

CCG-C-25-15364

**PHASE I GEOENVIRONMENTAL REPORT
FOR LAND AT ALFRED KNIGHT HOLDINGS LIMITED,
PEGASUS HOUSE
KINGS DRIVE
KINGS BUSINESS PARK
PRESCOT
KNOWSLEY
L34 1PJ
MAY 2025**

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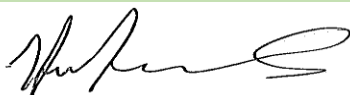
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1.0 INTRODUCTION

CC GEOTECHNICAL LIMITED (CCG) is providing consultancy services to the **ALFRED H KNIGHT INTERNATIONAL LIMITED** (the *Client*) via **WILLIAM JONES AND PARTNERS** (the *Consultant*) in connection with the proposed redevelopment of land located within the curtilage of Alfred Knight Holdings Limited, Pegasus House, Kings Drive, Kings Business Park, Prescott, Knowsley L34.

It is understood that the site is to be partially redeveloped by the construction of 2nr lightweight outbuildings (Blocks B and C) comprising:

Building B:

A 9.3m x 3.5m single storey outbuilding for the containment of 1nr x 5200 litre T1 store tank, 1nr x 10000 litre (T13) treated store tank, 1nr x 4000 litre (T3) treatment store tank, 1nr x 1000 litre (T9) store tanks, 1nr filter press, and associated works, with an adjoining carbon container and associated bund

Building C:

A 9.3m x 4.8m single storey outbuilding for the containment of 1nr x 10000 litre (T13) treated storage tank, 1nr x 5200 litre (T1) storage tank, 1nr (T3) treatment tank, 1nr x 1000 litre (T9) sludge tank, 1nr filter press, and associated works, with an adjoining carbon container and associated bund

It is further proposed that waste compound and storage facility be repositioned within the eastern section of the site.

The proposed site layout and elevations are as illustrated on **MERSEY DESIGN GROUP LIMITED (MDG)** architectural drawings contained within Appendix A.

The proposed development falls within the administrative jurisdiction of **KNOWSLEY METROPOLITAN BOROUGH COUNCIL**.

This Phase I Desk Study was required to research the history of the site in relation to any potential risks to the integrity of the proposed structure, or the health of construction workers and/or future worker occupants, and if appropriate, to enable the planning of an intrusive phase of investigation. It was devised to generally comply with the relevant principles and requirements of a wide range of guidance including BS5930:1999 as amended 2007: "*Code of Practice for Site Investigations*", BS10175: 2011 "*Investigation of Potentially Contaminated Sites - Code of Practice*", and the 'Environment Agency '*Land Contamination Risk Management*' (LCRM) procedures, July 2023,

This report should be read in conjunction with the Notes on Limitations, given in Appendix B.

2.0 PURPOSE & AIMS OF THE STUDY

The primary aim of the Phase I Desk Study was to assess whether the site is likely to be affected by contamination to an extent that it may pose a risk to human health and/or the built environment and/or the wider natural environment or is affected by any other natural or man-made features which may impact on the proposed redevelopment.

Specific tasks undertaken to achieve these objectives were as follows:

- Undertaking of a review of available historical mapping, environmental databases, and Environment Agency data
- Undertaking of a site walkover inspection
- Development of Preliminary Conceptual Model
- Development of a Phase 2 intrusive investigation strategy

3.0 SITE DATA

3.1 Site Location

The site is located within the curtilage of Kings Business Park. It comprises a parcel of commercially developed land located off Kings Drive, Prescott, Knowsley L34 1PJ, as illustrated on **CCG** Drawing No. CCG-C-25-15364-1 and Aerial Plate No. CCG-C-25-15364-2 contained within Appendix A.

The **ORDNANCE SURVEY** coordinates for the approximate site centre are 345491 392322.

3.2 Site Description & Walkover Observations

The site was visited during April 2025 on completion of a review of relevant historical and environmental mapping data (provided in Appendix D).

Photographs taken during the site walkover survey are contained within Appendix E.

The overall site is located within a commercial context. The sites for the 2nr proposed tank storage facilities described above are located adjacent to the NW and SE boundaries of the site for Buildings B and C respectively. The relocated waste compound will be sited adjacent to the NE boundary. The proposed layout is as shown on the MDG Location Plan in Appendix A.

The intended location for **Building B** comprises a rectangular shaped parcel of land which is contained within a low-level timber post and rail fence line. Its eastern boundary adjoins a current plant room facility, with a paved estate road extending along its southern boundary. Its northern boundary adjoins a stand of mature / semi-mature woodland species. The surface topography was seen to be sensibly flat with surface cover comprising mixed perennial grasses. As show within the appended photographs, 1nr small, rectangular shaped, service cover was observed within the grass sward.

The proposed location for **Building C** comprises a rectangular shaped parcel. It is bound to the south and east by a shallow open drainage ditch (c. 1m depth). As shown within the appended photographs, the site is currently occupied by a series a small outbuilding, one of which being utilised for the storage of radioactive substances. The surface topography was seen to be sensibly flat with surface cover comprising full hard pavement cover incorporating a series of metal manhole covers within its construction.

The site for the proposed relocated waste compound and storage facility comprises a small, rectangular shaped, parcel of land. it is bound to the west by a hard paved estate road, its remaining boundaries having an open aspect. The surface topography across this site was seen to be generally flat with surface cover comprising mixed perennial grasses with occasional perennial herb species. As show within the appended photographs, a series of square shaped service cover was observed within the grass sward.

There was no visual evidence of the presence of native and/or non-native plant species within, or adjoining, the site boundary.

Access to the site is currently from the Kings Drive frontage to the NW.

The information obtained from the visit is summarised in Table 1 hereunder.

Table 1: Summary of Walkover Observations

FEATURE	OBSERVATION
Current Use of Land	Commercial land
Context	Commercial context
Topography / Surfaces	Block B: The surface topography was seen to be sensibly flat with surface cover comprising mixed perennial grasses. As show within the appended photographs, 1nr small, rectangular shaped, service cover was observed within the grass sward. Block C: The surface topography was seen to be sensibly flat with surface cover comprising full hard pavement cover incorporating a series of metal manhole covers within its construction. Waste compound facility: The surface topography across this site was seen to be generally flat with surface cover comprising mixed perennial grasses with occasional perennial herb species. As show within the appended photographs, a series of square shaped service cover was observed within the grass sward.
Access	Access to the site is currently from the Kings Drive frontage to the NW.
Buildings Adjacent to the Site	Commercial land surrounding
Services	As illustrated within the appended photographs, numerous service cover set within surface cover
Material storage	None observed
Waste disposal	None observed
Other potential contamination	Contaminants associated with on site vehicles Radioactive substances
Ecology*	There was no visual evidence of the presence of native and/or non-native plant species within, or adjoining, the site boundary.

**These comments on the ecology are for initial preliminary assessment only and are based on observations undertaken by a person who is a trained ecologist but who has not undertaken a comprehensive Phase I Habitat Survey or similar.*

4.0 SITE HISTORY

The history of the site and its immediate surrounds was investigated by consultation with a range of archive resources. Geographical

information, historical mapping and environmental data were primarily based on a GroundSure Environmental Report (Reference No. CMAPS-AAG-1215961-4165-030425, dated April 2025), presented in Appendix D.

A summary of the historical mapping data is given hereunder:

Table 2: Historical Map Review

YEAR	SCALE	ON SITE	ADJACENT TO SITE	<250M
1850	1:10,560	Undeveloped / vacant land	Undeveloped / vacant land	Much of the land surrounding the site is undeveloped / vacant land c.15m SE: Road [later recognised as “Huyton Lane”] c.70m N: Nursery c.75m W: Pond c.150m NW: Properties associated with “The Hazels” c.150m S: Pond c.200m S: Properties associated with “Hurst House”
1891 1892-93	1:10,560 1:2,500	No significant change	No significant change	c.110m E: Well recognised c.200m NE: Well recognised
1906	1:10,560	No significant change	No significant change	c.20m SE: Huyton Golf Course recognised [extending to the S/SE]
1907-08 1925 1925	1:2,500 1:10,560 1:10,560	No significant change	No significant change	c.250m NW: Tramway recognised
1927	1:2,500	No significant change	No significant change	c.250m NW: Railway Line [former Tramway]
1937 1938 1947-50	1:2,500 1:10,560 1:10,560	No significant change	No significant change	c.240m NE: Development of semi-detached residential properties delineating Huyton Lane to the W
1954 1955	1:1,250 1:1,250	Few elongated unspecified properties located in the W portion of the site, extending beyond the W border of the site – associated with “City of Liverpool CF Mott Training College” to the W 2nr small unspecified properties located in the N portion of the site [extending beyond the NE boundary]	NE: Extension of 2nr small unspecified properties W: Extension of elongated unspecified properties	Much of the land on the site and to the W of the site associated with “City of Liverpool CF Mott Training College” c.100m NE: Old Quarry recognised c.120m N: Few Tennis Courts extending to the N
1955 1956 1965-66	1:2,500 1:10,560 1:10,560	No significant change	No significant change	c.210m NW: Electric Sub-Station recognised c.210m S: Ruin recognised
1973-76 1978 1989-90 1993	1:1,250 1:10,000 1:10,000 1:1,250	Additional properties associated with “The City of Liverpool’s CF Mott College of Education” located at approx. site centre, extending beyond the site’s N boundary	N: Extension of additional educational properties S: Development of road leading from Huyton Lane into educational estate	c.25m SW: Additional properties associated with “The City of Liverpool’s CF Mott College of Education” [extending to the SW] c.60m W: Development and redevelopment of properties associated with “The City of Liverpool’s CF Mott College of Education” [extending to the W] c.170m NE: Development of M57 motorway c.200m NW: Development of unspecified properties
1994 1994	1:1,250 1:1,250	Land fully vacant, apart of 2nr small unspecified properties in the S portion of the site	All properties extending beyond the site boundaries no longer recognised	All properties associated with “The City of Liverpool’s CF Mott College of Education” no longer recognised
2001	1:10,000	No significant change	W: Road, extending to roundabout to the W	c.90m W: Roundabout recognised
2010	1:10,000	No significant change	No significant change	Land to the immediate W of the site recognised as “King’s Business Park”
2025	1:10,000	Large property and occupies most of the site	No significant change	No significant change

In addition to the above, a **ZETICA UXO** mapping extract, contained within Appendix D shows that the site was located within an area where c. 15nr bombs per 1000acre or less, were deposited by the German Luftwaffe during the Second World War (WWII). At this density, the risk for unexploded ordinance to be present within the footprint of the site is considered to be ‘Low’.

5.0 ENVIRONMENTAL SETTING

5.1 Documented Geology

The geology of the site was researched by reference to the 1:50000 scale **BRITISH GEOLOGICAL SURVEY (BGS)** Sheet 097 Runcorn (Solid and Drift

Editions: 1977 - 1980).

The **BGS** 1:10, 000 Scale Drift Geological map indicate that the is underlain with natural drift deposits comprising poorly stratified, impermeable, diamictons (gravel sand silt and clay deposits) of glacial origin (*Pleistocene Epoch - Late Quaternary – Devensian Sub Age*).

The documented solid geology comprises the Pennine Lower Coal Measure Formations (*formerly the Lower Coal Measures Formation*) of the Pennine Coal Measures Group, comprising interbedded grey argillaceous mudstone, siltstone with subordinate pale grey sandstones, and numerous and thicker coal seams in the upper part of the Upper Carboniferous Period (*Westphalian CA: Langsettian Substage*).

The nearest geological line of weakness (i.e. faults, coal seams etc.) lies c. 225m east of the site. its downthrow is to the east.

The study site is located within an area where ancient earth movements have caused significant displacements and misalignments of the underlying and surrounding country rock. Hence, the general dip of the solid geology within the surrounding area varies between c.8° to the south, and c.50° to the west, northwest.

The appended environmental report and the '*Indicative Atlas of Radon in England and Wales*' (Miles. J.C.H *et.al*, 2007) Map 13 '*Northern Welsh Marches and Liverpool*', and the freely available UK Radon Map (www.ukradon.org) shows the site to be situated within an area where less than 1% of the properties within the local area are affected by naturally occurring Radon. Hence, Radon Protection Measures are not required for new structures in contact with the ground.

Geological Information obtained from the GroundSure Environmental Report is presented in Appendix D, and summarised hereunder:

Table 3: Summary of Geological Data from GroundSure Report

GEOLOGY		
Data	Distance	Comments
Artificial Ground	N/A	If present, artificial ground and/or reworked ground deposits associated with the development of the site & its immediate surroundings
Superficial Deposits / Drift Geology	On Site	Diamictons (gravel sand silt and clay deposits) of glacial origin
Permeability of Shirdley Hill Sand Formation	Maximum Permeability	High
	Minimum Permeability	Low
Bedrock and Solid Geology	On Site	Pennine Lower Coal Measure Formations
Permeability of Bedrock: On Site	Maximum Permeability	Moderate - High
	Minimum Permeability	Low – Moderate
Geological Lines of Weakness	On Site	No records
	<250m	The nearest geological line of weakness (i.e. faults, coal seams etc.) lies c. 225m east of the site. its downthrow is to the east.
Radon Affected Area	On Site	The appended environmental report and the ' <i>Indicative Atlas of Radon in England and Wales</i> ' (Miles. J.C.H <i>et.al</i> , 2007) Map 13 ' <i>Northern Welsh Marches and Liverpool</i> ', and the freely available UK Radon Map (www.ukradon.org) shows the site to be situated within an area where less than 1% of the properties within the local area are affected by naturally occurring Radon
Radon Protection	On Site	Radon Protection Measures are not required for new structures in contact with the ground.
MINING, GROUNDWORKINGS AND NATURAL CAVITIES		
Data	Distance	Comments
BritPits	<500m	430m S: Moss Croft House – Sandstone [Ceased]
Surface ground workings	<250m	50m N: Unspecified Quarry 53-54m N: Unspecified Quarry 64m W: Pond 66m W: Pond 67m N: Unspecified Quarry 70m W: Pond 73-74m w: Pond 116m NE: Cuttings 131m S: Pond 133-34m S: Pond 138m S: Pond
Underground workings	<500m	No records
Underground mining extents	<500m	No records
Historical Mineral Planning Areas	<500m	No records
Non-coal mining	<1000m	No records
The Coal Authority non-coal mining	<500m	No records
Researched mining	<500m	No records
Mining record office plans	<500m	No records
BGS mine plans	<500m	No records

Coal mining	On site	The site is located within a coal mining area as defined by the Coal Authority
Brine areas	On site	No records
Gypsum areas	On site	No records
Tin mining	On site	No records
Clay mining	On site	No records
Natural cavities	<500m	No records
Mining cavities	<1000m	No records
Reported recent incidents	<500m	No records
Historical incidents	<500m	No records
HAZARDS		
Data	Distance	Comments
Maximum shrink swell clays	On site	Negligible / Very Low
Maximum running sands	On site	Negligible / Very Low
Maximum compressible deposits	On site	Negligible
Maximum collapsible deposits	On site	Very Low
Maximum landslides	On site	Very Low
Maximum ground dissolution of soluble rocks	On site	Negligible

5.2 Historical Coal Mining

The appended environmental data, **BGS** mapping data and the **COAL AUTHORITY (CA)** online interactive map (accessed April 2025) confirm that the site is located within an area underlain by productive coal measures which may have been worked in the past and therefore a **CA** mining report was procured (Report Reference No. 51003489648001, dated April 2025).

5.3 Coal Mine Risk Assessment

Since the site is located in an area underlain by productive coal measures and located within a **CA** designated 'Development High Risk Area', a Coal Mine Risk Assessment (CMRA) was required to assess if the site is at risk of surface instability or other risk factors arising from shallow historical coal mining activities.

This CMRA was required to demonstrate to **KNOWSLEY METROPOLITAN BOROUGH COUNCIL** that all available coal mining information has been considered, and that any issues of potential surface instability have been identified and, if warranted by the assessment, have been considered in the scope of any intrusive site investigation conducted as part of the assessment.

Coal mining may present hazards to proposed development in a number of ways. Such hazards may currently exist or may be caused as a result of the construction of the proposed development, or could occur at some time in the future, and may include:

- Collapse of shallow historical coal workings
- Collapse of or risk of entry into historical shafts or adits
- Gas emissions from historical coal mines including methane and/or carbon dioxide
- Spontaneous combustion or ignition of coal which may lead to underground heating and production of CO₂
- Transmission of gases to adjacent properties
- Coal mining subsidence
- Water emissions from historical coal mine workings

In assessing mining related risks at this site, the following sources of information were consulted:

- **CA** Interactive Mine Entry Viewer (<http://coal.decc.gov.uk/en/coal/cms/publications/data/map/map.aspx>) (accessed: April 2025))
- **BGS** :1: 50 000 scale Sheet 097 Runcorn (Solid and Drift Editions: 1977 - 1980)
- **BGS** Solid and drift geology mapping extracts (Appendix A)
- **CA** Consultant Coal Mining Report (Reference No. 51003489648001, dated April 2025, Presented in Appendix D)
- Parry. D.N. *et.al.* (2019) 'Abandoned Coal Mining Manual', Cira C758D

5.4 Summary of the Documented Geology & Historical Mining

5.4.1 Solid & Drift Geology

The **BGS** superficial drift mapping data indicates that the site is underlain by natural drift cover comprising impermeable diamicton (boulder

clay) of glacial origin (*Pleistocene Epoch - Late Quaternary - Devensian Sub Age*).

The documented solid geology comprises the Pennine Lower Coal Measures Formation (*formerly the Lower Coal Measures*) of the Pennine Coal Measures Group with interbedded argillaceous mudstone, siltstones, fluvial sandstones and productive coal measure to the north with fluvial sandstones underlying land to the south. Both geological units being of the Upper Carboniferous Period (*Silesian Stage: Westphalian C/A: Langsettian Substage*).

5.4.2 Geological Lines of Weakness – Faults, Marine Bands, Coal Seams

The study site is located within an area where ancient earth movements have caused significant displacements and misalignments of the underlying and surrounding country rock. Hence, the general dip of the solid geology within the surrounding area varies between c. 3- 6° in a westerly - southwesterly direction.

There are numerous records pertaining to the presence of geological lines of weakness (*i.e. coal seams, faults etc.*) within the surrounding area, the nearest being a geological fault line which lies c. 225m east of the study site, its downthrow being to the east.

As illustrated on the appended geological mapping extracts, there are records pertaining to the presence of coal seams within a 500m radius of the site, the nearest being the Sir John Coal which is located c. 233m east of the study site.

Other identifiable coal seams within a 500m radius of the study site include the following:

1. Rushy Park Coal, sub-cropping c. 264m north of the site
2. Un-named coal seam sub-cropping c. 355m northeast of the site
3. Un-named coal seam sub-cropping c. 243m east of the site
4. Arley Coal, sub-cropping c. 489m north of the site
5. Un-named coal seam sub-cropping c. 471m southeast of the site
6. Main Ravenhead Coal sub-cropping c. 484m southeast of the site
7. Bastons Coal, sub-cropping c. 485m east of the site

Given the documented dip of the underlying bedrock formations, between c.8° to the south, and c.50° to the west / northwest, there is a potential for some of the above seams to extend at depth beneath the site.

Given that above coal seams are identifiable by name, it may be assumed that these coals may have been worked in the past.

5.4.3 Historical Underground Coal Mining

There are no records pertaining to historical coal mining activities being undertaken beneath the site within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination.

There are no records pertaining to the presence of shallow historical coal mining activities beneath the site.

There are no records pertaining to the presence of spine roadways at shallow depth.

5.4.4 Historical Mine Entries

There are no records pertaining to the presence of any historical mine entries (*i.e. mine shaft, adits*) within, or within 100m of, the site.

5.4.5 Abandoned Mine Catalogue Numbers

The following Abandoned Mine Plan Catalogue numbers intersect with some, or all, of the enquiry boundary:

Table 4: Abandoned Mine Plan Catalogue

16820		
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The CA records show that they may hold more plans than those listed above which could affect the enquiry boundary.

5.4.6 Outcrops

There are no records pertaining to the presence of coal out crops within, or within 50m of, the study site.

5.4.7 Geological Faults, Fissures and Breaklines

There are no records pertaining to the presence of any geological faults within, or within close proximity of, the site boundary.

5.4.8 Opencast Mines

There are no historical and/or current opencast site within, or within 500m of, the study site from which coal has been extracted using opencast mining methods.

5.4.9 Coal Authority Managed Tips

There are records pertaining to the presence of historical and/or current **CA** managed / owned tips within, or within 500m of, the site.

5.4.10 Site Investigations

There are no records relating to any intrusive ground investigations being undertaken within, or within 50m of, the study site where the **CA** has received information relating to coal mining risk investigations and/or remediation works undertaken by third parties.

5.4.11 Remediated Sites

There are no records regarding to and site which have been remediated by the **CA** following report of a hazard relating to coal mining under the **CA's** Emergency Surface Hazard Call Out procedures.

5.4.12 Coal Mining Subsidence

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

There are no current Stop Notices enforced on the site

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

5.4.13 Mine Gas Emissions

There is no record of a mine gas emission requiring action by the **CA** within, or within 50m of, the boundary of the site. Notwithstanding this, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The **CA** Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

5.4.14 Mine Water Treatment Schemes

There are no records pertaining to the treatment of mine water schemes within 500m of the site boundary.

5.4.15 Future Underground Mining

The site is not in an area for which the **CA** is determining to grant a licence to extract coal using underground methods: the site however is in an area where reserves of coal may be extracted at some time in the future.

5.4.16 Section 46 Notices

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

5.4.17 Withdrawal of Support Notices

The property is not in an area where a notice to withdraw support has been given.

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

5.4.18 SUMMARY RISK

By reference to the information sources listed above a risk assessment was constructed as tabulated in Table 8 hereunder:

Table 8: Summary of Coal Mining Information

Potential Hazards	Source	Comments
Is the site within a Coal Mining Referral Area?	Coal Authority Interactive Mapping Data	Mapping indicates that the site lies over an area of coal mining as identified on the Coal Authority Interactive Mapping Data
Is the site within the likely zone of influence of present underground coal mining?	CA Consultant Coal Mining Report (Ref No. 51003489648001	Report indicates that the property is not within the likely zone of influence of any present underground coal workings
Is the site within the likely zone of influence of past underground coal mining?	CA Consultant Coal Mining Report (Ref No. 51003489648001	Report indicates that the property is not in the likely zone of influence at the surface arising from historical underground workings
Is there a possibility of unrecorded shallow mine workings and/or mine entries?	CA Consultant Coal Mining Report (Ref No. 51003489648001 BGS mapping Sheet 097 Runcorn (Solid and Drift Editions: 1977 - 1980) CA Interactive Mine Entry Viewer	The site is not located within an area where the CA believes there is coal at, or close to, the surface which may have been worked in the past. BGS Solid & Drift mapping data shows seams of coal within a 500m radius of the site. Documented coal seams within surrounding area include: - Sir John Coal, sub-cropping c. 233m east of the site - Rushy Park Coal, sub-cropping c. 264m north of the site - Un-named coal seam sub-cropping c. 355m northeast of the site - Un-named coal seam sub-cropping c. 243m east of the site - Arley Coal, sub-cropping c. 489m north of the site - Un-named coal seam sub-cropping c. 471m southeast of the site - Main Ravenhead Coal sub-cropping c. 484m southeast of the site Given the documented dip of the underlying bedrock formations, between c.8° to the south, and c.50° to the west / northwest, there is a potential for some of the above seams to extend at depth beneath the site. Given the presence of named coal seams sub-cropping within the local area, it may be assumed that these may have been worked in the past.
Have any nearby documented mine entries being treated in the past?	CA Consultant Coal Mining Report (Ref No. 51003489648001	There are no known historical mine entries within, or within 100m of, the site
Is there a record of mine gas emissions within the site boundary?	CA Consultant Coal Mining Report (Ref No. 51003489648001	Report indicates that there are no records of the property ever having been affected by mine gas emissions. Notwithstanding this, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The CA Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.
Is the proposed development in an area for which the CA is determining or has granted a licence to remove coal by underground methods?	CA Consultant Coal Mining Report (Ref No. 51003489648001	Report indicates that the property is not in an area for which a licence has been granted to remove coal by underground methods
Are there any known faults or other lines of weakness due to coal mining at the site?	BGS mapping Sheet 097 Runcorn (Solid and Drift Editions: 1977 - 1980)	There are no records pertaining to a geological fault within and/or adjoining area
Has the site been subject to any remedial works by or on behalf of the CA under its surface hazard call out procedures?	CA Consultant Coal Mining Report (Ref No. 51003489648001	Report indicates that the site has not been subject to remedial works by or on behalf of the CA under its Emergency Surface Hazard Call Out procedures

5.5 MINE RISK ASSESSMENT CONCLUSIONS & RECOMMENDATIONS

Taking account of the prevailing geology, and the Coal Authority mining records for this area, it is concluded that there is no evidence of a potential risk of mining related surface instability at this site and an intrusive investigation for mining related voids is not required.

5.6 Hydrology and Hydrogeology

Information on hydrology and hydrogeology obtained from a GroundSure Environmental Report is presented in Appendix D, and summarised hereunder:

Table 4: Summary of Hydrology and Hydrogeological Data from GroundSure Environmental Report

HYDROGEOLOGY AND HYDROLOGY		
Aquifer within Superficial Drift Deposits	On site	Diamicton: Secondary Undifferentiated Aquifer: Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
Aquifer within Bedrock Deposits	On site	Pennine Lower Coal Measures Formation – Secondary A Aquifer: Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

Groundwater Abstraction Licences	<1000m	No records
Surface Water Abstraction Licences	<1000m	470m NE: James Whitaker & Sons Nurserymen Ltd. Licence No: 2569028003
Potable Water Abstraction Licences	<1000m	No records
Source Protection Zones	<500m	No records
Source Protection Zones (confined aquifer)	<500m	No records
Water Network (OS Mastermap)	<250m	On Site: Inland river not influenced by normal tidal action
Surface water features	<250m	2nr records
WFD Surface water body catchments	On Site	On Site: Alt. Operational catchment: Alt On Site: Prescott Brook (Logwood Mill Brook). Operational catchment: Ditton
WFD Surface water bodies	<250m	No records
WFD Groundwater bodies	<250m	On Site: Sankey and Glaze Carboniferous Aquifers. Overall rating: Poor [2019]
FLOODING		
Risk of Flooding from Rivers and Sea (RoFRaS)	<50m	No records
Historical Flood Events	<250m	No records
Flood Defences	<250m	No records
Areas Benefitting from Flood Defences	<100m	No records
Flood Storage Areas	<250m	No records
Flood Zone II	<50m	No records
Flood Zone III	<50m	No records
Surface water flooding: Highest risk	On Site	Negligible
	<50m	1 in 30 year, 0.1m - 0.3m
Groundwater flooding: Highest risk	On Site	Low
	<50m	Low

For simplified interpretation, the geological succession underlying the site may be regarded as a series of discrete units in terms of their hydrogeological significance, as illustrated hereunder:

Table 5: Hydrogeological Interpretation

UNIT	PROPERTIES	HYDROGEOLOGICAL DESIGNATION
Made / Reworked Ground	If present, likely to be generally granular and permeable and will permit vertical and lateral transmission of groundwater.	Unproductive Aquifer
Diamicton	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers	Secondary Undifferentiated Aquifer
Pennine Lower Coal Measures Formation	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers	Secondary A Aquifer

6.0 FURTHER ENVIRONMENTAL DATA

Environmental data was researched using several sources including Environment Agency Maps and GroundSure EnviroSight Report presented in Appendix D and is summarised hereunder in Table 6. This environmental data has been used to carry out a Preliminary Qualitative Risk Assessment (Tier 1) and formulate the preliminary conceptual model as discussed in Section 8.0 of this report.

Table 6: Summary of Environmental Data

POTENTIALLY CONTAMINATIVE USES IDENTIFIED FROM 1:10,000 SCALE MAPPING		
Data	Distance	Comments
Historical industrial land uses	<250m	50m N: Unspecified Quarry [1906-25] 53-54m N: Unspecified Quarry [1891-1956] 116m NE: Cuttings [1978-90] 228m N: Tramway Sidings [1956]
Historical tanks	<250m	60m N: Unspecified Tank [1983-1908]
Historical energy features	<250m	199m NW: Electric Sub-Station [1955] 227m NW: Electric Sub-Station [1954-99]
Historical petrol stations	<250m	No records
Historical garages	<250m	No records
Historical military land	<250m	No records
Records of Current Industrial Land Use		
Data	Distance	Comments
Recent industrial land uses	<150m	On Site: Chimney [Chimneys] 37m W: Electric Sub-Station [Electrical Features] 42m SW: Electric Sub-Station [Electrical Features] 76m NE: Mast [Telecommunications Features] 152m SW: Electric Sub-Station [Electrical Features] 165m W: King's Business Park [Business Parks and Industrial Estates] 204m E: Mast [Telecommunications Features] 223m W: Electric Sub-Station [Electrical Features] 224m SW: Electric Sub-Station [Electrical Features] 229m NW: Electric Sub-Station [Electrical Features]

		233m S: Chimney [Chimneys]
Current or recent petrol stations	<250m	No records
Electricity cables	<250m	No records
Gas pipelines	<250m	No records
Sites determined as Contaminated Land	<250m	No records
Control of Major Accident Hazards (COMAH)	<250m	No records
Regulated explosive sites	<250m	No records
Hazardous substance storage/usage	<250m	No records
Historical licensed industrial activities (IPC)	<250m	No records
Licensed industrial activities (Part A(1))	<250m	No records
Licensed pollutant release (Part A(2)/B)	<250m	No records
Radioactive Substance Authorisations	<250m	No records
Licensed Discharges to controlled waters	<250m	No records
Pollutant release to surface waters (Red list)	<250m	No records
Pollutant release to public sewer	<250m	No records
List 1 Dangerous Substances	<250m	No records
List 2 Dangerous Substances	<250m	No records
Pollution Incidents (EA/NRW)	<250m	No records
Pollution inventory waste transfers	<250m	No records
Pollution inventory radioactive waste	<250m	No records
WASTE AND LANDFILL		
Data	Distance	Comments
Active or recent landfill	<250m	No records
Historical landfill (BGS records)	<250m	No records
Historical landfill (LA/mapping records)	<250m	No records
Historical landfill (EA/NRW records)	<250m	No records
Historical waste sites	<250m	No records
Licensed waste sites	<250m	No records
Waste exemptions	<250m	143m W: Kings Business Park [Treating waste exemption]
ENVIRONMENTAL DESIGNATIONS		
Data	Distance	Comments
Sites of Special Scientific Interest (SSSI)	<500m	No records
Conserved wetland sites (Ramsar sites)	<500m	No records
Special Areas of Conservation (SAC)	<500m	No records
Special Protection Areas (SPA)	<500m	No records
National Nature Reserves (NNR)	<500m	No records
Local Nature Reserves (LNR)	<500m	No records
Designated Ancient Woodland	<500m	No records
Biosphere Reserves	<500m	No records
Forest Parks	<500m	No records
Marine Conservation Zones	<500m	No records
Green Belt	<500m	On Site: Merseyside and Greater Manchester Green Belt [Knowsley]
Proposed Ramsar sites	<500m	No records
Possible Special Areas of Conservation (PSAC)	<500m	No records
Potential Special Protection Areas (pSPA)	<500m	No records
Nitrate Sensitive Areas	<500m	No records
Nitrate Vulnerable Zones	<500m	On Site: Ditton Brook (Halewood to Mersey Estuary) NVZ [Existing] On Site: Alt NVZ [Existing]
RAILWAY INFRASTRUCTURE AND PROJECTS		
Data	Distance	Comments
Underground railways (London)	<250m	No records
Underground railways (Non-London)	<250m	No records
Railway tunnels	<250m	No records
Historical railway and tunnel features	<250m	228m N: Tramway Sidings
Royal Mail tunnels	<250m	No records
Historical railways	<250m	No records
Railways	<250m	No records
Crossrail 2	<250m	No records

7.0 PREVIOUS SITE INVESTIGATIONS / REPORTS

Searches and consultations have established that no previous ground investigation works have been undertaken on this site.

8.0 PRELIMINARY QUALITATIVE RISK ASSESSMENT (TIER 1)

8.1 Introduction

Based on the foregoing study, there is a potential for the presence of contamination associated with the historic developments on the site and/or immediately adjoining the study site, and previous land uses and hence a preliminary risk assessment was undertaken.

The risk assessment methodologies adopted by **CCG** are based on current available guidance from several sources and are included in Appendix D.

The Tier 1 Risk Assessment and Preliminary Conceptual Model (PCM) were formulated using the information discussed above and based on the following assumptions:

- The site is to be partially redeveloped by the construction of 2nr lightweight outbuildings (Blocks B and C) comprising:

Building B:

A 9.3m x 3.5m single storey outbuilding for the containment of 1nr x 5200 litre T1 store tank, 1nr x 10000 litre (T13) treated store tank, 1nr x 4000 litre (T3) treatment store tank, 1nr x 1000 litre (T9) store tanks, 1nr filter press, and associated works, with an adjoining carbon container and associated bund

Building C:

A 9.3m x 4.8m single storey outbuilding for the containment of 1nr x 10000 litre (T13) treated storage tank, 1nr x 5200 litre (T1) storage tank, 1nr (T3) treatment tank, 1nr x 1000 litre (T9) sludge tank, 1nr filter press, and associated works, with an adjoining carbon container and associated bund

It is further proposed that waste compound and storage facility be repositioned within the eastern section of the site.

- Drinking water will be from a mains supply.

In constructing the Preliminary Conceptual Model (PCM), **CCG** applied the guidance contained in Guidance for the Safe Development of Housing on Land Affected by Contamination, R&D: 2008 Volume 1 (*Environment Agency and CIEH*). This recommends use of a Risk Matrix which classifies risk based on the product of Probability of a source being present, and the Consequence of receptors being exposed to the source. Guidance tables setting out the classifications of probability and consequence together with a risk matrix are given in Tables 7 - 10 hereunder. In using this approach **CCG** recommends intrusive investigation of any Risk Classification of “*Moderate*” or above although a precautionary approach is recommended for residential housing developments, irrespective of the Risk Classification.

Table 7: Matrix of consequences against probability to gain a risk classification [CIRIA C552, 2001]

		CONSEQUENCE			
		SEVERE	MEDIUM	MILD	MINOR
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table 8: Classification of Consequence

Classification	Definition	Examples
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs.	Significant harm to humans is defined in circular 01.2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.
	Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce.	Major fish kill in surface water from large spillage of contaminants from site.
Medium	Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population.	Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity).
	Catastrophic damage to crops, buildings or property.	Explosion, causing building collapse (can also equate to immediate human health risk of buildings are occupied).
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs.	Significant harm to humans is defined in circular 01.2006 as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions.
	Equivalent to EA Category 2 pollution incident including	Damage to buildings rendering it unsafe to occupy e.g. foundation

	significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Significant damage to crops, buildings or property.	damage resulting in instability. Ingress of contaminants through plastic potable water pipes.
Mild	Exposure to human health unlikely to lead to "significant harm". Equivalent to EA Category 3 pollution incident including minimal or short-lived effect on water quality; marginal impact on amenity value, agriculture or commerce. Minor or short-lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Minor damage to crops, buildings or property.	Exposure could lead to slight short-term effects (e.g. mild skin rash). Surface spalling of concrete.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	The loss of plants in a landscaping scheme. Discoloration of concrete.

Table 9: Classification of Probability Definitions (C552 CIRIA, 2001)

Classification	Definition	Examples
High Likelihood	There is potential contaminant linkage, and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.	a) Elevated concentrations of toxic contaminants are present in soils in the top 0.5m in a residential garden. b) Ground/groundwater contamination could be present from chemical works, containing a number of UST's, having been in operation on the same site for over 50 years.
Likely	There is potential contaminant linkage, and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of 0.5-1.0m in a residential garden or the top 0.5m in a public open space. b) Ground/groundwater contamination could be present from an industrial site, containing a UST present between 1970 and 1990. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Low Likelihood	There is potential contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place and is less likely in the shorter term.	a) Elevated concentrations of toxic contaminants are present in soils at depths of >1m in a residential garden or 0.5-1.0m in a public open space. b) Ground/groundwater contamination could be present on a light industrial unit constructed in the 1990's containing a UST in operation over the last 10 years. The tank is known to be single skin. There is no evidence of leakage although there are no records of integrity tests.
Unlikely	There is potential contaminant linkage, but circumstances are such that it is improbable that an event would occur even in the very long-term.	a) Elevated concentrations of toxic contaminants are present below hardstanding. b) Light industrial units <10 yrs old containing a double-skinned UST with annual integrity testing results available.

Table 10: Description of the Classified Risks

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

Very Low

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be server.

8.2 Preliminary Conceptual Model

By application of the risk assessment methodology outlined above, the following PCM was constructed.

Table 11: Preliminary Conceptual Model (PCM)

POLLUTANT LINKAGE	SOURCE	PATHWAY	RECEPTOR	PROBABILITY	CONSEQUENCE	RISK RATING
1	Broad spectrum of heavy metals, aggressive pH, hydrocarbons, PAH's in Made Ground associated with the development & redevelopment of the site & adjoining area & historical onsite demolition works etc.	Soil and / or soil dust ingestion Dermal contact	Construction workers Future worker occupants Offsite receptors	Likely	Medium	Moderate
2	Asbestos containing materials (ACM) in made ground soils associated with the development & redevelopment of the site & adjoining areas & historical onsite demolition works etc.	Fibre Inhalation	Construction workers Future worker occupants Offsite receptors	Unlikely	Severe (ACM)	Moderate / Low
3	Inhalation of vapours associated with on-site made ground deposits etc.	Inhalation	Construction workers Future worker occupants Offsite receptors	Unlikely	Medium	Moderate
4	Inhalation of ground gases from onsite or offsite sources i.e., made ground deposits etc.	Inhalation	Future worker occupants / residents	Unlikely	Medium	Moderate
5	pH & Sulphate attack on concrete	Future building	Future building	Likely	Mild	Moderate / Low
6	Organic contamination associated with historical on-site land uses	Direct contact with water mains	Potable water supply	Unlikely	Medium	Moderate
7	Radioactive substances associated with on site storage facilities	Soil and / or soil dust ingestion Dermal contact Inhalation Future building Direct contact with water mains	Construction workers Future worker occupants Offsite receptors Future building Potable water supply	Likely	Medium	Moderate

8.3 Contaminants of Concern

The foregoing PCM identifies a generally low risk of significant contamination being present. Should a precautionary approach be preferred then the following ubiquitous contaminants of concern should be assessed.

