



# Oaklands College & Land south of Sandpit Lane, St Albans

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Phase 1 Desk Based Assessment  
(Contamination)

October 2025





Taylor Wimpey North Thames

# Oaklands College

Phase 1 Desk Study

1923853-R02 (00)

# RSK GENERAL NOTES

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**Project No.:** 1923853

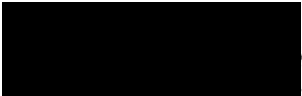
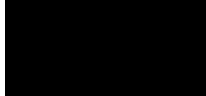
**Title:** Phase 1 Desk Study: Oaklands College, Hatfield Road, St Albans, AL4 0JA



**Client:** Taylor Wimpey North Thames

**Date:** September 2025

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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# 1 EXECUTIVE SUMMARY

<b>Commissioning and purpose of assessment</b>	<p>RSK Environment Limited (RSK) was commissioned by Taylor Wimpey North Thames to carry out a Phase 1 Desk Study of the land at Oaklands College, Hatfield Road, St Albans, AL4 0JA.</p> <p>The overall aim of the project was to assess geo-environmental constraints to the proposed development.</p>
<b>DESK-BASED ASSESSMENT</b>	
<b>Site description and proposed development</b>	<p>The site currently comprises Oaklands college and occupies an area of 44.18 hectares and is being considered for development for commercial use.</p>
<b>History of site and surrounding area</b>	<p>The site has been used as an agricultural college since circa 1937</p> <p>Potential sources of contamination identified on-site comprise made ground associated with historical development, electricity substations, tanks and a filter bed.</p> <p>Several potentially contaminative current activities have been identified in the surrounding area, including made ground associated with infilling of ponds &amp; chalk and gravel pits, electricity substations, industrial works comprising of factories, depots, works, nurseries, garages and tanks.</p>
<b>Previous site investigation (SI) reports</b>	<p>There are no previous SI reports available</p>
<b>Geology and environmental setting</b>	<p>The site is underlain by Lowestoft Formation over the Lewes Nodular Chalk Formation and Seaford Chalk Formation according to published geological data.</p> <p>Environmental receptors identified comprise:</p> <ul style="list-style-type: none"> <li>• Groundwater within Lowestoft Formation classified as an undifferentiated secondary aquifer</li> <li>• Groundwater within Lewes Nodular Chalk Formation and Seaford Chalk Formation classified as a principal aquifer</li> <li>• The nearest groundwater abstraction is located 310m east at Smallford Nurseries for horticultural watering</li> <li>• The Butterworth Brook is located along the northern boundary of the site</li> <li>• The site is located within a source protection zone 2 outer catchment and zone 3 total catchment.</li> </ul>

<p><b>Initial conceptual site model (CSM) and preliminary risk assessment (PRA)</b></p>	<p>Potentially complete contaminant linkages identified with a risk estimate of moderate to low or above include</p> <ul style="list-style-type: none"> <li>• future site users – commercial users [direct ingestion, inhalation and dermal contact with soil and soil-derived dust, inhalation of vapours from groundwater if present];</li> <li>• future site users - vertical and lateral migration and accumulation of ground gas leading to explosion or asphyxiation</li> </ul> <p>Uncertainties and data gaps have been identified in the CSM at desk study stage and should be considered in the design of future intrusive investigation if proposed.</p>
<p><b>Recommendations including issues for further assessment</b></p>	<p>The following recommendations are made for further assessment of the site to investigate the risks identified above and to address remaining uncertainties:</p> <ul style="list-style-type: none"> <li>• Phase 2 intrusive ground investigation comprising of trial pits/shallow dynamic sampler boreholes with the installation of ground gas/groundwater monitoring wells. The collection of soil samples for laboratory chemical testing to assist the land contamination assessment and gas monitoring to determine potential gas risk.</li> </ul>
<p><i>The information given in this summary is necessarily incomplete and is provided for initial briefing purposes only. The summary must not be used as a substitute for the full text of the report.</i></p>	

## 2 INTRODUCTION

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### 2.1 Commissioning

RSK Environment Limited (RSK) were engaged by Taylor Wimpey North Thames herein referred to as the 'Client' to carry out Phase 1 desk study services at Oaklands College, Hatfield Road, St Albans, AL4 0JA.

This report covers the Oakland College side of the site only and does not include the proposed Taylor Wimpey housing development known as "Oakland Blossom". The Phase 1 desk study associated with the Oakland Blossom site has been undertaken in report ref 1923853 R01 (00), dated September 2025.

References in this report to 'we', 'us', or 'our' shall mean RSK Geosciences as a trading name of RSK Environment Limited (company no.SC115530) at registered address 65 Sussex Street, Glasgow, G41 1DX.

The site location is provided in **Figure 1** and the site layout boundary to which this report refers is presented in **Figure 2**.

The report should be read and used in accordance with the limitations and constraints identified in the report text, and at **Appendix A – Service Constraints**.

### 2.2 Objectives

The site is being considered for development for commercial use.

The objective of the work is:

- to identify contamination constraints to the proposed development and, where relevant, to support discharge of planning conditions and building control requirements
- to identify based on risk assessment whether additional investigation or remediation works may be required to support safe development to make the site suitable for use

### 2.3 Scope of works

The scope of works has been developed in accordance with relevant British Standards and authoritative technical guidance as referenced through the report. The assessment of the contamination status of the site is in line with the technical approach presented in Land Contamination Risk Management (LCRM) (Environment Agency, 2023) and in general accordance with BS 10175: 2011 + A2 2017 (BSI, 2017). It is also compliant with relevant planning policy and guidance, i.e. national planning frameworks and policies.

The scope of works for the assessment has included the following:

#### **Desk study:**

- review of the history of development on the site and surroundings
- assessment of local geology, hydrogeology and hydrology
- to request and consider relevant information provided by the local planning authority

- review previous reports pertaining to the site condition where available
- development of an initial conceptual site model (CSM) and preliminary risk assessment
- provide recommendations for further works should this be required.

A site reconnaissance visit was outside of the agreed scope of work.

## 2.4 Existing reports

RSK have undertaken a Phase 1 and 2 Geo-environmental and Geotechnical Interpretative Report (report ref 1923853 R01, dated September 2025) for the adjacent proposed residential development. It is understood that a combined planning application is being submitted for both the residential development and the college site and as such a review of this report has not been included in this report.

## 2.5 Sustainability considerations

One of RSK's guiding principles is 'promoting the concept of sustainability in all that we do'. The RSK Group Second Nature 2030 Sustainability Strategy (RSK, 2023) confirms our commitment to embedding sustainability throughout our business and creating lasting positive impact for our planet and its people by delivering sustainability in all that we do.

This is supported by RSK Geosciences' Sustainability Policy, which sets our aspiration to provide industry-leading site assessment services to our clients to achieve more sustainable and climate resilient development and to support circular economy, decarbonisation and nature-based solutions. We also recognise that we have a responsibility to reduce our own business-related emissions. In this way our business activities are aligned with and contribute to meeting several of the UN Sustainable Development Goals (SDGs), as well as supporting pathways to net zero and circular economy.

Sustainability considerations have therefore been taken into account during the design, planning and implementation stages of the project as described in this report. Our approach prioritises sustainability by integrating Sustainable Management Practices (SMPs) across the project lifecycle, to reduce our project-related emissions and help our client achieve more sustainable outcomes for their projects. SMPs were originally published by CL:AIRE (CL:AIRE, 2021a) and further developed by RSK Geosciences as an in-house tool. Further detail is provided in Appendix B.

Where applicable, consideration has been made throughout this report to align the recommendations with circular economy, sustainable development and climate resilience. The following specific aspects have been identified to be relevant for this report:

- evaluation of impacts of projected future climate change and extreme weather effects on relevant geo-based risks.
- initial evaluation of potential for ground source heating and cooling.

## 2.6 Limitations

This report is subject to the RSK service constraints given in **Appendix A** and limitations that may be described below and throughout this document.

This report was prepared in accordance with good practice guidance and available datasets at the time of issue. Consideration should be considered in the light of changes in legislation, statutory requirements, or industry practices subsequent to the date of issue.

