



GEOENVIRONMENTAL DESK STUDY REPORT

Moorgate Road North Kirkby Liverpool

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JPG (Leeds) Ltd. Moorgate Road, Kirkby, Liverpool. Option 1 Site Entrance General Arrangement.
Ref. 6673-JPG-ZZ-ZZ-DR-T-1602-S2-P03-Option_1-General_Arrangement. Dated 29.04.2026.

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CONFIDENTIALITY STATEMENT

This report is addressed to and may be relied upon by the following:

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DOCUMENT HISTORY

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EXECUTIVE SUMMARY

Site Address	Moorgate Road North, Kirkby, Liverpool
Current Site Use	The site currently supports the main vehicle and pedestrian access gates associated with the Saputo Ltd premises. The access and egress roads adjoin Moorgate Road North and are separated by a single storey security gatehouse which is situated on a traffic island.
Proposed Development	The works comprise the realignment of the existing entrance and includes the demolition of the existing gatehouse. It is proposed to replace this with a portacabin type building suspended off the ground. No areas of soft landscaping are included in the proposals.
Site History	The earliest available historical mapping shows two large ponds present on the site, surrounded on open fields. Subsequent mapping from 1892 shows the ponds to be absent, with the site and surrounding land areas continuing to support agricultural activities. The current site layout is recorded from the late 1950s, with the gatehouse extended in the 1960s to resemble its current dimensions.
Site Setting	Geology – The site is shown to be straddling an area of made ground. Made ground would be expected associated with the historic ponds and construction of the current access features. Superficial deposits of Devensian Till (Diamicton) are recorded beneath and surrounding the site. The underlying bedrock comprises sandstone of the Chester Formation. Hydrogeology - The underlying Devensian Till (Diamicton) superficial deposits are classified as a Secondary Undifferentiated Aquifer. The Chester Formation sandstone bedrock is classified as a Principal Aquifer. The site is shown to lie in a groundwater source protection zone 3. Hydrology – No water network entries or surface water features are recorded on or within 500m of the site. Information on the gov.uk website and provided in the GS report indicates that the site does not lie within a Zone 2 or Zone 3 floodplain. No historic flood events are recorded in the GS report within 250m of the site. Environmental Permits and Registers - There are no records of sites determined as Contaminated Land under Part 2A of the Environmental Protection Act (EPA) 1990 within 500m of the site. Landfill - There are no recorded active or recently closed landfill sites within 500m of the site. Radon Risks - No radon protective measures are required for new properties. Unexploded Ordnance - The site is presented as a low UXO risk on online mapping supplied by Zetica UXO.
Environmental Risk Assessment	Based upon the conceptual site model, the site is considered to be low risk with respect to potential contamination. This designation will be largely dependent on the nature of any made ground and hazardous ground gases present on or adjacent to the site. If required as part of planning, a Phase 2 Geoenvironmental Ground Investigation, to include a Tier 2 Generic Quantitative Risk Assessment could be carried out to assess the risks to receptors. However, based on the nature of the proposed development, i.e. replacement of the existing gatehouse with a portacabin type building suspended off the ground and hardstanding surfaces with no areas of soft landscaping, the potential risk to human health and controlled waters will be mitigated. Potential risks to human health and controlled waters during the construction phase can be mitigated by the implementation of appropriate health and safety measures.
Preliminary Engineering Assessment	Foundations - It is anticipated that the building will be suspended off pads cast in the ground. The depth of the pads will be governed by the thickness, strength and settlement characteristics of the underlying natural strata. At this stage it is anticipated that the pads will be cast at shallow depth. Earthworks - Any earthworks should be carried out in accordance with the National Highways Manual of Contract Documents for Highway Works, Geotechnics Construction, CC 601 Earthworks (formerly Series 600), Version E/1.0.0. Groundwater - The presence of groundwater will need to be assessed as part of any ground investigation. Obstructions - The presence of significant obstructions in the made ground and natural strata is considered unlikely. Roads, Pavements and Hardstanding Surfaces - It is recommended that, at this stage, a conservative bearing value for the subgrade is assumed until the nature of the subgrade can be physically assessed. Chemical Attack on Buried Ground - Samples of made and natural ground should be obtained and submitted to the laboratory for testing in order to assess the sulphate content and acidity and hence, the concrete class required for buried concrete to the latest standard.
This sheet is intended as a summary only of the assessment of the site in relation to ground condition. It does not provide a definitive engineering analysis.	



1.0 INTRODUCTION

1.1 Instruction

JPG (Leeds) Limited (JPG) has been instructed by Saputo Limited to provide a geoenvironmental desk study report for the relocation of the current gatehouse and modification to the access road to the northwest of the Saputo Ltd premises off Moorgate Road North, Kirby, Liverpool.

This report covers the area proposed for redevelopment.

1.2 Objectives

The main objective of the geoenvironmental desk study is to identify potential geotechnical and environmental issues that may represent constraints to the proposed redevelopment of the site.

1.3 Scope of Works

The scope of works for the desk study includes the following:

- Site walkover.
- Review of previous reports, if available.
- Review of contemporary and historical Ordnance Survey publications.
- Consultations with regulatory authorities, where appropriate.
- Review of geological publications (including hydrology, hydrogeology, and soil survey publications where appropriate).
- Review of the radon status of the site.
- An environmental database search.
- Outline environmental risk assessment.
- Preliminary recommendations with respect to foundations, ground floor and pavement design.
- Recommendations for further work where appropriate; and
- Presentation of the findings in a tabular non-technical summary.

1.4 Location

The site is located to the southeast of Kirkby and is approximately 9.6km to the northeast of Liverpool city centre. The approximate centre of the site is located at NGR 342041, 397026.

A site location plan is provided as Figure 1 in Appendix A.



1.5 Development Proposals

JPG have prepared a drawing showing the development proposals. This is referenced below and a copy is provided in Appendix A.

- JPG (Leeds) Ltd. Moorgate Road, Kirkby, Liverpool. Option 1 Site Entrance General Arrangement. Ref. 6673-JPG-ZZ-ZZ-DR-T-1602-S2-P0-Option_1-General_Arrangement. Dated 29.04.2026.

This shows the northwestern area of the Saputo Ltd premises, which has been proposed for redevelopment.

The works comprise the realignment of the existing entrance and includes the demolition of the existing gatehouse. It is proposed to replace this with a portacabin type building suspended off the ground. No areas of soft landscaping are included in the proposals.

1.6 Site Description and Topography

A site walkover has been carried out by JPG.

The site is irregular in shape and covers an area of approximately 0.17ha.

The site currently supports the main vehicle and pedestrian access gates associated with the Saputo Ltd premises. The access and egress roads join Moorgate Road North and are separated by a single storey security gatehouse which is situated on a traffic island.

Metal palisade fencing is present along the remainder of the northwestern boundary (either side the access points off Moorgate Road North), with the entry points secured with double gates. Speed bumps and bollards are present adjacent to the inner gates.

A metal pedestrian access gate is located to the south of the security gates, which leads onto the site through a covered walkway.

Shrubs and other plants are present in peripheral soft landscaped areas surrounding the security gatehouse and pedestrian access point. With ground to the north and south of these areas supported by turfed lawns which also support signs and a flagpole. A gas governor and electricity substation buildings are present in the soft landscaping further to the northeast.

Electricity power lines are present above the site running in an approximate north-to-south orientation.

The access/egress roads travel from the gatehouse onto the remainder of the Saputo Ltd premises in a south-easterly direction across hardstanding.

A layby/parking bay is present to the south of the egress road, beyond which (to the southwest) are a line of semi-mature and mature trees.



Pedestrian walkways/crossings are marked out with paint on the ground to the east/northeast of the gatehouse.

An aerial photograph of the site is provided as Figure 2 in Appendix A.

A selection of photographs of the site is provided in Appendix B.

1.7 Limitations

The general limitations to the nature of the investigation are outlined in Appendix D.



2.0 SITE HISTORY

2.1 Ordnance Survey Mapping and Aerial Imagery

Historical maps and aerial imagery of the site were obtained from Groundsure (GS) and viewed online on Google Earth.

These were reviewed to establish the previous uses of the site and identify any potentially contaminative historical uses or potential geotechnical constraints to the proposed development.

A summary of the relevant map and imagery information is provided in Table 2.1 and copies of the Ordnance Survey (OS) maps are provided in Appendix C.

Table 2.1 – Summary of Relevant Historical Map and Aerial Imagery Information

Date(s) & Scale	Description
1867 1:2,500	Two large ponds are shown on the site. A field boundary runs through the centre of the site dividing these ponds, orientated north-to-south. The remainder of the site is shown to support parts of open fields which extend off-site. A tree is recorded on the southern site boundary. Beyond the site, areas of furze or marshy ground (and another possible pond) are shown adjacent to the north, southeast and west. Various sized fields surround the site on all sides, which frequently include similar ponds and trees (a row of trees is shown adjacent to southeastern boundary). Roads and paths/tracks are shown to the northwest of the site. Structures (probable farm houses) are shown approximately 110m southwest of the site and an old quarry is shown approximately 145m southwest of the site. A small unnamed watercourse is shown approximately 185m north of the site. Some houses and a small orchard are shown approximately 185m east of the site.
1892 1:10,560 1893 1:2,500	The ponds are no longer shown on the site, the site is shown to comprise parts of two large open fields. A small possible marshy area is shown encroaching onto the southeastern boundary. The previous field boundary is no longer shown, but a new field boundary is shown in the east of the site, in a similar orientation. The tree on the southern boundary is no longer shown. A pond is shown adjacent to the northwest boundary of the site. Most of the ponds previously recorded surrounding the site are no longer shown. The farm to the southwest of the site is now identified as Cherry Field House and is now shown to support a pump and additional outbuildings/barns.
1906 – 1907 1:10,560 1908 – 1:2,500	No significant changes are shown on the site. Some of the field boundaries surrounding the site are shown to have changed slightly, with the boundary adjacent to the north of the site now recorded further north, with a footpath shown alongside it. The pond which was adjacent to the northwest of the site is no longer shown. The pumps at Cherry Field House and the nearby old quarry are no longer shown.
1925 1:10,560 1927 1:2,500	No significant changes are shown on the site. No significant changes are shown beyond the site.
1937 1:1,2500 (Incomplete) 1938 1:10560 1956 1:10,560	The small possible marshy area in the south-east of the site is no longer shown. A large road (East Lancashire Road) is now shown approximately 160m to the south of the site, this includes small sections of raised ground (embankments), a layby/garage area and roundabout junction.
1959 – 1961 1:1,250 1960 – 1961 1:2,500 1966 1:10,560	The site is now shown to support an access road and gatehouse associated with a factory to the east. This broadly corresponds to its current (2026) layout, although the gatehouse appears smaller and the layby, trees and pedestrian access features are not recorded. The land surrounding the site is shown to have been extensively developed. Moorgate Road North borders the site to the northwest, beyond which is a large new housing estate which extends to the north, west and southwest. Land to the northeast supports features associated with the adjacent factory including small unidentified structures, with a telephone exchange shown approximately 95m from the site. A factory is shown beyond this to the northeast. To the east and southeast of the factory buildings, associated vehicular movement areas are shown. Possible tanks are recorded adjacent to the factory approximately 150m to the east of the site. Land south and southwest of the site supports open ground, with a garage shown approximately 155m from the site. Industrial premises ('works') are shown from approximately 500m east of the site.



Date(s) & Scale	Description
1967 – 1:1,250 (Incomplete) 1970 – 1:2,500 (Incomplete) 1974 – 1975 (1:1,250) (Incomplete)	The gatehouse is shown to have been extended and is now recorded to be a similar size to the current gatehouse. The factory to the east is now identified as a food factory and is shown to have been extended to the north. A warehouse is shown to the northeast of the telephone exchange. The factory to the northeast of the site is shown to have been redeveloped or extended. Mapping from 1974-1975, shows overhead power cables travelling towards the site from the southwest. A small pavilion, tennis court and bowling green are shown approximately 95m to the south.
1978 1:10,000	No significant changes are shown on the site. The adjacent factory is shown to have been extended to the south. Further/new industrial premises are now shown from approximately 275m south of the site and from approximately 500m northeast, east and southeast of the site.
1984-1989 1:1,250 1988 1:10,000 1993 1:1,250	An overhead power cable is shown crossing the site, oriented southwest to northeast. No significant changes are shown beyond the site.
2000 Google Earth 2001 1:10,000 2003 1:1,250 2003 Google Earth 2010 1:10,000 2010 Google Earth 2015 1:10,000 2025 1:10,000	From 2003 the layby, trees and pedestrian access features are shown. From 2003 an electricity substation is shown approximately 65m northeast of the site. The pavilion, tennis courts and bowling green are no longer shown from 2010 onwards, with overgrown land present at this location.

2.2 Summary of Site History

The earliest available historical mapping shows two large ponds present on the site, surrounded by open fields.

Subsequent mapping from 1892 shows the ponds to be absent, with the site and surrounding land areas continuing to support agricultural activities until significant development was recorded from the late 1950s. This comprised residential developments to the north and east of the site and industrial developments to the northeast, east and south.

The current site layout is recorded from the late 1950s, with the gatehouse extended in the 1960s to its current footprint. A quarry was recorded approximately 145m southwest of the site until 1893.



3.0 SITE SETTING

3.1 Geology

The Groundsure (GS) Report and the following geological publications have been consulted:

- British Geological Survey (BGS), Sheet 84. Wigan, 1:50,000, Solid and Drift Edition, dated 2013.
- British Geological Survey (BGS), Sheet 84. Wigan, 1:50,000, Solid Edition, dated 2013.
- BGS Onshore GeoIndex (<http://mapapps2.bgs.ac.uk/geoindex/home.html>).
- BGS, Lexicon of Named Rock Units.

