



Phase I Geo-Environmental Desk Study

13-15 West Street
Over
Cambridgeshire
CB24 5PL

Prepared for:

Mr Simon Bonnett
13 West Street
Over
Cambridgeshire
CB24 5PL

EPS Project Reference: UK23.6479

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13-15 WEST STREET, OVER

NON-TECHNICAL CLIENT SUMMARY

This report presents the findings of a Phase I Geo-Environmental Desk Study which was carried out to assess risks posed by contaminated land and to provide an initial assessment of geological and geotechnical aspects, to inform how the proposed development might be affected.

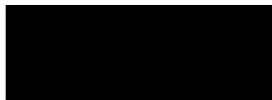


- The site currently comprises a 2-storey semi-detached house at the front, with a short driveway down the west side leading towards the rear parking space and garden area. A number of garages and outbuildings span both the east and west site boundaries within the rear garden. The proposed development comprises the construction of a rear extension to the existing residential property as well as alterations to both the main property and outbuildings.
- Ground conditions are reported to superficial sands and gravels which are classified as a Secondary Aquifer, likely followed by mudstone bedrock of the West Walton & Ampthill Clay Formations which are classified as Unproductive Aquifers. The site is not located within a source protection zone for groundwater abstraction and no notable watercourses are present in the immediate surrounding area. As such, the site is considered to lie within an area of relatively low environmental sensitivity.
- Historical mapping appears to show that the currently existing buildings along the southern and eastern site boundaries (including the main house) have been present in roughly the same layout since at least the 1880s, while the outbuildings along the western boundary were added during the 1970s.
- Given the fairly limited extent of the alterations proposed for the site, no new plausible risks are considered likely to be introduced to site users from potential exposure to ground contamination which would warrant further investigation. As such, the risks from ground contamination can be considered low and acceptable, and the site can be considered suitable for the proposed development.
- In terms of the suspected asbestos-containing materials within the roof construction of both the main house and one of the garages along the west side of the rear garden, if any of these are to be disturbed during the development works then they must be fully assessed, and if necessary removed and appropriately disposed of, by a specialist contractor.

A copy of this report should be provided to the Environmental Health department of South Cambridgeshire District Council so that the information may be used to support the planning application for the site. This report should satisfy all requirements of the planning process relating to contamination.

By their very nature, the above bullet points represent a simplified summary of our work and **must not** be relied upon to form the basis for key decisions for the proposed development. A full picture is provided in the following report, or alternatively give us a call and we'll talk you through it.



Project Reference:	UK23.6479
Title:	Phase I Geo-Environmental Desk Study – 13-15 West Street, Over
Client:	Mr Simon Bonnett
Date:	14 th June 2023
EPS Contact Details:	7B Caxton House Broad Street Cambourne Cambridge CB23 6JN T: 01954 710666 F: 01954 710677 E: info@epstrategies.co.uk W: www.epstrategies.co.uk
Status:	Issue 1

Author:	Reviewed:	Authorised:
		
Tom Hodgkinson	Michael Judson	Steve Bullock
Consultant	Senior Consultant	Director

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The report has been written, reviewed and authorised by the persons listed above. It has also undergone EPS' in house quality management inspection. Should you require any further assistance regarding the information provided within the report, please do not hesitate to contact us.

The National Planning Policy Framework requires a competent person to prepare site investigation information, which is defined as a person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation. EPS considers that it fulfils these criteria and would welcome any request for staff CVs or case studies to demonstrate it.

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1 INTRODUCTION

In May 2023, Environmental Protection Strategies Ltd (EPS) was commissioned by Mr Simon Bonnett to complete a Phase I Geo-Environmental Desk Study for 13-15 West Street, Over, Cambridgeshire, CB24 5PL ('the site'); see Figure 1.

The work was commissioned to support an application to discharge the outstanding planning condition 6 relating to land contamination, under South Cambridgeshire District Council planning ref: 20/03190/FUL (granted permission in June 2021) for a proposed development comprising the construction of a rear extension to an existing residential property as well as alterations to both the main property and a number of outbuildings.

This report presents the findings, conclusions, and recommendations of the Phase I Desk Study undertaken for the site as instructed.

1.1 Objectives

The purpose of this desk study is to evaluate the potential contaminant linkages which may be active at the site in its current condition, or could become active in future, and to determine if any action is required to investigate them further or to break them.

This is achieved by carrying out the following activities:

- a) Examining the site history - late 1800s to present day, through collection of historical maps of the area, site records, records held by relevant local authorities, the Environment Agency and review of other information databases.
- b) Characterising the site's environmental and geological sensitivity through examination of existing geological, hydrogeological, topographical, and historical maps and aerial photographs of the area.
- c) Identifying Potential Areas of Concern (PAOCs) through a combination of historical map and data review.
- d) Consideration of any future plans for the site and the effects any proposed changes may have on contaminant linkages over time.
- e) Development of a Conceptual Site Model through a Preliminary Risk Assessment to evaluate the potential risks posed by the site and make recommendations for any further work that may be required to ensure suitability for use and safe development. In accordance with the Environment Agency's *Land Contamination: Risk Management (2020)* and the *National Planning Policy Framework*.



1.2 Project Limitations and Constraints

The purpose of this report is to present the findings of a Phase I Geo-Environmental Desk Study conducted at the location(s) specified. When examining the data collected from third parties for the purposes of the investigations, EPS accepts no responsibility for any errors within the materials referenced and presented in this report.

This report does not include specific investigation for the presence of either Potential Asbestos Containing Material (PACM) or Japanese Knotweed at the subject site however, if obvious evidence of either is observed during EPS site walkover, details will be provided in this report. Specialist contractors should be commissioned to make detailed assessments and recommendations if these materials are suspected.

2 SITE CHARACTERISATION

The following section provides a summary of the information collected in relation to the site location and history.

2.1 Site Location and Description

Detail	Description
Location	The site is situated on the north side of West Street between the junctions with Glover Street and Unwin's Lane, in the south of the village of Over, Cambridgeshire, approximately 11km northwest of Cambridge.
National Grid Reference	537540, 269970
Topographic Elevation	Levels appear largely flat, lying at around 16m to 17m Above Ordnance Datum (AOD).
Description of Site	<p>The site is a rectangular parcel of land covering an area of 0.11ha. A walkover survey was undertaken on 25th May 2023, at which time the land was found to comprise a 2-storey semi-detached house at the front (south), with a short driveway down the western side accessed directly from West Street, leading towards the rear parking space and garden area. A number of garages and outbuildings are present in the garden spanning both the east and west site boundaries, mostly in good condition. In addition, a concrete slab was also noted within a mostly grass-covered area in the southwest corner of the site, where another barn is understood to have recently been removed after falling into disrepair.</p> <p>The garages along the west side of the garden appear to be mainly used for vehicle storage, while those along the east side house a variety of household/gardening equipment as well as a home gym. In terms of the rear garden area, the southern half is covered with hardstanding and used as off-street parking, while the remainder is laid to grass with several flowerbeds and a patio walkway across the middle which connects the garages on either side of the garden. In the northwest corner of the garden a couple of semi-mature to trees were present, notably including a leylandii around 8m in height.</p> <p>Suspected asbestos-containing materials were noted within the roof construction of both the main house and one of the garages in the west of the garden, in the form of corrugated cement sheeting.</p>
Surrounding Land Use	The site is surrounded on all sides by predominantly residential properties, although agricultural fields lie a short distance to the south, just beyond the properties on the opposite side of West Street.

A plan showing the site location is provided as Figure 1, and the current site layout is detailed on Figure 2 with an aerial photograph included as Figure 3. Selected Site Photographs are included as Appendix A, an indicative proposed development plan has been included as Appendix B, and relevant extracts of a Landmark Envirocheck report are included as Appendix C.

2.2 Geo-Environmental Setting

Detail	Description																
Geology	Geological maps of the area indicate the site to be underlain by superficial Glacio-fluvial Deposits mainly comprising sands and gravels, reportedly followed by mudstone bedrock of the West Walton & Ampthill Clay Formations (undifferentiated). Information on the site's geological context is included as Appendix D.																
British Geological Survey (BGS)	A historic borehole record held by the BGS for a location around 250m south/southeast of the site indicates an initial thin layer of topsoil underlain by yellow, clayey, fine to coarse gravel to a depth of 2.2m below ground level (bgl). This is followed by further superficial deposits in the form of boulder clay to 13.8m, and then stiff, blue silty clay thought to represent the Ampthill Formation, which extends to beyond the base of the borehole at 15.3m. Groundwater was reportedly struck within the boulder clay at a depth of 4.9m. A copy of this borehole log is also included within Appendix D.																
Geological Hazards	<table border="1"> <thead> <tr> <th>Hazard</th> <th>On Site Risk</th> </tr> </thead> <tbody> <tr> <td>Mining (non-coal)</td> <td>No Hazard</td> </tr> <tr> <td>Collapsible Ground</td> <td>Very Low</td> </tr> <tr> <td>Compressible Ground</td> <td>No Hazard</td> </tr> <tr> <td>Ground Dissolution</td> <td>No Hazard</td> </tr> <tr> <td>Running Sand</td> <td>Very Low</td> </tr> <tr> <td>Landslide</td> <td>Very Low</td> </tr> <tr> <td>Shrinking / Swelling Clay</td> <td>No Hazard (Moderate 46m to NE)</td> </tr> </tbody> </table>	Hazard	On Site Risk	Mining (non-coal)	No Hazard	Collapsible Ground	Very Low	Compressible Ground	No Hazard	Ground Dissolution	No Hazard	Running Sand	Very Low	Landslide	Very Low	Shrinking / Swelling Clay	No Hazard (Moderate 46m to NE)
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The nearest recorded mineral site refers to a former brick works historically located 985m to the southeast. This included an opencast pit which extracted common clay and shale from the West Walton & Ampthill Formations and appears to have ceased operation and been infilled during the 1960s or 1970s.																	
Radon	The Envirocheck indicates the site to lie in a location where the percentage of homes above the radon action level is less than 1%. It further reports that the site will therefore not require radon protection measures in the construction of any new buildings.																
Hydrogeology	Groundwater vulnerability maps for the area show that the superficial deposits are classified as a Secondary (A) Aquifer with high vulnerability, while the underlying bedrock formations are classified as Unproductive Strata. The site does not lie within a Source Protection Zone for local groundwater abstraction. The nearest groundwater abstraction is located around 350m to the northwest and is for spray irrigation purposes. Groundwater vulnerability maps are included as Appendix E.																