The opinions expressed in this report, and the comments and recommendations given, are based on the information obtained from the desk assessment and the site reconnaissance survey. No intrusive investigations have been undertaken to confirm the actual ground conditions and hence the environmental status of the site.

The study aims to principally identify and assess the potential risks and liabilities associated with contamination of the ground, on and in the vicinity of the site. While this includes consideration of current operations and housekeeping on the site, the report does not constitute a comprehensive environmental audit of the site, as covered under ISO 14001.

## 3 SITE DETAILS

### 3.1 Site location

Site location details are presented in **Table 1** and a site location plan is provided on **Figure 1**.

**Table 1 Site location details**

<b>Site name</b>	Oaklands College
<b>Full site address and Post code</b>	Hatfield Road, St Albans, AL4 0JA
<b>National Grid reference (centre of site)</b>	518229 , 207693

### 3.2 Site description

The site boundary and current site layout are shown on **Figure 2**. The site covers an area of c. 44.18 hectares. It is currently occupied by Oaklands college with numerous college buildings and associated sports facilities, parking and roadways in the centre of the site, with agricultural fields for equestrian use located in the east and north of the site.

### 3.3 Surrounding land uses

The site is located on the outskirts of St Albans, within a predominantly residential setting. Immediate surrounding land uses are described in **Table 2**.

**Table 2 Surrounding land uses**

<b>North</b>	Residential properties
<b>East</b>	Agricultural land
<b>South</b>	Residential properties
<b>West</b>	Residential properties

### 3.4 Proposed development plans

At this stage RSK have not yet seen a proposed development plan, however it is understood that the proposed development for the college site includes the demolition and renovation of the existing college buildings, the construction of new college buildings and associated creation of active travel routes including footpaths for walking, cycling and equestrian activities, public open space, habitat creations and new access points.

## 4 DESK-BASED ASSESSMENT

The desk-based assessment was designed to generally meet the objectives of a preliminary or Phase 1 investigation, as defined by BS 10175:2011+A2:2017 (BSI, 2017) and BS 5930:2015, and is set in context of a Tier 1 preliminary risk assessment as defined in LCRM.

The "vicinity" of the site for the purposes of this report is defined as locations situated within an approximate 250m radius of the site, although certain sources and/ or sensitive targets further than 250m distance from the site may also have been considered.

### 4.1 Site history

#### 4.1.1 Historical development record

The development history of the site and surrounding area based upon assessment of historical plans and records is detailed in **Table 3** and **Table 4**, respectively.

The historical maps reviewed are shown within the environmental database report in **Appendix C**.

**Table 3 Summary of historical development on site**

Date from	Date to	Historical Land Use (on-site)	Area of site
1879	Present	Open space	N, E & W
1879	Present	Woodlands	N, E & W
1879	1898	Gravel pit	Centre
1879	Present	Buildings	Centre
1924	1965	Filter bed	Centre
1937	Present	College buildings	Centre & W
1964	Unknown but not present	Tanks	W
1965	Present	4no. residential properties	S
1984	Unknown	Tanks	Centre & W
1984	Unknown	Electricity substation	Centre
1994	Unknown	Silos	Centre
2025	Present	Re-configuration of college buildings	W

**Table 4 Summary of historical development in the vicinity of the site**

Date from	Date to	Historical Land Use (off-site)	Distance (m) and orientation
1879 - 1898	1958 - Present	Ponds	50m N, 100m E, 110m S, 150m NE, 150m E & 200m NW
1879	1978	Railway	200m S

Date from	Date to	Historical Land Use (off-site)	Distance (m) and orientation
1879 - 1937	1898 - 1965	Old gravel pits	10m E, 110m N, 200m W & 250m S
1879	1964	Old chalk pit	230m SW
1937	1960	Brick works known as works from 1965	150m SW
1958 - 1993	Present	Electricity substations	10m E, 20m N, 85m SE, 90m SE, 90m NE, 140m SE, 200m S, 210m SE & 240m SE
1965	Unknown but not present	Corporation yard	30m W
1961 - 1965	1969 -1993	Depot	50m S, 80m W, 150m S & 200m SE
1965 - 1969	1985 - 1995	Factories comprising mechanical sweeping equipment, tool, optical equipment, agricultural equipment, dental equipment.	50m SE, 75m SE, 200m SE, 225m SE, 210m SE & 245m SE
1965	1969	Mill later known as instrument factory	80m S
1965 - 1985	1985 - 1995	Works including engineering works and rubber works	50m SE, 80m S, 120m SE, 180m S, 220m SE & 245m SE
1958 - 1965	Present	Ponds	10m NE, 110m S & 80m NE
1965 - 2003	Unknown but not present	Nursery	Adj N, 25m N & 120m E
1969 - 1994	1995 - present	Garages	75m SE, 80m SE, 110m SE & 150m SE
1985	1994 - present	Tanks	10m N & 230m S

The key potential contaminative land uses identified from the available historical maps include:

- Tanks;
- Gravel and chalk pits;
- Electricity substations;
- Factories, works, depot and garages; and
- Nurseries.

#### 4.1.2 Unexploded ordnance

A review of publicly available unexploded ordnance (UXO) risk maps indicates that the site is located in an area with low potential for wartime bombs to be present (Zetica, 2025).

## 4.2 Information from environmental database report

Relevant environmental permits and incidents detailed within the environmental database report (see **Appendix C**) are summarised below in **Table 5**.

**Table 5 Summary of environmental permits, landfills and incidents**

Data type	Entries on-site	Entries <250m from site	Entries >250m from site of relevance	Details
<b>Agency and hydrological</b>				
Pollution incidents to controlled waters	-	6	1	The nearest pollution incident occurred on 25/05/2002 located 106m W. The pollutant involved was contaminated water from firefighting run off. No impact was recorded to land, water or air.
Discharge consents	-	-	-	-
Registered radioactive substances	-	-	-	-
<b>Landfill and waste</b>				
Active landfills	-	-	-	-
Historic / closed landfills	-	7	3	Hatfield Quarry located 3m E of site for inert, industrial, commercial, household and special environmental permitting. Waste last recorded 31/07/1977
Licensed waste sites	-	7	5	Nearest located at Oakland college 102m for deposit of waste to land as a recovery operation.
Waste exemptions	1	13	73	Waste exemption located on site for use of waste in construction.
<b>Hazardous substances/ industrial land uses</b>				
Control of Major Accident Hazards (COMAH) sites	-	-	-	-

Data type	Entries on-site	Entries <250m from site	Entries >250m from site of relevance	Details
Explosives sites, Notification of Installations Handling Hazardous Substances (NIHHS), Planning hazardous substance consents/enforcements	-	-	-	-
Contaminated land Part 2A register entries and notices	-	-	-	-
Fuel station entries	-	-	1	-
<i>Note: Entries have only been included within the table where they are located within a 250m radius of the site or, where they fall outside of this radius but are considered to comprise a significant entry.</i>				

#### 4.2.1 Contemporary trade directory entries

Active potentially contaminative land uses identified with potential to affect the site within a 250m radius are identified:

- electricity substations x 2 (on site);
- silos (on site);
- electricity substations (30m – 32m N, 87m S, 91m NE, 124m S, 146m S, 152m S, 199m S, 210m S, 225m W, 245m S);
- Fiat St Albans (70m S), Dacia St Albans (70m S), Renault St Albans (70m S), Alpine Centre St Albans (70m S), Jeep St Albans (72m S), Formula on Autocentres (75m S), Halfords Autocentre (81m S), Alfa Romeo St Albans (83m S), Nissan St Albans (103m S), Abarth St Albans (104m S) and Petronas Group (241m S); and,
- sewage pumping stations (96m W & 153m NW).

### 4.3 Information from regulatory authorities

#### 4.3.1 Planning records

Planning records held by the Local Authority Planning Department pertaining to the site and relevant to the current assessment are summarised in **Table 6**.