Table 12: Summary of Contaminants of Concern based on PCM

LINKAGE NO.	METALS	NON-METALS	ORGANICS	GASES	OTHERS
PL1, PL2, PL3, PL5-PL6	Cd, Cr (total & hexavalent), Ni, Cu, Zn, Pb, Hg, Se, Mo, Sb	As, sulphates, sulphides, boron, free cyanide	TPHCWG, PAH's, BTEX, Volatiles (by PID), SOM	-	pH Asbestos
PL4	-	-	-	CH ₄ , CO ₂ , CO, H ₂ S	-
PL1, PL6	-	-	TPHCWG, PAH's, BTEX,	-	-
PL7	-	-	-	-	-
PL1-PL7	Cd, Cr (total), Ni, Cu, Zn, Pb, Hg, Se, Mo, Sb	As, sulphates, sulphides, boron, free cyanide	TPHCWG, BTEX PAH's, Volatiles (by PID), SOM	CH ₄ , CO ₂ , CO, H ₂ S	pH Asbestos

8.4 Summary of Risks

The foregoing analysis has not identified significant risks. However, should contamination be present, then this could adversely impact on human or environmental receptors, and since no previous site investigation has been undertaken, an intrusive phase of investigation is recommended to determine whether the postulated pollutant linkages are present on site.

9.0 AIMS AND PROPOSED SCOPE OF PHASE II INTRUSIVE INVESTIGATION

Based on the findings above, it is recommended that an intrusive investigation be undertaken. The Phase II Intrusive Investigation should include for exploratory holes to be sunk through made ground into the underlying natural strata.

The primary objectives of a ground investigations are to obtain enough data to reliably ascertain ground conditions on site, and to aid confirmation of the potential pollution linkages identified within the Preliminary Conceptual Model above. Sufficient soil and

groundwater/soil leachate contamination data should be obtained to reliably allow the Preliminary Conceptual Model to be tested and refined by the performance of a quantitative risk assessment.

Using the guidance contained in BS10175: 2011 and R&D Technical Report P5-0066/TR: 2000 and taking into account the size of the proposed tank storage facilities, it is proposed that 2nr boreholes be sunk using light dynamic sampling methods within the footprint of each of the tank facility to a notional depth of c.5mbgl with associated *in-situ* testing.

Given the potential presence of made ground deposits of an unknown composition, thickness and extent, and the potential for the presence of natural peat deposits underlying, it is recommended that each borehole position be utilised for the installation of standpipes, thus enabling a programme of ground gas monitoring to be undertaken. To comply with CIRIA C665 for a “*Moderate*” risk site, it is proposed that gas monitoring is undertaken as a minimum on 4nr occasions, distributed over a 1-month period.

The prime objective of any intrusive ground investigation is to provide reliable soil / groundwater, or soil leachate, contamination data and to assess the potential risk to human health and sensitive environmental receptors.

The proposed scope of works is summarised in Table 13 hereunder:

Table 13: Proposed Scope of Works

RISK	METHOD OF ASSESSMENT
Is the superficial ground impacted by contamination to the extent it may present a risk to human health?	Using the guidance contained in BS10175: 2011 and R&D Technical Report P5-0066/TR: 2000 and taking into account the size of the proposed tank storage facilities, it is proposed that 2nr boreholes be sunk using light dynamic sampling methods within the footprint of each of the proposed tank facility to a notional depth of c.5mbgl with associated <i>in-situ</i> testing. Broad spectrum contamination analyses will be performed on selective subsamples of recovered soil (4nr analyses) to suite in Table 11
What are the geotechnical properties of the ground?	Standard Penetration Test's (SPT's) to be carried out at regular depth increments throughout the boreholes, with HSV tests being carried out in cohesive strata on recovered soils, if encountered. A programme of soil engineering laboratory testing will be carried out. The <i>in-situ</i> tests and soil engineering test data will be used in formulating suitable foundation solutions.
Is the site affected by migrating gas from made ground	Given the potential presence of made ground deposits of an unknown composition, thickness and extent, and the potential for the presence of natural peat deposits underlying, it is recommended that each borehole position be utilised for the installation of standpipes, thus enabling a programme of ground gas monitoring to be undertaken. To comply with CIRIA C665 for a “ <i>Moderate</i> ” risk site, it is proposed that gas monitoring is undertaken as a minimum on 4nr occasions, distributed over a 1-month period.
Does the site pose a risk to the underlying Secondary A Aquifer?	Soil water samples will be recovered from the standpipes and will be analysed to the suite proposed in Table 11. In the event that water does not accumulate in the standpipes, soil leachate analyses will be undertaken to the suite in Table 7. The results will be assessed against Drinking Water Standards and Environmental Quality Standards.

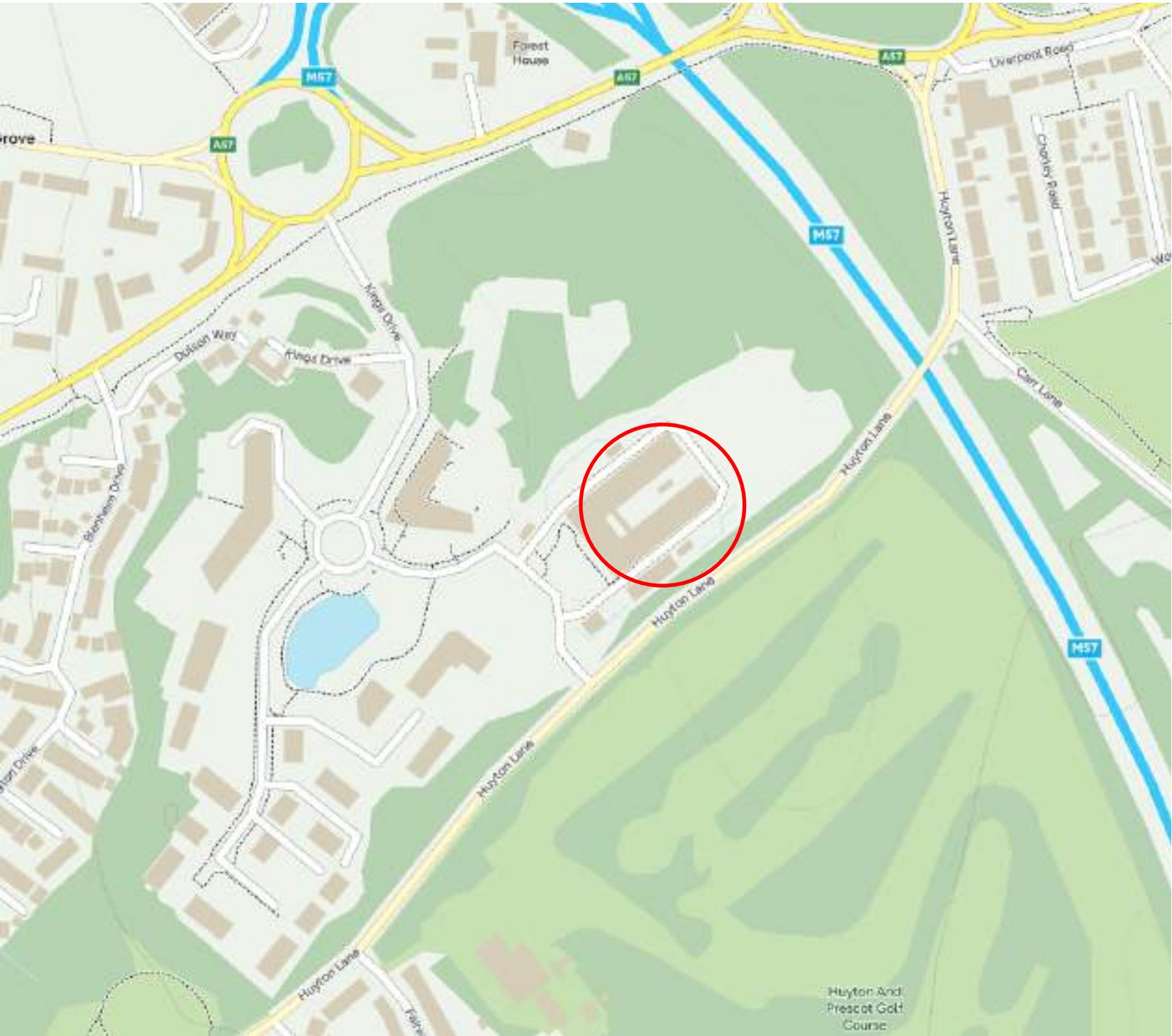
The layout of the proposed intrusive investigation is as annotated on **CCG** Drawing No. CCG-C-25-15364-3 ‘*Site Investigation Plan*’ contained herein.

To ensure that no borehole position impacts on any buried service, the final positioning of the boreholes will be determined following a review of ‘*Clients*’ buried service drawings.

Given that the site is to be redeveloped for commercial use, contamination data obtained as part of the above recommended Phase II intrusive investigation will be based on criteria contained in publication LQM/CIEH S4UL's for Human Health Risk Assessment (2015) (**CCG** Licence No. S4UL3233), applicable to the “*Commercial*” land use scenario. Given this document does not provide criteria for Lead contaminants, it is proposed that Lead results are compared to the C4SL published by DEFRA SP1010 Development of Category 4 Screening Levels for ‘*Commercial Land*’ use.

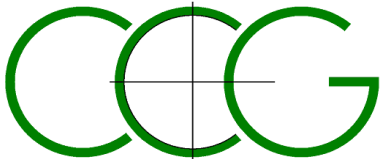
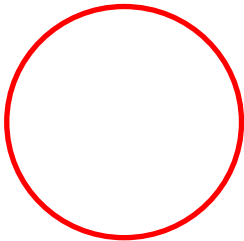
APPENDIX A: DRAWINGS:

**25-15364– SITE LOCATION PLAN
25-15364– AERIAL PLATE
ARCHITECTURAL DRAWINGS**



DO NOT SCALE

Notes: Study Site



CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client:
WILLIAM JONES & PARTNERS

Project:
Kings Drive, Kings Business Park, Prescot, Knowsley L34

Title:
Site Location

Scale:
NTS

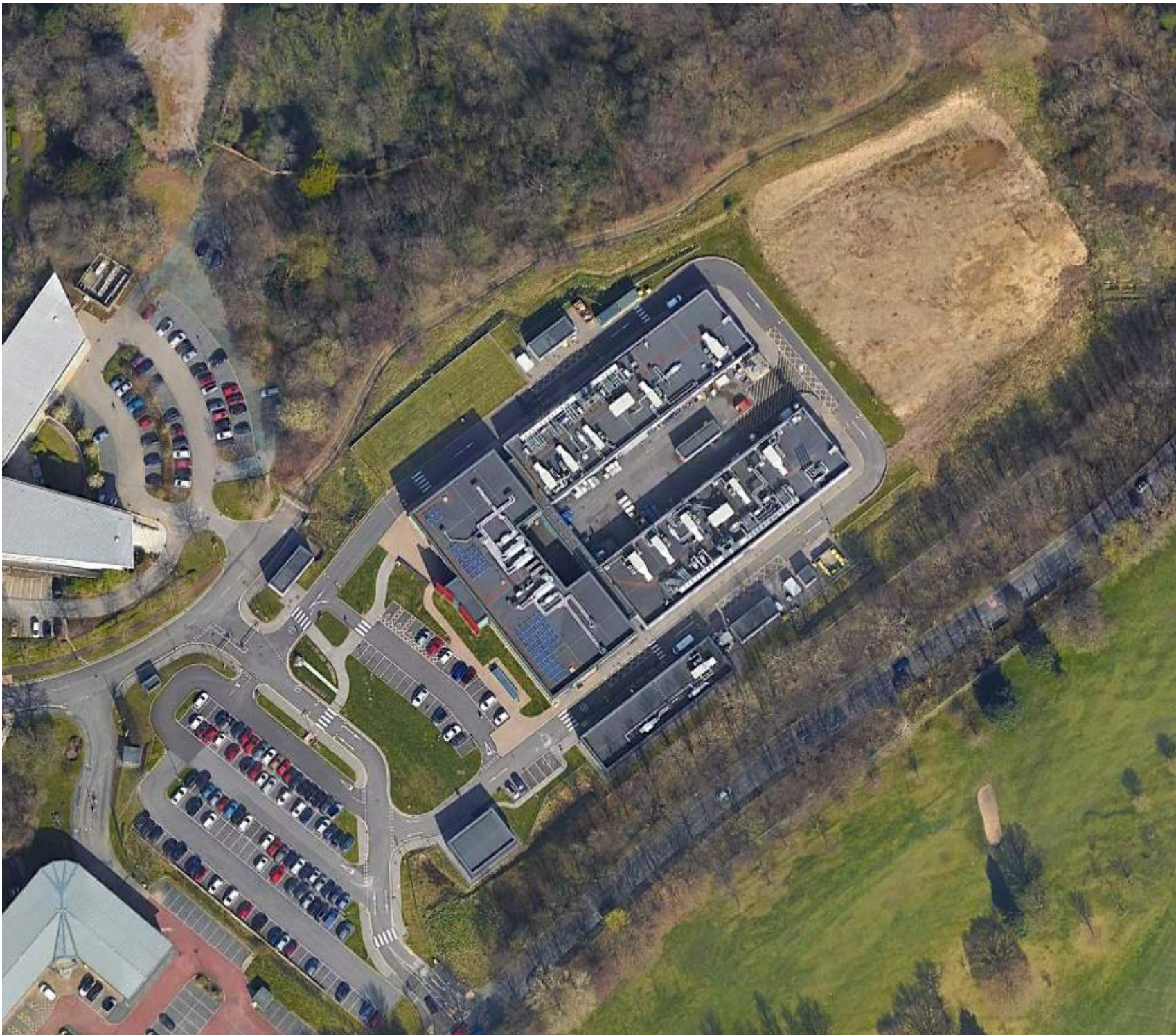
Issue:
01

Drawn by:
DG

Date:
March 2025

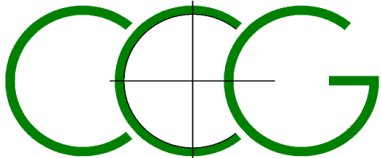
Project No.
CCG-C-25-15364

Drawing No.
01



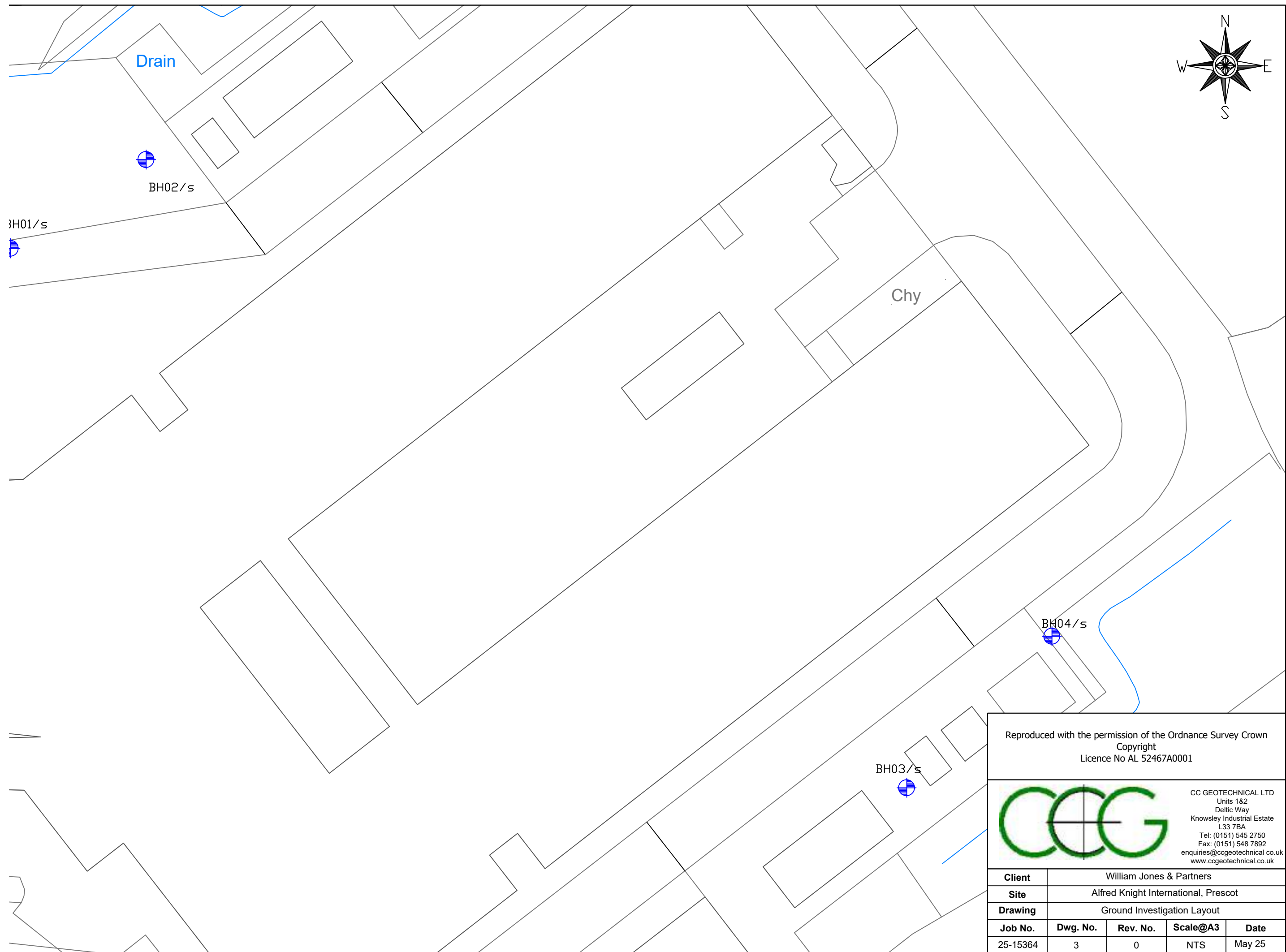
DO NOT SCALE

Notes: Study Site

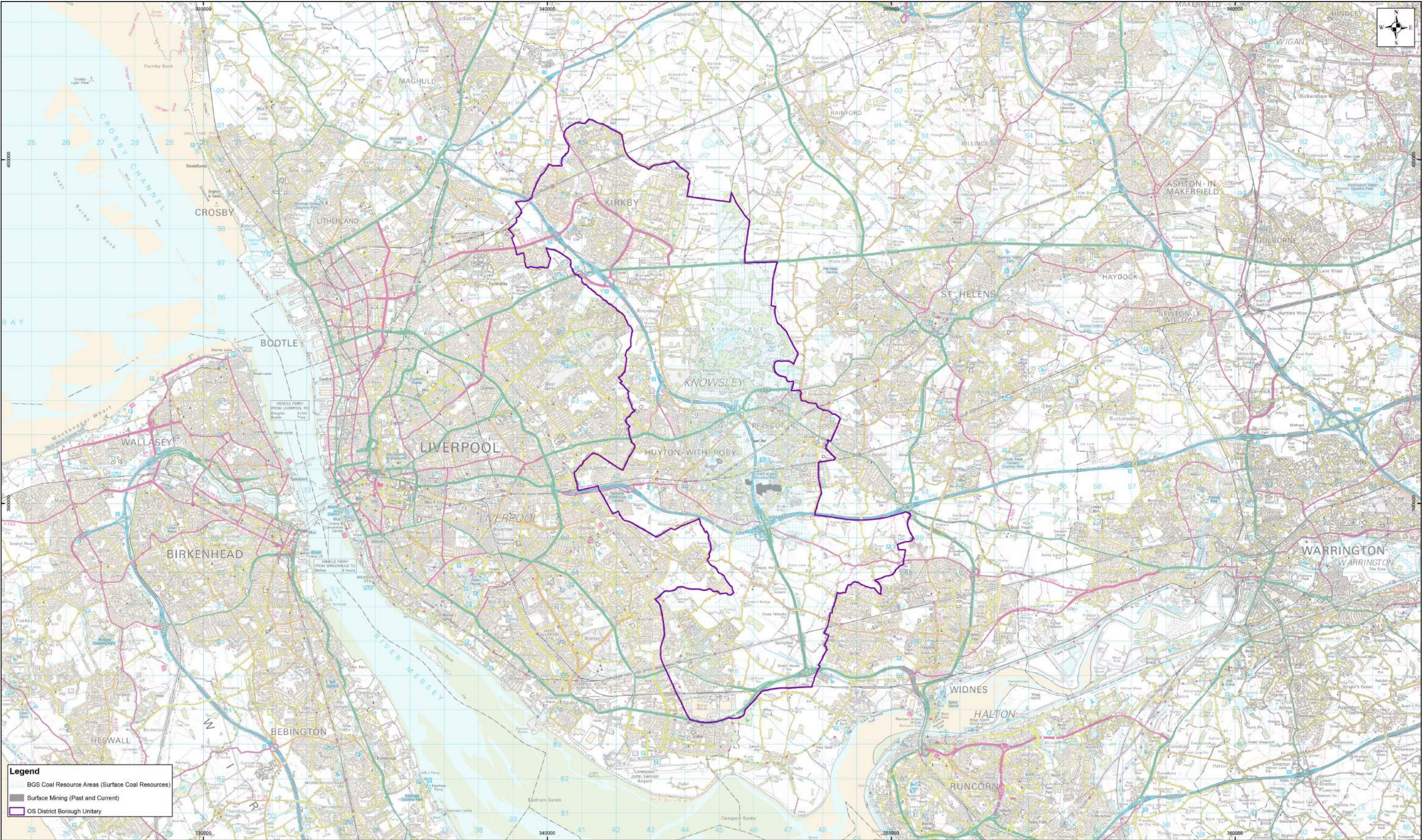


CC GEOTECHNICAL LIMITED
UNIT 1 DELTIC WAY
KNOWSLEY INDUSTRIAL ESTATE
LIVERPOOL
L33 7BA
0151 545 2750

Client: WILLIAM JONES & PARTNERS	
Project: Kings Drive, Kings Business Park, Prescott, Knowsley L34	
Title: Aerial Photograph	
Scale: NTS	Issue: 01
Drawn by: DG	Date: March 2025
Project No. CCG-C-25-15364	Drawing No. 02



Knowsley District (B) - Surface Coal Resource



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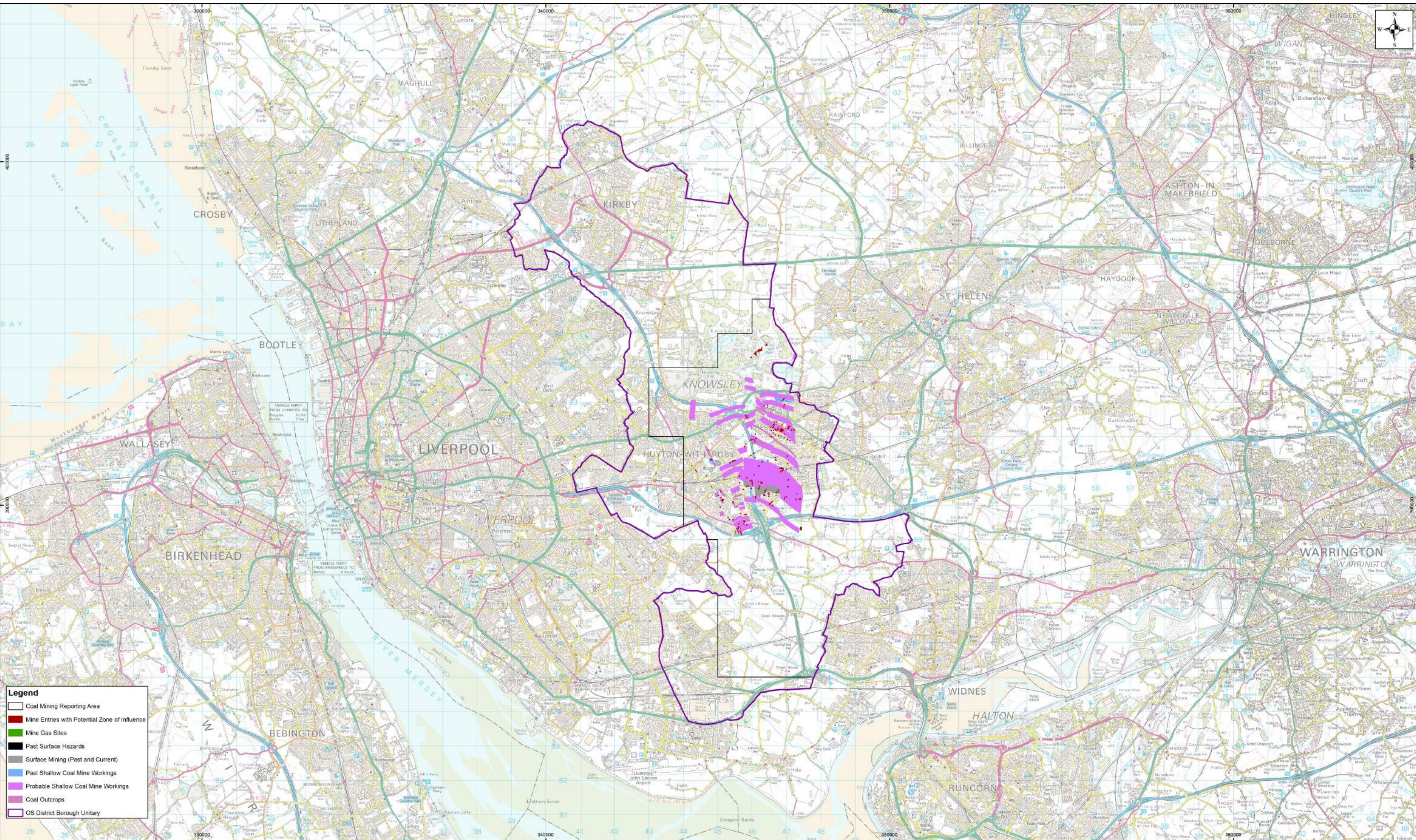
Scale 1:50000@A1

Published on: 07/06/2014



The Coal Authority

Knowsley District (B) - Specific Risk



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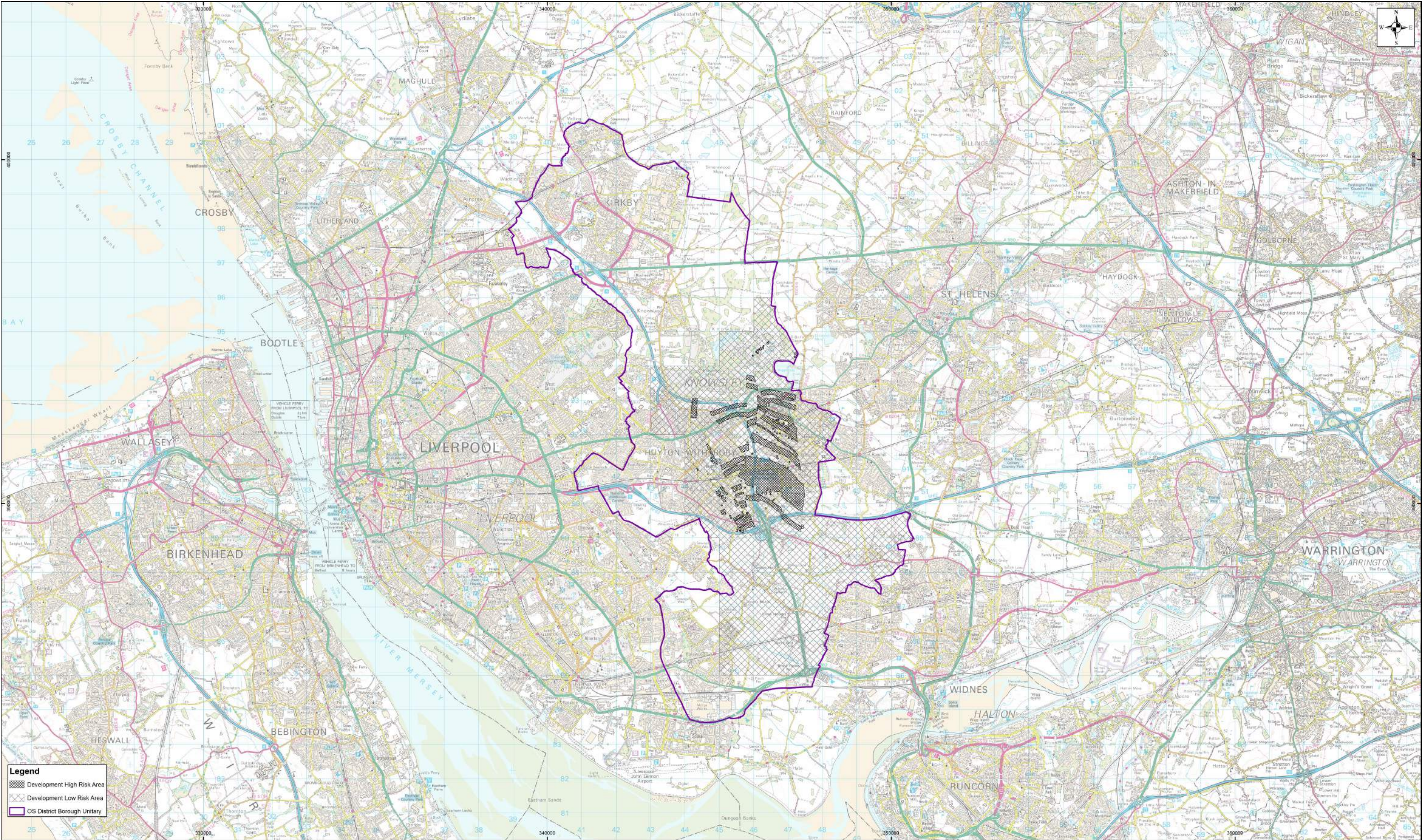
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Published on: 12/06/2014



The Coal
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Knowsley District (B) -Development Risk



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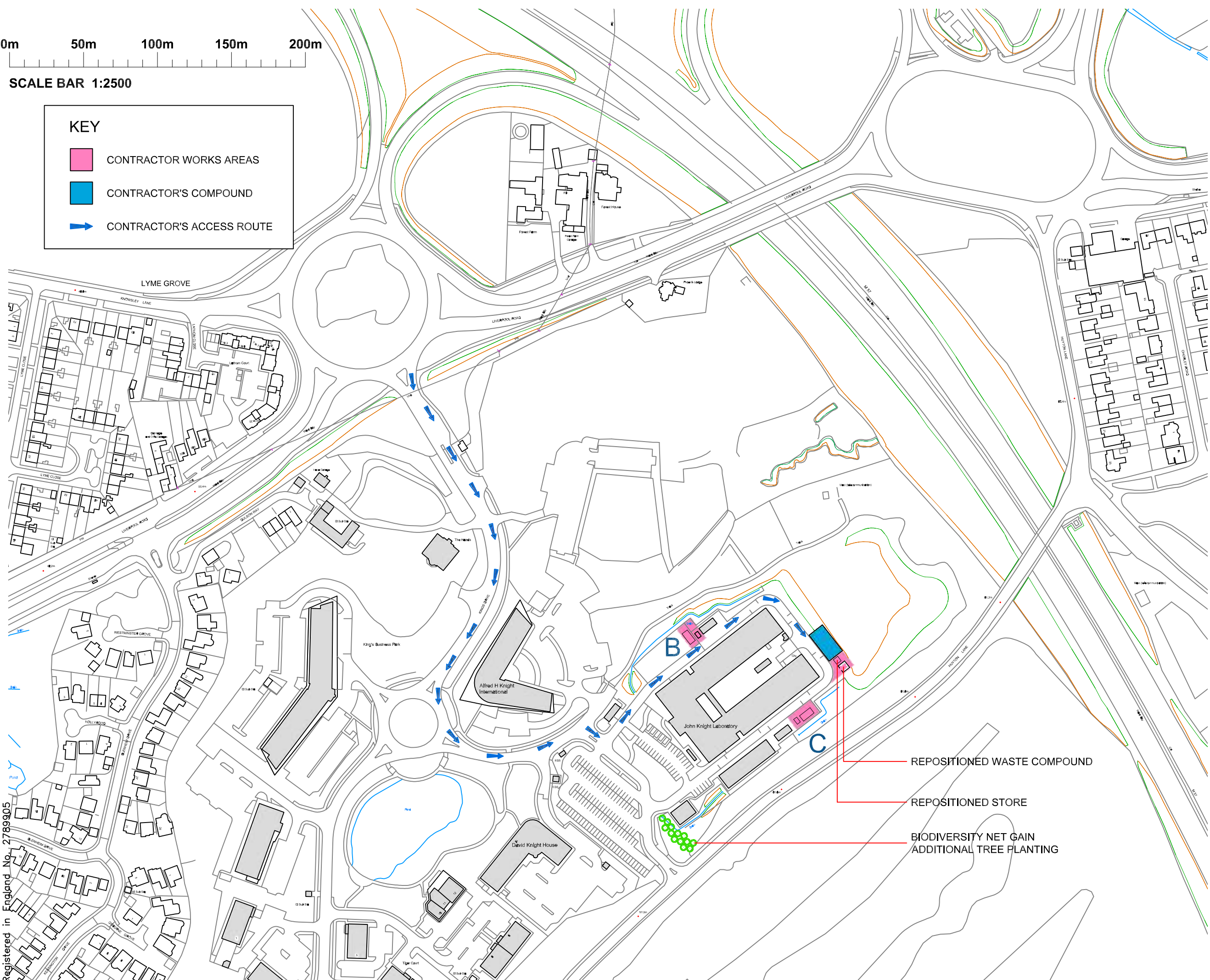
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Published on: 06/08/2014



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SCALE BAR 1:2500

KEY

CONTRACTOR WORKS AREAS

CONTRACTOR'S COMPOUND

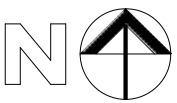
CONTRACTOR'S ACCESS ROUTE

Use only labelled dimensions and levels for construction. All dimensions & levels to be checked on site before commencing work and any discrepancies to be notified to C.A. immediately. If in doubt ask ?

