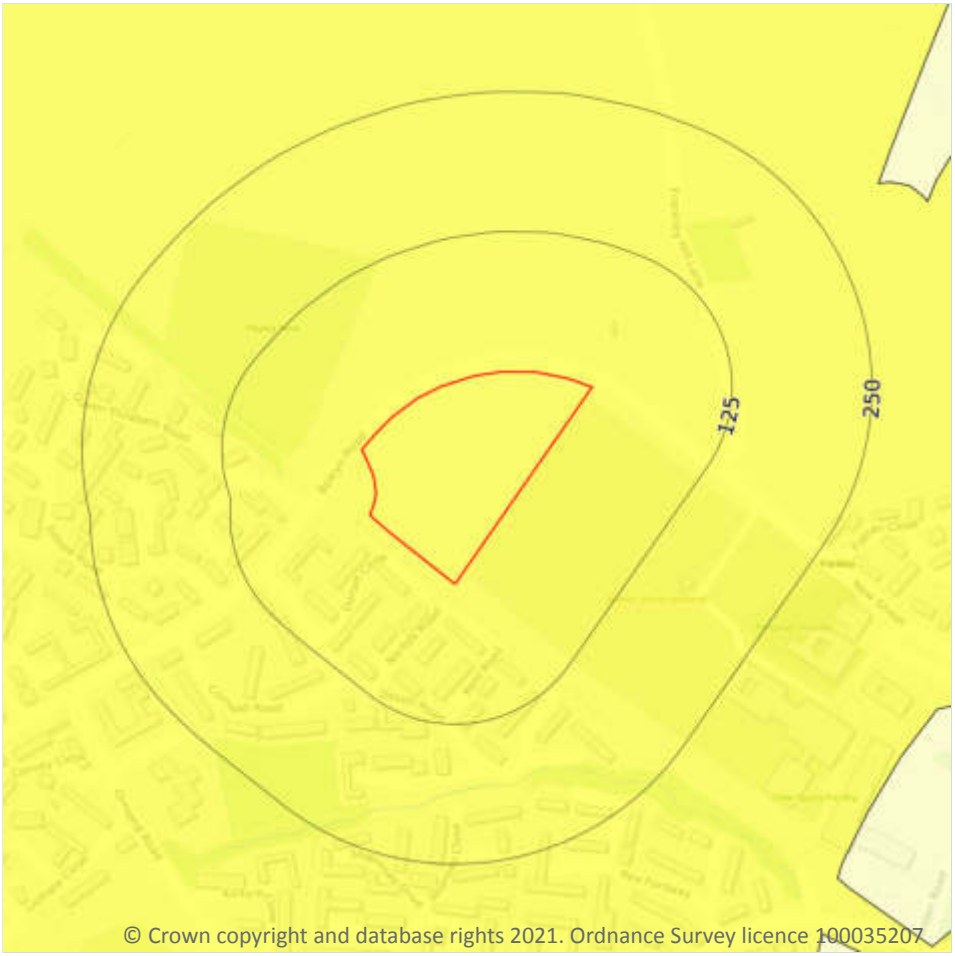
Features are displayed on the Boreholes map on **page 79**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	60m SW	398500 278580	BH.67 NEAR OLD RAILWAY TRACK	6.1	N	278423
2	129m W	398400 278650	BH.66 NEAR OLD RAILWAY TRACK	6.1	N	278422
3	144m SE	398770 278560	BH.63 HOLLY HILL FARM	6.2	N	278419

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	173m SE	398700 278430	BH.69 NEAR OLD RAILWAY TRACK	6.1	N	278425
5	180m SW	398530 278410	NR. SITE OF MANOR	6.1	N	278434
6	188m SW	398420 278480	NR. SITE OF MANOR	6.1	N	278435
7	189m SE	398860 278610	BH.51 NR HOLLY HILL	6.2	N	278407
8	203m SE	398800 278500	FRANKLEY AIDED FIRST SCHOOL	-2.0	N	278250
9	213m W	398330 278560	NR. OLD GRAVEL PIT 80	6.1	N	278436
10	214m W	398310 278730	BH.65 NEAR OLD RAILWAY TRACK	6.2	N	278421
11	244m S	398620 278330	NR RUBERY HILL FARM	6.1	N	278433