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Hydrology	<p>The Envirocheck indicates the nearest surface water feature to be a small pond around 150m to the southwest, although several drains and streams are also located in the wider surrounding area. The nearest of these lies around 275m east, whilst the larger Swavesey Drain is located around 780m to the southwest at its nearest, and flows in a northerly direction before discharging into the River Great Ouse around 1.7km northwest of the site.</p> <p>One discharge consent is recorded within a 1km radius, located 565m to the east and relating to sewage discharges from a pumping station into a culvert. The nearest surface water abstraction is located around 870m to the north and is used for spray irrigation.</p> <p>Review of the EA Flood Zone Map for the area indicates that the site lies within Flood Zone 1, which is defined as the area with a low potential risk of flooding from fluvial or tidal sources. It should be noted that the EA maps do not take into account the presence of flood defences, nor the likelihood of flooding from groundwater or poor drainage. A copy of the flood map for the site and surrounding area is also included within Appendix E.</p>																																
Known Site Drainage & Utilities	<p>The site is expected to include typical buried services associated with residential dwellings. Manhole covers were also noted within the rear parking area suggesting the presence of drainage runs beneath the rear of the property.</p>																																
Landfill & Waste	<p>There is one historic landfill recorded within a 1km radius, located at Hill Farm around 950m to the southeast of the site. Little additional information is given, except that the deposited wastes included inert waste.</p> <p>In addition, four other areas of potentially infilled land are also recorded within the wider surrounding area, the nearest of these referring to an unknown filled pit or quarry around 800m to the southwest.</p>																																
Permitted Industrial Activity	<p>One site in the surrounding area is reported as operating under a Local Authority Pollution Prevention and Control (LAPPC) environmental permit. This refers to Over Garage around 615m to the north, and the permission specifically relates to the use of waste oil burners.</p>																																
Other Industrial Land Use & Points of Interest	<p>The Envirocheck report lists 10 entries for other potentially contaminative industrial land uses/points of interest within the surrounding 500m, the most pertinent of which are summarised below.</p>																																
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Detail	Description		
Other Industrial Land Use & Points of Interest Cont.	Repairers & Service)		
	V W Technics (Vehicle Repair, Testing & Servicing)	414m (E)	Unspecified
	M A Joinery (Joinery Manufacturers)	431m (N)	Inactive
	Industrial Technical Services Ltd (Engineers – General)	497m (E)	Active
Pollution Incidents	Two pollution incidents to controlled waters are recorded within the surrounding area, the nearest of which occurred in May 1993 at a location around 525m to the west and is categorised as a minor incident although no further information is given regarding the specific pollutant(s) involved or the receiving waters affected.		
Previous Investigation / Remediation	EPS are not aware of any previous ground investigations or remedial works undertaken at the site.		
Sensitive Land Use	The site lies within a Nitrate Vulnerable Zone where groundwater and surface waters are identified as being at risk from nitrates leaching off agricultural land.		

2.3 Site History

A summary of historical map data from 1886 to 2023 is provided below. Key points are highlighted, and copies of relevant historic maps and any others examined during the investigation are included in this report as Appendix F.

- The available mapping appears to show that the currently existing buildings along the southern and eastern site boundaries (including the main house) have been present in roughly the same layout since at least the 1880s, while the adjacent property to the west also encroached into the southwest corner of the site at this time. A small outbuilding is later mapped in the northwest corner of the site during the 1920s and 1930s.
- Both this and the adjacent building to the southwest appear to have been demolished by the 1970s, after which the existing outbuildings along the western site boundary (including the barn recently removed) were constructed and the site assumed its current layout, with few notable changes having occurred since according to the mapping. Historical satellite imagery from Google Earth does however suggest that there was again a small structure in the northwest corner of the site between 1999 and 2008.
- Within the surrounding area, the earliest mapping shows that the village of Over was largely established by the late 19th century, with notable features nearby including pubs, churches and a smithy within 250m. Much of the land in the area that had not yet been built on at this time was then dedicated to orchards, including land immediately to the north and south of the site.
- From around the 1970s onwards, while the amount of orchards present reduces with the increased residential expansion of the village, a number of nurseries and greenhouses are shown to be present on the land occupied by the remaining orchards, as well as a feature labelled as a ‘tank filter bed’ in one such location around 220m southwest of the site. Two farms are also shown within a 500m radius, Poplar Farm around 300m to the north and Sandpit Pond Farm around 400m to the southeast.



- Major residential development to the area appears to have mostly ceased by the end of the 1990s, with relatively little significant change observed on the mapping during the 2000s. The nearest remaining orchards in the present day are located around 250m west of the site.

3 PRELIMINARY RISK ASSESSMENT & CONCEPTUAL SITE MODEL

In accordance with the Environment Agency's Land Contamination: Risk Management, there are three stages to managing contaminated land (Risk Assessment, Remedial Options Appraisal, Remediation and Verification). This section outlines the first tier of Stage 1, the Preliminary Risk Assessment.

The following section provides a review of the contaminant linkages that may be active at the site, whereby EPS have examined the potential sources that may be present as a result of historic and / or current site activities and where potential interaction between these sources and the identified human / environmental receptors may occur.

3.1 Background

A Desk Study comprises the first stage of any geo-environmental assessment, the purpose of which is to determine what potentially contaminative activities may have occurred at the property or the surrounding area which may pose an environmental or geological risk to site users, the surrounding environment or proposed development, either at present or in the future.

The method used in this investigation to assess the environmental risk posed is based on the concept of 'contaminant linkage', which considers the following three factors:

Source	The location from which an environmentally hazardous / contaminative substance is, (or was,) derived.
Pathway	A route or mechanism via which a source could come into contact with a receptor to cause significant harm.
Receptor	An environmentally sensitive object or condition e.g. person, property, controlled water, or ecological system, which may be present now or in future.

If all three factors are identified, there is the potential for a 'contaminant linkage' to be active, which could result in significant harm being caused to the environment or human health.

3.2 Source Characterisation

The following potential contaminant sources have been identified at the site and in the surrounding area:



Potential Source	Source Description	Principal Contaminants of Concern
Current Site Use	In-fill material of unknown origin (Made Ground) likely used to level areas beneath existing buildings and hardstanding prior to development.	PAH, Metals, ACM
	Suspected asbestos-containing materials within the fabric of one or more of the buildings on site.	ACM
Current and Historical Surrounding Land Use	Long history of much of the surrounding land being used for orchards, including the land directly adjacent to the north.	Metals, Pesticides & Herbicides
	Presence of a historic landfill and other areas of potentially infilled land within the wider surrounding area.	Ground Gases (CO ₂ ; CH ₄)
	Various potentially contaminative current and historical industrial land uses of the surrounding area including farms.	TPH, PAH, Metals, ACM, VOC

Notes: PAH Polycyclic Aromatic Hydrocarbons ACM Asbestos Containing Materials
 CH₄ Methane CO₂ Carbon Dioxide
 TPH Total Petroleum Hydrocarbons VOC Volatile Organic Compounds

3.3 Potential Receptors

A framework for the assessment of risks arising from the presence of contamination in soils has been produced by the Environment Agency and the Department for the Environment, Food and Rural Affairs (DEFRA) and is presented with the report: ‘Using Science to Create A Better Place: Updated Technical Background to the CLEA Model – Science Report SC050021/SR3’. This guidance document defines a series of standard land uses which have been further developed into six generic land uses in the Category 4 Screening Levels project for Land Affected by Contamination (DEFRA/Contaminated Land: Applications in Real Environments (CL:AIRE) Project Report SP1010, 2014), which form a basis for the development of the Conceptual Site Model.

Risks posed to controlled waters have been considered in line with the Environment Agency’s *approach to groundwater protection* (v1.2, 2018) and associated position statements.

The proposed development plan for the site includes only the construction of a rear extension to the existing residential property as well as alterations to both the main property and a number of outbuildings, with little change proposed in terms of the total areas made up of hardstanding / building footprint and soft landscaping. This proposed land use has been considered as:

- Residential (with Homegrown Produce)

In view of the environmental setting, current and potential future land use of the site and surrounding sites, the potential receptors for any contaminant impact are discussed below:



Receptor	Site Specific Description
Human	Future site users, site workers involved in the site redevelopment, and those working and living in the surrounding area have the potential to be at risk from exposure to potential contaminants of concern (CoCs).
Groundwater	The site is reported to be underlain by superficial deposits which are defined by the EA as a Secondary Aquifer. Whilst the bedrock geology is defined as Unproductive and the site does not lie within a SPZ for nearby groundwater abstraction, the underlying geology does have some resource potential and therefore groundwater should be considered as a potential receptor to site-derived contaminants.
Surface Water	The nearest surface water feature is a small pond around 150m to the southwest, although several drains and streams are also located in the wider surrounding area. The primary concern for this site should be considered as the groundwater within the underlying secondary aquifer however, if significant impacts to groundwater were to be encountered then further consideration should be given to the associated risk posed to nearby surface waters via lateral migration of contaminants in the subsurface.
Flora and Fauna	The proposed development will include the provision of soft landscaped areas within the rear garden, although this is likely to represent a slight loss compared to the current layout. Nevertheless, some of the identified contaminants of concern are known to be phytotoxic and as such, the potential for this impact should be considered.
Buildings & Infrastructure	Subsurface structures are likely to be present at the site which may be adversely affected by the potential presence of the identified contaminants of concern. These include concrete used in building foundations, buried potable water supply pipes and other service lines and pipes.
Adjacent Land	Adjacent residential properties could also be at risk from potential contaminants found at the site.

3.4 Potential Pathways

Where contaminants may be present in soil, there are a number of potential pathways that enable human receptors to come into contact with or be exposed to them. The most direct pathways, considered under current UK legislation, can be summarised as follows:

- Direct ingestion of contaminated soil
- Ingestion of household dust
- Ingestion of contaminated vegetables
- Ingestion of soil attached to vegetables
- Dermal contact with contaminated soil
- Dermal contact with household dust
- Inhalation of fugitive soil dust
- Inhalation of fugitive household dust
- Inhalation of vapours outdoors
- Inhalation of vapours indoors

Clearly, not all of these potential pathways apply for every standard land-use. For example, ingestion of contaminated vegetables will not apply to land uses other than residential with plant uptake and allotments.

