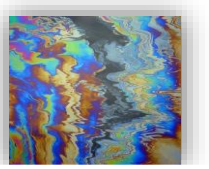


INVESTIGATE



REMEDIATE



REGENERATE

T E C H N I C A L R E P O R T

WALKOVER SURVEY
AND DESK STUDY
AT
THE BIRDS PUBLIC HOUSE,
HALMER GATE,
SPALDING,
LINCOLNSHIRE,
PE11 2EL
FOR
LIFE PROPERTY CONSTRUCTION LIMITED

DESK STUDY NO. NE3769
NOVEMBER 2018

SUB SURFACE NORTH EAST LIMITED
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Dewsbury Road
Ossett
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- Small Scale Survey Plans
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- Figures

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WALKOVER SURVEY AND DESK STUDY AT THE BIRDS PUBLIC HOUSE, HALMERGATE, SPALDING, LINCOLNSHIRE, PE11 2EL

CLIENT: LIFE PROPERTY CONSTRUCTION LIMITED

ENGINEER: WA CONSULTING ENGINEERS

---

1. INTRODUCTION

This report has been prepared in accordance with an emailed instruction dated 25th October 2018, from the Engineer on behalf of the Client.

The brief was set out in our estimate, ref. E5974A and dated 17th October 2018, and comprises a walkover survey and a desk study report including a historical, geological and environmental appraisal together with a conceptual ground model.

1.1 Site Location and Description

The site is located at The Birds Public House, Halmer Gate, Spalding, Lincolnshire, PE11 2EL as indicated in Figure 1. The approximate National Grid Reference of the centre of the site is 525795, 322898.

As shown in Figure 2, the site is located at The Birds Public House, at the junction of Halmer Gate with Low Road in Spalding, and comprises an almost rectangular shaped area of land bound by Halmer Gate to the northwest, the gardens to houses fronting Low Road to the northeast, the rear gardens to houses that front onto Avebury Gardens in the south and west and the gardens to houses fronting onto Halmer Gate in the west.

1.2 Proposed Development and Purpose of the Desk Study

We understand that it is proposed to demolish the public house and construct a nursing home building as shown in Figure 3.

The purpose of the desk study is to obtain information regarding the sites historical, geological and environmental setting in order to produce a conceptual ground model, to assess the ground conditions, to undertake a preliminary assessment of contamination sources, pathways and receptors relating to potential hazards that exist or will potentially exist on the site and to assess the need for ground investigation.

1.3 Walkover Survey

The site walkover survey was undertaken on 15th November 2018. Photographs taken during the site walkover are appended with their locations depicted in Figure 4.

The site boundary is part fencing and domestic garden bushes and plants, with a drainage ditch present along the eastern boundary situated within the hedge line. The site is generally flat with the existing large pub building situated centrally and bound by bituminous macadam surfaced parking to its north and west. The central building has an enclosed fenced off work area to the rear which continues further south to a large grassed area that covers the southern third of the site comprising traditional pub benches and children's climbing frames. This rear area is enclosed by bushes and fencing and is accessed by the public along the western side of the site where there are additional restaurant/pub benches and tables set in a grass and bituminous macadam surfaced footpath area.

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A small planted area is present on the central northern boundary with some semi mature and mature trees and bushes. The pub building includes a restaurant facility, bar area, covered outdoor "smoking" area and kitchen areas. The enclosed courtyard area includes rubbish bins and brick outside storage facilities.

There were no indications of contamination, spillages or significant issues in relation to contamination on the site.

2. DESK STUDY

2.1 Historical Appraisal

The past history of the site has been interpreted from the study of old Ordnance Survey plans supplied by Groundsure, as follows:

TABLE 1 SMALL SCALE SURVEYS

Date	Scale
1887	1:10,560
1903	1:10,560
1929	1:10,560
1929-1932	1:10,560
1938	1:10,560
1950	1:10,560
1958-1959	1:10,560
1971	1:10,000
1968-1971	1:10,000
1982-1987	1:10,000
1987-1992	1:10,000
2002	1:10,000
2010	1:10,000
2014	1:10,000

TABLE 2 LARGE SCALE SURVEYS

Date	Scale
1889	1:2,500
1904	1:2,500
1931-1932	1:2,500
1965	1:2,500
1965-1968	1:2,500
1967-1969	1:2,500
1973	1:2,500
1974-1979	1:2,500
1979-1983	1:2,500
1986-1988	1:2,500
1989-1993	1:2,500
1995	1:2,500

Extracts of the above surveys are appended.

TABLE 3 HISTORICAL APPRAISAL

Date	On site	Beyond site boundary
1887-1889	At the time of the earliest survey, the site is part of a divided field with an area of trees along its north western and northern margins.	Up to 250m, the surrounding area is largely depicted as undeveloped farmland with some roads and cottages. Adjacent to the site lies Halmer Gate to the north west and a cottage with access to the east. There are three pumps depicted, with closest shown 63m north and 100m east of the site boundary. Multiple drainage ditches border field boundaries and roads with the nearest running some 13m north east of the site. An orchard is depicted some 100m east and ponds shown some 220m north east.
1903-1904	Tree line bordering the north removed and drainage ditch runs adjacent and parallel to the eastern boundary of the site.	Allotments established to the north west of the site extending up to 13m west of the site and the orchard to the east no longer shown.
1929-1938	Trees completely removed from site.	Residential development depicted north west of the site replacing the allotments. Nursery with

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		glass houses depicted 53m north and orchards shown some 250m north and 100m west.
1950-1958	No significant changes are noted on site at this time.	Continued residential development with properties developed some 110m south west. Orchards to the north west and north no longer shown, with newly established orchards now depicted 127m east and north east.
1967-1978	Construction of the public house and access with a similar footprint to the building present now on site.	Major residential development to the north west, southwest and southeast with further housing and access constructed some 115m east. The residential properties to the north in part replace the existing nursery grounds. Residential properties and gardens border the site to the west, east and rear gardens border the south west and south. A drainage ditch runs adjacent and parallel to the eastern boundary of the site. Buildings for both storage and cold storage are situated some 50m north west. Part of the cutting of the Coronation Channel is situated 250m east. Pump to the east no longer shown. Sewage pumping station approximately 78m south west and an electricity substation 73m south west are depicted. Housing developed to the east is situated where the ponds were present, indicating their backfilling for development.
1979	No significant changes are noted on site at this time.	The storage buildings to the north now depicted as warehouses and The Priory School developed some 150-250m south.
1979-1983	No significant changes are noted on site at this time.	Further residential development 150-250m south east replacing fields and drainage ditches.
1986-2002	No significant changes are noted on site at this time.	Nursery to the north west completely redeveloped by the construction of housing.
2010-2014	No significant changes are noted on site at this time.	Warehouses to the north demolished with the area redeveloped into a residential estate.

We are not aware of any other significant changes to the site in the period between the 2014 Ordnance Survey and the Walkover Survey conducted 15th November 2018.

2.2 Geological Appraisal

The geological appraisal is based on the appended Groundsure Geo Insight Report.

Made Ground

According to the Geo Insight report there are no records of artificial ground in the immediate vicinity of the site, however the site is developed and some may be present.

Drift

According to the Geo Insight report the drift strata beneath the site are expected to be Tidal Flat deposits comprising clays and silts which exhibit a low to very low permeability.

Bedrock

The bedrock beneath the site is anticipated to be Callovian aged mudstone of the Oxford Clay Formation that exhibits a low to very low permeability.

The report records no faults within 500m of the site.

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Radon

The Geo Insight report contains information from the Radiation Protection Division of the Health Protection Agency (HPA).

The HPA indicate that the site is not in a Radon Affected Area as less than 1% of surrounding properties are above the Action Level. The Action Level is 200 Becquerels/ m^3.

Also, the Geo Insight report indicates that for new properties or extensions to existing properties, in accordance with the Building Research Establishment (BRE) publication BR211, no radon protection measures are required.

Ground Workings

The survey states there are historical surface ground working features within 250m including two ponds some 216m and 242m east. There are no records of historical underground working features or current ground workings within 250m of the site.

Mining, Extraction & Natural Cavities

According to the Geo Insight report there are no records of historical, coal or non-coal mining within 1km of the site.

The site is not in an area affected by non-coal mining cavities, natural cavities, brine or gypsum extraction, tin mining or clay mining.

Natural Ground Subsidence

The report states that the site has a moderate hazard rating of natural subsidence due to compressible deposits and running sands. This indicates a significant potential for compressibility and running sand problems during and after the construction of the new build. There is a low hazard rating of natural subsidence due to compressible deposits and shrink-swell clays which will also have implications on the new build proposed for the site. Ground investigation should be conducted to determine the properties of the strata beneath the site to ensure appropriate foundation design.

A very low hazard rating due to landslides and a negligible hazard rating posed by ground dissolution of soluble rocks and collapsible deposits are identified in the report.

Railways and Tunnels

According to the Geo Insight report there are no historical and active railway and tunnel features within 250m of the site.

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2.3 Environmental Appraisal

An environmental data search has been carried out by Groundsure and the results are given in the appended Enviro Insight report. A summary is as follows:

Historical Land Use

The report identifies several records indicative of potentially contaminative past land use within 250m of the site comprising unspecified stores and commercial/industrial use 13m north east and nurseries some 47m north and 171m east. There are four records of historical energy features within 250m of the site, with the closest an electricity substation 47m west.

Areas of potentially infilled land are determined in the report as ponds some 216m and 240m east.

IPC/ IPPC/ Part 1(A) Authorisations

The environmental data report indicates that there are no IPC and no IPPC or Part 1(A) Authorisations within 500m of the site boundary.

Potentially Harmful Discharges

According to the environmental data report there are no records of potentially harmful discharges to public sewers or controlled waters within 500m of the site boundary.

List 1 and List 2 Dangerous Substances Inventory Sites

The environmental data report indicates that there are no records of List 1 or List 2 Dangerous Substances Inventory Sites within 500m of the site boundary.

Part A(2) and Part B Authorisations

According to the environmental data report there are no Part A(2) but one Part B (formerly LAPC/ LAPPC) Authorisations related to air pollution within 500m of the site boundary 401m north.

Radioactive Substance Licences

The environmental data report indicates that there are no records of Category 3 or Category 4 Radioactive Substance Licenses within 500m of the site boundary.

Discharges

According to the environmental data report there is one licensed discharge consent within 500m of the site boundary, determined 332m east.

Planning Hazardous Substances Consents and Enforcements

There are no records of Planning Hazardous Substances Consents and Enforcements within 500 metres of the site boundary according to the environmental data report.

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Dangerous or Hazardous Sites

Records of COMAH and NIHHS indicate that there are no dangerous or hazardous sites within 500m of the site boundary.

Pollution Incidents

The environmental data report indicates that there has been one pollution incident within 250m of the site boundary 233m east dated to 2002 which had a minor impact on water. In our opinion, this would not have affected the site.

Contaminated Land

There are no sites determined as contaminated under Section 78R of the Environmental Protection Act (1990) within 500m of the site boundary.

Registered Landfill Sites

According to the environmental data report there are no registered landfill sites within 250m of the site boundary.

Other Waste Treatment, Transfer or Disposal Sites

According to the environmental data report there are no waste treatment, transfer or disposal sites within 500m of the site boundary.

Current Land Use

Current potentially contaminative industrial land uses are recorded by the environmental data report. Within 250m of the site boundary there is a distribution haulage company 5m south west, electricity substations 75m west and 103m north, a sewage pumping station 82m south west, clearance and salvage dealers 169m north west and engineering supplies 176m east. Furthermore, there is a record of an obsolete petrol and fuel site 108m north.

Hydrogeology and Hydrology

Designation of aquifers in the environmental data report are in accordance with the Environment Agency's April 2010 Groundwater Protection Policy.

The superficial/ drift deposits comprise clays and silts which are indicated to be an Unproductive aquifer.

The bedrock comprises mudstone also determined to be an unproductive aquifer.

Unproductive aquifers consist of rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

According to the environmental data report there is one licensed surface water abstraction point within 1km of the site boundary, located 923m to the south. However, there are no licensed groundwater abstraction points within 1km of the site boundary and no licensed potable water abstraction points within 2km of the site boundary.

There are no Source Protection Zones, set up to protect a water source within 500m of the site of boundary, present according to the environmental data report.

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The environmental data report indicates that the nearest watercourse is located 1m east of the site boundary, an inland river within the Welland Catchment.

The report indicates that the site is situated within a Flood Zone 2 and 3 and there are no areas benefiting from flood storage within 250m. There is one flood defence present within 250m of the site boundary which is situated 249m east. The risk of flooding from rivers and the sea is determined as medium. Consequently, a Flood Risk Assessment is recommended.

Environmental Sensitivity

According to the environmental data report the site is located in a Nitrate Vulnerable Zone and there is a Local Nature Reserve situated 1285m north west.

2.4 Conceptual Ground Model

A conceptual ground model of a site and its environs uses available information to form a preliminary assessment of contamination sources, pathways and receptors, and the significance of hazards that exist or will potentially exist on the site. Its purpose is to identify the relationships between sources of contamination, pathways and receptors to allow exposure scenarios to be determined and thereby aid in the design of any intrusive investigation. It also forms the basis of the risk assessment.

Sources

Potential sources of contamination identified in the desk study are:

- General contaminants in made ground derived from past building and demolition processes and materials.
- Hydrocarbon contamination from spillage and leakage of parked vehicles.

Pathways

Potential pathways between sources and receptors for the proposed development are:

- Direct contact with and ingestion of contaminated soil and inhalation of dust by site workers during construction and demolition and by end users of the site.
- Inhalation of vapours by site workers during construction and demolition and by the end users of the site in enclosed spaces.
- Uptake of contaminated groundwater by plants grown in any garden or landscaped areas.
- Migration of contaminants to the underlying aquifer.

Receptors

Potential receptors for the proposed development are:

- Site workers during the demolition and construction phases.
- The end users of the site.
- Controlled waters including the underlying aquifer.
- Plants grown in the garden areas.

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Conclusions

An appraisal of the sources, pathways and receptors has been considered and we have produced a conceptual ground model based upon the available information, as follows:

TABLE 4 CONCEPTUAL GROUND MODEL

Potential Source	**Nature of Hazard**	**Contaminants Associated with the Source**	**Pathway**	**Receptor**	**Preliminary Risk Rating**
Made Ground (if present on site)	Contaminants in Made Ground	Gen. Contaminants Arsenic Cadmium Chromium Lead Mercury Nickel Selenium Boron Copper Zinc Cyanide Sulphide Sulphate pH Phenols Polynuclear Aromatic Hydrocarbons (PAH) Total Petroleum Hydrocarbons (TPH)	Ingestion of soil Ingestion of dust Dermal contact Inhalation of dust Inhalation of vapours	Site Operatives End Users	Very Low
			Uptake via contaminated groundwater	Vegetation	Very Low
			Vertical and lateral movement of mobile contaminants to surface water and groundwater	Controlled Waters	Very Low
			Direct contact	Structures and Services	Very Low
Asbestos in Made Ground	Asbestos	Asbestos fibres	Inhalation of fibres	Site Operatives End Users	Very Low
Vehicles	Fuel/ oil spillage and/or leakage from vehicles	Total Petroleum Hydrocarbons (TPH) Benzene/ Toluene/ Ethylbenzene/ Xylene (BTEX) Chlorinated Solvents	Ingestion of soil Ingestion of dust Dermal contact Inhalation of dust Inhalation of vapours	Site Operatives End Users	Very Low
			Uptake via contaminated groundwater	Vegetation	Very Low
			Vertical and lateral movement of mobile contaminants to surface water and groundwater	Controlled Waters	Very Low
			Direct contact	Structures and Services	Very Low

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The conceptual ground model indicates that intrusive ground investigation is required to assess the ground conditions for appropriate foundation design which can address the potential for natural subsidence due to compressible deposits, running sands and shrink-swell clays. If made ground is present on site, it would be prudent to also obtain soil samples for asbestos detection and contamination analysis and, where possible, groundwater and surface water samples for contamination analysis.

The historical appraisal identified several drainage ditches and pumps in the vicinity of the site and precautions should be taken during construction and post development if drainage is a problem in the area.

Due to the distance and small size of the infilled ponds and low permeability of the strata, ground gasses pose a negligible risk to the site. However, if a significant depth of made ground we would recommend the installation and monitoring of gas standpipes.

Recommendations for a Flood Risk Assessment have been made in section 2.3.

2.5 General

Based on the conceptual ground model given in Section 2.4 we would recommend the following further investigation intrusive ground investigation to assess the properties of the strata beneath the site.

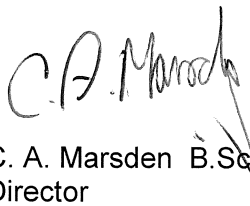
No consideration has been given to flora and fauna as this was outside our brief.

We trust that this report fulfils your present requirements but if you have any queries or we can be of further assistance please contact the undersigned or Mr David Simpson at our Ossett office.

SUB SURFACE CONSULTANTS LIMITED
REPORT No. NE3769
NOVEMBER 2018



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Geotechnical Engineer
For and on behalf of
Sub Surface Consultants Limited



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PHOTOGRAPHS

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Photographs

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Client: LIFE PROPERTY CONSTRUCTION LIMITED

Engineer WA CONSULTING ENGINEERS

Job No. NE3769

Sheet 1 / 2

Survey Date 15/11/18

WALKOVER SURVEY PHOTOGRAPHS


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Job No. NE3769

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Survey Date 15/11/18

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GEOINSIGHT REPORT

Geo Insight

Address:	**Birds Public House Site, Halmer Gate, Spalding, PE11 2EL**
Date:	**26 Oct 2018**
Reference:	**CMAPS-CM-752056-4199-261018GEO**
Client:	**CENTREMAPS**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	06-Apr-2015
Grid Reference:	525795,322898
Site Size:	0.42ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale		
2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features	2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?	Yes
	2.3.3 Are there any records of linear features within 500m of the study site boundary?	No

Section 3: Radon

3. Radon	3.1Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
	3.2Radon Protection	No radon protective measures are necessary.

Section 4: Ground Workings	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	7	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non–Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0

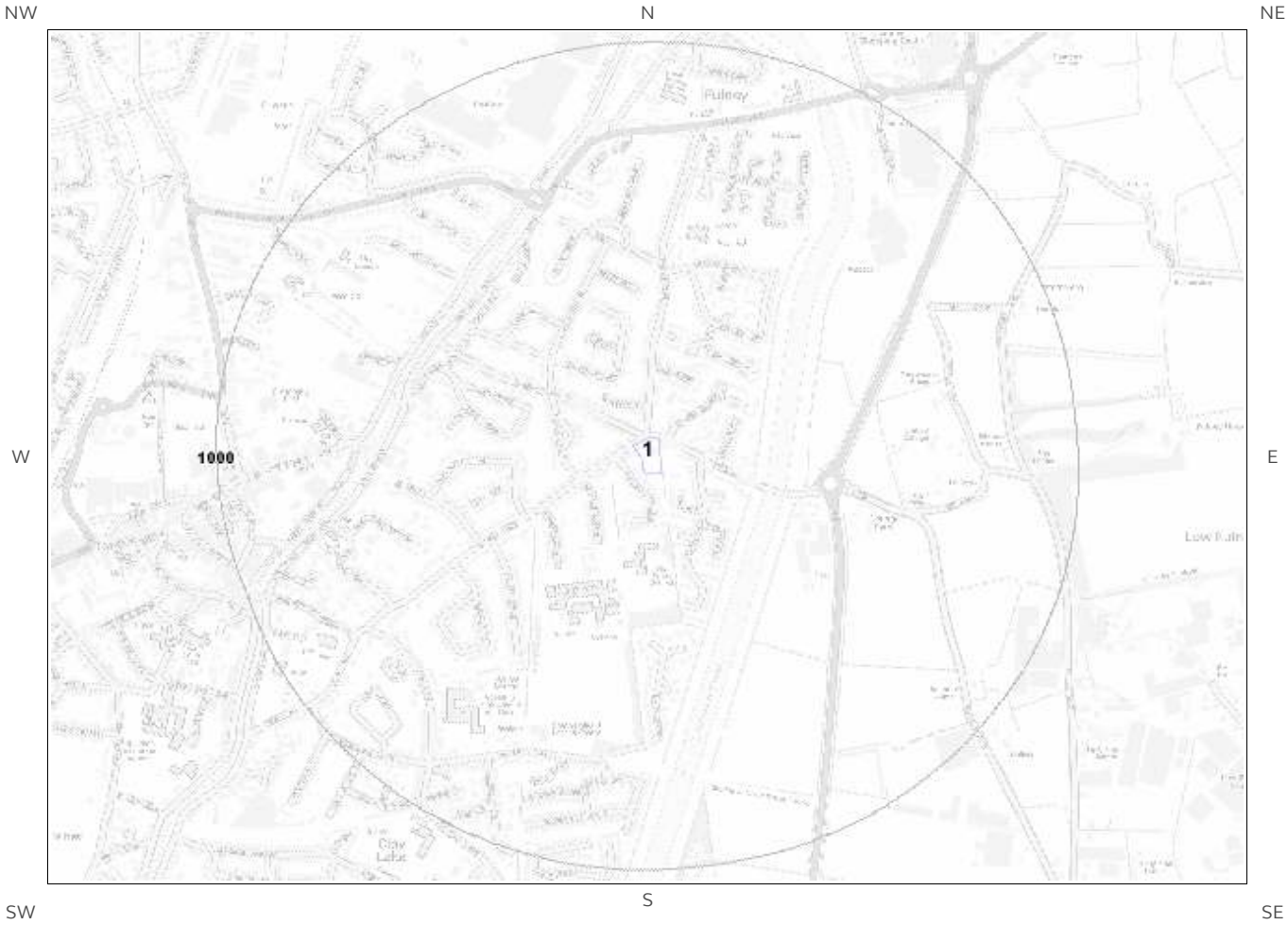
Section 6: Natural Ground Subsidence	On-site
6.1 Shrink-Swell Clay	Low
6.2 Landslides	Very Low
6.3 Ground Dissolution of Soluble Rocks	Negligible
6.4 Compressible Deposits	Moderate
6.5 Collapsible Deposits	Negligible
6.5 Running Sand	Moderate