QIM

ISO 9001 REGISTERED

PRM



D	Redrawn at 1:2500 scale. Contractor access route, works areas & compound added.	AW	05/12/24
C	Site boundary changes for planning validation	CM	24/10/24
B	BNG tree planting added+waste compound relocated	CM	12/09/24
A	Building B rotated 90°	CM	05/08/24
rev	comments	initials	date



architects
interior designers
strategy planners
quantity surveyors
principal designers

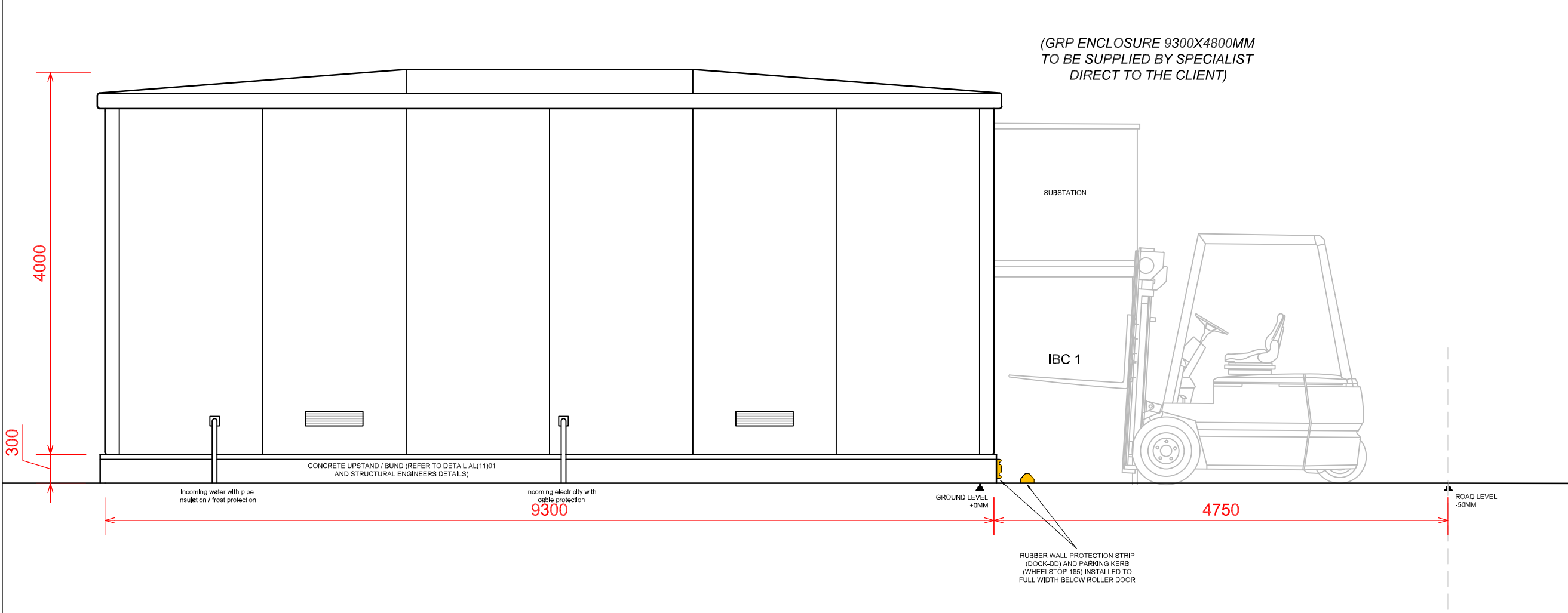
Mersey Design Group Ltd
Cleveland House
41 Shaw Street
Liverpool L6 1HL

telephone: 0151 207 9431
facsimile: 0151 207 9447
e-mail: info@mdg.design
web: www.mdg.design

client	Alfred H Knight International Ltd
project	Lab Effluent Project Kings Business Park, Kings Drive Prescot. L34 1PJ
content	Location Plan

scale 1:2500	sheet A3	date June 2024	drawn by CM	checked
project number 308-04	drawing number AL(9)03		rev D	
purpose of issue	Tender			

BUILDING B FRONT ELEVATION B-1 1:50 (BELOW)



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E	Minor amendments and notes for tender issue.	CM	12/12/24
D	Minor amendments and notes for tender issue.	AW	06/12/24
C	ground / finished floor level changes	CM	07/11/24
B	external carbon contained heightened to 1850mm	CM	13/08/24
A	to show Building B elevations and roof plan only	CM	05/08/24
rev	comments	initials	date



architects Mersey Design Group Ltd
interior designers Mersey Design Group Ltd
strategy planners Mersey Design Group Ltd
quantity surveyors Mersey Design Group Ltd
principal designers Mersey Design Group Ltd

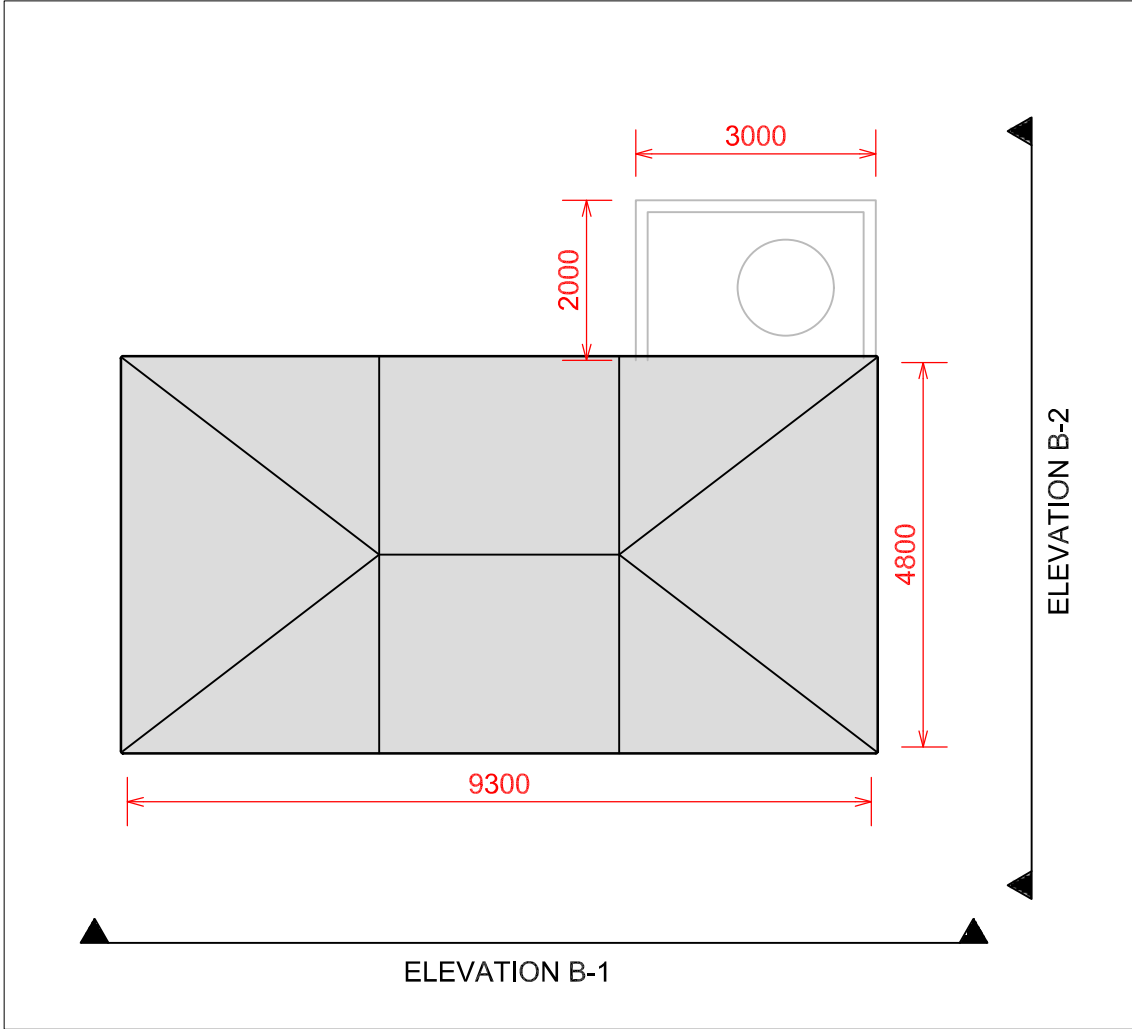
client Alfred H Knight International Ltd

project Lab Effluent Project
Kings Business Park, Kings Drive
Prescot. L34 1PJ

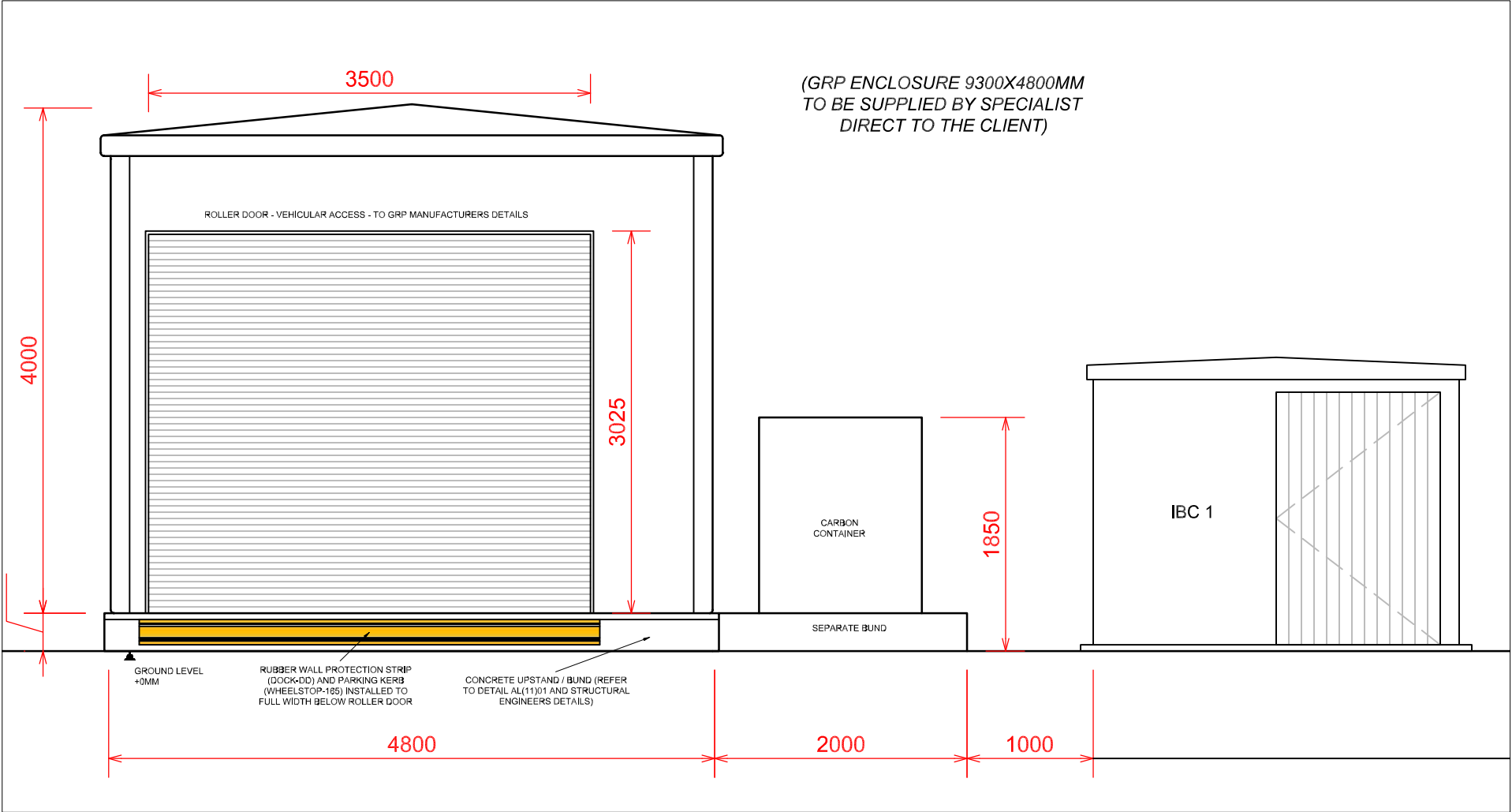
content Elevations & Roof Plan
Building B

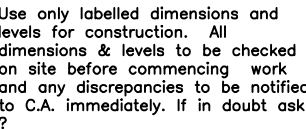
scale	1:50	sheet	A3	date	July 2024	drawn by	AW	checked	
project number	308-04	drawing number	AL(2)03	rev					E
purpose of issue	Tender								

BUILDING B ROOF PLAN 1:100 (BELOW)

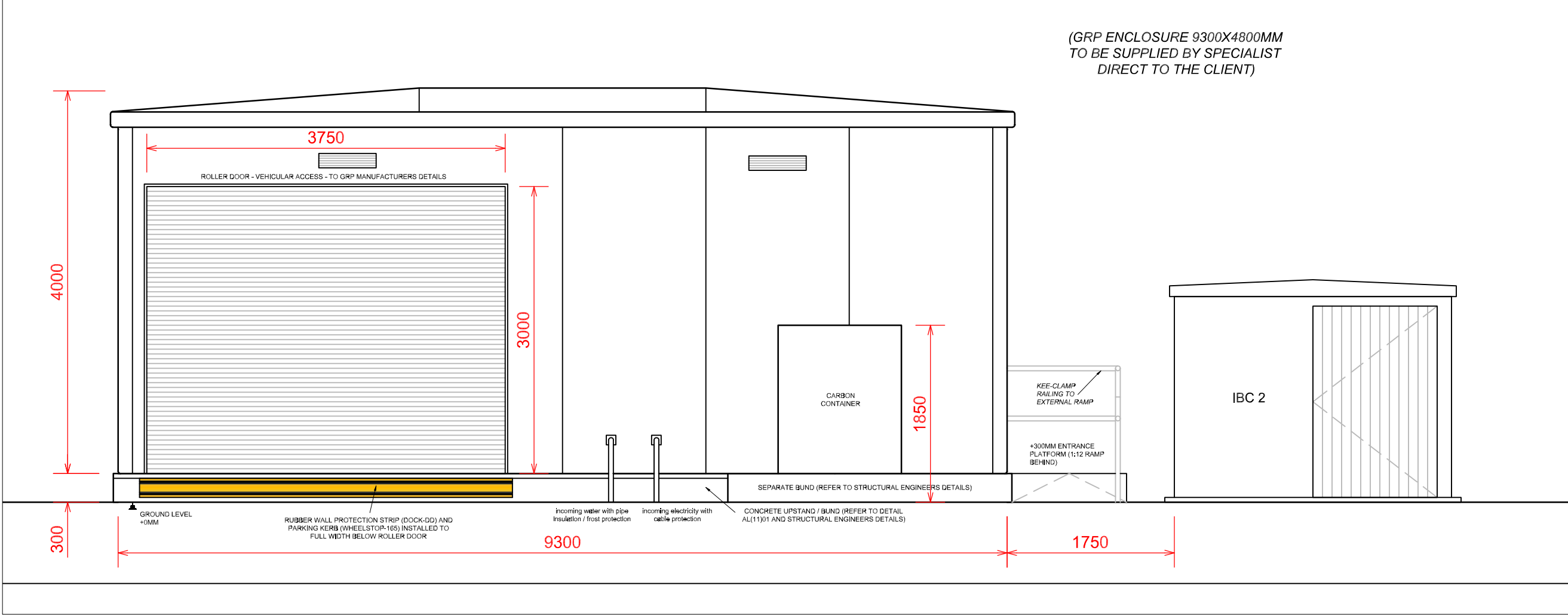


BUILDING B SIDE ELEVATION B-2 1:50 (BELOW)





BUILDING C FRONT ELEVATION B-11:50 (BELOW)



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E	Minor amendments and notes for tender issue.	CM	12/12/24
D	Minor amendments and notes for tender issue.	AW	06/12/24
C	ground / finished floor level changes	CM	07/11/24
B	external carbon contained heightened to 1850mm	CM	13/08/24
A	to show Building C elevations and roof plan only	CM	05/08/24
rev	comments	initials	date



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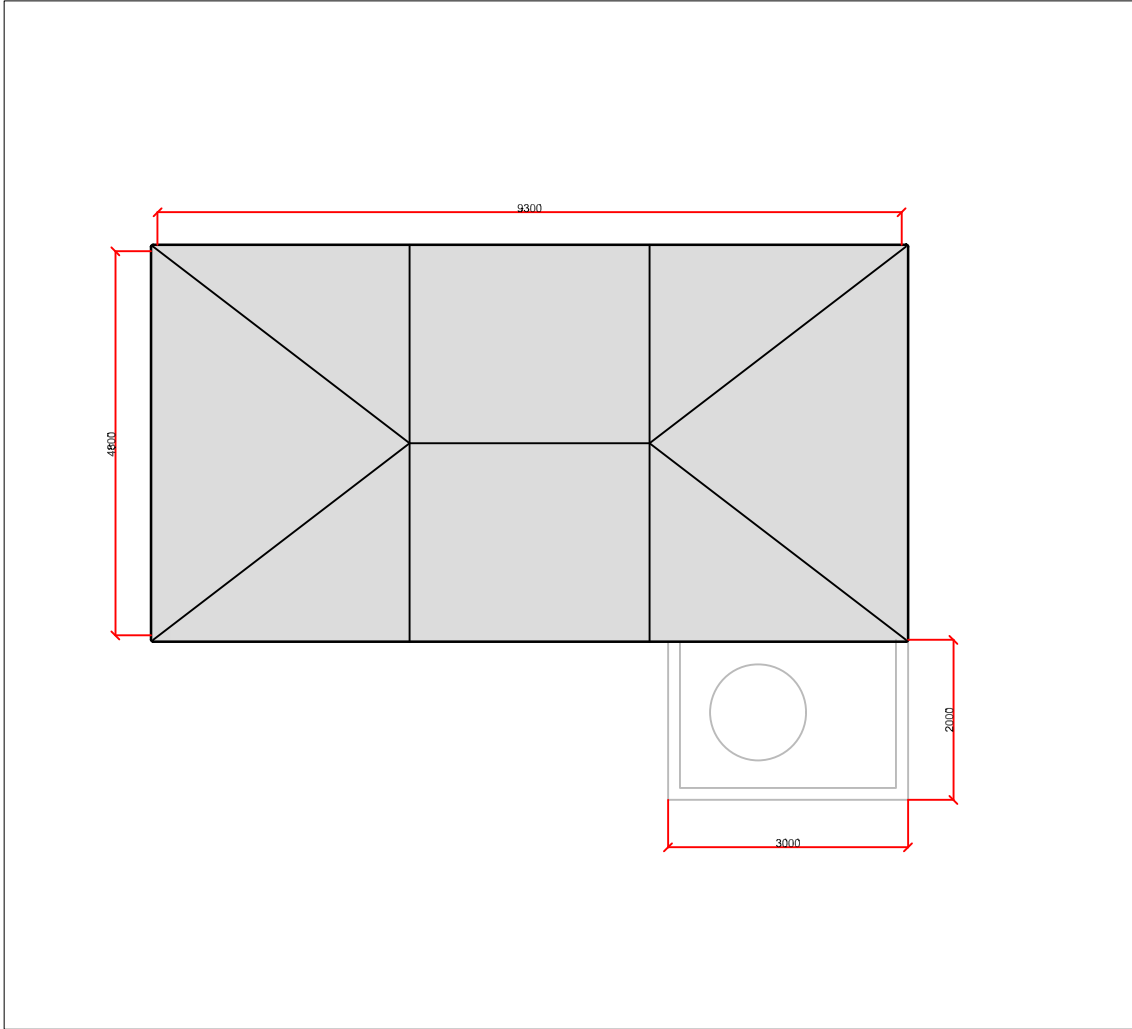
client
Alfred H Knight International Ltd

project
Lab Effluent Project
Kings Business Park, Kings Drive
Prescot. L34 1PJ

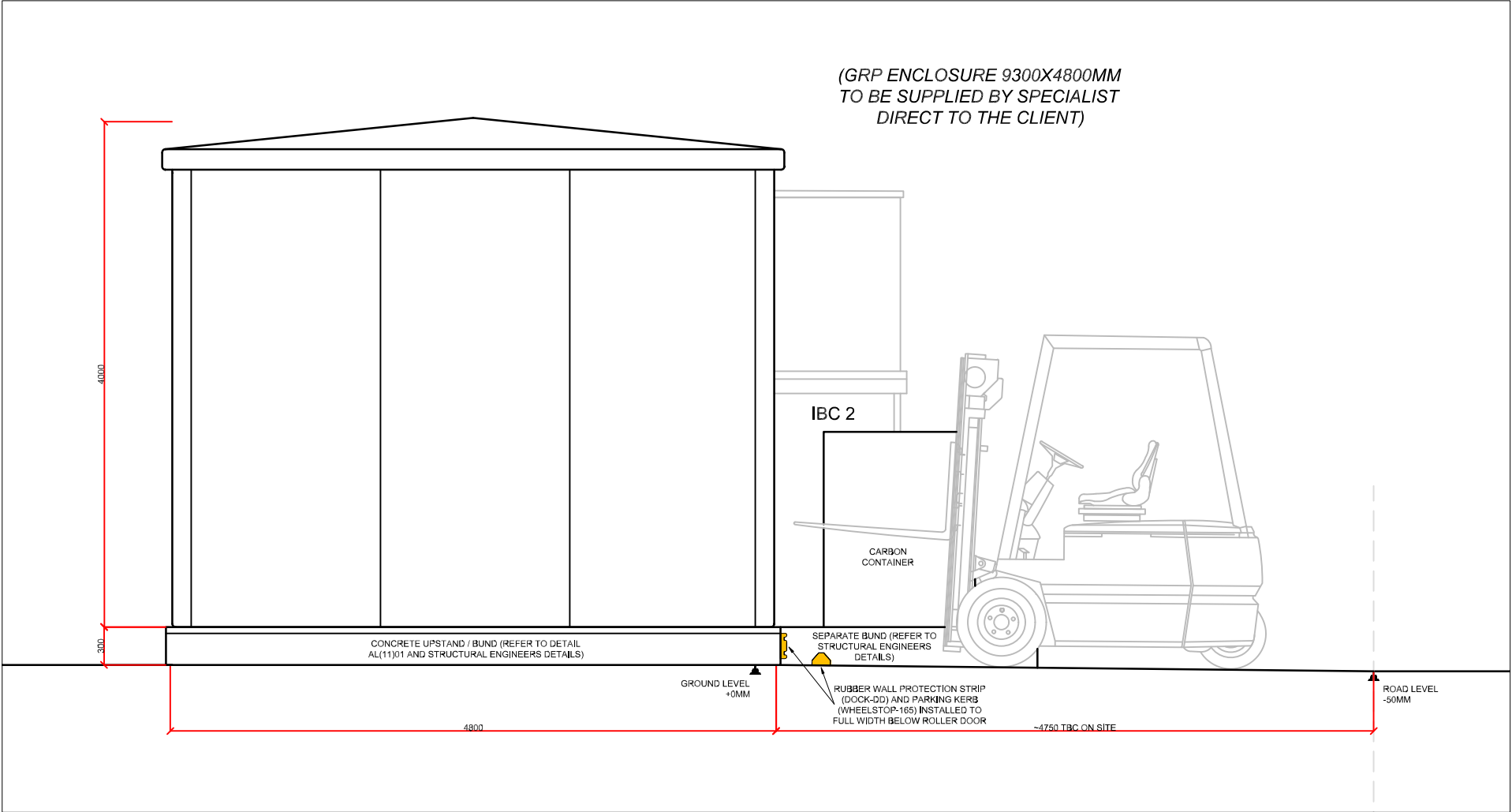
content
Elevations & Roof Plan
Building C

scale	sheet	date	drawn by	checked
1:50	A3	July 2024	AW	
project number	drawing number	rev		
308-04	AL(2)04	E		
purpose of issue Tender				

BUILDING C ROOF PLAN1:100 (BELOW)

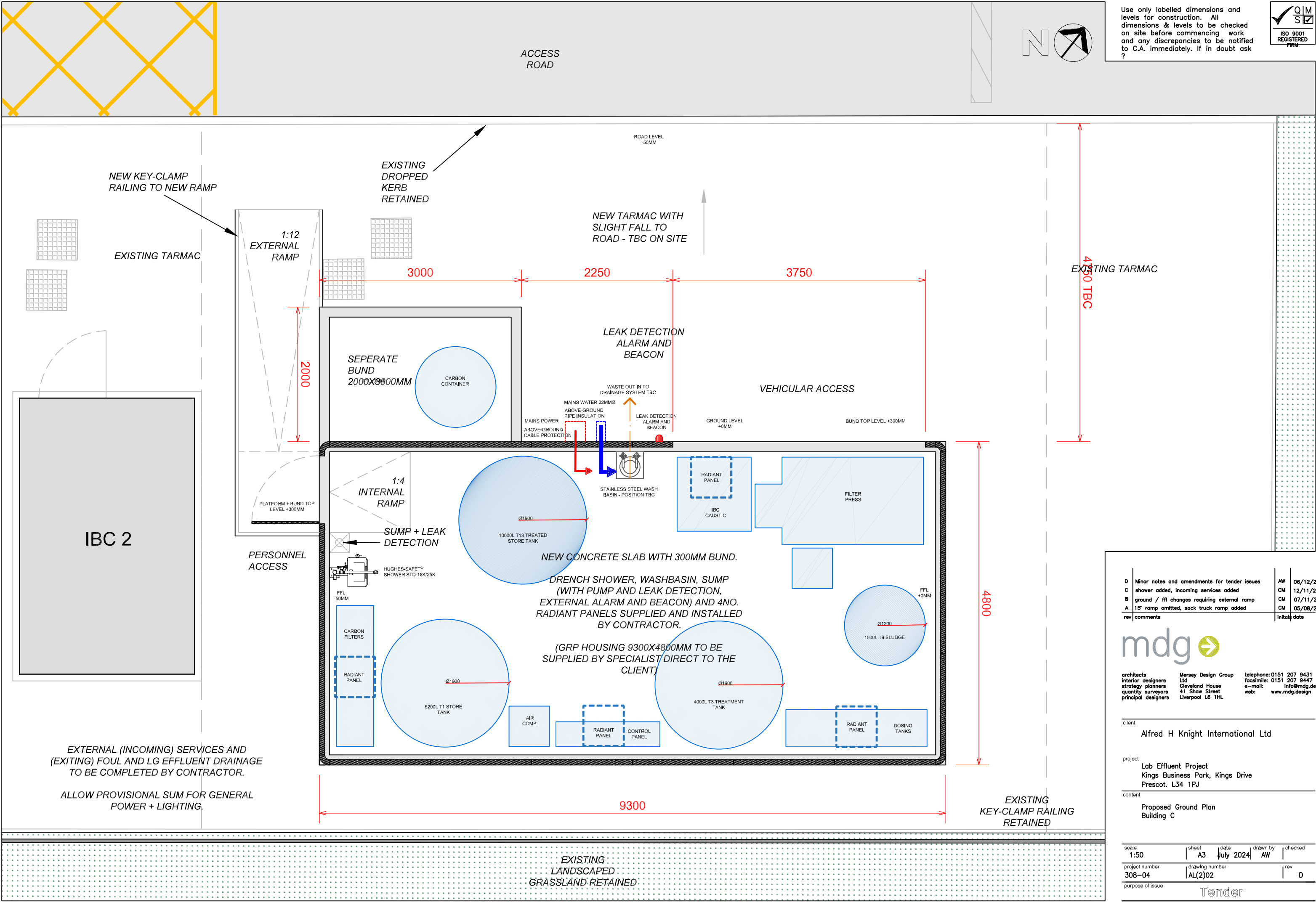


BUILDING C SIDE ELEVATION B-21:50 (BELOW)





Use only labelled dimensions and levels for construction. All dimensions & levels to be checked on site before commencing work and any discrepancies to be notified to C.A. immediately. If in doubt ask ?



D	Minor notes and amendments for tender issues	AW	06/12/2
C	shower added, incoming services added	CM	12/11/2
B	ground / ffi changes requiring external ramp	CM	07/11/2
A	15' ramp omitted, sack truck ramp added	CM	05/08/2
rev	comments	initiate date	



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strategy planners Cleveland House e-mail: info@mdg.de
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client
Alfred H Knight International Ltd

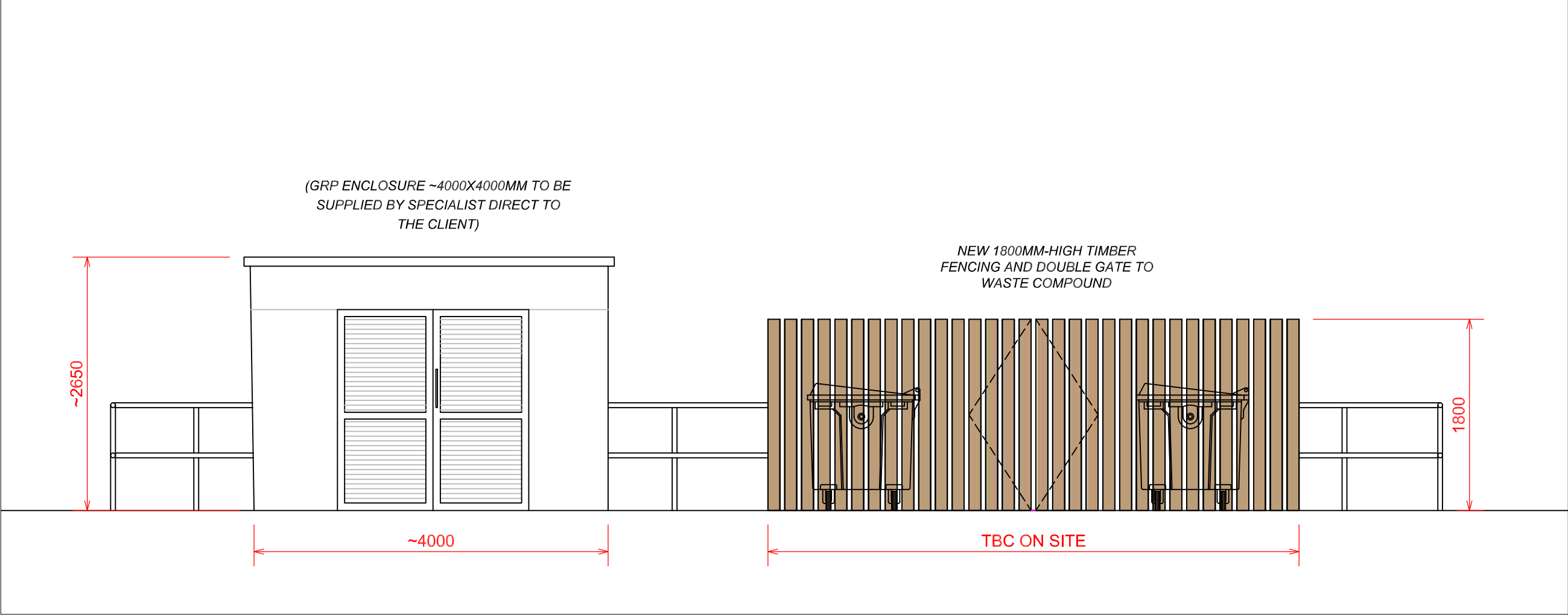
project
Lab Effluent Project
Kings Business Park, Kings Drive
Prescot. L34 1PJ

content

Proposed Ground Plan
Building C

scale 1:50	sheet A3	date July 2024	drawn by AW	checked
project number 308-04		drawing number AL(2)02		rev D

Tender



Use only labelled dimensions and levels for construction. All dimensions & levels to be checked on site before commencing work and any discrepancies to be notified to C.A. immediately. If in doubt ask ?



A	Minor amendments and notes for tender issue.	AW	06/12/24
rev	comments	initials	date



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client

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project

Lab Effluent Project
Kings Business Park, Kings Drive
Prescot. L34 1PJ

content

Proposed Elevation
Waste Compound and Store

scale	sheet	date	drawn by	checked
1:50	A3	Oct 2024	AW	
project number	drawing number		rev	
308-04	AL(2)07			A
purpose of issue				

Tender

Use only labelled dimensions and levels for construction. All dimensions & levels to be checked on site before commencing work and any discrepancies to be notified to C.A. immediately. If in doubt ask ?



EXISTING
LANDSCAPED
GRASSLAND RETAINED

NEW KEE-CLAMP
RAILING

NEW TARMAC WITH
FALL TO REAR OF SITE

NEW 1800 HIGH-LEVEL
TIMBER FENCING AND
DOUBLE GATE TO WASTE
COMPOUND

NEW CONCRETE SLAB TO
NEW STORE - REFER TO
STRUCTURAL ENGINEERS
DETAILS

(GRP ENCLOSURE ~4000X4000MM TO BE
SUPPLIED BY SPECIALIST DIRECT TO
THE CLIENT)

NEW TARMAC

EXISTING
LANDSCAPED
GRASSLAND RETAINED

NEW KEE-CLAMP
RAILING EXTENDING
FROM EXISTING

NEW TARMAC WITH
NEW KERB TO
GRASS BOUNDARY

NEW TARMAC WITH
~1:80 FALL TO ROAD
- TBC ON SITE

NEW YELLOW HATCHING TO
LOADING AREA

NEW
DROPPED
KERB

A	Minor amendments and notes for tender issue	AW	06/12/24
rev	comments	Initials	date



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web: www.mdg.design

client
Alfred H Knight International Ltd

project
Lab Effluent Project
Kings Business Park, Kings Drive
Prescot. L34 1PJ

content
Proposed Ground Plan
Waste Compound & Store

scale 1:50	sheet A3	date Oct 2024	drawn by AW	checked
project number 308-04	drawing number AL(2)06	rev A		
purpose of Issue				

APPENDIX B: NOTES ON LIMITATIONS

Notes on Limitations For Geoenvironmental and Geotechnical Consultancy Services

General

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The findings and opinions provided in this document are made in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined in this document.

The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date. In particular, seasonal groundwater levels, with the effects of precipitation, may affect the conditions found during the investigation. The report should be read in conjunction with the further Notes on Limitations included in Appendix A.

Where opinions expressed in this report are based on current available guidance and legislation, no liability can be accepted by CC GEOTECHNICAL LTD for the effects of any future changes to such guidelines and legislation. Additional information, improved practices, new guidance, changes in legislation, or amendments to design proposals, may necessitate this report having to be reviewed in whole or in part after that date. Opinions and interpretations are not accredited by UKAS.

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1. the consequences of this document being used for any purpose or project other than for which it was commissioned
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2. the consequences of use of this document by any party with whom an agreement has not been executed.

Phase I Environmental Audits / Desk Studies

The work undertaken to provide the basis of a Phase 1 Desk Study report comprises a study of available documented information from a variety of sources (including the client), together with (where appropriate) a brief walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in a Desk Study report have been dictated by finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in the report, CC GEOTECHNICAL LTD reserves the right to review such information and to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Factual Ground Investigations

The investigation of the site has been carried out in accordance with the scope and specification instructed by the Client. No interpretations of the data generated by the investigation have been provided or implied. The exploratory holes undertaken in this commission, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. Conditions may exist on the site which have not been detected by the works undertaken. Furthermore, the number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered.

Interpretative Phase II Environmental Audits

The investigation of the site has been carried out with the intention of providing sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated to potential human targets, building materials, the environment (including adjacent land), and surface and groundwater.

The amount of exploratory work and chemical testing undertaken may have been restricted by factors including inter alia the Clients budget, the available timescale, access to all parts of the site, the existence of buried services etc., and where this is the case, a more comprehensive investigation may be required if the site is to be redeveloped, since a number of important engineering and environmental issues may need further assessment.

For those reasons, if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

It must be borne in mind, that the exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" or more widespread contamination where concentrations may be significantly higher than those actually encountered. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out within the constraints of Client budget, available timeframe, access to all parts of the site, the existence of buried services and a more comprehensive investigation may be required to provide sufficient information regarding the type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to formulate a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to the site remediation, these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of the site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report. The findings of the investigation are valid for the time of investigation and the passage of time may result in changes to the contamination status of the site, and a reassessment of the site may be required where significant time has elapsed.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal, weather, or other effects.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations and no liability can be accepted for the retrospective effects of any future changes or amendments to these values.

**APPENDIX C: CURRENT CONTAMINATED LAND GUIDANCE / LEGISLATION & RISK ASSESSMENT
METHODOLOGIES**

CURRENT CONTAMINATED LAND LEGISLATION / GUIDANCE & ENVIRONMENTAL RISK ASSESSMENT METHODOLOGY

LEGISLATION OVERVIEW

This report includes hazard identification and risk assessment in line with the risk-based methods referred to in relevant UK legislation and guidance. Government environmental policy is based upon a "suitable for use approach". When considering the current use of land, Part IIA of the Environment Protection Act 1990 (EPA 1990) provides the regulatory regime, which was introduced by Section 57 of the Environment Act 1995, which came into force in England on 1 April 2000. The main objective of introducing the Part IIA regime is to provide an improved system for the identification and remediation of land where contamination is causing unacceptable risks to human health, or the wider environment given the current use and circumstances of the land.

Part IIA provides a statutory definition of contaminated land under Section 78A(2) as:

"any land which appears to the Local Authority in whose area it is situated to be in such a condition, by reason of substances in, on, or under the land, that:

Significant harm is being caused or there is a significant possibility of such harm being caused;
or
Pollution of controlled waters is being, or is likely to be, caused."

Part IIA provides a statutory definition of the pollution of controlled waters under Section 78A(9) as:

"the entry into controlled waters of **any** poisonous, noxious or polluting matter or **any** solid waste matter".

To assist in establishing if there is a "significant possibility of significant harm" there must be a "significant pollutant linkage" for potential harm to exist. That means there must be a source(s) of contamination, sensitive receptors present and a connection or pathway between the two. This combination of source-pathway-receptor is termed a "pollutant linkage or SPR linkage."

Part IIA of The Environmental Protection Act 1990 is supported by a substantial quantity of guidance and other Regulations, especially DEFRA Circular 01/2006 Contaminated Land (this replaces DETR Circular 02/2000). Part IIA defines the duties of Local Authorities in dealing with it. Except for situations of very high pollution risk, Part IIA places contaminated land responsibility on the planning and redevelopment process. In situations where there is very high pollution risk direct action from the Local Authority is usually necessary. Planning Policy Statement 23 (PPS23) provides guidance on the planning process and requires that sites which have been developed shall not be capable of being determined "contaminated land" under Part IIA.

The criteria for assessing levels of pollutants and hence determining whether a site represents a hazard are based on a range of techniques, models, and guidance. Within this context it is relevant to note that Government objectives are:

- (a) to identify and remove unacceptable risks to human health and the environment;
- (b) to seek to bring damaged land back into beneficial use;
- (c) to seek to ensure that the cost burdens faced by individuals, companies and society are proportionate, manageable, and economically sustainable.

These three objectives underlie the "suitable for use" approach to remediation of contaminated land. The "suitable for use" approach focuses on the risks caused by land contamination. The approach recognises that the risks presented by any given level of contamination will vary greatly according to the use of the land and a wide range of other factors, such as the underlying geology of the site. Risks therefore should be assessed on a site-by-site basis.

The "suitable for use" approach then consists of three elements:

- (a) ensuring that land is suitable for its current use - in other words, identifying any land where contamination is causing unacceptable risks to human health and the environment, assessed on the basis of the current use and circumstances of the land, and returning such land to a condition where such risks no longer arise; the contaminated land regime provides the regulatory mechanisms to achieve this;
- (b) ensuring that land is made suitable for any new use, as planning permission is given for that new use - in other words, assessing the potential risks from contamination, on the basis of the proposed future use and circumstances, before official permission is given for the development and, where necessary to avoid unacceptable risks to human health and the environment, remediating the land before the new use commences; this is the role of the town and country planning and building control regimes; and
- (c) limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land for which planning permission is being sought - in other words, recognising that the risks from contaminated land can be satisfactory assessed only in the context of specific uses of the land (whether current or proposed), and that any attempt to guess what might be needed at some time in the future for other uses is likely to result either in premature work (thereby running the risk of distorting social, economic and environmental priorities) or in unnecessary work (thereby wasting resources).

The mere presence of pollutants does not therefore necessarily warrant action, and consideration must be given to the scale of risk involved for the current and proposed end use of the site.

RISK ASSESSMENT METHODOLOGY

Current practice recommends that the determination of potential liabilities that could arise from land contamination be carried out using the process of risk assessment, whereby "risk" is defined as:

- “(a) The probability, or frequency, or occurrence of a defined hazard; and
- (b) The magnitude (including the seriousness) of the consequences.”

The UK’s approach to the assessment of environmental risk is set out in by the Department of the Environment (2000) publication “A Guide to Risk Assessment and Risk Management for Environmental Protection.” This established an iterative, systematic staged process which comprises:

- (a) Hazard identification
- (b) Hazard assessment
- (c) Risk estimation
- (d) Risk evaluation
- (e) Risk Assessment

At each stage during the investigation process the above steps are repeated as more detailed information becomes available for the site.

CLR11- ‘Model Procedures for the Management of Land Contamination’, a document published by the Department for Environment, Food and Rural Affairs (DEFRA) and the Environment Agency (EA) outlines a tiered approach to the assessment of risks posed by contaminated land, as summarised hereunder:

Tier 1: Preliminary Risk Assessment

A Preliminary Risk Assessment is usually undertaken as part of a desk study, outlines potential risks posed by potential contamination to all receptors by defining plausible “pollution linkages” and developing a preliminary conceptual model (PCM). The purpose of this model is to define all possible complete pollution linkages, where the requisite source – pathway – target elements are present, and these elements being defined as:

- a contaminant (source) is a hazardous substance or agent, present at levels that have the potential to cause harm or damage a receptor
- a pathway is the means by or through which a contaminant meets, or otherwise affects, the receptor
- a receptor (target) is an entity (human being, aquatic environment, flora, and fauna etc) that is vulnerable to the adverse effects of the contaminant

This relationship is termed a “pollution linkage”. It should be recognised that for a health or environmental risk to exist, all three elements of the relationship or linkage must be present, i.e.

- if there is no contaminant, or contaminant present at levels below those considered to be harmful or damaging to a receptor, then there can be no adverse effect on a receptor
- if there is no receptor present that can be adversely affected by a contaminant, no harm or damage can arise
- even where both a contaminant and a receptor are present, no harm or damage will occur if there is no pathway by or through which a linkage between the two can be established

The absence of one or more of each component (source, pathway, receptor) would prevent a pollutant linkage being established and there would be no significant environmental risk.

The PCM is subject to continual refinement as additional data becomes available. As part of a Phase I Investigation (Desk Study and site walk over) a PCM is formed. Based on the PCM, potential pollutant linkages can be assessed. If the PCM and hazard assessment indicate that a pollution linkage is not of significance, then no further assessment or action is required due to this linkage. For each significant and possible linkage, a risk assessment is carried out. The linkages which potentially pose significant risks may require a variety of responses ranging from immediate remedial action or risk management or, more commonly, further investigation and risk assessment. This next stage is usually termed a Phase II Main Site Investigation and should provide additional data to allow refinement of the PCM and assess the level of risk from each pollutant linkage. Risk assessment will usually include Tier 2 Generic Quantitative Risk Assessment and / or, if necessary, a Tier 3 Detailed Quantitative Risk Assessment.

Tier 2: Generic Quantitative Risk Assessment (GQRA)

GQRA requires an intrusive investigation to characterise the site assisting in the re-assessment of the source-pathway receptor linkage. The conceptual model should be refined accordingly.

Upon completion of an intrusive investigation, it must be decided whether Generic Assessment Criteria (GAC) are suitable for assessing the risk posed by potential contamination at the site. If GAC are deemed unacceptable for risk assessment purposes or cannot be developed a Tier 3 Detailed Quantitative Risk Assessment (DQRA) is required.

If GQRA reveals that unacceptable risks are not present, then no further action is required. If GQRA identifies a possibility of risk, a decision must be made whether further work is required or necessary for the purposes of risk assessment. If further risk assessment is deemed not suitable not required, an Options Appraisal should be undertaken. If further risk assessment is required, the scope nature of further risk assessment must be decided – it is possible that a Tier 3 DQRA will be undertaken in this scenario.

Tier 3: Detailed Quantitative Risk Assessment (DQRA)

DQRA is used when pollutant linkages require further assessment. DQRA is often undertaken for pollutant linkages where GAC are unavailable or inappropriate for or more conservative than the actual circumstances of the site. Site specific data is used to create Site Specific Assessment Criteria (SSAC) and enable a more accurate assessment of the risks. Further investigation may or may not be required to formulate SSAC depending on the site-specific conditions and information already obtained.

If DQRA reveals that unacceptable risks are not present, then no further action is required. If DQRA identifies a possibility of risk, a decision must be made whether further work is required or necessary for the purposes of risk assessment. If further risk assessment is deemed not suitable not

required, an Options Appraisal should be undertaken. If further risk assessment is required, the scope and nature of further risk assessment must be decided at this point.