However, in addition to direct exposure pathways, a number of physical transport mechanisms / pathways may also exist at a site that allow remote or less accessible contaminants in soil or groundwater to reach human or environmental receptors both at a site and beyond the site boundary. These include the following:

- Downward and lateral movement of contaminants in soil either by gravity or through being 'leached' by percolating rainwater.
- Lateral migration of contaminants dissolved in groundwater.
- Direct seepage or leaching of contaminants from soil into subsurface drains or supply pipework.
- Volatilisation of contaminants from groundwater or unsaturated soils into buildings or outdoor air.

Through examination of the standard land use and environmental setting at each site, the presence of pathways and transport mechanisms described above must be considered when assessing whether a contaminant linkage may plausibly be active, and therefore be included in the conceptual site model.

3.5 Summary of Contaminant Linkages

Considering the site use and environmental setting, along with the proposed land use, no plausible contaminant linkages have been identified through which an unacceptable risk is likely to be present.

The following comments are made with respect to contaminant linkages which have been considered through development of the conceptual model, but have not been concluded as 'plausible' – i.e. through which a significant possibility of significant harm could occur to an identified receptor:

- Given the limited extent of the alterations proposed for the site, particularly in terms of the existing areas of soft landscaping, it is considered that no new risks will be introduced to site users from potential exposure to ground contamination.
- The contaminants of concern typically associated with made ground beneath the site (heavy metals, PAH compounds, and asbestos) are widely considered to be relatively immobile within the environment as a result of their very low solubility and volatility. On this basis, plausible pathways by which these contaminants could pose a significant risk to the underlying groundwater, or any off-site receptors such as neighbouring properties or surface watercourses, are not considered to be active. Similarly, there is not considered to be a significant risk posed to the site itself from any off-site sources of these contaminants.
- While much of the surrounding land has historically been occupied by orchards, where historical pesticides and herbicides such as lead arsenate would likely have been used, the site itself does not appear to have been used in this way. Therefore, given the limited mobility and low residency time of these compounds in soil, it is not considered likely that there would be a significant risk of contamination to the site from any historical use of these chemicals.
- The presence of a historic landfill and other potentially infilled features in the wider surrounding area is not considered likely to pose a significant risk to the site in terms of



migration of ground gases, primarily due to their substantial distance from the site (>800m) and the broadly low permeability of the wider ground conditions.

- For the same reason, none of the other potentially contaminative industrial land uses identified within the surrounding area are considered likely to pose any significant risks to the site, including from migration and volatilisation of organic compounds.
- The suspected asbestos-containing materials identified within the roof construction of the main house and one of the outbuildings should not pose a risk to site users through soil contamination unless they are to be disturbed during the development works, in which case they must be fully assessed, and if necessary removed and appropriately disposed of, by a specialist contractor in accordance with the *Control of Asbestos Regulations* (2012).

4 GEOTECHNICAL GROUND MODEL

Geological records indicate the ground conditions to comprise superficial glacio-fluvial deposits underlain by bedrock of the West Walton & Ampthill Clay Formations (undifferentiated), with some limited made ground also anticipated to be present at the surface given the historic development of the site. A conceptual geotechnical ground model is provided in the table below which assesses design elements, anticipated strata, and ground conditions:

Element	Anticipated Strata	Parameter(s)	Anticipated Conditions
Foundations	Made Ground	Allowable Bearing Pressure	Not appropriate as bearing strata
		Settlement	High sensitivity
		Volume Change	Depends upon the soil composition
	Glacio-fluvial Deposits	Allowable Bearing Pressure	75kN/m ² to 125kN/m ²
		Settlement	Low sensitivity
		Volume Change	Low volume change potential
	West Walton / Ampthill Clay Formations	Allowable Bearing Pressure	75kN/m ² to 150kN/m ²
		Settlement	Moderate sensitivity / Long-term consolidation under loading
		Volume Change	High volume change potential
Drainage	Made Ground	Permeability	Not suitable for infiltration drainage
	Glacio-fluvial Deposits		Likely to be suitable depending on depth to groundwater or lower permeability strata
	West Walton / Ampthill Clay Formations		Unlikely to be suitable for infiltration drainage
Concrete Grade	Made Ground	Grade	Low to moderate risk of high sulphate levels
	Glacio-fluvial Deposits		Low risk of high sulphate levels
	West Walton / Ampthill Clay Formations		High risk of high sulphate levels



Potential Hazard	Comment
Trees & Vegetation	A number of large trees were noted around the edges of the site as well as on neighbouring sites, including high water demand species such as leylandii. The presence of any such trees both on and around the site, including any previously existing or yet to be planted, must be taken into account during foundation design as the shallow soils anticipated may be cohesive which could require deepening of foundations.
Below Ground Structures	Some below ground structures / foundations may be present within the ground in association with previously existing buildings, while any fill material encountered could also contain waste that could form localised obstructions.
Excavation Stability	While unsupported excavations in cohesive soils or bedrock can remain stable over short periods, the long-term stability of these along with any excavations in granular soils, or any disturbed materials such as made ground, should not be relied upon.

5 CONCLUSIONS & RECOMMENDATIONS

The site is generally considered low risk in terms of contaminated land. This Phase I Desk Study has not identified any significant plausible contaminant linkages with the potential to become active through the proposed development works.

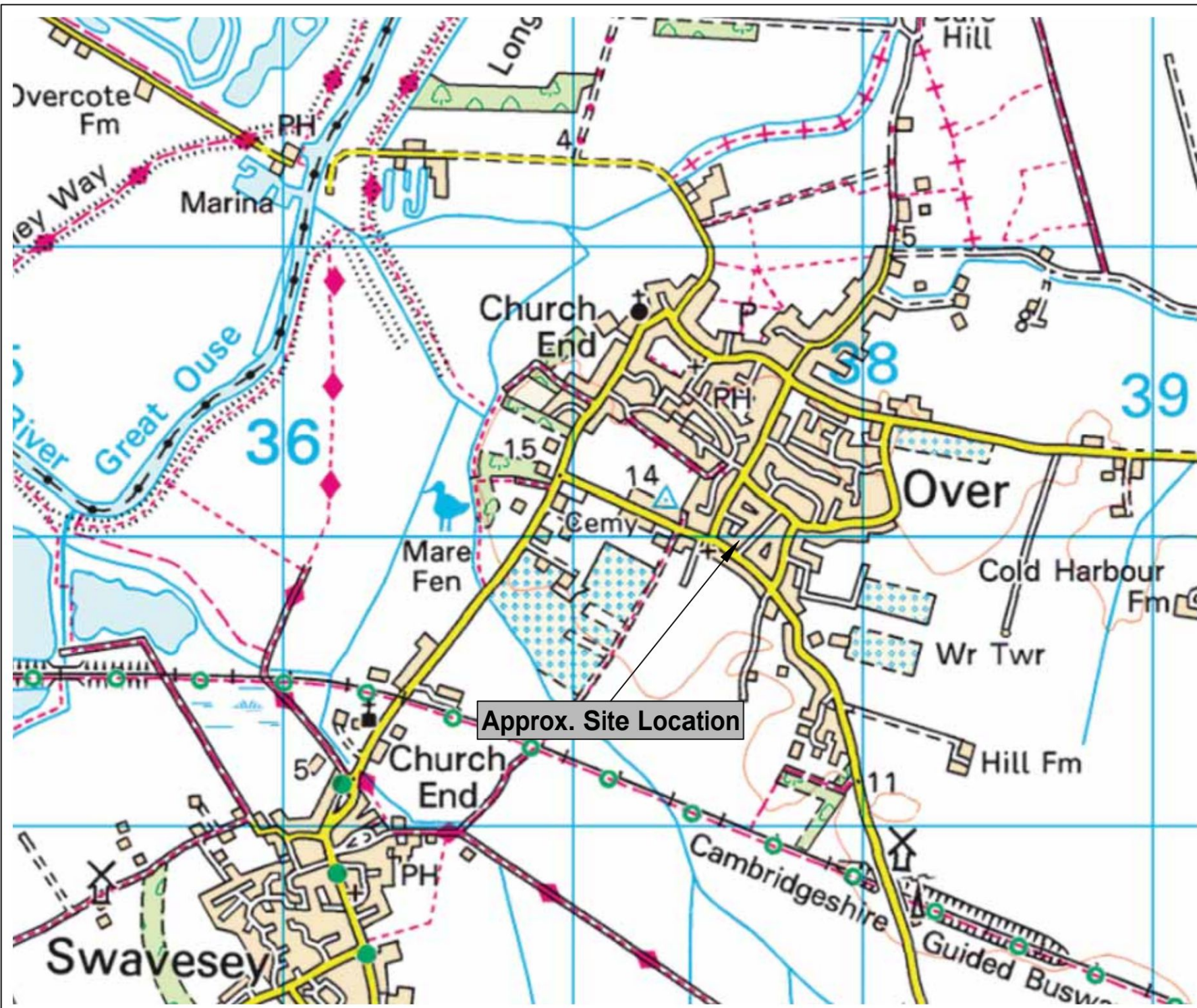
In the context of potentially unacceptable or acceptable risks as outlined within the Environment Agency's *Land Contamination: Risk Management* guidance, the site is considered safe and suitable for the proposed development and continuing residential use in its current condition without the need for any further investigation.

In terms of the suspected asbestos-containing materials identified within the roof construction of both the main house and one of the garages along the west side of the rear garden, these should not pose a risk to site users through soil contamination unless they are to be disturbed during the development works, in which case they must be fully assessed, and if necessary removed and appropriately disposed of, by a specialist contractor in accordance with the *Control of Asbestos Regulations* (2012).

A copy of this report should be provided to the Environmental Health department of South Cambridgeshire District Council so that the information may be used to support an application to discharge the outstanding planning condition 6 under 20/03190/FUL. This report should satisfy all requirements of the planning process relating to contamination.



