

FOURWAY PROJECTS

**LONGLEY HAY FARM, HALIFAX ROAD, LITTLEBOROUGH
OL15 0LB**

**PHASE II CONTAMINATED LAND INTERPRETATIVE
REPORT**



Confidential

Report Reference: CRC-FP-PII-E2001-V1

September 2024

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PHASE II CONTAMINATED LAND INTERPRETATIVE REPORT



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Document Revision Status

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1	12 September 2024	Final version for submission to Employer.

FOREWORD
(Contaminated Land Assessment)

This report has been prepared for the sole internal use and reliance of the Employer named on Page I.

This report shall not be relied upon or transferred to any other parties without the express written authorization of CRC Site Investigation Ltd; such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their risk and the authors owe them no duty of care and skill.

The report presents factual data and observations obtained during our site investigation and provides an assessment of geotechnical and environmental issues with respect to information provided by the Employer regarding the proposed development. Further advice should be sought from CRC Site Investigation Ltd prior to significant revision of the development proposals. Primary aims of this combined desk study and exploratory phase of investigation were to identify salient geotechnical and environmental issues affecting the site to enable the Employer to obtain budget costs for the necessary site preparatory and enabling works.

The report should be read in its entirety, including all associated drawings and appendices. CRC Site Investigation Ltd cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

The findings and opinions conveyed in this report (including review of any third-party reports) are based on information obtained from a variety of sources as detailed within this report, and which CRC Site Investigation Ltd believes are reliable. All reasonable care and skill have been applied in examining the information obtained. Nevertheless, CRC Site Investigation Ltd cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

The report represents the findings and opinions of experienced geotechnical and environmental consultants. CRC Site Investigation Ltd does not provide legal advice and the advice of lawyers may also be required.

Intrusive investigation can only investigate shallow ground beneath a small proportion of the total site area. It is possible therefore that the intrusive investigation undertaken by CRC Site Investigation Ltd, whilst fully appropriate, may not have encountered all significant subsurface conditions. Any opinions expressed as to the possible configuration of strata between, or below exploratory holes are for guidance only and no responsibility is accepted as to its accuracy.

It should be borne in mind that the timescale over which the site investigation was undertaken might not allow the establishment of equilibrium groundwater levels. Particularly relevant in this context is

that groundwater levels are susceptible to seasonal and other variations and may be higher during the wetter periods than those encountered during the monitoring period.

This report assumes that ground levels will not change significantly from those existing at present. If this is not to be the case, then some modification to this report may be required.

It should be noted that the banning of the co-disposal of hazardous and non-hazardous waste was introduced in 2011, as a result of the implementation within the UK of the Landfill Directive. This will considerably affect the current practices and procedures for the handling and disposal of wastes, in particular hazardous wastes. In addition, it will be a requirement for all wastes to be pre-treated and to comply with certain waste acceptance procedures prior to sending wastes to landfill. The full potential effects of these important changes are not known at this stage, but it is perceived that disposal costs will rise, particularly for hazardous wastes, and waste pre-treatment may, in some cases, become an 'additional' redevelopment cost with regard to the remediation of contaminated sites. Should this report recommend that materials could be excavated and removed off site for landfill disposal, then it should be noted that the costs, timescales and implications of the pending changes to waste management legislation couldn't be predicted at this stage. CRC Site Investigation Ltd will not be responsible for changing practices, etc. that may affect the viability of necessary remedial actions or of the implications of potential alternative treatment techniques.

CRC Site Investigation Ltd reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

General notes and limitations relevant to all CRC Site Investigation Ltd are described in the Foreword and should be read in conjunction with this report.

EXECUTIVE SUMMARY

INTRODUCTION	CRC Site Investigation Ltd was instructed by Fourway Projects (the “Employer”) to undertake a Phase II Ground Assessment for the site at Longley Hey Farm, Halifax Road located in Littleborough OL15 0LB. The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of contaminated land hazards which may be present at the study site.
SITE LOCATION AND DESCRIPTION	The site is located to the north east of Littleborough town centre at National Grid Reference SD 95445 17771. The application site on Halifax Road is irregular in shape and covering approximately 0.477 acres. Longley Hey farmhouse on the Site is currently derelict, overgrown with vegetation and temporally secured with heras fencing. There are a few matured trees within the grounds of the property. A dry-stone wall with post & wire fencing runs along the perimeter of the site and tarmac and concrete hardstanding around the derelict farmhouse and out building on site.
PROPOSED DEVELOPMENT	The Site is under consideration for the proposed conversion of existing outbuilding in garden curtilage to form additional ancillary residential accommodation in association with main use of Longley Hey Farmhouse as a dwelling.
DESK STUDY AND PRELIMINARY CONCEPT SITE MODEL	The site is highlighted as having been subject to limited potentially contaminative uses from mapping.
PREVIOUS WORK	A Desk top study and coal mining risk assessment has been undertaken at the site by CRC Site Investigation Ltd.
GEOLOGY GROUND CONDITIONS	Based on the sites current state, Made Ground is considered to be absent on the Site. The published geology for the Site is shown to be underlain by Drift comprising Glacial Till. The underlying bedrock beneath the superficial deposits is the Rossendale Formation. Made Ground: Little variation in thickness and predominantly cohesive comprising sandy gravelly clay with minor clayey sandy gravel horizons. Natural Ground: The natural deposit comprised of yellow brown sandy gravelly clay and greyish brown gravelly sand. Solid Geology: Bedrock encountered consisted of Black shale, dark grey mudstone and grey siltstone interlaminated with mudstone.
GROUNDWATER	Groundwater in all 3 boreholes during the monitoring visits were recorded as dry.
ENVIRONMENTAL RISK ASSESSMENT	Long Term Human Health The results of the chemical analyses have revealed the strata beneath the site did not exhibit significant degree of contamination, with all determinands tested for revealing concentrations, detected below their respective assessment criteria for the proposed development and pose no risk to human health. Subsequently, formal remediation works will not be required as part of the redevelopment. Controlled Waters Risk Assessment The risk to controlled waters is considered to be Low.

GROUND GAS RISK ASSESSMENT	Based on the ground gas data obtained over 4 number visits, the ground gas monitoring results indicate that the site has been classified as CS2. Therefore, gas protection measures shall be required for the residential building structures and which will require specialist mitigation measures to be constructed in accordance with BS8485 (2015) (+A1) 2019. Two number additional monitoring are required to confirm the classification.
RADON	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. No radon protective measures are necessary.
GEOTECHNICAL ASSESSMENT	General It is understood that consideration is being given to the redevelopment to comprise erection of a new house, associated car parking and new access road. Foundation excavations should be extended through the Made Ground and be located within the upper levels of the Glacial Till. From the results of the SPT tests undertaken in the Glacial Till, it is recommended that conventional strip or pad foundations could be employed and be designed to achieve a bearing capacity of 150kPa. Settlements in the Glacial Till are anticipated to be less than 25mm under the above quoted loading regime. In addition, due to the cohesive nature of the foundation soils, settlements should be sensibly completed by the end of the construction period. Floor Construction - Based upon the amount of Made Ground noted on site it is recommended that a ground-bearing slab is utilised on site placed on re-engineered Made Ground. Geotechnical Uncertainty - Based on historic plans there are relic foundations present on the site and earthworks to be carried out to an engineering specification.
RECOMMENDATIONS	The following actions are recommended: • Remediation statement not required as part of the redevelopment. • No evidence of instability or broken ground was noted during formation of the rotary exploratory holes that were undertaken on site therefore risks presented by shallow mine workings or mine gas emission is considered negligible and no formal remedial works are required at the site. • Good hygiene practices should be employed during construction work. In addition, the findings of this investigation should be included within the contractors Health and Safety File and an assessment of risks associated with short term human health completed. No consumption of food or smoking should occur without prior hand washing. If dust is encountered, dust masks should be worn and dust suppression employed. • Complete the ground gas monitoring and update the design CS2 gas protection measures for the residential building structures in accordance with BS8485 (2015) (+A1) 2019.