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

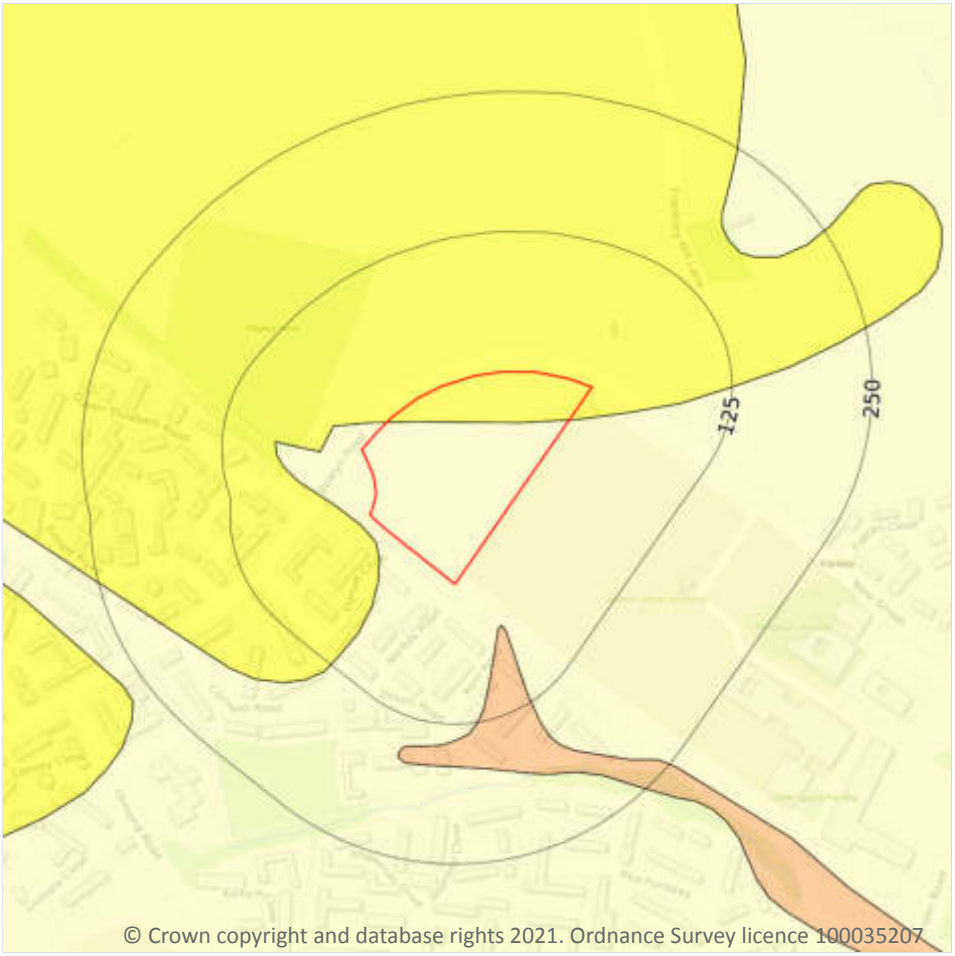
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 81**

Location	Hazard rating	Details
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	2

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.

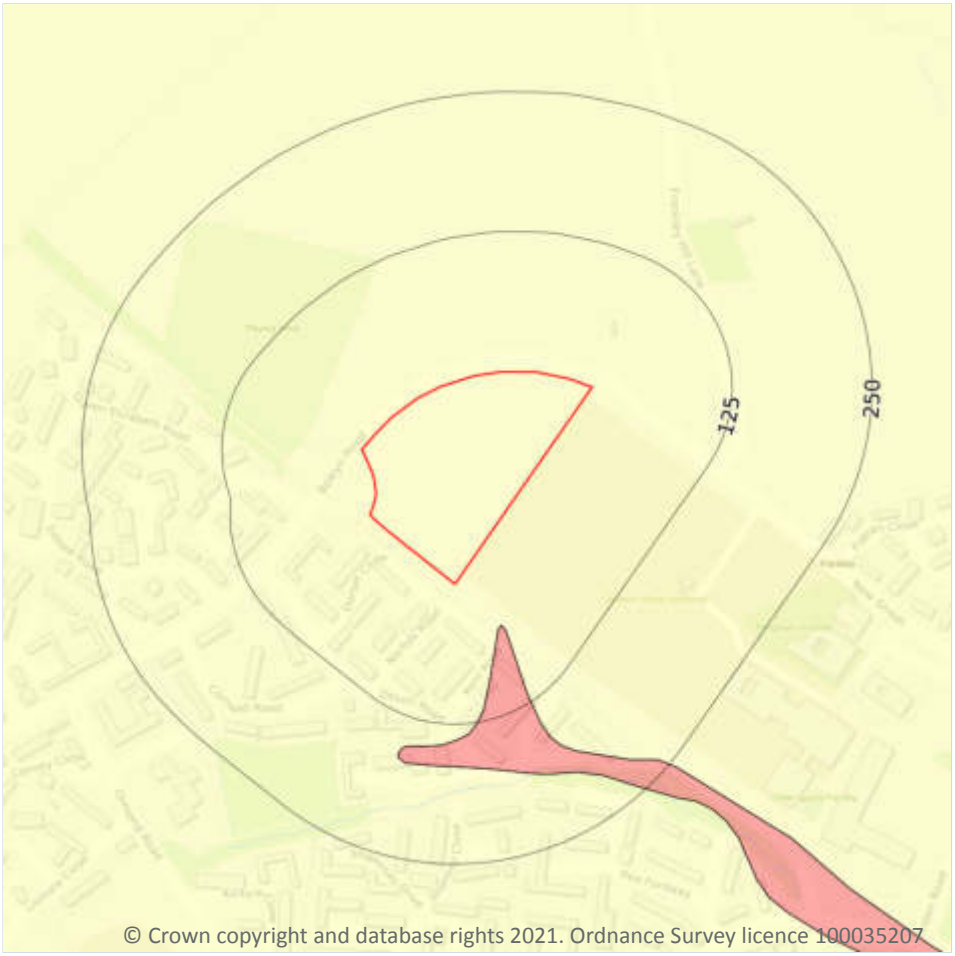
Features are displayed on the Natural ground subsidence - Running sands map on **page 82**