FIGURES



Notes:
 1. Base map reproduced under Crown Copyright Licence Number: 100054115

Rev	Date	Drawn	Description	CHK'd



The Geotechnical and Environmental Engineers
 www.epstrategies.co.uk

Site
 13-15 West Street, Over
 CB24 5PL

Client
 Mr Simon Bonnett

Title
 Figure 1 - Site Location Plan

Surveyed	n/a	Drawn by	TH
Checked by	MJ	Date	May 2023

Scale	(M Sheet)	Drawing Reference
NTS		UK23.6479_001

Job No	UK23.6479	Rev	0
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KEY:
 APPROX. SITE BOUNDARY

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www.epstrategies.co.uk

Site:
 13-15 West Street, Over
 CB24 5PL

Client:
 Mr Simon Bonnett

Title:
 Figure 2 - Current Site Layout

Surveyed by:	n/a	Drawn by:	TH
Checked by:	MJ	Date:	May 2023

Scale:	(A4 Sheet)	Drawing Reference:	UK23.6479_002
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Job No:	UK23.6479	Rev:	0
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KEY:

 APPROX. SITE BOUNDARY

Notes:

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Rev	Date	Drawn	Description	CHK'd



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www.epstrategies.co.uk

Site
13-15 West Street, Over
CB24 5PL

Client
Mr Simon Bonnett

Title
Figure 3 - Aerial Photograph

Surveyed:	n/a	Drawn by:	TH
Checked by:	MJ	Date:	May 2023

Scale	(A4 Sheet)	Drawing Reference
NTS		UK23.6479_003

Job No	UK23.6479	Rev	0
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APPENDICES



APPENDIX A

Selected Site Photographs & Walkover Notes

EPS Site Walkover Checklist V3.0 (With Photos)

Submitted by: WEvansEPS

Submitted time: May 25, 2023, 1:25:39 PM

General Information

Job Number

UK23.6479

Date

May 25, 2023

Consultant

TH

EPS Lower Risk Assessment Completed?

Yes

Completed Air Quality Walkover Checklist?

No

General Site Information

Site Description

2-storey brick-built semi-detached house at the front, with driveway to the west of the house leading to rear parking space and garden. A number of garages/outbuildings span both the east and west site boundaries in various states of dilapidation.

General Site Photo 1



General Site Photo 2



General Site Photo 3



General Site Photo 4



Geotechnical Considerations

Are there any abrupt changes in slope profiles?

No

Is there evidence of overburden on the slopes?

No

Is there evidence of excavation at the base of a slope?

No

Are there signs of landslip, such as tilting trees/posts?

No

Are there signs of subsidence?

No

Is there evidence of cracked ground?

No

Is there evidence of compressible ground (i.e. Peat)?

No

Is there evidence of an abrupt change in ground conditions?

No

Is there evidence of high groundwater, such as areas of waterlogged ground?

No

Do signs of water loving plants such as reeds exist?

No

Are there any ponds, streams, ditches (even if dry), springs or wells?

No

What is the nature of the vegetation?

Rear half of garden laid to grass with various shrubs and flowerbeds. Mature hedgerow spanning the rear boundary. All appear to be healthy.

Species & Height of trees

Leylandii around 8m high in NW corner of site. Other mature trees up to around 15m in height are present on the adjacent plot to the west.

What is the nature and condition of vegetation on adjoining land?

As mentioned above, all appear to be healthy.

Is there evidence of former vegetation?

No

Is there evidence of movement in any existing structures?

No

Evidence of below ground structures & services?

Yes

Comment on below ground structures/services

Manhole covers suggesting drainage run(s) present to rear of house.

Any evidence of mine shafts or adits? (Check Coal Authority Mapping)

No

Is there any access issues for a digger/drilling rig (slopes, height, gates etc.)?

No

Contamination

Evidence of ground contamination?

No

Evidence of groundwater /surface water contamination?

No

Evidence of historic site use?

Yes

Comment on historic site use?

Concrete floor slab still present where a former barn used to stand in SW corner of site.

Photo of historic site use.



Have all buildings been accessed internally?

No

What was found inside the buildings?

Rear outbuildings appear to be used for general domestic storage of vehicles and gardening equipment etc., as well as a gym.

Evidence of /suspected asbestos?

Yes

Describe condition and form (cement/fibrous).

Suspected asbestos-containing cement sheeting present in roof of main house and western garage.

Photo of suspected asbestos



Any man-made surfacing present?

Yes

Describe condition of hardstanding.

Concrete driveway and parking space to rear of house.

Any fuel or oil storage present?

No

Obvious drainage features observed?

No

Any waste deposition observed, such as fly-tipped soils or chemical containers/ drums or areas of burning?

No

On-site electricity substation present, maintained/operational?

No

Evidence of previous investigation/remediation?

No

Identify any off-site sources such as petrol stations, heating oil tanks.

No

Anecdotal evidence

No

Site Photos

Additional Photo 1



Additional Photo 2



Additional Photo 3



Additional Photo 4





APPENDIX B

Proposed Development Plan

Flat roof garage and store. Poor state of repair. Not Listed.

Flat Roof out-building. Poor state of repair. Not listed.



View 4



View 5



View 3



View 6



View 2



Pitched roof out-building. Poor state of repair. Not listed.



View 1

Derelict Barn falling down. Not listed.

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The Office
31 Gibraltar Lane
Swavesey
Cambridgeshire, CB24 4RR
Phone 01954 232267
E-mail ml@crbarnes.co.uk

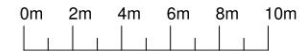
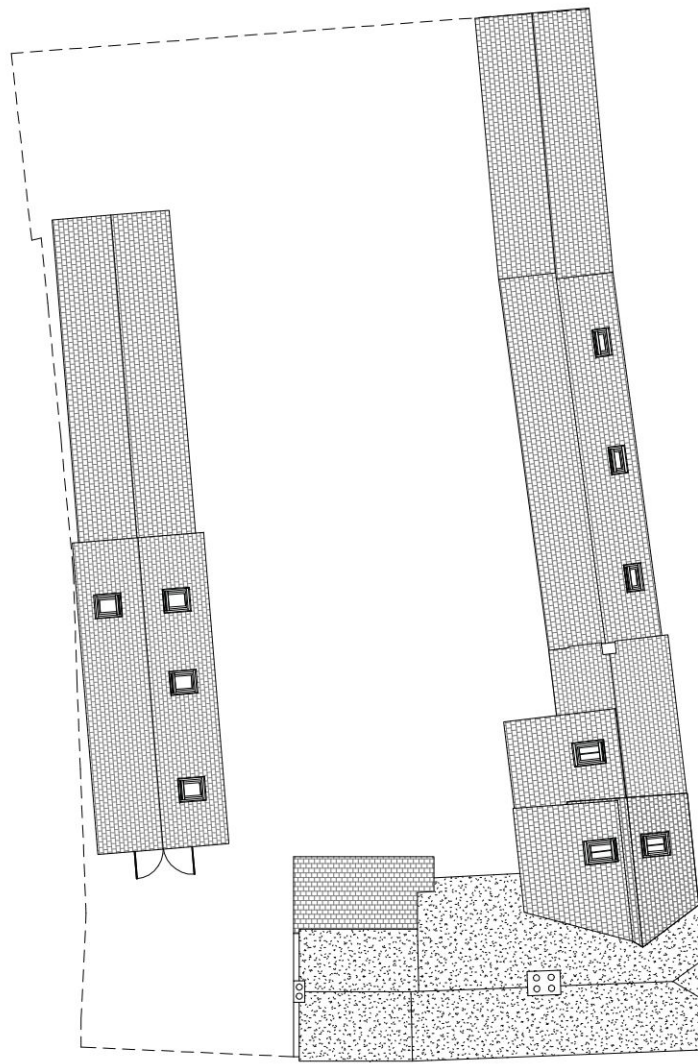


Mr & Mrs S Bonnett

Planning Drawings
Rear Extension and Alterations
Main house and Outbuildings 13 - 15
West Street, Over, Cambs CB24 5PL

No.	Description	Date
Existing Site		
Project number	CM1572	02
Date	21-07-20	
Drawn by	CRB	1 : 200
Checked by	ML	

1 Existing Site Plan
1 : 200



C R Barnes Limited

The Office
31 Gibraltar Lane
Swavesey
Cambridgeshire, CB24 4RR

Phone 01954 232267

E-mail ml@crbarnes.co.uk



Mr & Mrs S Bonnett

Planning Drawings
Rear Extension and Alterations
Main house and Outbuildings 13 - 15
West Street, Over, Cambs CB24 5PL

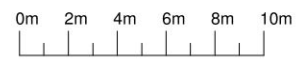
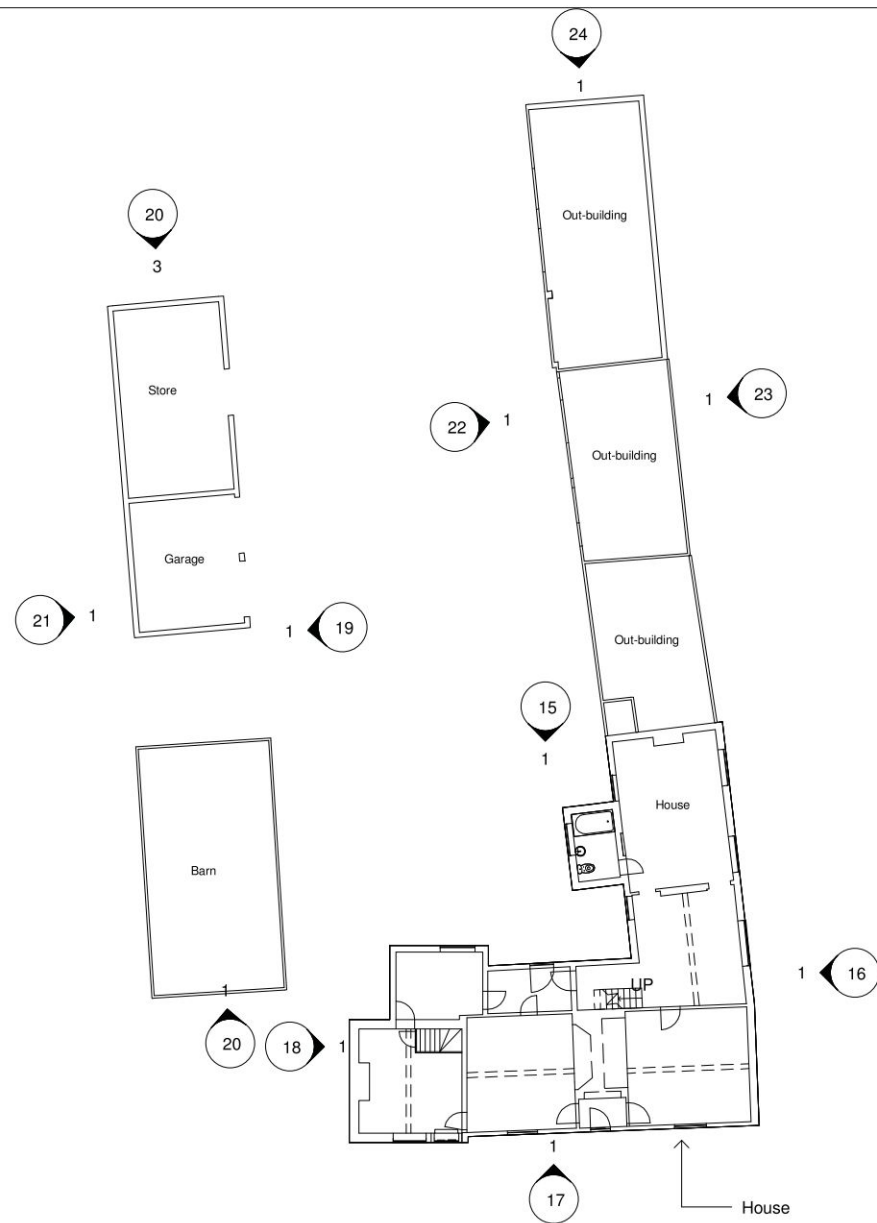
No.	Description	Date
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Proposed Site

Project number	CM1572	03
Date	21-07-20	
Drawn by	CRB	
Checked by	ML	
Scale @ A3		1 : 200

1 Proposed Site Plan
1 : 200

↑ For Information. Extend existing drop kerb in front of proposed garage. This would be applied for as a separate application to the highways authority.