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	0	0	1

Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	1	0	0

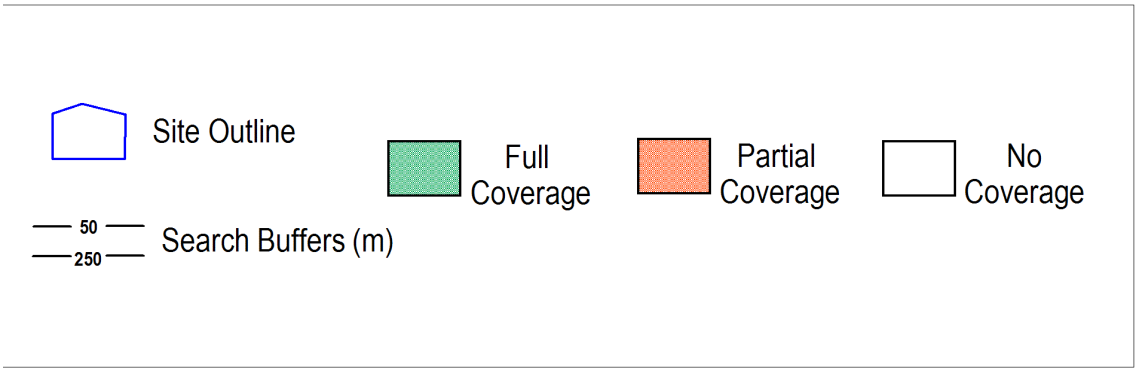
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500
9.1 Tunnels	0	0	0	Not Searched
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched
9.3 Historical Railways	0	0	0	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	No deposits are mapped	No coverage	No coverage	No coverage

Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

1. Geology 1:10,000 scale

1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? No

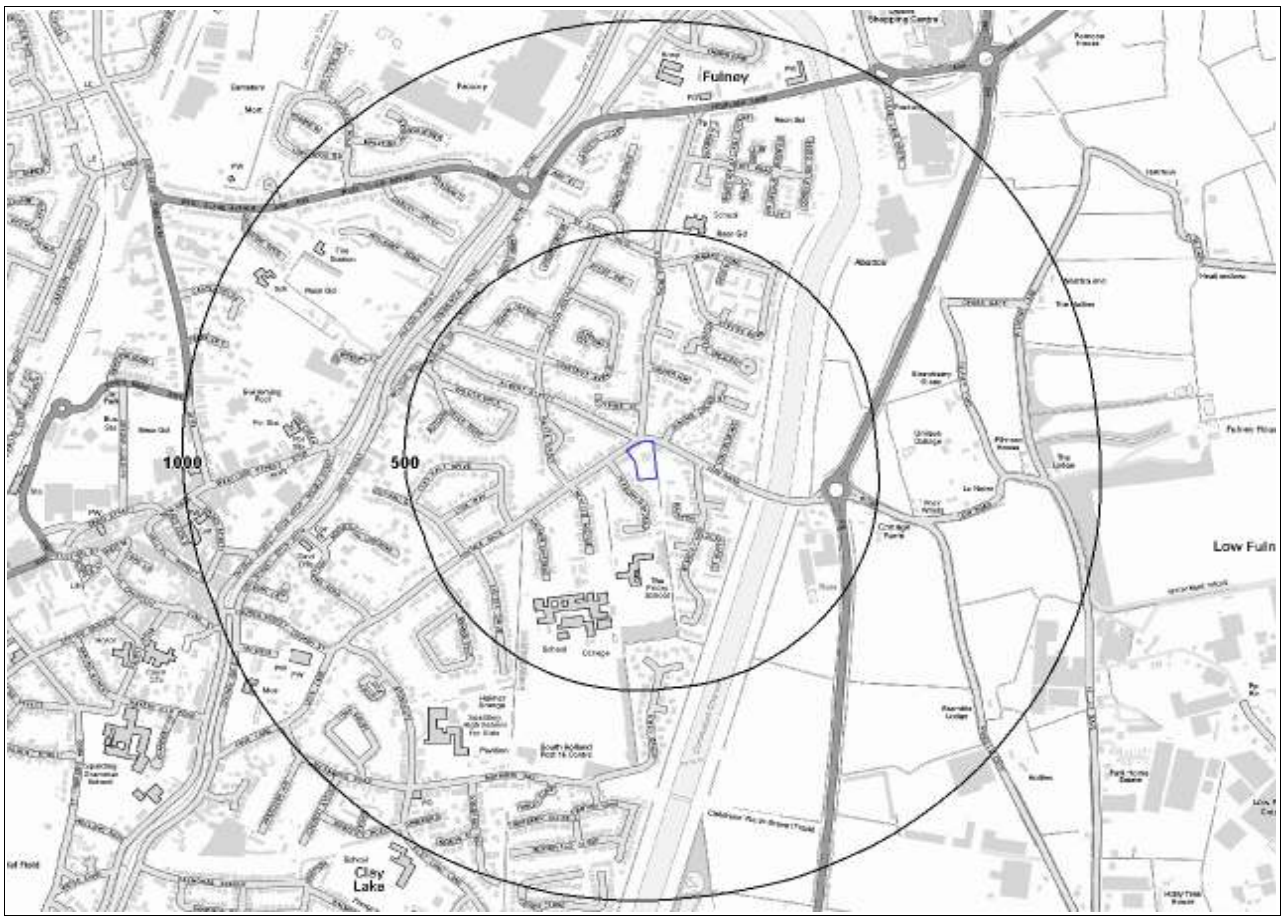
Database searched and no data found.

1.2 Superficial Deposits and Landslips map (1:10,000 scale)

NW N NE

W E

SW S SE



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

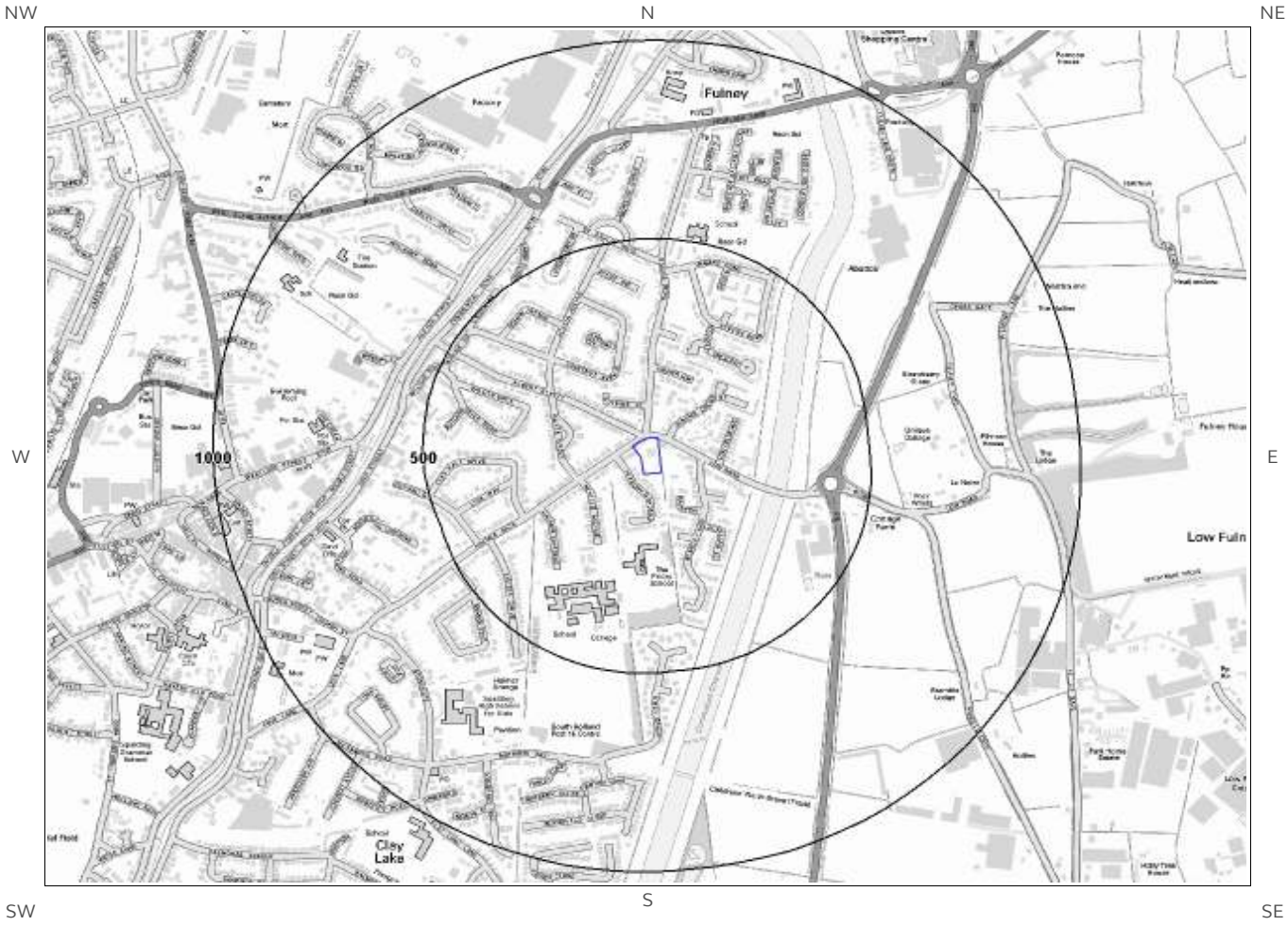
No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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Site Outline

500
1000
Search Buffers (m)

1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

Database searched and no data found at this scale.

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Disturbed Ground (undivided)

Worked Ground (undivided)

Landscaped Ground (undivided)

Infilled Ground

Reclaimed Ground

2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 144

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

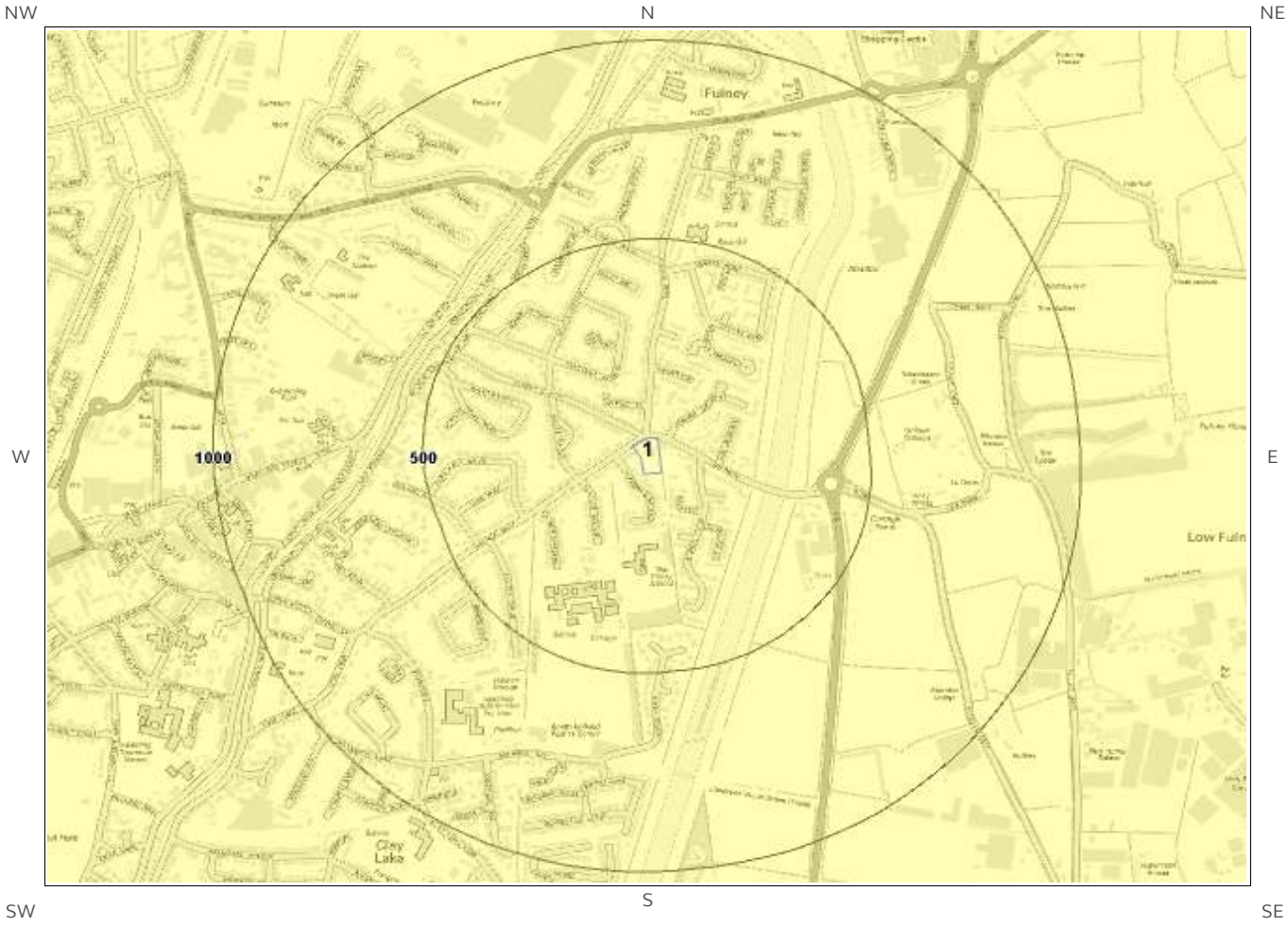
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Intergranular	Low	Very Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline

500
1000
Search Buffers (m)

2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 144

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	OXC-MDST	OXFORD CLAY FORMATION - MUDSTONE	CALLOVIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Low	Very Low

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

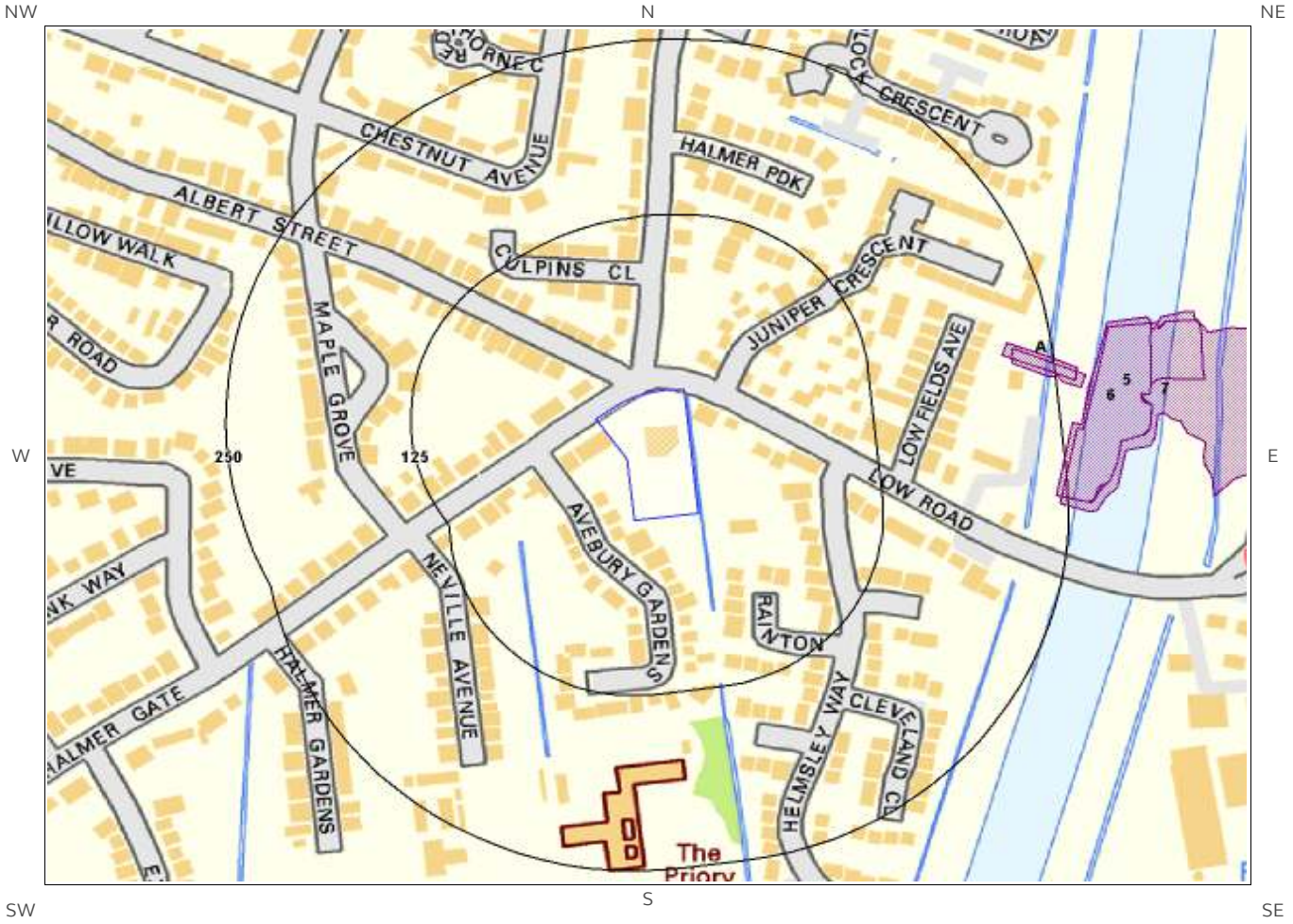
The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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4 Ground Workings map



Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

Historic Underground Workings

Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	216.0	E	526061 322964	Ponds	1950
2A	222.0	E	526066 322960	Ponds	1887
3A	222.0	E	526066 322960	Ponds	1903
4A	222.0	E	526066 322960	Ponds	1950
5	242.0	E	526122 322932	Water Body	1903
6	242.0	E	526122 322932	Ponds	1950
7	244.0	E	526173 322926	Water Body	1887

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

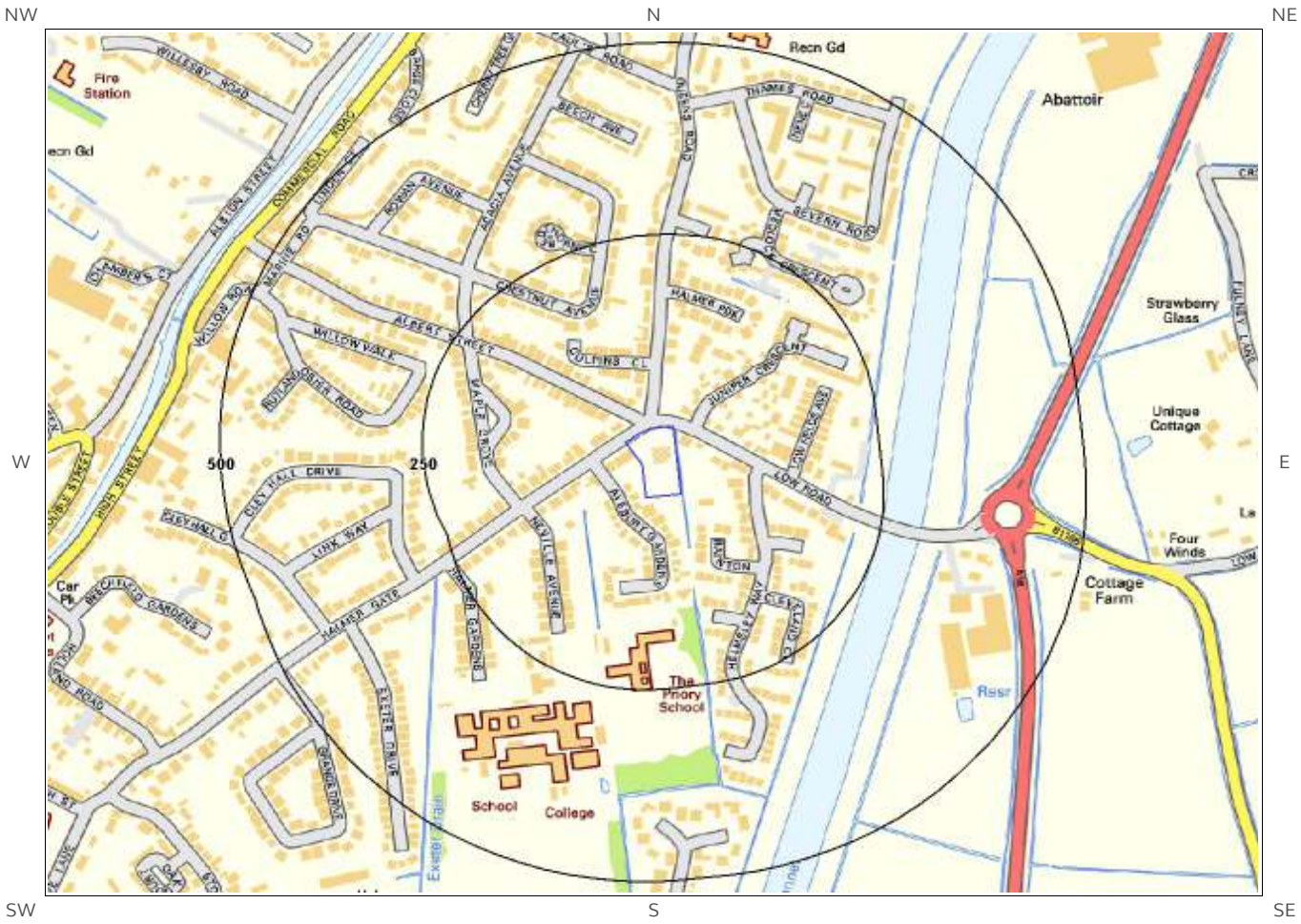
4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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Site Outline

Search Buffers (m) 250 500

Historical Mining

Non-Coal Mining Cavities

Natural Cavities (point data)

Natural Cavities (polygon data)