Location	Hazard rating	Details
On site	**Negligible**	**Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.**

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

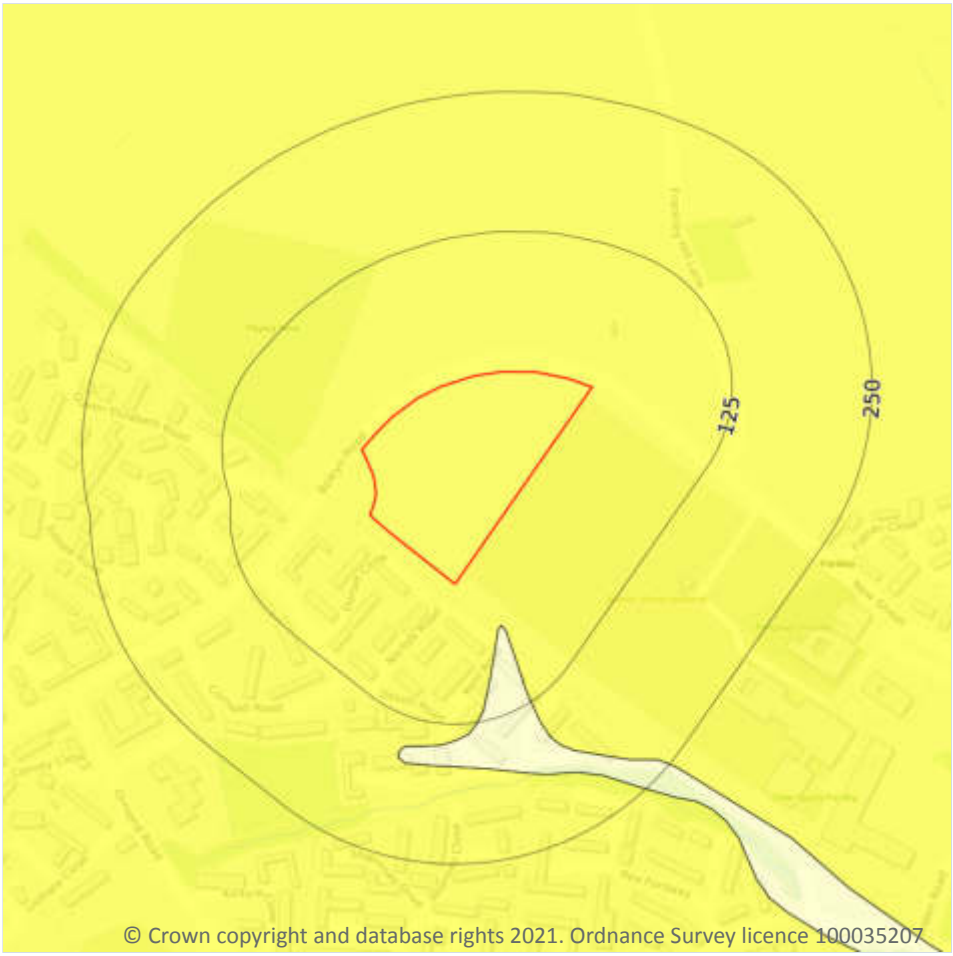
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