NOTE: A Tier 1 Preliminary Risk Assessment is undertaken as part of a Desk Study Report and a Preliminary Conceptual Model is developed for all pollutant linkages. However, the methodologies for assessing the risks to human health, risks to controlled waters and risk posed by ground gas using quantitative techniques vary considerably, therefore GQRA and DQRA for human health, controlled waters and ground gas must be undertaken separately. The risk assessment methodologies where quantitative assessment is used for risks to human health, risks to controlled waters and risks posed by ground gas, if relevant, are described hereunder.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED TO HUMAN HEALTH

Background

In March 2002, the Department for Environment, Food and Rural Affairs (DEFRA) and the EA published the Contaminated Land Exposure Assessment (CLEA) Model and a series of related reports. These were designed to provide a scientifically based framework for the assessment of chronic risks to human health from contaminated land. These reports (CLR7-10) together with associated "SGV" documents have since been withdrawn (August 2008) and the following documents have been published as revised guidance to the CLEA assessment:

Environment Agency : 2008: Updated Technical Background to the CLEA model Science Report SC050021/SR3

Environment Agency : 2008: Human Health Toxicological Assessment of Contaminants in Soil SC050021/SR2

Additional guidance on statistical assessment replacing CLR 7 is provided in:

CL:AIRE :2008 Guidance on Comparing Data with a Critical Concentration

Other guidance/software used in spatial / statistical assessment is provided in:

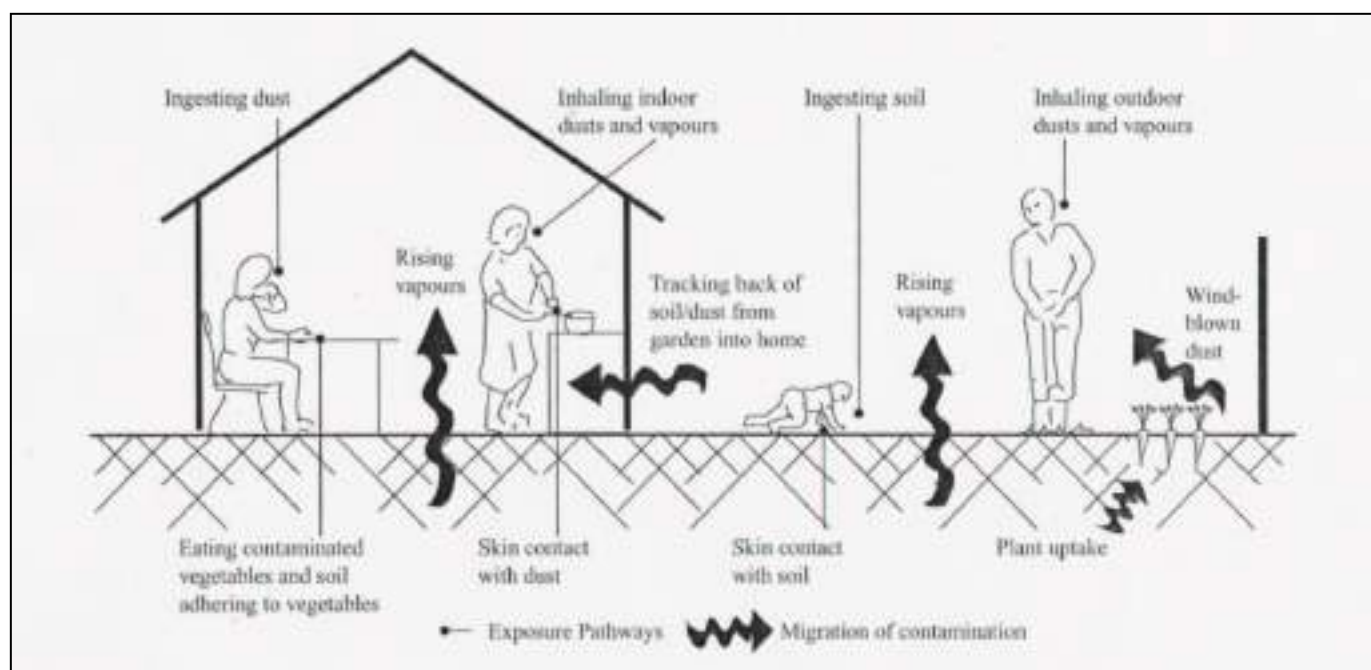
USEPA 2006: Data Quality Assessment: Statistical Methods for Practitioners

Spatial Analysis and Decision Assistance (SADA) – The University of Tennessee

A different approach to the statistical appraisal of data is required depending on whether the assessment of risk is to assess whether land is Contaminated Land in accordance with regulations, or whether the assessment is to determine whether the site is suitable for new development in according with Planning guidance. This is discussed further in CL:AIRE :2008 "Guidance on Comparing Data with a Critical Concentration".

A program for the derivation of GAC's based on the above guidance is provided by the Environment Agency and is entitled "CLEA Software Version 1.04".

The CLEA model has been developed to calculate an estimated tolerable daily soil intake (TDSI) for site users given a set 'default' exposure pathway. Ten human exposure pathways are covered in the CLEA model as presented below:



Ingestion

ingestion of outdoor soil

ingestion of indoor dust

ingestion of home grown produce

ingestion of soil attached to home grown produce

Dermal Contact

dermal contact with outdoor soil
dermal contact with indoor dust

Inhalation

inhalation of outdoor dust
inhalation of indoor dust
inhalation of outdoor soil vapour
inhalation of indoor soil vapour

It should be noted that there is other potential exposure pathways on some sites not included in the CLEA model e.g., certain organic compounds can pass through plastic water pipes into drinking water supply.

Where contaminated water is present at a depth less than 2.00mbgl and there is a potential risk of inhalation of vapours (only when volatile compounds are present) the risk from inhalation of vapours from soil water will be assessed using a UK compliant version of BP Risc v4.02.

The presence and/or significance of each of the above exposure pathways are dependent on the type of land use being considered and the nature of the contaminant under scrutiny. Accordingly, the CLEA model considers for principal 'default' land use types and makes a series of 'default' assumptions about human exposure frequency, duration and critical human target groups for each land use considered:

residential
allotments
commercial / industrial land use

The above land use categories defined in the CLEA are detailed below:

Residential: This generic scenario assumes a typical residential property consisting of a two-storey house built on a ground-bearing slab with a private garden consisting of lawn, flowerbeds, and a small fruit and vegetable patch. The occupants are assumed to be parents with young children, who make regular use of the garden area.

Allotments: This generic scenario assumes a plot of open space (about 250 m²), commonly made available by the local authority to tenants to grow fruit and vegetables for their own consumption. There are usually several plots to a site and the overall site area may cover more than a hectare. The tenants are assumed to be parents or grandparents and that young children make occasional accompanied visits to the plot.

Commercial/Industrial: There are many kinds of workplace and work-related activities. This generic scenario assumes a typical commercial or light industrial property consisting of a three-storey building at which employees spend most time indoors and are involved in office based or relatively light physical work.

Human Health Risk Assessment Methodology

Assessment of risk for the protection of human health is undertaken using the methodology as outlined previously, and summarised hereunder:

Tier 1 Preliminary Risk Assessment
Tier 2 Generic Quantitative Risk Assessment
Tier 3 Detailed Quantitative Risk Assessment

The Tier 1 Preliminary Risk Assessment is undertaken as part of the desk study report and includes the development of a Preliminary Conceptual Model. Tier 2 and Tier 3 Quantitative Risk Assessments are undertaken to develop and refine the Preliminary Conceptual Model aiding a more detailed assessment of the risk posed by contaminants revealed by site investigation and soil / soil water chemical analyses.

The methods used by CC GEOTECHNICAL LTD to derive assessment criteria, to statistically analyse chemical data and to compare chemical data to the derived assessment criteria are discussed hereunder.

Derivation of Generic Assessment Criteria (GAC) and Site-Specific Assessment Criteria (SSAC)

GAC's are derived based on the proposed land use and the associated applicable exposure pathways. It should be noted that there are difficulties in establishing soil concentrations of contaminants beyond which risks from exposure to these contaminants would be 'unacceptable' and the GAC value does not necessarily equate to the level for "significant possibility of significant harm" as defined in Part IIA of The Environmental Protection Act (1990) to determine whether land is "contaminated." This ultimately requires detailed 'toxicological' information of the health effects of individual contaminants and a scientific judgement on what constitutes an 'unacceptable' risk. The primary purpose of the CLEA derived GAC's are as 'minimal risk thresholds' for the assessment of human health risks in relation to land use.

Minimal risk thresholds calculated using generic input parameters for each of the above land uses are termed Generic Assessment Criteria (GAC) and are used for Generic Quantitative Risk Assessment (GQRA). However, further assessment may be required taking into consideration site specific factors such as the way the land is used, the soil type, the building characteristics, and the exact nature of the receptor, to determine whether there is a significant possibility of risk to human health to site users. Such an assessment is known as a Detailed Quantitative Risk Assessment (DQRA) and the resultant threshold concentrations are known as Site Specific Assessment Criteria (SSAC). Such assessments should be conducted with the agreement of the local authority (or the Environment Agency) since it is the authority that determines whether land is Contaminated Land or whether Planning Permission for a new development may be granted.

For the purposes of this report, assessment criteria have been derived in accordance with current guidance based on the conceptual model for the proposed land use using the CLEA v1.04 software. These criteria are not intended to indicate whether the site may be contaminated land, nor do they replace any published soil guideline values. However, the values are intended to provide guidance for the local authority on whether the site may be considered uncontaminated. If, based on the site's proposed future use, the site would be considered by the local authority to be uncontaminated and therefore, on the basis of soil concentrations, fit for purpose, then no further risk assessment based on soil concentrations and the risk to human health would be necessary. However, should these criteria be exceeded, or the conceptual site model vary from the model used in the risk assessment to derive these values then the risk assessment should be updated accordingly.

For contaminants routinely analysed where inhalation is a significant pathway (naphthalene, phenanthrene, Aromatic EC5-EC7, Aromatic EC7-EC8, Aromatic EC8-EC10, Aromatic EC10-EC12, Aromatic EC12-EC16, Aliphatic EC5-EC6, Aliphatic EC8-EC10, Aliphatic EC10-EC12, Aliphatic EC12-EC16), plots of the GAC as a function of Soil Organic Matter (SOM) are used to determine if they pose a potential risk to human health, which are presented hereunder. Where there is an exceedance further assessment may be undertaken.

Statistical Assessment of Soil Contamination Data & Comparison of Contamination Data to Threshold Values

In any site investigation only a small fraction of the soil on the site is analysed. Therefore, the mean derived from the contamination data for a contaminant may not be the same as the true mean for the contaminant distribution on the site. To improve the reliability of any assessment a statistical analysis is undertaken in line with the CL:AIRE document "Guidance on Comparing Soil Contamination Data with a Critical Concentration".

Statistical assessment of soil data is undertaken using programs based on the guidance in the CL:AIRE document or the USEPA software ProUCL v4.0.

Where the number of results in a dataset is less than four, a statistical assessment is not undertaken, and the assessment is performed by comparison of the maximum value(s) with a Health Criteria Value (HCV), such as Generic Assessment Criteria value(s).

For the Planning situation, the regulator needs to check whether the concentration of contaminants is low compared to the HCV. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is lower than the HCV.

For the Part IIA scenario the regulator needs to determine whether the concentration of contaminants is greater than the HCV. This decision is based on whether there is at least a 95% confidence level that the true mean of the dataset is higher than the HCV. However, the regulator may proceed with determination if there is just a 51% probability, "on the balance of probabilities".

The Outlier Test used in the statistical assessment may not be able identify separate populations if numerous populations are present. To ensure that this is not the case a spatial assessment of the data will be undertaken using SADA.

If the screening levels are exceeded, then more sophisticated quantitative risk assessment or remedial action may be undertaken. The benefits of undertaking a quantitative risk assessment must be weighed against the likelihood that it will bring about cost savings in the proposed remediation.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED TO CONTROLLED WATER

Definition of Controlled Waters

The term 'controlled waters' is defined in Section 104 of the Water Resources Act 1991 as:

"Territorial Waters...which extend seawards for three miles..., coastal waters..., inland freshwaters, waters in any relevant lake or pond or of so much of any relevant river or watercourse as is above the freshwater limit, and ground waters, that is to say, any waters contained in underground strata."

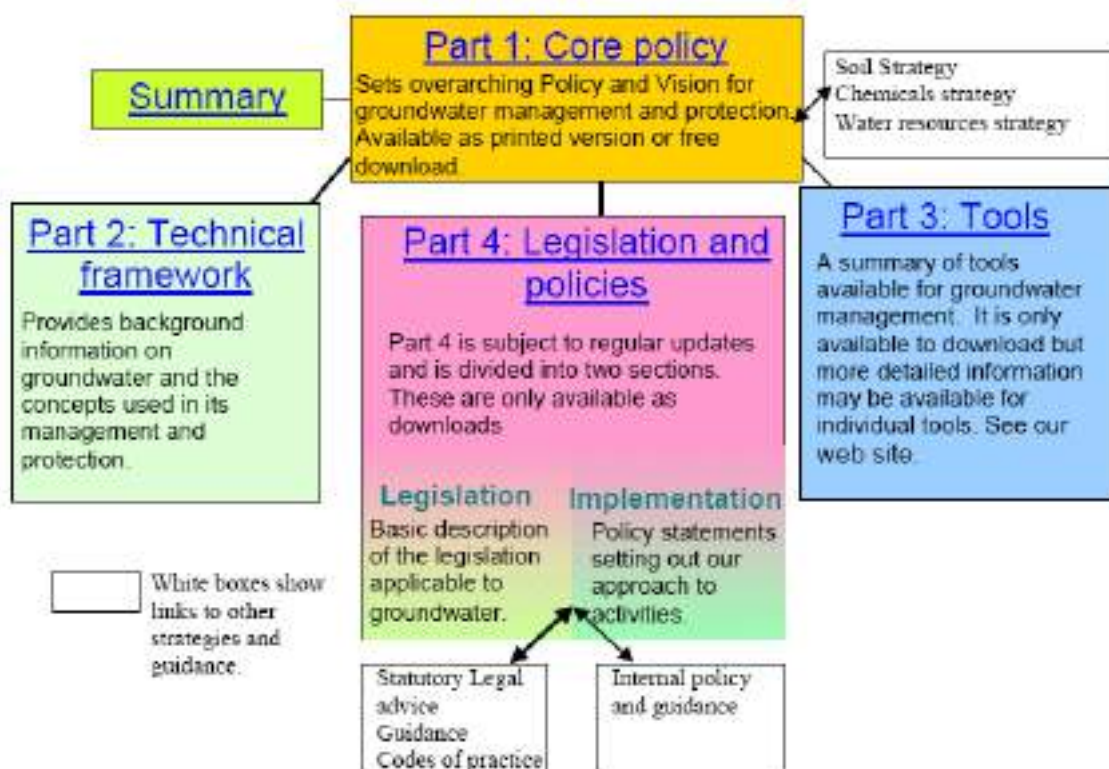
Note that the definition of groundwater under the Water Resources Act 1991 includes all water within underground strata (including soil / pore water in the unsaturated zone). The definition of groundwater under the Groundwater Directive however is limited to water in the saturated zone. For the purposes of Part IIA of the Environmental Protection Act 1990, the Environment Agency recommends that the groundwater within the saturated zone only is considered as the receptor (rather than soil / pore water).

Environment Agency Guidance

Legislation and guidance surrounding the protection of controlled waters in the UK is abundant and can be complex. The Environment Agency's overall position on groundwater is "To protect and manage groundwater resources for present and future generation in ways that are appropriate for the risks that we identify" (Groundwater Protection : Policy and Practice GP3, 2006). In brief, the core objectives of the existing legislation serve to enforce this position.

In 1992, the National Rivers Authority published their Policy and Practice for the Protection of Groundwater (PPPG), this document was influential as it provided a focus for key developments such as Source Protection Zones (SPZs) and Groundwater Vulnerability Maps. The Policy was then revised in 1998, since which there have been substantial changes in legislation, driven by Europe. Key European Directives relating to groundwater include the Groundwater Directive (80/68/EEC) and the Water Framework Directive (2000/60/EC). Aspects of these directives are controlled by primary UK legislation such as the Water Resources Act 1991. Further to legislative changes, gaps identified in the 1998 PPPG required addressing. These changes are reflected in the forthcoming Environment Agency Policy document entitled Groundwater Protection : Policy and Practice (GP3), a draft version of which was available for public consultation (Parts 1 to 3) ending July 2006 with Part 4 issued in March 2008. Part 4 includes a section on key groundwater legislation and the Environment Agency's interpretation of it.

The following gives a breakdown of the structure of the document (taken from the Environment Agency GP3 draft consultation document, 2006)



Controlled Water Risk Assessment Methodology

The risk posed to controlled water is assessed by CC GEOTECHNICAL in accordance with current guidance as outlined hereunder.

In order for a developer of a potentially contaminated site to fulfil their obligations under the legislation, a site assessment would be required to be undertaken in order to identify any potential risks to controlled waters and to derive suitable clean-up criteria if necessary to ensure the protection of controlled waters. The general approach for Groundwater Protection is detailed further in Part 3 of GP3.

When assessing groundwater impact the Environment Agency advocate the application of their framework methodology "Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination" Environment Agency (2006). The methodology has four levels of assessment as described below:

Level 1 considers whether contaminant concentrations in "pore water" in contaminated soil are enough to impact on the receptor, ignoring dilution, dispersion, and attenuation along the pathway. The "pore water" concentration is determined from:

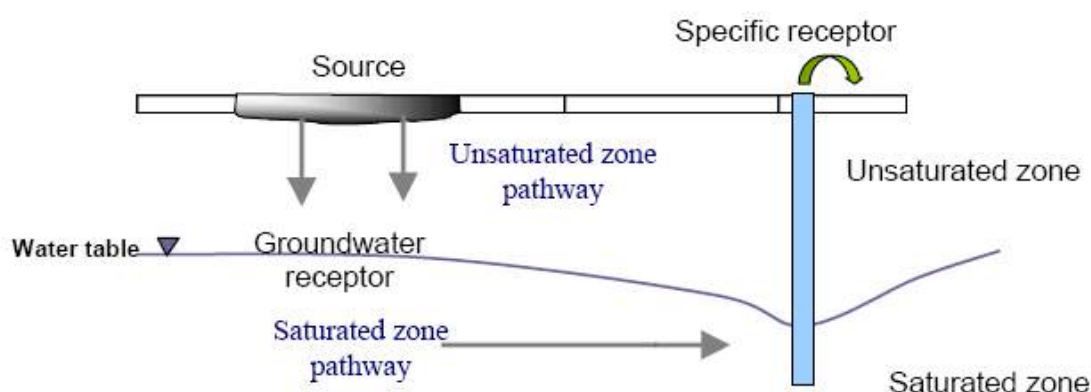
- measured "pore water" concentrations or perched water quality
- ii) soil leaching tests
- iii) theoretical calculations based on soil/water partitioning equations

Level 2 considers dilution by the receiving groundwater or surface water body and whether this is enough to reduce contaminant concentrations to acceptable levels. The remedial target is defined as the target concentration multiplied by a dilution factor (DF).

Levels 3 and 4 consider whether natural attenuation (including dispersion, retardation, and degradation) of the contaminant as it moves through the unsaturated and saturated zones to the receptor are enough to reduce contaminant concentrations to acceptable levels. The remedial target is defined as target concentration multiplied by a dilution factor (DF) and attenuation factor (AF). In Level 3 simple analytical models are used to calculate the significance of attenuation. The Environment Agency has released a "Remedial targets worksheet v3.1" to carry out basic calculations using a conservative approach up to Level 3 using basic principles assuming a simple migration of contaminants from the source zone into the aquifer receptor. Level 4 assessment uses more sophisticated numerical models and allows for the introduction of additional geological horizons and is used mainly to determine whether soil contaminants will reach their target within a specified timeframe. Use of such software should only be used once agreement has been obtained from the Environment Agency.

Three main stages apply to any risk assessment of controlled waters, these are:

1. Risk Screening (Tier 1 Preliminary Risk Assessment): The understanding of the Conceptual Site Model (CSM) is the key to assessing any site. Using a robust CSM, potential pathways or receptors may be screened out from any further assessment at an early stage. For example, if the pathway through the unsaturated zone is blocked by the presence of a significant thickness of low permeability clay. A greater understanding of the CSM is achieved with each tier of risk assessment. An example of a basic CSM is given below (taken from the Environment Agency GP3 draft consultation document, 2006):



2. Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Level 1): When undertaking the Generic Hydrogeological Risk Assessment (EA Remedial Targets Methodology Tier 1), comparison of chemical analytical results is made with screening criteria. Published values of screening criteria with which chemical test results can be compared are published in the following guidance:

Water Supply (Water Quality) Regulations 2000

The Private Water Supplies Regulations 1991

Environmental Quality Standards for surface waters based on The EC Dangerous Substances Directive (76/464/EEC and Daughter Directives)

The Surface Waters (Abstraction for Drinking Water Classification) Regulations 1996

World Health Organisation Drinking Water Standards 2004

Should the Level 1 assessment indicate threshold levels to be exceeded, then there are three alternative ways in which to proceed:

To devise suitable remedial solutions

To carry out more investigation, sampling, and analysis

To conduct a site specific Detailed Quantitative Risk Assessment (DQRA) to determine if the materials are suitable for their proposed use, or devise site specific clean-up level

3. Detailed Quantitative Risk Assessment (EA Remedial Targets Methodology Levels 2 to 4): The decision to carry out a DQRA will be dependant on the extent and implications of the initial qualitative and generic assessment. The scope of any such assessment will be accurately defined by the outcomes of the previous levels of assessment. The conceptual model will be sufficiently refined by this stage that only certain contaminants of concern, certain pathways and certain receptors will require further assessment, the remainder having been screened out.

Additional site-specific data is normally required for this stage of assessment, as explained above, more processes that are capable of affecting contaminant concentrations are considered (such as dilution and attenuation).

Remediation criteria, if derived, will therefore be specific to each site and will be based on a detailed assessment of the potential impact at the identified receptor or compliance point. A greater level of confidence can be placed on the predicted impact on the compliance point following a DQRA.

BACKGROUND INFORMATION, CURRENT GUIDANCE AND RISK ASSESSMENT METHODOLOGY FOR RISKS POSED BY GROUND GAS

Origin of Ground and Landfill Gases

When carrying out a ground gas risk assessment, the origin or source of the gases is important as potential risks will vary depending on the source. This Appendix relates to the risk of the two main ground gases of concern; methane and carbon dioxide and does not apply to other ground gases (e.g., radon or vapours from hydrocarbon spills). Methane and carbon dioxide are major constituents of landfill gas but can also occur from a variety of anthropogenic and natural sources, as summarised in Table 5 below:

Gas	Source	Comments
Landfill Gas	Anaerobic decomposition of degradable waste within landfill sites. Typically, 60% methane and 40% carbon dioxide during methanogenic phase.	Composition varies over time, particularly in early stages. Contains a range of minor constituents (particularly carbon monoxide and hydrogen sulphide).
Landfill Associated Gases	- Anaerobic degradation of leachate external to the site; - Degassing of dissolved gases in groundwater; - Evolution of gases following interaction between leachate and groundwater	Can result in secondary (external) production of methane or carbon dioxide.
Made Ground	Anaerobic degradation of organic components	Very variable depending on source
Sewer Gas, Cess Pits	Anaerobic degradation of organic components of sewage producing methane and carbon dioxide.	Often characterised by hydrogen sulphide odour.
Mains Gas	Leakage from underground pipework or storage tanks. Mainly methane but often contains higher alkanes.	An odourise is added to permit detection of leaks. Typically, 90% CH ₄ , but 1 to 27% C ₂ -C ₄ alkanes, May

Gas	Source	Comments
		also contain other trace gases e.g., CO, helium, and CO ₂ (from degradation of CH ₄ in the ground).
Other Anthropogenic Sources	- Degradation of leaked or spilled hydrocarbons or other industrial chemicals; - Anaerobic degradation of organic contaminants in groundwaters (e.g., silage liquor); - Reactions between monitoring well construction components and environment; - Burial grounds/cemeteries.	Hydrocarbon spillages often have an 'oily' odour. Fuel spillages common – Petrol or Diesel and can contain a wide range of VOC's. Can degrade to produce methane / carbon dioxide.
Alluvium / Marsh / Peat Gas	Anaerobic microbial degradation of organic material (usually waterlogged vegetation / peat). Often associated with the presence of alluvial deposits or dredging's.	
Geogenic Gas	Natural seepages of carbon dioxide and hydrocarbon gases derived from geologic sources such as coal seams and deep oil / gas source formations. Can be present in solution in groundwaters.	Methane most common but can contain carbon dioxide and higher alkanes.
Mine Gases	Various types. Most common is "fire damp" with high methane, produced by the desorption of gas trapped in coal. "Black damp" (Scythe gas) with high carbon dioxide and denser than air. "White damp" is high in carbon monoxide.	Methane most common. Can contain higher alkanes, carbon dioxide and carbon monoxide. Often low in oxygen.
Natural Shallow Ground Gas	Various types - high carbon dioxide formed by subsurface aerobic activity leading to depleted oxygen and elevated carbon dioxide; - chemical degradation of rocks (e.g., carbonates) producing carbon dioxide; - carbon dioxide production in root zone of soils by plants.	Gases can be emitted from ground under falling barometric pressure conditions.

Table 5. Potential Sources of Ground Gases

This Appendix does not provide guidance for the assessment of risk when other gases are present due to 'Other Sources' from the above table (particularly organic compounds such as BTEX and VOC's or for the risk from radon or hydrogen sulphide).

To determine the origin of the gas a range of factors must be considered together, including;

1. Proximity of likely sources
2. Ground conditions (geology, hydrogeology, anthropogenic pathways etc)
3. Properties of gases present including:
 - Chemical composition
 - Physical properties
 - Ratios of components e.g., methane : carbon dioxide
4. Timeframe of activities such as infilling periods, capping works, installation of gas control systems etc

Identification of the originating source may be problematic given that there may be more than one source present and trace gas analysis may be required. Identification of the sources of the gases encountered during monitoring is usually carried out through a process of eliminating the most unlikely potential sources (given the site setting) and selecting those which are most likely.

Hazards Associated with Presence of Methane

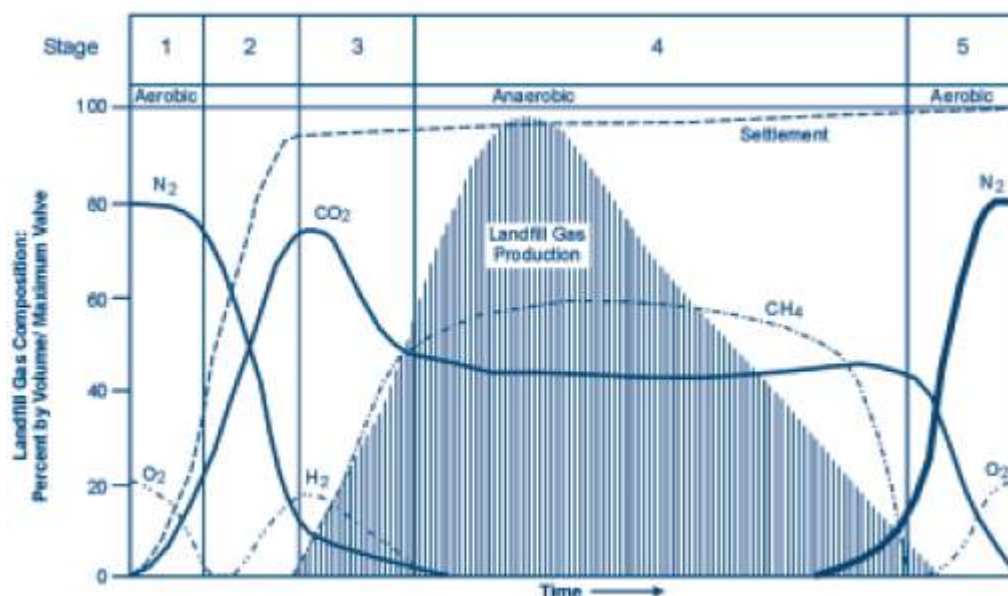
Methane gas is combustible and potentially explosive. When the concentration of methane in air is between the limits of 5.0%v/v and 15.0%v/v an explosive mixture is formed. The Lower Explosive Limit (LEL) of methane is 5.0%v/v, which is equivalent to 100% LEL. The 15.0%v/v limit is known as the Upper Explosive Limit (UEL), but concentrations above this level cannot be assumed to represent safe concentrations. Further, the LEL and UEL will vary (up and down) depending upon the proportion of other gases (including oxygen). However, the fact that methane is a colourless, odourless gas means that there is no simple indicator of the presence of the gas until such a time as explosive limits are reached, and an incident occurs. Methane is lighter than air and has a low toxicity. However, at high concentrations it can result in asphyxiation due to oxygen displacement.

Hazards Associated with Presence of Carbon Dioxide

Carbon dioxide is a colourless, odourless gas, which, although non-flammable, is both toxic and an asphyxiant. As carbon dioxide is denser than air, it will collect in low points and depressions. The UK Health & Safety Executive (HSE) has published information relating to concentrations of carbon dioxide that humans may be exposed to, which uses concentrations contained in the Control of Substances Hazardous to Health Regulations 2002 (as amended). These are the Long-Term Occupational Exposure Limit (LTOEL, 8-hour period) and the Short-Term Occupational Exposure Limit (STOEL, 15-minute period), which are 0.5% and 1.5% carbon dioxide, respectively.

Parameters Influencing the Rate of Ground Gas Production

The figure below is taken from EA guidance document LFTGN 03 illustrates typical ground gas generation curves from biodegradable materials:



The production of methane and carbon dioxide at a landfill site may be expected to be considerable and ongoing. Concentrations of methane will eventually decrease, followed by concentrations of carbon dioxide, but the duration and rate of gas production can vary markedly between sites. Five distinct phases of gas production occur during the process which are, in order of event as marked above, as follows:

1. An aerobic phase involving oxygen depletion and temperature increase through aerobic respiration;
2. The establishment of anaerobic conditions and the evolution of carbon dioxide and hydrogen through acidogenic activity;
3. Commencement of methanogenic activity; the establishment of populations of methanogenic bacteria;
4. A phase of stable methanogenic activity, which may go on for many tens of years;
5. A phase of decreasing methanogenic activity, representing depletion of the organic material and a return to aerobic conditions.

The time scale for the return to the normal ground gas concentrations will be highly variable, depending upon the types and quantities of materials present. In addition, the optimum parameters influencing the rate of decomposition and ground gas production within the ground at a site are as follows:

High water content with adequate rainfall and water infiltration to provide moisture content between approximately 20 to 26%;
Conditions that either are or are very close to anaerobic;
High proportion of biodegradable materials;
A pH between 6.5 and 8.5, ideally verging slightly on the acidic between pH 6 to 7;
Temperature between 25°C and 55°C;
The ratio of the biochemical and chemical oxygen demands (BOD:COD);
High permeability;
Small particle size, as finer subsurface materials possess a greater surface area to provide a growing 'face' for the micro-organisms, but high fines levels reduce permeability and reduces decomposition rate.

For this reason, it is vital that sources of methane and carbon dioxide are identified prior to the commencement of any work on a construction site, and that the ground gas regime is characterised at the worst temporal conditions a site may experience. From this, a risk assessment is carried out to identify the risk at the site from ground gases so that suitable protection measures can be designed and incorporated into a development to prevent a dangerous build-up of gas occurring.

Factors Influencing the Migration and Behaviour of Ground Gases

There are many factors that influence the migration of ground gases which can affect the risk from a gassing source:

driving force – pressure differential along a pathway, diffusion and dissolved in solution;
meteorological conditions – short term and seasonal conditions including atmospheric pressure changes (e.g., rapidly falling pressure causes gas to expand increasing emission rates), rainfall, frozen ground and thawing, temperature;
geological and groundwater conditions – these can have the over riding influence on the direction/pathways and quantity of migrating gas;
anthropogenic influences – man-made pathways include mine shafts, service runs/drains, foundation piles, underground voids/pits/basements, foundation/building design/construction

Current Guidance

Previous versions of Building Regulations Approved Document C provided statutory guidance stating that consideration should be given to appropriate action and / or specific solutions in situations where methane concentration exceeded 1%v/v or carbon dioxide concentrations exceeded 5%v/v. The latest Building Regulations Approved Document C (DoE 2004) no longer endorses this approach and recommends the use of a risk-based approach to interpreting a gas monitoring survey. This is in line with current EA guidance for landfill gas (LFTGN 03, 2004) which recommends the use of a structured risk-based approach like that outlined in CLR 11. On this basis, recent guidance has been produced in 2006 and 2007 with the aim of providing up to date advice in relation to residential and commercial development. The guidance does not address issues associated with gas derived from landfills, for this refer to "Guidance on the Management of Landfill Gas" (Environment Agency 2004) for an overview.

Recent guidance relevant to gas assessments for residential and commercial development includes;

Wilson et al. (CIRIA C665, December 2007) "Assessing Risks Posed by Hazardous Ground Gases for Buildings."

This document provides up to date advice on all aspects of ground gas risk assessment such as investigation, monitoring programmes, data collection and interpretation. The guidance presents separate methodologies for the characterisation of:

All development types except low rise housing with gardens (Situation A)

Low rise housing with gardens (Situation B)

Boyle and Witherington (NHBC / RSK Group, Report 10627-R01(04) January 2007) "Guidance on the Evaluation of Development Proposals on Sites where Methane and Carbon Dioxide are Present."

This document presents the "Traffic Lights System" detailed below and is relevant only for low rise properties (e.g., bungalows and town houses) that have a ventilated sub-floor void (i.e., Situation B as described in CIRIA C665).

British Standard (BS 8485, December 2007) "Code of Practice for the Characterization and Remediation from Ground Gas in Affected Developments"

This document provides an overview of gas characterisation and assessment. The Standard is intended to be used by designers of gas protection measures and regulators involved in the assessment of design solutions.

Further guidance, Wilson, and Card (CIEH) "Ground Gas Handbook for Designers and Regulators" providing practical guidance on ground gas assessments and the design and evaluation of protection measures, is expected to be published in March 2009.

Each of these documents continues to highlight the importance of, and give further guidance towards, carrying out a tiered risk-based decision-making process in accord with government policy on dealing with contamination from historic or natural sources and highlight the importance of the Conceptual Model in site characterisation.

Ground Gas Risk Assessment Methodology

Assessment of risk posed by ground gas is undertaken using the methodology as outlined previously, and summarised hereunder:

Tier 1 Preliminary Risk Assessment

Tier 2 Generic Quantitative Risk Assessment

Tier 3 Detailed Quantitative Risk Assessment

The methodology used in each of the above assessments with concern to ground gas is discussed hereunder.

Tier 1 Preliminary Risk Assessment

All potential sources of methane and carbon dioxide are identified in the Preliminary Conceptual Model and the generation potential determined. The background information discussed earlier is referred to in order to determine the potential for a source to generate ground gas.

CIRIA C665 provides idealised monitoring frequency / period dependant upon generation potential of gas source and sensitivity of the proposed land use as below:

Idealised Frequency and Period of Monitoring (after Table 5.5a and 5.5b, CIRIA C665)

		Generation Potential of Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4/1	6/2	6/3	12/6	12/12
	Moderate (Flats)	6/2	6/3	9/6	12/12	24/24
	High (Residential with Gardens)	6/3	9/6	12/6	24/12	24/24

Notes

1. First number is the number of readings and the second is the minimum period in months (e.g., 6/2 – six sets of readings over two months).
2. At least two sets of readings must be at low (preferably under 1,000 mb) and falling pressure.

The monitoring programme is decided using the above table prior to the intrusive site investigation. However, if the intrusive investigation reveals that the potential source is better or worse than anticipated the monitoring programme should be modified accordingly. For example, if the made ground contains no evidence of organic material and comprises entirely granular brick fill, the potential for that made ground to generate ground gas is reduced considerably.

Tier 2 Generic Quantitative Risk Assessment

Generic Quantitative Risk Assessment is undertaken upon completion of the required gas monitoring period.

All three current guidance documents propose that both ground gas concentrations and flow rates are used to calculate the limiting gas well gas volume flow rates for methane and carbon dioxide, based on the ground gas conditions monitored for during the worse-case temporal conditions. This limiting gas well volume flow rate is termed the Gas Screening Value (GSV, note that this was termed borehole gas volume flow), and is calculated as follows:

$$GSV (l/hr) = [\text{gas well gas concentration } (\%v/v)] \times [\text{gas well flow rate } (l/hr)]$$

GSV's are compared to typical max concentrations and limiting gas screening values derived for either Situation A - All development except low rise housing with gardens, or Situation B low rise housing with gardens (NHBC Traffic Light System). Table 8.5 from CIRIA C665 is used for comparison of gas screening values for "Situation A Developments" and is presented hereunder:

Characteristic Situation (CIRIA R149)	Comparable Partners in Technology gas Regime (see Box 8.2)	Risk Classification	Gas Screening Value (CH ₄ or CO ₂) (l/hr) ¹	Additional Factors	Typical Source of Generation
1	A	Very low risk	<0.07	Typically, methane $\leq$ 1% and/or carbon dioxide $\leq$ 5%. Otherwise consider increase to Situation 2	Natural soils with low organic content "Typical" made ground
2	B	Low risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to characteristic Situation 3	Natural soil, high peat/organic content. "Typical" made ground
3	C	Moderate risk	<3.5		Old landfill, inert waste, mineworking flooded
4	D	Moderate to high risk	<15	Quantitative risk assessment required to evaluate scope of protective measures.	Mineworking susceptible to flooding, completed landfill (WMP 26B criteria)
5	E	High risk	<70		Mineworking unflooded inactive with shallow workings near surface
6	F	Very high risk	>70		Recent landfill site

Table 8.5 from CIRIA C665 Modified Wilson and Card Classification

Table 8.7 is used for comparison of gas screening values for "Situation B Developments" and is presented hereunder:

Traffic Light	Methane ¹		Carbon Dioxide ²	
	Typical max concentration ³ (% by volume)	Gas screening value ^{2,4} (litres/hour)	Typical concentration ³ (% max by volume)	Gas screening value ^{2,4} (litres/hour)
Green				
Amber 1	1	0.13	5	0.78
Amber 2	5	0.63	10	1.60
Red	20	1.60	30	3.10

Notes:

- The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst-case temporal conditions that the site may be expected to encounter will be the decoder as to what Traffic Light is allocated;
- Borehole Gas Volume Flow Rate, in litres per hour as defined in Wilson and Card (1999), is the borehole flow rate multiplied by the concentration in the air stream of the gas being considered;
- The Typical Maximum Concentration can be exceeded in certain circumstances should the Conceptual Site Model indicate it is safe to do so;
- The Gas Screening Value thresholds should not generally be exceeded without the completion of a detailed ground gas risk assessment considering site-specific conditions.

Table 8.7 from CIRIA C665 - NHBC Traffic light system for 150 mm void

Dependant on the outcome of the assessment of risk posed by ground gas it is determined whether gas protection measures are required for the proposed development, and or whether a detailed quantitative risk assessment is required for the site.