NOTE: The executive summary is an overview of the key findings and conclusions of the report. There may be other information contained in the body of the main report which puts into context the information presented within the executive summary. No reliance should be placed on the executive summary.

1.0 INTRODUCTION

1.1 Terms of Reference

The study site (from herein known as 'the Site') is situated on Halifax Road located in Littleborough OL15 0LB.

CRC Site Investigation Ltd (UAA) was commissioned by Fourway Projects (FP) (The Employer) in June 2024 to undertake a Phase II Land Quality Assessment for the Site. The report has been requested in order to support a proposed planning application for the Site.

At the time of undertaking the ground investigation in July 2024, the existing buildings on site were in a derelict state and the surrounding ground is overgrown with vegetation and temporally secured with heras fencing. There are a few matured trees within the grounds of the property. A dry-stone wall runs along the perimeter of the site and tarmac and concrete hardstanding around the derelict buildings on site.

The Site is under consideration for redevelopment under Rochdale Metropolitan Brough Council (OMBC) Planning Application 23/01280/FUL for the proposed conversion of existing outbuilding in garden curtilage to form additional ancillary residential accommodation in association with main use of Longley Hey Farmhouse as a dwelling on Halifax Road, Littleborough OL15 0LB. There is no information relevant to this ground investigation attached to the planning application and an electronic copy is included in **Appendix 1**.

The aim of this report is to provide an assessment of potential ground contamination risks at the site in terms of both its current condition and following the proposed redevelopment. It is also intended to provide geotechnical information for civil/structural engineering design purposes. To this end, the following broad objectives have been defined:

- A planning application and the discharge of contaminated land conditions where reasonably practicable that may have been assigned to the site and to include the design of a remediation scheme, if required as part of the National Planning Policy Framework (NPPF).
- Summarise existing information regarding the site's environmental setting and previous development history.
- Confirm the stratigraphy underlying the site through physical investigation.
- Undertake Generic Quantitative Risk Assessments to determine the potential significance of any ground contamination encountered.
- To assess the likelihood of reuse of materials that are site won or disposal options for surplus material.
- Provide recommendations on geotechnical matters including foundations option, floor slabs and other associated engineering considerations potentially affecting the redevelopment.

The objective of this Phase II Ground Investigation is:

- to resolve uncertainties identified in the Phase 1 Desk Study and Coal Mining Risk Assessment by refining and updating the preliminary Ground Model, determining geo-environmental and geotechnical site conditions and identifying key contamination risks by updating and finalising the Conceptual Site Model (CSM) in accordance with the principles of LCRM;
- to identify geo-environmental mitigation requirements to enable development; and
- to provide preliminary geotechnical recommendations for design.

In developing this geoenvironmental interpretative report reference has been made to the following technical documents.

- CRC Site Investigation Fourways Project Longley Hey Farm, Halifax Road, Littleborough OL15 0LB Coal Mining Risk Assessment Report Ref. FP/CMRA/002/V1 dated January 2024.
- CRC Site Investigation Fourways Project Longley Hey Farm, Halifax Road, Littleborough OL15 0LB Phase 1 Desk Study Report Ref. FP/DS/003/v1 dated January 2024.

1.2 Development Proposal

The landowner proposes rebuilding of Longley Hey Farmhouse and conversion of existing outbuilding in garden curtilage to form additional ancillary residential accommodation. The proposed development layout plans for the Site are included in **Appendix 2**.

1.3 Legislative Context

The presence of contaminants which may pose a risk to human health or the environment is a material planning consideration. For planning, it should be considered whether the site is suitable for its new use, and the responsibility for securing a safe development (including cumulative effects of pollution on health, and the potential sensitivity of the proposed development to adverse effects from pollution) rests with the developer and/or landowner. Planning is concerned with the Site's proposed use not its current use, where the amount of contamination is expected to be low relative to the level of risk. This is the opposite to Part 2A which considers high levels (significant harm) and the current use of the Site.

Section 57 of the Environment Act 1995 includes Part 2A (ss.78A-18YC) to the Environmental Protection Act 1990 and contains the legislative framework for identifying and dealing with contaminated land. Where development is undertaken on land which may be affected by contamination, the National Planning Policy Framework, Paragraphs 120 to 122 considers pollution and remediation. This links the contaminated land regime within the development process.

For there to be an environmental liability associated with the Site, there must be a perceived source (a contaminant), a receptor (humans, living organisms or property) and a pathway between them. The potential presence of all of these aspects would result in a complete contaminant linkage.

In accordance with environmental legislation and the associated guidelines, assuming the Site is to be redeveloped for a residential end use, it should be noted that any redevelopment of the Site could actually create new pathways that could increase the liabilities associated with the site. In addition, the basis of the intrusive ground assessment is to refine the Conceptual Site Model (CSM).

1.4 Investigation Regulatory Guidance

The investigation work has been carried out in general compliance with recognised best practice, including (but not limited to) BS 5930:2015, BS 10175:2011+A2:2017 and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The geo-environmental section of this report is written in broad accordance with BS 10175:2011+A2:2017, 'Land Contamination: Risk Management' (LCRM, 2019) and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The methods used follow a risk-based approach, the first stage of which is a Phase 1 desk study and field reconnaissance, with the potential geo-environmental risk assessed qualitatively using the 'source-pathway-receptor contaminant linkage' concept to assess risk as introduced in the Environmental Protection Act 1990 (EPA, 1990). Potential geotechnical risks are also assessed.

Phase II comprises intrusive ground investigation work and testing. The factual information from Phase I and Phase II are used to develop the CSM. This CSM is based on a ground model of the

site physical conditions and an exposure model of the possible contaminant linkages. The CSM forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines. This GQRA might lead to more Detailed Quantitative Risk Assessment (DQRA).

Professional judgement is then used to evaluate the findings of the risk assessments and to provide recommendations for the development.

The geotechnical section of this report is prepared in general accordance with BS EN 1997-1+A1: 2013, BS EN 1997-2:2007 and BS 8004:2015. This report constitutes a Ground Investigation Report (GIR) as described in Part 2 of Eurocode 7 (BS EN 1997-2) (EC7). However, it is not intended to fulfil the requirements of a Geotechnical Design Report (GDR) as specified in EC7.

The geo-environmental and geotechnical aspects are discussed in separate sections. Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the Site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination).

However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related.

Designers should take all aspects of the investigation into account.

1.5 Site Location

The site is located to the north east of Littleborough town centre at National Grid Reference SD 95445 17771. The site location is shown on the plan presented as **Figure 1**.

The application site is within a farmland setting on Halifax Road, irregular in shape and covering approximately 0.477 acres. A plan indicating the Site layout is presented as **Figure 2**.

1.6 Site Description and Layout

Longley Hey Farmhouse was built around circa 1851 is currently derelict, overgrown with vegetation and temporally secured with heras fencing. There are a few matured trees within the grounds of the property. A dry-stone wall runs along the perimeter of the site and tarmac and concrete hardstanding around the derelict buildings on site.

The immediate surrounding area of the site is grazing pastures with a number of ponds lying approximately 120m to the south and southwest of the derelict property on the site. The current site layout is shown on the plan presented as **Figure 2**.

According to [Elevation Finder](#) and the recent site topographic survey, the general site level is at between approximately 220.0m AOD and 225.9m AOD.