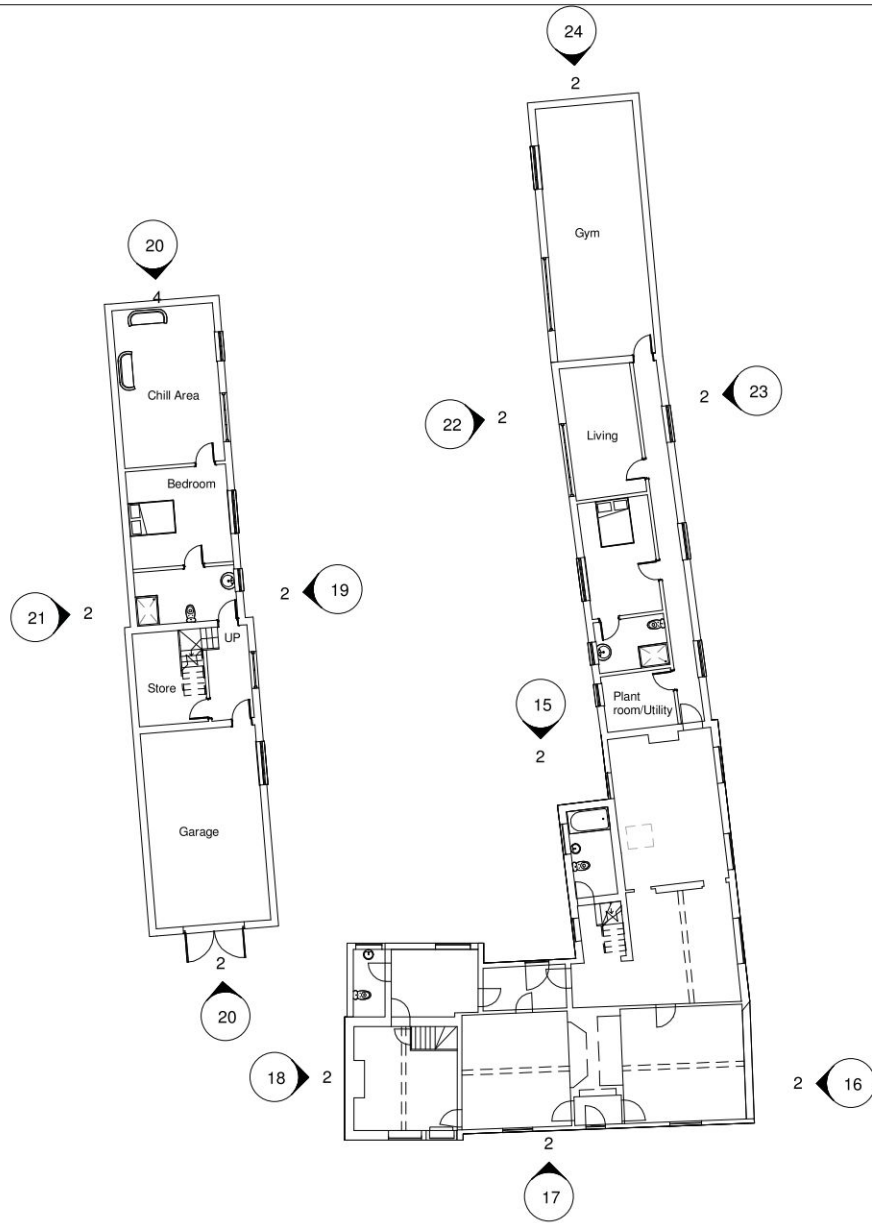
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 The Office
 31 Gibraltar Lane
 Swavesey
 Cambridgeshire, CB24 4RR
 Phone 01954 232267
 E-mail ml@crbarnes.co.uk



Mr & Mrs S Bonnett
 Planning Drawings
 Rear Extension and Alterations
 Main house and Outbuildings 13 - 15
 West Street, Over, Cambs CB24 5PL

No.	Description	Date	
Existing Site Floor Plan			
Project number	CM1572	04	
Date	21-07-20		
Drawn by	CRB		
Checked by	ML		
		Scale @ A3	1 : 200

1 Existing Site Floor Plan
 1 : 200



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 Cambridgeshire, CB24 4RR
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 E-mail ml@crbarnes.co.uk



Mr & Mrs S Bonnett
 Planning Drawings
 Rear Extension and Alterations
 Main house and Outbuildings 13 - 15
 West Street, Over, Cambs CB24 5PL

No.	Description	Date

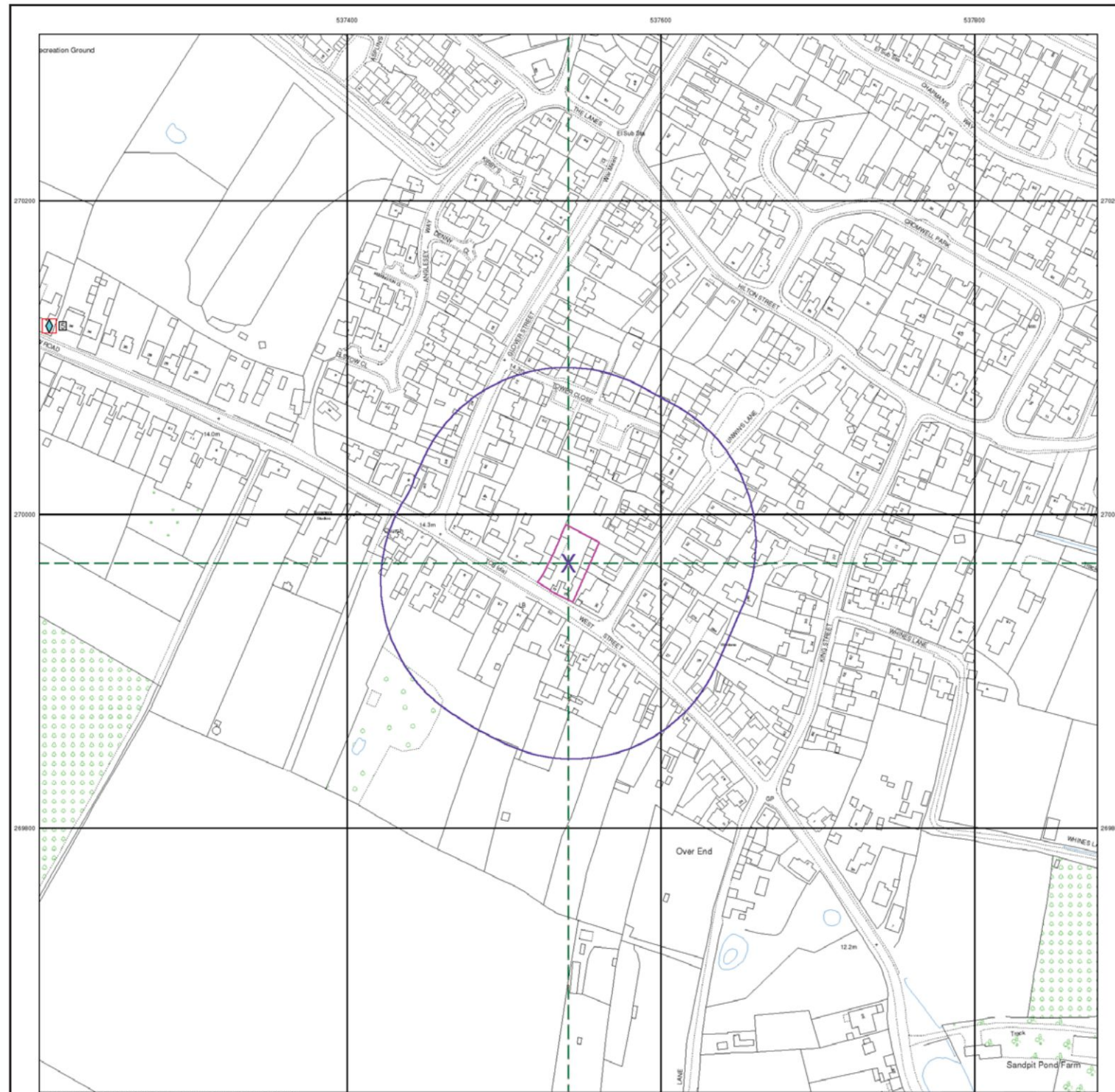
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Project number	CM1572	05
Date	21-07-20	
Drawn by	CRB	1 : 200
Checked by	ML	

1 Proposed Site Floor Plan
 1 : 200



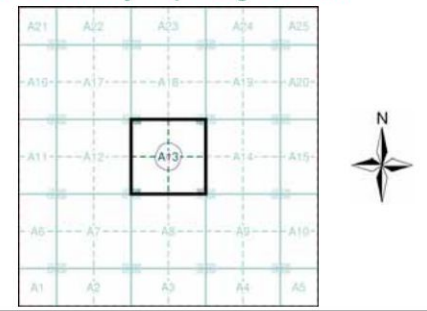
APPENDIX C

Surrounding Land Use



- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
 - Severals of Type at Location
 - Pylon
 - Overhead Transmission Line
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Contaminated Land Register Entry or Notice
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
 - BGS Recorded Mineral Site
- Waste**
- BOS Recorded Landfill Site (Location)
 - BOS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13