Selection & Design of Protective Measures

Table 8.6 and Box 8.4 of CIRIA C665 contain information on the detailed design of protection measures and were initially intended for the purposes of determining then level of protection measures a development requires. These tables and related text include some useful information on the design of gas protection measures, however BS8485:2007, which supersedes the guidance included within CIRIA C665, is used for selection of gas protection measures.

BS8485: 2007 uses a scoring system dependant on the Characteristic Situation / NHBC Traffic Light and proposed end use of the site. The scoring system is summarised in BS8485:2007 Table 2 as presented hereunder:

Characteristic gas	NHBC traffic	Required gas protection
--------------------	--------------	-------------------------

situation, CS	light	Non-managed property e.g., private housing	Public building (a)	Commercial buildings	Industrial buildings (b)
1	Green	0	0	0	0
2	Amber 1	3	3	2	1 (c)
3	Amber 2	4	3	2	2
4	Red	6 (d)	5(d)	4	3
5			6(e)	5	4
6				7	6

NOTE Traffic light indications are taken from NHBC Report no.:10627-RO1 (04) and are mainly applicable to low-rise residential housing¹. These are for comparative purposes but the boundaries between the traffic light indications and CS values do not coincide.

a) Public buildings include, for example, managed apartments, schools, and hospitals.

b) Industrial buildings are generally open and well ventilated. However, areas such as office pods might require a separate assessment and may be classified as commercial buildings and require a different scope of gas protection to the main building.

c) Maximum methane concentration 20% otherwise consider and increase to CS3.

d) Residential building on higher traffic light/CS sites is not recommended unless the type of construction or site circumstances allow additional levels of protection to be incorporated, e.g., high-performance ventilation or pathway intervention measures, and an associated sustainable system of management of maintenance of the gas control system, e.g., in institutional and/or fully serviced contractual situations.

e) Consideration of issues such as ease of evacuation and how false alarms will be handled are needed when completing the design specification of any gas protection scheme

¹ The NHBC guidance and CIRIA C665 guidance refers to low rise housing (which is up to three storeys without lifts) that is constructed with a 150mm ventilated sub-floor void.

BS8485:2007 Table 2 Required gas protection by characteristic gas situation and type of building

Once a score is assigned, a combination of protection systems / elements is chosen from BS8485:2007 Table 3 shown below:

PROTECTION ELEMENT/SYSTEM		SCORE	COMMENTS
a) Venting/dilution (See Annex A BS8485)			
Passive sub floor ventilation (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)A Subfloor ventilation with active abstraction/pressurization (venting layer can be a clear void or formed using gravel, geocomposites, polystyrene void formers, etc.)A Ventilated car park (basement or undercroft)	Very good performance	2.5	Ventilation performance in accordance with Annex A (BS8485)
	Good performance	1	If passive ventilation is poor this is generally unacceptable, and some form of active system will be required.
		2.5	There must be robust management systems in place to ensure the continued maintenance of any ventilation system. Active ventilation can always be designed to meet good performance.
		4	Mechanically assisted systems come in two forms: extraction and positive pressurization.
b) Barriers			
Floor slabs Block and beam floor slab Reinforced concrete ground bearing slab Reinforced concrete ground bearing foundation raft with limited-service penetrations that are cast into slab Reinforced concrete cast in situ suspended floor slab with minimal service penetrations and water bars around all slab penetrations and at joints Fully tanked basement		0 0.5 1.5 1.5 2	It is good practice to install ventilation in all foundation systems to effect pressure relief as a minimum. Breaches in floor slabs such as joints must be effectively sealed against gas ingress in order to maintain these performances.
c) Membranes			
Taped and sealed membrane to reasonable levels of workmanship/in line with current good practice with validation B,C	0.5	The performance of membranes is heavily dependent on the quality of design of the installation, resistance to damage after installation, and the integrity of joints.	
Proprietary gas resistant membrane to reasonable levels of workmanship /in line with good practice under independent inspection (CQA)B,C	1		
Proprietary gas resistant membrane installed to reasonable levels of workmanship/in line with current good practice under CQA with integrity testing and independent validation	2		
d) Monitoring and detection (not applicable to non-managed property, or in isolation)			
Intermittent monitoring using handheld equipment		0.5	Where fitted, permanent monitoring systems ought to be installed in the underfloor venting/dilution system in the first instance but can also be provided within the occupied space as a fail safe.
Permanent monitoring and alarm system A	Installed in the underfloor venting/dilution system	2	
	Installed in the building	1	
e) Pathway Intervention			
Pathway intervention		-	This can consist of site protection measures for off-site or on-site sources (see Annex A, BS8485)
NOTE In practice the choice of materials might well rely on factors such as construction method and the risk of damage after installation. It is important to ensure that the chosen combination gives an appropriate level of protection			
It is possible to test ventilation systems by installing monitoring probes for post installation validation.			
If a 1 200g DPM material is to function as a gas barrier it should be installed according to BRE 212 /BRE 414 being taped and sealed to all penetrations			

Polymeric Materials > 1200 g (proportional to thickness) but their physical properties mean that they are more robust and resistant to damage.

BS8485:2007 Table 3 Solution Scores

Where the gas situation is 4 or more (and for NHBC Red situations) the site requires a comprehensive risk assessment to confirm the scope of protection measures. These are higher risk sites and reliance on Table 2 and 3 alone is not enough.

For a site which is impacted by migratory gases from an off-site source, the development may be protected by imposing pathway intervention methods, which if successfully validated, could also remove the need for further analysis. It is essential that the gas regime in these circumstances has been fully characterised and that the only source impacting the site is located off site and that the pathway is clearly defined, and its interception equally proven before construction commences. Pathway intervention methods may include vertical membrane installations, venting trenches, rows of stone columns, activated trenches and various proprietary systems. These systems are particularly relevant to domestic housing where there is limited scope for foundation type solutions.

CURRENT GUIDANCE ON REMEDIATION

When risk assessment of the site has been completed and it indicates that remedial works are required, the main guidance in managing this process is set out in the DEFRA/EA publication CLR11 (2004) "Model Procedures for the Management of Land Contamination." The stages of managing remediation are as follows:

- (a) Options Appraisal and develop Remediation Strategy;
- (b) Develop Implementation Plan and Verification Plan;
- (c) Remediation, Verification and Monitoring.

The Remediation Strategy sets out the remediation targets, identifies technically feasible remedial solutions and presents an evaluation of the options so that these can be assessed enabling that the most suitable solution is adopted. An outline of the proposed remedial method should be presented. Agreement should be sought of the appropriate statutory bodies for the Remediation Strategy before proceeding to the next stage.

The Implementation Plan is a detailed method statement setting out how the remediation is to be carried out including stating how the site will be managed, welfare procedures, health, and safety considerations together with practical measures such as details of temporary works, programme of works, waste management licences and regulatory consents required. Agreement should again be sought of the appropriate statutory bodies for this Plan.

The Verification Plan sets out the requirements for gathering data to demonstrate that the remediation has met the required remediation objectives and criteria. The Verification Plan presents the requirements for a wide range of issues including the level of supervision, sampling and testing regimes for treated materials, waste and imported materials, required monitoring works during and post remediation, how compliance with all licenses and consents will be checked etc. Agreement should again be sought of the appropriate statutory bodies for the Verification Plan. On completion of the remediation a Verification Report should be produced to provide a complete record of all remediation activities on site and the data collected as required in the Verification Plan. The Verification Report should demonstrate that the remediation has met the remedial targets to show that the site is suitable for the proposed use.

APPENDIX D: COMMERCIAL ENVIRONMENTAL DATA

Alfred H Knight International Ltd, Alfred Knight Holdings Ltd, Pegasus House Kings Drive, Kings Busi, L34 1PJ

Order Details

Date: 03/04/2025
Your ref: CMAPS-AAG-1215961-4165-030425
Our Ref: CMAPS-AAG-1215961-4165-030425EDRGEO

Site Details

Location: 345491 392322
Area: 1.7 ha
Authority: [Knowsley Metropolitan Borough Council](#) ↗



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[Summary of findings](#)

[p. 2 >](#) [Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#) [Insight User Guide](#) ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	1	5	29	-
17 >	1.2 >	Historical tanks >	0	0	1	3	-
17 >	1.3 >	Historical energy features >	0	0	3	7	-
18	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	0	0	5	-
19	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
20 >	2.1 >	Historical industrial land uses >	0	2	6	32	-
22 >	2.2 >	Historical tanks >	0	0	2	8	-
23 >	2.3 >	Historical energy features >	0	0	4	10	-
23	2.4	Historical petrol stations	0	0	0	0	-
24 >	2.5 >	Historical garages >	0	0	0	5	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
25	3.1	Active or recent landfill	0	0	0	0	-
25	3.2	Historical landfill (BGS records)	0	0	0	0	-
26	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
26	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
26	3.5	Historical waste sites	0	0	0	0	-
26	3.6	Licensed waste sites	0	0	0	0	-
26 >	3.7 >	Waste exemptions >	0	0	1	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
28 >	4.1 >	Recent industrial land uses >	1	2	8	-	-
29 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
29	4.3	Electricity cables	0	0	0	0	-
30	4.4	Gas pipelines	0	0	0	0	-
30	4.5	Sites determined as Contaminated Land	0	0	0	0	-

30	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
30	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
31	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
31	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
31 >	4.11 >	<u>Licensed pollutant release (Part A(2)/B) ></u>	0	0	0	1	-
31	4.12	Radioactive Substance Authorisations	0	0	0	0	-
32 >	4.13 >	<u>Licensed Discharges to controlled waters ></u>	0	0	0	1	-
32	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
32	4.15	Pollutant release to public sewer	0	0	0	0	-
32 >	4.16 >	<u>List 1 Dangerous Substances ></u>	0	0	0	2	-
33	4.17	List 2 Dangerous Substances	0	0	0	0	-
33 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	3	-
34	4.19	Pollution inventory substances	0	0	0	0	-
34	4.20	Pollution inventory waste transfers	0	0	0	0	-
34	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
35 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
37 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
39 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
40	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
40	5.5	Groundwater vulnerability- local information	None (within 0m)				
41	5.6	Groundwater abstractions	0	0	0	0	0
42 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	2	0
42	5.8	Potable abstractions	0	0	0	0	0
43	5.9	Source Protection Zones	0	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
44 >	6.1 >	<u>Water Network (OS MasterMap) ></u>	4	0	0	-	-



45 >	6.2 >	Surface water features >	1	0	1	-	-
45 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
46 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
46 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	None (within 50m)				
49	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
50 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
52 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
53	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
54	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
55	10.7	Designated Ancient Woodland	0	0	0	0	0
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56 >	10.11 >	Green Belt >	1	0	0	0	1
56	10.12	Proposed Ramsar sites	0	0	0	0	0

56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57 >	10.16 >	Nitrate Vulnerable Zones >	2	0	0	0	3
58 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
59	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61 >	11.4 >	Listed Buildings >	0	0	4	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
63 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64 >	12.3 >	Tree Felling Licences >	0	0	8	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
65	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	13.1 >	Priority Habitat Inventory >	0	6	7	-	-
67	13.2	Habitat Networks	0	0	0	-	-
67	13.3	Open Mosaic Habitat	0	0	0	-	-
67	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	14.1 >	10k Availability >	Identified (within 500m)				
70	14.2	Artificial and made ground (10k)	0	0	0	0	-
71	14.3	Superficial geology (10k)	0	0	0	0	-

71	14.4	Landslip (10k)	0	0	0	0	-
72	14.5	Bedrock geology (10k)	0	0	0	0	-
72	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
73 >	15.1 >	50k Availability >	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
76 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77 >	15.8 >	Bedrock geology (50k) >	2	0	4	7	-
78 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
79 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	3	9	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	16.1 >	BGS Boreholes >	9	14	46	-	-
Page	Section	Natural ground subsidence >					
84 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
85 >	17.2 >	Running sands >	Very low (within 50m)				
87 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
88 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
89 >	17.5 >	Landslides >	Very low (within 50m)				
90 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
92 >	18.1 >	BritPits >	0	0	0	1	-
93 >	18.2 >	Surface ground workings >	0	2	20	-	-
94 >	18.3 >	Underground workings >	0	0	0	0	8
94	18.4	Underground mining extents	0	0	0	0	-
95	18.5	Historical Mineral Planning Areas	0	0	0	0	-



95	18.6	Non-coal mining	0	0	0	0	0
95	18.7	JPB mining areas	None (within 0m)				
95	18.8	The Coal Authority non-coal mining	0	0	0	0	-
96	18.9	Researched mining	0	0	0	0	-
96	18.10	Mining record office plans	0	0	0	0	-
96	18.11	BGS mine plans	0	0	0	0	-
96 >	18.12 >	Coal mining >	Identified (within 0m)				
97	18.13	Brine areas	None (within 0m)				
97	18.14	Gypsum areas	None (within 0m)				
97	18.15	Tin mining	None (within 0m)				
97	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
98	19.1	Natural cavities	0	0	0	0	-
98	19.2	Mining cavities	0	0	0	0	0
98	19.3	Reported recent incidents	0	0	0	0	-
98	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
100 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
102 >	21.1 >	BGS Estimated Background Soil Chemistry >	6	0	-	-	-
102	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
103	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
104	22.1	Underground railways (London)	0	0	0	-	-
104	22.2	Underground railways (Non-London)	0	0	0	-	-
105	22.3	Railway tunnels	0	0	0	-	-
105 >	22.4 >	Historical railway and tunnel features >	0	0	1	-	-
105	22.5	Royal Mail tunnels	0	0	0	-	-
105	22.6	Historical railways	0	0	0	-	-



106	22.7	Railways	0	0	0	-	-
106	22.8	Crossrail 2	0	0	0	0	-
106	22.9	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 20/05/2023

Site Area: 1.7ha



Recent site history - 2022 aerial photograph



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Capture Date: 18/10/2022

Site Area: 1.7ha



Recent site history - 2015 aerial photograph



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Capture Date: 11/06/2015

Site Area: 1.7ha



Recent site history - 2005 aerial photograph



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Capture Date: 02/09/2005

Site Area: 1.7ha



Recent site history - 2000 aerial photograph



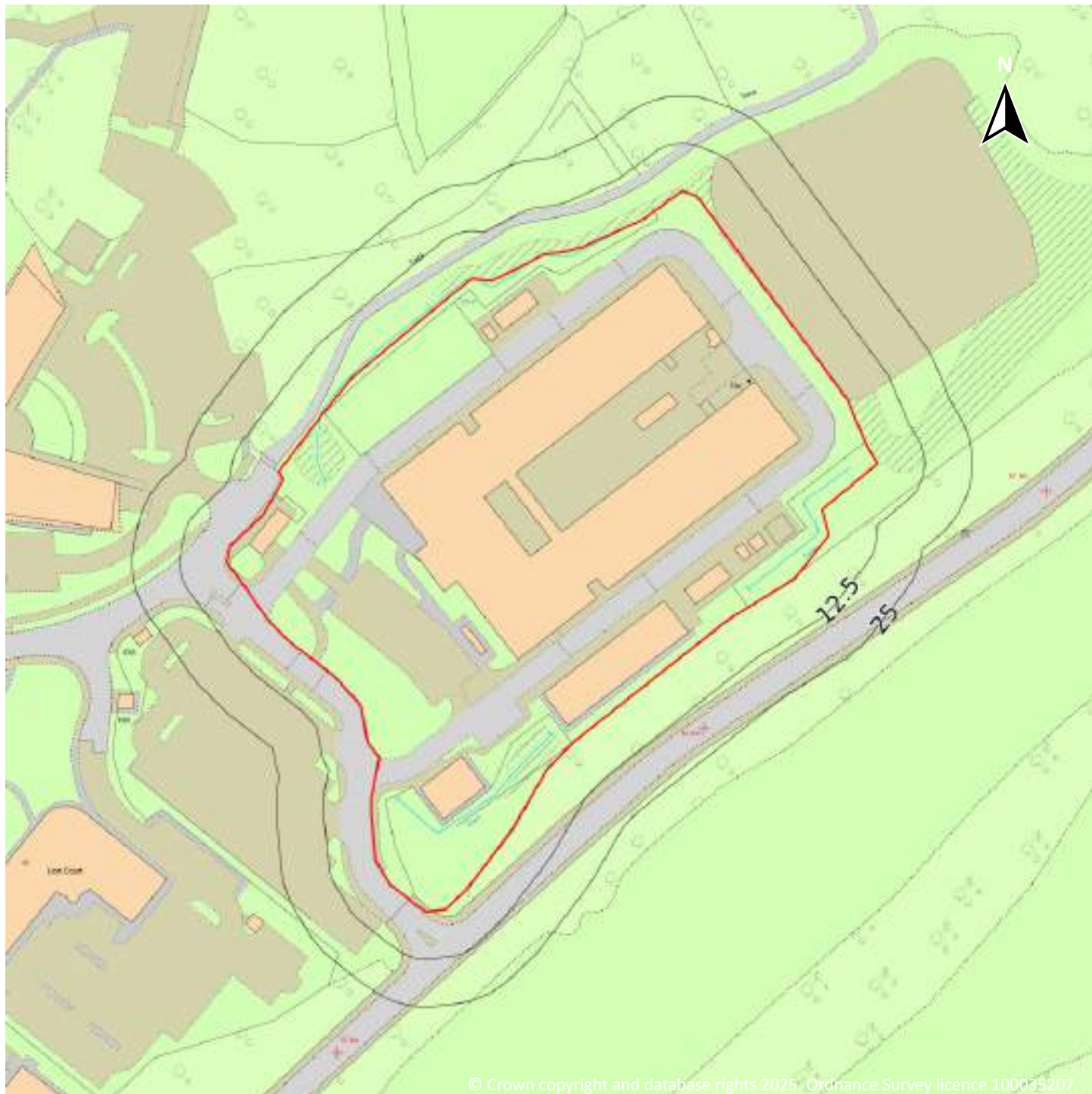
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Capture Date: 21/07/2000

Site Area: 1.7ha



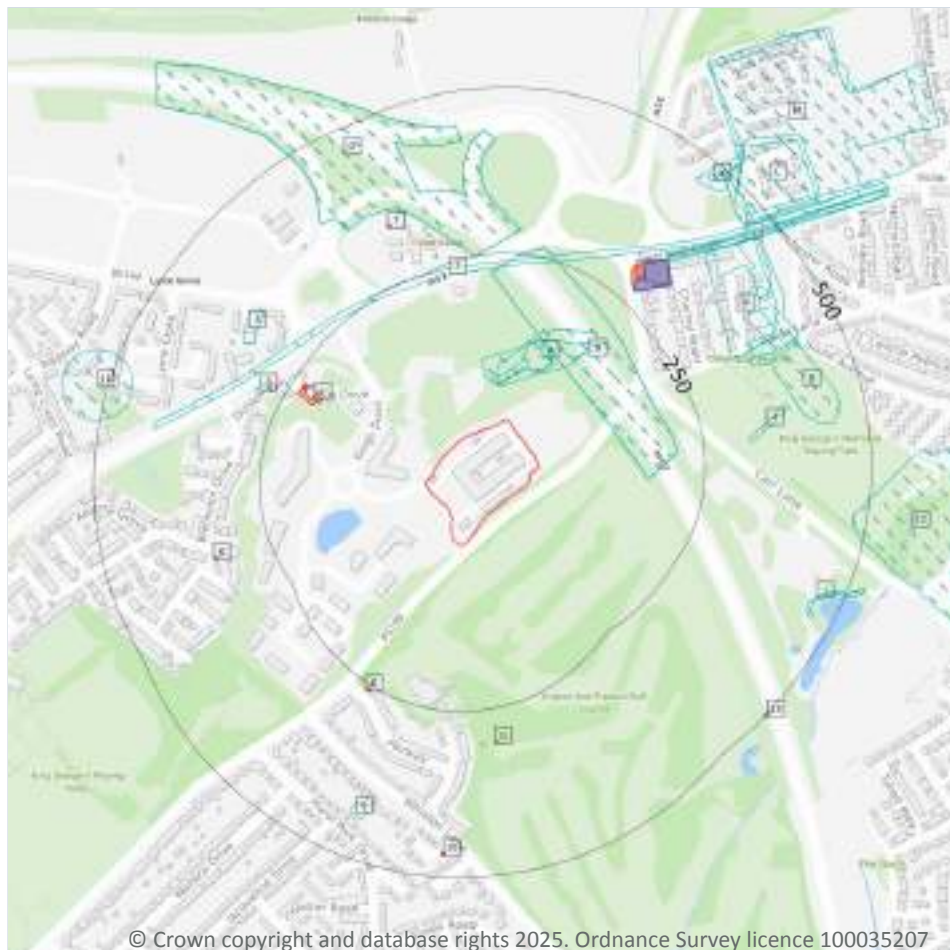
OS MasterMap site plan



Site Area: 1.7ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

35

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

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

ID	Location	Land use	Dates present	Group ID
A	50m N	Unspecified Quarry	1906 - 1925	906146



ID	Location	Land use	Dates present	Group ID
A	53m N	Unspecified Quarry	1891	974373
A	54m N	Unspecified Quarry	1938 - 1956	890743
B	116m NE	Cuttings	1978	886997
B	116m NE	Cuttings	1990	903509
1	228m N	Tramway Sidings	1956	954466
D	250m N	Cuttings	1990	880567
D	250m N	Cuttings	1978	904123
2	264m N	Pump	1850	834535
3	274m NW	Railway Building	1925	854840
4	319m E	Unspecified Ground Workings	1978	815752
5	330m NW	Unspecified Heap	1891	843749
H	333m NE	Colliery	1850	844617
I	339m NE	Tramway Sidings	1925	993649
I	341m NE	Railway Sidings	1950	857842
I	341m NE	Tramway Sidings	1925 - 1938	985434
H	355m E	Unspecified Heap	1950	843748
H	364m NE	Unspecified Ground Workings	1956	815751
H	379m NE	Unspecified Pit	1966	830675
8	381m E	Unspecified Pit	1950 - 1956	911349
H	407m NE	Unspecified Heap	1966	843750
H	413m NE	Tan Yard	1850	822880
9	417m S	Sandstone Quarry	1850	820432
J	455m E	Unspecified Ground Workings	1906 - 1925	955396
J	455m E	Unspecified Ground Workings	1947	1001531
K	460m NE	Dye House	1956	874084
L	461m NE	Nursery	1950	964192
M	463m NE	Nursery	1925	954739
11	463m W	Filter Bed	1925	942064



ID	Location	Land use	Dates present	Group ID
K	472m NE	Dye House	1950	867837
L	475m NE	Nursery	1956	871480
M	475m NE	Nursery	1850	956111
12	478m E	Unspecified Works	1966	916309
K	478m NE	Dye House	1850	900343
13	497m SE	Boat House	1906	824616

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

4

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

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

ID	Location	Land use	Dates present	Group ID
A	60m N	Unspecified Tank	1893 - 1908	147107
G	298m S	Unspecified Tank	1892 - 1927	134029
G	300m S	Unspecified Tank	1892 - 1927	141861
7	334m N	Unspecified Tank	1954 - 1955	132298

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

10

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

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



ID	Location	Land use	Dates present	Group ID
C	199m NW	Electricity Substation	1955	91088
C	227m NW	Electricity Substation	1973 - 1999	82800
C	227m NW	Electricity Substation	1954	84408
E	254m SW	Electricity Substation	1999	84962
E	254m SW	Electricity Substation	1973	69299
F	281m NE	Electricity Substation	1993	77270
F	281m NE	Electricity Substation	1954 - 1955	89475
F	288m NE	Electricity Substation	1976	78611
6	332m W	Electricity Substation	1999	66257
10	461m S	Electricity Substation	1977 - 1994	86676

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

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

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	5
----------------------------	----------

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

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

ID	Location	Land use	Dates present	Group ID
F	272m NE	Garage	1993	28606

ID	Location	Land use	Dates present	Group ID
F	272m NE	Garage	1976	26864
F	273m NE	Garage	1955	23365
F	296m NE	Garage	1965	23438
F	296m NE	Garage	1954	28961

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

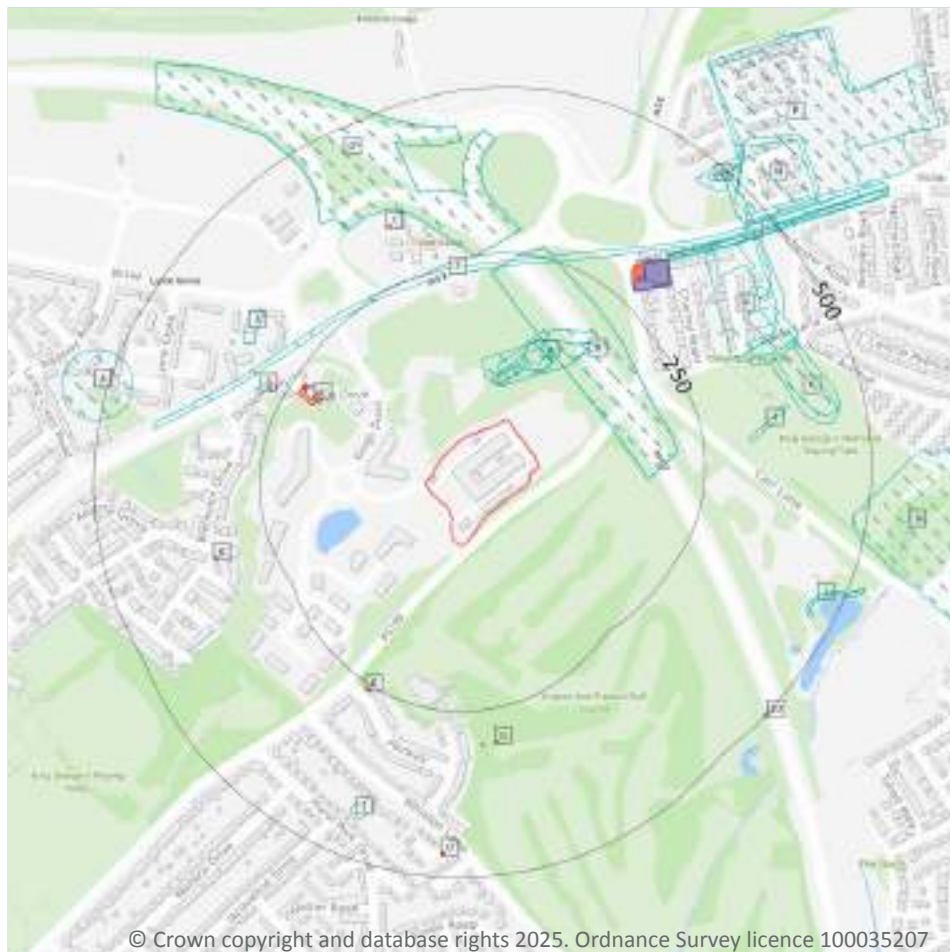
0

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

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



2 Past land use - un-grouped



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

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2.1 Historical industrial land uses

Records within 500m

40

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

Features are displayed on the Past land use - un-grouped map on [page 20](#) >

ID	Location	Land Use	Date	Group ID
A	50m N	Unspecified Quarry	1925	906146
A	50m N	Unspecified Quarry	1906	906146
A	53m N	Unspecified Quarry	1891	974373

ID	Location	Land Use	Date	Group ID
A	54m N	Unspecified Quarry	1938	890743
A	67m N	Unspecified Quarry	1956	890743
B	116m NE	Cuttings	1978	886997
B	116m NE	Cuttings	1990	903509
1	228m N	Tramway Sidings	1956	954466
D	250m N	Cuttings	1978	904123
D	250m N	Cuttings	1990	880567
2	264m N	Pump	1850	834535
3	274m NW	Railway Building	1925	854840
4	319m E	Unspecified Ground Workings	1978	815752
5	330m NW	Unspecified Heap	1891	843749
H	333m NE	Colliery	1850	844617
J	339m NE	Tramway Sidings	1925	993649
J	341m NE	Tramway Sidings	1938	985434
J	341m NE	Tramway Sidings	1925	985434
J	341m NE	Railway Sidings	1950	857842
H	355m E	Unspecified Heap	1950	843748
H	364m NE	Unspecified Ground Workings	1956	815751
H	379m NE	Unspecified Pit	1966	830675
K	381m E	Unspecified Pit	1950	911349
K	392m NE	Unspecified Pit	1956	911349
H	407m NE	Unspecified Heap	1966	843750
H	413m NE	Tan Yard	1850	822880
7	417m S	Sandstone Quarry	1850	820432
L	455m E	Unspecified Ground Workings	1947	1001531
L	455m E	Unspecified Ground Workings	1925	955396
L	455m E	Unspecified Ground Workings	1906	955396
M	460m NE	Dye House	1956	874084

ID	Location	Land Use	Date	Group ID
N	461m NE	Nursery	1950	964192
P	463m NE	Nursery	1925	954739
8	463m W	Filter Bed	1925	942064
M	472m NE	Dye House	1950	867837
N	475m NE	Nursery	1956	871480
P	475m NE	Nursery	1850	956111
9	478m E	Unspecified Works	1966	916309
M	478m NE	Dye House	1850	900343
10	497m SE	Boat House	1906	824616

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

10

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

Features are displayed on the Past land use - un-grouped map on [page 20 >](#)

ID	Location	Land Use	Date	Group ID
A	60m N	Unspecified Tank	1893	147107
A	60m N	Unspecified Tank	1908	147107
G	298m S	Unspecified Tank	1892	134029
G	298m S	Unspecified Tank	1907	134029
G	298m S	Unspecified Tank	1927	134029
G	300m S	Unspecified Tank	1892	141861
G	300m S	Unspecified Tank	1907	141861
G	300m S	Unspecified Tank	1927	141861
I	334m N	Unspecified Tank	1955	132298
I	335m N	Unspecified Tank	1954	132298

This data is sourced from Ordnance Survey / Groundsure.



2.3 Historical energy features

Records within 500m	14
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Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 20 >](#)

ID	Location	Land Use	Date	Group ID
C	199m NW	Electricity Substation	1955	91088
C	227m NW	Electricity Substation	1954	84408
C	227m NW	Electricity Substation	1973	82800
C	228m NW	Electricity Substation	1999	82800
E	254m SW	Electricity Substation	1999	84962
E	254m SW	Electricity Substation	1973	69299
F	281m NE	Electricity Substation	1993	77270
F	281m NE	Electricity Substation	1954	89475
F	282m NE	Electricity Substation	1955	89475
F	288m NE	Electricity Substation	1976	78611
6	332m W	Electricity Substation	1999	66257
O	461m S	Electricity Substation	1977	86676
O	462m S	Electricity Substation	1994	86676
O	462m S	Electricity Substation	1994	86676

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

5

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

Features are displayed on the Past land use - un-grouped map on [page 20 >](#)

ID	Location	Land Use	Date	Group ID
F	272m NE	Garage	1993	28606
F	272m NE	Garage	1976	26864
F	273m NE	Garage	1955	23365
F	296m NE	Garage	1965	23438
F	296m NE	Garage	1954	28961

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



— Site Outline
Search buffers in metres (m)
● Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**2**

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 25 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	143m W	Kings Business Park, Kings Drive, Prescot, L34 1pj	WEX259277	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal



ID	Location	Site	Reference	Category	Sub-Category	Description
2	392m SW	26, Whiston Lane, Huyton, Liverpool, L36 1ty	WEX154019	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- List 1 Dangerous Substances
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

11

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Chimney	Merseyside, L34	Chimneys	Industrial Features
A	37m W	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
A	42m SW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
2	76m NE	Mast (Telecommunication)	Merseyside, L34	Telecommunications Features	Infrastructure and Facilities
3	152m SW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
4	165m W	King's Business Park	Merseyside, L34	Business Parks and Industrial Estates	Industrial Features
5	204m E	Mast (Telecommunication)	Merseyside, L34	Telecommunications Features	Infrastructure and Facilities
6	223m W	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
7	224m SW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
8	229m NW	Electricity Sub Station	Merseyside, L34	Electrical Features	Infrastructure and Facilities
9	233m S	Chimney	Merseyside, L36	Chimneys	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	1
----------------------------	----------

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 28](#) >

ID	Location	Company	Address	LPG	Status
11	334m NE	OBSOLETE	Liverpool Road, Prescot, Merseyside, L34 1NN	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

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

High voltage underground electricity transmission cables.

This data is sourced from National Grid.



4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m**0**

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m**0**

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

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

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

Records within 500m**1**

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

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Address	Details	
12	449m NW	EuroGarages, Earlsfield SS, Arley Drive, Huyton, L34 4BE	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

1

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

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Address	Details	
10	302m N	DYEHOUSE,LIVERPOOL LRD,PRESCOT,MERSEY SIDE,L341NR	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01M/339 Permit Version: 1 Receiving Water: PRECSOT BROOK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 14/09/1962 Effective Date: 14/09/1962 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

2

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

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Name	Status	Receiving Water	Authorised Substances
C	462m SE	Bicc Prescott Merseyside - Rod Rollers	Active	-	-



ID	Location	Name	Status	Receiving Water	Authorised Substances
C	462m SE	Bicc Prescott Merseyside - Rod Rollers	Not Active	Ditton Brook, Mersey Estuary	Cadmium

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

4.17 List 2 Dangerous Substances

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

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	3
----------------------------	----------

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

Features are displayed on the Current industrial land use map on [page 28 >](#)

ID	Location	Details	
B	283m NE	Incident Date: 13/08/2001 Incident Identification: 23908 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
B	283m NE	Incident Date: 13/07/2001 Incident Identification: 16187 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
C	490m SE	Incident Date: 20/07/2001 Incident Identification: 17725 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

2

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 35](#) >

ID	Location	Designation	Description
1	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
2	408m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

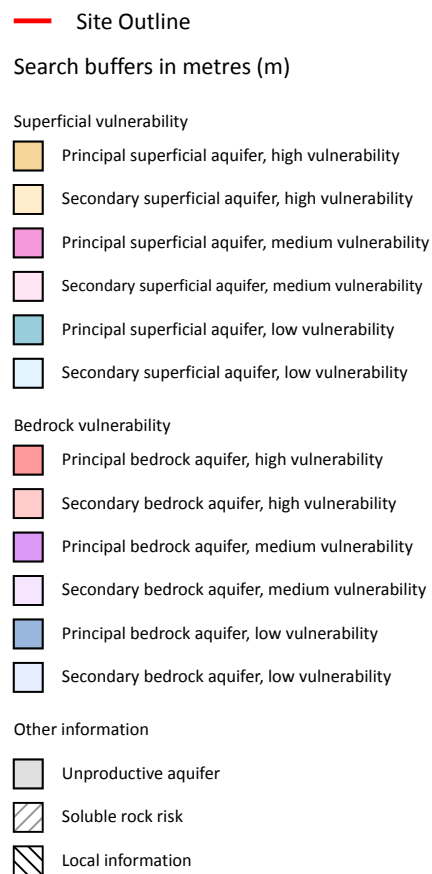
Features are displayed on the Bedrock aquifer map on [page 37](#) >

ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	408m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

2

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

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

Features are displayed on the Groundwater vulnerability map on [page 39](#) >



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

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

5.5 Groundwater vulnerability- local information

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

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

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

Abstractions and Source Protection Zones



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

5.6 Groundwater abstractions

Records within 2000m

0

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

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

5.7 Surface water abstractions

Records within 2000m

2

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 41](#) >

ID	Location	Details	
A	470m NE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: "Surface, Non-Tidal - North West Region" Point: "LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE" Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -
A	470m NE	Status: Historical Licence No: 2569028003 Details: Spray Irrigation - Direct Direct Source: Surface, Non-Tidal - North West Region Point: LOGWOOD MILL BROOK AT LH'S PREMISES, PRESCOT, MERSEYSIDE Data Type: Point Name: JAMES WHITAKER & SONS NURSERYMEN LTD Easting: 345900 Northing: 392700	Annual Volume (m ³): 772.82 Max Daily Volume (m ³): 77.282 Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/03/1999 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m

0

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

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



5.9 Source Protection Zones

Records within 500m

0

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

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m

0

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

4

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

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

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

ID	Location	Type of water feature	Ground level	Permanence	Name
B	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

2

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

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

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

2

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

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

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Alt	GB112069060580	Alt	Alt and Crossens
2	On site	River	Prescot Brook (Logwood Mill Brook)	GB112069060710	Ditton	Mersey Lower

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



6.4 WFD Surface water bodies

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

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

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

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	441m E	River	Prescot Brook (Logwood Mill Brook)	GB112069060710 ↗	Poor	Fail	Poor	2019
-	1228m SW	River	Alt	GB112069060580 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

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

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

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

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
B	On site	Sankey and Glaze Carboniferous aquifers	GB41202G100100 ↗	Poor	Poor	Good	2019

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

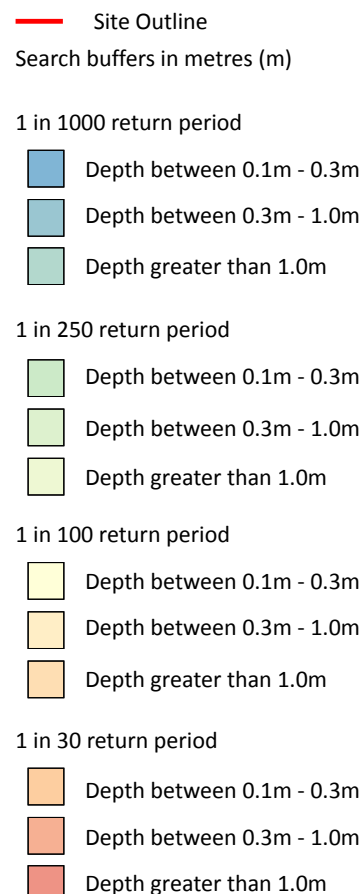
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on [page 50](#) >

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

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

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

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

Features are displayed on the Groundwater flooding map on [page 52 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



— Site Outline
Search buffers in metres (m)
Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

2

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

Features are displayed on the Environmental designations map on [page 53](#) >

ID	Location	Name	Local Authority name
1	On site	Merseyside and Greater Manchester Green Belt	Knowsley
-	1784m NE	Merseyside and Greater Manchester Green Belt	St. Helens

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

5

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
On site	ALT NVZ	Surface Water	642	Existing
1316m W	ALT NVZ	Surface Water	642	Existing
1535m N	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
1634m NE	Sankey Brook (Black Bk to Mersey) NVZ	Surface Water	639	Existing

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



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

2

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

Features are displayed on the SSSI Impact Zones and Units map on [page 58](#) >

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.
2	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.

This data is sourced from Natural England.