1.7 Surrounding Land Uses

A description of current land uses surrounding the boundaries of the Site is given below in **Table 1** below.

Table 1 Summary of Surrounding Land Uses

Boundary	Land Use Description
Northern	Grazing pastures.
Eastern	Open land with sapling trees.
Western	Grazing pastures.
Southern	Access track and closed landfill site.

1.8 Previous Studies

CRC recently undertook a Coal Mining Risk Assessment for the Site and the report is referenced:

- CRC Site Investigation Fourways Project Longley Hey Farm, Halifax Road, Littleborough OL15 0LB Coal Mining Risk Assessment Report Ref. FP/CMRA/002/V1 dated January 2024.
- CRC Site Investigation Fourways Project Longley Hey Farm, Halifax Road, Littleborough OL15 0LB Desk Study Report Ref. FP/CMRA/002/V1 dated January 2024.

Other than the above mentioned reports, no other studies are known to have been undertaken at the Site to CRC's knowledge.

1.9 Limitations

Presentation of the factual and interpretative information reported herein have been made in line with legislation and guidelines in force at the time of writing, representing best practice at that time.

All of the comments and findings contained in this report, are based on the information obtained by CRC from the site investigation. This report is written in the context of an agreed scope of works and should not be used in a different context.

Except as otherwise requested by the Employer, CRC is not obliged and disclaims any obligation to update the report for events taking place after:

- a) the date on which the ground investigation was undertaken; and
- b) the date on which the final report is delivered.

New information, improved practises, and changes in legislation may require the changes to the report in whole or in part after its original issue. CRC reserve the right to alter the factual and interpretative information in the light of further information that may become available. This report is provided for the sole use of the Employer and their professional advisers and is confidential to them unless agreed otherwise in writing.

CRC makes no representation whatsoever concerning the legal significance of its findings or to other legal matters referred to in this report.

2.0 PHASE 1 DESK STUDY

2.1 Desk Study

A number of desk study sources have been used to assemble the following information. These are presented in **Appendix 3** and include:

- An Envirocheck Report and historical map records.
- British Geological Survey (BGS) GeoIndex – Onshore database.
- Ordnance Survey Open Data
- Coal Authority Development and Specific Risk databases.
- Environment Agency open-source databases
- Google mapping services
- Interrogation of search engines for anecdotal information on the site history and other readily available online resources.

2.1.1 Site History

Historical maps for the Site have been studied for the period 1894 to the present, to determine the historical land use of the site and surrounding area and its impact on the proposed development. The OS County Series 1:10,560, 1:10,000 and 1:2,500 scale historical maps were reviewed and copies of the respective maps are included in **Appendix 3**.

The history of the site is summarised as follows in **Table 2** below.

Table 2 Summary Site History

1851 (1:10,560 scale)	The site is shown with the present property and the surrounding northern, eastern and western areas as farmland. Wellfield Mill is shown to the south of the property.
1895 (1:10,560 scale)	The site is shown present property shown as expanded and the surrounding north, eastern and western layout unchanged. Wellfield Mill is shown to the at approximately 180m south of the property with a footpath connecting both developments.
1911 (1:10,560 scale)	The surrounding development layout out has change to current layout. The development site is shown as developed with housing and a single structure shown spanning across the site.
1930 - 1932 (1:10,560 scale)	The development layout for both the site and surrounding development has changed however individual plots not defined.
1956 (1:10,560 scale)	The development layout for both the site and surrounding development has changed however individual plots not defined.
1963 (1:2,500 scale)	The development layout for the site has changed however individual plots not defined.
1980 (1:10,000 scale)	The development layout on the site remains as it is currently, no changes.
1996 (1:2,500 scale)	The development layout for the site has changed with an additional structure shown along the northern part of the site.
1999 (1:10,000 scale)	The development layout on the site remains as it is currently, no changes.
2001 (1:2,500 scale)	The development layout on the site remains as it is currently, no changes.

From the detailed study of the historical plans for the period 1851 to present, there has been no evidence of ground disturbance associated with either surface, shallow underground coal mining or mine entries/shafts within the proposed development site boundary.

2.1.2 Mapped Geology

According to extracts of geological map taken from the 1:50,000 scale British Geological Survey (BGS) Digital Geological Map of Great Britain GeoIndex onshore (BGS Map Viewers), the site is shown to be underlain by superficial deposits with artificial ground (Made Ground) absent.

Superficial deposits are indicated to be present in the search area and comprise Till, Devensian - Diamicton. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

Beneath the superficial deposits, the proposed development site is shown to be underlain by Rossendale Formation which generally comprise a fine to very coarse grained and pebbly, feldspathic sandstone, interbedded with grey siltstone and mudstone, and subordinate marine black shales, thin coals and seatearths. Typically, the formation comprises a lower mudstone dominated succession including two prominent marine shales, the *Cancelloceras cancellatum* and *Cancelloceras cumbriense* marine bands, and an upper sandstone dominated succession, including the Rough Rock and Rough Rock Flags.

A copy of an extract of the BGS Interactive map is included in **Appendix 3**.

Landslide deposits are indicated to be absent within the development site boundary. These are deposits formed by localised mass-movement of soils and rocks on slopes under the action of gravity.

2.1.3 Ground Stability Hazards

The Environmental Reports presented in **Appendix 3** has been reviewed and pertinent information relating to potential ground stability hazards affecting the Site is summarised in **Table 3**.

Table 3 Onsite Ground Stability Hazards

Hazard	Hazard Potential
Collapsible Ground Stability Hazards	Very Low.
Compressible Ground Stability	No Hazard.
Ground Dissolution Hazard	No Hazard
Landslide Ground Stability Hazard	Low
Running Sand Ground Stability Hazard	Hazard Potential: Very Low
Shrinking or Swelling Clay Ground Stability Hazard	Hazard Potential: Very Low

2.1.4 Coal Mining

A Consultants CON29M Coal Mining Report have been obtained from The Coal Authority, dated 29 December 2023. This report is based on and limited to the records for the site held by the Coal Authority at the time this report was produced.

The Site is located in an area which may be affected by probable shallow coal mine workings.

A coal outcrop is recorded to pass through the property boundary with area of probable working as indicated on the plan included in **Appendix 4**. The coal seam was last mined in 1880 from the coal mining records held by the Coal Authority and there is a possibility of unrecorded mining features associated with this coal outcrop within the property boundary.

The coal mining report for the Site is included in **Appendix 4**.

The Coal Authority mining report indicates that the property is in a surface area that could be affected by underground mining in 1 seam of coal at shallow depth and last worked in 1880. Furthermore, although, there are no known mine entries within or within 100 meters of the boundary of the site, the records are incomplete and consequently there may exist in the local area mine entries of which the Coal Authority has no knowledge.

From the detailed study of the historical plans for the period 1851 to present, there clearly shows no marked evidence of ground disturbance associated with either surface or shallow underground coal mining (i.e. bell pits) at the proposed development site or within 100m of the property.

In light of the risk associated with probable shallow mining issues existing at the proposed development site dating pre 1851 which cannot be discounted, there is a need for further investigation prior to redevelopment of the site and this was carried out as part of this investigation scope of works.

Regarding other potential hazards commented upon in the Consultants Coal Mining Report, the following statements appear in the mining report dated 29th December 2023.

- The Coal Authority is unaware of any issues arising due to geological faults or other lines of weakness that have been affected by mining.
- There are no records of any damage claims having been made in respect of the proposed development site or any property within 50 meters since 31 October 1994.
- No opencast mining has taken place within 500 meters of the property.
- No coal mining licensing recorded within 200 meters of the property.
- The property is not in an area where a notice has been given under Section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.
- The Site is not within the boundary of a former opencast site or within the site of a future opencast site which the Authority is determining.
- The Coal Authority hold no record of a mine gas emission requiring action at the proposed development site.
- No recorded mine water treatment scheme within 500 meters of the property.