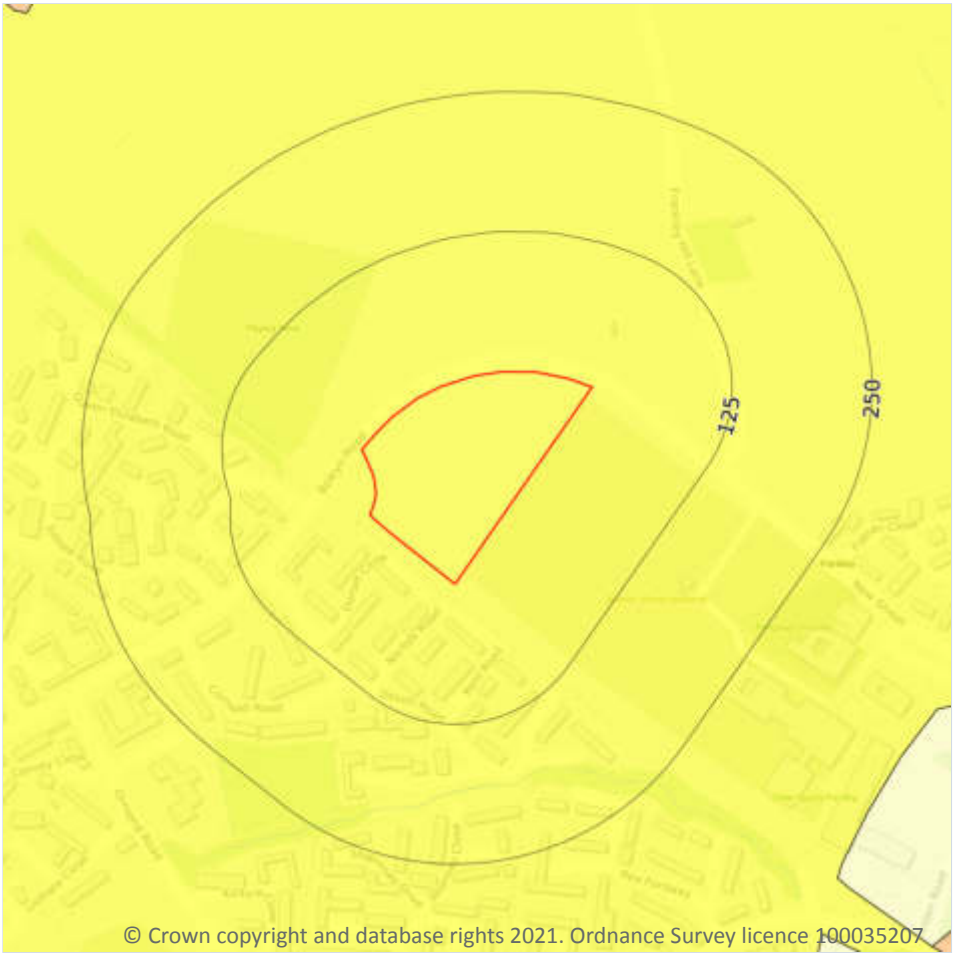
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 85**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

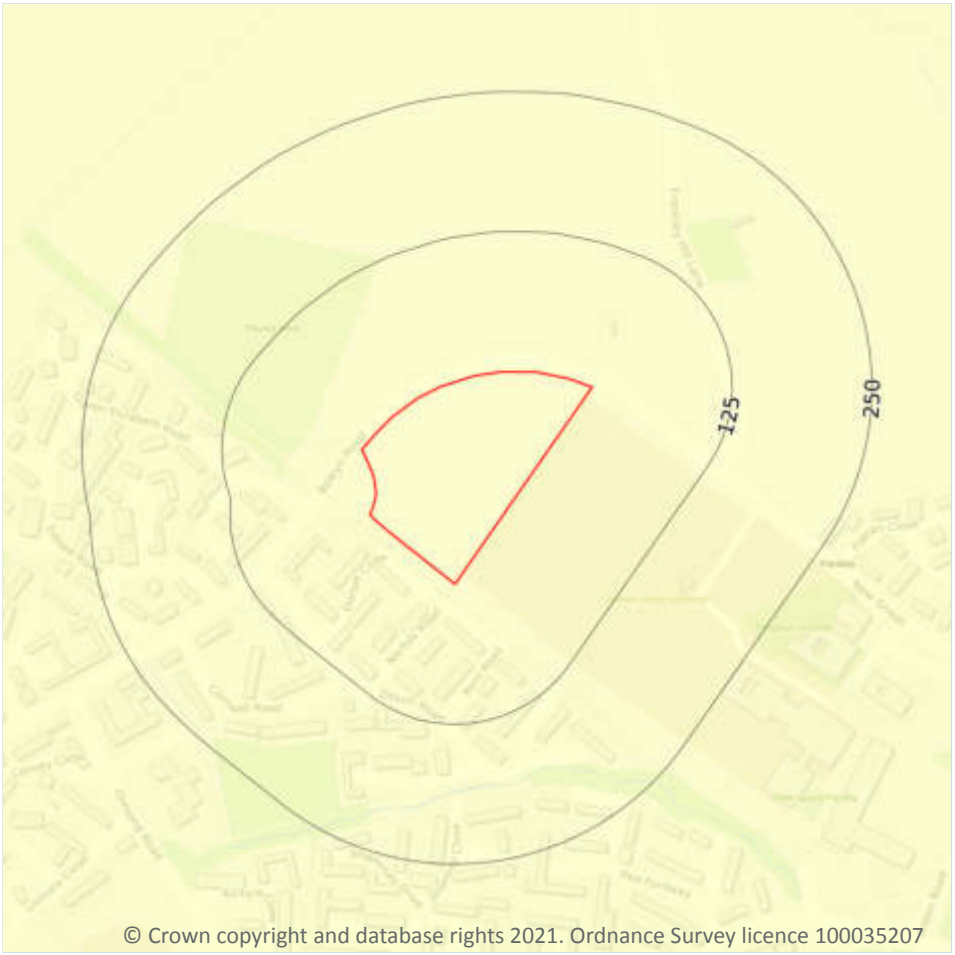
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 86**