10.18 SSSI Units

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

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



11 Visual and cultural designations



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

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

4

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

Features are displayed on the Visual and cultural designations map on [page 60 >](#)

ID	Location	Name	Grade	Reference Number	Listed date
1	103m N	Garden Wall To The Hazels	II	1075508	31/05/1990
2	158m NW	The Hazels	II	1283592	06/06/1951
3	209m NW	Stables To West Of The Hazels	II	1075537	19/03/1987
4	220m S	Hurst Hall, Huyton And Prescot Golf Club	II	1343446	03/08/1981

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

11.5 Conservation Areas

Records within 250m

0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

0

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

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

12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on [page 63](#) >

ID	Location	Classification	Description
1	On site	Urban	Non-agricultural/no quality assigned

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m

0

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

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

12.3 Tree Felling Licences

Records within 250m

8

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

Features are displayed on the Agricultural designations map on [page 63](#) >

ID	Location	Description	Reference	Application date
A	118m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
2	126m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-
A	141m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
3	178m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
4	182m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
5	190m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
6	197m E	Selective Fell/Thin (Conditional)	010/163/09-10	08/02/2010
7	222m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

13

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

Features are displayed on the Habitat designations map on [page 66](#) >

ID	Location	Main Habitat	Other habitats
1	4m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	6m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	18m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	24m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
5	45m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
6	47m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
7	63m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	77m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
8	110m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	115m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
9	189m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
10	203m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	210m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

0

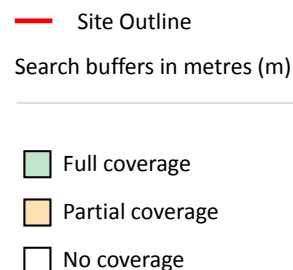
Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave

them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 69](#) >

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
Search buffers in metres (m)

☐ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 73](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW097_runcorn_v4

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 75 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

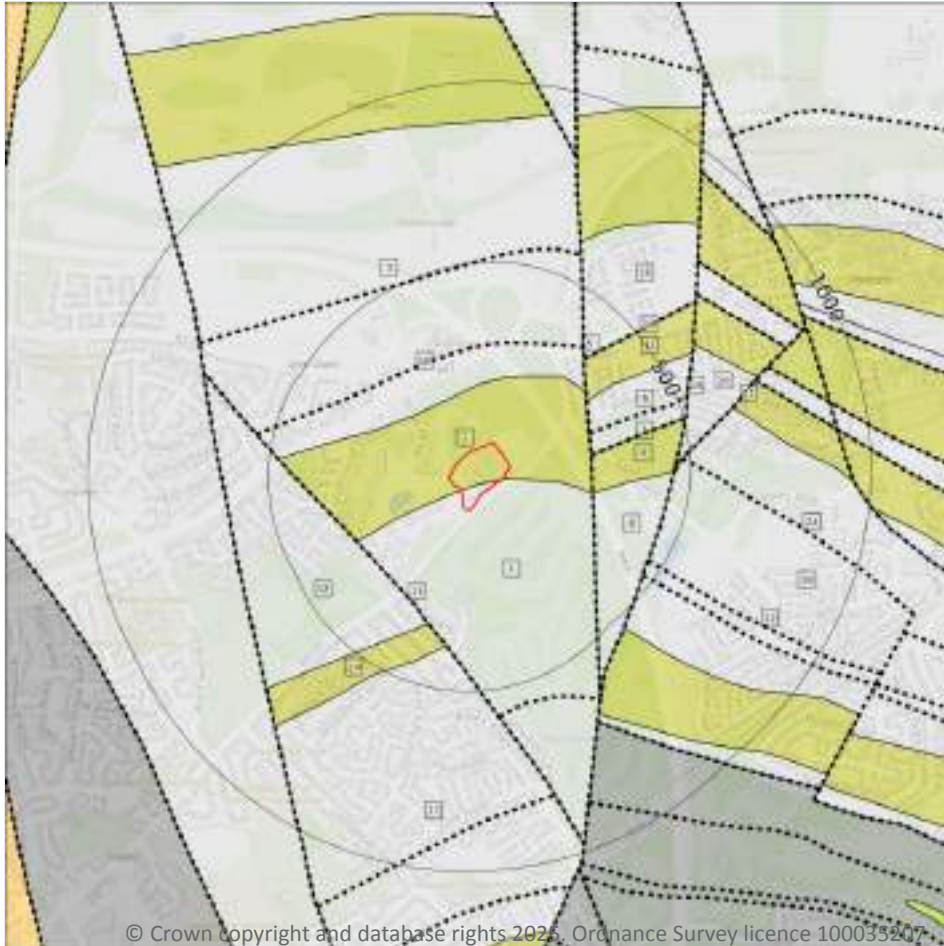
Records within 50m

0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

13

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 77 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	On site	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

ID	Location	LEX Code	Description	Rock age
3	157m NW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	225m E	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
6	226m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
8	238m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
11	277m NE	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
12	281m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
14	332m S	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
15	343m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
17	378m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
18	443m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
20	456m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
---------------------------	----------

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Moderate	Low
On site	Fracture	High	Moderate

This data is sourced from the British Geological Survey.



15.10 Bedrock faults and other linear features (50k)

Records within 500m

12

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

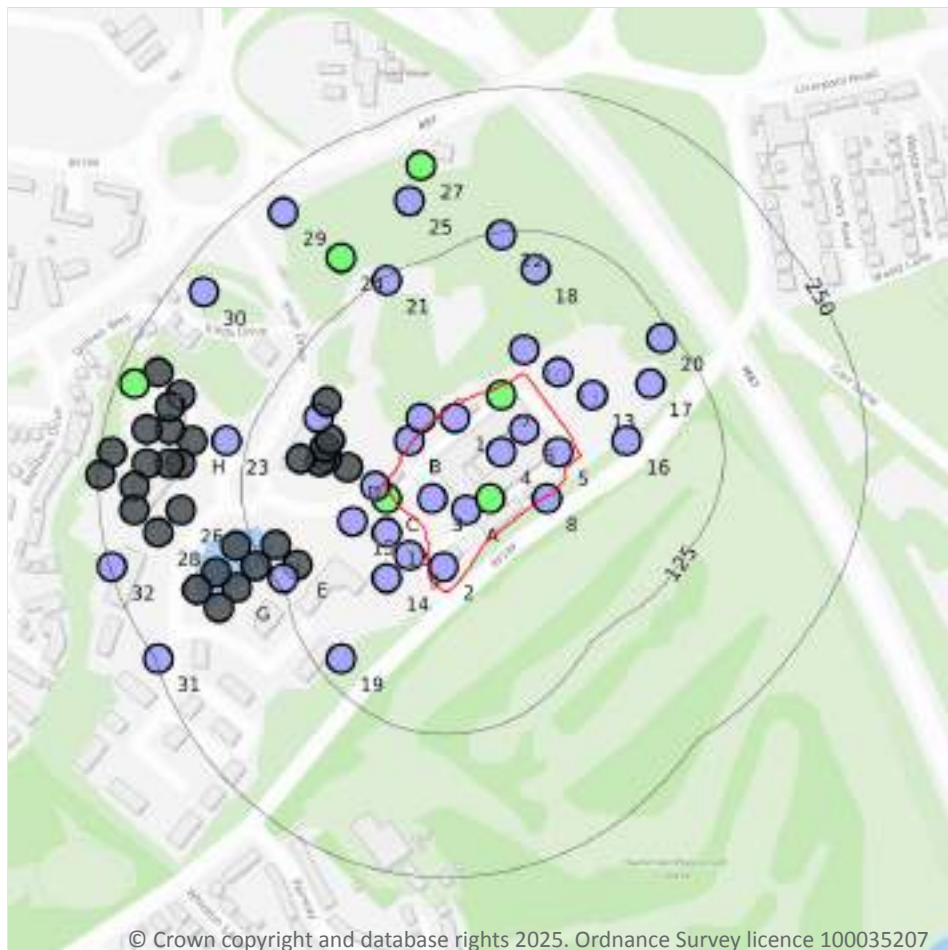
Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 77](#) >

ID	Location	Category	Description
5	225m E	FAULT	Fault, inferred
7	226m E	ROCK	Coal seam, inferred
9	239m E	ROCK	Coal seam, inferred
10	266m N	ROCK	Coal seam, inferred
13	281m SW	FAULT	Fault, inferred
16	343m NE	ROCK	Coal seam, inferred
19	443m E	FAULT	Fault, inferred
21	456m E	FAULT	Fault, observed
22	459m SE	ROCK	Coal seam, inferred
23	471m SE	ROCK	Coal seam, inferred
24	477m E	ROCK	Coal seam, inferred
25	492m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

69

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

Features are displayed on the Boreholes map on [page 80](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	345470 392370	THE HAZELS PRESCOT TP 22	2.3	N	165803 ↗
2	On site	345460 392240	THE HAZELS PRESCOT TP 28	1.85	N	165809 ↗
3	On site	345450 392300	THE HAZELS PRESCOT TP 3	1.3	N	165815 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	On site	345510 392340	THE HAZELS PRESCOT TP 6	1.5	N	165818 ↗
5	On site	345560 392340	THE HAZELS PRESCOT TP 7	2.2	N	165819 ↗
6	On site	345530 392360	THE HAZELS PRESCOT TP 8	1.6	N	165820 ↗
7	On site	345510 392390	THE HAZELS PRESCOT 3	25.0	N	165829 ↗
A	On site	345480 392290	THE HAZELS PRESCOT TP 2	2.1	N	165814 ↗
A	On site	345500 392300	THE HAZELS PRESCOT 2	19.5	N	165828 ↗
8	1m E	345550 392300	THE HAZELS PRESCOT TP 29	2.5	N	165810 ↗
B	3m NW	345430 392350	THE HAZELS PRESCOT TP 4	2.2	N	165816 ↗
C	5m W	345410 392300	THE HAZELS PRESCOT 1	25.0	N	165827 ↗
C	8m W	345400 392310	THE HAZELS PRESCOT TP 21	3.62	N	165802 ↗
B	9m NW	345440 392370	THE HAZELS PRESCOT TP 5	2.15	N	165817 ↗
9	16m SW	345430 392250	THE HAZELS PRESCOT TP 12	2.0	N	165824 ↗
10	21m N	345530 392430	THE HAZELS PRESCOT TP 23	2.05	N	165804 ↗
11	24m NE	345560 392410	THE HAZELS PRESCOT TP 9	1.5	N	165821 ↗
12	25m SW	345410 392270	THE HAZELS PRESCOT TP 1	2.4	N	165813 ↗
D	35m W	345376 392327	THE HAZELS KINGS BUSINESS PARK KNOWSLEY 4	-	Y	N/A
13	36m NE	345590 392390	THE HAZELS PRESCOT TP 10	2.0	N	165822 ↗
14	37m SW	345410 392230	THE HAZELS PRESCOT TP 13	1.0	N	165825 ↗
15	41m W	345380 392280	THE HAZELS PRESCOT TP 14	2.1	N	165826 ↗
16	43m E	345620 392350	THE HAZELS PRESCOT TP 30	2.4	N	165811 ↗
D	54m W	345358 392335	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP4	-	Y	N/A
D	59m W	345352 392332	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP2	-	Y	N/A
D	60m W	345356 392344	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP3	-	Y	N/A
D	60m W	345360 392351	THE HAZELS KINGS BUSINESS PARK KNOWSLEY 3	-	Y	N/A
D	76m W	345335 392334	THE HAZELS KINGS BUSINESS PARK KNOWSLEY 2	-	Y	N/A
D	80m W	345350 392370	THE HAZELS PRESCOT TP 14	3.35	N	165795 ↗
D	80m NW	345358 392384	THE HAZELS KINGS BUSINESS PARK KNOWSLEY 1	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
17	83m NE	345640 392400	THE HAZELS PRESCOT TP 11	2.2	N	165823 ↗
18	92m N	345540 392500	THE HAZELS PRESCOT TP 24	2.9	N	165805 ↗
E	102m SW	345332 392242	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP13	-	Y	N/A
19	104m SW	345370 392160	THE HAZELS PRESCOT TP 27	2.05	N	165808 ↗
F	108m W	345313 392259	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP11	-	Y	N/A
20	114m NE	345650 392440	THE HAZELS PRESCOT TP 31	1.2	N	165812 ↗
E	118m SW	345320 392230	THE HAZELS PRESCOT TP 20	3.45	N	165801 ↗
21	122m NW	345410 392490	THE HAZELS PRESCOT TP 15	3.96	N	165796 ↗
22	122m N	345510 392530	THE HAZELS PRESCOT TP 16	2.55	N	165797 ↗
F	132m SW	345296 392241	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP10	-	Y	N/A
F	140m W	345278 392258	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP7	-	Y	N/A
23	143m W	345270 392350	THE HAZELS PRESCOT TP 13	4.2	N	165794 ↗
G	156m SW	345279 392222	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP9	-	Y	N/A
24	161m NW	345370 392510	THE HAZELS PRESCOT 4	24.0	N	165779 ↗
G	165m W	345261 392235	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP6	-	Y	N/A
H	172m W	345240 392350	KINGS BUSINESS PARK KNOWSLEY TP 4	-	Y	N/A
25	179m N	345430 392560	THE HAZELS PRESCOT TP 9	2.55	N	165791 ↗
H	179m W	345230 392330	KINGS BUSINESS PARK KNOWSLEY TP 14	-	Y	N/A
26	179m W	345230 392290	KINGS BUSINESS PARK KNOWSLEY TP 2	-	Y	N/A
G	180m SW	345263 392204	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP8	-	Y	N/A
G	187m W	345244 392220	THE HAZELS KINGS BUSINESS PARK KNOWSLEY TP5	-	Y	N/A
H	189m W	345220 392330	KINGS BUSINESS PARK KNOWSLEY 2	-	Y	N/A
H	194m W	345230 392390	KINGS BUSINESS PARK KNOWSLEY TP 5	-	Y	N/A
H	194m W	345220 392360	KINGS BUSINESS PARK KNOWSLEY TP 15	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
H	200m W	345220 392380	KINGS BUSINESS PARK KNOWSLEY 1	-	Y	N/A
27	201m N	345440 392590	THE HAZELS PRESCOT 5	21.0	N	165780 ↗
28	202m W	345210 392270	KINGS BUSINESS PARK KNOWSLEY TP 12	-	Y	N/A
H	209m W	345200 392330	KINGS BUSINESS PARK KNOWSLEY TP 3	-	Y	N/A
H	213m W	345200 392360	KINGS BUSINESS PARK KNOWSLEY TP 6	-	Y	N/A
H	218m W	345190 392310	KINGS BUSINESS PARK KNOWSLEY TP 13	-	Y	N/A
H	219m W	345190 392290	KINGS BUSINESS PARK KNOWSLEY 3	-	Y	N/A
I	220m W	345210 392410	KINGS BUSINESS PARK KNOWSLEY TP 11	-	Y	N/A
29	224m NW	345320 392550	THE HAZELS PRESCOT TP 8	3.45	N	165790 ↗
30	224m NW	345250 392480	THE HAZELS PRESCOT TP 7	3.4	N	165789 ↗
I	235m W	345190 392400	THE HAZELS PRESCOT 2	20.5	N	165777 ↗
J	240m W	345170 392340	KINGS BUSINESS PARK KNOWSLEY TP 7	-	Y	N/A
31	248m SW	345210 392160	THE HAZELS PRESCOT TP 19	3.0	N	165800 ↗
32	248m W	345170 392240	THE HAZELS PRESCOT TP 12	3.8	N	165793 ↗
J	248m W	345160 392320	KINGS BUSINESS PARK KNOWSLEY TP 8	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



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

17.1 Shrink swell clays

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 84 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Running sands map on [page 85](#) >

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

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 87 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 88](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



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

17.5 Landslides

Records within 50m

1

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

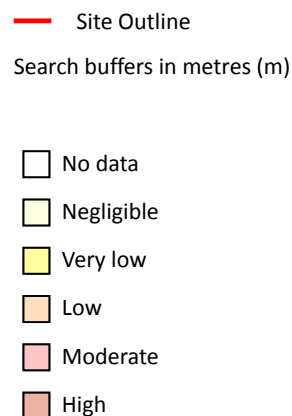
Features are displayed on the Natural ground subsidence - Landslides map on [page 89](#) >

Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 90](#)

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



This data is sourced from the British Geological Survey.



18 Mining and ground workings



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

18.1 BritPits

Records within 500m

1

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

Features are displayed on the Mining and ground workings map on [page 92 >](#)

ID	Location	Details	Description
H	430m S	Name: Moss Croft House Address: PRESCOT, Merseyside Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	22
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Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on [page 92](#) >

ID	Location	Land Use	Year of mapping	Mapping scale
A	50m N	Unspecified Quarry	1925	1:10560
A	50m N	Unspecified Quarry	1906	1:10560
A	53m N	Unspecified Quarry	1891	1:10560
A	54m N	Unspecified Quarry	1938	1:10560
B	64m W	Pond	1850	1:10560
B	66m W	Pond	1978	1:10000
B	66m W	Pond	1990	1:10000
B	66m W	Pond	1966	1:10560
A	67m N	Unspecified Quarry	1956	1:10560
B	70m W	Pond	1891	1:10560
B	73m W	Pond	1925	1:10560
B	73m W	Pond	1906	1:10560
B	74m W	Pond	1938	1:10560
B	74m W	Pond	1925	1:10560
C	116m NE	Cuttings	1978	1:10000
C	116m NE	Cuttings	1990	1:10000



ID	Location	Land Use	Year of mapping	Mapping scale
D	131m S	Pond	1956	1:10560
D	133m S	Pond	1938	1:10560
D	133m S	Pond	1925	1:10560
D	133m S	Pond	1906	1:10560
D	134m S	Pond	1925	1:10560
D	138m S	Pond	1891	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

8

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

Features are displayed on the Mining and ground workings map on [page 92 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
R	559m SE	Unspecified Old Levels	1947	1:10560
R	559m SE	Unspecified Old Levels	1925	1:10560
R	559m SE	Old Trial Levels	1906	1:10560
K	567m SE	Unspecified Shaft	1891	1:10560
R	586m SE	Unspecified Old Level	1956	1:10560
S	589m SE	Unspecified Old Levels	1947	1:10560
S	589m SE	Unspecified Old Levels	1925	1:10560
S	589m SE	Old Trial Levels	1906	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

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



This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

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

This data is sourced from The Coal Authority.



18.9 Researched mining

Records within 500m

0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

1

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

Location	Details
On site	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.

This data is sourced from the Coal Authority.

18.13 Brine areas

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

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

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

18.14 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

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

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

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

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

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

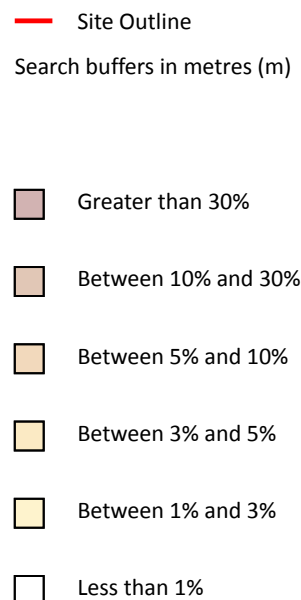
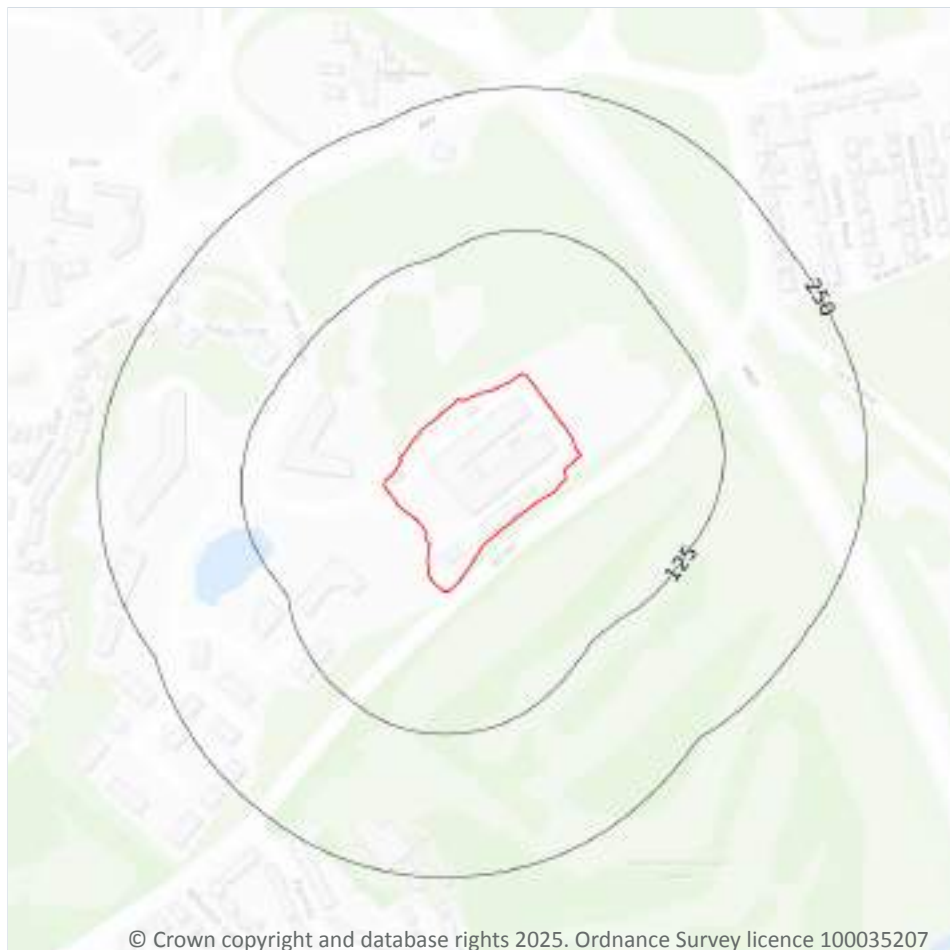
Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.



This data is sourced from Groundsure.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 100](#) >

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



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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

6

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	2.2 - 3.0 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



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

22.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

1

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

Features are displayed on the Railway infrastructure and projects map on [page 104 >](#)

Location	Land Use	Year of mapping	Mapping scale
228m N	Tramway Sidings	1956	10560

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.



22.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.

Data providers

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

Terms and conditions

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





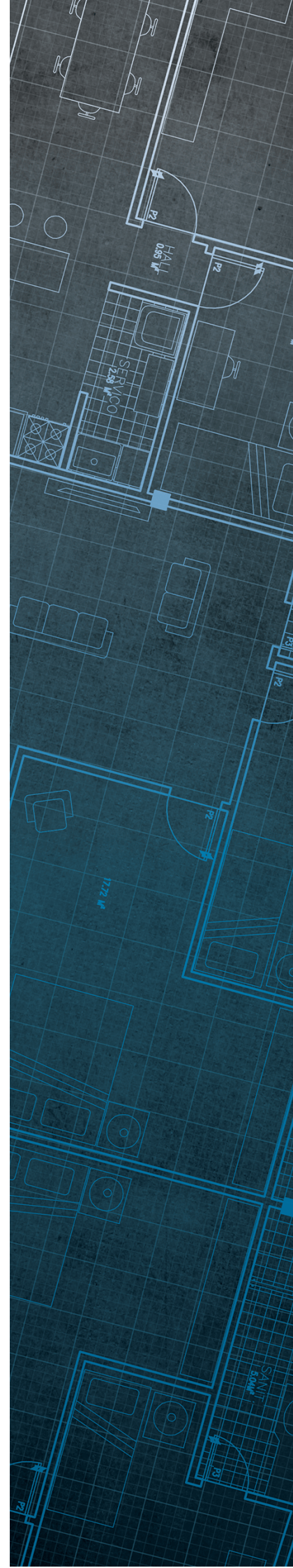
The Coal
Authority

Consultants Coal Mining Report

Alfred Knight Holdings Ltd
Pegasus House
Kings Drive
Kings Business Park
Prescot
Knowsley
L34 1PJ

Date of enquiry: 3 April 2025
Date enquiry received: 3 April 2025
Issue date: 3 April 2025

Our reference: 51003489648001
Your reference: Alfred Knight, Prescot



Consultants

Coal Mining Report

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

Client name

Tony Gerrard

Enquiry address

Alfred Knight Holdings Ltd
Pegasus House
Kings Drive
Kings Business Park
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Mansfield
Nottinghamshire
NG18 4RG

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 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

16820		
-------	--	--

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

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

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

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

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

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

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

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

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

Withdrawal of support notices

The property is not in an area where a notice to withdraw support has been given.

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

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Opencast mines

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

Coal Authority managed tips

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

Site investigations

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

Remediated sites

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

Coal mining subsidence

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

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

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

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

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

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

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

Future underground mining

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

Coal mining licensing

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

Court orders

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

Section 46 notices

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

Withdrawal of support notices

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

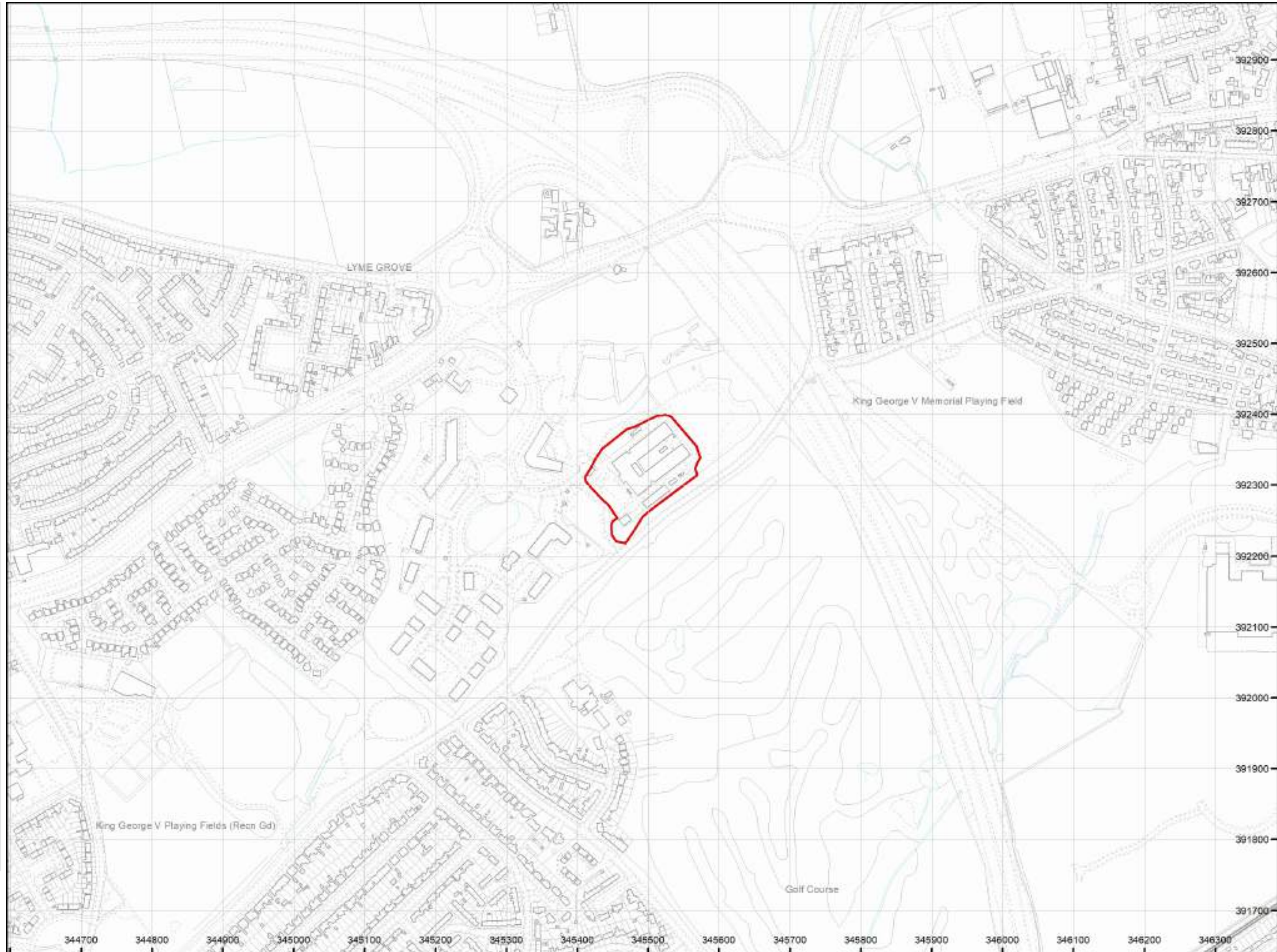
Payment to owners of former copyhold land

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

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

Key

Approximate position of the enquiry
boundary shown 



How to contact us

0345 762 6848 (UK)
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www.groundstability.com



Groundsure
INSIGHTS

HISTORICAL MAP PACK LEGEND

**COUNTY SERIES &
NATIONAL GRID**
1:10,560 & 1:10,000

Information present on these legends is sourced
from the same Ordnance Survey mapping
as the maps used in this product.

If you have a query regarding any of the maps
provided please contact Groundsure's technical helpline.
We will endeavour to answer any queries you may have.

Technical Help
Tel 0800 028 0000

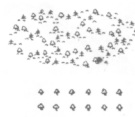
insight@groundsure.com
WWW.GROUNDSURE.COM

COUNTY SERIES 1:10,560

VEGETATION



Fir Wood



Mixed Wood



Orchard



Rough Pasture



Marsh



Deciduous Wood



Brushwood



Reeds

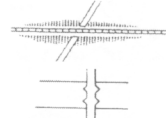


Furze

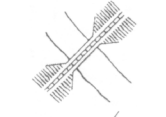


Osiers

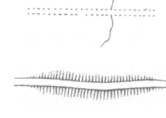
ROADS



Railway over Road



Road over River
or Canal



Railway over River



Road over Stream



Raised Road

RAILWAYS



Double Lines of Railway



Single Lines of Railway
and Tramway

GENERAL FEATURES



Gravel Pit



Quarry



Other Pits



Sand Pit



Shingle

Antiquities, Site of



Arrow, showing direction of
flow of water



Trigonometrical Station

BOUNDARIES



County Boundary



Parish Boundary



Contours



Parliamentary Division
Boundary



Union Boundary



Rural District Boundary

NATIONAL GRID 1:10,000 & 1:10,560

HEIGHTS (METRES)

Values are given in metres above mean sea level
at Newlyn.

Surface heights
determined by

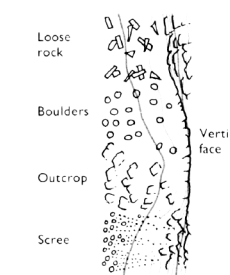
ground survey
air survey

163m
163m

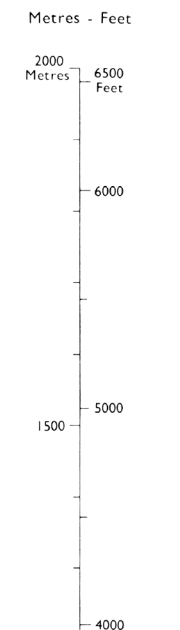
Bench marks and their values are shown on large
scale maps, and bench mark lists containing
fuller and possibly later levelling information
are obtainable from the Director General,
Ordnance Survey.

Contours are at 5 metres vertical interval.

ROCK FEATURES



CONVERSION SCALE

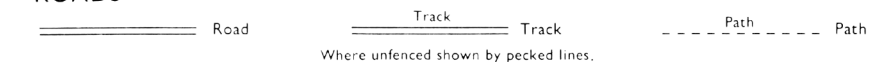


ABBREVIATIONS

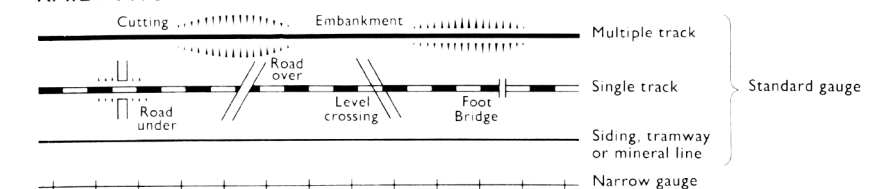
BP,BS Boundary Post or Stone
Ch Church
CH Club House
F Sta Fire Station
FB Foot Bridge
Fn Fountain
GP Guide Post
MP,MS Mile Post or Stone
P Pole or Post
Pol Sta Police Station

PO Post Office
PC Public Convenience
PH Public House
S Stone
Spr Spring
TCB Telephone Call Box
TCP Telephone Call Post
TH Town Hall
W Well
Y Youth hostel

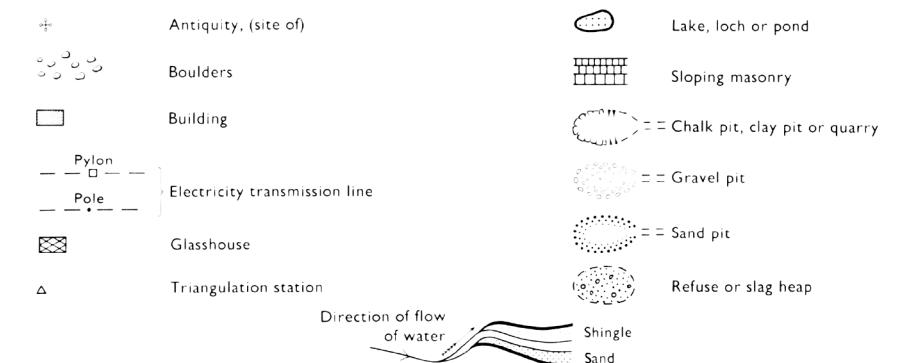
ROADS



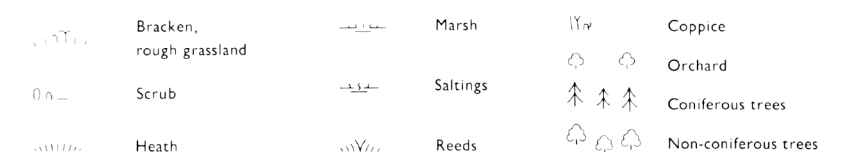
RAILWAYS



GENERAL FEATURES



VEGETATION



In some areas bracken () and rough grassland () are shown separately.