2.1.5 Radon

According to data published by the BGS, National Geoscience Information Service, the Site is within a Low Probability Radon Area, where less than 1% of homes are at or above the action level for naturally occurring radon gas.

Radon protection measures are not necessary in the construction of the new residential property.

2.1.6 Hydrogeology

The Superficial Drift deposits are designated as Secondary (undifferentiated). These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

The Rossendale Formation bedrock is designated as a Secondary A Aquifer. These are predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

2.1.7 Groundwater Discharge Consents

The Landmark Report indicates that there are no discharge consent entries within 250m of the site.

2.1.8 Hydrology

There are a number of ponds lying approximately 120m to the south and southwest of the derelict property on the Site.

2.1.9 Landfill and Waste Management

There is one historical landfill site located within approximately 10m of the southern site boundary and details are summarised in **Table 4**.

Table 4 Historical Landfill Site

Name/Operator	Address	Details
Longley Hey Farm Landfill/Hudson Peter	Halifax Road, Littleborough, Lancashire, OL15 0LB	Licence Number: 53589 Authority: Environment Agency - North West Region, South Area Site Category: Landfills Taking Non- biodegradable Wastes (Not Construction) Licence Status: Inactive
Rochdale Metropolitan Borough Council	Has no landfill data to supply.	

There are no known licensed waste management facilities or active waste transfer sites within 500m of the Site.

2.1.10 Contemporary Trade Entries

The Landmark Report indicates that there is 1 inactive contemporary trade entry for the site and 2 active contemporary trade entries located within 250m of the Site.

2.1.11 Environmental Constraints

The Landmark Report indicates that there are no areas of environmental constraints located within 250m of the Site.

2.1.12 Environmental Permits, Incidents and Register

The Envirocheck Report indicate that there are no inactive contemporary trade entries for the Site and no active contemporary trade entries located within 250m of the Site.

There are no IPPC authorisations recorded for the site itself.

2.1.13 Infilled Features

There are no areas of potentially infilled land recorded within 250m of the Site.

2.1.14 BGS Recorded Mining Sites

The Envirocheck Report indicates that there are no known BGS recorded mining sites located within 250m of the site.

2.1.15 Estimated Soil Chemistry

Data provided by the BGS in relation to estimated soil chemistry for a number of key metals and metalloid elements are summarised in **Table 5**.

Table 5 Soil Chemistry Concentrations

Element	Location	Estimated Soil Concentration (mg/kg)
Arsenic	on site	<15
Cadmium	on site	<1.8
Chromium	on site	60 - 90
Lead	on site	<100
Nickel	on site	15 - 30

2.1.16 Industrial Land Use Information

Current Land Use data presented in the Envirocheck report indicates that there are no “potentially contaminative industrial sites” on-site.

Surrounding potentially contaminative sites in the area relate to:

- Waste disposal.
- Pervious coal mining.

3.0 TIER 1 PRELIMINARY CONTAMINATION RISK ASSESSMENT

3.1 Objectives

The objective of this preliminary risk assessment (PRA) is to determine the suitability of the Site for the proposed redevelopment and end users, in terms of the risk from contamination. The assessment comprises the following steps:

- Identify potential contaminant linkages (PCLs) between sources, pathways and receptors.
- To provide data to assist in the design of potential exploratory and detailed intrusive investigations and to give an early indication of possible remedial requirements, if necessary.

3.2 Evaluation Criteria

The following assessment is undertaken within the legislative framework of the planning system. Therefore, the assessment needs to identify if land contamination could pose an unacceptable risk to human health or the environment, within the context of the proposed development site. In the context of the existing site use, as a minimum, land should not be capable of being determined as 'contaminated land' under Part IIA of the Environmental Protection Act 1990.

The risk criteria for the proposed development is based on a 'minimal risk' approach, whereas under the existing land use a designation of 'contaminated land' would only apply if there is a significant possibility of significant harm (SPOSH).

3.3 Methodology

The objectives listed above are achieved by utilising the information presented within the desk study to develop a preliminary conceptual site model (CSM) and identification of potential unacceptable risks. Depending upon the outcome of the Tier 1 assessment, it may be necessary to undertake a Tier 2 generic quantitative risk assessment (GQRA).

The preliminary CSM relies upon the identification and assessment of PCLs. A contaminant linkage comprises of three key components:

- Source – a contaminant or pollutant that is in, on or under the land and that has the potential to cause harm or pollution.
- Pathway – Current and post-development routes by which a receptor is, or could be, affected by a contaminant.
- Receptor – Something that could be adversely affected by a contaminant, for example a person (current and proposed end users or neighbours), controlled waters and ecosystems.

The Tier 1 risk assessment has been produced with reference to the following guidance:

- Land contamination risk management (EA, 2021).
- BS 10175:2011+A2:2017 Investigation of potentially contaminated sites – Code of Practice.
- CIRIA C552 Contaminated land risk assessment- a guide to good practice, 2001.
- BS EN ISO 21365:2020 'Soil quality – Conceptual site models for potentially contaminated sites
- BS 8576:2013 'Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOC).

3.4 Potential Contaminant Linkages

3.4.1 Sources

The likely contaminants from Made Ground associated with former site usage which may be present on site could include the following.

- heavy metals such as cadmium, chromium, copper, lead, nickel and zinc, asbestos, hydrocarbons and organic compounds such as Polycyclic Aromatic Hydrocarbons (PAHs). Furthermore, ground gases such as methane and carbon dioxide may be generated from areas of Made Ground and mine workings.

The offsite sources have been identified that would represent a significant risk to the site include the landfill site and probable mine workings.

The likely contaminant sources from previous land uses are shown below in **Table 6**.

Table 6 Potential Source(s) of contamination

Reference	Potential Sources (On and Off site)	Potential Contaminants
S1	Potential Made Ground on site.	Localised metals, non-metals asbestos, TPH, PAHs, ground gases (CH ₄ , CO ₂).
S2	Probable Mine Workings on site and offsite.	Mine gas.
S4	Landfill off site.	Localised metals, non-metals asbestos, TPH, PAHs, ground gas (CH ₄ , CO ₂).

3.4.2 Receptors

The most sensitive receptors identified using the conceptual site model are considered to be site and adjacent site users, construction and maintenance workers, controlled waters (Secondary A Aquifer), infrastructure and buried services. These are most likely to be affected by Made Ground and any associated contaminants and gas generated from Made Ground present on site.

Human receptors would comprise construction workers, future site users and adjacent site users. It is likely that the exposure to contamination by construction workers will be limited due to the short exposure to the potential contamination and the use of PPE. If ground gases are produced, this could be a potential risk to the future site users and properties and workers in confined spaces/trenches etc.

Due to the potential for contaminants to be present on site there is the potential for contaminants to leach and migrate to the underlying Secondary A Aquifer.