The site is shown to be straddling an area of made ground, '*artificially raised ground including site formation, spoil tips, landfills and dams*'. This area of made ground extends further to the north/northeast, east and south of the site, covering an area measuring approximately 1.5km in width (measured from west-to-east). Based on the history of the site, made ground would also be expected associated with the historic ponds (potentially including low-strength organic soils/materials) and construction of the current access features.

Superficial deposits of Devensian Till (Diamicton) are recorded beneath and surrounding the site, described on the 1:50,000 BGS mapping as clay or sandy clay with '*common pebbles, cobbles and some boulders*'. Superficial deposits of the Shirdley Hill Sand Formation are recorded further to the north and south of the site (recorded from approximately 120m to the south of the site). Extensive deposits of peat are recorded from approximately 2km east of the site.

The made ground and superficial deposits are recorded to be underlain by sandstone bedrock of the Chester Formation. The BGS Lexicon indicates that this generally comprises sandstone which may be pebbly with subordinate beds of mudstone, generally described in the area as "*...red-brown, yellow, or yellow-mottled, very fine to coarse grained sandstones that are commonly cross-bedded, locally micaceous, silty or argillaceous, pebbly or conglomeratic and generally friable.*".

Solid geology of the Pennine Lower Coal Measures is recorded from approximately 2.3km southwest and from approximately 2.6km east of the site.

There are no recorded faults within 500m of the site, although a fault is shown approximately 850m west of the site.



3.2 Historical Boreholes

Historical borehole records have been reviewed on the BGS Onshore Geoindex.

There is one BGS borehole record located within 250m of the site (SJ49NW1190) which is confidential.

BGS log ref. SJ49NW6 is located approximately 255m southeast of the site and BGS log ref. SJ49NW656 is located approximately 295m east of the site.

A summary of relevant/useful available boreholes records is provided below.

Table 3.2 – Summary of Historical Boreholes

Borehole Location	Borehole Name	Depth (m bgl)
255m South-East	Kirkby Main Sewerage (SJ49NW6)	5.33
295m East	Dairy Crest, Moorgate Road, Kirkby (SJ49NW656)	80.00

The Kirkby Main Sewerage borehole recorded 'fill' to 1.37m depth, underlain by clay (extending to 4.27m depth), red sand (extending to 5.33m depth) and finally 'rock'.

The Dairy Crest borehole recorded 'topsoil/slag' to 0.50m depth, underlain by boulder clay (extending to 5.75m depth), sandstone/marl (extending to 68m depth) and finally yellow sandstone (from 68m to 80m depth).

3.3 Coal Mining

The site does not lie within a Mining Remediation Authority reporting area; therefore, a coal mining report is not required.

3.4 Quarrying/Mineral Extraction

The GS report provides information from the British Pits (BritPit) database, which is a database maintained by the BGS of currently active and closed surface and underground mineral workings.

There is one recorded historical BritPit entry located within 500m of the site.

Cherry Field House Gravel Pit was located approximately 163m to the southwest of the site. This was a surface mineral working from which sand and gravel was extracted.

3.5 Hydrogeology

The underlying Devensian Till (Diamicton) superficial deposits are classified as a Secondary Undifferentiated Aquifer. These are described as being '*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*'.



The Shirdley Hill Sand Formation present to the south and north of the site is classified as a Secondary A Aquifer. These are *'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'*.

The Chester Formation Sandstone bedrock underlying the site is classified as a Principal Aquifer. These are described as *'Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers'*.

The site is shown to lie in a groundwater source protection zone 3, which extends in all directions surrounding the site.

The GS report indicates that the risk of groundwater flooding is 'high' in the far north-western area of the site (possibly outside the proposed construction areas) and straddles 'moderate-high' and 'moderate' risk zones across remaining areas. The risk of groundwater flooding occurring at the site should be assessed based on site specific information.

There are no active groundwater abstraction licences within 1km of the site, although four historic licences are recorded which are all positioned at the same location. Details are provided in Table 3.5 below.

Table 3.5 - Records of Historic Groundwater Abstraction Licences within 1km of the site

Distance and Direction	Name/Source/Point	Details	Licence No.
243m East	Land at Dairy Crest	Evaporative Cooling	2569031142
243m East	Land at Dairy Crest	Process Water	2569031142
243m East	Land at Dairy Crest	Evaporative Cooling	2569031142R01
243m East	Land at Dairy Crest	Process Water	2569031142R01

There are no recorded active licenced discharge consents to controlled groundwater within 500m of the site. However, one revoked discharge consent is recorded located 455m southwest of the site at East Lancashire Road. This is for the discharge of 'miscellaneous discharges – surface water' into Knowsley Brook.

3.6 Hydrology

No water network entries or surface water features are recorded on or within 500m of the site.

There are no recorded active licenced surface water abstractions within 1km of the site.

There are no recorded active licenced discharge consents to controlled surface water within 500m of the site.



There are no recorded (red list) pollutant releases to surface waters within 500m of the site.

There are no records of pollutant releases (special category effluent) to the public sewer within 500m of the site.

Information on the gov.uk website and provided in the GS report indicates that the site does not lie within a Zone 2 or Zone 3 floodplain.

No historic flood events are recorded in the GS report within 250m of the site.

The Groundsure report indicates that the highest risk of surface water flooding occurring on the site is 1 in 30-years with a depth of 0.3m to 1.0m. The risk of surface water flooding occurring at the site should be assessed based on site specific information.

3.7 Pollution Incidents

There are two recorded Environments Agency Pollution Incidents within 500m of the site.

The closest entry is recorded 302m southwest of the site and occurred on the 21 August 2025, resulting in minor impacts to water and air and significant impacts to land (no pollutant descriptions are given).

The remaining entry is recorded 345m south of the site relating to oils and fuel (unidentified oil) which resulted in minor impacts to water.

3.8 Environmental Permits and Registers

There are no records of active or historical Control of Major Accidents Hazard (COMAH) sites or Notification of Installations of Handling Hazardous Substances (NIHHS) sites within 500m of the site.

There are no historical Integrated Pollution Control (IPC) records of substance releases to air, land or water within 500m of the site.

There are ten recorded Part A(1) licensed industrial activities within 500m of the site, all of which are recorded on the site. These are held by the operator 'Dairy Crest Ltd' and include '*associated processes*', '*disposal of non-hazardous waste*', '*treatment and processing (other than packaging) of animal or vegetable raw materials (other than milk only)*'. Seven of these entries are recorded to be '*effective*', with two '*last date noted as effective*' on the 7 January 2026.

There is one active recorded Part A(2) and Part B licensed pollutant release within 500m of the site. This is recorded 286m northeast of the site, relating to '*coating processes*' (historical permit, type B).

There are no records of sites determined as Contaminated Land under Part 2A of the Environmental Protection Act (EPA) 1990 within 500m of the site.



3.9 Landfills and Waste

The GS report includes information on recorded active, recently closed and historical landfill sites supplied by the EA, Local Authority and the BGS.

There are no recorded active or recently closed landfill sites within 500m of the site.

There are no records of historical landfill or waste sites within 500m of the site.

There are two recorded waste exemptions within 500m of the site. The closest is located 106m west of the site relating to '*treating waste*' and is described as '*sorting and de-naturing of controlled drugs for disposal*'. The remaining entry is located 337m southeast and relates to '*treating waste*', described as '*preparatory treatments (bailing, sorting, shredding etc.)*'.

3.10 Radon Risks

The site is not in a radon affected area as defined by Public Health England with less than 1% of properties above the action level. In accordance with the Building Research Establishment (BRE) publication BR211, no radon protective measures are required for new properties constructed on the site.

3.11 Unexploded Ordnance

The site is presented as a low UXO risk on online mapping supplied by Zetica UXO.

3.12 Previous Reports

No previous reports for the site have been provided for review as part of this desk study.



4.0 ENVIRONMENTAL RISK ASSESSMENT

4.1 Introduction

The statutory definition of contaminated land is given in the Environmental Protection Act, Part 2A, Section 78, 1990, which was introduced by the Environment Act, Section 57, Department of Environment, 1995 and is defined as:

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 (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and/or
- Significant pollution of controlled waters is being caused, or there is a significant possibility of such pollution being caused (by the land).

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. The potential for harm to occur requires three conditions to be satisfied:

- Sources – The presence of substances (potential contaminants/pollutants), in or under the ground, that may cause harm or pollution.
- Receptors - The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora; and
- Pathway - The existence of a linkage between the Source and the Receptor.

In summary, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and an unacceptable risk of harm to available receptors.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the sensitivity of the intended end use of the site and the site's characteristics and environmental setting.

Legislation and guidance on the assessment of contaminated sites acknowledges the need for a tiered risk-based approach. This is set out in the Environment Agency's manual Land Contamination: Risk Management (LCRM), published in October 2020 and last updated on 12 June 2025.



The LCRM outlines the following stages of risk assessment:

Tier 1: Preliminary risk assessment (PRA)	As part of this assessment, the overall site objectives are defined. Current and historical information about the site and the potential contaminants expected to be present are assessed and an outline conceptual model (CM) is developed. The risks are assessed qualitatively, and the findings reported in the PRA (or desk study). The report recommends what further works would be required in order to assess whether the site is suitable for its proposed use.
Tier 2: Generic quantitative risk assessment (GQRA)	The GQRA uses Generic Assessment Criteria, and a standard set of generic assumptions based on specific end uses in order to assess the risks to receptors. It includes the collection of more detailed information including laboratory analysis of soil and water samples in order to inform and assess the risks.
Tier 3: Detailed quantitative risk assessment (DQRA)	If pollutant linkages are confirmed as part of the GQRA, these are known as relevant pollutant linkages (RPLs) and further detailed assessment is required. At this tier, detailed site-specific information is collected to estimate the risk or to develop site-specific assessment criteria (SSAC). This may include collecting information about the receptor.

This geoenvironmental desk study report represents a Tier 1 Preliminary Risk Assessment.

4.2 Potential Sources

The following potentially contaminative sources may be present on or adjacent to the site:

- Potentially contaminated made ground on the site associated with the historical ponds (backfilled), farm tracks, agricultural activities and marshy areas.
- Potentially contaminated made ground, e.g. backfilled ponds and quarries, adjacent to the site.
- Construction materials associated with the current gatehouse and access roads (e.g. potential asbestos-containing materials and coal tar constituents within tarmac).

Potential contaminants which could be present on the site are listed below:

- Metals, metalloids and their compounds.
- Inorganic compounds, e.g. arsenic.
- Asbestos fibres/asbestos containing materials.
- Organic compounds including polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons (TPH).



- Pesticides and herbicides.
- Hazardous ground gases.

4.3 Potential Pathways

Based on the available information and the proposed works which comprise the realignment of the existing entrance and secure access points. Demolition of the existing gatehouse and replacement with a portacabin type building (suspended off the ground) and absence of areas of soft landscaping. The following potential exposure pathways will require consideration, both during the development works and on completion of construction:

- Dermal contact with contaminated soil and groundwater.
- Inhalation of hazardous ground gases/asbestos fibres; and
- Leaching/migration of potential contaminants from soil into groundwater and surface water via surface infiltration, drainage and/or groundwater flow.

4.4 Potential Receptors

The potential receptors considered are:

- Development workers and future maintenance workers involved in excavations, e.g. foundations or where services are being installed or repaired following development.
- Future end users of the site, e.g. site staff, security personnel; and
- Controlled waters, i.e. underlying aquifers.

4.5 Pollutant Linkage Assessment

A potential pollutant linkage assessment has been completed and is summarised in the Conceptual Site Model (CSM), which is provided in Section 4.6. This is based on the proposed development of the site for an ongoing commercial end use.

Based on the proposed/ongoing commercial end use and history of the site, the following potential pollutant linkages may be present:

- Development and maintenance workers and future site end users could come into contact with soils and groundwater containing elevated concentrations of potential contaminants and hazardous ground gases.
- Controlled surface waters could become contaminated due to leaching and migration of potential contaminants from the made ground.
- The underlying aquifers and nearby surface waters could become contaminated due to the leaching and migration of potential contaminants from the made ground.



These are based on current site conditions and do not consider exposure pathways following any remediation of the site as part of the proposed redevelopment works.

4.6 Conceptual Site Model & Risk Rating

The conceptual model is summarised in Table 4.6 below.

Table 4.6 Preliminary Conceptual Model

Source	Pathway	Receptor	Risk Rating	Comments
On-site Sources	Dermal contact with contaminated soil and groundwater; and	Human Health	Low	If required as part of planning carry out a ground investigation to confirm the thicknesses and nature of the made ground and establish the concentrations of potential contaminants.
Potentially contaminated made ground on the site associated with the historical ponds (backfilled), farm tracks, agricultural activities and marshy areas.	Inhalation of hazardous ground gases/asbestos fibres.	Development workers and future maintenance workers involved in excavations, e.g. foundations or where services are being installed or repaired following development.		Vigilance to be maintained during the works for any potentially contaminated materials. If potentially contaminated materials are encountered, seek the advice of a specialist.
Construction materials associated with the current gatehouse and access roads (e.g. potential asbestos-containing materials and coal tar constituents within tarmac).		Future end users of the site, e.g. site staff, security personnel.		Appropriate health and safety procedures to be in place during the construction phase of the development. Including possible entry into excavations and any confined spaces.
Off-site Sources	Leaching/migration of potential contaminants from soil into groundwater and surface water via surface infiltration, drainage and/or groundwater flow.	Controlled Waters	Low	On completion of the works the site will be covered with hardstanding. This will isolate any potential contaminants in the made ground.
Potentially contaminated made ground, e.g. backfilled ponds and quarries, adjacent to the site.		Groundwater, i.e. underlying aquifers.		If required as part of planning to carry out a ground investigation to confirm the presence of groundwater and establish the concentrations of potential contaminants present.
				Site is located within a Groundwater Source Protection Zone.
				On completion of the works the site will be covered with hardstanding. This will significantly reduce the potential for leaching and migration of potential contaminants.