**Table 6 Planning information**

Year	Details and application reference no.	Part of site
2025	Ref No. 5/2025/071 Proposed development of a hybrid planning application for up to 472 residential dwellings, 80 extra care dwellings, a new local centre and new education facilities	Whole

Year	Details and application reference no.	Part of site
2013	Ref No. 55/2013/2589 Comprehensive redevelopment to provide new and refurbished college buildings, enabling residential development of 348 dwellings, car parking, associated access and landscaping, including demolition of existing buildings.	Whole

## 4.4 Site geology

### 4.4.1 Anticipated geological sequence

Published records (British Geological Survey, 2025) for the area and available historical borehole logs indicate the geology of the site to be characterised by the succession recorded in **Table 7**.

There are 4no. publicly available BGS historical boreholes located on the site, which are presented in **Appendix D**. A further 6no. records are available within 50m of the site boundary. TL10NE168, located in the centre of the site, encountered topsoil to 0.10m overlying clay to 4.66m bgl overlying sand and gravels to 16.04m bgl with the chalk at depth to the base of the investigation at 18.50m bgl. Groundwater was encountered at 7.20m bgl.

All of the historic borehole logs reviewed showed the top of the underlying chalk to lie at an elevation of between 67 – 69m aOD.

**Table 7 Site geology**

Strata	Description	Estimated thickness	Permeability
Lowestoft Formation	Diamicton	Up to 60m	Low
Lewes Nodular Chalk Formation and Seaford Chalk Formation	Chalk	Unknown	High
Relevant information sources: BGS Geoindex <input checked="" type="checkbox"/> BGS borehole logs <input checked="" type="checkbox"/> Previous SI reports <input type="checkbox"/>			

Chalk can be susceptible to dissolution and the formation of solution features. Solution features generally occur where preferential weathering of the chalk occurs along discontinuities or joints. They are more common along geological boundaries, where surface water runoff from impermeable soils meets the more permeable underlying chalk. They are generally infilled with loose/soft soils and can be visible at ground level due to surface depressions, although this may be masked by overlying superficial deposits. They may lie dormant for many years, and are generally reactivated by the introduction of water from, for example, a leaking drain, soakaway etc.

The environmental database report indicates a solution feature to be present approximately 500m to the west of the site, within the same geology as present at the site.

#### 4.4.2 Radon

The environmental database report provides an assessment of site-specific radon risk. The report indicates that the estimated percentage of houses with radon above the Radon Action Level (200 Bq m<sup>-3</sup>) is <1%.

The environmental database report indicates that the site is not located within an 'Affected Area' and therefore no radon protective measures are required within new dwellings (or extensions) at the site.

### 4.5 Mining and quarrying

Evidence has been sought to identify any mining, quarrying, landfilling and land reclamation operations, past and present, which have taken place within 500m of the site. An initial site appraisal has been carried out based on the information provided on the Mining Remediation Authority Interactive Viewer of the UK Coalfield areas and the commercial environmental databased report for information on non-coal mining.

Use of the Mining Remediation Authority interactive viewer indicates the site lies outside their Coal Mining Reporting Area and therefore no further assessment of coal mining issues is required within this report.

#### 4.5.1 Areas of other (rock or mineral) mining

The site lies in an area with a known history of quarrying of chalk and gravel. The nearest gravel pit was located in the centre of the site with the closest off-site gravel pit located 10m east of the site.

Where chalk deposits and aggregates are present at or near surface, historical mining activities may have resulted in unrecorded mines.

### 4.6 Hydrogeology

A summary of the hydrogeological setting of the site, with respect to the anticipated geological sequence set out in Section 4.4 is presented below in **Table 8**.

**Table 8 Summary of hydrogeological setting**

Condition	Description
Aquifer characteristics	The site is underlain by a secondary undifferentiated aquifer relating to the Lowestoft Formation and Principal aquifer relating to the bedrock Lewes Nodular and Seaford Chalk Formations.
Depth to groundwater and flow	The anticipated depth to the groundwater table is in the order of circa 7.20m below ground level within the Lowestoft deposits, estimated from BGS logs. Shallow groundwater in the site area is anticipated to flow in a northerly direction, i.e. towards and in the direction of flow of the Butterworth Brook
Groundwater flooding	The risk associated with groundwater flooding is considered moderate.

Condition	Description
Groundwater recharge/attenuation	The site is a mixture of unsurfaced and covered with buildings and hardstanding. Where the site is unsurfaced, it will therefore drain to ground. With the college buildings this will limit infiltration to ground and groundwater recharge, except where SUDS are present.
Licensed groundwater abstractions	The environmental database report indicates that there are 5 current licensed groundwater abstraction within 1km of the site. The nearest groundwater abstraction is located 310m east at Smallford Nurseries for horticultural watering.
Source protection zones	Information available in the environmental database report indicates that the site lies within Zone 2 outer catchment and Zone 3 Total Catchment of the groundwater Source Protection Zone (SPZ)

## 4.7 Hydrology

A summary of the hydrology within the site area is summarised in **Table 9**.

**Table 9 Summary of hydrology in site area**

Condition	Description
Surface watercourses / features	The Butterwick Brook is located running along the northern boundary of the site. It is anticipated that it flows in an easterly / south easterly direction towards the Colne River located 3.2km south of the site.
Surface water abstractions	There are no surface water abstractions identified by the environmental database, within a 1km radius of the site.
Site drainage	Surface drainage from the site appears to be discharged to ground within agricultural areas in the east, west and north. It is assumed that surface drainage is into the sewer network within the Oaklands college campus.
Preliminary flood risk assessment	The site does not lie within an Environment Agency floodplain zone.

## 4.8 Sensitive land uses

**Table 10** provides a summary of any environmentally sensitive areas identified within 250m of the site based on the environmental database report.

**Table 10 Environmentally sensitive areas**

Feature	Present within 250m of site?	Details	Likely pathways from site?
International designations – Ramsar wetland, Special Area of Conservation (SAC), Special Protection Area (SPA)	No	-	-
National designations – Site of Special Scientific Interest (SSSI),	Yes	Home Wood located on	None as groundwater flow direction is anticipated towards the north

Feature	Present within 250m of site?	Details	Likely pathways from site?
National Nature Reserve (NNR), ancient woodland		western site boundary	
Local designations – Local Nature Reserve, Site of Importance for Nature Conservation (SINC)	No	-	-
Nearest high sensitivity development, e.g. residential	n/a	Located adjacent south of site.	-

## 5 INITIAL CONCEPTUAL SITE MODEL

In the UK land contamination is assessed using a risk-based approach taking account of the magnitude (severity of the hazard) and likelihood (probability) of occurrence. A ‘receptor’ is something that could be adversely affected by contamination (e.g. people, an ecological system, property or a water body). A ‘pathway’ is a route or means by which a receptor is or could be exposed to or affected by a contaminant. A ‘contaminant source’ is a hazard but it can only pose a risk to a receptor where a pathway is present.

The relationship between sources, pathways and receptors are referred to as a conceptual site model. A risk can only be realised where a contaminant source, pathway and receptor are all in place, referred to as a ‘contaminant linkage’.

In line with LCRM (Environment Agency, 2023) and BS 10175: 2011 + A2 2017 (BSI, 2017), RSK has used information in the preceding sections to identify hazards (sources of contaminants), receptors that may be impacted and plausible linking pathways. Where all three are present this is termed a potentially complete contaminant linkage and a qualitative risk estimation is made.

The conceptual site model has been considered in context of the proposed development as understood at the time of writing this report. Should the site development proposals change, the CSM and the associated contaminant linkages identified may need to be revised.

### 5.1 Potential soil, soil vapour and groundwater linkages

#### 5.1.1 Potential sources of contamination

Potential sources of soil and groundwater contamination identified from current activities and the history of the site and surrounding area are presented in **Table 11**.