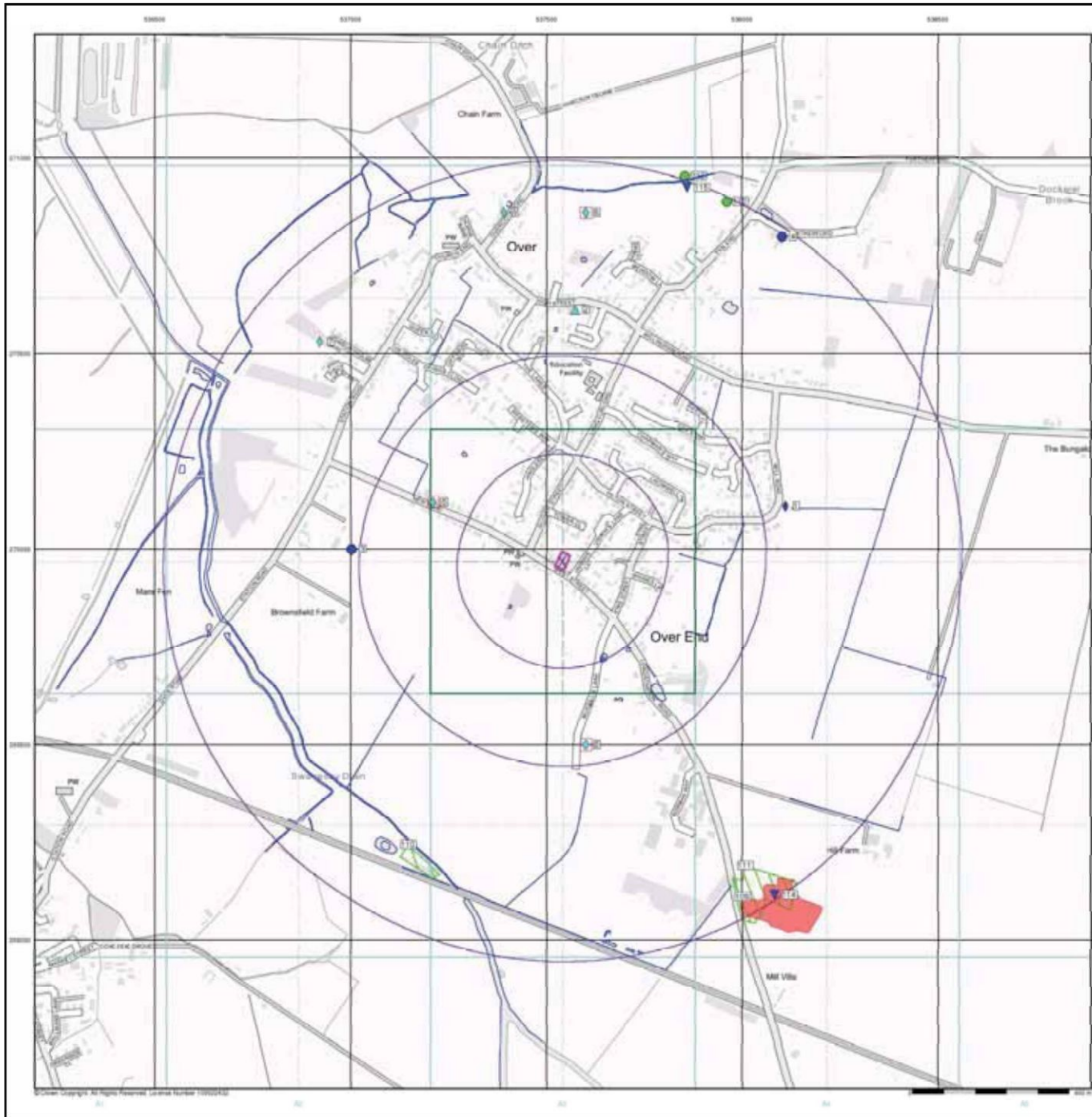


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 Site Area (Ha): 0.11
 Plot Buffer (m): 100

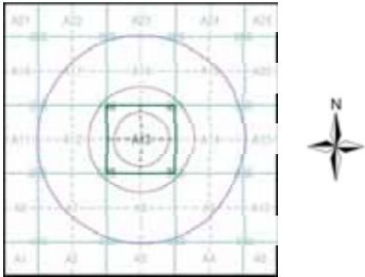
Site Details
 Site at 537540, 269970

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- General**
- Specified Site
 - Specified Buffer(s)
 - Swearing Reference Point
 - Map ID
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (General)
 - Contaminated Land Register Entry or Notice (Discharge Consent)
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention and Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Retention
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - IPHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
- Geological**
- BGS Recorded Mineral Site
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site (Boundary)
 - EA Historic Landfill (Airfield Area)
 - EA Historic Landfill (Other)
 - Integrated Pollution Control of Registered Waste Site
 - Licensed Waste Management Facility (Landfill Operator)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site (Boundary)
 - Potentially Infiltrated Land (Non-water)
 - Potentially Infiltrated Land (Non-water)
 - Potentially Infiltrated Land (Other)
 - Potentially Infiltrated Land (Water)
 - Potentially Infiltrated Land (Water)
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Other Refused to Store)
 - Registered Landfill Site (Other Refused to Store)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

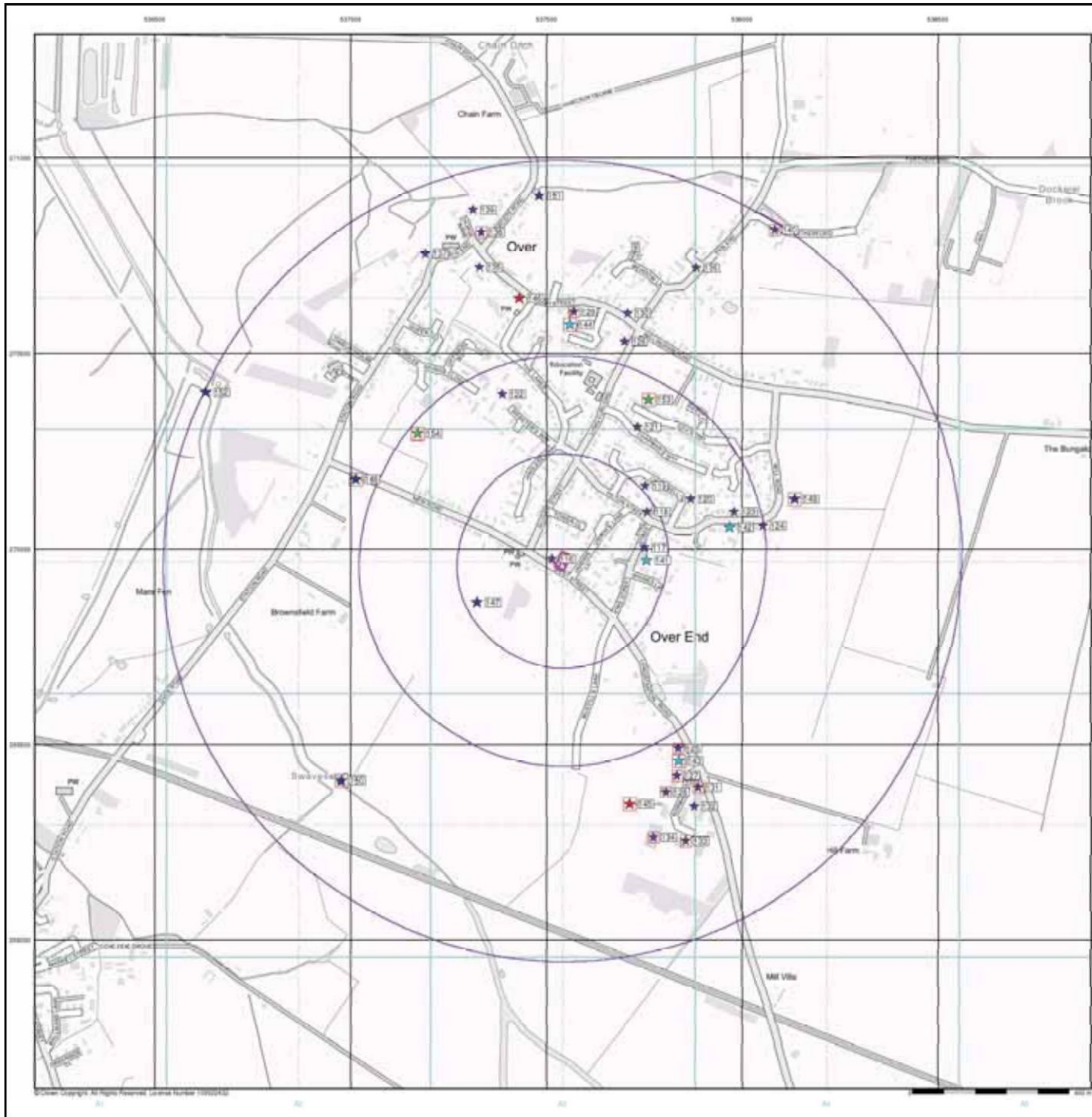
Site Sensitivity Map - Slice A



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 National Grid Reference: 537540, 269970
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details
 Site at 537540, 269970

Landmark INFORMATION GROUP
 Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



Industrial Land Use Map

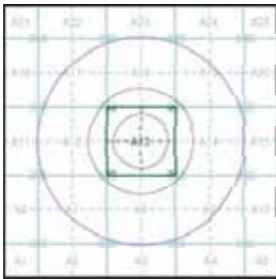
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

Order Number: 311484294_1_1
 Customer Ref: UK23,6479
 National Grid Reference: 537540, 269970
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details

Site at 537540, 269970



Tel: 0844 844 9952
 Fax: 0844 844 9951
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APPENDIX D



Geological Context

Geology 1:50,000 Maps Legends

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	T1T2	River Terrace Deposits, 1 to 2	Sand and Gravel	Not Supplied - Holocene
	ODT	Oadby Member	Diamicton	Not Supplied - Anglian
	GFDMP	Glaciofluvial Deposits, Mid Pleistocene	Sand and Gravel	Not Supplied - Cromerian
	RTD2	River Terrace Deposits, 2	Sand and Gravel	Not Supplied - Quaternary
	RTD1	River Terrace Deposits, 1	Sand and Gravel	Not Supplied - Quaternary
	RTD4	River Terrace Deposits, 4	Sand and Gravel	Not Supplied - Quaternary
	RTD3	River Terrace Deposits, 3	Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WWAC	West Walton Formation and Arrphill Clay Formation (Undifferentiated)	Mudstone	Not Supplied - Oxfordian
	OXC	Oxford Clay Formation	Mudstone	Not Supplied - Callovian