Non-Coal Mining

Highly likely

Likely

Unlikely

Highly unlikely

Rare

5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

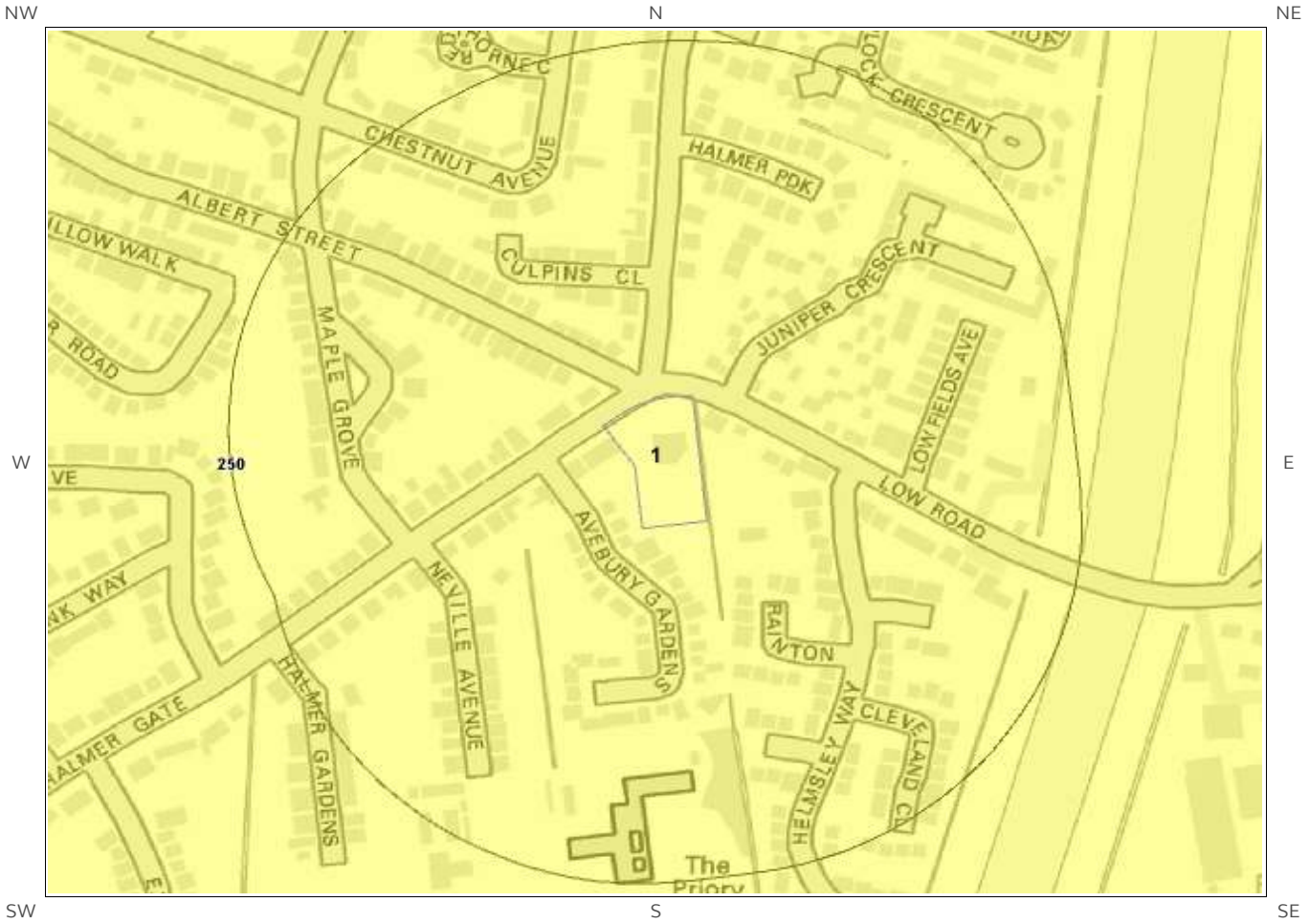


Shrink Swell Clay Legend

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6.2 Landslides map



Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map



Ground Dissolution Soluble Rocks Legend

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6.4 Compressible Deposits map

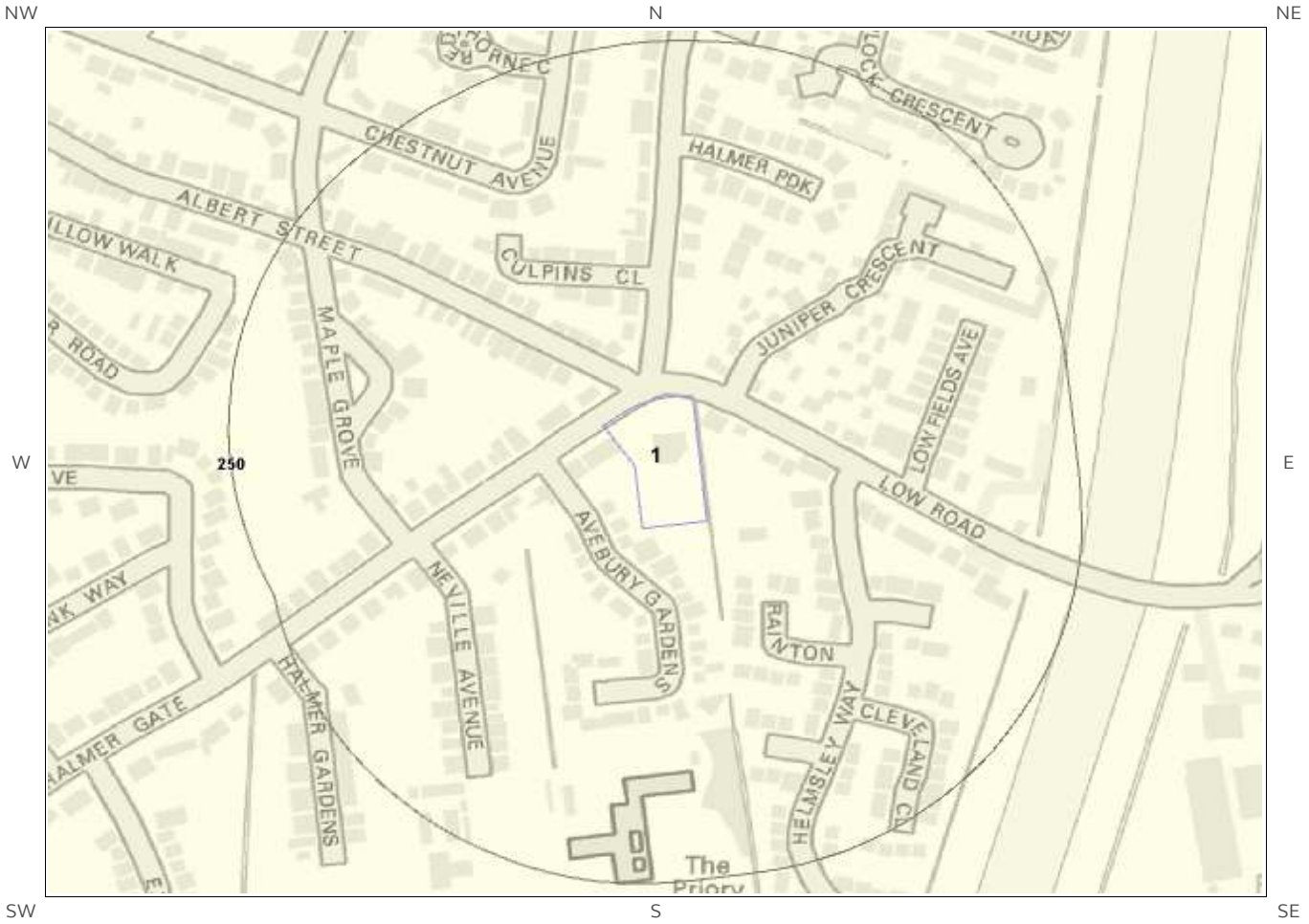


Compressible Deposits Legend

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6.5 Collapsible Deposits map



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Collapsible Deposits Legend



6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

* This includes an automatically generated 50m buffer zone around the site

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

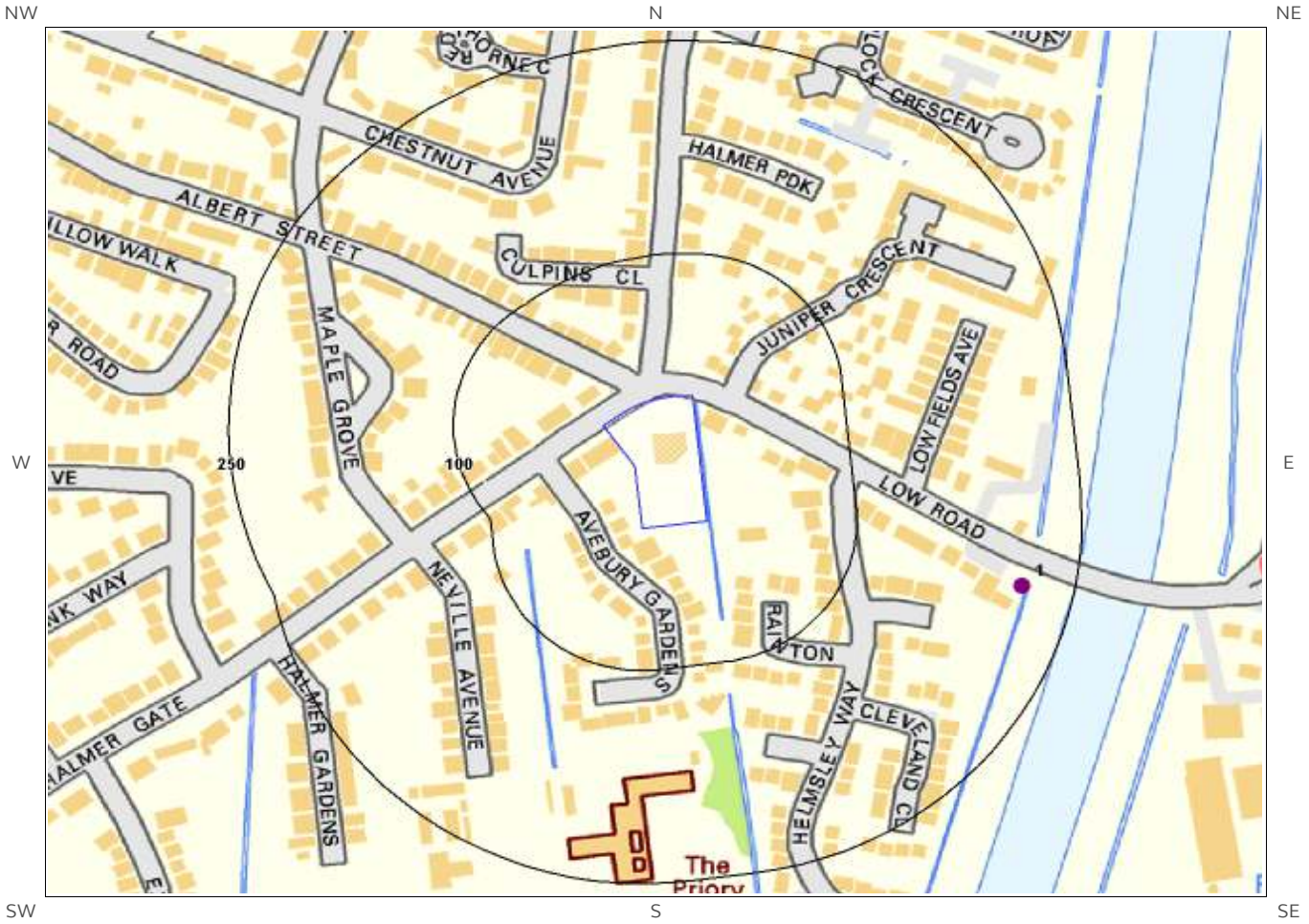
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build - consider the consequences of soil and groundwater conditions during and after construction. For existing property - possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

7 Borehole Records map



Borehole Records Legend

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Site Outline

Borehole Locations

125
250
Search Buffers (m)

7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary: 1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	215.0	E	526040 322810	TF22SE25	14.02	RIVER WELLAND DEVIATION 11

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/473716

8 Estimated Background Soil Chemistry

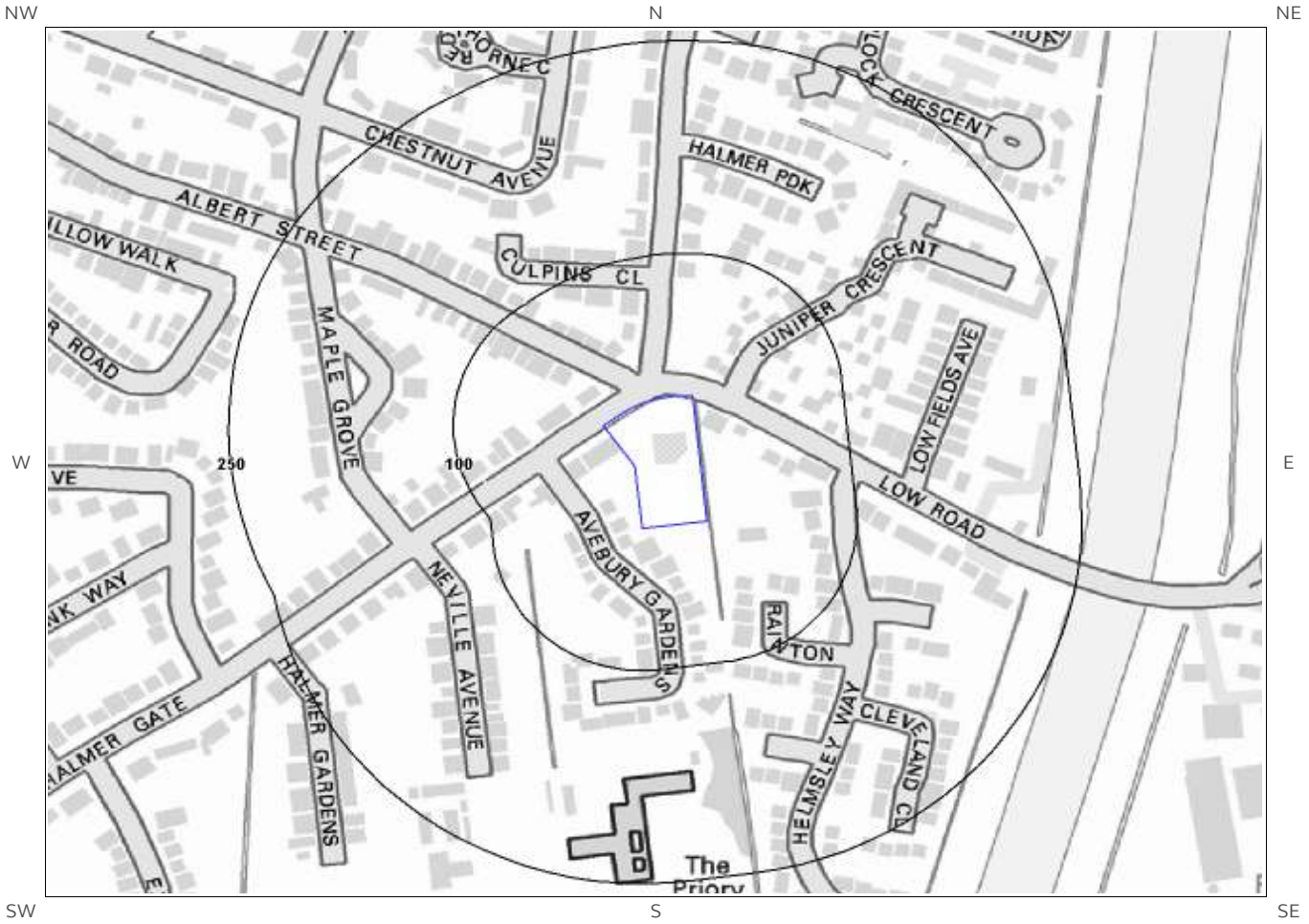
Records of background estimated soil chemistry within 250m of the study site boundary: 1

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg

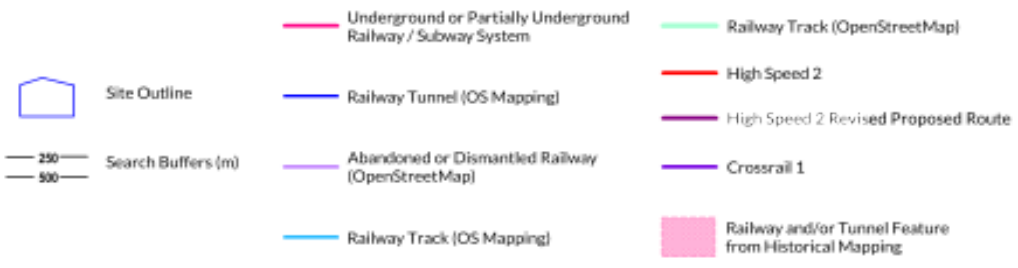
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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© OpenStreetMapContributors



9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No
Have any other railway tunnels been identified within 250m of the site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary?	No
Have any historical railway or tunnel features been identified within 250m of the study site boundary?	No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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ENVIROINSIGHT REPORT

Enviro Insight

Address:	**Birds Public House Site, Halmer Gate, Spalding, PE11 2EL**
Date:	**26 Oct 2018**
Reference:	**CMAPS-CM-752056-4199-261018EDR**
Client:	**CENTREMAPS**

NW N NE



W E

SW S SE

Aerial Photograph Capture date:	06-Apr-2015
Grid Reference:	525795,322898
Site Size:	0.42ha

Report Reference: CMAPS-CM-752056-4199-261018EDR
Client Reference: 4199

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Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	4	3	6
1.2 Additional Information – Historical Tank Database	0	0	0	4
1.3 Additional Information – Historical Energy Features Database	0	2	4	16
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	0	0
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	10	6

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	1
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	1
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	1	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	2	1

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	1	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	4
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	#250GWV#	#500GWV#	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	Yes	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	10	38	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Medium
7.4 Flood Defences within 250m of the study site	Identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	1
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	1	0	0	0	1	1
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Low
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Moderate
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Negligible
9.1.6 Maximum Running Sand hazard rating identified on the study site	Moderate
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use



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Historical 1:10,000 and 1:10,560 scale mapping

Site Outline

Industrial Land Use

Potentially Infilled Land

250
500
Search Buffers (m)

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 13

ID	Distance [m]	Direction	Use	Date
1A	13	NE	Unspecified Stores	1971
2A	13	NE	Unspecified Commercial/Industrial	1987
3B	47	N	Nursery	1929
4B	47	N	Nursery	1929
5B	51	N	Nursery	1938
6	52	N	Nursery	1950
7	171	E	Nursery	1971
8	290	SW	Nursery	1887
9	325	E	Nursery	1971
10	405	S	Nursery	1968
11	407	W	Unspecified Works	1971
12	475	W	Unspecified Store	1971
13	498	W	Unspecified Mill	1968

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 4

ID	Distance (m)	Direction	Use	Date
14C	315	SW	Unspecified Tank	1965
15C	315	SW	Unspecified Tank	1965
16C	315	SW	Unspecified Tank	1973
17	401	SE	Unspecified Tank	1996

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 22

ID	Distance (m)	Direction	Use	Date
18D	47	W	Electricity Substation	1973
19D	48	W	Electricity Substation	1991
20E	70	SW	Electricity Substation	1965
21E	70	SW	Electricity Substation	1965
22	181	E	Electricity Substation	1967
23F	250	W	Electricity Substation	1979
24F	252	W	Electricity Substation	1999
25G	252	S	Electricity Substation	1986
26G	252	S	Electricity Substation	1965
27G	252	S	Electricity Substation	1965
28F	253	W	Electricity Substation	1986
29F	253	W	Electricity Substation	1992
30G	254	S	Electricity Substation	1991
31H	281	N	Electricity Substation	1992
32H	282	N	Electricity Substation	1999
33H	298	N	Electricity Substation	1986
34H	298	N	Electricity Substation	1979
35I	307	SW	Electricity Substation	1965
36I	307	SW	Electricity Substation	1965
37I	307	SW	Electricity Substation	1973
38I	307	SW	Electricity Substation	1967
39I	310	SW	Electricity Substation	1991

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 0

Database searched and no data found.

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

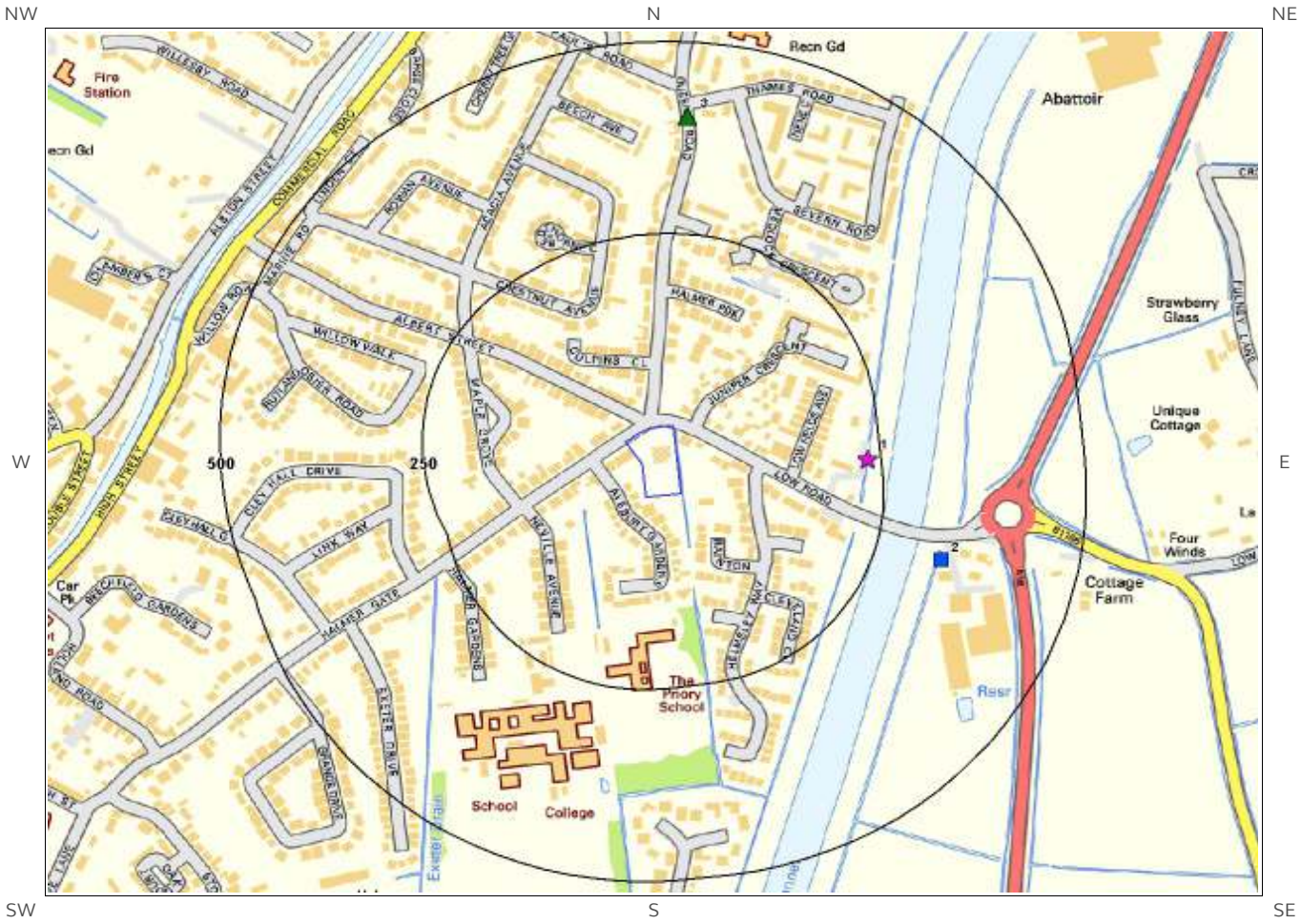
1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 16

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date
40J	216	E	Ponds	1968
41K	218	E	Ponds	1938
42J	222	E	Ponds	1887
43J	222	E	Ponds	1950
44J	222	E	Ponds	1903
45K	240	E	Ponds	1929
46K	240	E	Ponds	1929
47K	242	E	Water Body	1903
48K	242	E	Ponds	1950
49	244	E	Water Body	1887
50L	394	E	Ponds	1929
51L	394	E	Ponds	1929
52L	397	E	Ponds	1968
53L	397	E	Ponds	1938
54L	397	E	Pond	1950
55L	397	E	Ponds	1903