Table 7 Potential Receptors

Reference	Potential Receptor	Description
R1	Current and future site users	Site users; personnel, general workers and maintenance workers,
R2	Construction Workers	Contractors working on the development of the site. Construction workers, maintenance workers or other personnel who may be directly exposed to contaminated materials in the course of their activities.
R3	Controlled Waters	Secondary A Aquifer and on site drainage.
R4	Adjacent Site Users	Adjacent site users. Third-party land (i.e., the possibility of contamination migrating off-site onto third party land via contaminated groundwater, surface water run-off).
R5	Infrastructure / Buried services	Proposed buildings and buried services

3.4.3 Pathways Creating Contaminant Linkages

Table 8 Potential Pathways

Reference	Potential Pathway	Description
P1	Direct contact with potential contaminants.	Dermal absorption, ingestion and inhalation of contaminants via direct contact. Construction workers may come into contact during the site works, however this will be for a short time and therefore limited exposure will occur. PPE can be used. Construction workers may come into contact during the site works, however this will be for a short time and therefore limited exposure will occur. PPE can be used and worn as a precaution to reduce the risk.
P2	Ingestion of potential contaminants.	
P3	Inhalation of potential contaminants.	
P4	Leaching and migration of contaminants.	Leaching of possible contaminants could migrate into the underlying Undifferentiated Secondary and Secondary A Aquifer via shallow groundwater. On site drainage is also at risk from shallow contamination, if present.
P5	Vertical and lateral migration of ground gases/vapours.	There is the potential for contaminants to be present on the site, which could generate ground gas/vapours on site.

3.5 Risk Estimation

Through consideration of the potential consequence and likelihood of exposure occurring, a potential risk rating for each potential contamination linkages has been assigned and is presented in **Section 3.4**. The purpose of this assessment is to focus upon the potential risks present, based on the proposed development, post construction with mitigation measures. The definitions of estimated risk are taken from CIRIA report C552 and are summarised below:

Very High Risk: There is a high probability that severe harm could arise to a designated receptor or there is evidence that severe harm to a designated receptor is currently happening.

High Risk: Harm is likely to arise to a designated receptor. Realisation of the risk is likely to present a substantial liability.

Medium Risk: It is possible that harm could arise to a designated receptor. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild.

Low Risk: It is possible that harm could arise to a designated receptor, but it is likely that this harm, if realised, would be mild.

Very Low Risk: The possibility of harm to the designated receptor is either not plausible or, if the possibility of harm is plausible, risk is considered to be very unlikely with attenuation along the exposure pathway.

The risk is evaluated through the probability matrix presented in **Table 9**.

Table 9 Estimation of the level of Risk by comparison of Consequence and Probability

	Consequence				
		Severe	Medium	Mild	Minor
Probability (Likelihood)	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

3.6 Risk Evaluation

An evaluation of the risk that each contaminant linkage poses to redevelopment of the site has been undertaken, in general accordance with CIRIA guidance document C552, 2001.

The evaluation and the resultant actions identified are based on the available information presented within this report. Each potential contaminant linkage is identified, and evaluation of risk presented in **Table 9** and a visual representation of the preliminary CSM is presented as **Figure 3**.

Table 10 Preliminary Conceptual Site Model

Sources	Pathways	Receptors	Risk (Consequences/Probability)
<u>On site</u> Contaminated Soils	Dermal contact with soil and dust; and Ingestion and inhalation of soil, waters and soil derived dust/ asbestos fibres.	Study area users; Residents, adjacent site users; and Maintenance workers.	Moderate (Medium to Severe/low likelihood to likely).
<u>Off site</u> Contaminated Soils Made Ground associated with construction works of the development of the surrounding area;	Inhalation of soil and soil derived dust/ asbestos fibres.	Adjacent site residents, visitors and workers.	Low (Mild/Low likelihood).
<u>On site</u> Ground Gas Made Ground in particular landfill areas.	Vertical and lateral migration and accumulation of explosive and/or asphyxiating gases in confined spaces or buildings or uptake by flora.	Current buildings and services and proposed buildings and structures; Study area users; Adjacent site users; and Maintenance workers.	Moderate to High (Medium to Severe/likely).
<u>Off site</u> Ground Gas (CH ₄ and CO ₂) Made Ground landfill areas recorded 50m to the south.			
<u>On site</u> Contaminated Groundwater Potential for contaminated groundwater associated with the historical uses of the study area.	Ingestion; and Direct contact.	Maintenance workers.	Low (Mild / low likelihood)
<u>Off site</u> Contaminated Groundwater Potential for contaminated groundwater associated with the surrounding historical uses of the study area.	Vertical and lateral migration in groundwater beneath the site and contaminated groundwater which may have migrated on to the site. Migration of potentially contaminated groundwater onto the site.	Controlled Waters: Undifferentiated Secondary Superficial and Secondary A Bedrock Aquifers. Existing structures and services.	Moderate to low (Medium/low likelihood to likely). Low (Mild/low likelihood).

In conclusion, based on the preliminary risk assessment undertaken has determined the site poses a Moderate risk to identified receptors and a Moderate/Low risk associated with off-site potentially contaminative sources and ground gases.

During redevelopment of the site there is a potential for short term human health risk to construction workers. These should be assessed and anticipated by the contractor under CDM Regulations 2015.

3.7 Risks to Site End Users – Selection of Human Health Risk Screening Criteria

Category 4 Screening Levels

The Department for Environment, Food and Rural Affairs (Defra) published Category 4 Screening Levels^{1,2} (C4SLs) in 2014. These were developed to be used in the inspection of potentially contaminated land under Part 2A of the Environmental Protection Act (1990) (hereafter referred to as 'Part 2A') to define land that is suitable for use and definitely not contaminated land.

Defra has explicitly stated that the C4SL values are suitable for use for soil contamination assessments within the development planning regime; the Policy Companion Document published by Defra to be read alongside the main document states that:

“The Part 2A regime and the planning regime are inter-linked such that the National Planning Policy Framework states that “after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990” and that “Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.” The Part 2A Statutory Guidance and accompanying Impact Assessment were developed on the basis that Category 4 Screening Levels could be used under the planning regime, as they would be in Part 2A investigations directly”.

Hence a site where all shallow soils contain concentrations of contaminants that are equal to or less than the applicable C4SLs is suitable for use, as defined within the National Planning Policy Framework (NPPF). Therefore, the C4SLs are appropriate for use as a human health risk screening tool in this assessment. However, where the concentration of a contaminant is greater than the C4SL value, this is not necessarily indicative that there is an unacceptable risk or that remediation is required; other lines of evidence should also be taken into consideration.

The land use assumptions for the residential, allotments and commercial land use scenarios within the C4SL assessment system are based on the Environment Agency's Contaminated Land Exposure Assessment (CLEA) model^{3,4,5}, with amendments to the exposure assumptions within the standard land use models and exchanging the health criteria values (HCVs) used to calculate the previously published soil guideline values (SGVs) for updated Low Levels of Toxicological Concern (LLTC).

At the time of writing, C4SL values have been published for arsenic, benzene, benzo(a)pyrene, cadmium, hexavalent chromium and lead.

Suitable 4 Use Levels

Land Quality Management Ltd (LQM) and the Chartered Institute of Environmental Health (CIEH) published Suitable 4 Use Levels (S4ULs) in 2015⁶. These were calculated based on the same assumptions on exposure as those used to calculate the C4SL values, and LLTC values that are of an equivalent level of protection as the C4SLs.

Accordingly, the S4UL have been used as human health risk screening criteria in this assessment for those heavy metals, PAH compounds and petroleum hydrocarbon fractions not covered by the C4SLs.

Asbestos

For the assessment of the risk from asbestos in soils, guidance contained within CIRIA Report C7337 has been taken into consideration, although it should be noted that this document does not include any UK-based SGVs for the assessment of risk from asbestos in soils.

Risks to Human Health – Conceptual Exposure Model

C4SLs and S4ULs have been produced for the following standardised land use scenarios:

- Residential (with and without home-grown produce);
- Allotments;
- Commercial;
- Public open space near to housing;
- Public open space distant from housing.

In the CLEA model, the residential land use without home-grown produce scenario is assumed to consist of a small two-storey terraced house built on a ground-bearing floor slab without access to a private garden. The standard critical receptor is assumed to be a young female child (aged zero to six years old) with a duration of exposure of six years.