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



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

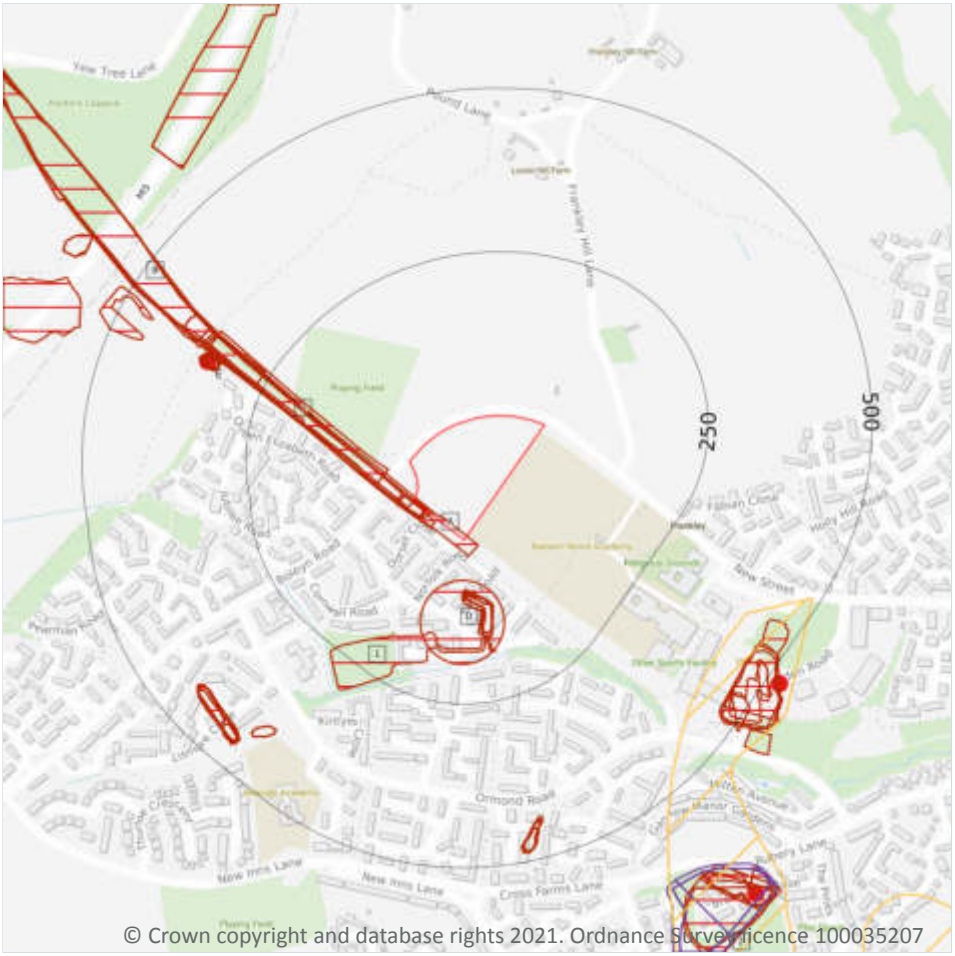
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 87**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.2 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, ground workings and natural cavities map on **page 88**

ID	Location	Details	Description
E	343m NW	Name: Lower Hill Farm Address: Frankley Hill, BROMSGROVE, Worcestershire Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	17

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Cuttings**	**1982**	**1:10000**
B	**On site**	**Cuttings**	**1938**	**1:10560**
B	**On site**	**Cuttings**	**1954**	**1:10560**
B	1m SW	Cuttings	1921	1:10560
A	3m SW	Cuttings	1904	1:10560
A	3m SW	Cuttings	1883	1:10560
C	20m W	Cuttings	1883	1:10560
C	20m W	Cuttings	1904	1:10560
C	35m W	Cuttings	1982	1:10000
D	62m S	Fish Ponds	1971	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
D	76m S	Unspecified Heap	1938	1:10560
D	79m S	Unspecified Heap	1954	1:10560
D	81m S	Unspecified Heap	1921	1:10560
D	81m S	Unspecified Heap	1921	1:10560
D	85m S	Unspecified Heap	1883	1:10560
D	85m S	Unspecified Heap	1904	1:10560
1	149m S	Unspecified Ground Workings	1883	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	2