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) 250 / 500
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- COMAH / NIHHS Sites
- Sites Determined as Contaminated Land
- Hazardous Substance Consents and Enforcements

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

1

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
3	401	N	525836 323344	Address: St. Pauls Filling Station, Queens Road, Spalding, PE11 2JQ Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

1

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
2	332	E	526150 322770	Address: BUNGALOW ON LOW ROAD, SPALDING Effluent Type: UNSPECIFIED Permit Number: PR5LF5186 Permit Version: 1	Receiving Water: into land Status: PRE NRA LEGISLATION WHERE ISSUE DATE < 01-SEP-89 (HISTORIC ONLY) Issue date: 11/09/1986 Effective Date: 11-Sep-1986 Revocation Date: 01/10/1996

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

1

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	233	E	526059 322901	Incident Date: 17-Jun-2002 Incident Identification: 85428 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

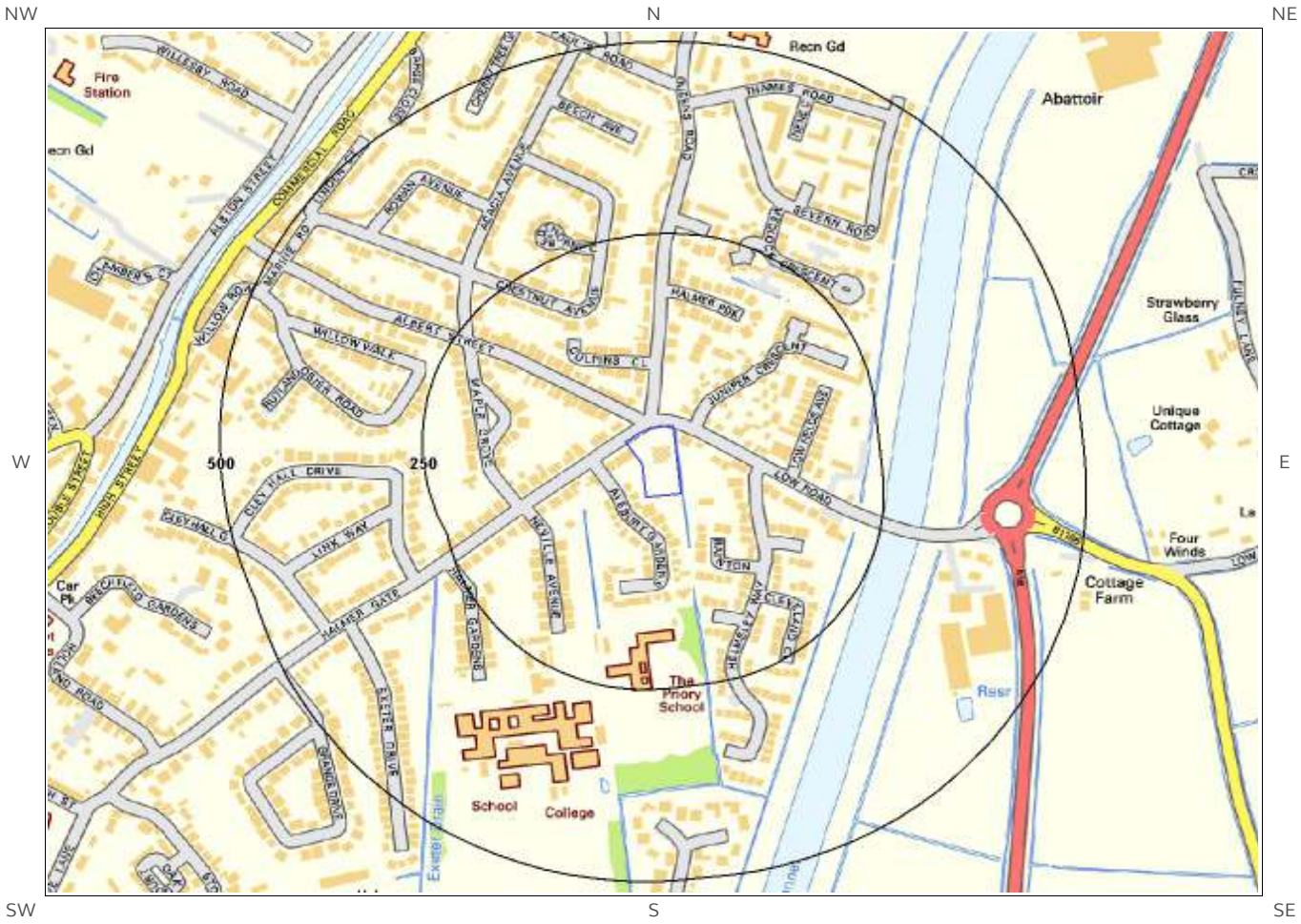
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250
500
Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

1

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1206	N	Site Address: Spalding Sugar Beet Factory, Spalding, Lincolnshire Waste Licence: Yes Site Reference: L115, RD7 032/2, RD7-70-01/89, SH-70-01/89, 2500/5312 Waste Type: Inert, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 24-Apr-1990 Licence Surrendered: Licence Holder Address: PO Box 26, Oundle Road, Peterborough Operator: British Sugar Plc Licence Holder: British Sugar Plc First Recorded: - Last Recorded: -

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	624	SE	526173 322307	Refuse Tip	1967 mapping	Polygon

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

0

Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

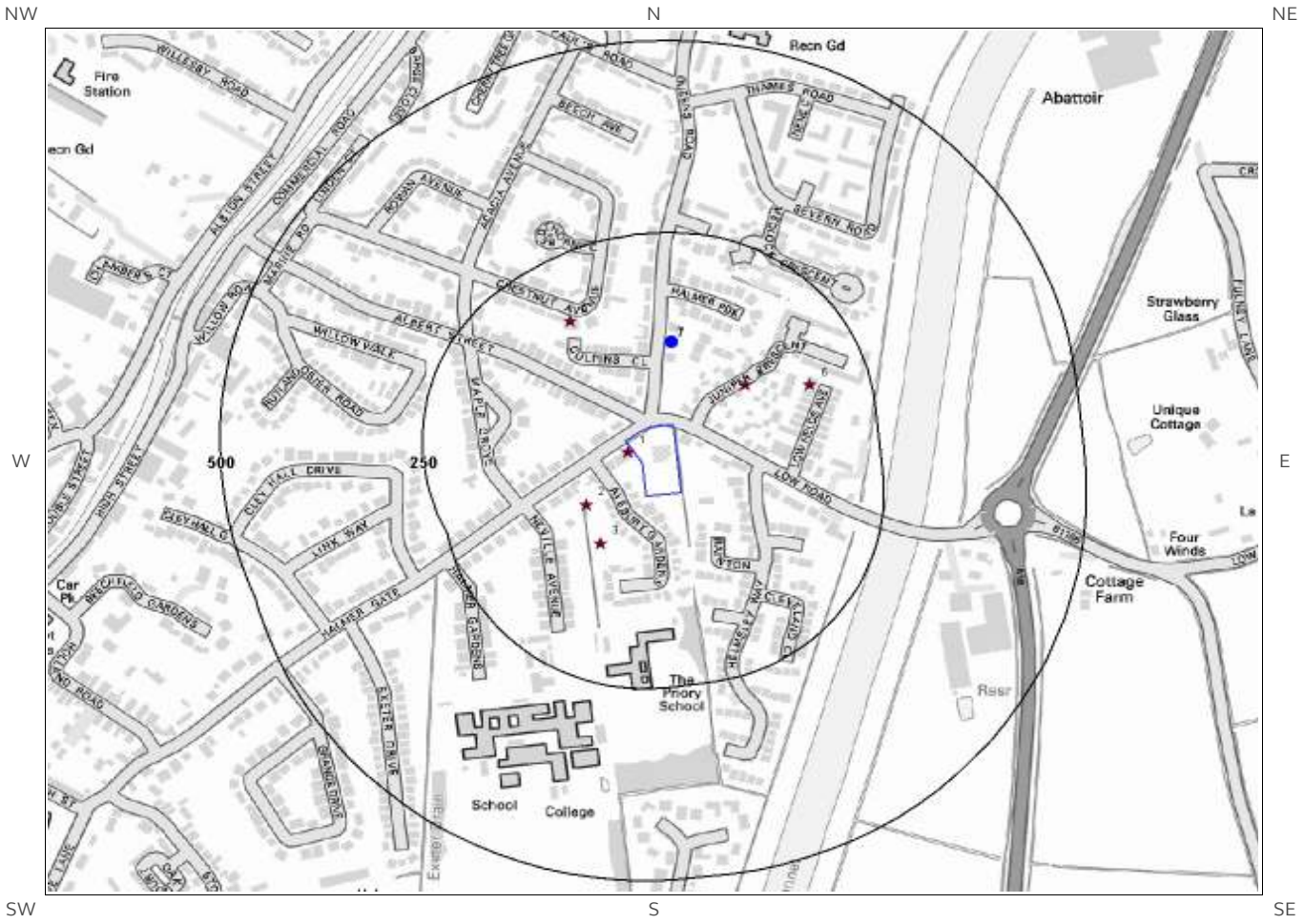
3

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	854	NW	525400 323700	Site Address: Albion Street, Spalding, Linconshire, PE11 2AY Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRA003 EPR reference: - Operator: Transco Waste Management licence No: 73048 Annual Tonnage: 0.0	Issue Date: 26/05/1994 Effective Date: - Modified: - Surrendered Date: 29/02/2000 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Spalding Depot Correspondence Address: -
Not shown	854	NW	525400 323700	Site Address: Albion Street, Spalding, Lincolnshire, PE11 2AY Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TRA004 EPR reference: EA/EPR/QP3394NT/S002 Operator: Transco Waste Management licence No: 73048 Annual Tonnage: 25000.0	Issue Date: 26/05/1994 Effective Date: - Modified: - Surrendered Date: 29/02/2000 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Spalding Depot Correspondence Address: -
Not shown	1405	S	525400 321500	Site Address: Street Mr T J, Elvander, Clay Lake, Spalding, Lincolnshire, PE12 6BL Type: Metal Recycling Site (Vehicle	Issue Date: 09/09/1992 Effective Date: - Modified: -

ID	Distance (m)	Direction	NGR	Details	
				Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: STR002 EPR reference: EA/EPR/TP3198NV/A001 Operator: Street Mr T J Waste Management licence No: 71027 Annual Tonnage: 5000.0	Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Bridge Cottage, Clay Lake Correspondence Address: -

4. Current Land Use Map



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Site Outline

Search Buffers (m)
250
500

Current Industrial Sites

Petrol & Fuel Sites

Electricity Transmission Cables

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 6

The following records are represented as points on the Current Land Uses map.

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	5	SW	Caspianro Ltd	525764 322909	106, Halmer Gate, Spalding, PE11 2EL	Distribution and Haulage	Transport, Storage and Delivery
2	75	W	Electricity Sub Station	525712 322841	PE11	Electrical Features	Infrastructure and Facilities
3	82	SW	Sewage Pumping Station	525730 322791	PE11	Waste Storage, Processing and Disposal	Infrastructure and Facilities
4	103	NE	Electricity Sub Station	525909 322997	PE12	Electrical Features	Infrastructure and Facilities
5	169	NW	Dolby's Removals & Light Haulage	525692 323080	73, Chestnut Avenue, Spalding, PE11 2LN	Clearance and Salvage Dealers	Recycling Services
6	176	E	Spalding Engineering Supplies	525988 322997	15, Lowfields Avenue, Spalding, PE12 6EE	General Purpose Machinery	Industrial Products

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 1

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
7	108	N	525817 323052	OBSOLETE	Queens Road, Spalding, Lincolnshire, PE11 2JJ	Not Applicable	Obsolete

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

---

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
TFD-XCZ	TIDAL FLAT DEPOSITS	CLAY AND SILT

5.3 Bedrock and Solid Geology

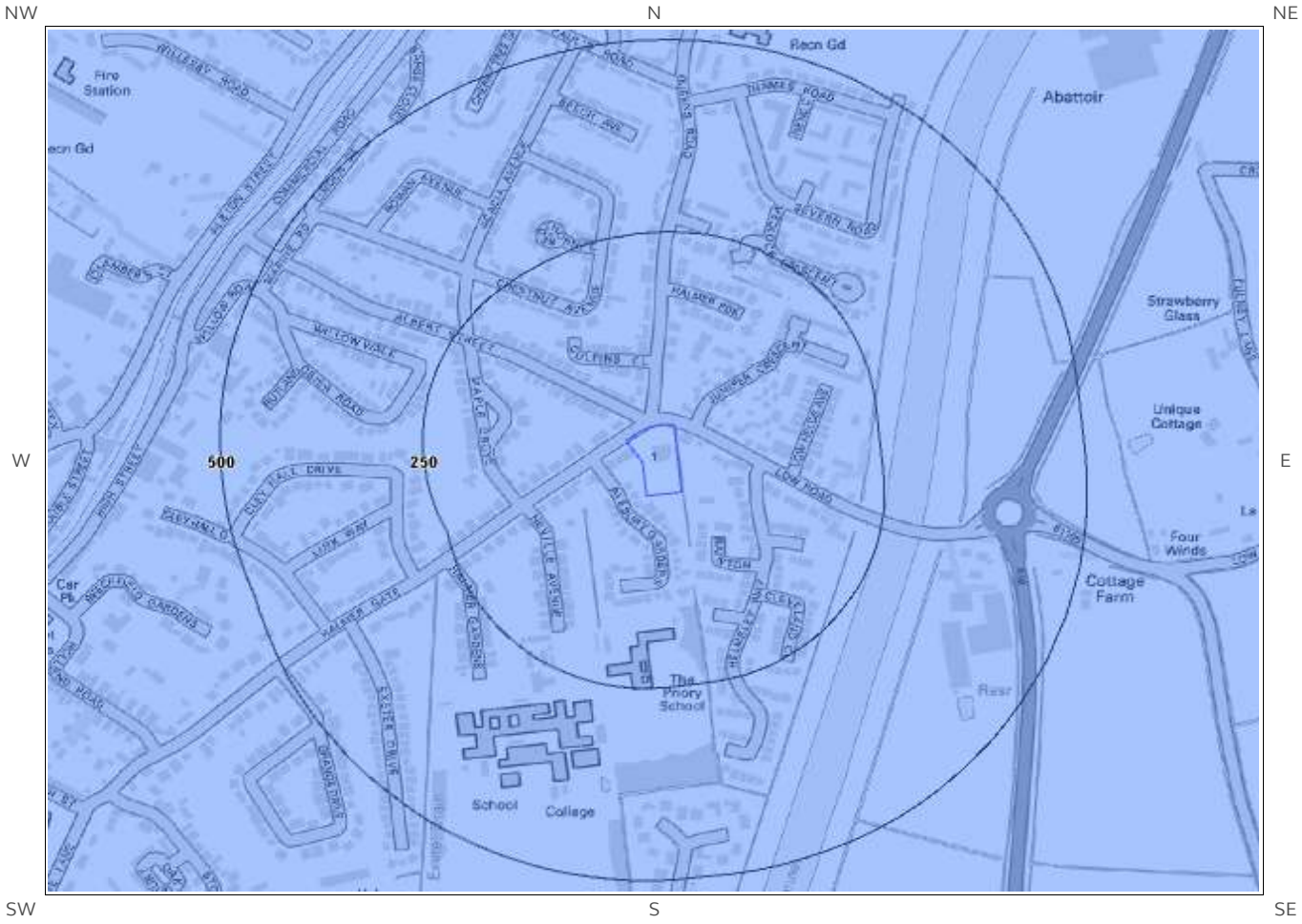
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
OXC-MDST	OXFORD CLAY FORMATION	MUDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

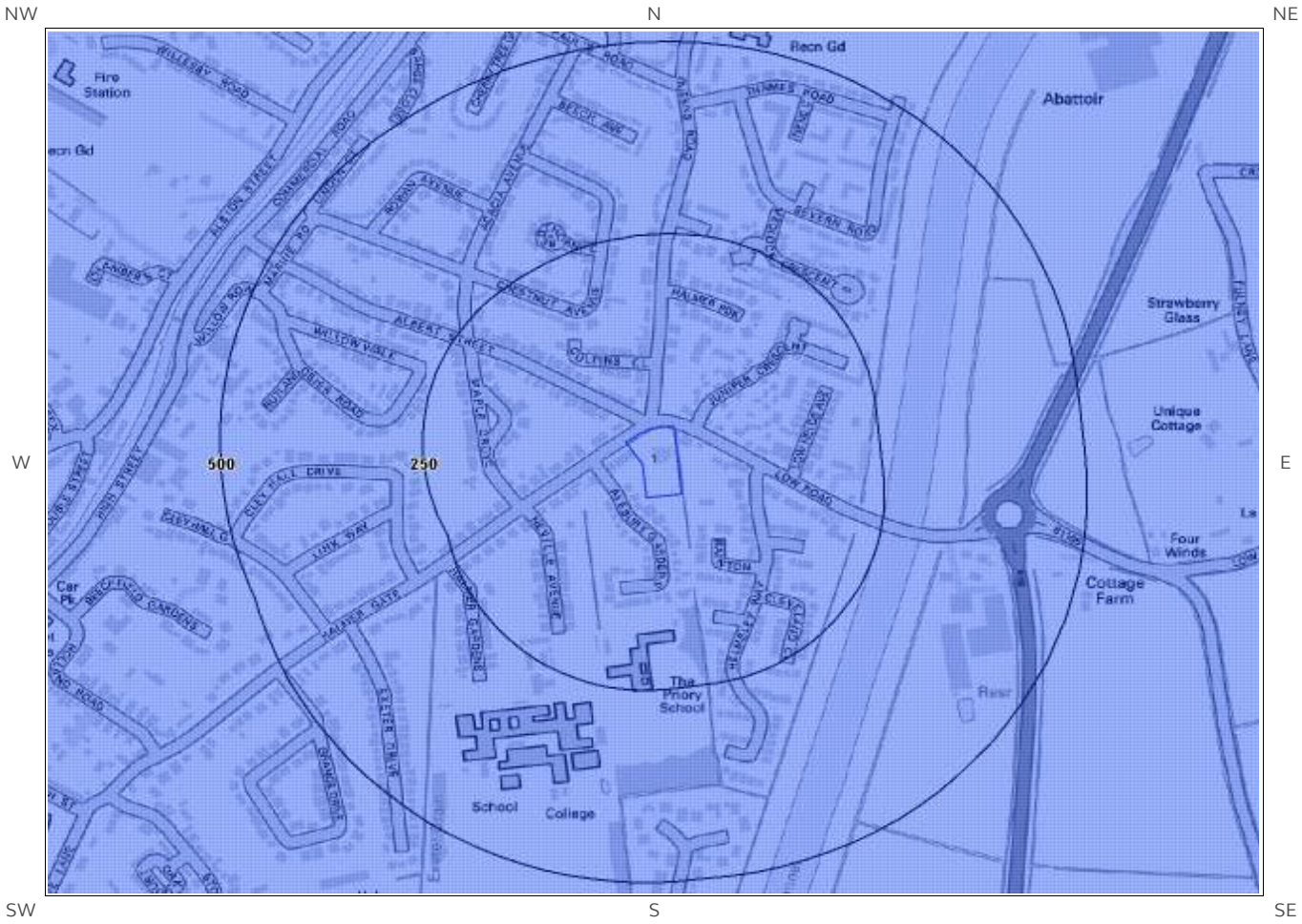
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Groundwater Abstraction Licence

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

Surface Water Abstraction Licence

6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



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Site Outline

250 Search Buffers (m)
500

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

Potable Water Abstraction Licence

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



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Site Outline

250
500
Search Buffers (m)

Tidal River

Inland River

Underground or Elevated Tidal River

Underground or Elevated Inland River

Foreshore

General Quality Assessment: Chemistry

Canal

Underground or Elevated Canal

Lock or Flight of Locks

Lake, Reservoir, or Marsh

Drain or Transfer

General Quality Assessment: Biology

6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site None identified

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details	
Not shown	923	S	525850 321930	Status: Active Licence No: 5/31/14/*S/0157 Details: Make-Up Or Top Up Water Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: CORONATION CHANNEL - SPALDING Data Type: Point Name: LINCOLNSHIRE WILDLIFE TRUST	Annual Volume (m^3): 2500 Max Daily Volume (m^3): 224 Application No: - Original Start Date: 01/01/1982 Expiry Date: - Issue No: 101 Version Start Date: 08/05/2007 Version End Date:
Not shown	1051	S	525800 321800	Status: Historical Licence No: 5/31/14/*S/0157 Details: Make-Up or Top Up Water Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: CORONATION CHANNEL Data Type: Point Name: LINCOLNSHIRE TRUST FOR NATURE CONSERVATION	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 01/01/1982 Expiry Date: - Issue No: 100 Version Start Date: 01/12/1992 Version End Date:
Not shown	1451	N	525340 324320	Status: Historical Licence No: 5/31/14/*S/0014 Details: Non-Evaporative Cooling Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATTS DRAIN Data Type: Line Name: SPALDING ENERGY CO LTD	Annual Volume (m^3): 2.72766e+006 Max Daily Volume (m^3): 22912 Application No: - Original Start Date: 01/01/1966 Expiry Date: - Issue No: 101 Version Start Date: 02/02/2002 Version End Date:
Not shown	1653	SW	524600 321700	Status: Historical Licence No: 5/31/14/*S/0113 Details: Spray Irrigation - Direct Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: R WELLAND (CORONATION CHANNEL) Data Type: Point Name: C SLOOTEN LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date:
Not shown	1756	N	525800 324700	Status: Historical Licence No: 5/31/14/*S/0014 Details: Non-Evaporative Cooling Direct Source: SURFACE WATER SOURCE OF SUPPLY Point: VERNATTS DRAIN Data Type: Point Name: BRITISH SUGAR PLC	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 01/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/01/1966 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site	None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site	None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site	None identified

Database searched and no data found.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	Identified

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	771	W	525000 322800	River Name: Welland (coronation Cut) Reach: New River Spalding...tidal Limit (2) End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B
Not shown	771	W	525000 322800	River Name: Welland (coronation Cut) Reach: New River Spalding...tidal Limit (1) End/Start of Stretch: End of Stretch NGR	B	B	B	B	B
Not shown	1156	N	525800 324100	River Name: Welland (coronation Cut) Reach: New River Spalding...tidal Limit (2) End/Start of Stretch: End of Stretch NGR	B	B	B	B	B