It is understood that the site is proposed for redevelopment with residential properties. While a specific development layout has not been provided, it is expected that houses with private gardens will form part of the development.

Therefore, C4SL and S4UL values for the 'residential with home-grown produce' land use scenario have been chosen as the initial risk screening criteria for the site for the potential redevelopment of the site for residential use.

Soil Organic Matter

The soil organic matter (SOM) from made ground soil samples analysed varies between 0.30% and 96.8%. S4UL values based on an assumed 1% SOM have therefore been used in this assessment. The C4SL values are calculated assuming a SOM concentration of 6%.

3.8 Preliminary Risk Assessment Conclusions and Recommendations

In summary, the PRA has highlighted potential contaminant linkages (PCL) which could pose a significant possibility of significant harm under the current land use. In terms of the proposed development scheme, a minimal risk approach applies, and PCLs have been identified which require further consideration.

In particular the historical landfill recorded on the southern site boundary, probable mine workings beneath the site and potential for Made Ground deposits that could give rise to a wide range of contaminants. Further intrusive investigation works are recommended to further refine the assessment and to determine if any remedial measures are necessary.

Overall, each PCL identified as posing a risk of 'Moderate/Low' or higher has been considered as part of the intrusive Tier 2 generic quantitative risk assessment (GQRA).

4.0 GROUND INVESTIGATION

4.1 Design Rationale

The aim and design of the ground assessment is to satisfy planning conditions assigned to the Site by reference to the National Planning Policy Framework (NPPF). This will identify elevated concentrations of determinands with the aim of assessing long term human health risks to site users and controlled waters. In addition, the works have been designed to allow the design of economic foundation solutions for the proposed residential development.

4.2 Fieldwork and Scope

Fieldwork was undertaken on 27th June 2024 and all works were undertaken by CRC and supervised by a suitably qualified CRC geotechnical engineer. The investigation was carried out in general accordance with the following standards:

- BS10175:2011+A2:2017 Investigation of Potentially Contaminated Sites – Code of Practice
- R&D Technical Report P5-066/TR Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination, 2001 (Environment Agency).
- BS 5930:2015 Code of Practice for Site Investigations and,
- BS EN ISO 22475-1:2006 Geotechnical Investigation and Testing. Sampling methods and groundwater measurements. Technical principles for execution.

The site investigation comprised the following and the exploratory hole location plan is presented as **Figure 4**.

- Six number machine excavated trial pits referenced TP01 to TP06 inclusive to a maximum depth of 3.00m bgl. TP01 to TP03 excavated to determine the ground conditions and recover samples for contamination and geotechnical analysis. TP04 to TP06 to establish presence of landfill on the site boundary.
- Three number cable percussive boreholes referenced BH01 to BH03 inclusive to a maximum depth of 6.00m bgl. Boreholes to determine the ground conditions, recover samples for contamination and geotechnical analysis and install ground gas monitoring standpipes.
- Three number rotary open hole boreholes referenced RH01 to RH03 inclusive to a maximum depth of 30.0m bgl. Rotary boreholes to determine presence of mine workings.
- Installation of 3 number ground gas and groundwater monitoring installations.
- Soil and groundwater laboratory analysis.
- 6 number post fieldwork gas and groundwater monitoring visits.

4.3 Soil Logging

Soil samples from all trial pits and cable tool boreholes were logged by the geotechnical engineer in general accordance with BS5930:2015.

Small and bulk disturbed environmental and geotechnical soil samples were taken from a range of depths. Environmental soil samples were stored on site in temperature-controlled conditions.

Soil descriptions are presented in the **Appendix 5** together with details of sampling.

4.4 Health and Safety

Prior to undertaking the intrusive investigation, a Risk Assessment and Method Statement (RAMS) was produced by CRC, in which safe working practices and investigation locations was given for agreement on site with site operatives and other stakeholders, as relevant.

Service plans for the development site were obtained and included as part of the RAMS. A copy of these plans was maintained on site by the geotechnical engineer who was also responsible for clearing the areas to be investigated by use of a Cable Avoidance Tool (CAT).

4.5 Chemical Laboratory Testing

For the purpose of this proposal, the suite of analytical testing was chosen to provide generic screening of common contaminants.

The suite of testing comprised heavy metals, inorganic and organic compounds, as well as asbestos screening, where appropriate.

The range of chemical contamination tests scheduled by CRC were carried out on a selected number of soil samples at Envirolab, Hyde (UKAS No. 1247). Testing was carried out in accordance with ISO/ICE 17025:2017. The laboratory analytical results are included in **Appendix 6**.

The location, depth and suite of analysis selected for each soil sample and location are presented in **Table 11**.

Table 11 Contamination Analysis

Sample Reference	Depth (m bgl)	Strata	Laboratory Analysis
TP01 D2	1.00	Made Ground	m, as, or, ir, le
TP02 D2	0.80	Made Ground	m, as, or, ir, le
TP03 D2	1.00	Made Ground	m, as, or, ir, le
TP06 D2	1.50	Made Ground	m, as, or, ir, le

Notes:

m = Heavy metals/metalloids analysis – arsenic, copper, lead, zinc,
as = Asbestos analysis
or = Organics – TPH CWG, PAH USEPA 16, BTEX, MTBE, phenol, VOC's
ir= Inorganic - pH, cyanide, total organic carbon
le= Leachate screening

4.6 Geotechnical Laboratory Testing

Geotechnical testing of soil found beneath the site comprised soil classification tests including, but not limited to, moisture content, Atterberg Limits and particle size distribution.

Chemical testing for aggressive soil conditions was carried out in accordance with BRE Special Digest SD1, utilising the appropriate suite(s) depending on soil type.

The specific testing was determined by the geotechnical engineer as the works progress and was based upon the ground conditions encountered and the samples collected.

A range of geotechnical laboratory tests were carried out on a selected number of soil samples at Envirolab, Hyde (UKAS No. 1247). Testing was carried out in accordance with British Standards.

The location, depth and suite of analysis selected for each soil sample and location are presented in **Table 12**. The full set of geotechnical analytical results are presented in **Appendix 7**.

Table 12 Geotechnical Analysis

Sample Reference	Depth (m bgl)	Strata	Laboratory Analysis
TP01 B2	1.00	Made Ground	w, PSD, BRE
TP03 B1	1.00	Clay	w, PSD, BRE

Notes:

w = Moisture Content Test
PSD = Particle Size Distribution Analysis

PI = Plasticity Index, determined from Liquid Limit (LL) and Plastic Limit (PL) Test
BRE= Water soluble sulphates

4.7 Drainage

It is recommended that the Client/developer contact United Utilities with respect to capacity in existing foul and surface water sewers in the vicinity of the development area.

4.8 Water Supply

Please note the testing suite carried out for this site is for human health purposes and may not cover the suite of contaminants required by United Utilities for pipe selection and therefore further testing may be required.

4.9 Services

It is recommended that the Client/developer contact the relevant service provided to ascertain the requirements for power reinforcement and/or relocation/diversion of existing services.

5.0 GROUND MODEL

5.1 Ground Conditions

Full details of the ground conditions encountered during the investigation are shown on the exploratory hole logs included in **Appendix 5**.

The findings of the ground investigation generally confirmed Made Ground was present in all exploratory hole locations.

Made Ground

Made Ground was encountered in all exploratory hole locations from ground level to a maximum depth of 2.00m below ground level (bgl) at rotary open hole RH01 and trial pit TP05. Across the remain part of the site, the Made Ground varied between 0.20m and 1.80m depth bgl.

Made Ground typically comprised of a mix of sand, gravel and clay strata with anthropogenic inclusions consisting of predominantly rocks of mixed lithologies. Traces of timber, ceramic, brick, concrete, plastic, wood encountered at TP04 and TP06.