4.7 Risk Classification

Based upon the conceptual site model, the site is considered to be low risk with respect to potential contamination.

This designation will be largely dependent on the nature of any made ground and hazardous ground gases present on or adjacent to the site.



If required as part of planning, a Phase 2 Geoenvironmental Ground Investigation, to include a Tier 2 Generic Quantitative Risk Assessment could be carried out to assess the risks to receptors.

However, based on the nature of the proposed development, i.e. replacement of the existing gatehouse with a portacabin type building suspended off the ground and hardstanding surfaces with no areas of soft landscaping, the potential risk to human health and controlled waters will be mitigated.

Potential risks to human health and controlled waters during the construction phase can be mitigated by the implementation of appropriate health and safety measures.



5.0 PRELIMINARY ENGINEERING ASSESSMENT

5.1 Development Proposals

JPG have prepared a drawing showing the development proposals. This is referenced below and a copy is provided in Appendix A.

- JPG (Leeds) Ltd. Moorgate Road, Kirkby, Liverpool. Option 1 Site Entrance General Arrangement. Ref. 6673-JPG-ZZ-ZZ-DR-T-1602-S2-P03-Option_1-General_Arrangement. Dated 29.04.2026.

This shows the northwestern area of the Saputo Ltd premises, which has been proposed for redevelopment.

The works comprise the realignment of the existing entrance and includes the demolition of the existing gatehouse. It is proposed to replace this with a portacabin type building suspended off the ground. No areas of soft landscaping are included in the proposals.

5.2 Foundations

Ground conditions at the proposed location of the gatehouse are anticipated to comprise hardstanding and made ground underlain by superficial deposits of Devensian Till (Diamicton) and sandstone bedrock of the Chester Formation.

The works comprise the realignment of the existing entrance and includes the demolition of the existing gatehouse. It is proposed to replace this with a portacabin type building suspended off the ground.

It is anticipated that the building will be suspended off pads cast in the ground. The depth of the pads will be governed by the thickness, strength and settlement characteristics of the underlying natural strata. At this stage it is anticipated that the pads will be cast at shallow depth.

5.3 Earthworks

Any earthworks should be carried out in accordance with the National Highways Manual of Contract Documents for Highway Works, Geotechnics Construction, CC 601 Earthworks (formerly Series 600), Version E/1.0.0.

5.4 Groundwater

The presence of groundwater will need to be assessed as part of any ground investigation.



5.5 Obstructions

The presence of significant obstructions in the made ground and natural strata is considered unlikely.

5.6 Roads, Pavements and Hardstanding Surfaces

It is recommended that, at this stage, a conservative bearing value for the subgrade is assumed until the nature of the subgrade can be physically assessed.

Any earthworks should be designed to achieve a suitable CBR value for the proposed development.

5.7 Chemical Attack on Buried Ground

Samples of made and natural ground should be obtained and submitted to the laboratory for testing in order to assess the sulphate content and acidity and hence, the concrete class required for buried concrete to the latest standard.



Appendix A Figures & Drawings

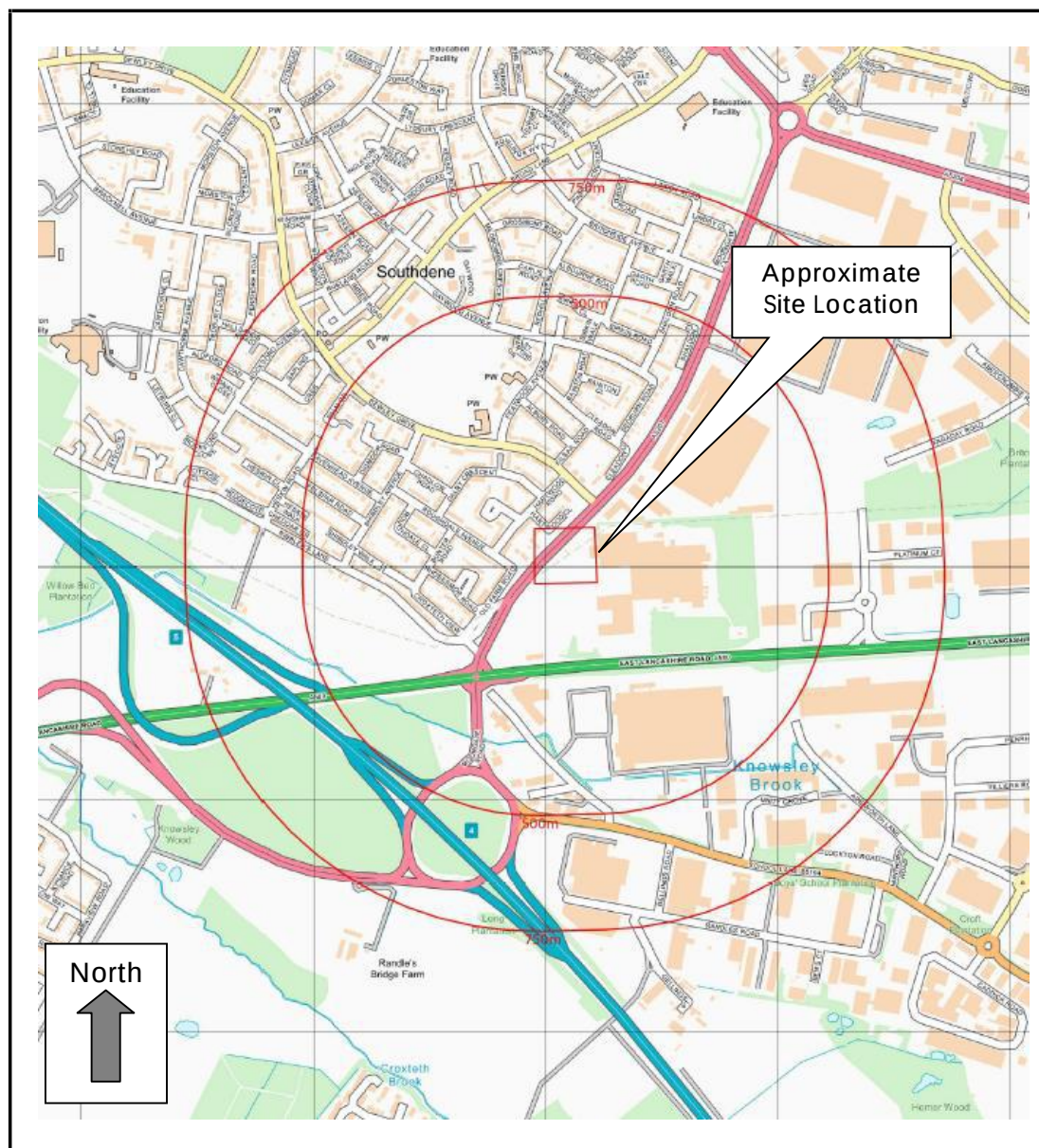


Figure 1 – Site Location Plan

Site	Moorgate Road North, Kirkby, Liverpool
Client	Commercial Development Projects Limited
Job Number	6673
Scale	NTS

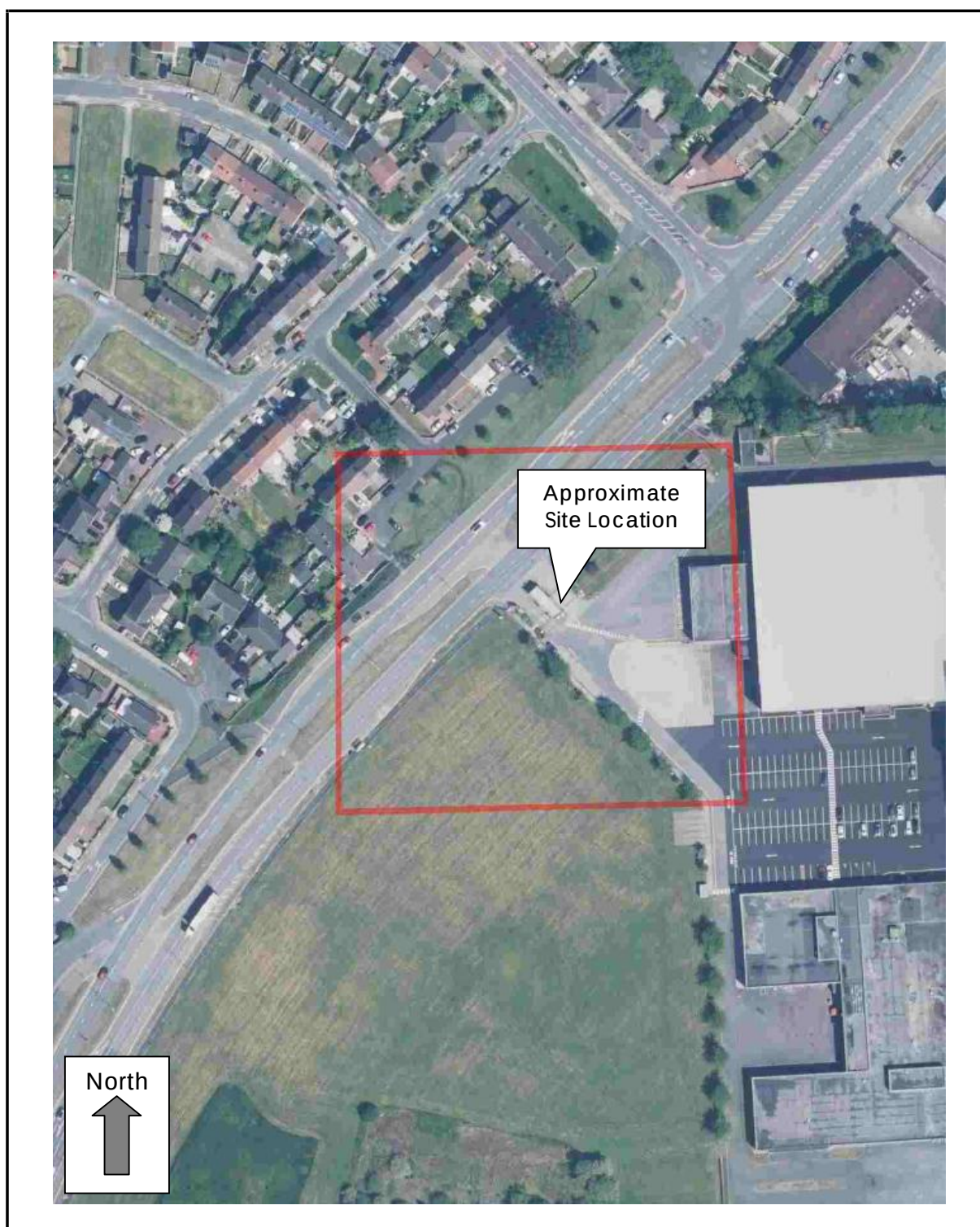
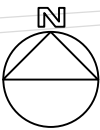
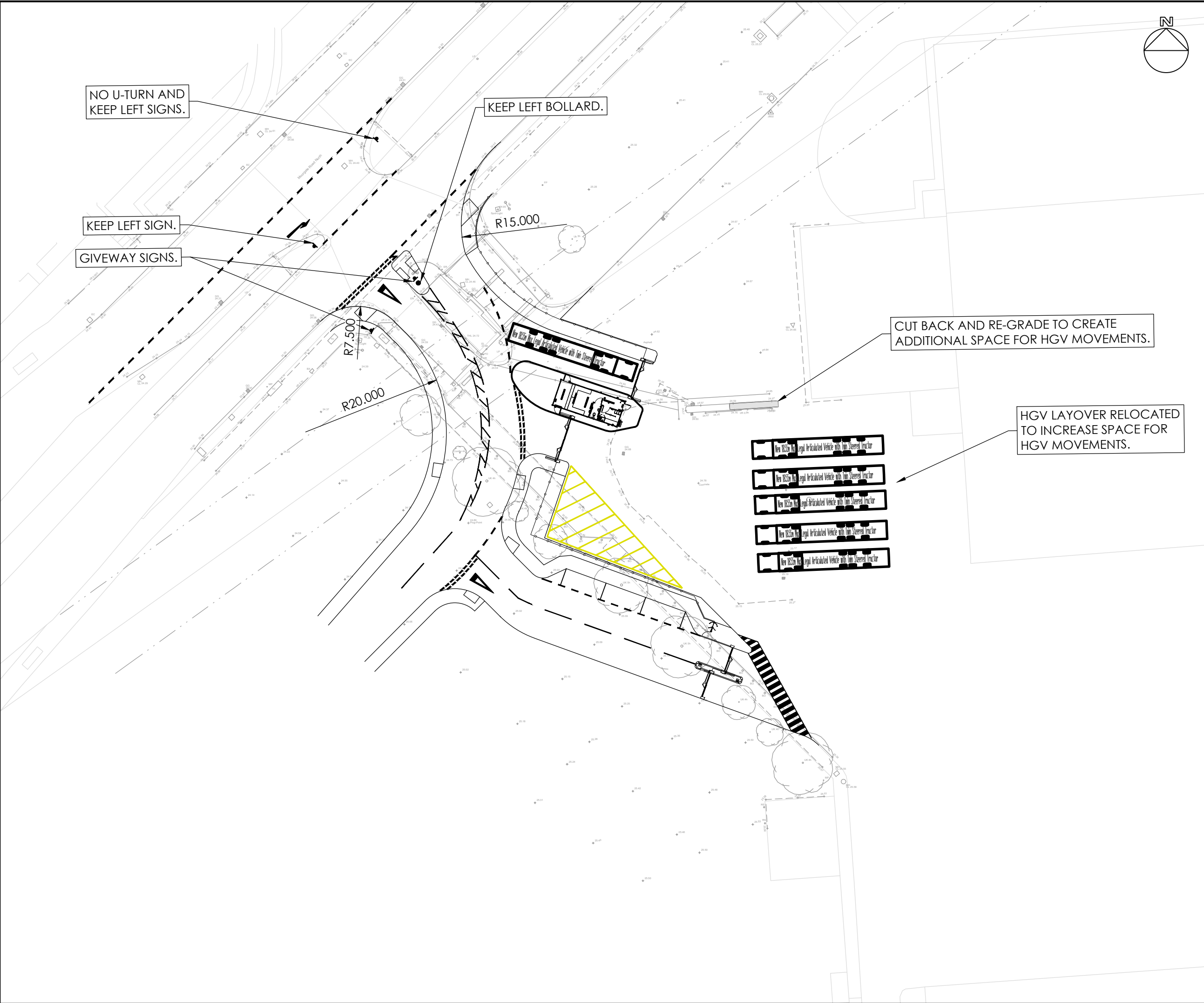


Figure 2 – Aerial Photograph	
Site	Moorgate Road North, Kirkby, Liverpool
Client	Commercial Development Projects Limited
Job Number	6673
Scale	NTS



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DO NOT SCALE (A3)

NOTES

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1. ALL MATERIALS AND WORKMANSHIP IS TO COMPLY WITH JPG CONSULTANTS STANDARD SPECIFICATION & ALL RELEVANT BRITISH & EUROPEAN STANDARDS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, M & E CONSULTANTS AND JPG CONSULTANTS DRAWINGS.
3. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ENGINEER IMMEDIATELY SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO COMMENCEMENT OF WORKS.