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	771	W	525000 322800	River Name: Welland Reach: New River Spalding Tidal Limit (2) End/Start of Stretch: Start of Stretch NGR	C	C	B	B	B
Not shown	771	W	525000 322800	River Name: Welland Reach: New River Spalding Tidal Limit (1) End/Start of Stretch: End of Stretch NGR	C	C	B	B	B
Not shown	976	W	524864 322531	River Name: Welland Reach: New River Spalding Tidal Limit (2) End/Start of Stretch: Sample Point NGR	C	C	B	B	B
Not shown	1156	N	525800 324100	River Name: Welland Reach: New River Spalding Tidal Limit (2) End/Start of Stretch: End of Stretch NGR	C	C	B	B	B

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	1 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
11	1 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.2
2	79 W	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
12	79 W	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
3	122 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
13	122 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
4	210 N	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	210 N	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	217 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
15	217 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.6
6	220 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
16	220 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.3
7	271 E	Coronation Channel	Inland river not influenced by normal tidal action.	Catchment Area: Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 38.4
17	271 E	Coronation Channel	Inland river not influenced by normal tidal action.	Catchment Area: Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 38.4
8	278 W	Exeter Drain	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
18	278 W	Exeter Drain	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
9	326 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
19	326 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
10	339 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
Not shown	339 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.2
11	344 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
21	344	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	E			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
12	347 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
22	347 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
13	375 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	375 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
14	378 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
Not shown	378 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.7
15	381 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	381 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
16	398 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	398 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
17	408 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	408 S	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Welland Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): 2.0
18	433 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	433 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
19	437 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
Not shown	437 NE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
20	439 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	439 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
21	443 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	443 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
22	475 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
23	475 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1
Not shown	475 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.5
Not shown	475 SE	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 3.1

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
24	490 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
Not shown	490 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.9
25	496 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
Not shown	496 E	Not specified	Inland river not influenced by normal tidal action.	Catchment Area: Nene Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0

6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
122	S
210	N
216	E
219	E
246	E
247	E

7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

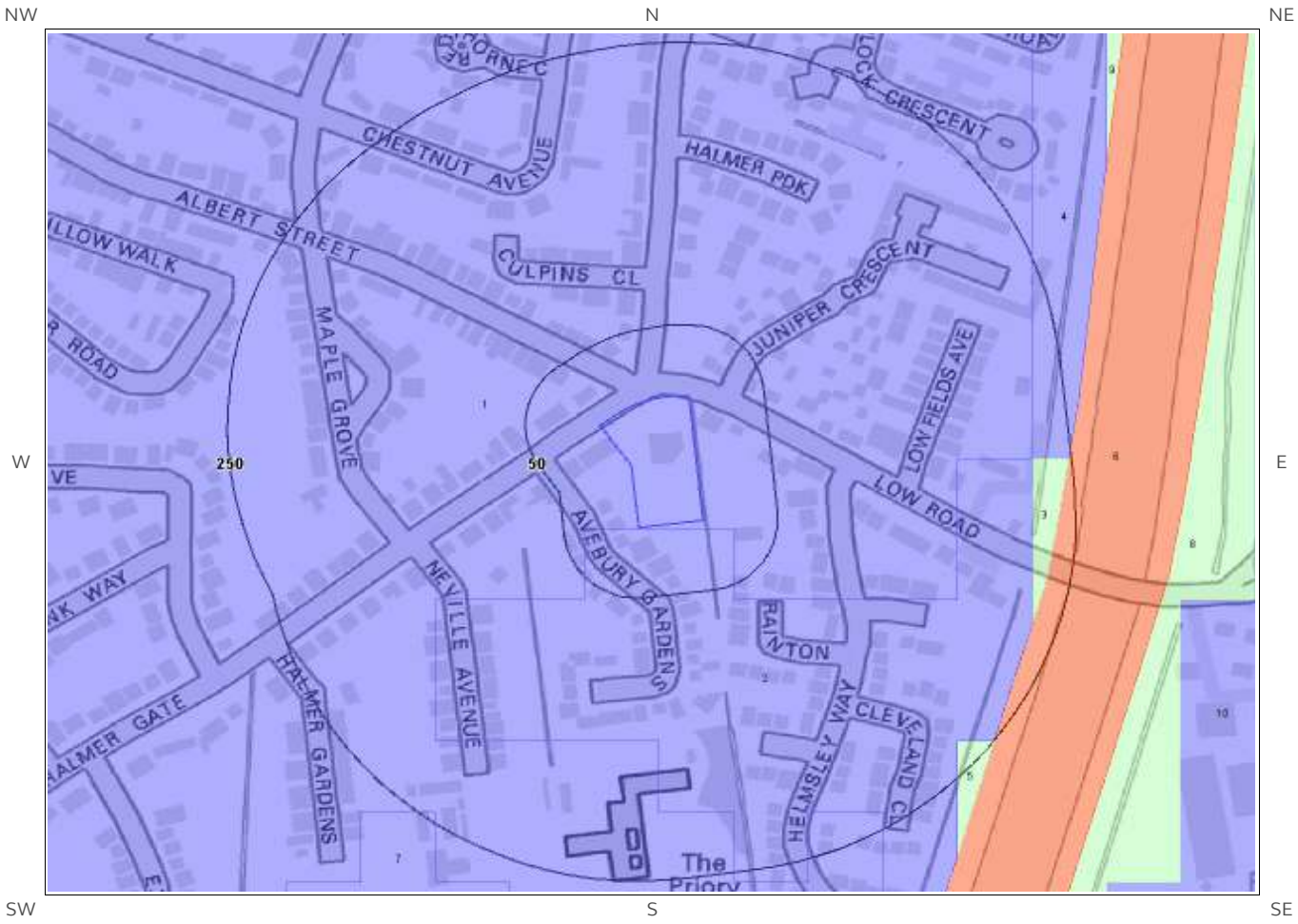
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	15-Oct-2018	Zone 2 - (Fluvial /Tidal Models)
2	250	W	15-Oct-2018	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	0	On Site	15-Oct-2018	Zone 3 - (Fluvial Models)
2	250	W	15-Oct-2018	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Medium

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Medium (greater than 1 in 100 but less than 1 in 30) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRas flood Risk
1	0.0	On Site	Medium
2	1.0	S	Medium

7.4 Flood Defences

Flood Defences within 250m of the study site — Identified

The following flood defence records are represented as lines on the Flood Map:

ID	Distance (m)	Direction	Update
10	249	E	08-Oct-2018

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — None identified

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

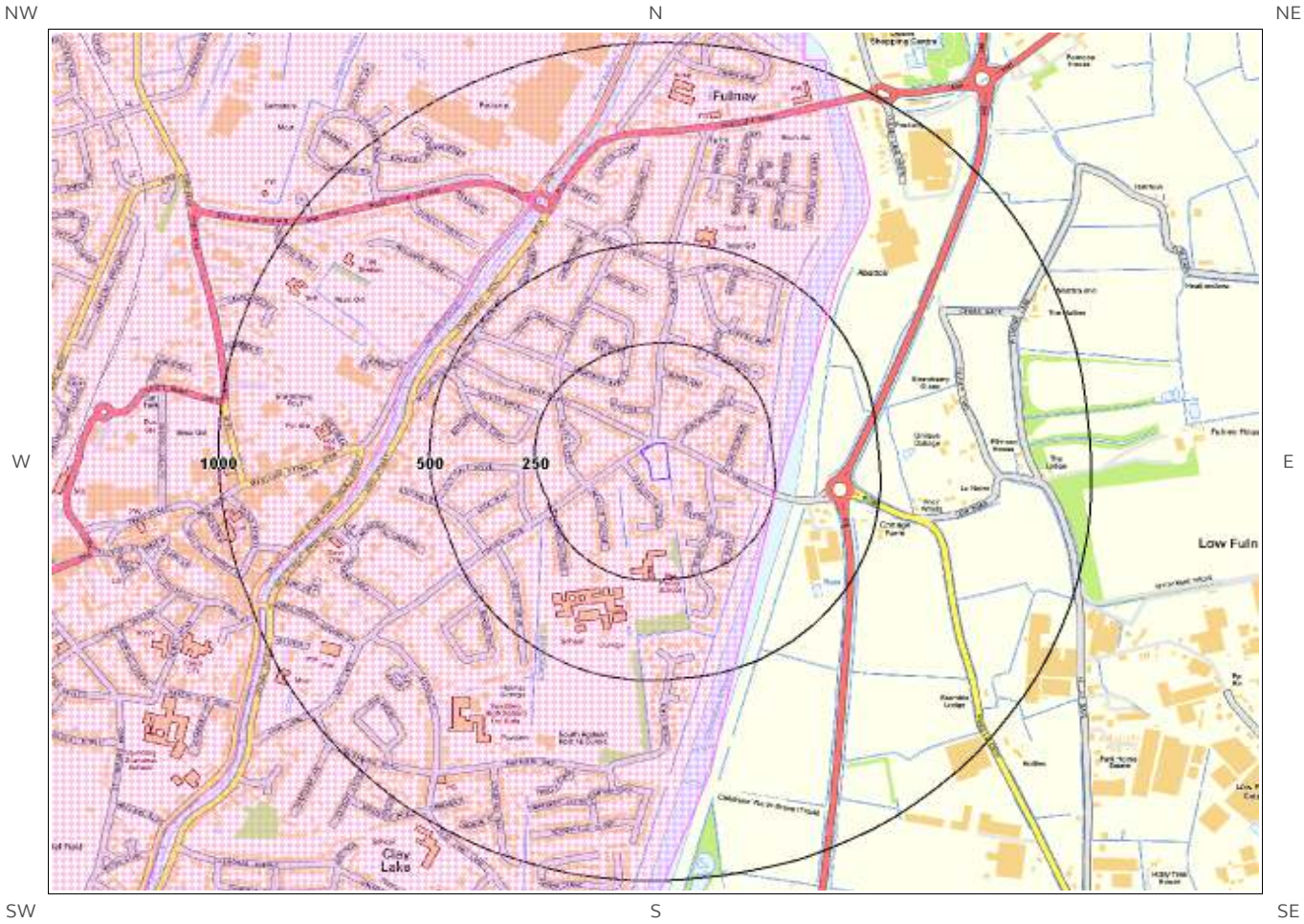
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result — Not Applicable

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100
250
Search Buffers (m)

AONB

National Park

SSSI

Special Protection Areas

Nitrate Vulnerable Zones

Green Belt

Environmentally Sensitive Areas

Special Areas of Conservation

World Heritage Sites

Nitrate Sensitive Areas

Ancient Woodland

National Nature Reserve

Local Nature Reserves

Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

1

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
Not shown	1285	NW	Vernatts	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

3

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
2	0	On Site	Existing	DEFRA
3	570	NW	Existing	DEFRA
Not shown	1818	NW	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell* hazard rating identified on the study site — Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for running sand problems with relatively small changes in ground conditions. Avoid large amounts of water entering the ground (for example through pipe leakage or soak-aways). Do not dig (deep) holes into saturated ground near the property without technical advice. For new build consider the consequences of soil and groundwater conditions during and after construction. For existing property possible increase in insurance risk from running sand, for example, due to water leakage, high rainfall events or flooding.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing
ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site	None identified

Database searched and no data found.

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary	None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site Guidance: No Guidance Required.	None identified

Contact Details

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BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
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Tel: 03708 506 506
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Main switchboard**: 020 7654 8000**

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Local Authority
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Gemapping PLC
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SMALL SCALE SURVEY PLANS



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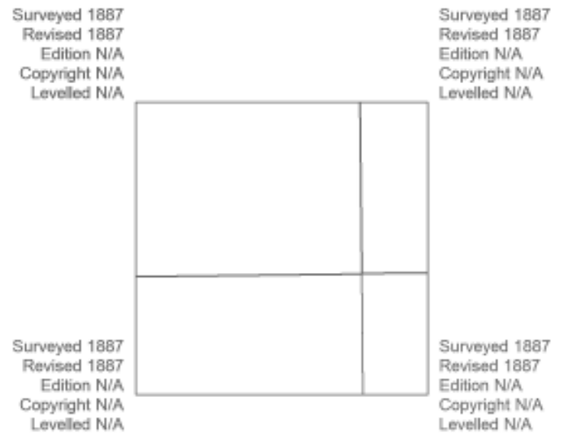
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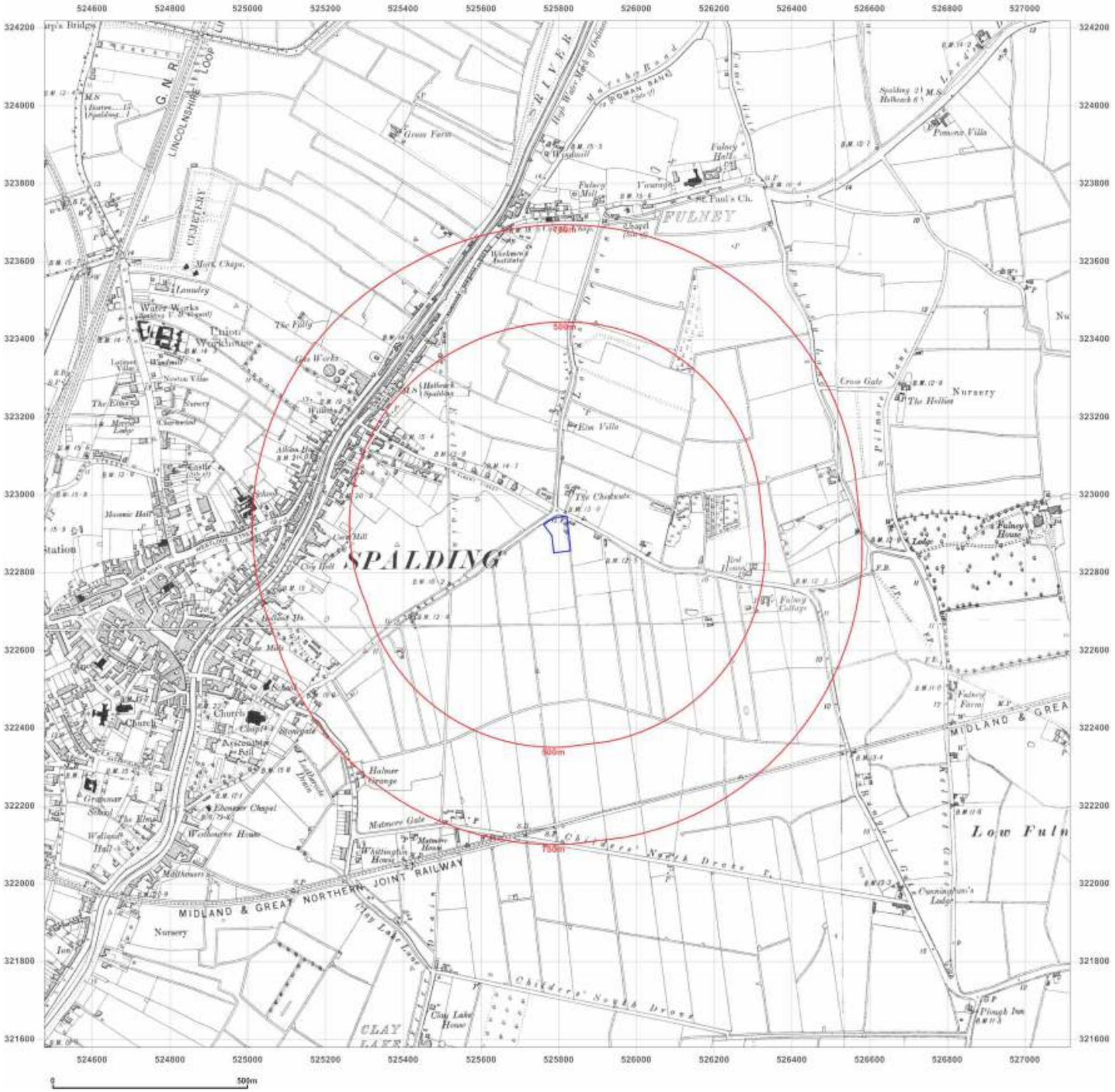
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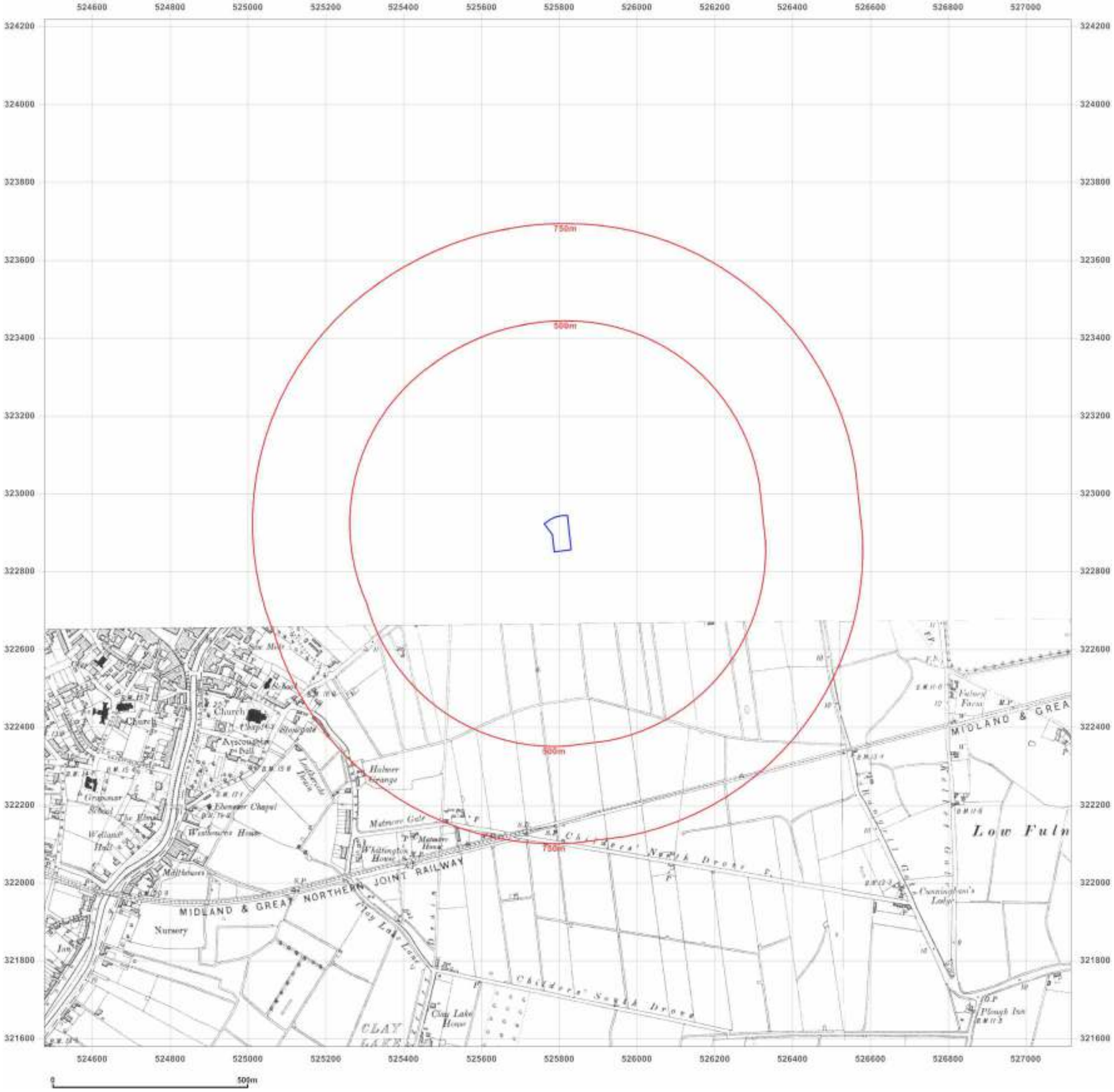
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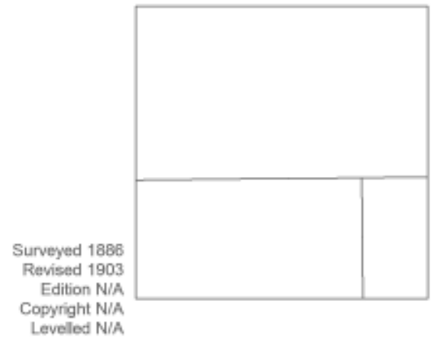
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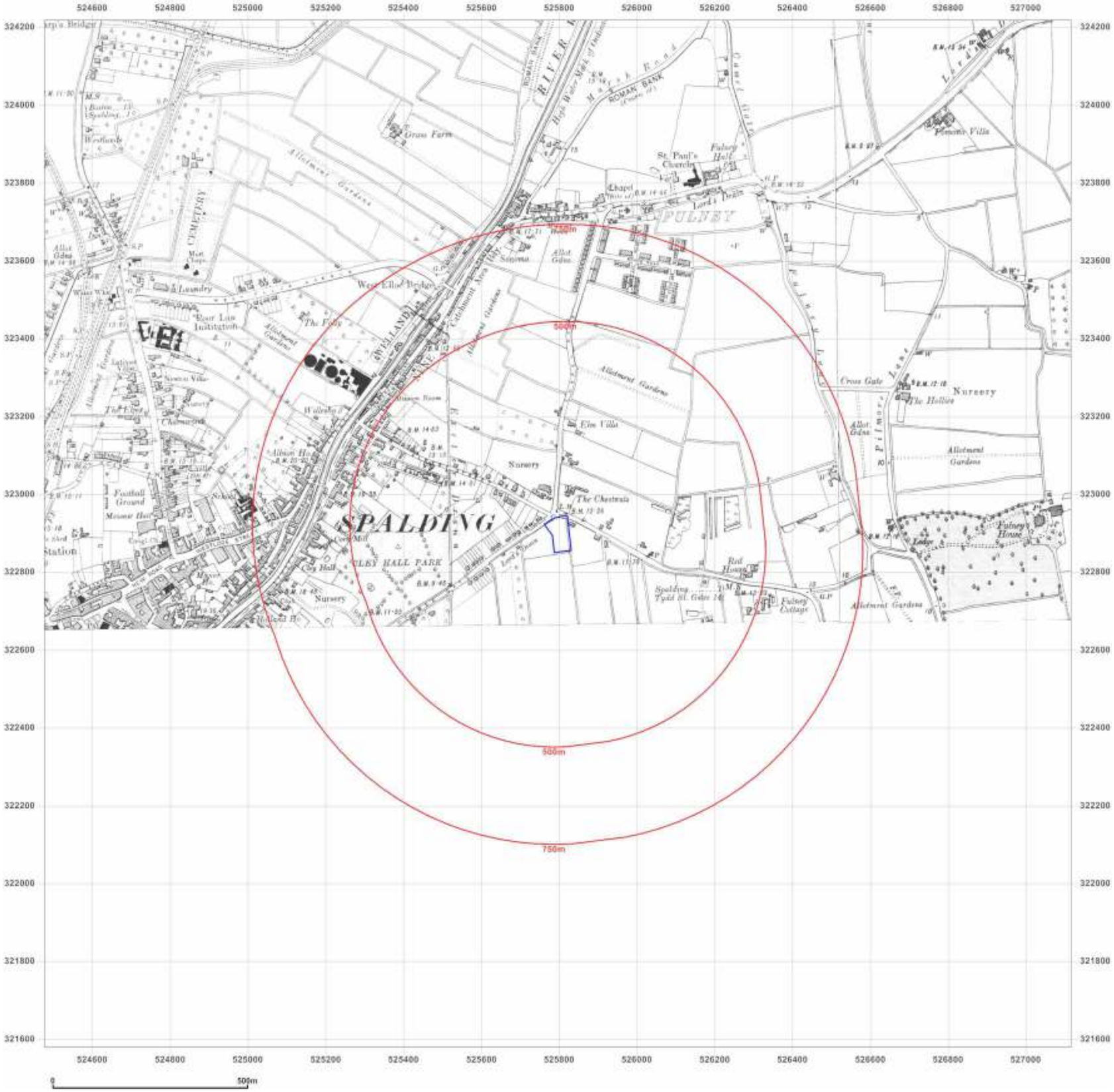
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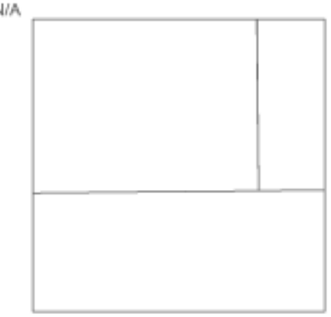
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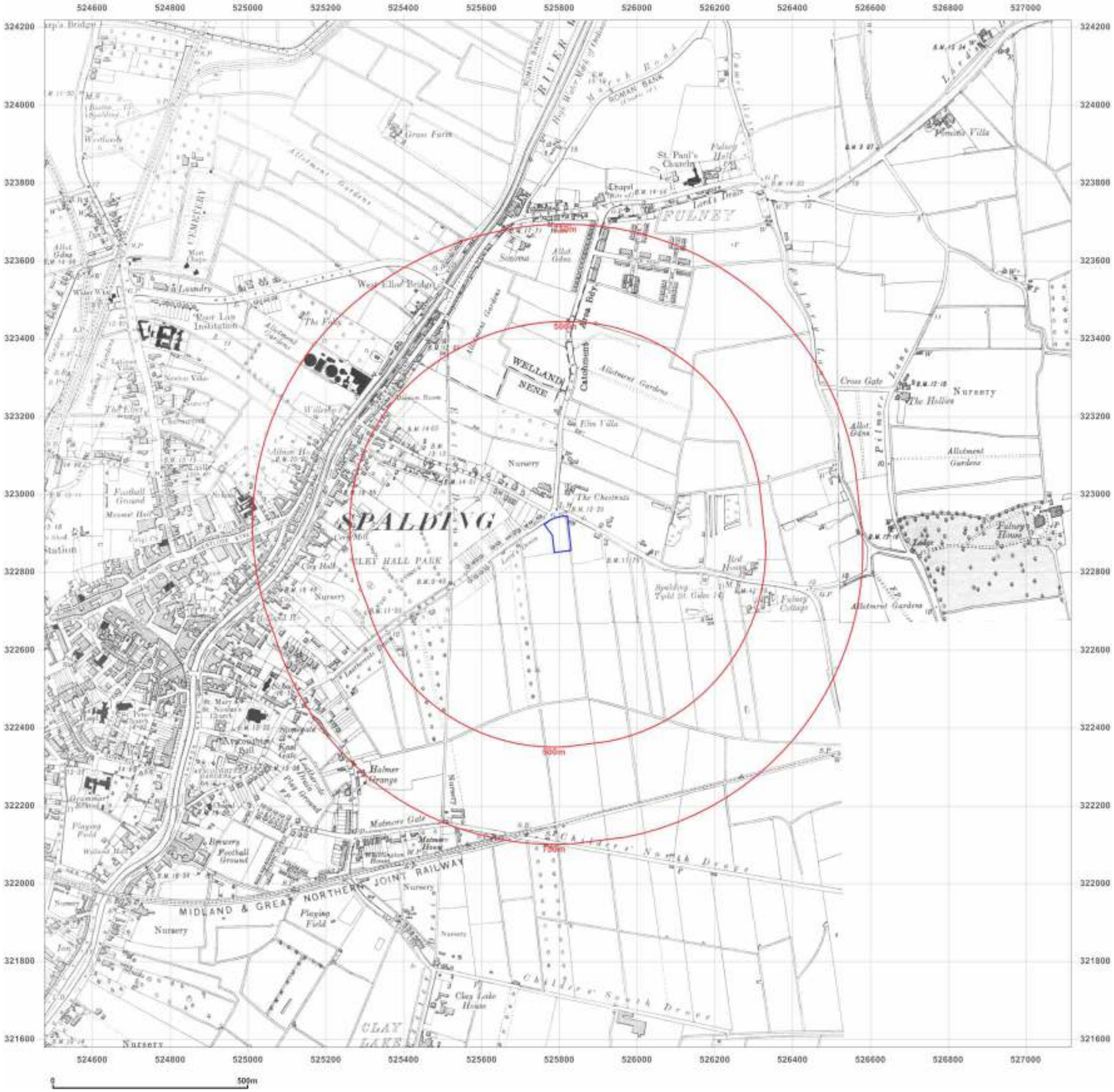
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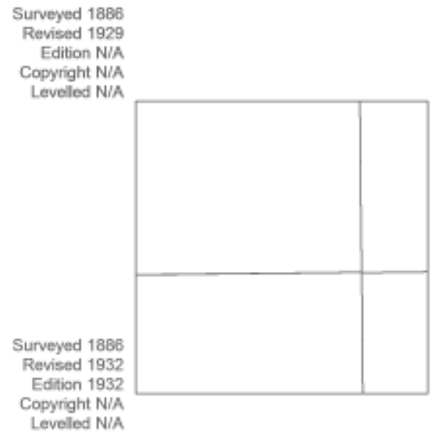
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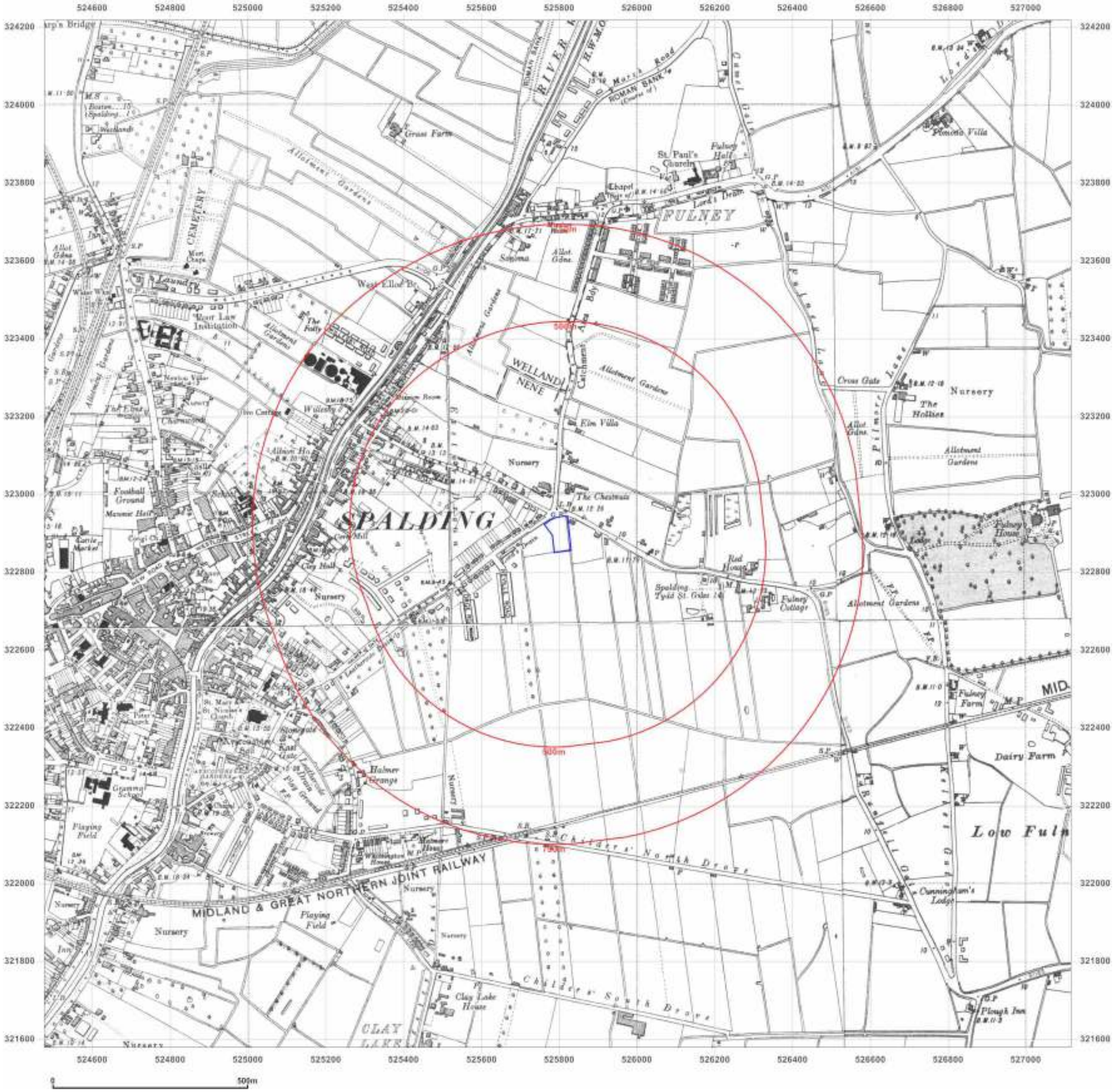
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Production date: 26 October 2018