Superficial Deposits (Till, Devensian – Diamicton)

Materials considered to represent the superficial deposit was encountered at all the exploratory hole locations directly beneath the Made Ground and were proven to a maximum depth of 6.00m bgl.

The deposit comprised of yellow brown sandy gravelly clay and greyish silty clay.

Bedrock (Rossendale Formation)

Materials considered to represent the bedrock was encountered in two trial pits and all the borehole locations directly beneath the superficial deposits and were proven to a maximum depth of 30.00m bgl in all the rotary open boreholes.

Bedrock encountered consisted of black shale, dark grey mudstone and grey siltstone interlaminated with mudstone.

The ground conditions taken from the exploratory hole locations are summarised in **Table 13** below.

Table 13 Summary of Ground Conditions

Strata	Thickness (m)	Comments
Surface Cover	0.20 – 0.40	Topsoil and concrete hardstanding.
Made Ground	1.60 – 2.00	Little variation in thickness and predominantly cohesive comprising sandy gravelly clay and clayey sandy gravel.
Superficial Deposit	0.40 – 5.30	Yellow brown sandy gravelly clay and greyish silty clay.
Bedrock	0.10 – 27.00	Black shale, dark grey mudstone and grey siltstone interlaminated with mudstone.

A geological cross section through the site is presented in **Appendix 5**.

In-situ Standard Penetration Tests (SPT's) were undertaken in accordance with BS1377 (1990) within the cable percussion boreholes. The characteristic values for the natural ground are shown below in **Table 14**.

Table 14 **Material Properties**

Property	No. of Tests	Range	Average SPT N Value
SPT N Values CLAY	14	1 - 15	7

5.2 **Field Evidence of Contaminated Soils**

Olfactory evidence associated with hydrocarbon contamination was not encountered during this ground investigation.

5.3 **Groundwater**

In accordance with the agreed scope of works, monitoring of groundwater installations completed by CRC was undertaken using an electronic ATEX Dip meter on four occasions, results of which are presented in **Table 15** below.

Table 15 **Groundwater Monitoring Data**

Location	Water Level (m bgl)					
	18.07.2024	02.08.2024	31.08.2024	05.09.2024	19.09.2024	03.10.2024
BH01	dry	dry	dry	dry	TBC*	TBC*
BH02	dry	dry	dry	dry	TBC*	TBC*
BH03	dry	dry	dry	dry	TBC*	TBC*

TBC - yet to be undertaken and to be confirmed.*

6.0 CONTAMINATION ASSESSMENT

6.1 General

This section discusses the results of the chemical analysis for soil and groundwater taken during the CRC 2024 investigation.

The following presents a summary of the chemical analysis and a preliminary assessment of the results based on the proposed end-use for the site. A human health and controlled waters risk assessment was undertaken relative to the receptors identified in the preliminary conceptual site model. This contamination assessment uses site-specific soils, soil leachate, groundwater and ground gas data to determine the level of risk to the proposed end-users of the development and to Controlled Waters (aquifers).

Four soil samples were analysed for the presence of contamination comprising a standard suite of contaminants as specified in **Section 4.5**.

Two soil leachate analyses were undertaken on selected soil samples to determine the leachability potential for a suite of contaminants as specified in **Section 4.5**.

Groundwater samples were not recovered due the monitoring standpipes recorded as dry during the monitoring visits.

6.2 Human Health Risk Assessment

A Tier 2 Generic Quantitative Risk Assessment (GQRA) has been carried out for the potential human health pollutant linkages, based on the screening of soil contamination data against relevant Generic Assessment Criteria (GAC), where these are available.

In order to identify potential contaminants of concern (CoCs), the soil analytical data has been screened against soil screening values (SSVs) or Category 4 Screening Levels (C4SLs) derived to be protective of chronic risks to human health. A copy of the Soil Screening Generic Acceptance Criteria is reproduced in **Appendix 8**.

The site is under consideration for redevelopment to comprise residential housing with curtilage. As such, the results of the contamination analyses have been assessed for a residential land use category within the CLEA model.

The results of the chemical analyses have revealed the strata beneath the site does not exhibit any degree of contamination, with all the determinands tested for revealing concentrations, detected below their respective assessment criteria (published SGV's, GAC's, in-house criteria, etc.,) for the proposed development and therefore does not pose a risk to human health.

6.3 Pollution of Controlled Waters Risk Assessment

The risks to groundwater and surface water from contaminants on site have been assessed in accordance with the Environment Agency (2006) Remedial Targets Methodology (RTM).

Based on the Preliminary Risk Assessment and Ground Model for this site, a Level 1 Screening Assessment has been undertaken in general accordance with Environment Agency guidance Environment Agency Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination, 2006.

The methodology comprises:

- Identification of potential contaminant linkages.
- Selection of appropriate generic screening values for controlled waters.

- Screening measured concentrations of leachate against the generic screening values available for UK Drinking Water Standards (UK DWS) and Environmental Quality Standards (EQS)
- Assessment of contaminant distribution and risk to receptors.
 - Identification of contaminants of concern and relevant contaminant linkages.
 - Identification of potential contaminants and contaminant linkages which are no longer of concern.

6.3.1 Identification of Potential Contaminant Linkages

Contaminant linkages have been identified in **Section 3.0** between the Made Ground and the underlying aquifer via infiltration and/or migration of dissolved phase contaminants.

6.3.2 Selection of Generic Screening Values

Screening values for Drinking Water Standards (DWS) have been used to assess leachability. DWS are relevant to potable receptors (Secondary A Aquifer).

Environmental Quality Standards (EQS) screening values have been used to assess risks to surface water resources and can be viewed in **Appendix 9**.

6.3.3 Leachate & Groundwater Screening – UK DWS & EQS

Metals, TPH CWG and Speciated PAH's were assessed. Exceedances of relevant UK DWS and EQS screening criteria were not encountered, It should be noted that several determinands have limits of detection greater than their respective screening values.

The leachate analytical laboratory results are presented in **Appendix 6**.

7.0 GROUND ENGINEERING ASSESSMENT

7.1 Particle Size Distribution

A total of 2 samples were tested to determine the particle size distribution (PSD) of the underlying Made Ground and natural strata across the site and taken from depths at 1.00m bgl.

The PSD results are presented in the laboratory test report included in **Appendix 7**.

7.2 Ground Stability and Coal Mine Workings

During the drilling of the rotary open boreholes investigate the presence or otherwise of shallow coal workings, check for mine gas emission and to confirm the type and nature of the sub-strata prior to development 3 number boreholes were drilled to a maximum depth of 30m bgl.

No evidence of instability or broken ground was noted during formation of the exploratory holes that were undertaken on site therefore risks presented by shallow mine workings or mine gas emission is considered negligible and no formal remedial works are required at the site.

7.3 Soluble Sulphate and pH

It is envisaged foundations will extend through the Made Ground and into the natural strata. Two samples taken from the Made Ground were submitted for pH and water-soluble sulphate (2:1 soil/water extract) analysis and the results are presented in **Table 16** below.

Table 16 Soluble Sulphate and pH Results

Sample ID	Sample Depth (m bgl)	Strata	pH BRE	Water Soluble Sulphate (mg/l)
TP01/B1	1.00	Made Ground	5.27	<10
TP03/B2	1.00	Clay	4.67	39

Based on the results, sub-surface concrete that is only in contact with Made Ground can be Design Sulphate Class DS-1, with an ACEC Classification of AC-2z.

7.4 Foundation Recommendations

7.4.1 General

It is understood that consideration is being given to construction of residential housing with associated parking.