**Table 11 Potential sources of soil and groundwater contamination**

Potential sources	Contaminants of concern
<b>On-site</b>	
Made ground (i.e. fill material) associated with infilling of old gravel pit and historical development on site	Unknown fill material but potentially including brick, ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), asbestos
Tanks & Silos (centre and west of site)	Petroleum hydrocarbons (petrol/diesel), PAHs
Filter bed (centre of site)	Ammoniacal nitrogen, chloride, coliforms and e-coli (faecal coliforms), toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), asbestos, petroleum hydrocarbons
Electricity Substations (centre of site)	Polychlorinated Biphenyls (PCBs)
<b>Off-site</b>	
Made ground (i.e. fill material) associated with infilling of chalk and gravel pits, ponds, landfill	Unknown fill material but potentially including brick, ash and clinker and containing toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), asbestos

Potential sources	Contaminants of concern
Industrial activities including factories, works, depot, corporation yard, mill.	Petroleum hydrocarbons, toxic and phytotoxic metals, inorganics, PAHs, asbestos
Garages	Petroleum hydrocarbons, toxic and phytotoxic metals, inorganics, PAHs, asbestos
Nurseries	Petroleum hydrocarbons (petrol/diesel), fertilisers and pesticides
Electricity Substations	Polychlorinated Biphenyls (PCBs)
Tanks	Petroleum hydrocarbons (petrol/diesel), PAHs
Sewage pumping stations	Ammoniacal nitrogen, chloride, coliforms and e-coli (faecal coliforms), toxic and phytotoxic metals, inorganics, polycyclic aromatic hydrocarbons (PAHs), asbestos, petroleum hydrocarbons

### 5.1.2 Sensitive receptors

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential sources identified above comprise:

- future site users (commercial)
- adjacent site users (residential / commercial workers)
- current / future buildings and services (i.e. foundations and potable water pipes)
- groundwater in secondary undifferentiated aquifer
- groundwater in principal and source protection zone
- surface water course (Butterworth Brook)

### 5.1.3 Potential contaminant pathways

Exposure pathways applicable to human health receptors include:

- direct ingestion, inhalation and dermal contact with soil and soil-derived dust
- vapour migration followed by indoor and/or outdoor inhalation
- soil-derived dust migration followed by off-site deposition and ingestion, inhalation, and dermal contact
- asbestos fibre release followed by inhalation
- wind-blown dust and deposition off-site followed by direct ingestion, inhalation, and dermal contact.

Pathways applicable to environmental receptors include:

- direct contact of foundations/services with contamination in soil and/or groundwater
- leaching from soil followed by migration in groundwater
- migration in groundwater
- migration of NAPL/DNAPL

- migration via run-off through drainage
- discharge to surface water

Ecological receptors are only considered within the conceptual model in the context of statutory protected sites.

Please note that construction workers and future maintenance workers have not been identified in the conceptual model as receptors because risks are considered to be managed through health and safety procedures according to the Health & Safety at Work Act 1974 and associated regulations and guidance.

Where there are potential instances that construction methods may result in short term environmental impacts, these will need to be assessed at design stage, within a construction phase environmental management plan and mitigation measures put in place where required.

## 5.2 Potential ground gas linkages

### 5.2.1 Ground gas generation potential

Potential ground gas sources identified for the site and surrounding are shown in **Table 12**.

**Table 12 Potential ground gas sources**

Potential sources	Indicative ground gas generation potential (CIEH, 2008)	Additional information
<b>On-site</b>		
Made ground with low degradable organic content (e.g. up to 5% organic material and no easily degradable waste).	Very low	BGS geology viewer has not mapped made ground on-site. However it is expected likely to be present as a result of historical development at the site.
<b>Off-site</b>		
Infilled gravel and chalk pits	Low	All mapped gravel and chalk pits were backfilled between 1889 and 1964
Landfill (3m E)	Low	The last recorded waste was in 1977

Given the anticipated ground conditions set out above, significant potential sources of ground gas generation have been identified associated with infilled gravel and chalk pits and the Hatfield Quarry Landfill.

### 5.2.2 Radon

The site is in an area where the estimated percentage of homes exceeding the action level of 200 Bq m<sup>3</sup> is <1% as indicated on available radon potential mapping (UKHSA & BGS, 2022).

In accordance with BRE 211 guidance (2023) and associated building regulations/standards no protection measures are considered to be required in new developments.

### 5.2.3 Preferential pathways for ground gas migration

Credible preferential pathways potentially connecting the source and receptor through vertical and lateral migration are:

- geology of the Lowestoft Formation which is likely to be permeable
- building foundations, piled foundations and vibro-stone columns
- construction joints and cracks within building structure
- utility routes and service penetrations into buildings

### 5.2.4 Sensitive receptors and ground gas linking pathways

Sensitive receptors identified at or in the vicinity of the site that could be affected by the potential ground gas sources identified above comprise:

- on-site human receptors - migration and ingress of ground gases into buildings or confined spaces followed by explosion / asphyxiation
- current / adjacent site users – migration off-site and ingress of ground gases into buildings or confined spaces followed by explosion / asphyxiation
- current / future buildings and services - migration and ingress of ground gases into buildings or confined spaces followed by explosion.

The assessment has identified receptors to include building structures and proposed end-users.

Construction workers have not been identified as receptors for the purposes of this assessment. Risks may still be present to construction workers especially where works include the entry into excavations within the ground. Construction workers should undertake appropriate risk assessments and risks should be managed through health and safety procedures and the use of PPE.

## 5.3 Preliminary risk assessment

The preliminary risk assessment findings and potentially complete contaminant linkages are shown in **Table 13**.

The risk classification is based on the combination of hazard consequence and probability using a risk matrix from CIRIA C552 (Rudland et al., 2001). The requirement for a preliminary qualitative risk assessment is in accordance with LCRM (Environment Agency, 2023). A summary of the risk assessment process is in **Appendix D**.

**Table 13 Risk estimation for potentially complete contaminant linkages**

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
On-site Made ground (i.e. fill material associated with historical site development)	Future site user	Direct ingestion, inhalation and dermal contact with soil and soil-derived dust	Low Likelihood	Medium	Low / Moderate	There is the potential for localised contamination to be present. Further investigation would be required to confirm the risk.
		Accumulation of ground gas leading to explosion or asphyxiation	Unlikely	Severe	Low / Moderate	The potential for ground gas generation arising from infilled materials at the site is unknown however the time since previous development (>40 years) indicates the potential for ongoing gas generation to be unlikely. However owing to the severity of hazardous gas risk further characterisation of a potential source is considered to be required.
	Adjacent site user	Ingestion of contaminated soil and dust and inhalation of contaminated dust and potential vapours	Unlikely	Medium	Low	There is the potential for localised contamination to be present in concentrations that may affect adjacent site users.
	Future buildings and services	Direct contact of foundations/services with contamination in soil and groundwater.	Low Likelihood	Minor	Low	Water supply pipelines are likely to be laid in a designated trench with “clean” backfill. Therefore there is considered to be a low likelihood that any potential contaminants would be in contact with the water supply pipes
	Groundwater	Leaching to groundwater	Unlikely	Medium	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration to the groundwater within the Secondary & Principal aquifers.

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
	Surface water (Butterworth Brook)	Leaching to groundwater followed by migration in groundwater	Low Likelihood	Mild	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration via the groundwater to the Butterworth Brooke.
Tanks & silos	Future site user	Direct ingestion, inhalation and dermal contact with soil and soil-derived dust	Low Likelihood	Medium	Low / Moderate	There is the potential for localised contamination to be present. Further investigation would be required to confirm the risk.
	Adjacent site user	Ingestion of contaminated soil and dust and inhalation of contaminated dust and potential vapours	Unlikely	Medium	Low	There is the potential for localised contamination to be present in concentrations that may affect adjacent site users.
	Future buildings and services	Direct contact of foundations/services with contamination in soil and groundwater.	Low Likelihood	Minor	Low	Water supply pipelines are likely to be laid in a designated trench with “clean” backfill. Therefore there is considered to be a low likelihood that any potential contaminants would be in contact with the water supply pipes.
	Groundwater	Leaching to groundwater	Unlikely	Medium	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration to the groundwater within the Secondary & Principal aquifers.
	Surface water (Butterworth Brook)	Leaching to groundwater followed by migration in groundwater	Low Likelihood	Mild	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration via the groundwater to the Butterworth Brooke.
Filter bed	Future site user	Direct ingestion, inhalation and dermal contact with soil and soil-derived dust	Low Likelihood	Medium	Low / Moderate	There is the potential for localised contamination to be present. Further investigation would be required to confirm the risk.