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 88**

ID	Location	Name	Commodity	Class	Likelihood
2	415m SE	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
6	845m SE	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	1

Areas which could be affected by former coal 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) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.**

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

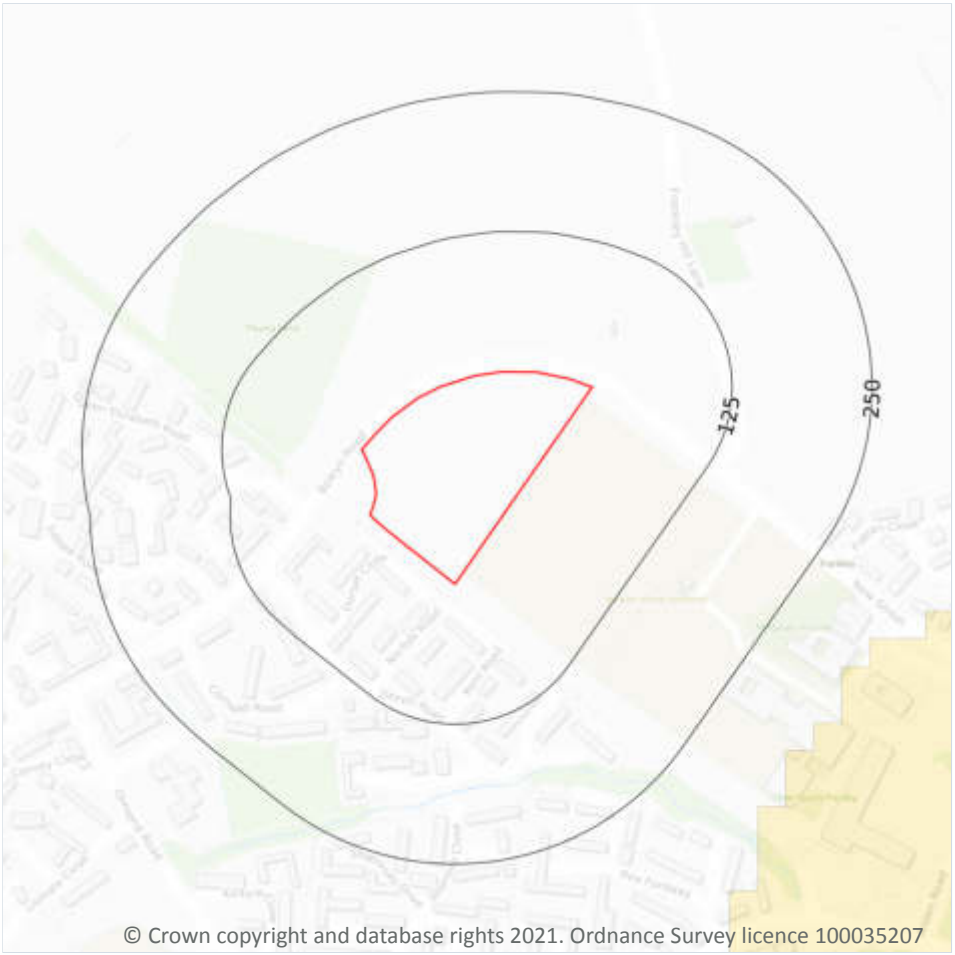
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

19.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 93**

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

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	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 km^2. 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 km^2; 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 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
12m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
21m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
29m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