0m 12.5m 25m
SCALE 1:500

P03	SITE LAYOUT UPDATE	29.04.26	AB	EY
P02	GENERAL UPDATE	21.04.26	AB	AB
P01	INITIAL ISSUE	19.03.26	AB	LSG
REV	DESCRIPTION	DATE	CHK	BY

Project
MOORGATE ROAD,
KIRKBY,
LIVERPOOL

Drawing Title
OPTION 1
SITE ENTRANCE GENERAL ARRANGEMENT

INFORMATION

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www.jpg.group
E admin@jpg.group | T +44 (0)113 263 1155

6673-JPG-ZZ-ZZ-DR-T-1602

S2

P03



Appendix B Site Photographs



Photograph 1: Looking Southeast at the Egress to the Site.



Photograph 2: Looking Northwest at the Entrance to the Site.



Photograph 3: Looking West Across the Southern End of the Gatehouse.



Photograph 4: Looking East Towards the Existing Building.



Photograph 5: Looking Northwest Towards the Entrance to the Site.



Photograph 6: Looking North Towards the Existing Building.



Appendix C Historical Maps

Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
Grid ref:	342041.73, 397026.26
Production date:	23 March 2026

Map name:	County Series
Map date:	1867
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Printed at:	1:2,500



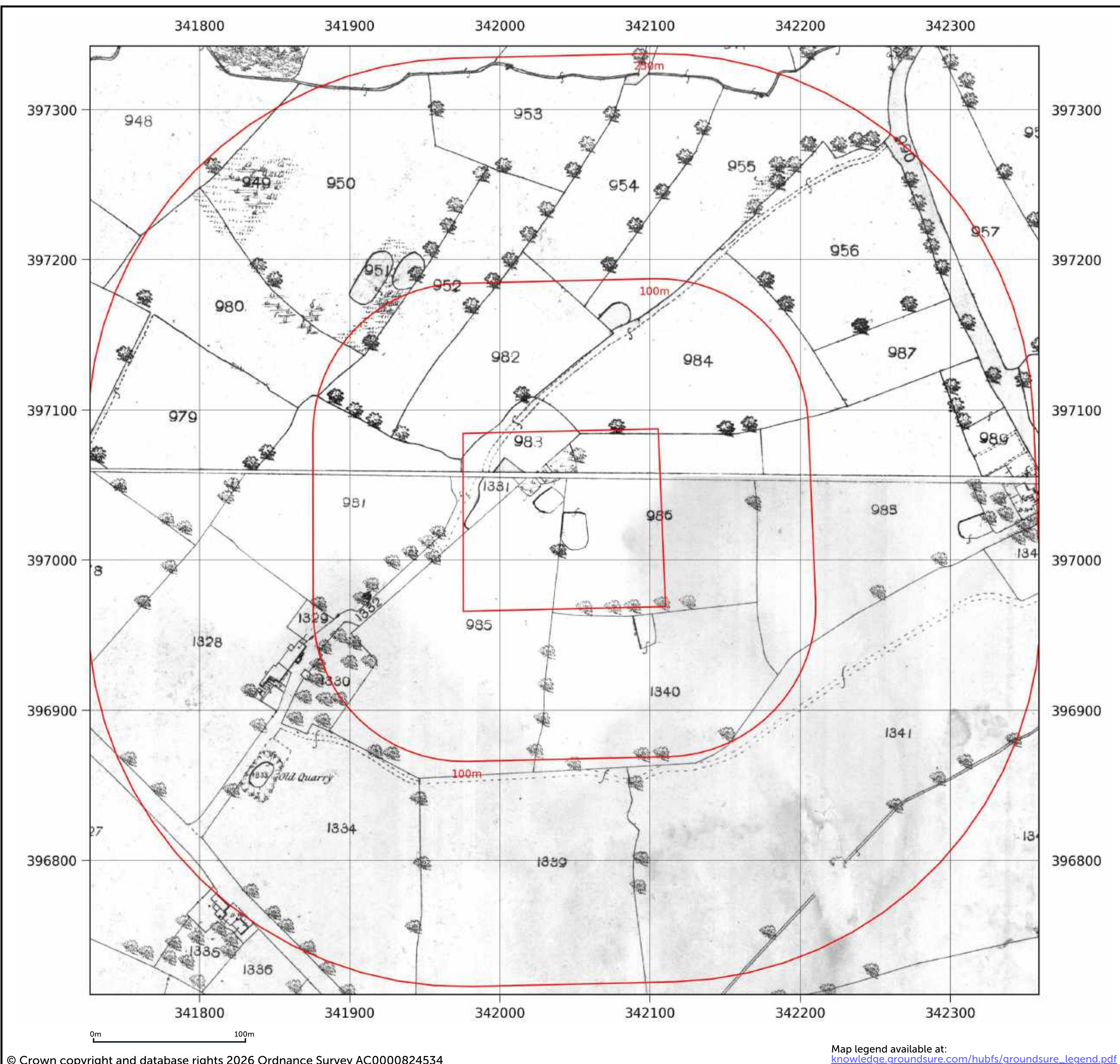
Date: 1867
Surveyed: 1867
Revised: 1867

Date: 1867
Surveyed: 1867
Revised: 1867

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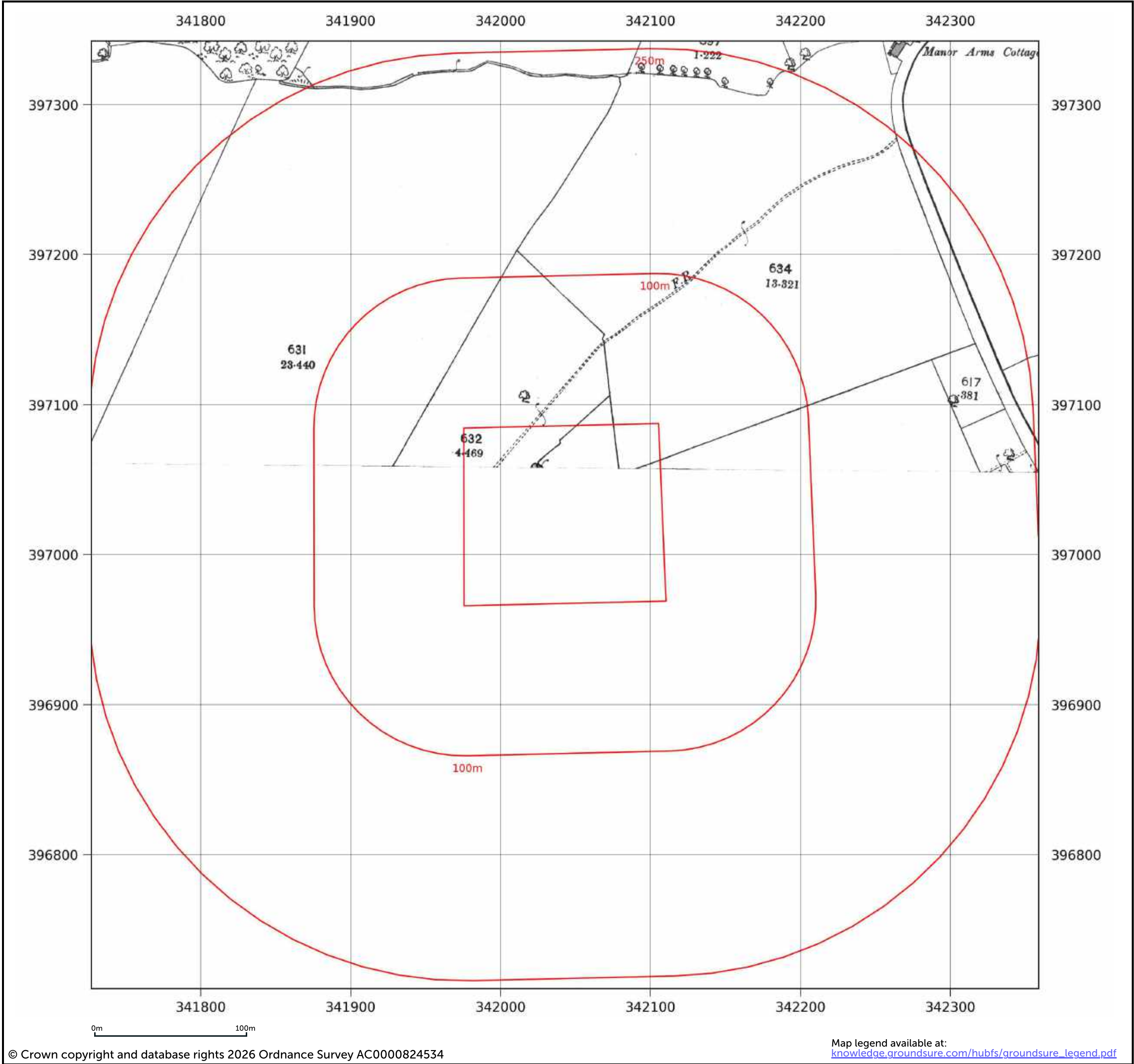


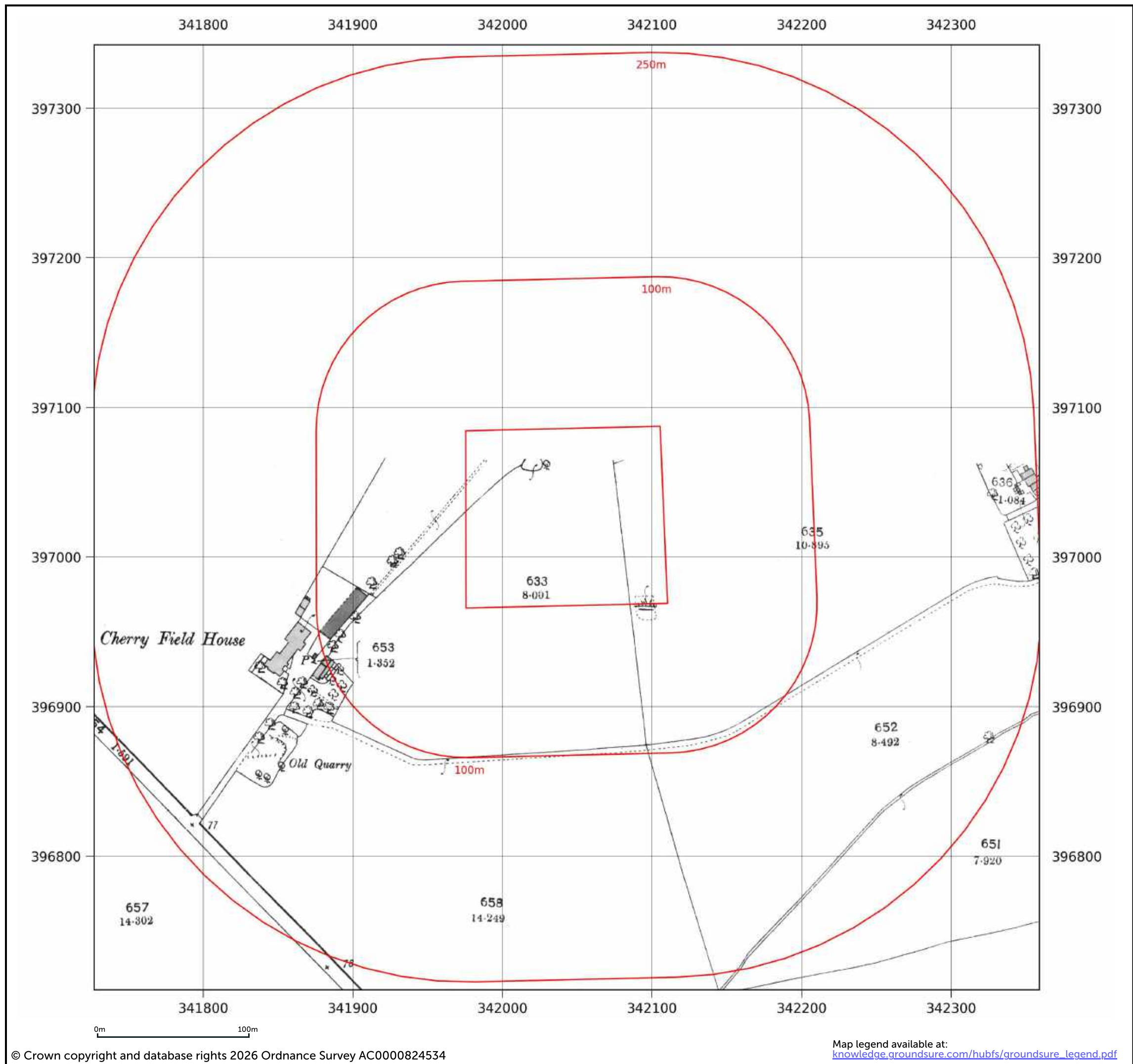
In partnership with



Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
Grid ref:	342041.73, 397026.26
Production date:	23 March 2026
Map name:	County Series
Map date:	1893
Scale:	1:2,500
Printed at:	1:2,500
Date: 1893 Surveyed: 1893 Revised: 1893	