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
	Adjacent site user	Ingestion of contaminated soil and dust and inhalation of contaminated dust and potential vapours	Unlikely	Medium	Low	There is the potential for localised contamination to be present in concentrations that may affect adjacent site users.
	Future buildings and services	Direct contact of foundations/services with contamination in soil and groundwater.	Low Likelihood	Minor	Low	Water supply pipelines are likely to be laid in a designated trench with “clean” backfill. Therefore there is considered to be a low likelihood that any potential contaminants would be in contact with the water supply pipes.
	Groundwater	Leaching to groundwater	Unlikely	Medium	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration to the groundwater within the Secondary & Principal aquifers.
	Surface water (Butterworth Brook)	Leaching to groundwater followed by migration in groundwater	Low Likelihood	Mild	Low	Cohesive soils are anticipated to be beneath the site and may restrict contamination migration via the groundwater to the Butterworth Brooke.
Electricity substations	Future site user	Direct ingestion, inhalation and dermal contact with soil and soil-derived dust	Low Likelihood	Medium	Low / Moderate	There is a low likelihood that PCBs may have migrated into soils. Further investigation would be required to confirm the risk.
	Adjacent site user	Ingestion of contaminated soil and dust and inhalation of contaminated dust and potential vapours	Unlikely	Medium	Low	Given that PCBs have very low mobility it is unlikely that any contaminates will migrate to adjacent site users.
	Future buildings and services	Direct contact of foundations/services	Unlikely	Medium	Low	Given that PCBs have very low mobility it is unlikely that any contaminates will migrate to water supply pipes

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
		with contamination in soil and groundwater.				
	Groundwater	Leaching to groundwater	Unlikely	Medium	Low	Given that PCBs have very low mobility it is unlikely that any contaminates will migrate to the groundwater.
	Surface water (Butterworth Brook)	Leaching to groundwater followed by migration in groundwater	Unlikely	Medium	Low	Given that PCBs have very low mobility it is unlikely that any contaminates will migrate to the Butterworth Brook.
Off-site sources						
Made ground (i.e. fill material) associated with infilling of chalk and gravel pits, ponds, landfill	Future site user	Vertical and lateral migration of contaminants	Unlikely	Medium	Low	No chemical analysis data for the off-site infilled materials has been identified based on the desk based review. However given that the infilled pits, landfill were infilled in 1960s & 1970s and that cohesive geology is anticipated, it is unlikely that volatile contaminants will migrate onto site sufficient concentrations to pose a risk to future site users.
	Future site user	Vertical and lateral migration and accumulation of ground gas leading to explosion or asphyxiation	Unlikely	Severe	Low / Moderate	The potential for ground gas generation arising from infilled materials in the landfill is unknown however the time since infilling (>40 years) and that records suggest it was inert waste, indicate the potential for ongoing gas generation to be unlikely. However owing to the severity of hazardous gas further characterisation of a potential source is considered to be required.
Industrial activities including factories, works, depot, corporation yard, mill.	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	There is the potential for contamination to be present in soil and groundwater from these activities in the surrounding area. However, it is considered unlikely that volatile compounds will migrate onto

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
						site at sufficient concentrations to pose a risk to future site users.
Garages	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	There is the potential for contamination to be present in soil and groundwater from these activities in the surrounding area. However, given the distance from the site, it is considered unlikely that volatile compounds will migrate onto site at sufficient concentrations to pose a risk to future site users.
Nurseries	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	There is the potential for contamination to be present in soil and groundwater from these activities in the surrounding area. However, given the anticipated cohesive geology beneath the site, it is considered unlikely that volatile compounds will migrate onto site at sufficient concentrations to pose a risk to future site users.
Electricity Substations	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	Given that PCBs have very low mobility it is unlikely that volatile contaminants will migrate onto site sufficient concentrations to pose a risk to future site users.
Tank	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	There is the potential for contamination to be present in soil and groundwater from these activities in the surrounding area. However, given the anticipated cohesive geology beneath the site, it is considered unlikely that volatile compounds will migrate onto site at sufficient concentrations to pose a risk to future site users.
Sewage pumping stations	Future site user	Vertical and lateral migration	Unlikely	Medium	Low	There is the potential for contamination to be present in soil and groundwater from these activities in the surrounding area. However, given the distance from the site, it is considered unlikely that

Potential source	Potential receptor	Possible pathway	Likelihood	Severity	Risk Rating	Justification
						volatile compounds will migrate onto site at sufficient concentrations to pose a risk to future site users.

Risk matrix		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very low	Very low
	Very Unlikely	Low	Very Low	Negligible	Negligible

Potentially complete contaminant linkages with a potential risk of moderate to low or higher comprise:

- future site users – commercial users [direct ingestion, inhalation and dermal contact with soil and soil-derived dust, inhalation of vapours from groundwater if present];
- future site users - vertical and lateral migration and accumulation of ground gas leading to explosion or asphyxiation

In line with LCRM, these potentially complete contaminant linkages need to be assessed further through an appropriate scope of site investigation and/or mitigation incorporated into the development as may be appropriate.

## **5.4 Data gaps and uncertainties**

Key data gaps and uncertainties identified in the CSM at desk study stage include:

- gaps in available historical OS maps 1937 - 1960
- no site walkover has been undertaken of the site
- the centre site was developed before first published OS map and prior history not known
- there are no previous investigations available for the site, therefore no information on actual ground conditions and the contamination status of the site are available at this stage
- groundwater depth and flow direction are conceptual at this stage

## 6 CONCLUSIONS AND RECOMMENDATIONS

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### 6.1 Geo-environmental assessment

The Phase 1 Desk Study has identified potential sources of contamination.

Potentially complete contaminant linkages with a potential risk of moderate to low or higher comprise:

- future site users – commercial users [direct ingestion, inhalation and dermal contact with soil and soil-derived dust, inhalation of vapours from groundwater if present];
- future site users - migration and ingress of ground gases into buildings or confined spaces followed by explosion / asphyxiation.

In line with LCRM, these potentially complete contaminant linkages need to be assessed further through an appropriate scope of site investigation and/or mitigation incorporated into the development as may be appropriate.

### 6.2 Recommendations

The following recommendations are made for further assessment of the site to investigate the risks identified above and to address remaining uncertainties:

- Phase 2 intrusive ground investigation comprising of trial pits/shallow dynamic sampler boreholes with the installation of ground gas/groundwater monitoring wells. The collection of soil samples for laboratory chemical testing to assist the land contamination assessment and gas monitoring to determine potential gas risk.

## REFERENCES

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### Standards and guidance

AGS (2022), UK Specification for Ground Investigation (UKSGI), third edition, 2022.

British Standards Institution (BSI) (2020), 'BS 5930:2015+A1:2020. Code of practice for ground investigations.

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<https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>, 2023.