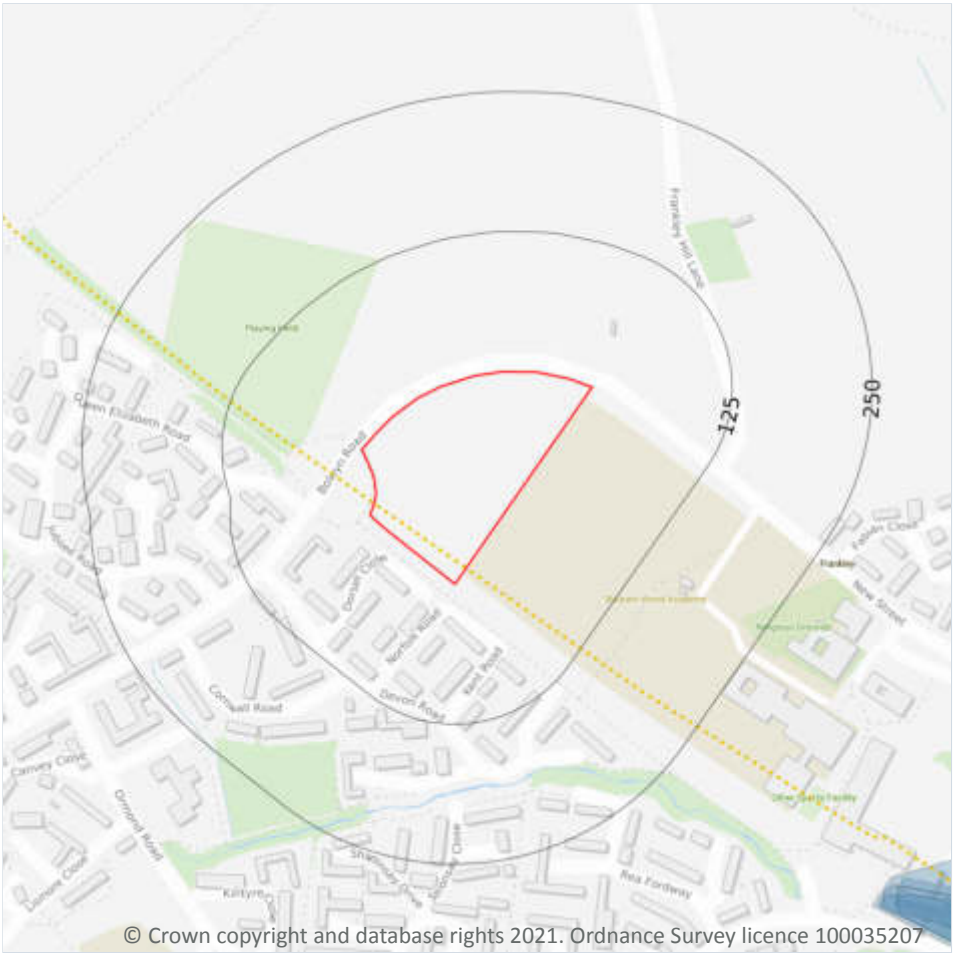
20.3 BGS Measured Urban Soil Chemistry

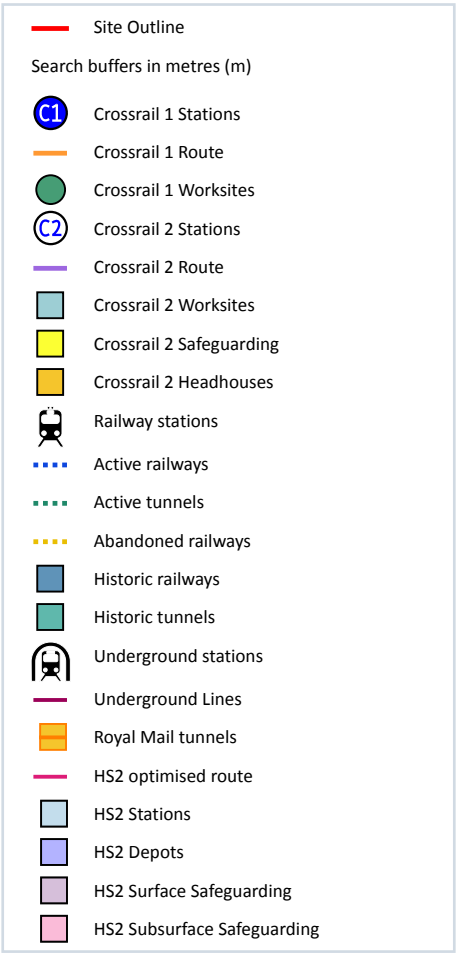
Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects





21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	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 96**

Location	Description
On site	**Abandoned**

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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

Terms and conditions

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

Appendix D

Preliminary UXO Risk Assessment

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Express Preliminary UXO Risk Assessment

Client	Obsidian Geo- Consulting
Project	Boleyn Road, Birmingham
Site Address	Boleyn Road, Birmingham, B45 0NG
Report Reference	EP11875a-00
Date	25/09/20
Originator	KH