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INSIGHTS

HISTORICAL MAP PACK LEGEND

COUNTY SERIES
1:1,2500
NATIONAL GRID
1:1,250 & 1:2,500

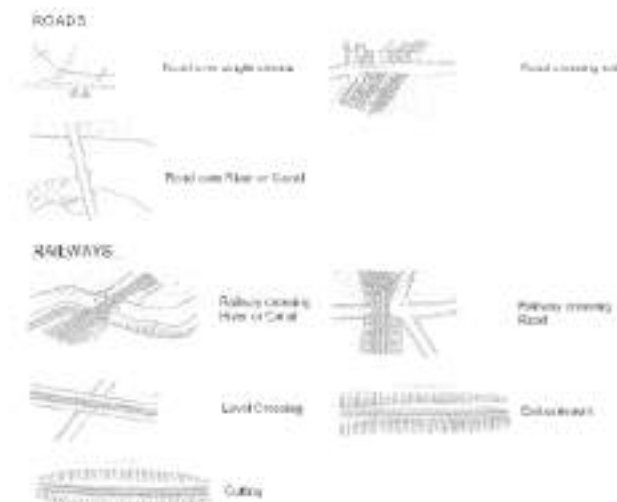
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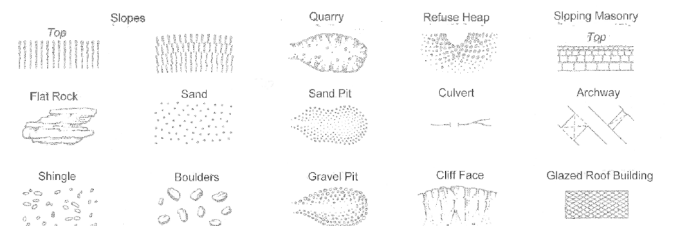
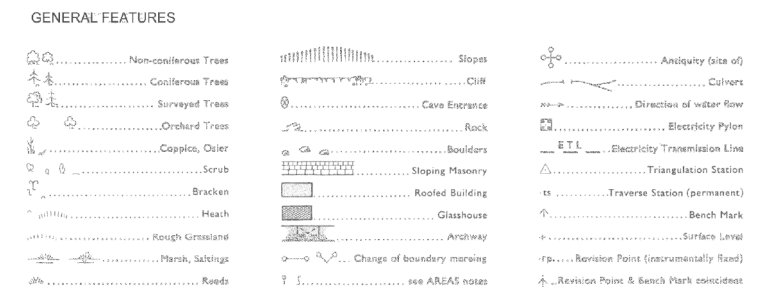
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COUNTY SERIES 1:2,500



ABBREVIATIONS	
△ Triangulation Station	W Well
BM Bench Mark	W.R. Mooring Ring
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post
ETL Electricity Transmission Line	W.P. Mooring Post

NATIONAL GRID 1:2,500 & 1:1,250



BOUNDARIES

England & Wales	
County Boundary (geographical)	
County & Civil Parish Boundary coterminous	
Admin County or County Borough Boundary	
London Borough Boundary	
County District Boundaries based on civil parish	
England, Wales & Scotland	
Civil Parish Boundary	
Parly & Ward Boundaries based on civil parish	
Parly & Ward Boundaries not based on civil parish	
Scotland	
County Boundary (geographical)	
County Council Boundary	
County of the City Boundary	
Burgh Boundary	
District Council Boundary	
Not with parish	Coincident with parish

ABBREVIATIONS

BH Beer House	M.P.U. Mail Pick-up
BM Bench Mark	MS Mile Stone
BP Boundary Post	NT National Trust
BS Boundary Stone	NTL Normal Tidal Limit
C Crane	NTS National Trust for Scotland
CH Chimney	P Pillar, Pole or Post
Chy Chimney	PC Public Convenience
Cn Capstan	PCB Police Call Box
Dn Drinking Fountain	PH Public House
Dk Dock	PO Post Office
EP Electricity Pillar or Post	Pp Pump
ETL Electricity Transmission Line	P.T.P. Police Telephone Pillar
FA Fire Alarm	R.R. Reservoir
FAP Fire Alarm Pillar	R.H. Road House
FB Filter Bed, Foot Bridge	rp Revision Point
FBM Fundamental Bench Mark	S Stone
FS Flagstaff	SB Signal Box
F Sta Fire Station	SL Signal Light
GP Guide Post	SI Sluice
GV Gas Valve Compound	SP Signal Post
H Hydrant or Hydraulic	Spr Spring
ha Ha	SSA Signal Station
LB Letter Box	T.C.B. Telephone Call Box
LB Station	T.C.P. Telephone Call Post
LC Level Crossing	Tk Tank or Track
L.G. Loading Gauge	Tr Trough
L.H. Lighthouse	ts Traverse Station
L.Twr. Lighting Tower	W Well
m Metres	WB Weighbridge
M.H.W. Mean High Water	Wd.P. Wind Pump
M.H.W.S. Mean High Water Springs	Wks Works
M.L.W. Mean Low Water	W.P. Water Point
M.L.W.S. Mean Low Water Springs	W.T. Water Tap
M.P. Mile or Mooring Post	



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Client Ref: CMAPS-AAG-1215961-4165-030425
Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: County Series

Map date: 1850

Scale: 1:10,560

Printed at: 1:10,560



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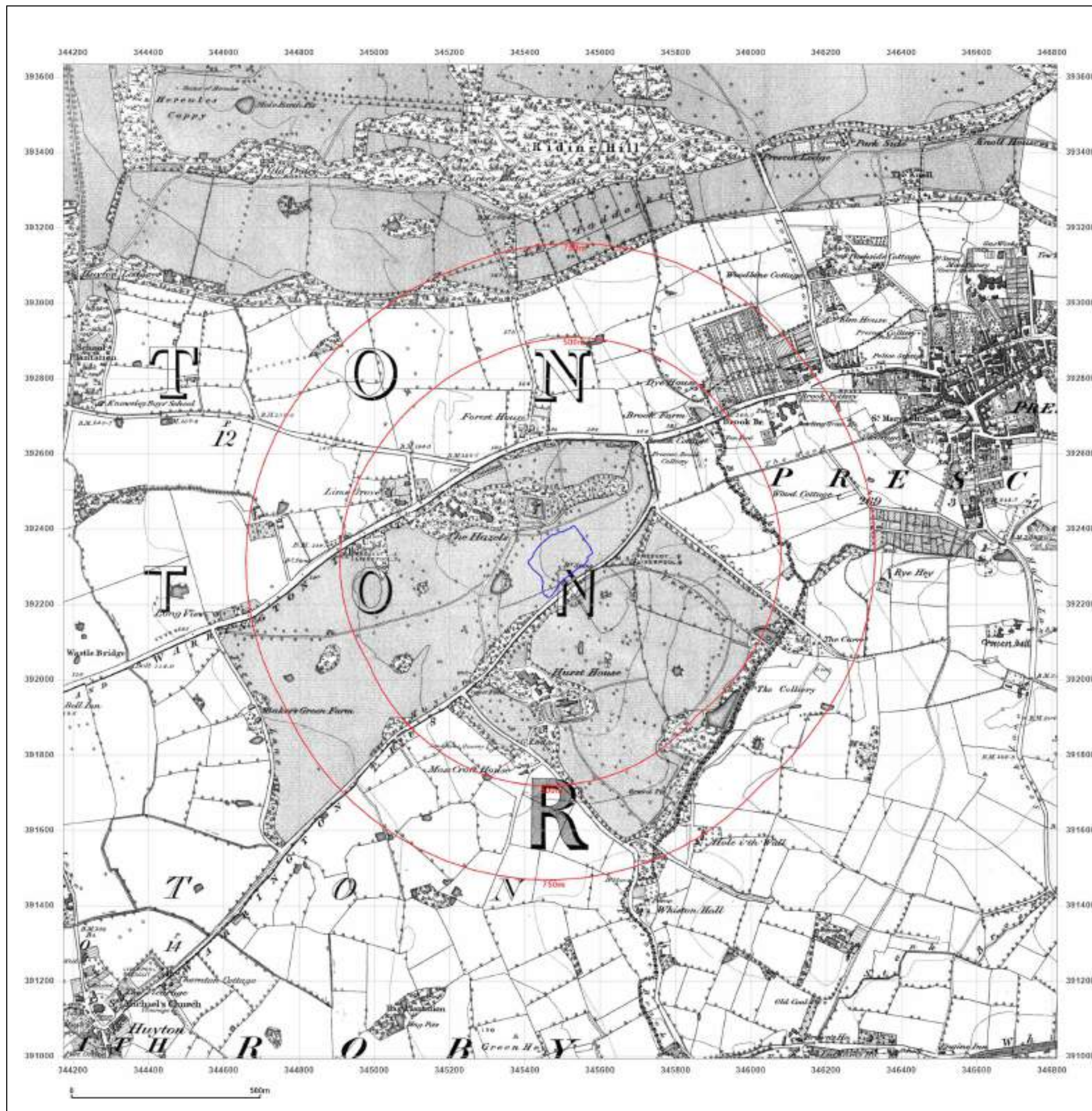


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Grid Ref: 345493, 392313

Map Name: County Series

Map date: 1906

Scale: 1:10,560

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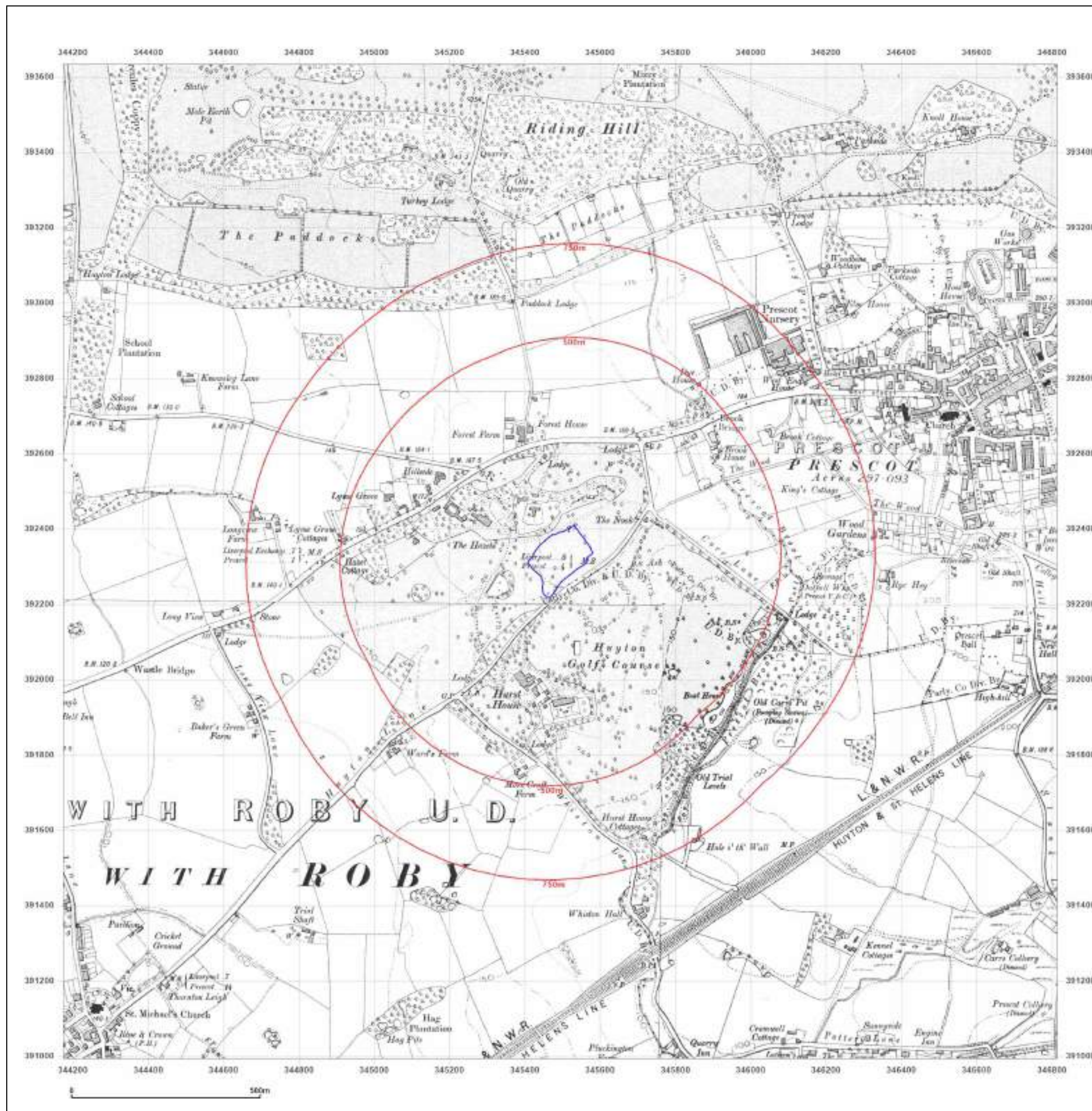


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Grid Ref: 345493, 392313

Map Name: County Series

Map date: 1925

Scale: 1:10,560

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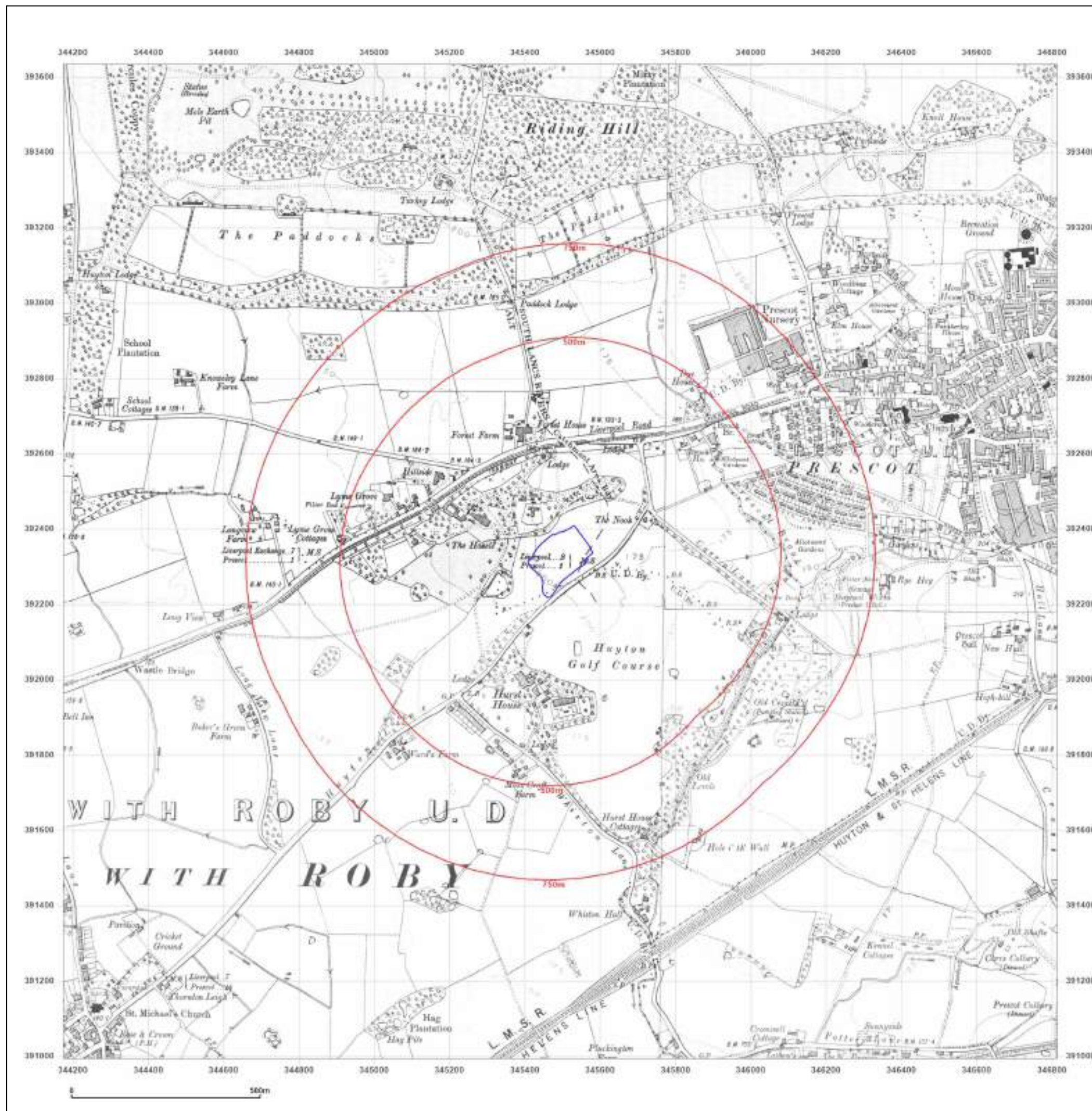


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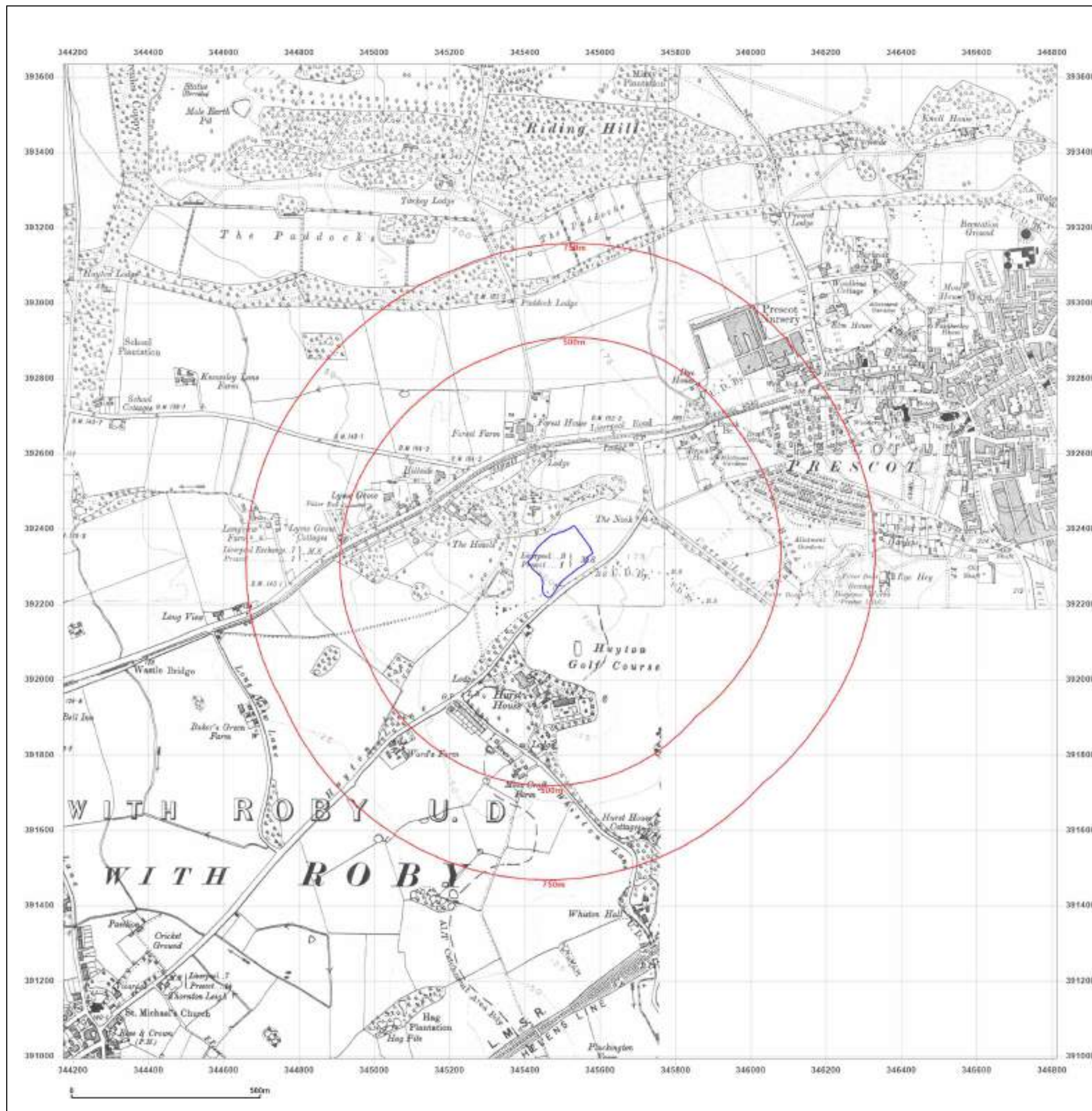


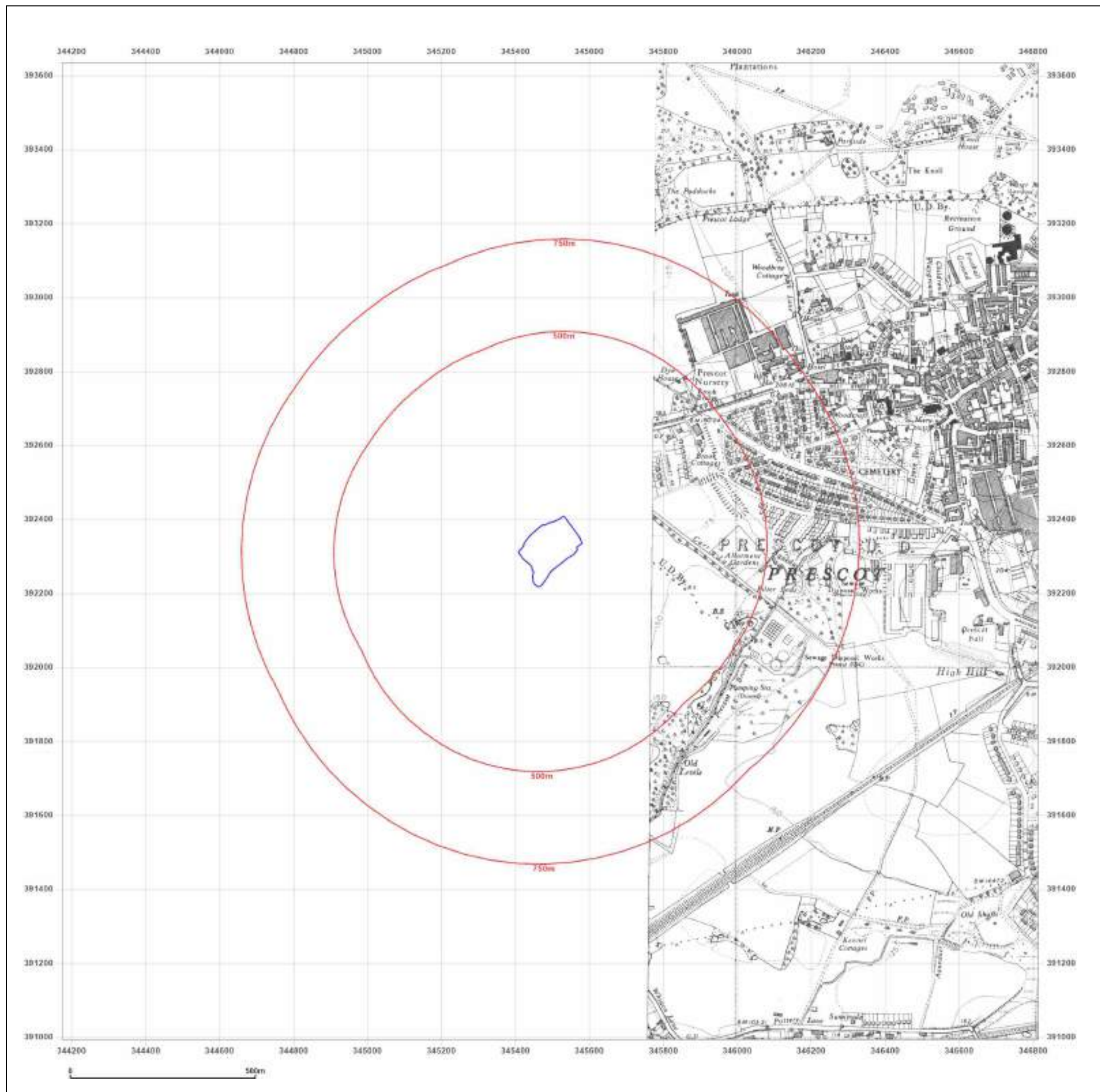
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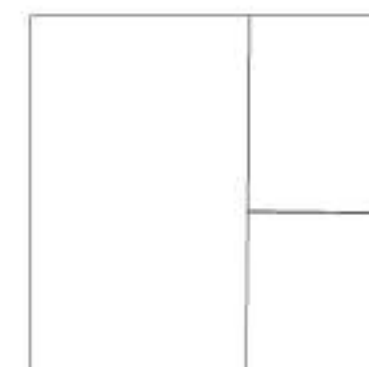
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Map Name: County Series

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Grid Ref: 345493, 392313

Map Name: Provisional

Map date: 1956

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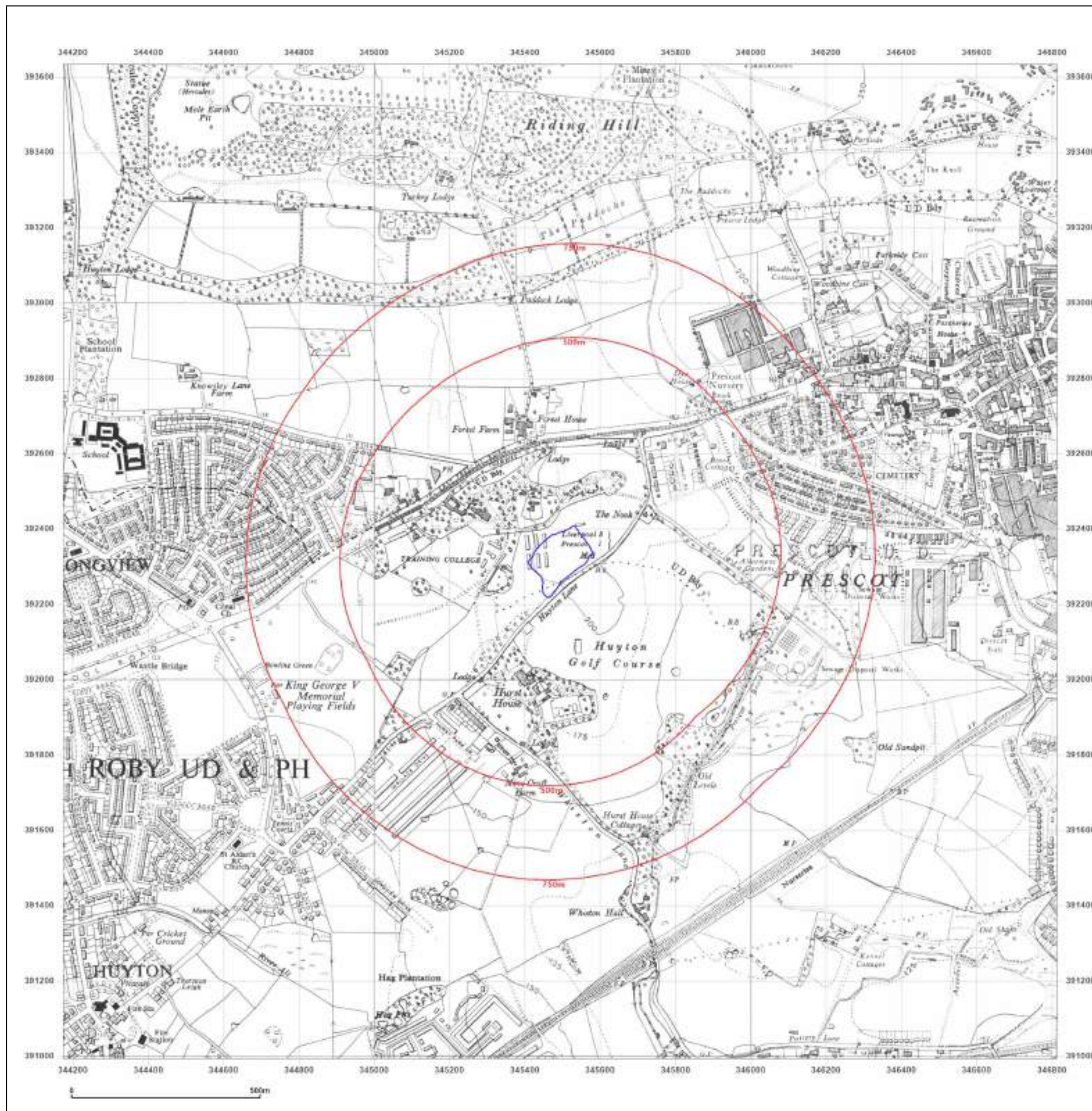


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Grid Ref: 345493, 392313

Map Name: Provisional

Map date: 1965-1966

Scale: 1:10,560

Printed at: 1:10,560



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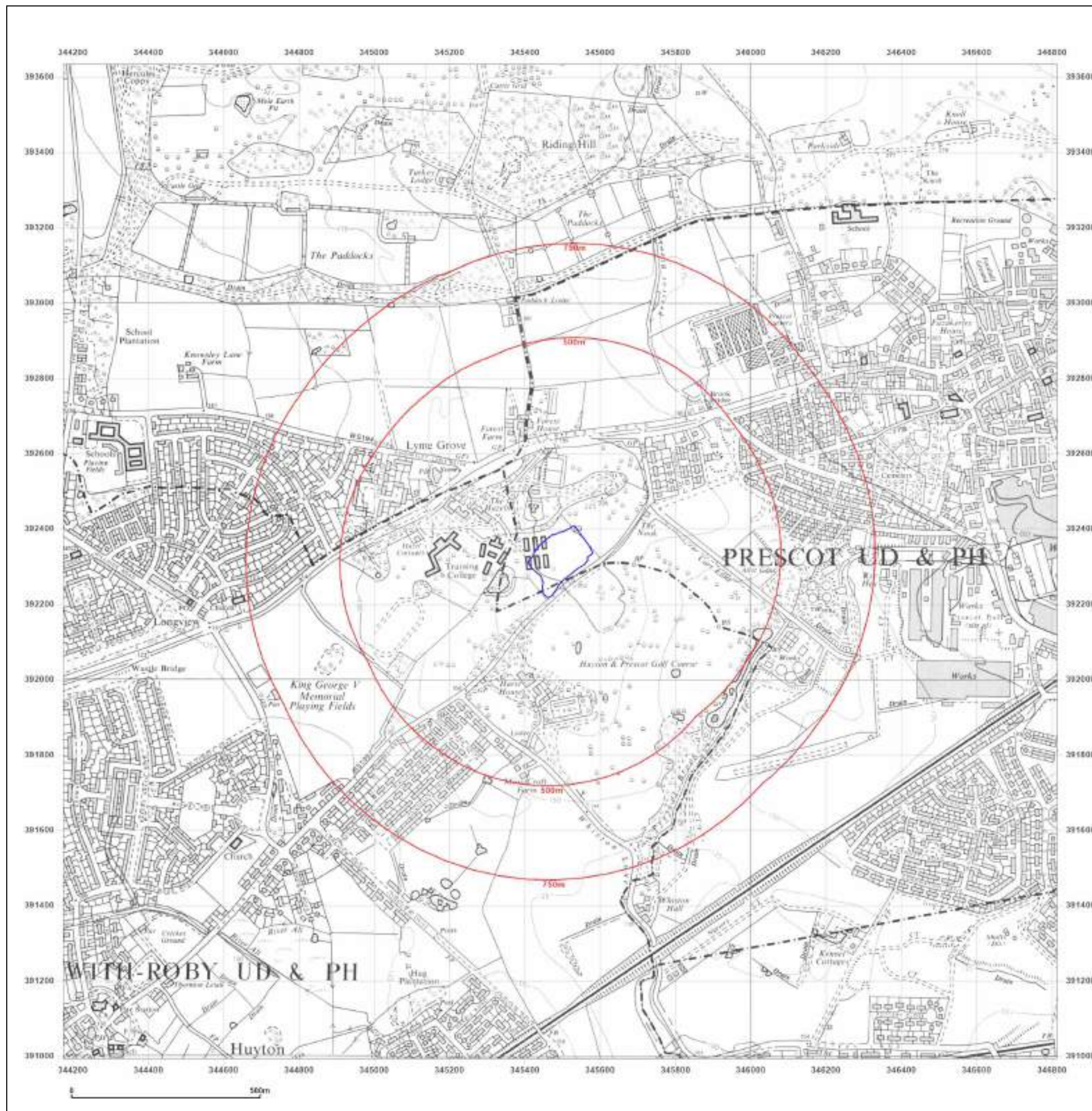


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Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1978

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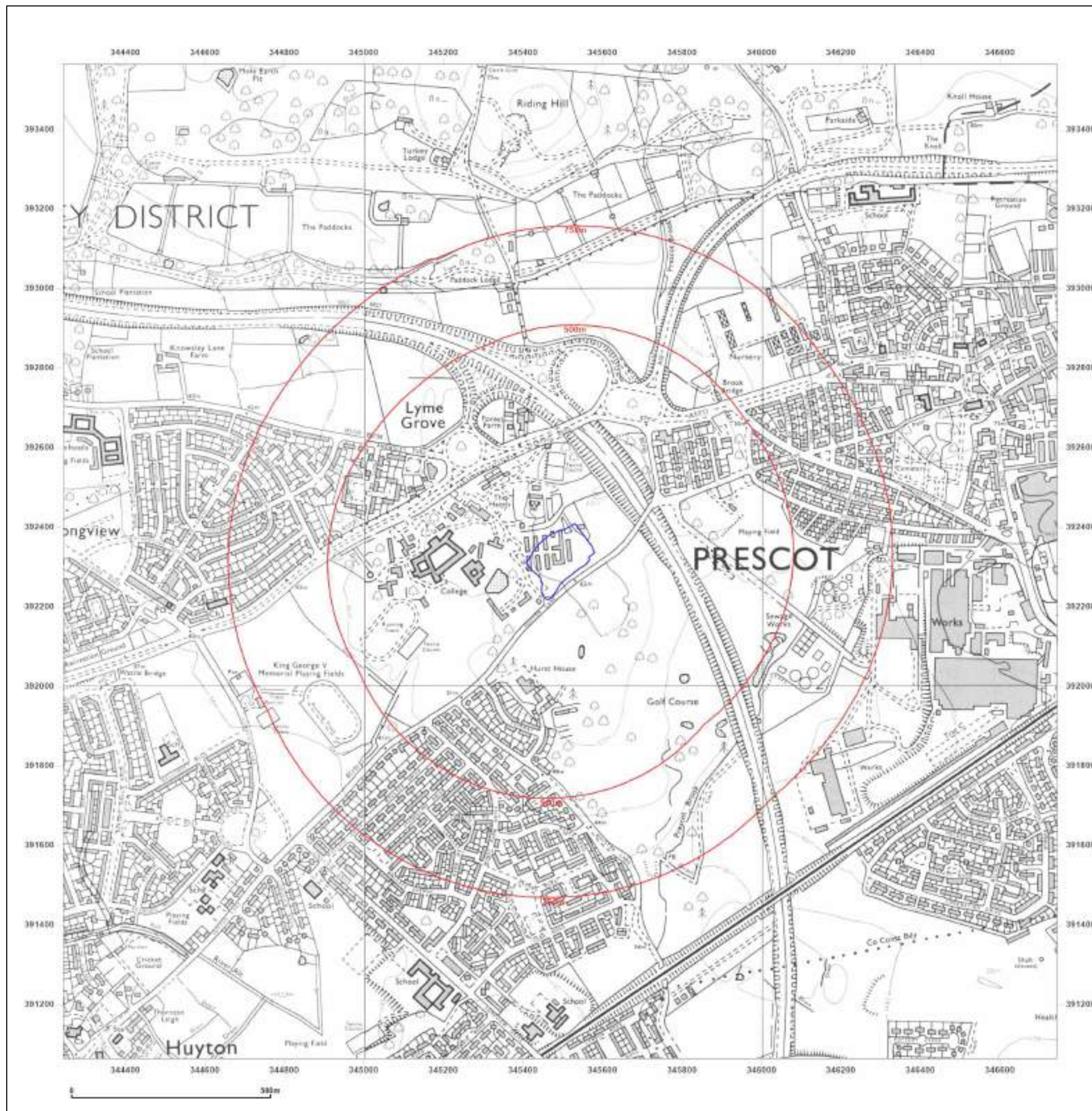


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Grid Ref: 345493, 392313

Map Name: National Grid

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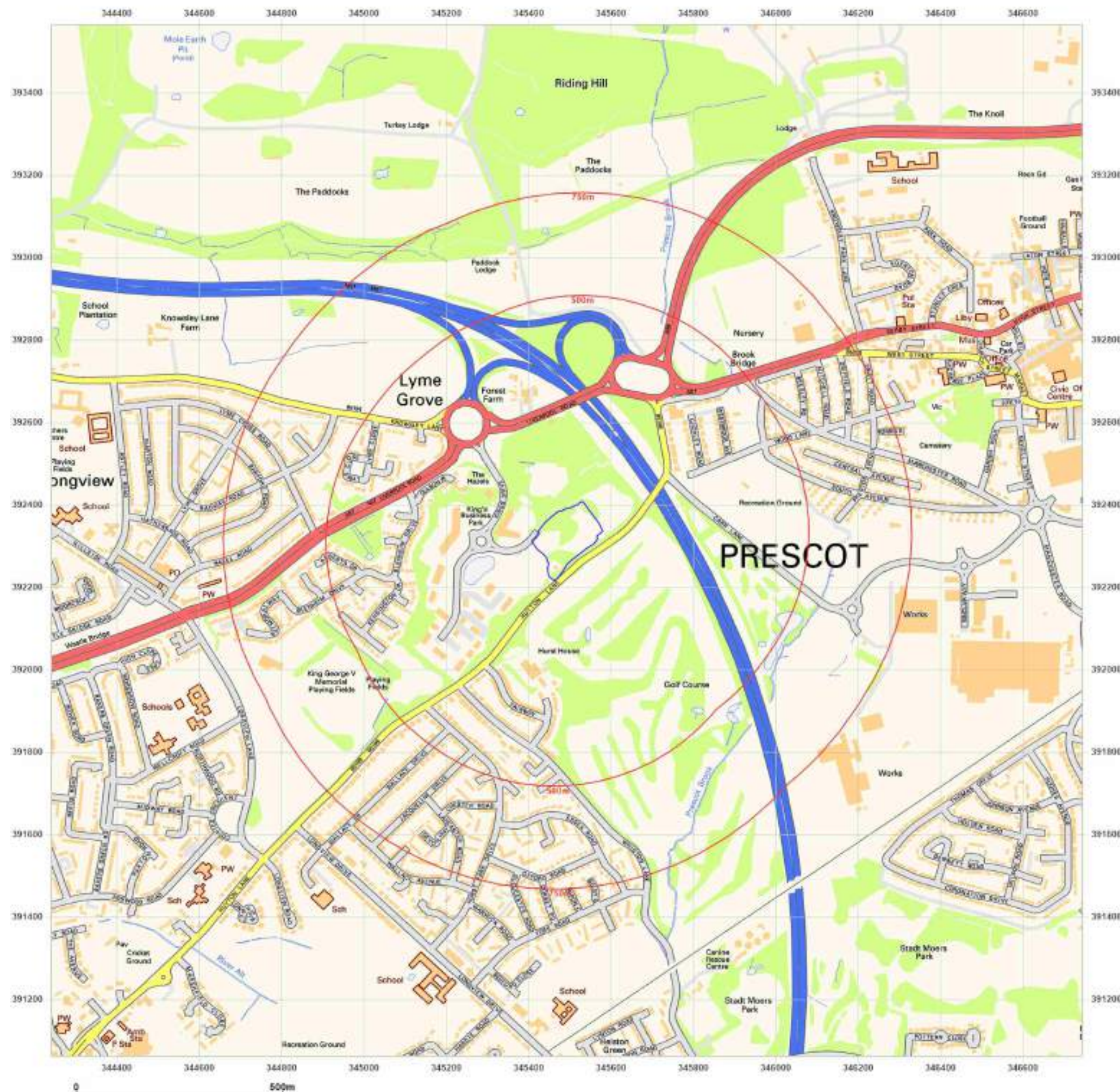


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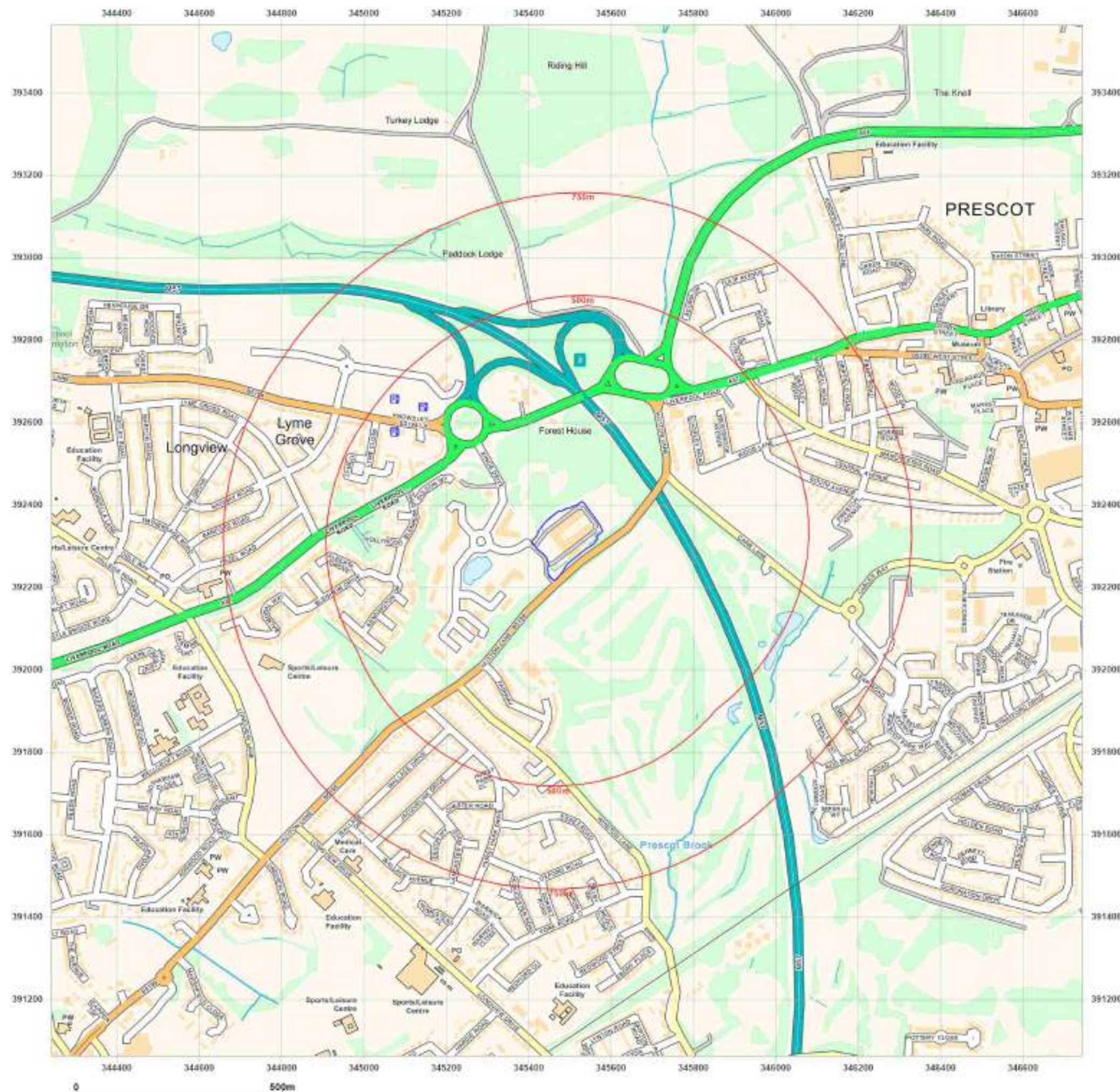