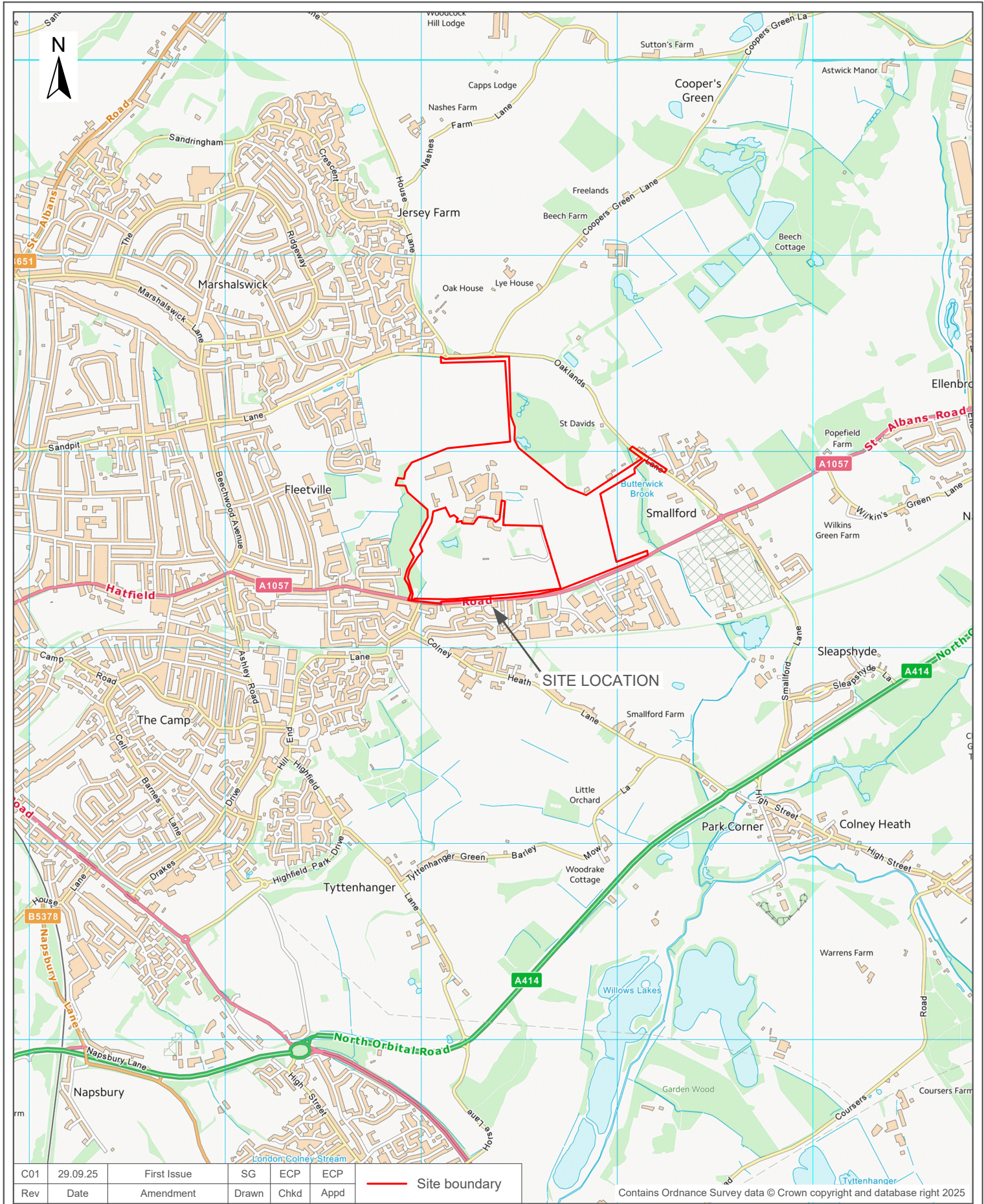
Part IIA of the Environmental Protection Act (Contaminated Land Regulations (England)) 2002.

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# FIGURES

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**Figure 1 SITE LOCATION PLAN**



C01	29.09.25	First Issue	SG	ECP	ECP	 Site boundary
Rev	Date	Amendment	Drawn	Chkd	Appd	

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Client  
Taylor Wimpey North Thames

Project Name  
Oaklands College, St Albans

Description  
Site Location Plan

Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name
m	A4	1:25,000	518229 , 207693	1923853	11102	C01	1923853-HH-111-XX-D-G-11102-C01

**Figure 2 SITE LAYOUT PLAN**



DO NOT SCALE FROM THIS DRAWING



**LEGEND**

— Site boundary

**Notes:**

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C01	29.09.25	First Issue	SG	ECP	ECP
Rev	Date	Amendment	Drawn	Chkd	Appd



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Client  
Taylor Wimpey North Thames

Project Name  
Oaklands College, St Albans

Description  
Site Layout Plan

Project ID	Drawing no.	Revision
1923853	11202	C01

File name  
1923853-HH-112-XX-D-G-11202-C01

Dimensions	Scale	Size
m	NTS	A3

# APPENDICES

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**Appendix A**  
**SERVICE CONSTRAINTS**

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# APPENDIX A

## SERVICE CONSTRAINTS

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### 1. Service Constraints

1.1. This Report (the "Report") and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the "Appointment") between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

- a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.
- b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.
- c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.
- d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

## **2. Service Constraints where the Report provides an intrusive assessment of ground conditions:**

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent

of the limited area depends on the properties of the materials adjacent and local conditions, together with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

### **3. Service Constraints where the Report relates to Surface Water Management:**

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibility for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

#### **4. Service Constraints where the Report relates to Waste Management:**

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the

comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

#### **5. Service Constraints for Construction Environmental Management Plan Reports:**

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

#### **6. Service Constraints where the Report relates to Ground Gas Membrane Verification:**

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

#### **7. Service Constraints for Environmental Due Diligence (EDD) Reports:**

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

## **8. Service Constraints for Ground source heat energy Reports:**

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

## **9. Service Constraints for Water Abstraction Borehole Reports:**

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.



## **Appendix B**

# **ENVIRONMENTAL DATABASE REPORT**

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**Site Details:**

OAKLANDS COLLEGE,  
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SMALLFORD CAMPUS,  
HATFIELD ROAD, ST ALBANS,  
HERTFORDSHIRE, AL4 0JA

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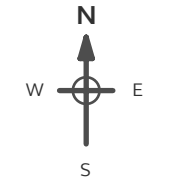


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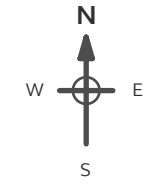
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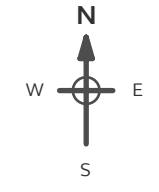
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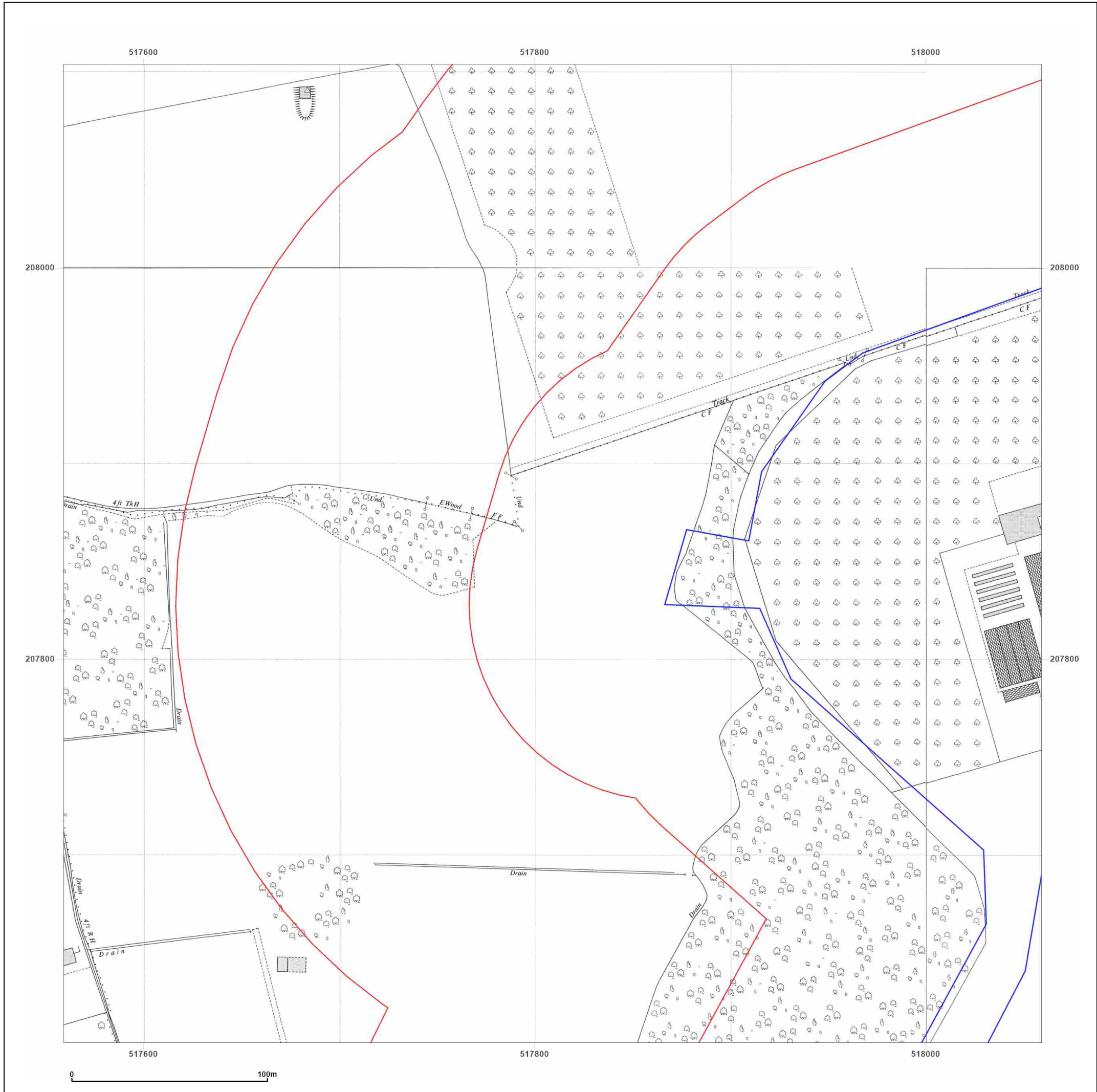