Assessment Objective

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

Background

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

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

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

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

Risk Assessment Considerations	
Site location and description/current use	The site is located in Rubery, Birmingham, and is situated approximately 2.4km south-west of the Bartley Reservoir. The site is bordered by Boleyn Road to the north and west, and Kent Road to the south. The site and area immediately adjacent are occupied by soft-standing ground in the form of a playing field bordered by some trees along Boleyn Road and Kent Road. Hardstanding ground is present adjacent the site in the form of housing and paved pathways along Kent Road, as well as along the sites northern and western boundary in the form of Boleyn Road. More soft ground lies north and west of the site opposite Boleyn Road. The site is approximately centred on the OS grid reference: **SO 98608 78692** 
Are there any indicators of current/historical military activity on/close to the site?	1st Line Defence could find no evidence that the site has any current or former military footprint. In addition, 1st Line Defence could find no evidence to suggest that items of ordnance were ever produced, stored or disposed of within the site or its vicinity. The nearest Heavy Anti- Aircraft Battery was located approximately 340m north-east of the site. A structure situated approximately 200m due east of the site is also considered to likely have serviced the nearby HAA emplacement. The conditions in which unexploded anti-aircraft ordnance may have fallen unrecorded are analogous to that of aerial delivered German bombs.
What was the pre- and post-WWII history of the site?	Prior to WWII, OS mapping indicates the site to have been situated within open ground. No notable features are recorded within the site boundary, however a railway track is recorded immediately adjacent the sites southern boundary. A *Foot Bridge* is also visible along the sites southern boundary extending over the railway, and *Fence Posts* are recorded within the sites southern boundary line. Post- WWII, OS mapping indicates no significant changes within the site boundary. An area of Ash Trees are identified within the site boundary, and a *Manor House* and *Sewage Pumping Station* are identified further south beyond the railway.
Was the area subject to bombing during WWII?	During WWII the site was situated within the Bromsgrove Rural District, which sustained a low density of bombing according to Home Office statistics, with an average of 3.2 items recorded per 1,000 acres. This included 139 high explosive (HE) bombs, 2 parachute mines, and 6 oil bombs. Available in-house written bomb records for the Rural District of Bromsgrove were consulted but did not record any instances of bombing in the site area. Bomb plot mapping of Birmingham was also consulted which showed the site area, but is believed to have been beyond the scope of those bombs plotted on this map. The nearest bombing was recorded approximately 1.6km east of the site.

Is there any evidence of bomb damage on/close to the site?	Due to the nature of the site as occupied by open land during WWII, no changes to features such as structures could be identified which may indicate evidence of bomb damage on site. Low- resolution aerial imagery available at this stage, believed to have been taken during the war, does not indicate any obvious evidence of bomb damage in the area immediately surrounding the site.
To what degree would the site have been subject to access?	Given the unoccupied land which the site comprised, access is considered to have been low. Any such access may have been reduced to the tending of this open land as farm ground, or by any occasional access to the site area via a footbridge atop the railway along the sites southern boundary.
To what degree has the site been developed post-WWII?	Post-WWII, the site remains unoccupied grassland. However the area immediately surrounding the site shows evidence of extensive development, including the addition of hardstanding ground adjacent the site boundary in the form of Boleyn Road. Landscaping work also appears to have taken place at the position of several pathways at the sites south- western corner. Residential housing was also constructed due south and west of the site. 1st Line Defence could find no evidence of post- war redevelopments on site, however the risk of encounter of UXO is considered mitigated to the depths of any post- war intrusive developments.
What is the nature and extent of the intrusive works proposed?	The nature and extent of works proposed was not available at the time of writing.

Summary and Conclusions

During WWII the site was situated within the Bromsgrove Rural District, which sustained a low density of bombing according to Home Office statistics, with an average of 3.2 items recorded per 1,000 acres. Available in- house written bomb records for Bromsgrove and bomb plot maps for Birmingham were consulted, but did not record bombing in the site area- partially due to the limited record set for this area. The nearest bombing was recorded approximately 1.6km east of the site. Wartime access to the site is considered to likely have been low. Available aerial photography does not indicate any evidence to suggest bombing in the immediate site area.

A WWII-era Heavy Anti-Aircraft gun battery and an associated structure is mapped on three different datasets around 200m east of the site – all in slightly different locations. Low resolution imagery appears to show features of a similar layout to a gun battery approximately 340m north-east of the site. However, whilst its exact location is not clear, it does not appear to have been on site, and as a result it is not thought likely that the site could have become contaminated with UXO as a result of its presence.

Recommendations
No evidence could be found to indicate that the risk of UXO contamination at this site is any higher than the background level of risk for the wider area in general. It is therefore not deemed necessary to undertake further research in the form of a Detailed UXO Risk Assessment, and it is not recommended that any further action is taken. If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.

It should be noted that although the risk from unexploded ordnance on this site has been assessed as low/minimal, this does not mean there is 'no' risk of encountering UXO. This preliminary report has been undertaken with due diligence, and all reasonable care has been taken to access and analyse relevant historical information. By necessity, when dealing historical evidence, and when making assessments of UXO risk, various assumptions have to be made which we have discussed and justified within this report. Our reports take a common-sense and practical approach to the assessment of UXO risk, and we strive to be reasonable and pragmatic in our conclusions. As referenced, it would be possible to undertake further research into this site, but based on the evidence to hand, this is not deemed strictly necessary, and no reasonably justifiable requirement for proactive on-site mitigation has been identified.

It should however be stressed that if any suspect items are encountered during the proposed works, 1st Line Defence should be contacted for advice/assistance, and to re-assess the risk as necessary. Furthermore, we would recommend that ground personnel are always made aware of the potential for encountering UXO, what to look out for and what to do in the unlikely event that a suspect item is encountered, and that a UXO Risk Management Plan is put together for the proposed works. We would be happy to provide a template and guidance for this – contact us on 01992 245020. Should the scope of works change or additional works be proposed, 1st Line Defence should be contacted to re-evaluate the risk.

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