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Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
Grid ref:	342041.73, 397026.26
Production date:	23 March 2026

Map name:	County Series
Map date:	1893
Scale:	1:2,500
Printed at:	1:2,500

Date: 1893
Surveyed: 1893
Revised: 1893

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Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
Grid ref:	342041.73, 397026.26
Production date:	23 March 2026

Map name:	County Series
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Printed at:	1:2,500

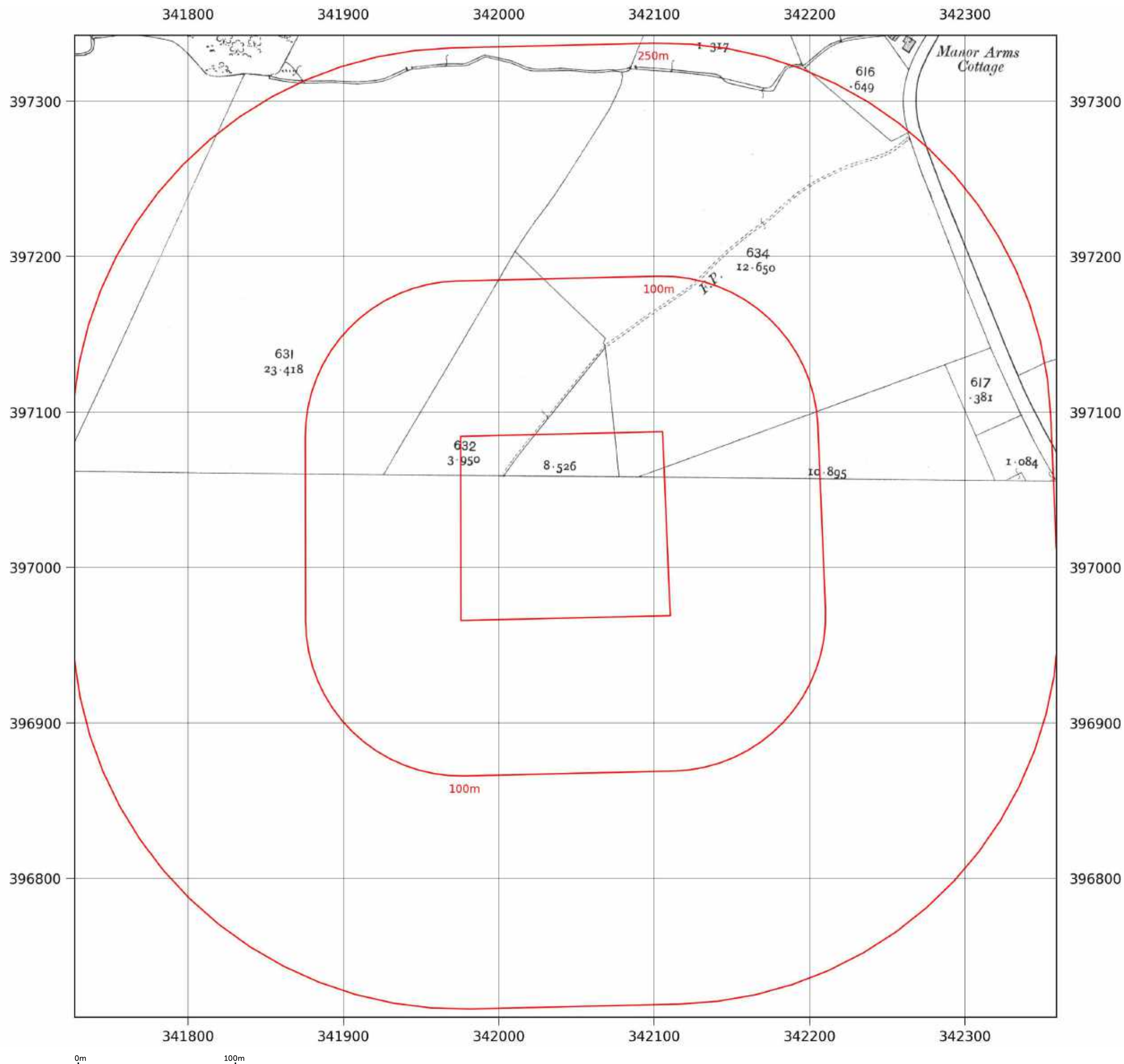


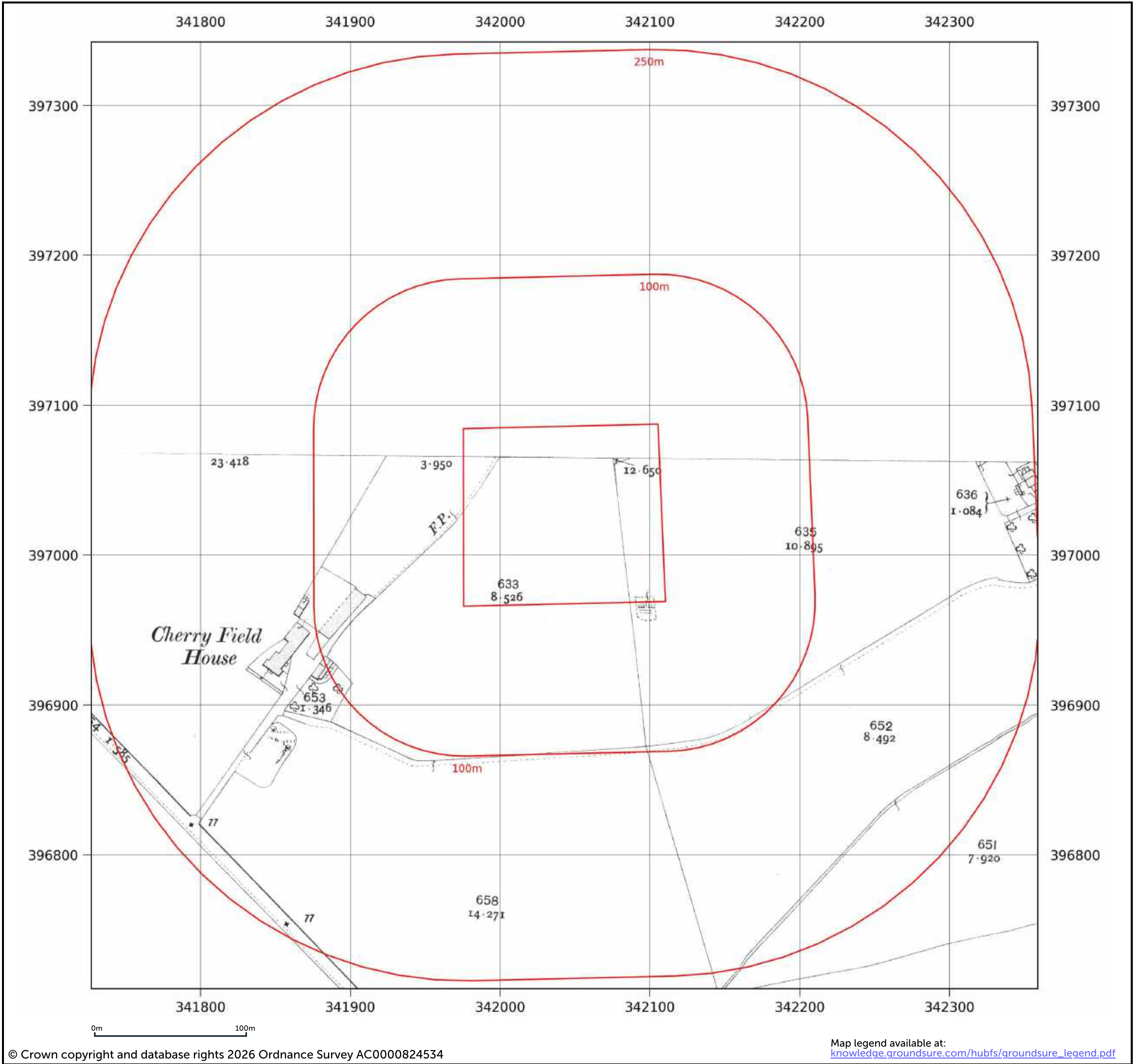
Date: 1908
Surveyed: 1908
Revised: 1908

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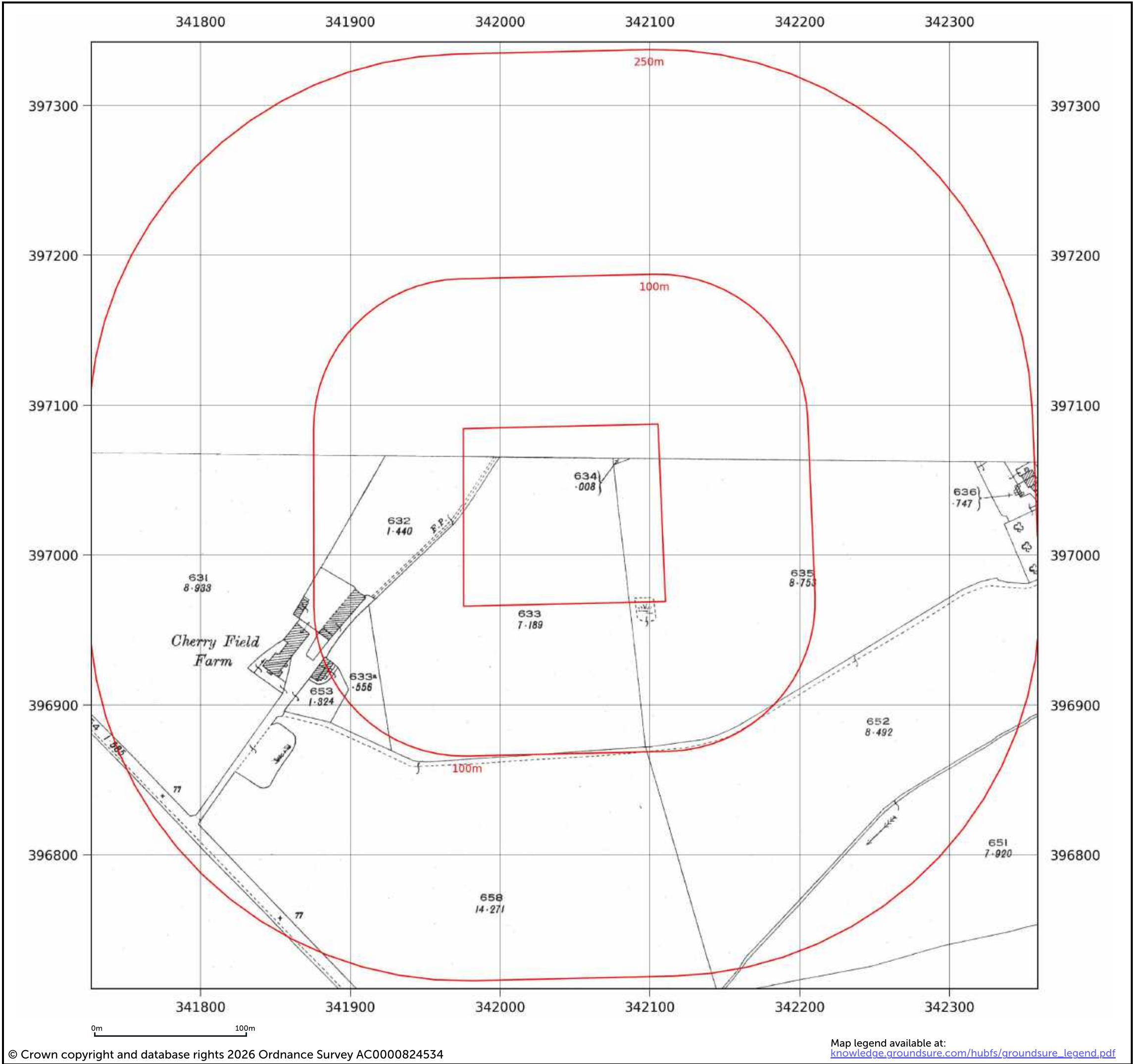


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Report ref:	CMAPS-JPG-1269608-6775-230326HIS
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Surveyed: 1908
Revised: 1908