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Grid Ref: 345493, 392313

Map Name: County Series

Map date: 1892-1893

Scale: 1:2,500

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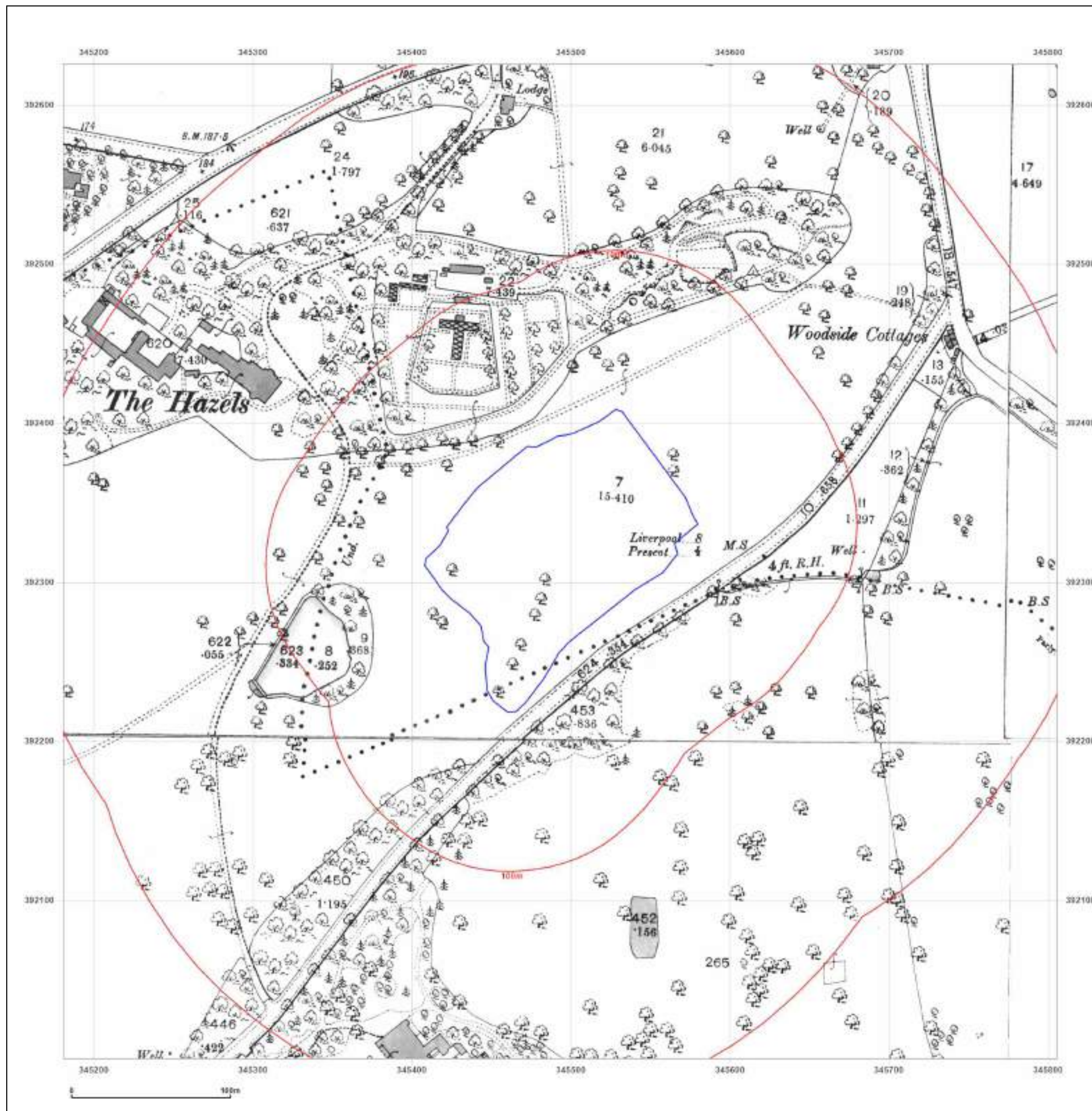


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Map Name: County Series

Map date: 1907-1908

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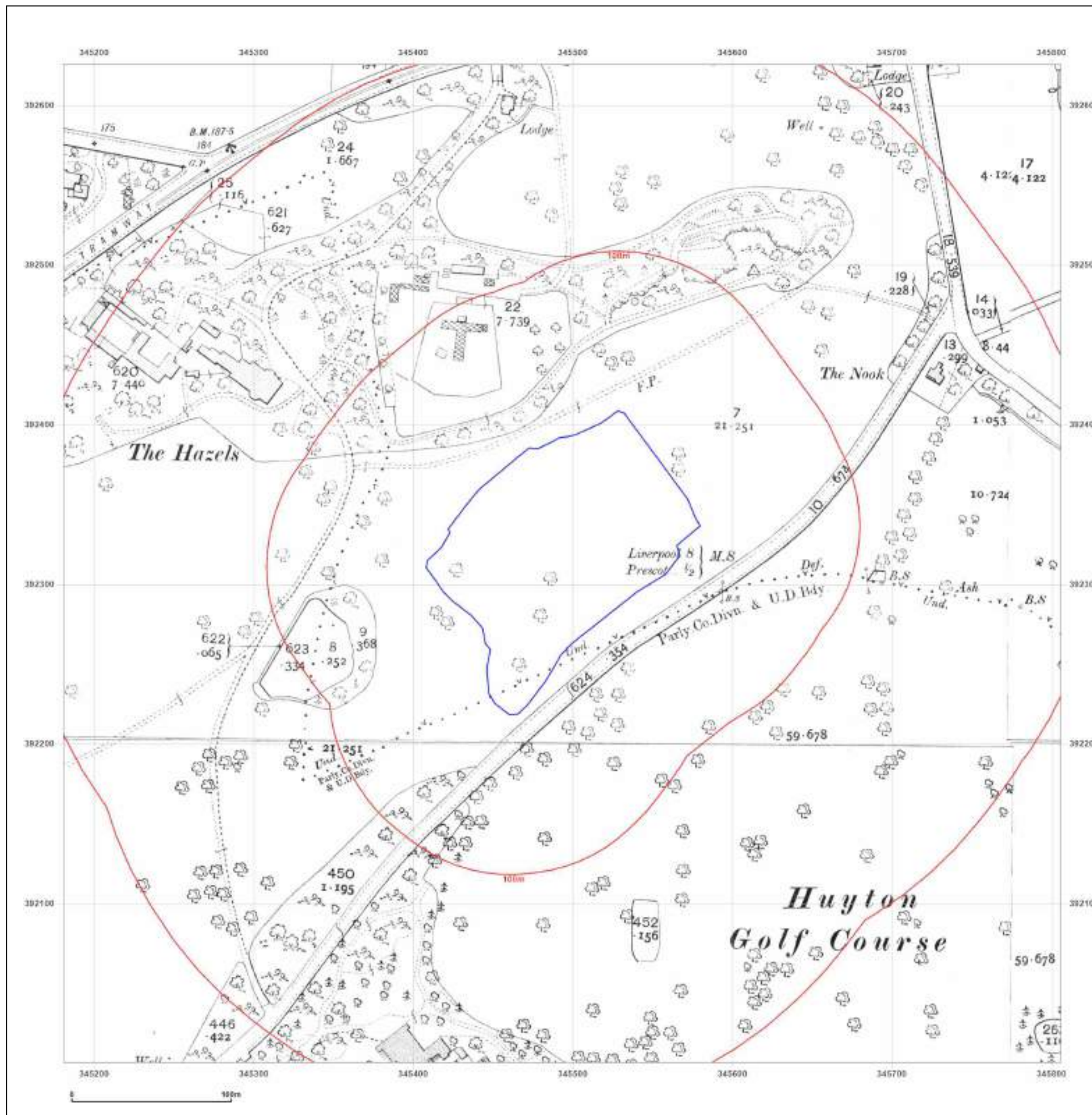


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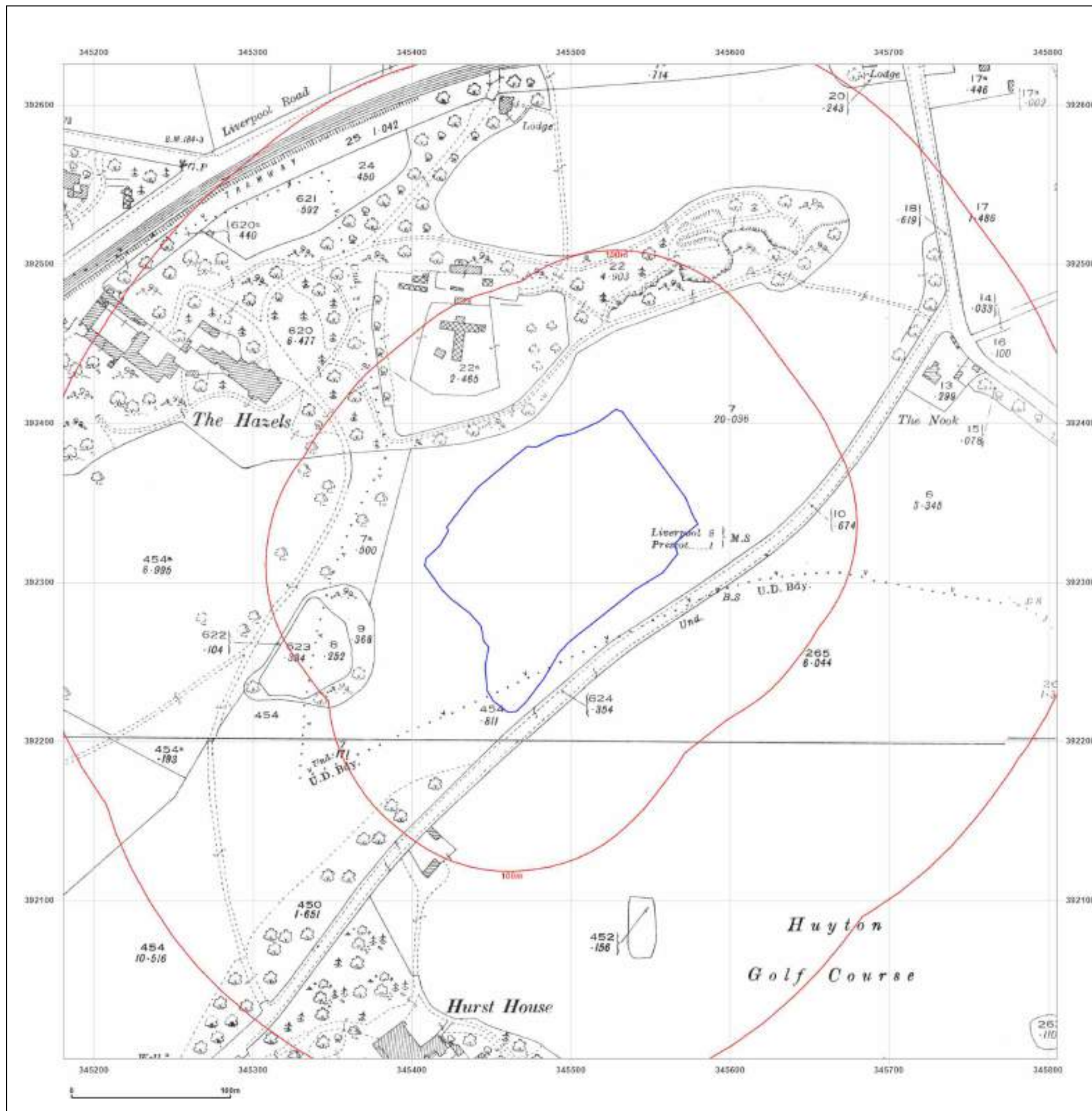


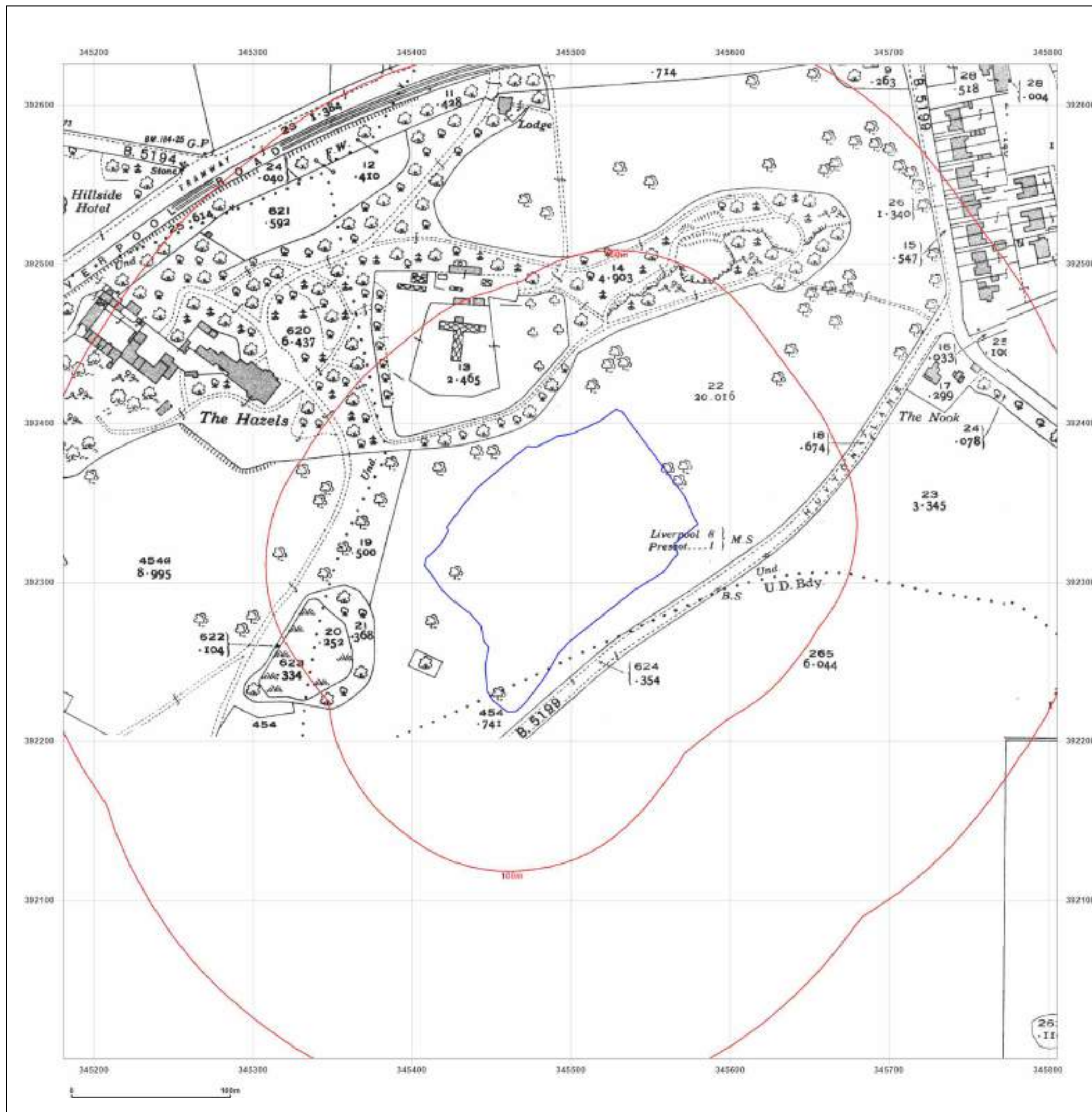
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Report Ref: CMAPS-AAG-1215961-4165-030425HIS
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Map Name: County Series

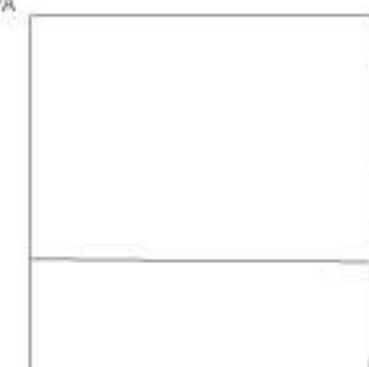
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Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1954

Scale: 1:1,250

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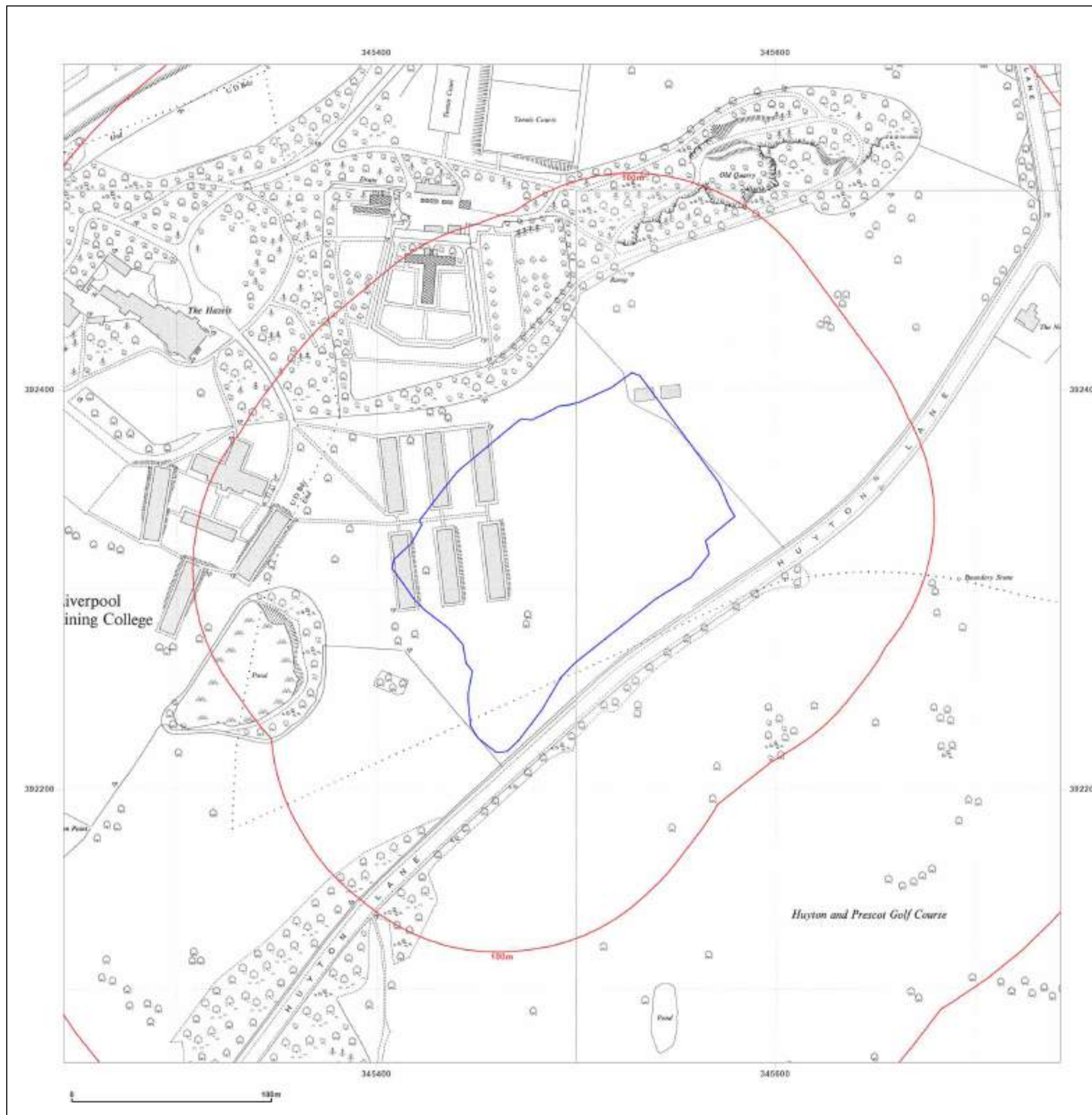


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Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1955

Scale: 1:1,250

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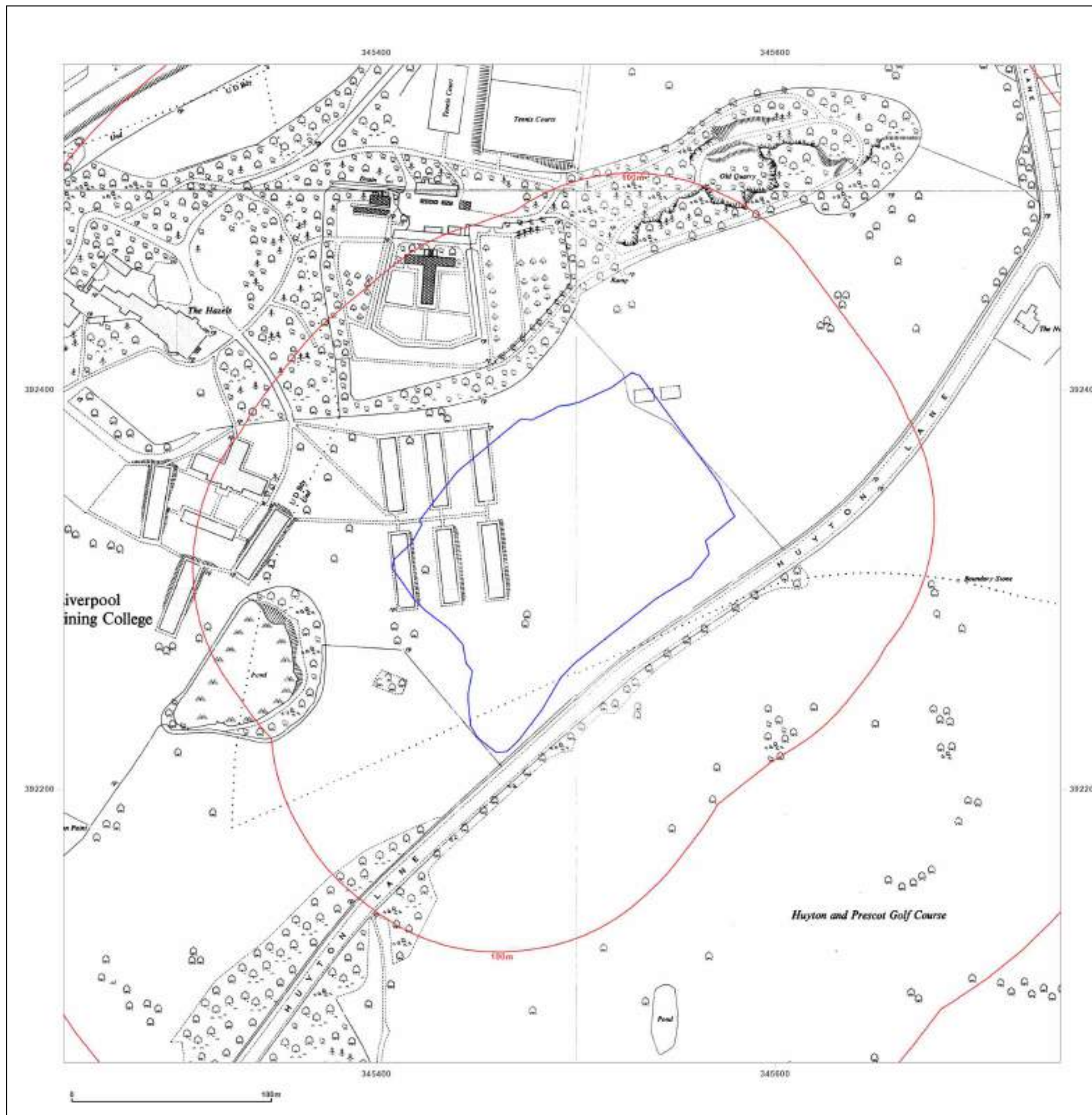


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Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1955

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1954
Revised 1954
Edition 1955
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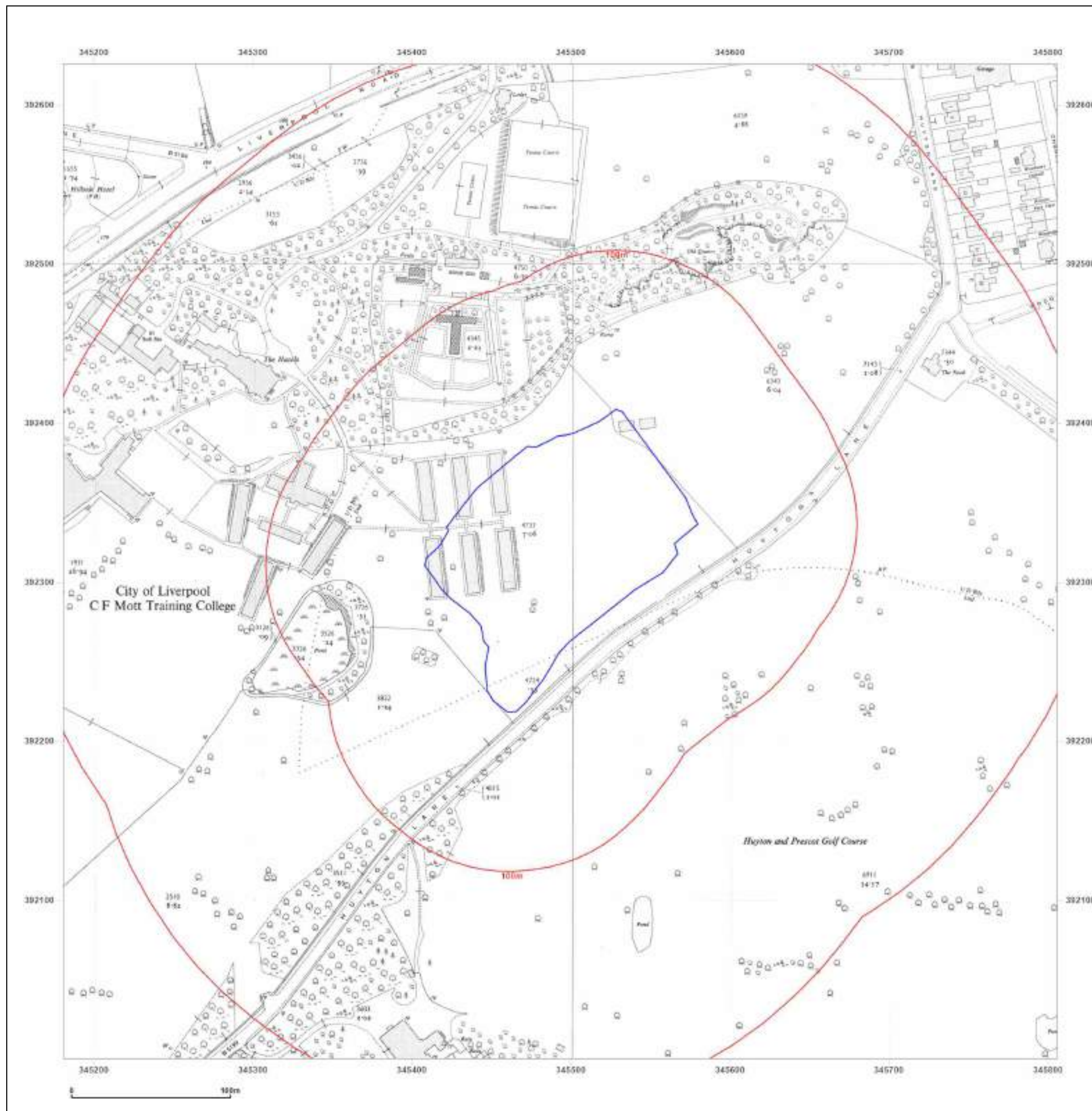


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Site Details:

Alfred H Knight International
Ltd, Alfred Knight Holdings Ltd,
Pegasus House Kings Drive,
Kings Busi, L34 1PJ

Client Ref: CMAPS-AAG-1215961-4165-030425
Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1973-1976

Scale: 1:1,250

Printed at: 1:2,000



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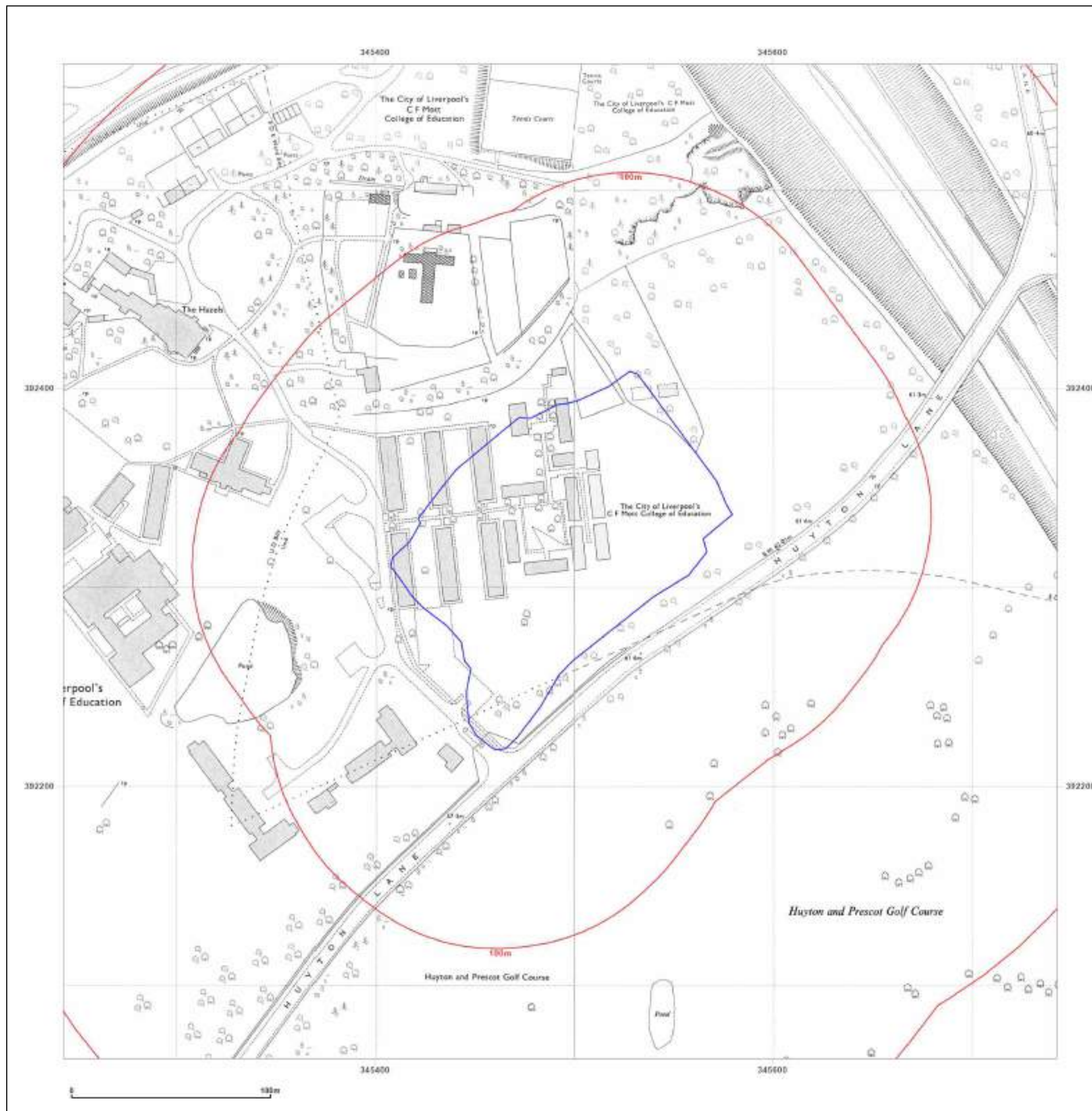


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Client Ref: CMAPS-AAG-1215961-4165-030425
Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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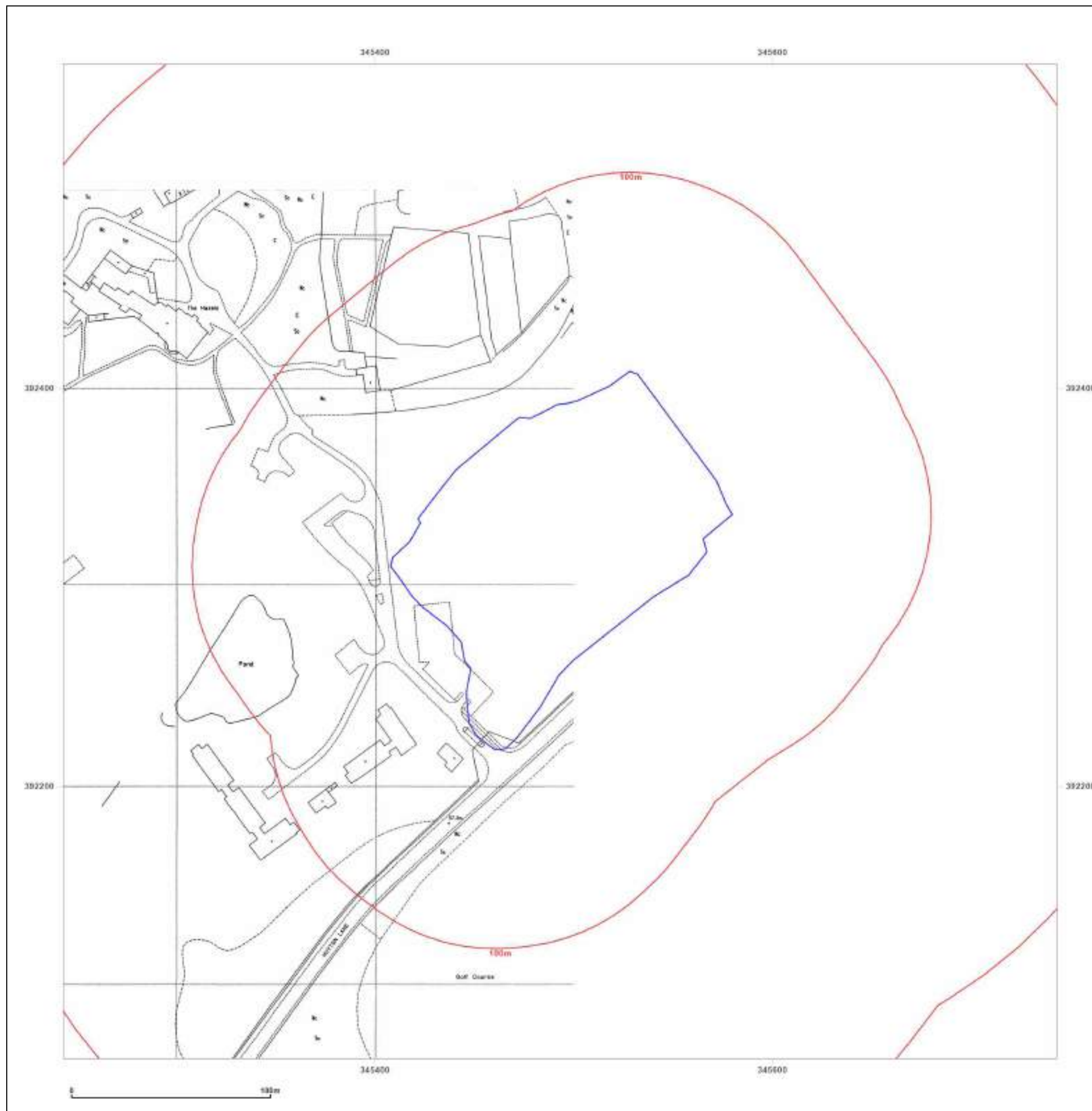


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Client Ref: CMAPS-AAG-1215961-4165-030425
Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

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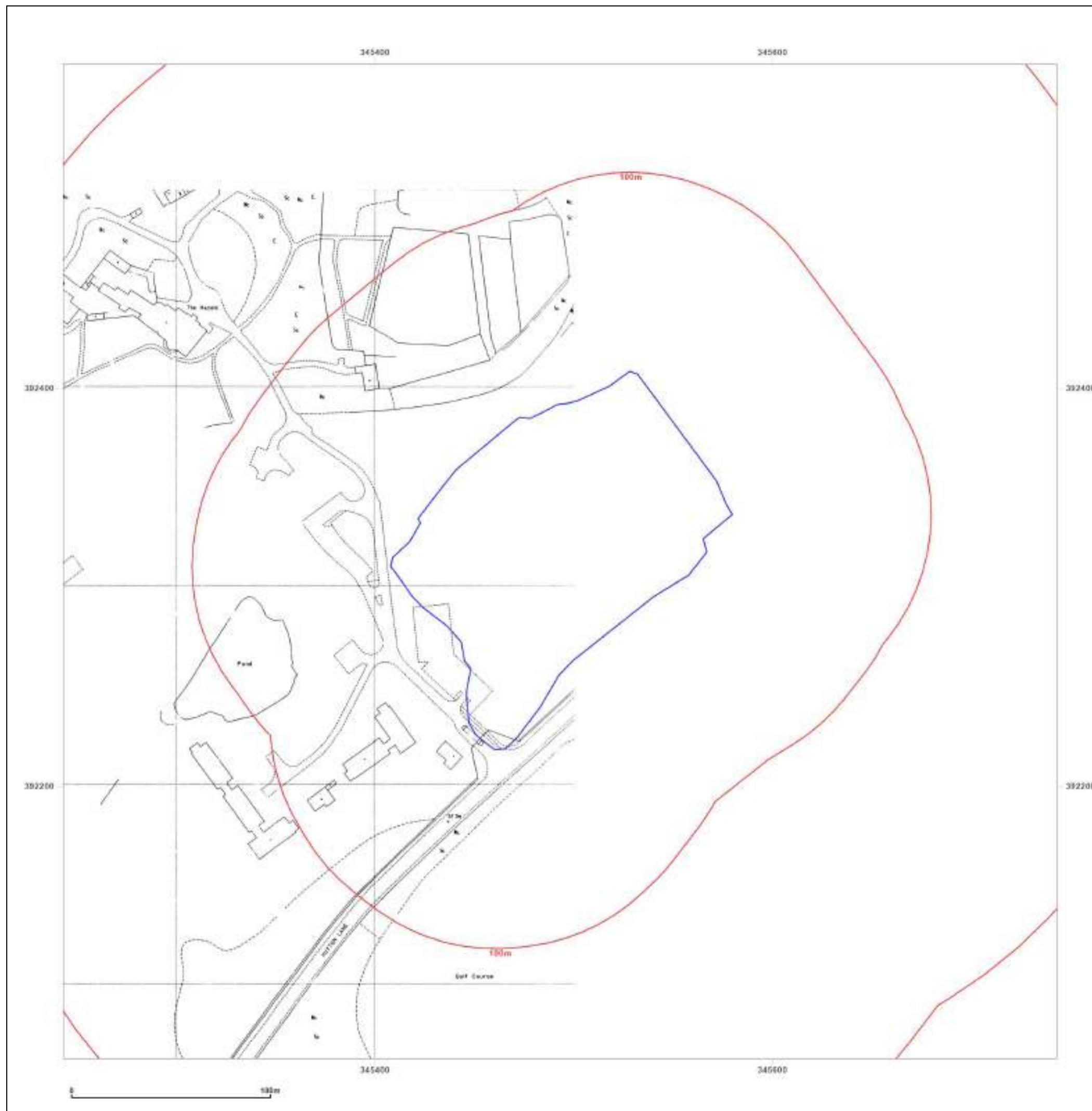


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Client Ref: CMAPS-AAG-1215961-4165-030425
Report Ref: CMAPS-AAG-1215961-4165-030425HIS
Grid Ref: 345493, 392313

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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APPENDIX E: SITE PHOTOGRAPHS



- 01. Site of relocated waste compounds showing grassed surface cover
- 02. As above





- 03. Metal service cover set within grassed surface at site proposed waste compound area
- 04. As above





- 05. Site for proposed Block B showing grassed surface cover
- 06. As above





07. As Plate 05 – 06 above

08. Showing small outbuilding located adjoining location of proposed Block B





09. Shallow ditch adjacent the proposed area for Block C

10. Showing existing waste compound area which is to be taken over for the placement of Block C





11. As Plate 10, showing adjoining outbuildings, one of which utilised for the storage of radioactive materials
12. Showing warning signage to the front of the outbuilding positioned adjacent site of proposed Block C