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FOR A BETTER POINT OF VIEW

Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1886
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1886
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1886
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1886
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

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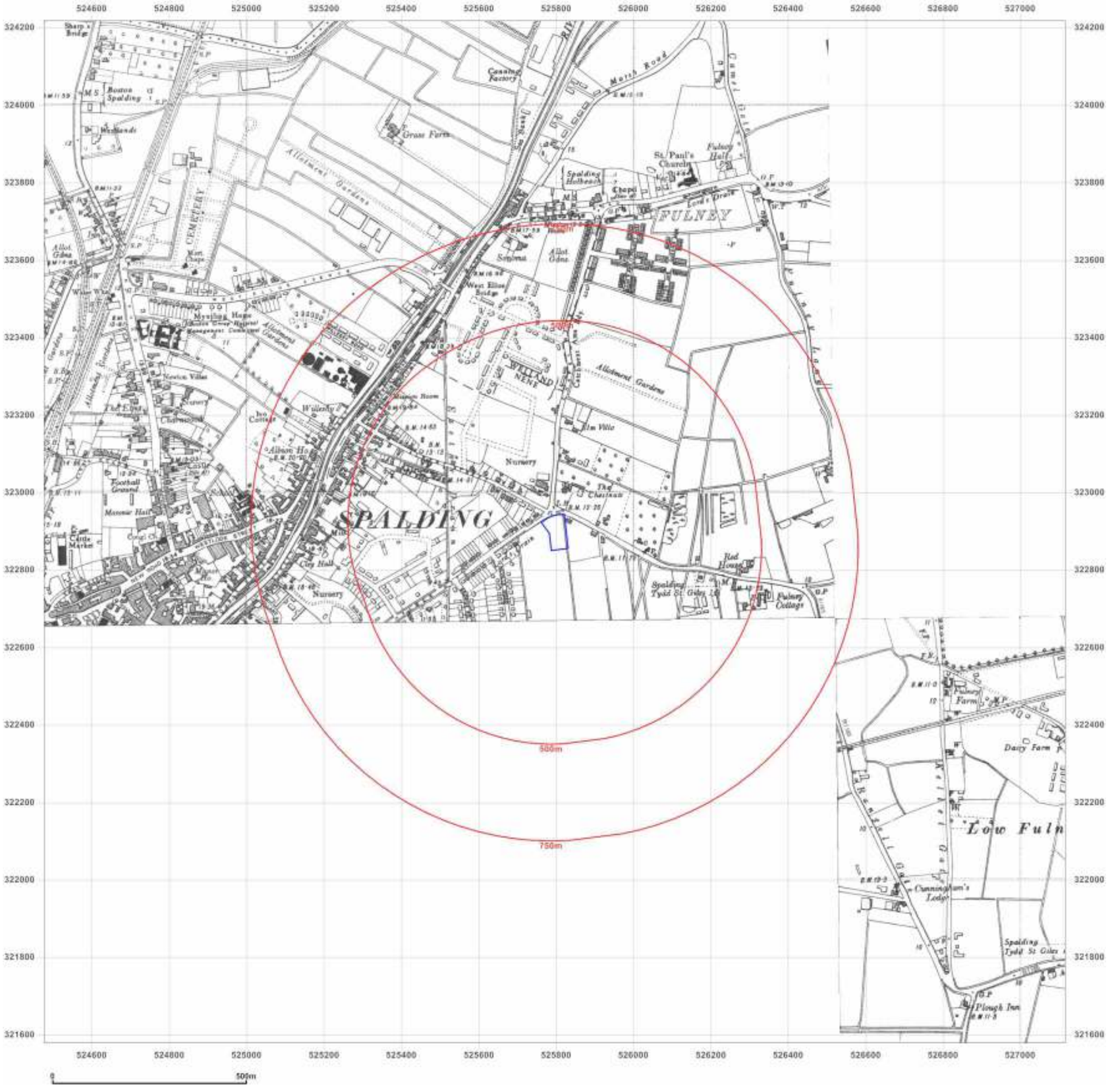
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Site Details:

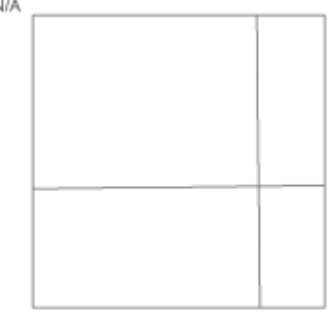
Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: County Series
Map date: **1950**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1886
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1886
Revised 1950
Edition N/A
Copyright N/A
Levelled N/A

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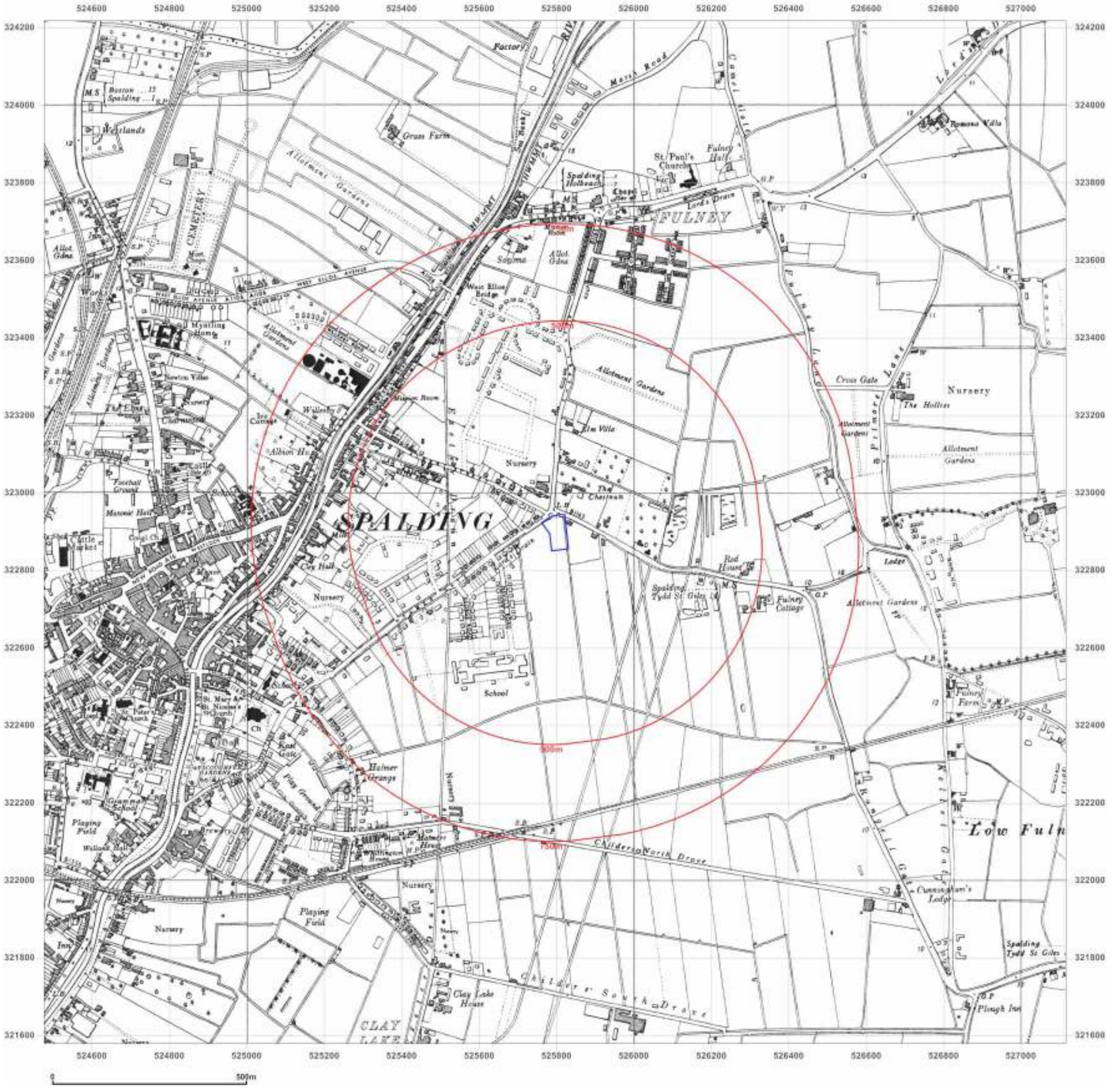
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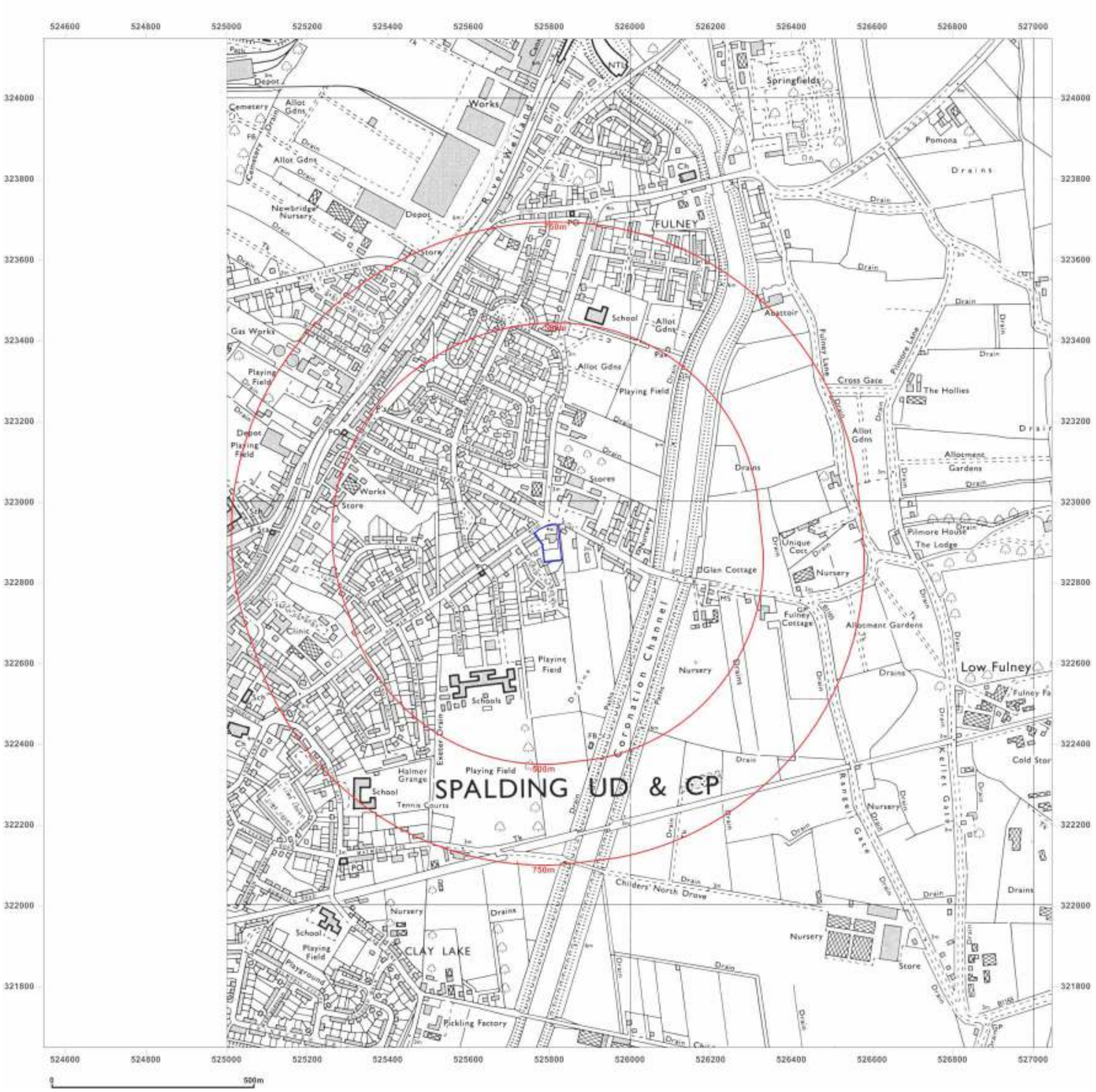
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Production date: 26 October 2018

Map legend available at:
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SPALDING
FULNEY
Factory
Mayor Road
Grass Farm
Allotment Gardens
CEMETERY
St. Paul's Church
Fulney Hall
Spalding Holbeach
Lord's Drain
Fulney Lane
Primrose Lane
Cross Gate
Nursery
The Hollies
Elm Villa
Albion House
Football Ground
Masonic Hall
Civil Ch.
Cattle Market
City Hall
Red House
Lodge
Spalding Tydd St. Giles Ld.
Fulney Cottage
Allotment Gardens
School
Holmer Grange
Holmer House
Play Ground
Gramma School
Playing Field
Willoughby Hall
Brewery
Nursery
Inn
Clay Lake House
CLAY LAKE
Childers North Drove
Childers South Drove
Low Fulney
Cunningham's Lodge
Spalding Tydd St Giles
Plough Inn
Fulney Farm
Fulney Cottage
Primrose Villa
Swan Bridge
Sapma
Allot. Gdns
Myatling Home
Newton Villas
Ivy Cottage
Wellesley
Albion House
Elm Villa
The Chestnuts
Nursery
Masonic Room
Works
Nurseries
Nurseries
Nurseries