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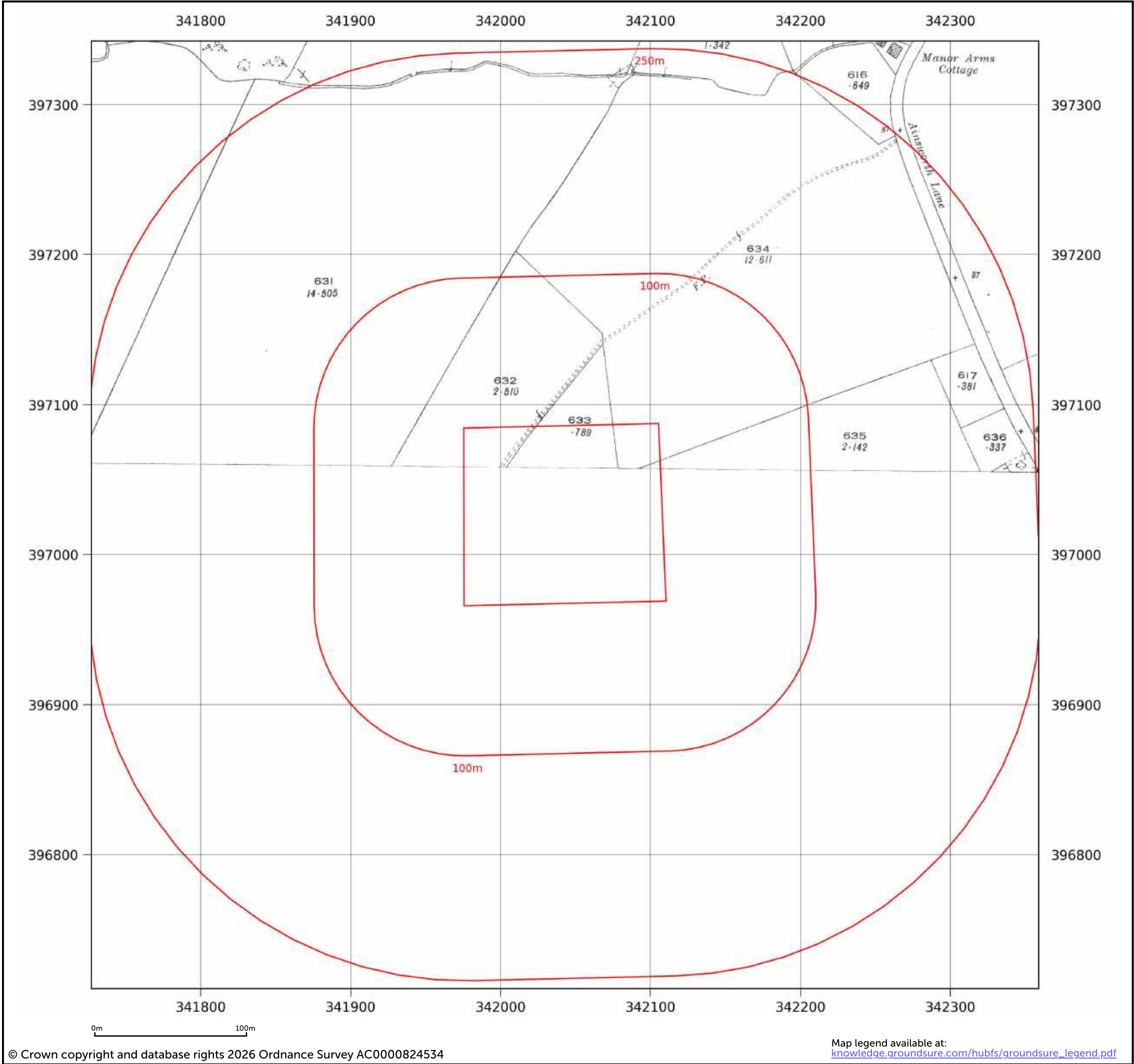


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Production date:	23 March 2026

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Date: 1927
Surveyed: 1927
Revised: 1927

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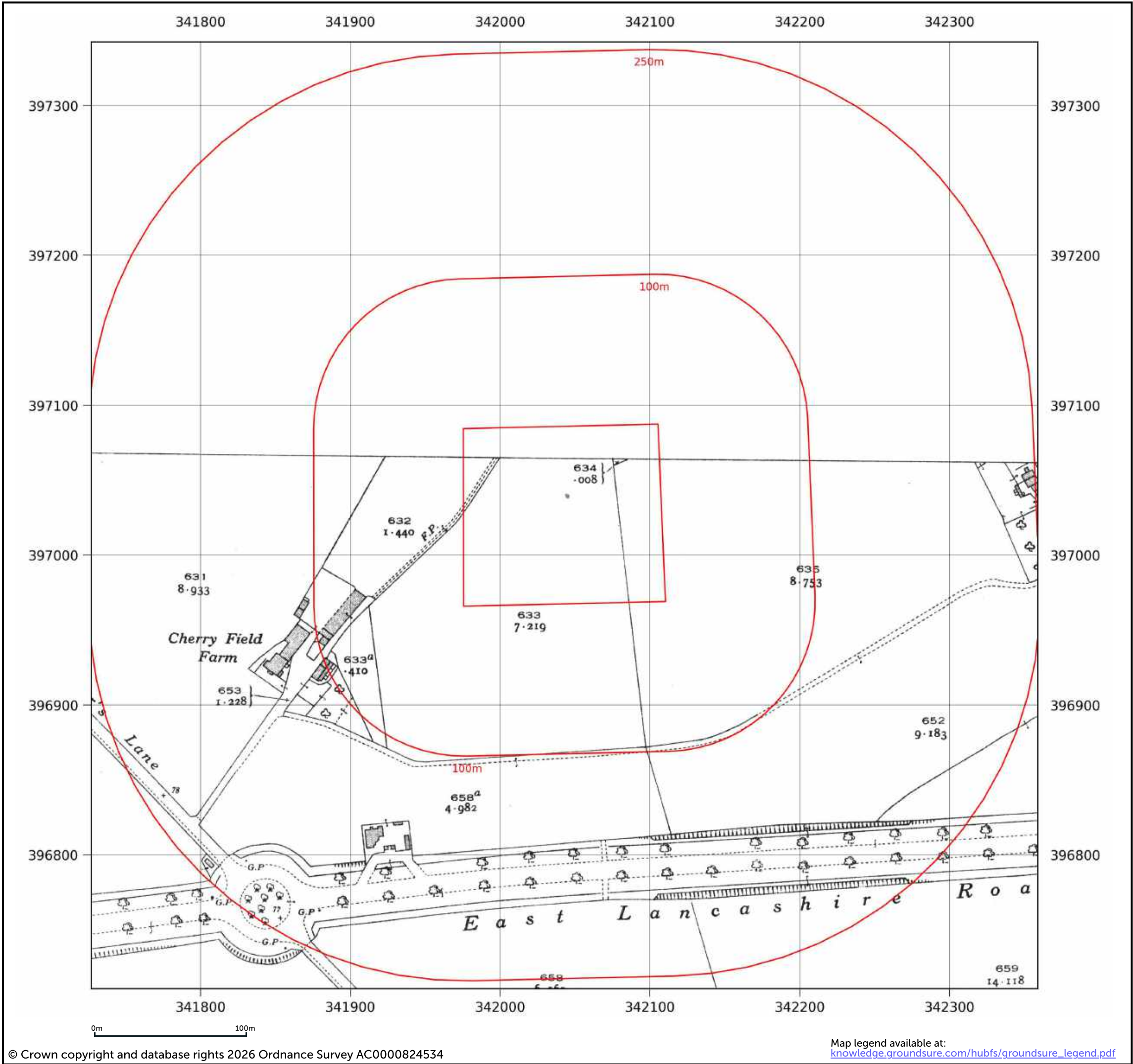


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Map name:	County Series
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Date: 1927
Surveyed: 1927
Revised: 1927

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Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
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Production date:	23 March 2026
Map name:	County Series
Map date:	1937
Scale:	1:2,500
Printed at:	1:2,500
Date: 1937 Surveyed: 1937 Revised: 1937	

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Site details: Moorgate Road, Kirkby
Client ref: CMAPS-JPG-1269608-6775-230326
Report ref: CMAPS-JPG-1269608-6775-230326HIS
Grid ref: 342041.73, 397026.26
Production date: 23 March 2026

Map name: National Grid
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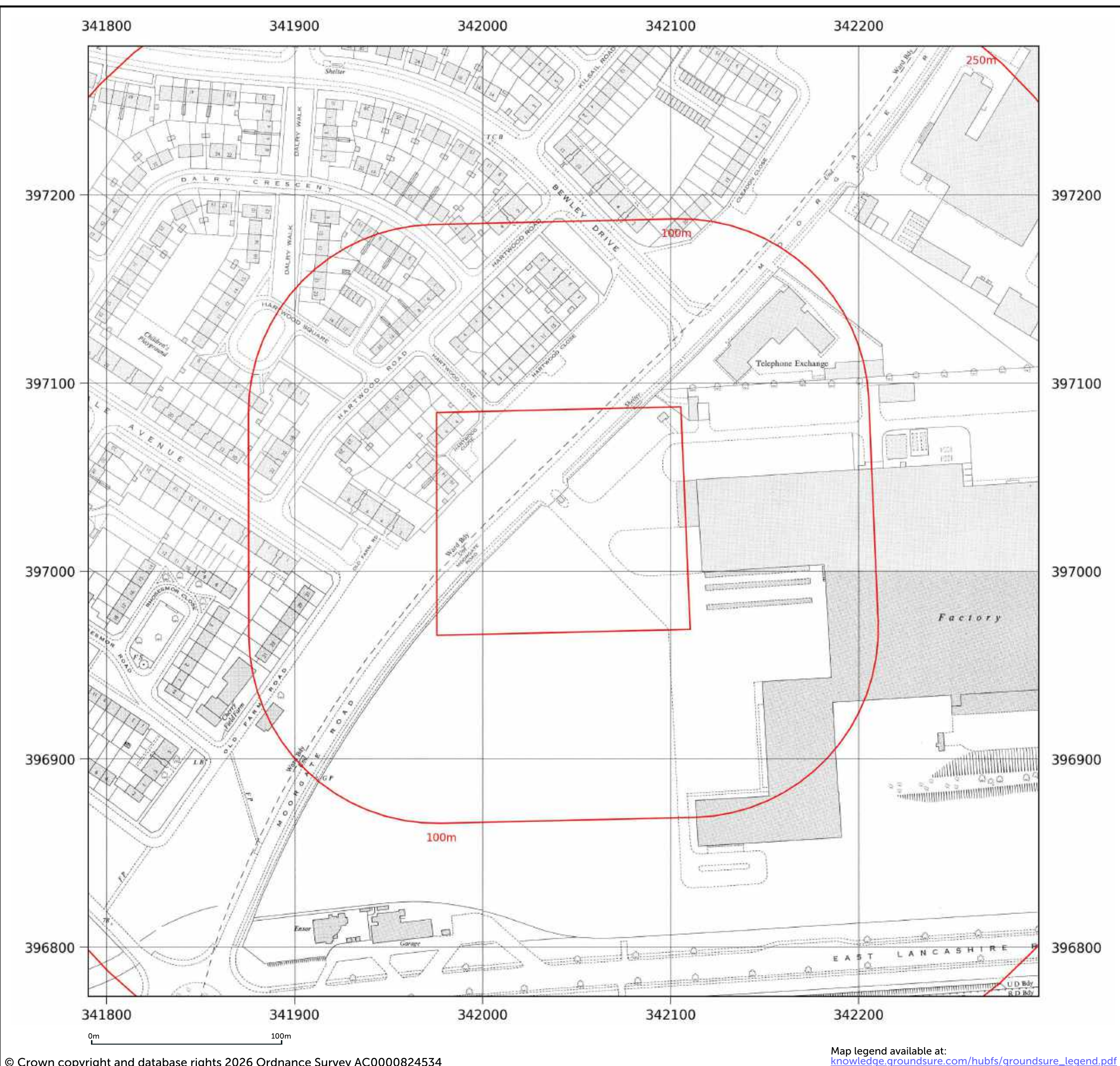


Date: 1961 Surveyed: 1960 Revised: 1960 Copyright: 1961 Levelled: 1946	Date: 1960 Surveyed: 1959 Revised: 1959 Copyright: 1960 Levelled: 1946
Date: 1959 Surveyed: 1958 Revised: 1958 Edition: 1959 Copyright: 1959 Levelled: 1946	Date: 1959 Surveyed: 1959 Revised: 1959 Copyright: 1959 Levelled: 1946

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Site details: Moorgate Road, Kirkby
Client ref: CMAPS-JPG-1269608-6775-230326
Report ref: CMAPS-JPG-1269608-6775-230326HIS
Grid ref: 342041.73, 397026.26
Production date: 23 March 2026