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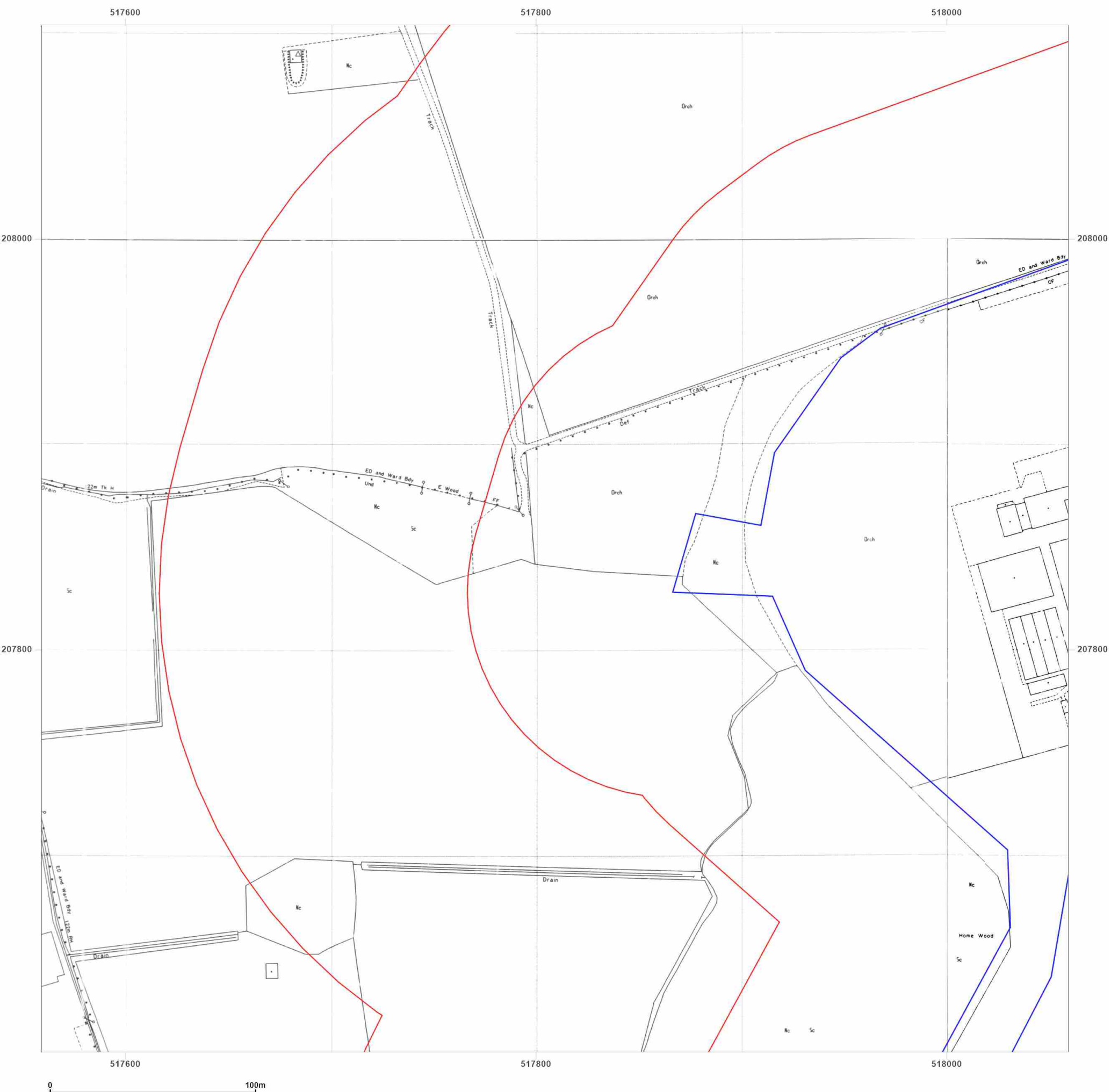
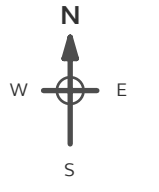
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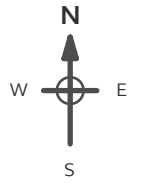
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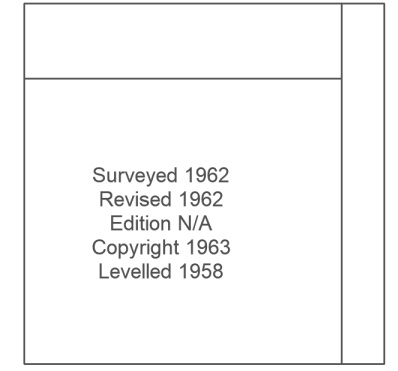
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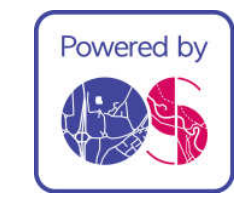
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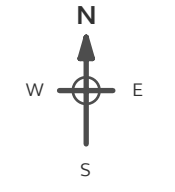
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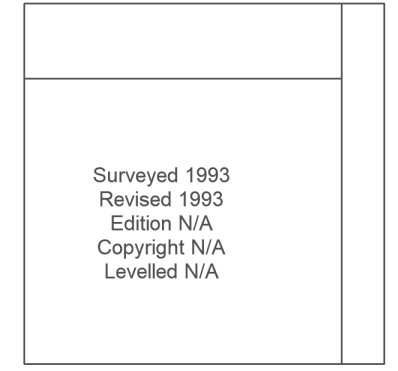
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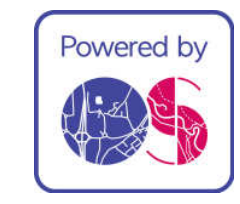
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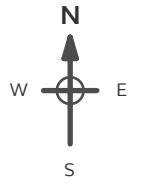
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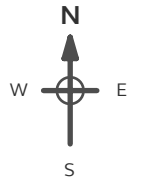
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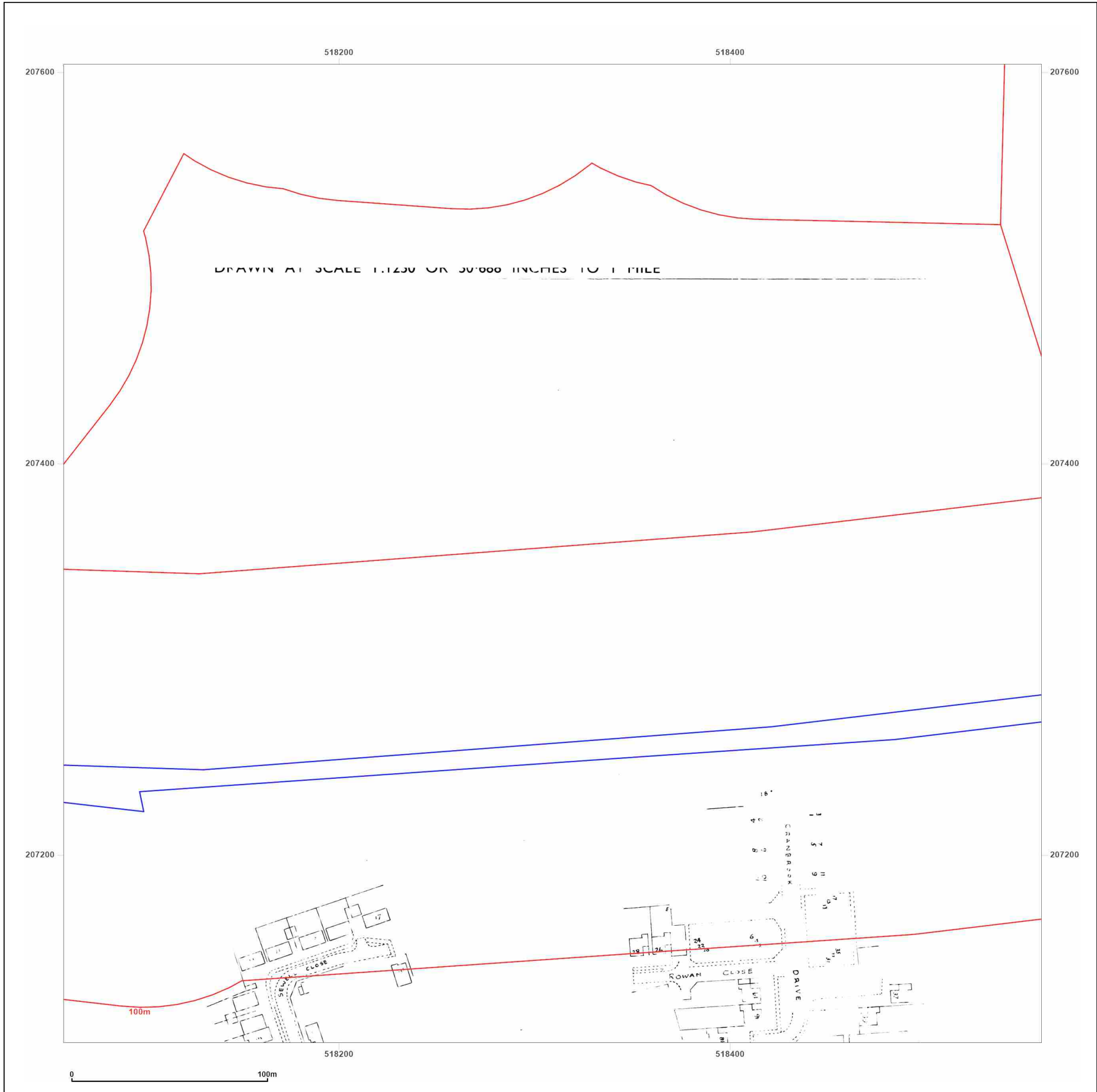
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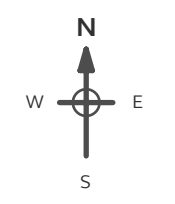