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FOR A BETTER POINT OF VIEW

Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

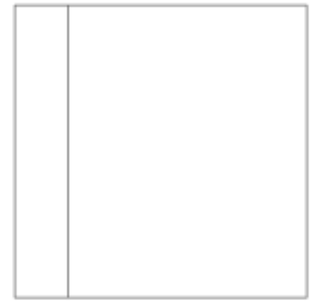
Map Name: National Grid

Map date: **1971**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1968
Revised 1970
Edition N/A
Copyright 1971
Levelled 1969

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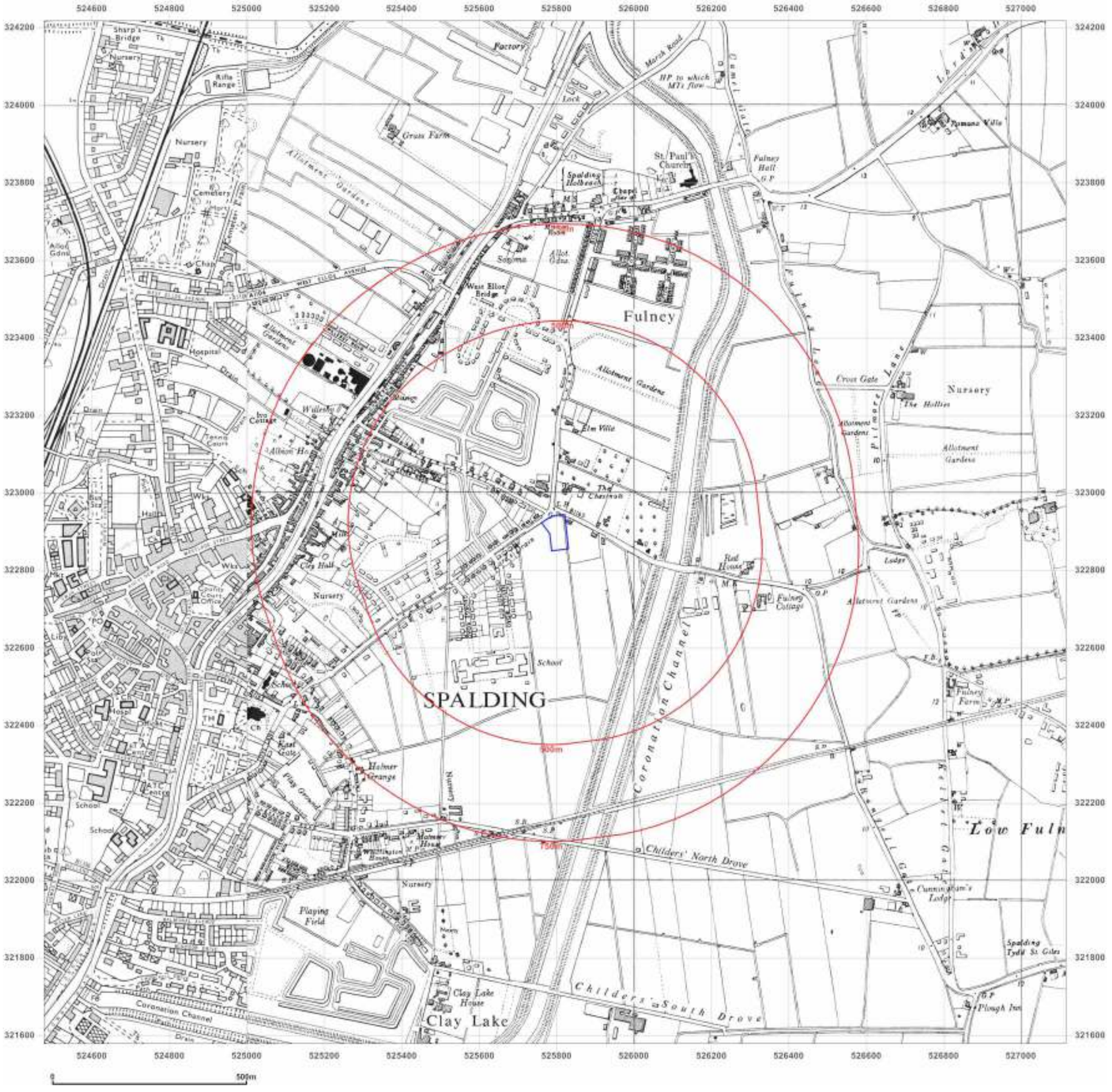
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Production date: 26 October 2018

Map legend available at:
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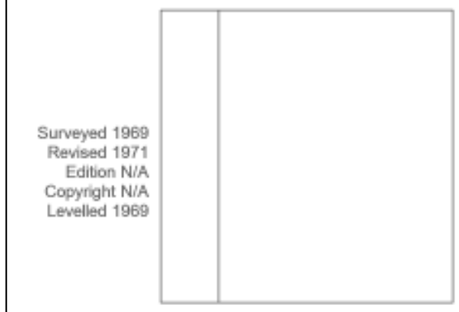
Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: Provisional
Map date: **1968-1971**
Scale: 1:10,560
Printed at: 1:10,560

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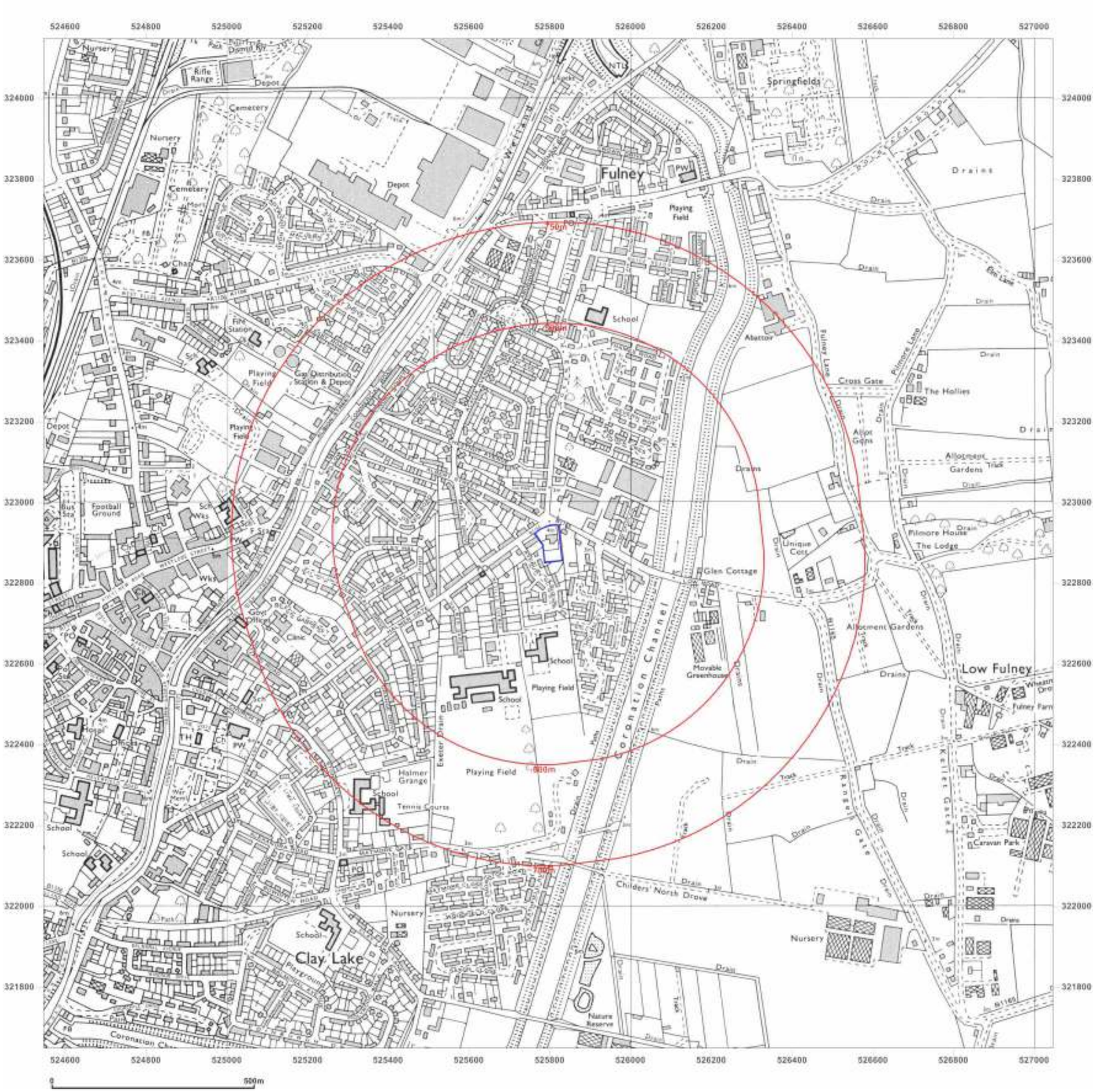
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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

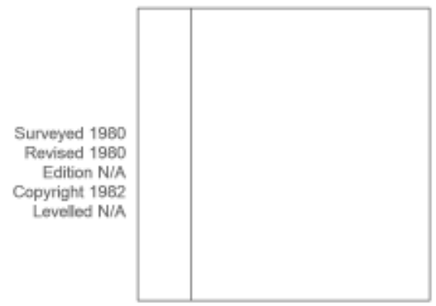
Map Name: National Grid

Map date: **1982-1987**

Scale: 1:10,000

Printed at: 1:10,000

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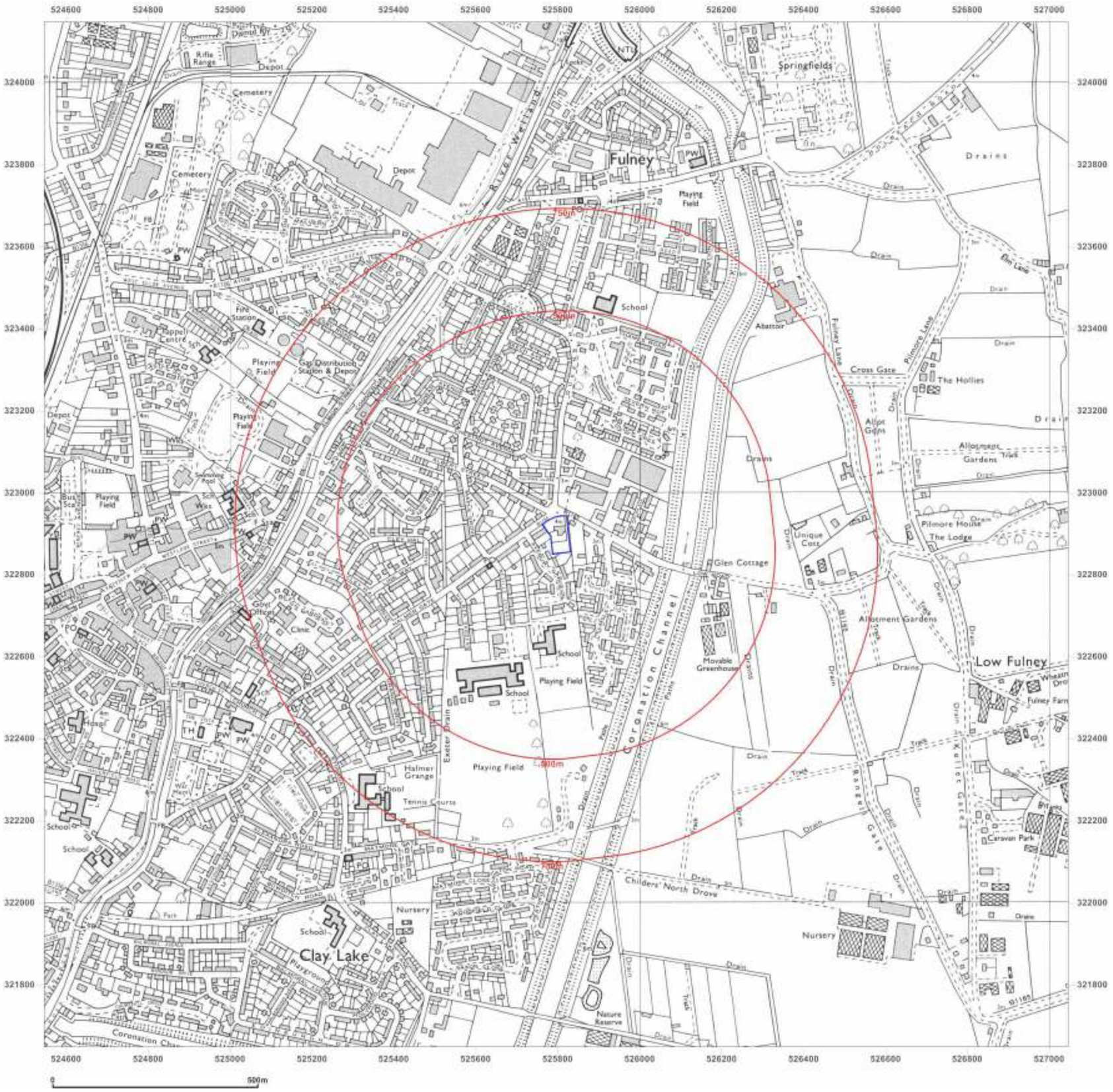
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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1989
Revised 1990
Edition N/A
Copyright 1992
Levelled N/A

Surveyed 1979
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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2002

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

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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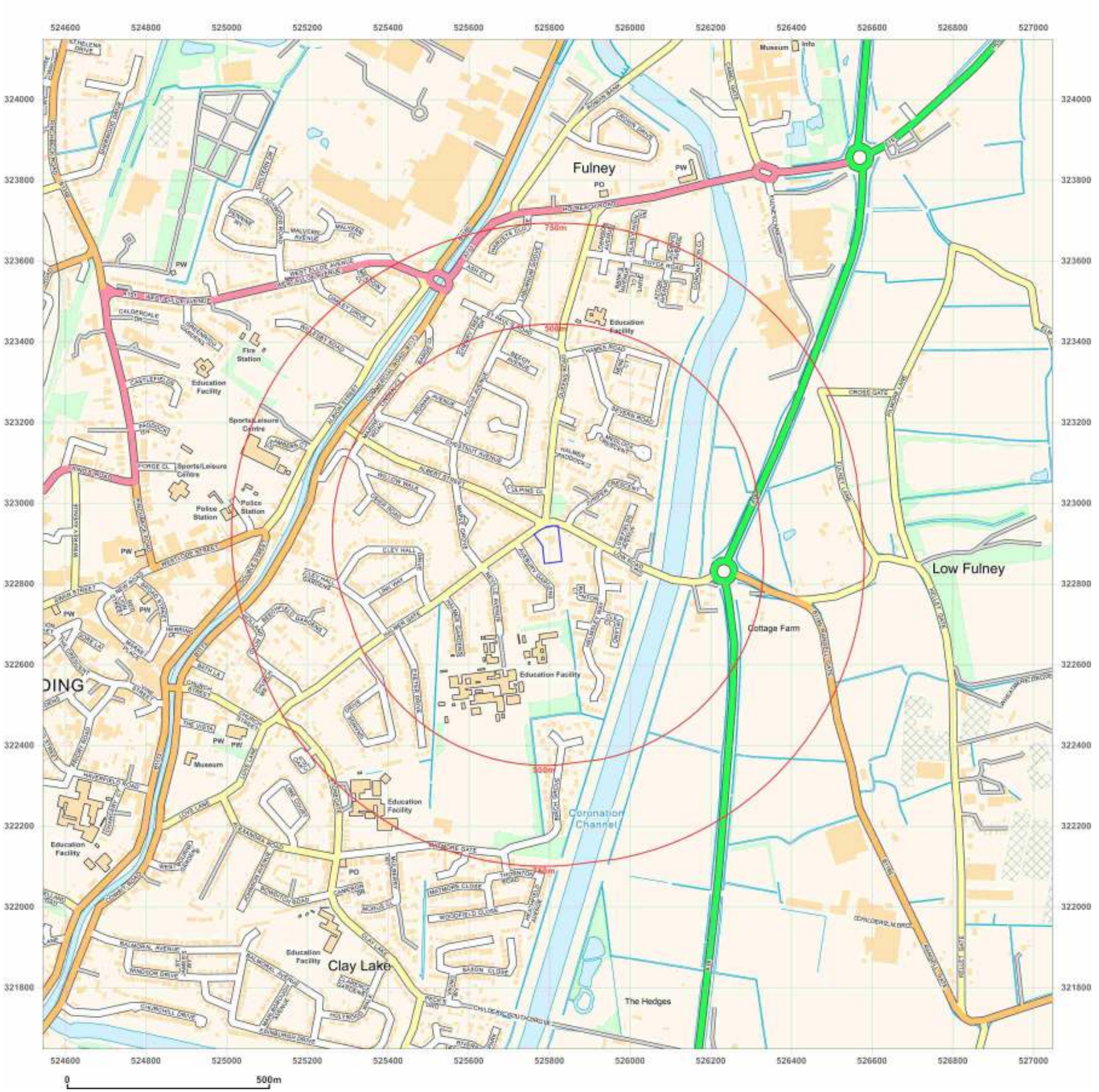
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Production date: 29 October 2018

Map legend available at:
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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid
Map date: **2014**
Scale: 1:10,000
Printed at: 1:10,000

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2014

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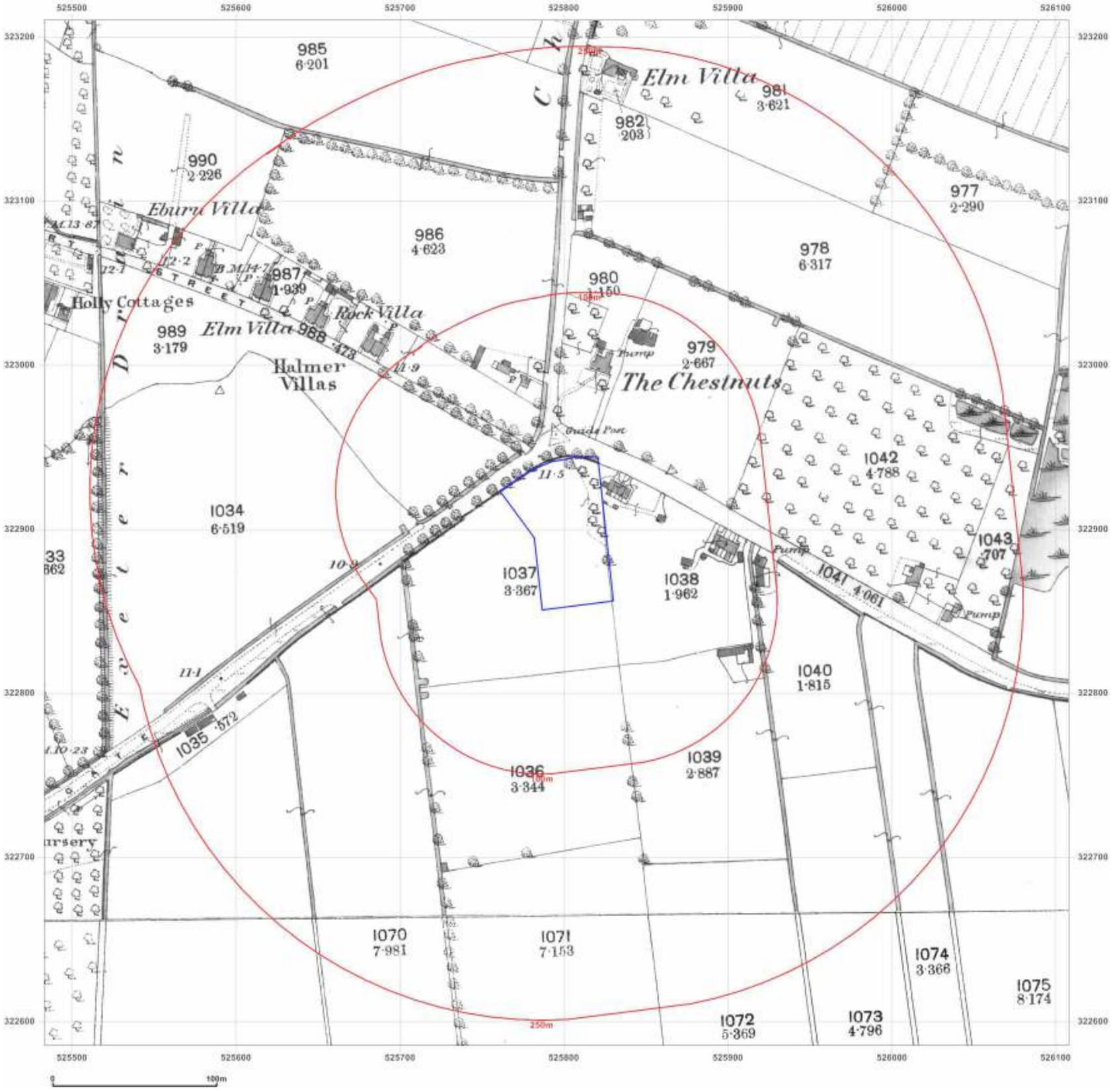
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LARGE SCALE SURVEY PLANS



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FOR A BETTER POINT OF VIEW

Site Details:

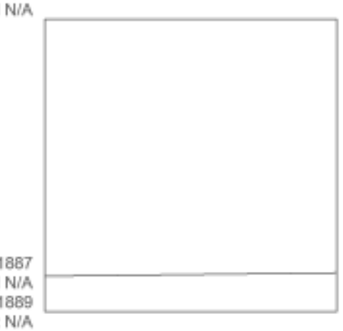
Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: County Series
Map date: **1889**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1889
Revised 1889
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1887
Revised N/A
Edition 1889
Copyright N/A
Levelled N/A