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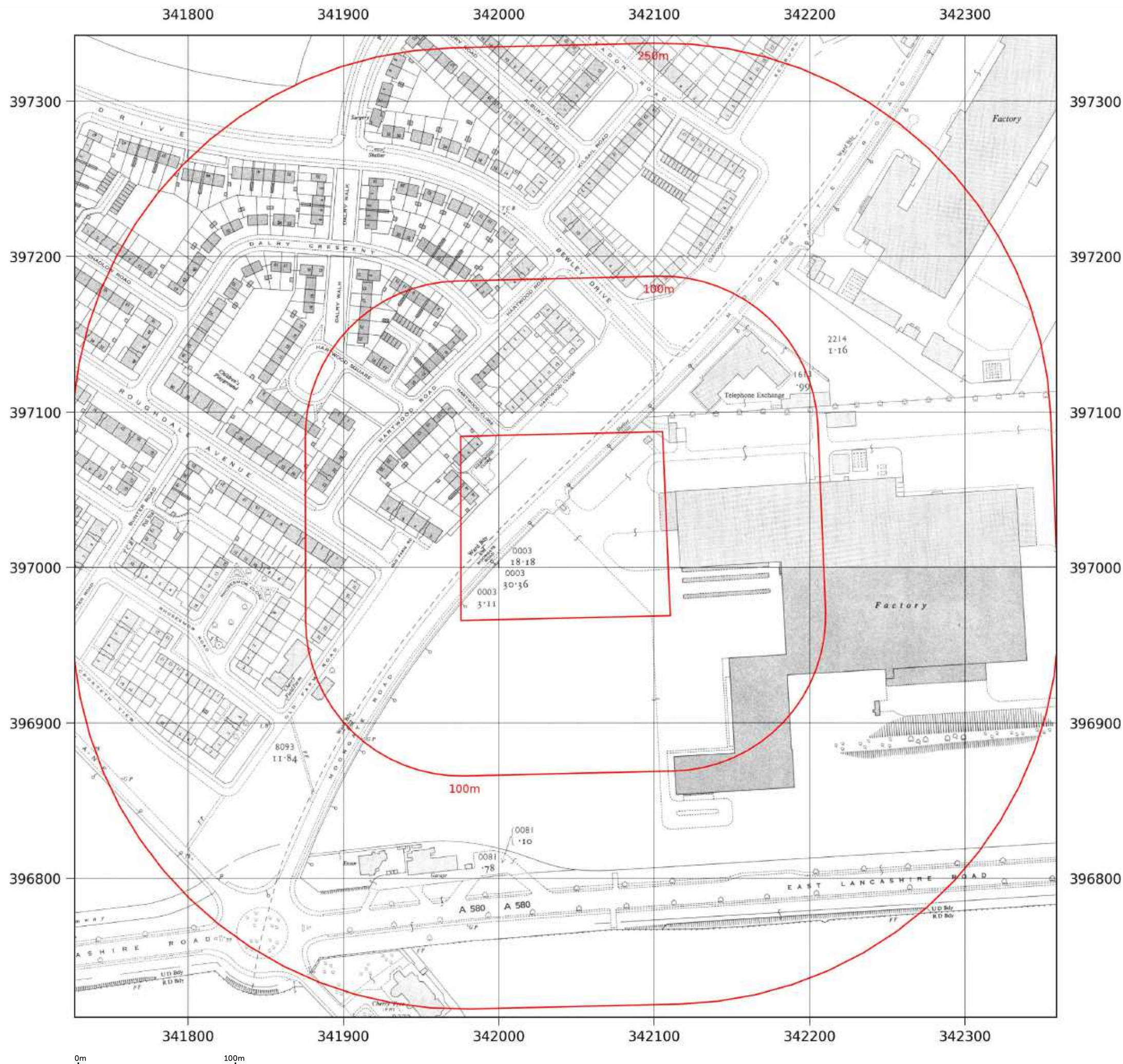


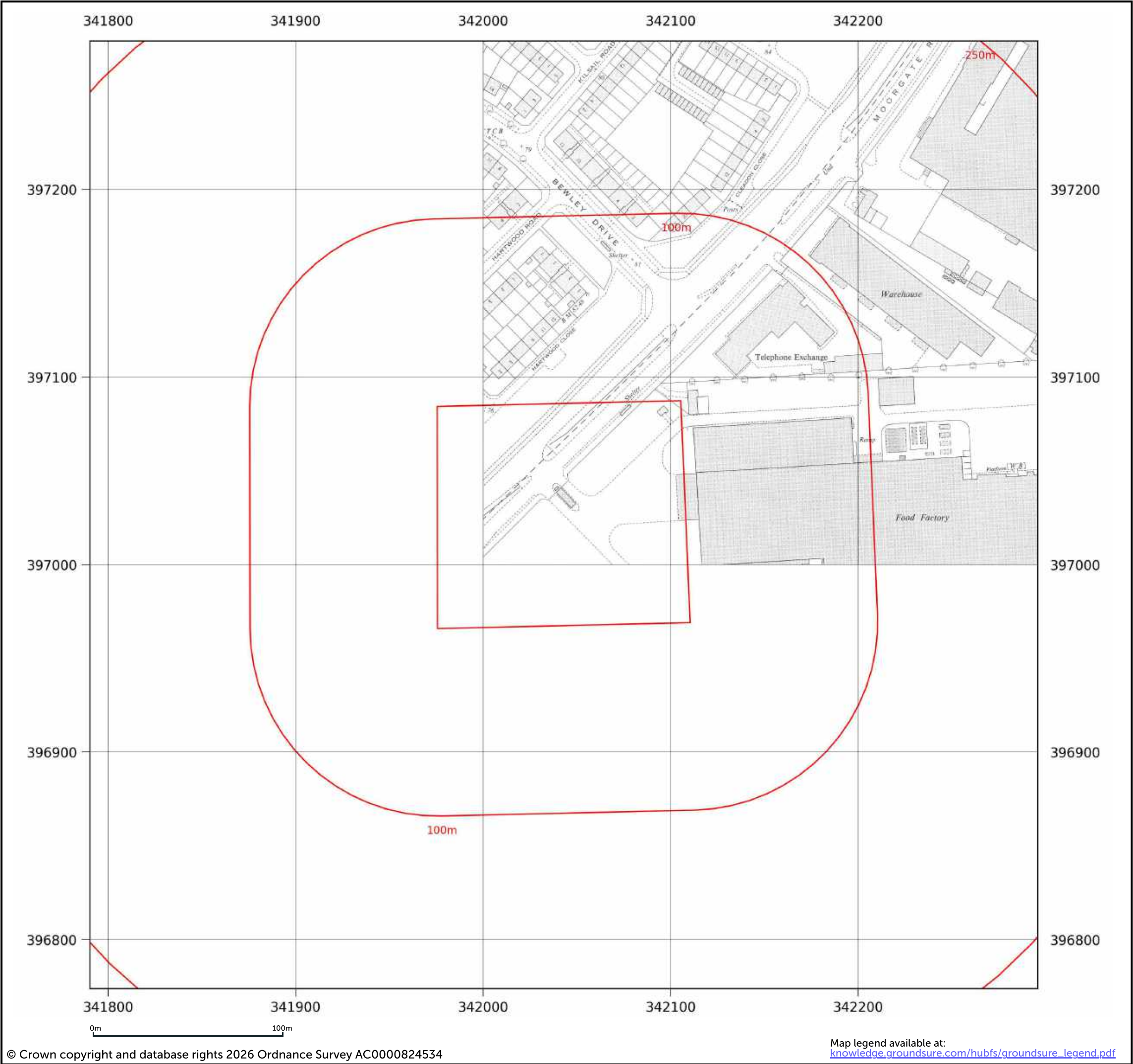
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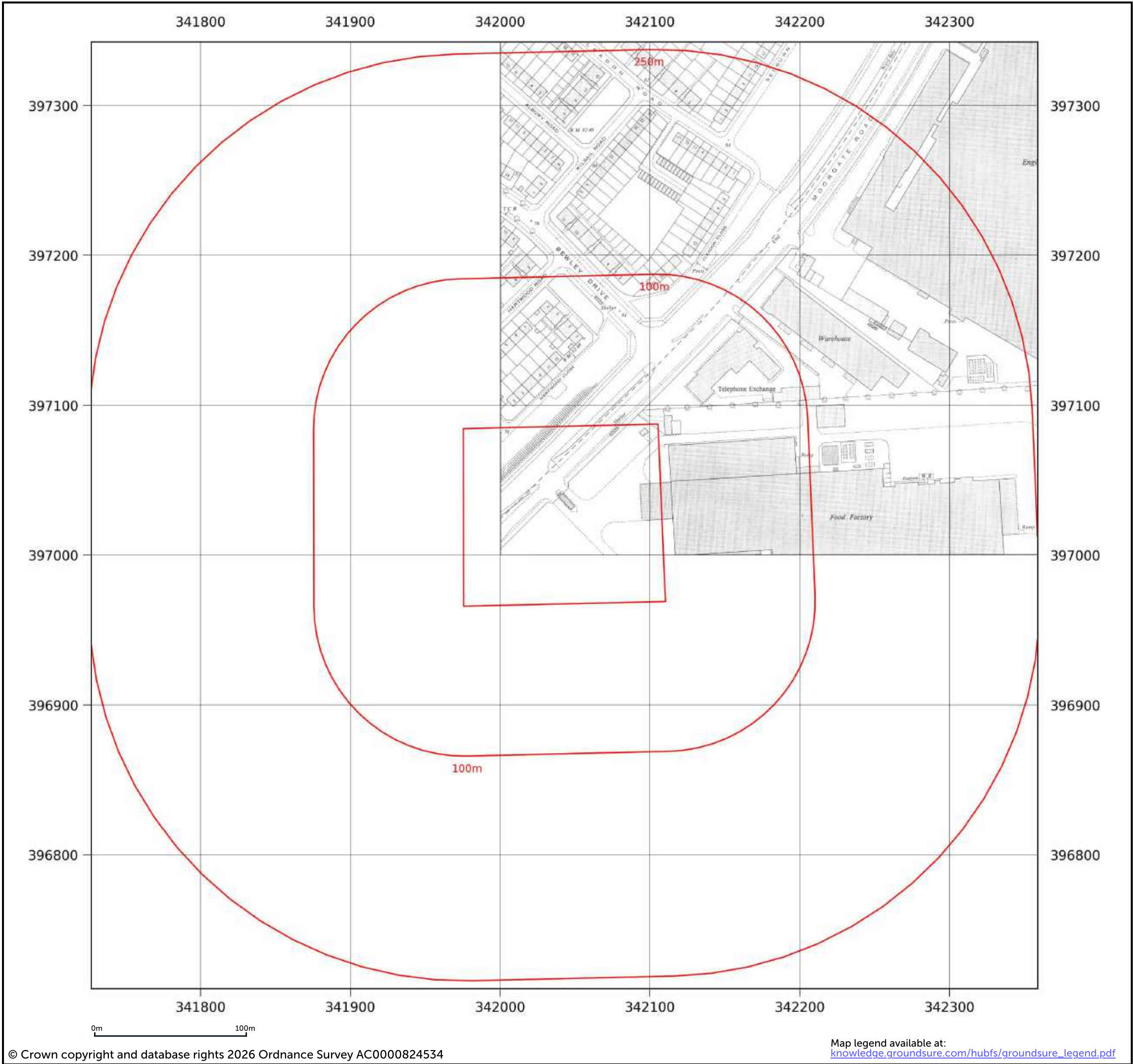
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Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
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Site details: Moorgate Road, Kirkby
Client ref: CMAPS-JPG-1269608-6775-230326
Report ref: CMAPS-JPG-1269608-6775-230326HIS
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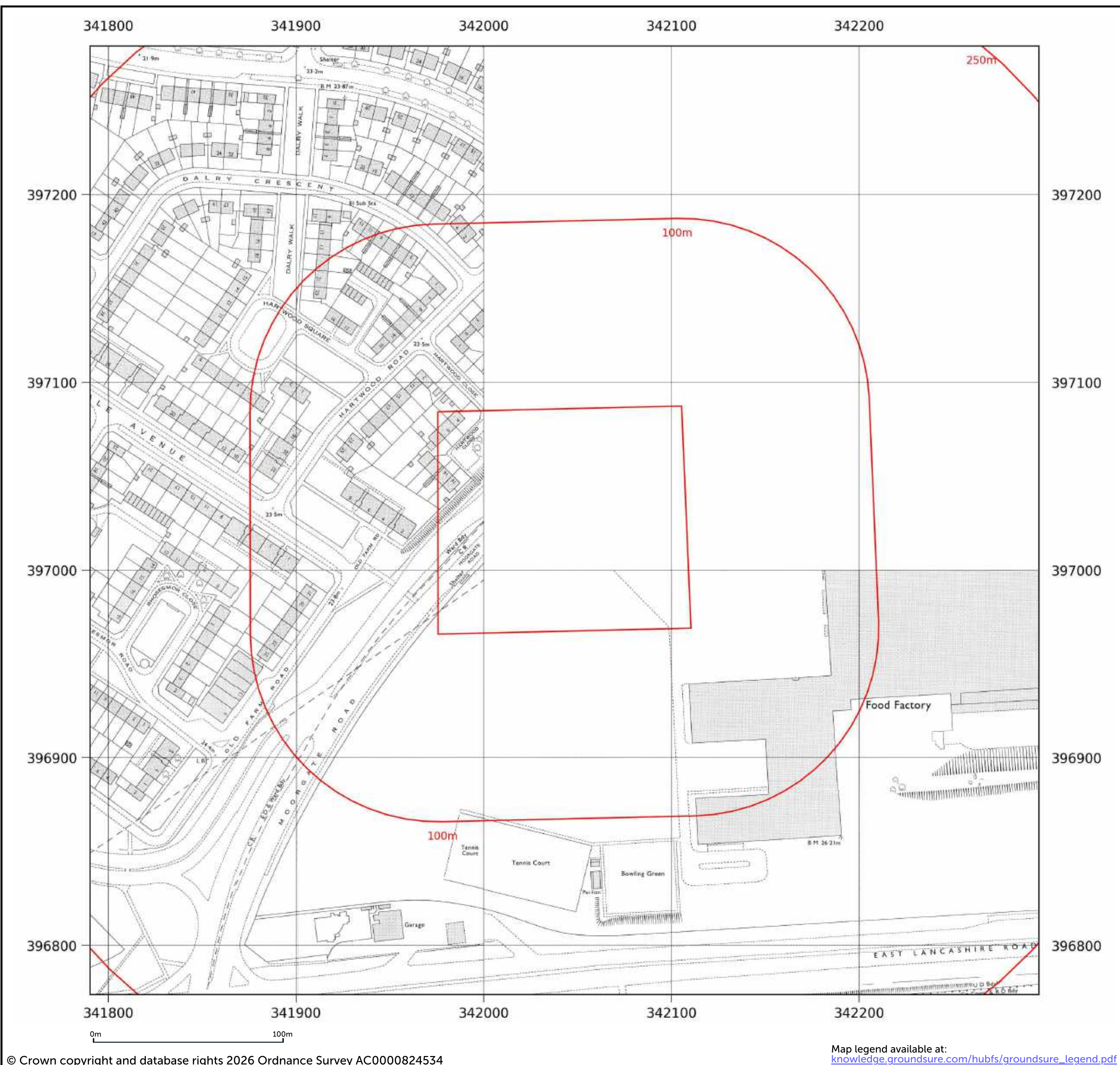
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 Revised: 1973
 Copyright: 1974
 Levelled: 1960