Geology 1:50,000 Maps

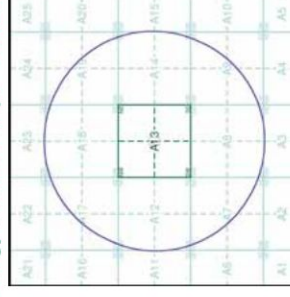
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID: 187
 Map Sheet No: 187
 Map Name: Huntingdon
 Map Date: 1975
 Bedrock Geology: Available
 Superficial Geology: Available
 Artificial Geology: Not Available
 Faults: Not Available
 Landslip: Not Available
 Rock Segments: Not Supplied

Geology 1:50,000 Maps - Slice A

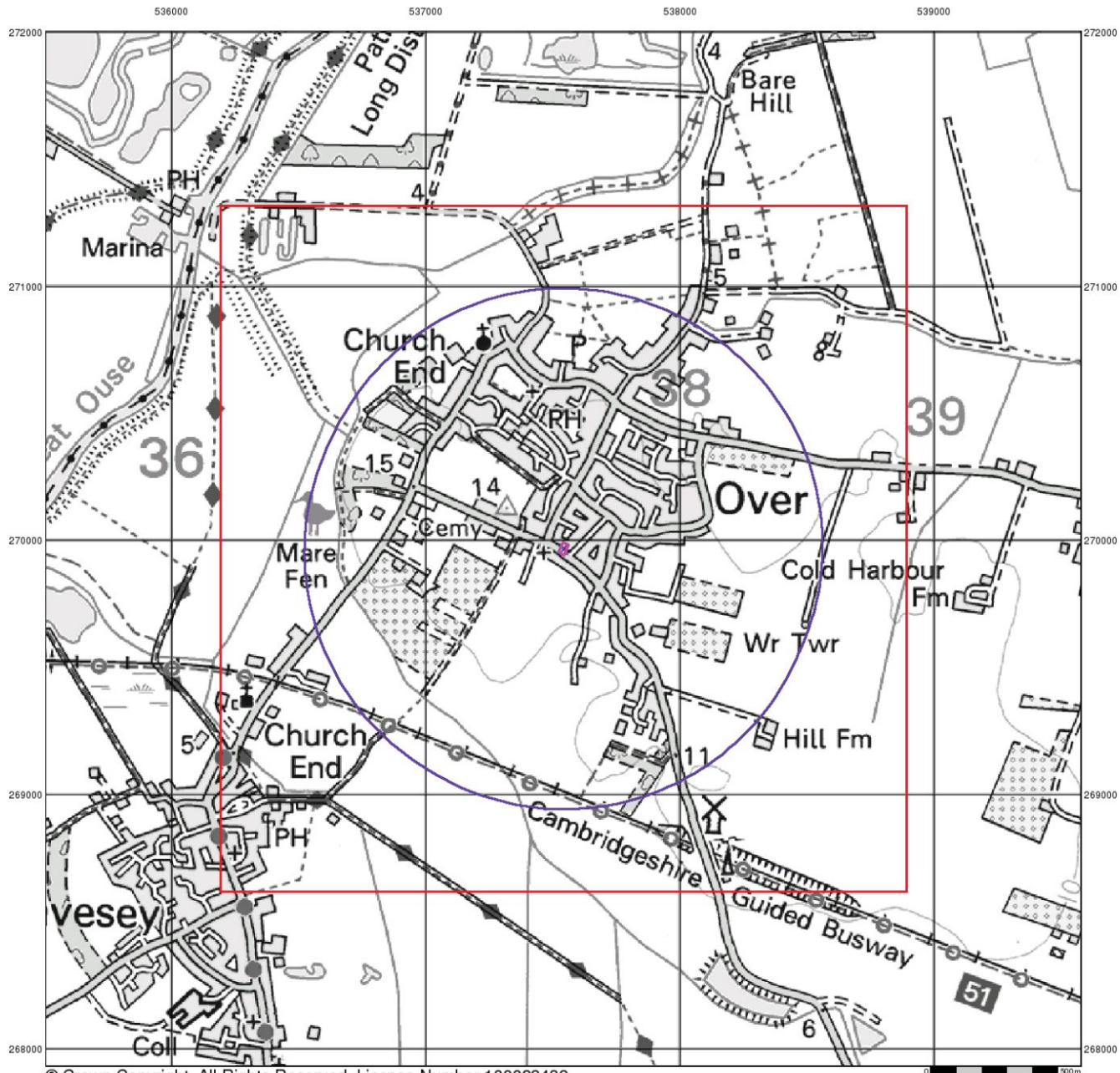


Order Details:

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 Customer Reference: UK23 6479
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 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details:

Site at 537540, 269970



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Artificial Ground and Landslip

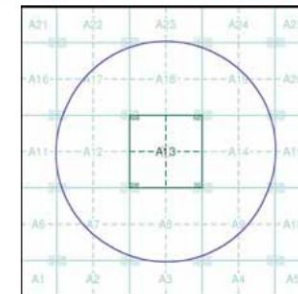
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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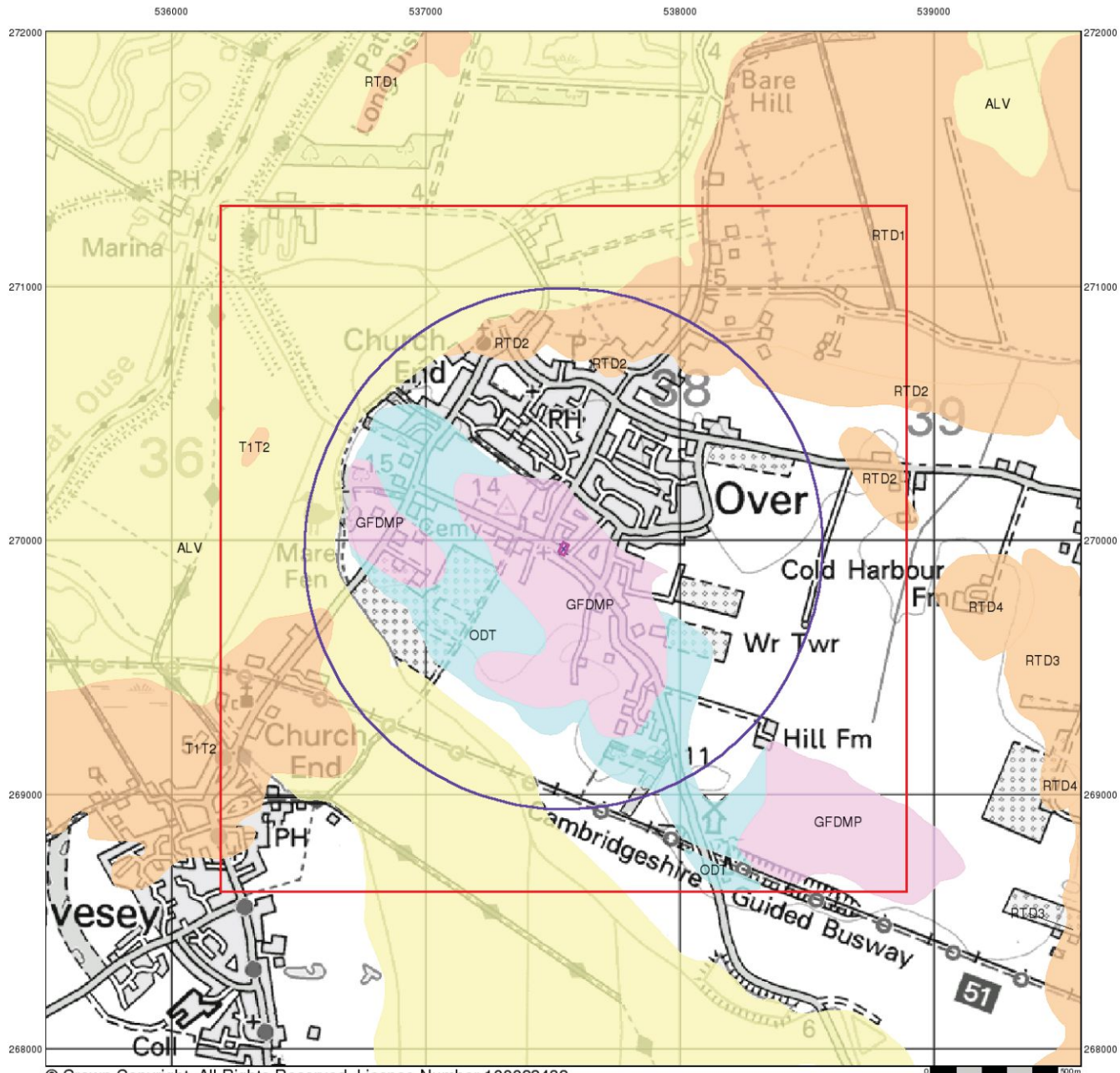
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 Customer Reference: UK23.6479
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 Site Area (Ha): 0.11
 Search Buffer (m): 1000

Site Details:

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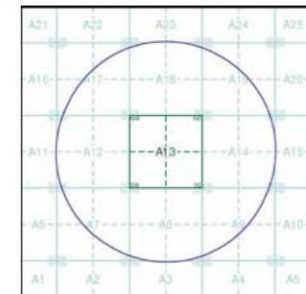
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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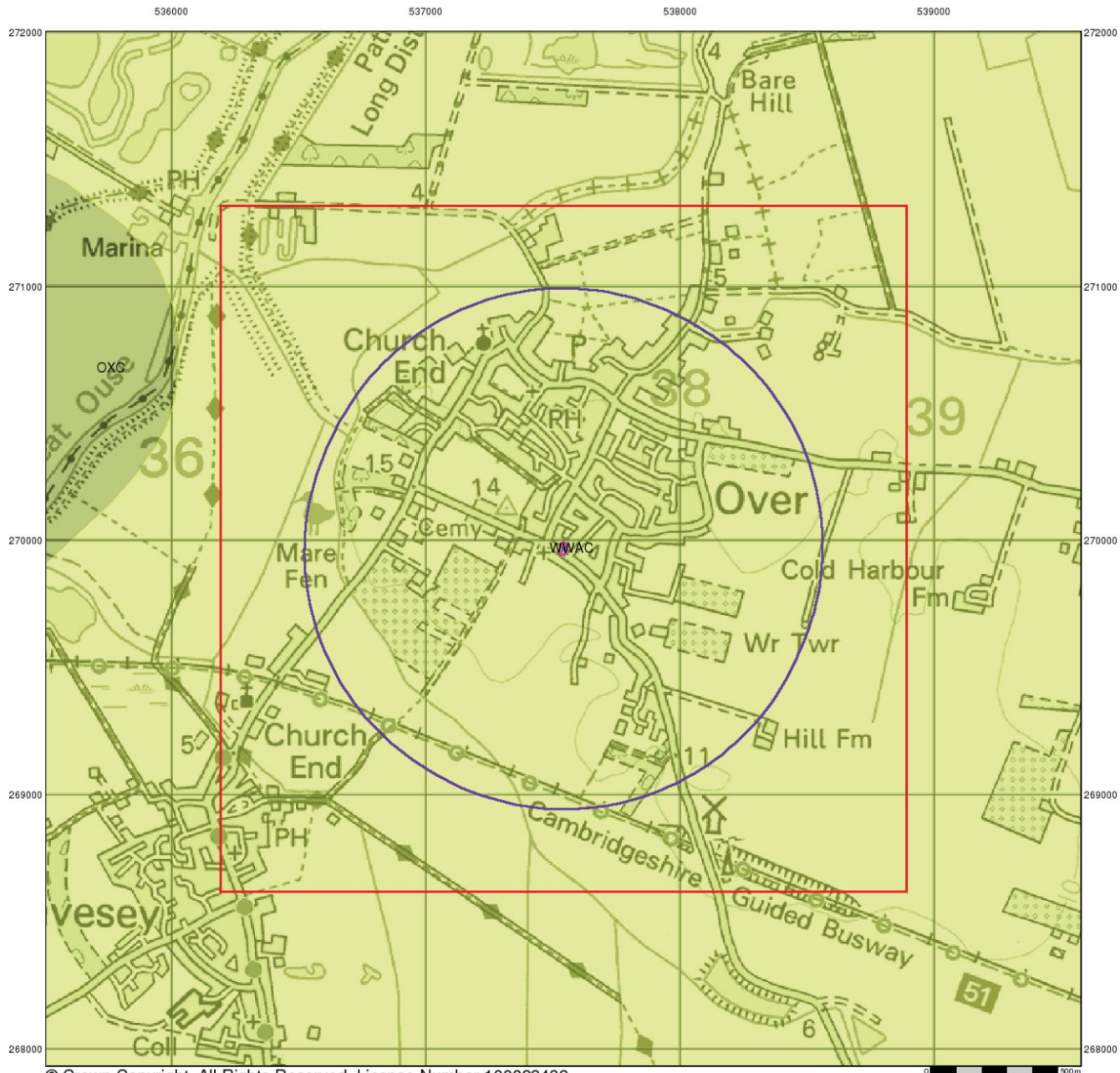
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Site Details:

Site at 537540, 269970



Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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Bedrock and Faults

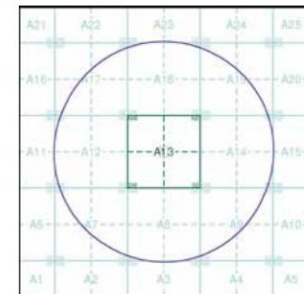
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

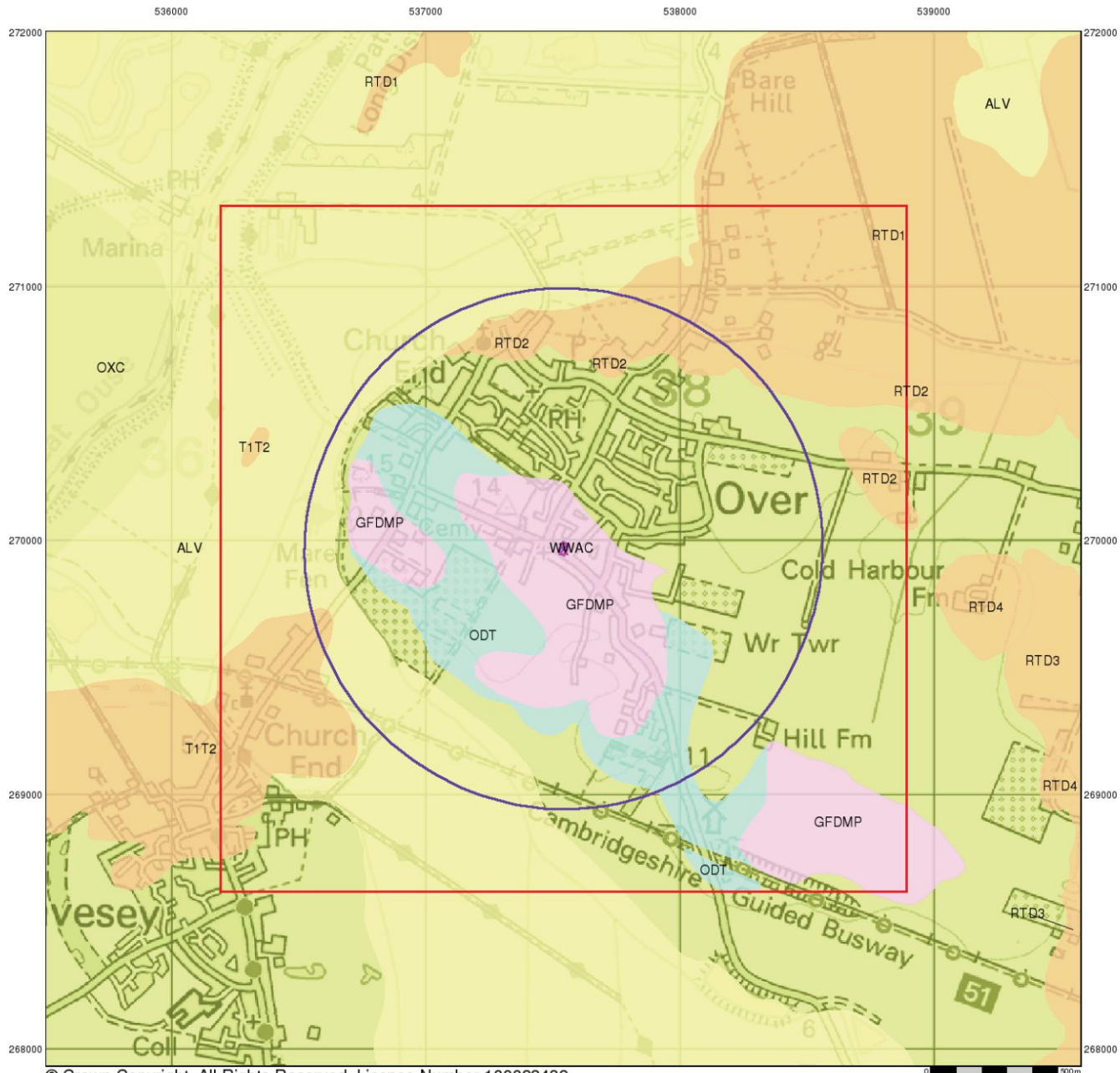
Order Number: 311484294_1_1
 Customer Reference: UK23.6479
 National Grid Reference: 537540, 269970
 Slice: A
 Site Area (Ha): 0.11
 Search Buffer (m): 1000

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

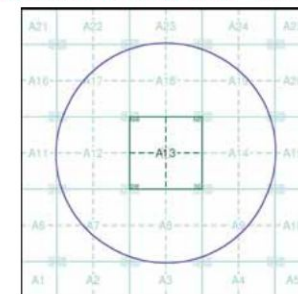
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
 Kingsley Dunham Centre
 Keyworth
 Nottingham
 NG12 5GG
 Telephone: 0115 936 3143
 Fax: 0115 936 3276
 email: enquiries@bgs.ac.uk
 website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details:

Order Number:	311484294_1_1
Customer Reference:	UK23.6479
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TL 36 NE 2 3570 6930 Church End, Swavesey
 Surface level +4.3 m
 Water struck at +2.4 m
 Dando Shell, 152 mm diameter
 June 1976

TL 36 NE 2
 Block E
 Overburden 0.6 m
 Mineral 2.2 m
 Bedrock 0.7 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Made ground	0.6	0.6
Terrace Deposits (Terraces 1-2)	'Clayey' sandy gravel Gravel: fine, angular flint, with quartzite, sandstone and some chalk Sand: medium with coarse, orange-yellow Fines: upper part very silty	2.2	2.8
Elsworth Rock (?)	Limestone, oolitic, shelly, orange-yellow-grey, interbedded with grey calcareous mudstone	0.7+	3.5

GRADING

Mean for deposit percentages			Depth below surface (m)	percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				-1 ϕ	+1 ϕ -1 ϕ	+1-1	+1-4	+4-16	+16-64	+64
15	58	27	0.6-1.1	28	21	42	4	5	0	0
			1.1-1.9	12	7	32	15	30	4	0
			1.9-2.8	11	5	35	17	30	3	0
			Mean	15	9	36	13	24	3	0

TL 36 NE 3 3762 6968 Mustill's Lane, Over
 Surface level +12.7 m
 Water struck at +7.8 m
 Dando Shell, 152 mm diameter
 June 1976

TL 36 NE 3
 Block H
 Overburden 0.4 m
 Mineral 1.8 m
 Waste 11.6 m
 Bedrock 1.5 m+

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil	0.4	0.4
Glacial Sand and Gravel	'Clayey' gravel Gravel: fine with coarse, angular to subangular flint with quartzite, limestone, sandstone and chalk Sand: medium and coarse, quartz with flint and chalk Fines: silty, yellow	1.8	2.2
Boulder Clay	Silt, clayey, grey, rare chalk pebbles	1.6	3.8
	Clay, silty, dark grey, pebbles of chalk, siltstone, limestone and flint; more silty and sandy lower down	10.0	13.8
Amphill Clay (?)	Clay, silty, stiff, dark blue, fossiliferous	1.5+	15.3

GRADING

Mean for deposit percentages			Depth below surface (m)	percentages						
Fines	Sand	Gravel		Fines	Sand			Gravel		
				-1 ϕ	+1 ϕ -1 ϕ	+1-1	+1-4	+4-16	+16-64	+64
13	37	50	0.4-1.0	14	7	20	10	38	10	0
			1.0-2.2	12	5	19	13	45	6	0
			Mean	13	5	20	12	43	7	0