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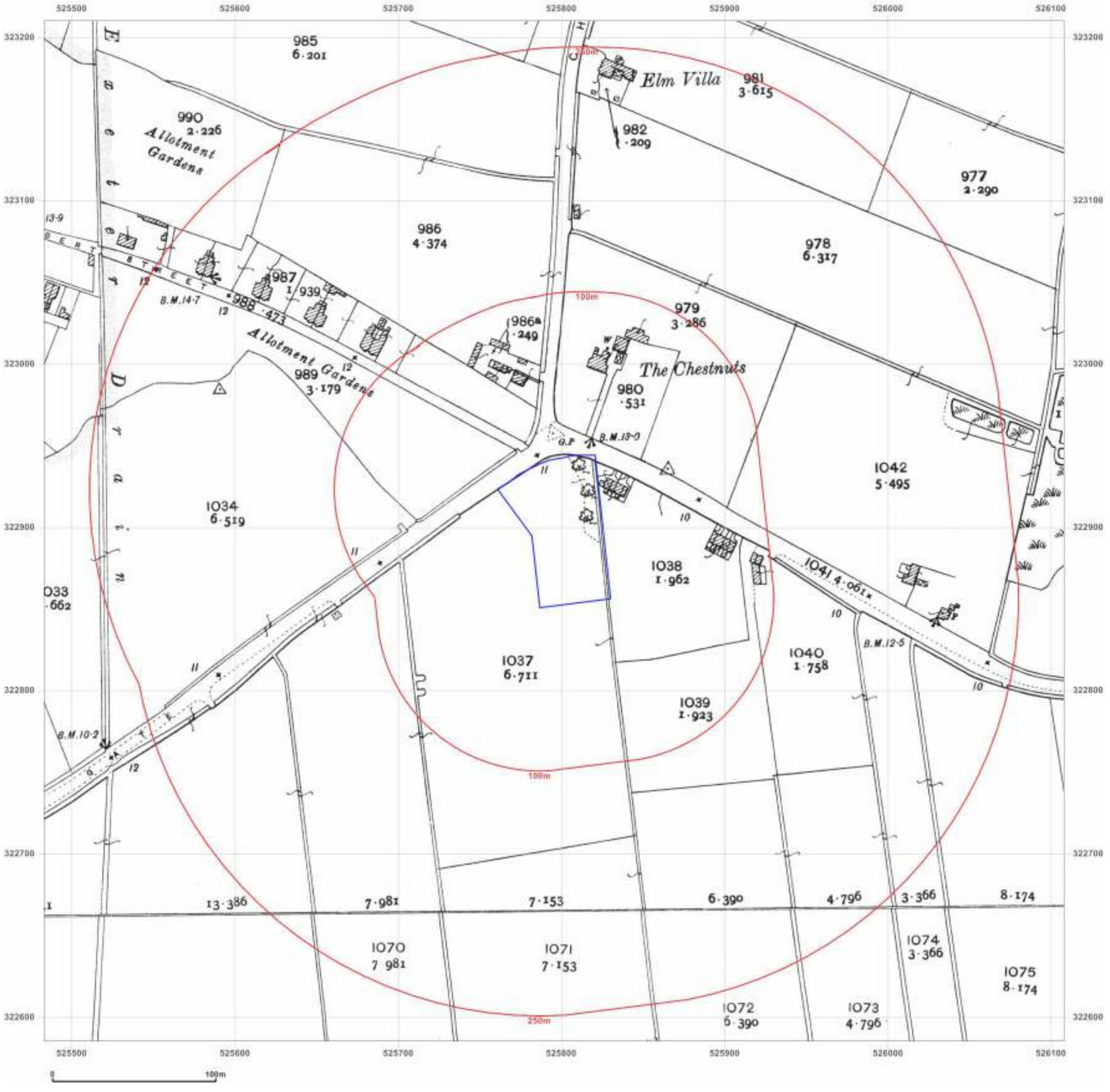
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Site Details:

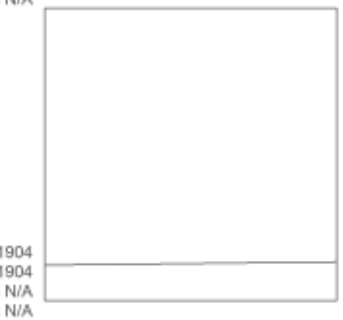
Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: County Series
Map date: **1904**
Scale: 1:2,500
Printed at: 1:2,500

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



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

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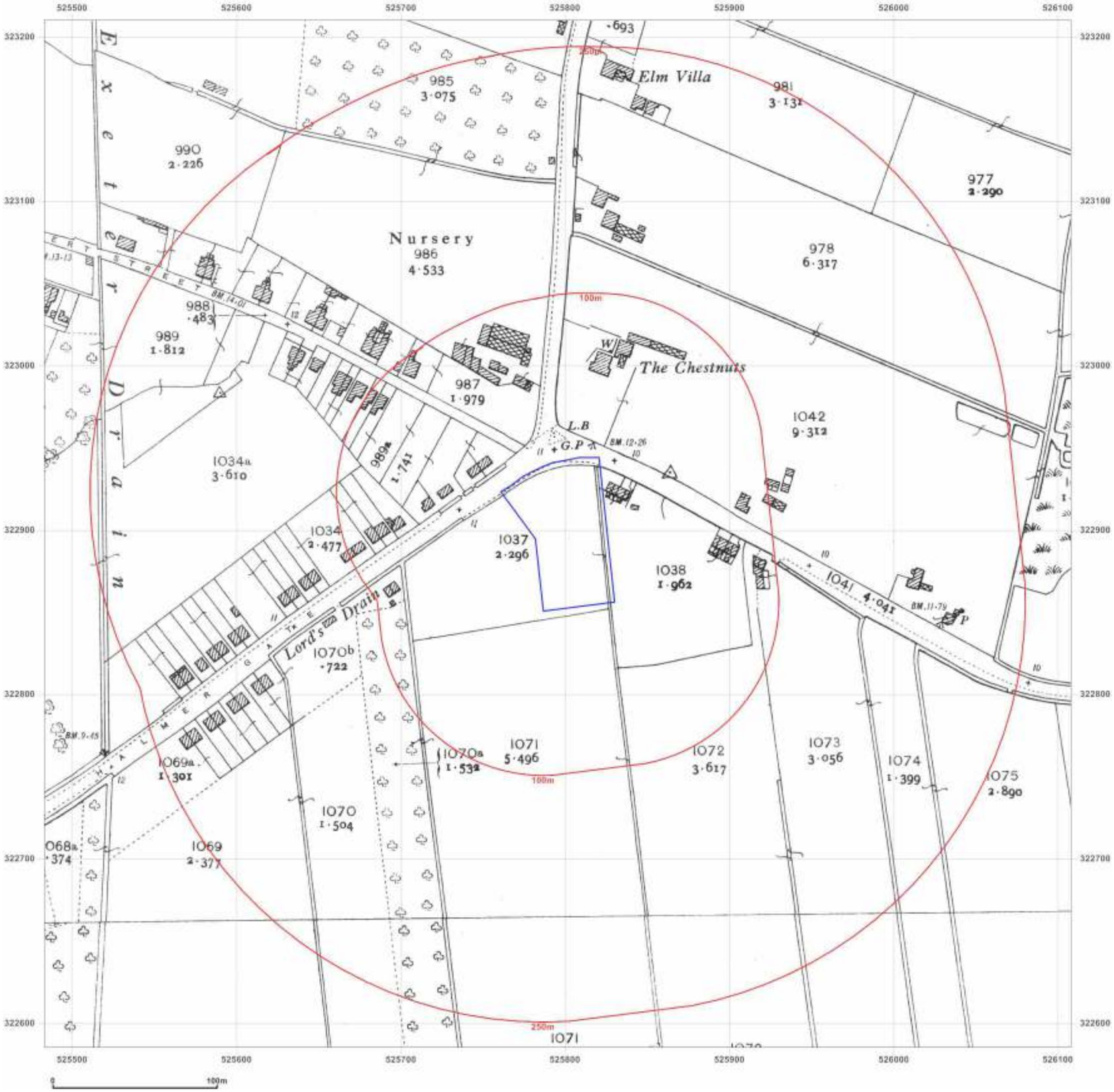
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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: County Series
Map date: **1931-1932**
Scale: 1:2,500
Printed at: 1:2,500

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

Surveyed 1931
Revised 1931
Edition N/A
Copyright N/A
Levelled N/A

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FOR A BETTER POINT OF VIEW

Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid
Map date: **1965**
Scale: 1:2,500
Printed at: 1:2,500

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid
Map date: **1965-1968**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed N/A Revised 1967 Edition N/A Copyright 1968 Levelled 1965	Surveyed 1967 Revised 1967 Edition N/A Copyright 1969 Levelled 1965
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled 1965	Surveyed 1967 Revised 1967 Edition N/A Copyright 1969 Levelled 1965

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid

Map date: **1967-1969**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1967
Revised 1967
Edition N/A
Copyright 1968
Levelled 1965

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

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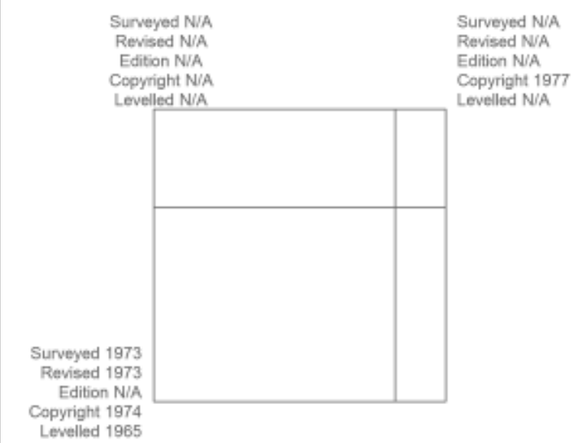
Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid
Map date: **1973-1978**
Scale: 1:2,500
Printed at: 1:2,500

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

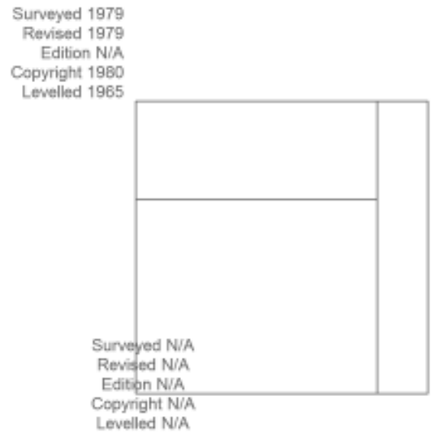
Map Name: National Grid

Map date: **1974-1979**

Scale: 1:2,500

Printed at: 1:2,500

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid
Map date: **1979-1983**
Scale: 1:2,500
Printed at: 1:2,500

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

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1983
Levelled 1965

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid

Map date: **1986-1988**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1965
Revised 1986
Edition N/A
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CENTRE MAPS LIVE.
FOR A BETTER POINT OF VIEW

Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid

Map date: **1989-1993**

Scale: 1:2,500

Printed at: 1:2,500

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Site Details:

Birds Public House Site, Halmer Gate, Spalding, PE11 2EL

Client Ref: 4199
Report Ref: CMAPS-CM-752056-4199-261018HIS
Grid Ref: 525795, 322898

Map Name: National Grid

Map date: **1995**

Scale: 1:2,500

Printed at: 1:2,500

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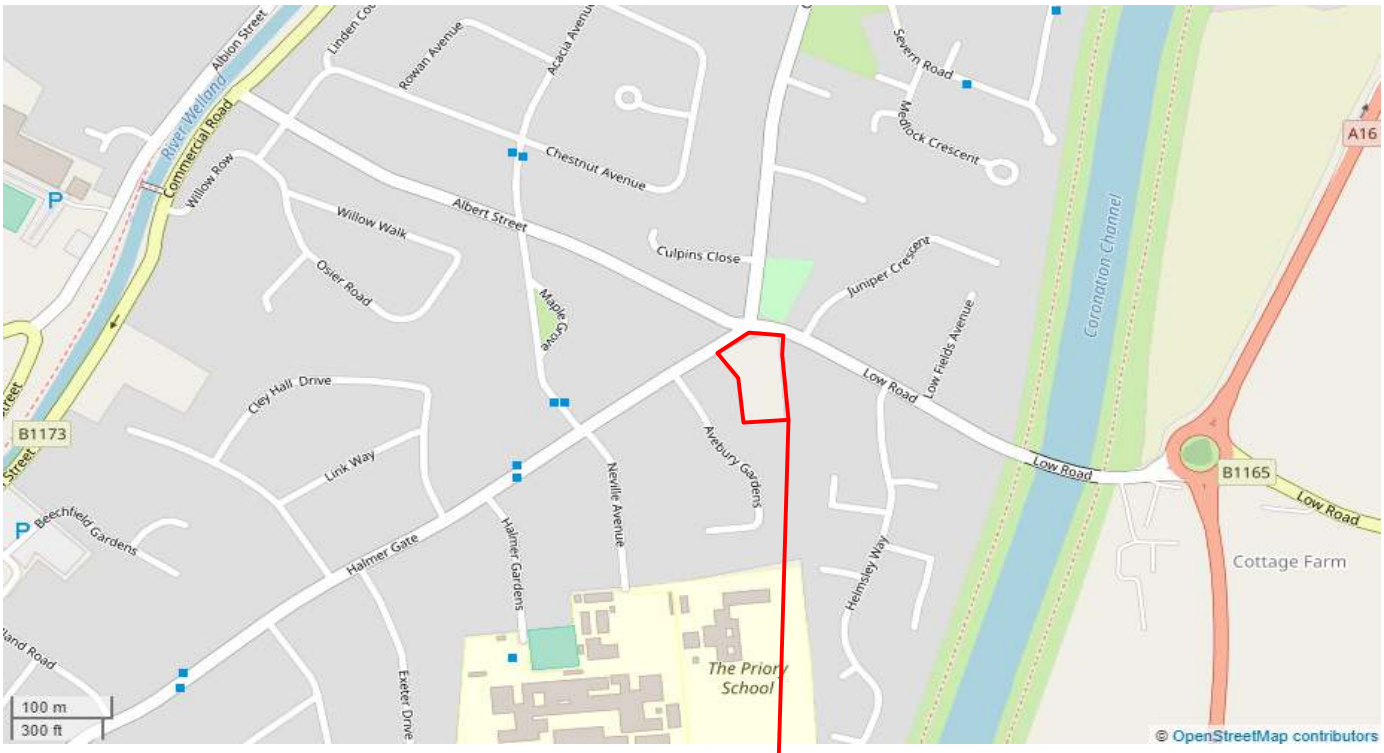
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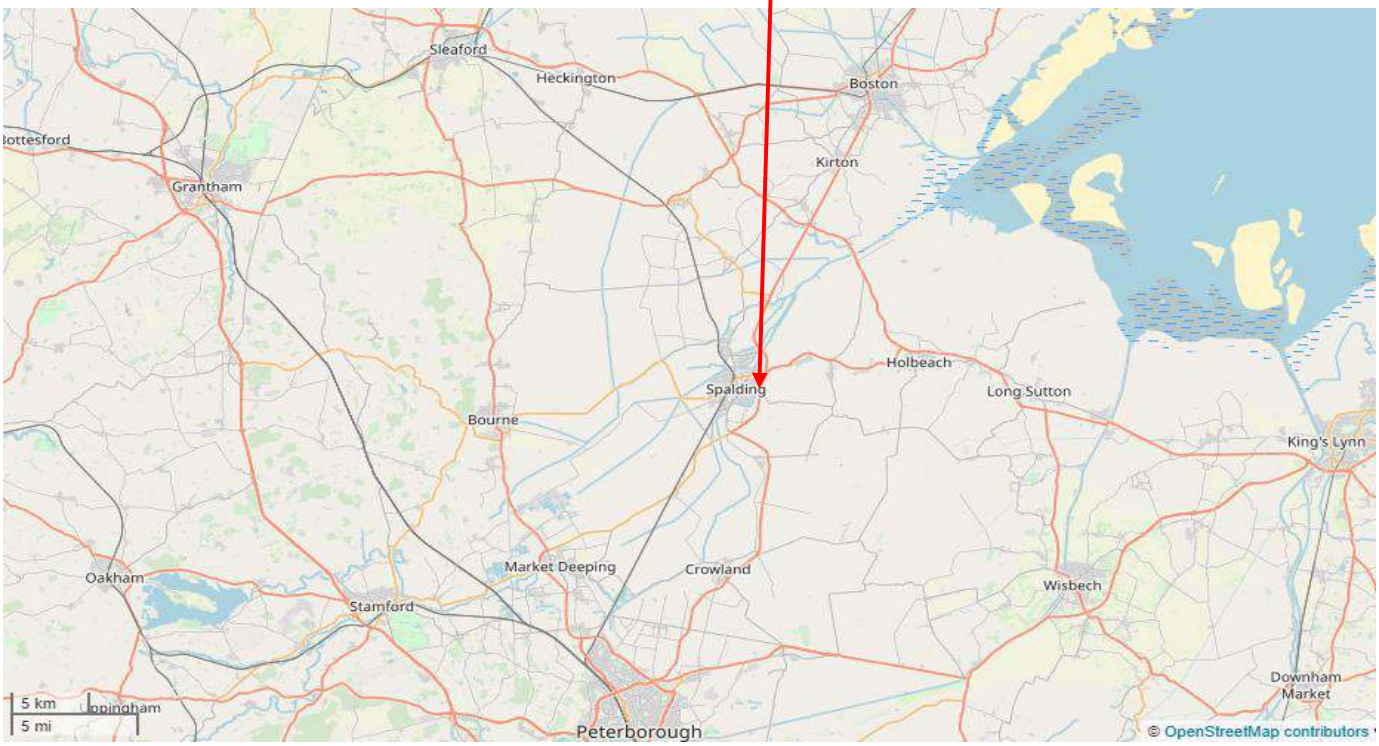
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FIGURES





SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907	General Site Location			
Site THE BIRDS PUBLIC HOUSE, HALMER GATE, SPALDING, LINCOLNSHIRE	Date Drawn 28-Nov-18	Date Checked	Orientation N	Job No. NE3769
Client LIFE PROPERTY CONSTRUCTION LIMITED	Drawn By TRB	Checked By	Scale _	Figure No. 1



SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS

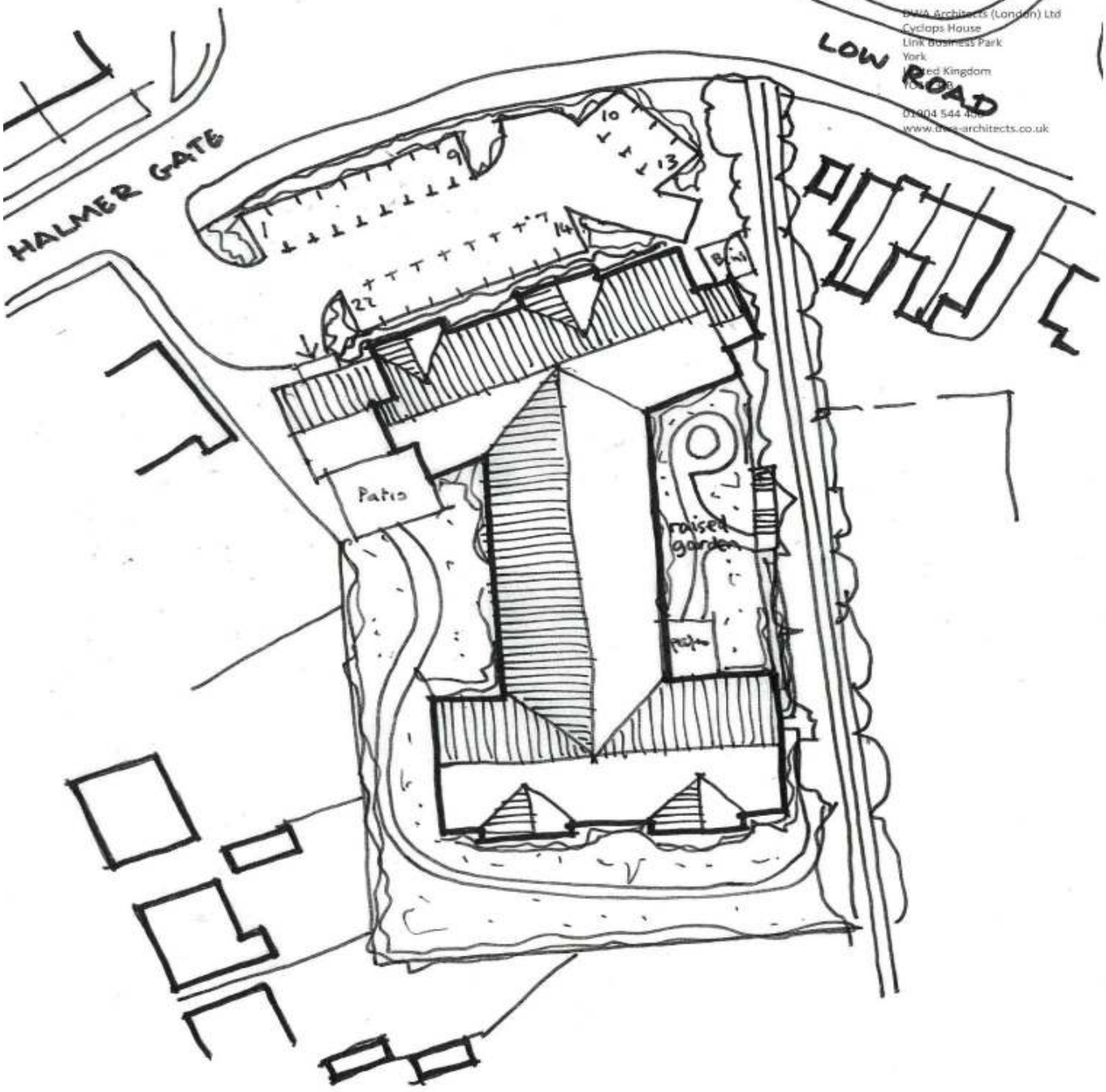
3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Site Layout

Site	Date Drawn	Date Checked	Orientation	Job No.
THE BIRDS PUBLIC HOUSE, HALMER GATE, SPALDING, LINCOLNSHIRE	28-Nov-18		N	NE3769
Client	**Drawn By**	**Checked By**	**Scale**	**Figure No.**
LIFE PROPERTY CONSTRUCTION LIMITED	TRB			2

PROPOSED CARE HOME DEVELOPMENT AT THE BIRDS PUBLIC HOUSE, 108 HALMER GATE, SPALDING, PE1 2EL

DWA ARCHITECTS
DWA Architects (London) Ltd
Cyclops House
Link Business Park
York
United Kingdom
01904 544 4[illegible]
www.dwa-architects.co.uk



PROPOSED SITE LAYOUT PLAN
Prepared by DWA Architects (London) Ltd
For Glenholme Group SEPTEMBER 2018 dwg G5100(0015) SK01B

RIBA Chartered Practice

Offices also at: Manchester & London Registered in England & Wales No. 03865070

SUB SURFACE SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS 3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907	Proposed Development Plan			
Site THE BIRDS PUBLIC HOUSE, HALMER GATE, SPALDING, LINCOLNSHIRE	Date Drawn 28-Nov-18	Date Checked	Orientation N	Job No. NE3769
Client LIFE PROPERTY CONSTRUCTION LIMITED	Drawn By TRB	Checked By	Scale	Figure No. 3



SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS

3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Walkover Photograph Locations

Site	Date Drawn	Date Checked	Orientation	Job No.
THE BIRDS PUBLIC HOUSE, HALMER GATE, SPALDING, LINCOLNSHIRE	12-Nov-18		N	NE3769
Client	**Drawn By**	**Checked By**	**Scale**	**Figure No.**
LIFE PROPERTY CONSTRUCTION LIMITED	TRB		_	4