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Site details:

Client ref:

Report ref:

Grid ref:

Production date:

Moorgate Road, Kirkby

CMAPS-JPG-1269608-6775-230326

CMAPS-JPG-1269608-6775-230326HIS

342041.73, 397026.26

23 March 2026

Map name:

Map date:

Scale:

Printed at:

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1984-1989

1:1,250

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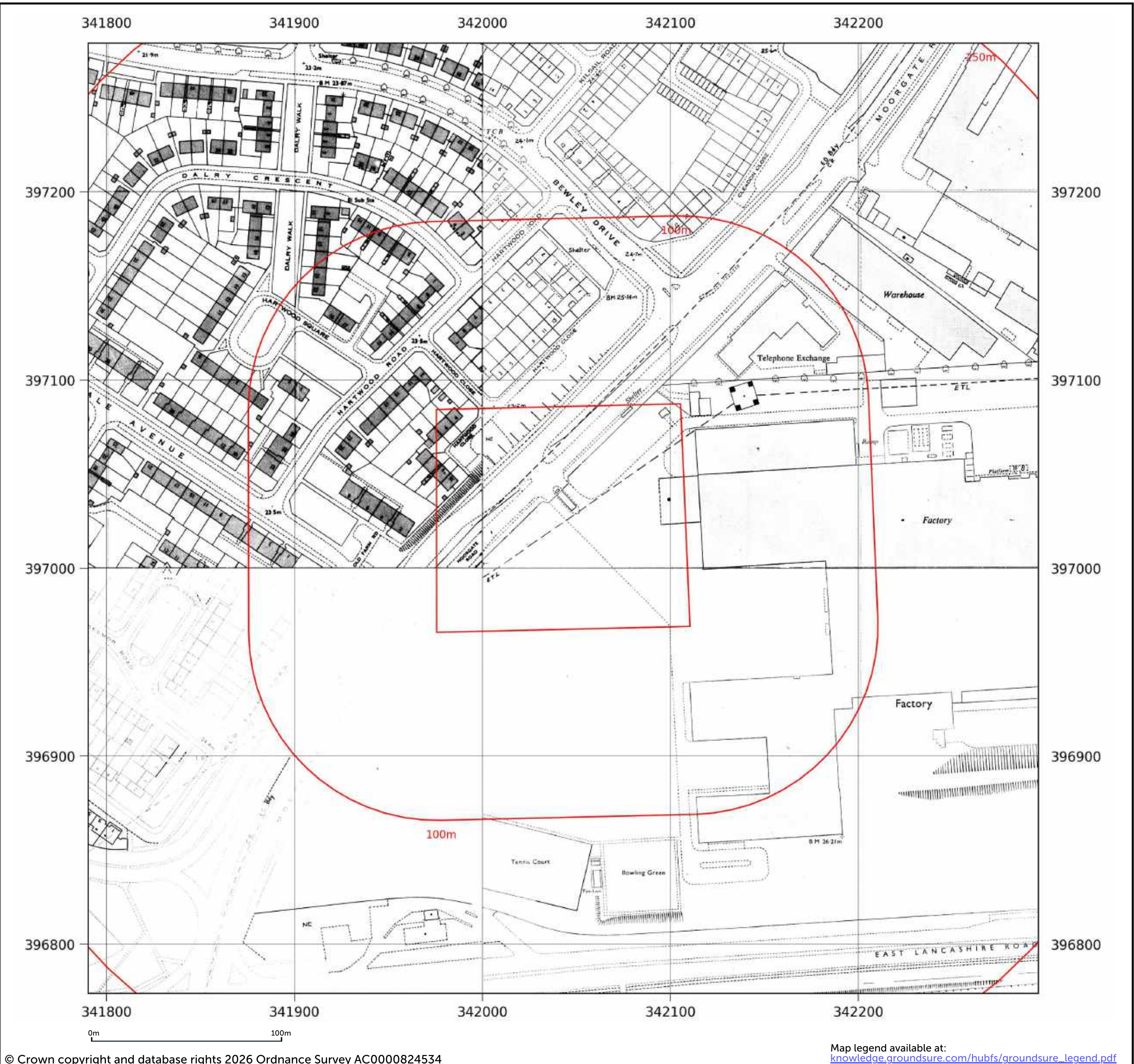
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Copyright: 1984
Levelled: 1960



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Site details:	Moorgate Road, Kirkby
Client ref:	CMAFS-JPG-1269608-6775-230326
Report ref:	CMAFS-JPG-1269608-6775-230326HIS
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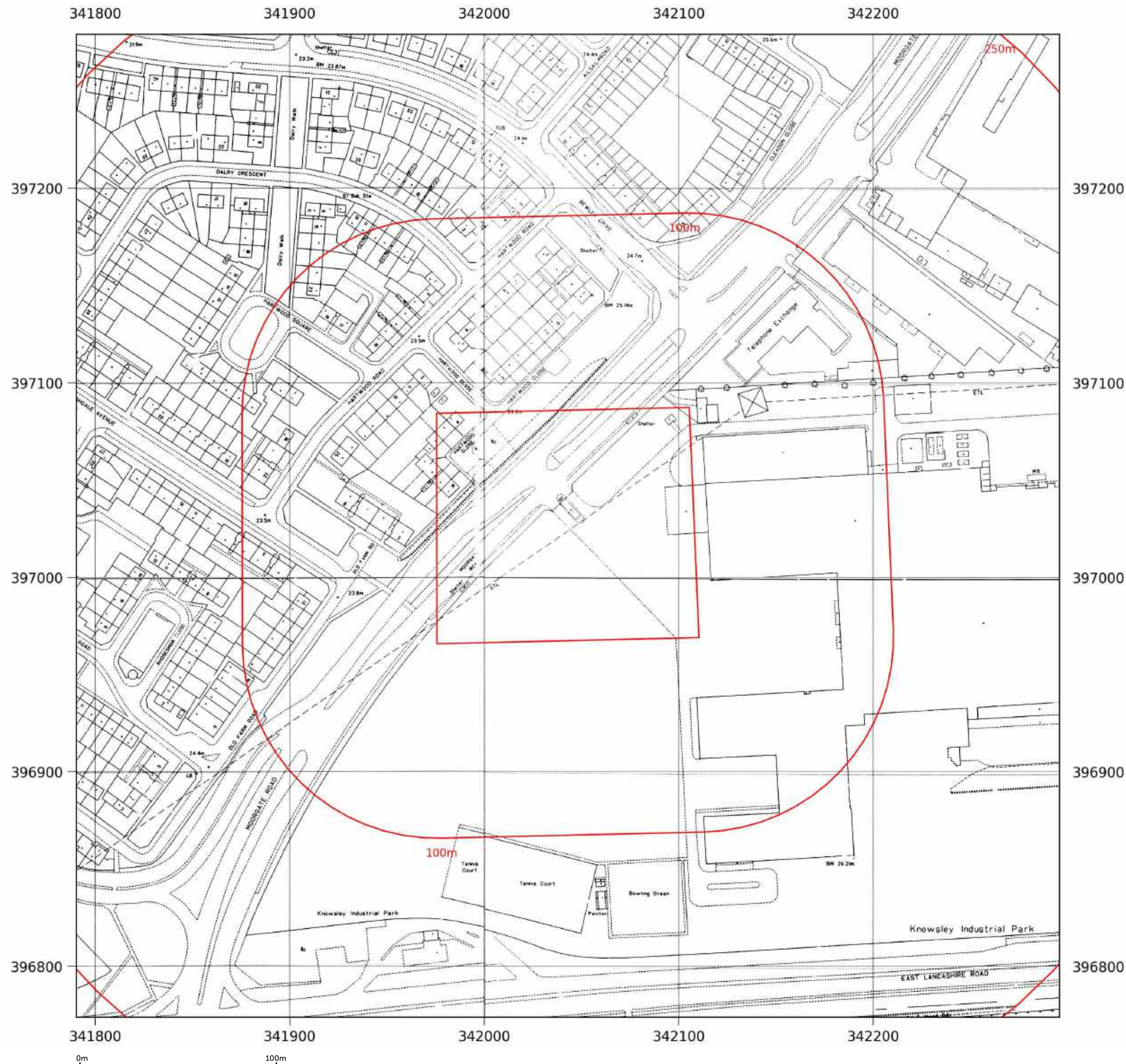


Date: 1993 Copyright: 1993	Date: 1993 Copyright: 1993
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Site details:	Moorgate Road, Kirkby
Client ref:	CMAPS-JPG-1269608-6775-230326
Report ref:	CMAPS-JPG-1269608-6775-230326HIS
Grid ref:	342041.73, 397026.26
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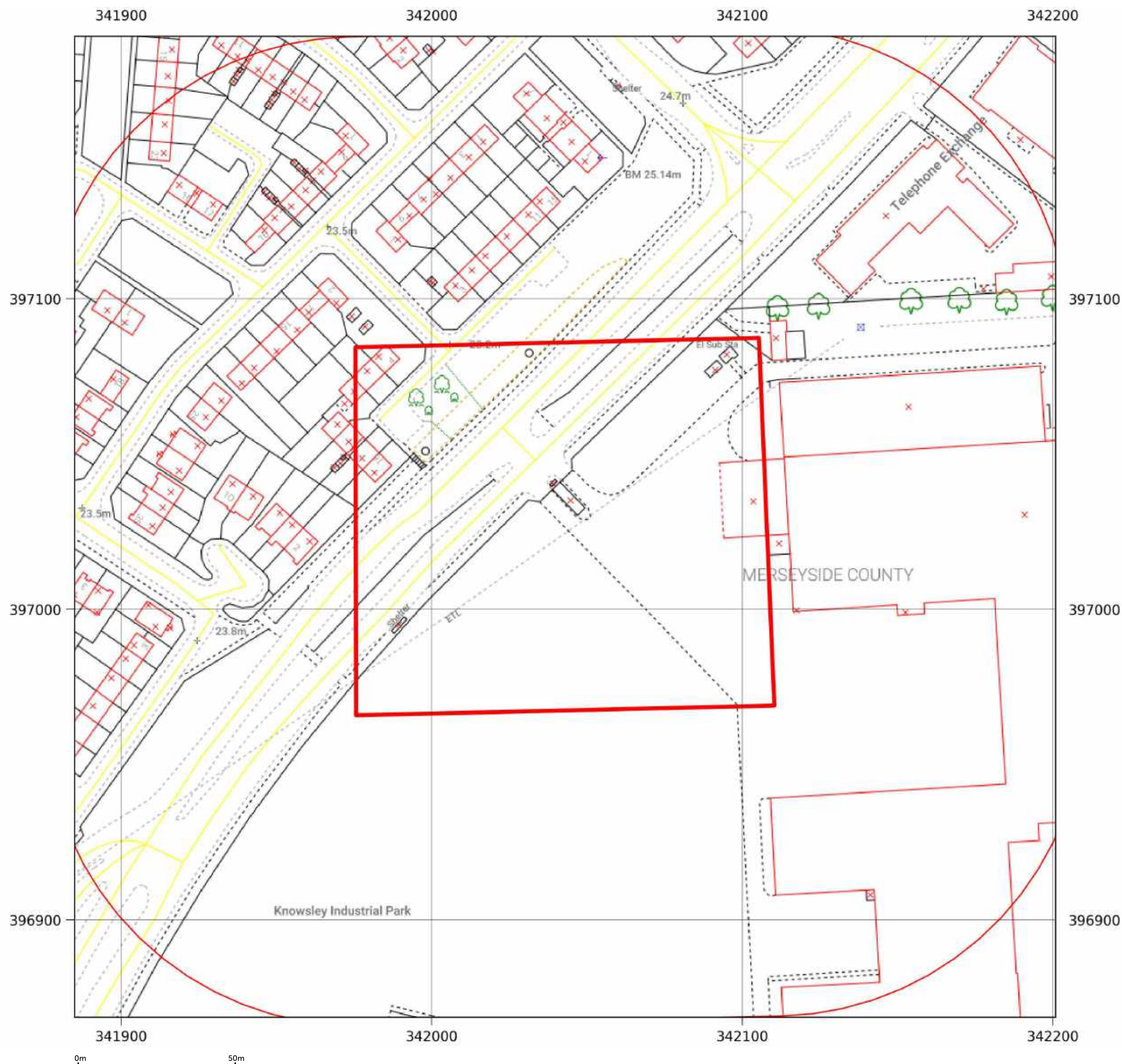


Date: 2003

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Appendix D Notes on Limitations



General

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Phase I Desk Study Reports

The work undertaken to provide the basis of this report comprised 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 this report have been dictated by the 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 this report, JPG (Leeds) Ltd reserves the right to review such information and, if warranted, 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.

Phase II Geo-Environmental Investigations

The investigation of the site has been carried out to provide sufficient information concerning the type and degree of contamination, geotechnical characteristics and ground and groundwater conditions to allow a reasonable assessment of the environmental risks together with engineering and development implications.

The objectives of the investigation have been limited to establishing the risks associated with potential human receptors, building materials, the environment (including adjacent land) and controlled waters (surface water and groundwater).

The number of sampling points and the methods of sampling and testing do not preclude the existence of localised "hotspots" of contamination where concentrations may be significantly higher than those actually encountered.

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

The scope of the investigation was selected on the basis of the specific development proposed by the Client and may be inappropriate to another form of development or scheme.

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