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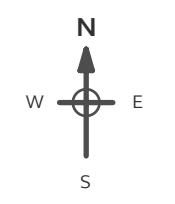
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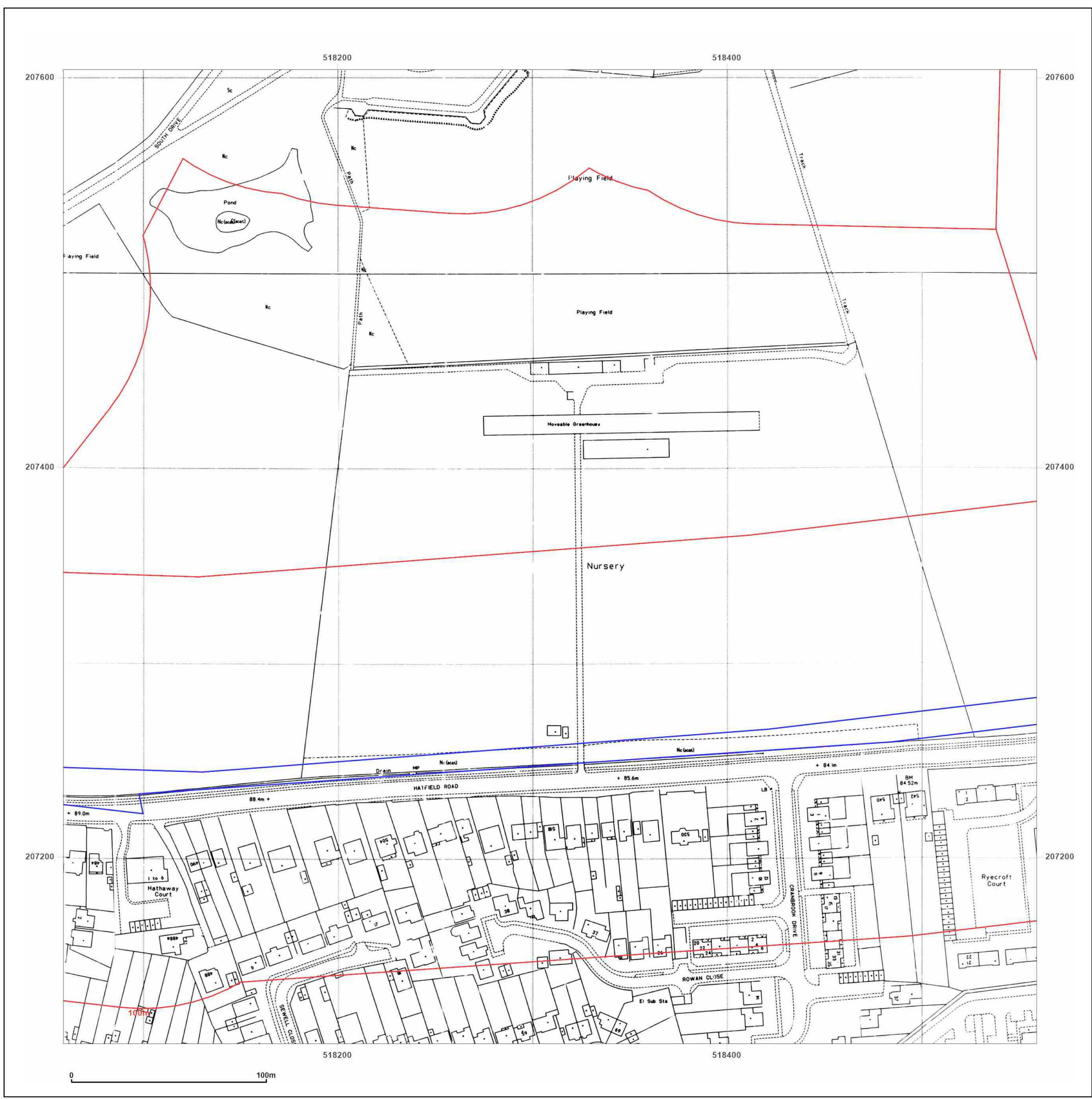


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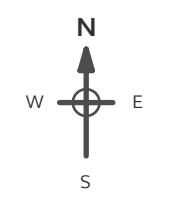
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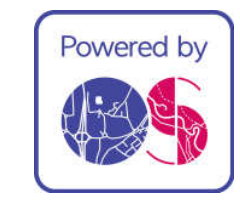
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 HATFIELD ROAD, ST ALBANS,  
 HERTFORDSHIRE, AL4 0JA

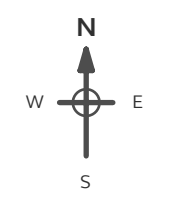
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**Report Ref:** GS-RHT-UJD-S5R-5WT\_1250\_2\_2  
**Grid Ref:** 518309, 207854

**Map Name:** National Grid

**Map date:** 1984

**Scale:** 1:1,250

**Printed at:** 1:2,000



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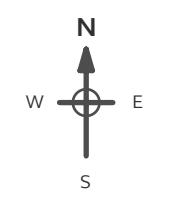
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**Grid Ref:** 518309, 207854

**Map Name:** National Grid

**Map date:** 1993

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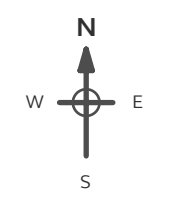
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