7.4.2 Foundations

A safe (allowable) bearing capacity for the underneath soils (natural strata or improved/re-engineered made ground) of minimum 150kN/m² for the strip footings and 120kN/m² for the pads must be achieved. Enlarging strips foundation width up to 1.0m wide may be considered to reduce net bearing pressures. This allowable bearing capacity should be reviewed/revised at detailed design stage according to designed structural loads.

Acceptable limits of settlement (serviceability limit state assessment) must be also undertaken to show ground settlements are within acceptable limits (typically less than 25mm total settlement) according to structural design.

Where loose/soft materials are locally present beneath proposed shallow foundations, the foundation depth should be increased, or the soft/loose material removed and replaced with suitably engineered and compacted granular material.

7.4.3 Floor Slab Construction

Subject to geotechnical design and on the basis that excavation and replacement of the Made Ground soils will be undertaken and all structural fill will be placed strictly in accordance with an appropriate Earthworks Specification. As a preliminary assessment subject to design, ground bearing floor slabs may be adopted with an allowable bearing pressure of 120kN/m².

The floor slab should be designed by a structural engineer and a limit state assessment undertaken as part of the geotechnical design.

Prior to the placement of the founding materials and the construction of the ground bearing floor slab, the sub-formation and formation will need to be inspected and checked by a competent person to ensure the ground conditions at time of construction are consistent with the Specification and the design parameters derived from this ground investigation. Testing should be undertaken in accordance with The Concrete Society Technical Report 34 (The Concrete Society 2013) and DMRB IAN 73/06. It is recommended that the verification of the sub-formation and formation include, as a minimum, the measurement of modulus of sub-grade reaction (k) determined by static plate load testing.

7.5 Excavations and Groundwater

Excavations at the site should be feasible using an appropriate scale of hydraulic plant. Collapse of side walls is likely to occur in all excavations where groundwater is reached and these will therefore require adequate lateral support to ensure their stability.

However, groundwater was not encountered during the monitoring period. Groundwater is therefore unlikely to be encountered in shallow excavations formed during the development and therefore de-watering not necessary. It should be noted that disposal of groundwater from excavations if encountered shall require careful management and due consideration of appropriate legislation, guidance and Duty of Care responsibilities.

7.6 Infiltration Drainage

Shallow in-situ permeability tests were not undertaken as part of the ground investigation, however the underlying Made Ground and natural soils are cohesive and therefore it is considered unlikely to be suitable for infiltration drainage.

7.7 Water Supply

A full site investigation as set out in the UK Water Industry Research (UKWIR) document 'Guidance for the selection of Water supply pipes to be used in Brownfield sites' has not been undertaken.

It is advised to consult the water company for advice to determine if protective pipe is necessary or if further assessment and investigation works are warranted.

8.0 GROUND GAS RISK ASSESSMENT

8.1 CIRIA C665 Assessment

Gas monitoring wells were installed in 3 no exploratory hole locations (BH01, BH02 & BH03) as part of the 2024 ground investigation completed by CRC.

A full copy of all gas monitoring readings and water levels together with the gas meter calibration certificate can be found in **Appendix 9**.

8.2 Methodology

A ground gas risk assessment has been undertaken in general accordance with the British Standard BS8485:2015+A1:2019, "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings".

The guidance is written specifically for use by designers of gas protection measures relating to the development of a site. Reference has also been made to the CIRIA document C665:2007: "Assessing Risks Posed By Hazardous Ground Gases To Buildings" and to the Health and Safety Executive document EH40/2005 "Workplace Exposure Limits".

Our assessment comprises the following:

- Review of results.
- Calculation of Gas Screening Values for methane (CH₄) and carbon dioxide (CO₂).
- Assessment of risks from ground gas.
- Development options.

The results of the gas monitoring were assessed using the classification system contained within BS8485:2015 and CIRIA C665. The classification system uses gas concentrations and recorded flow rates for methane and carbon dioxide to determine a gas screening value (GSV). The GSV is calculated by multiplying the steady state recorded flow rate (l/hr) against the maximum recorded gas concentration (%) for each exploratory hole across the site, to determine values reflecting the worst case scenario for each borehole. The GSV is used in turn to determine a Characteristic Situation for the site.

8.3 Review of Field Data

To date four (4) of the six (6) rounds of gas monitoring have been completed. Gas monitoring was undertaken using a fully calibrated GFM436 gas monitor which measured concentrations of oxygen, carbon dioxide, methane, VOC's, barometric pressure as well as gas flow emission rates have been recorded in each of the monitoring standpipe installations.

The first visit was carried out during low atmospheric pressure and two weeks after the standpipes were installed.

The findings are summarised in **Table 17**.

Table 17 Summarised Ground Gas Monitoring Data

Maximum Gas Readings encountered during Monitoring						
Location	Max CH ₄ (%)	Max CO ₂ (%)	Min O ₂ (%)	Max PID (ppm)	Atmospheric Pressure (mb)	Max Flow Rate (l/hr)
18.07.2024						
BH01	0.0	3.0	17.10	1.0	964	0.2
BH02	0.0	6.9	15.80	1.0	964	0.2
BH03	0.0	4.7	14.90	1.0	964	0.1
02.08.2024						
BH01	0.0	3.0	17.20	1.0	964	0.1
BH02	0.0	5.9	16.80	1.0	964	0.1
BH03	0.0	4.3	14.40	1.0	964	0.1
31.08.2024						
BH01	0.0	2.9	17.80	1.0	1001	0.2
BH02	0.0	6.1	16.60	1.0	1001	0.2
BH03	0.0	2.3	16.40	1.0	1001	0.0
05.09.2024						
BH01	0.0	3.1	16.90	1.0	990	0.1
BH02	0.0	7.9	15.20	1.0	990	0.3
BH03	0.0	4.9	11.40	1.0	990	0.1
19.09.2024						
BH01	TBC	TBC	TBC	TBC	TBC	TBC
BH02	TBC	TBC	TBC	TBC	TBC	TBC
BH03	TBC	TBC	TBC	TBC	TBC	TBC
03.10.2024						
BH01	TBC	TBC	TBC	TBC	TBC	TBC
BH02	TBC	TBC	TBC	TBC	TBC	TBC
BH03	TBC	TBC	TBC	TBC	TBC	TBC

8.4 Calculation of Gas Screening Values

8.4.1 Methane (CH₄)

No detectable concentrations of methane have been recorded in the standpipes monitored to date.

8.4.2 Carbon Dioxide (CO₂)

Carbon dioxide (maximum concentration 7.9%) was recorded during all monitoring visits.

A worst-case flow rate of 0.3l/hr. The GSV will be calculated as:

Limiting volume flow rate of gas = gas concentration x measured borehole flow rate

$$= 7.9 \times 0.3/100 \text{ (gas concentration in Table 16 is \%)}$$

$$= 0.0237 \text{ l/hr}$$

The GSV classifies the site as very low hazard risk (gas threshold <0.07L/hr CS1 for Carbon Dioxide). However, due the recorded carbon dioxide maximum gas concentration recorded at borehole BH02 position was >5% v/v (7.9%); the classification of the site has been increased to CS 2 low hazard risk.

Consequently, passive gas protection measures in accordance with CS2 conditions are therefore required which will require specialist mitigation measures to be constructed in accordance with BS8485 (2015) (+A1) 2019.

8.5 Radon

The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. No radon protective measures are necessary.

8.6 Discussion

Based on the ground gas data obtained over 4 number visits, the ground gas monitoring results indicate that the site has been classified as CS2. Therefore, gas protection measures shall be required for the residential building structures and which will require specialist mitigation measures to be constructed in accordance with BS8485 (2015) (+A1) 2019. However, a further 2 number monitoring visits are yet to be carried out on site to confirm the classification and the absence of methane ground gas.

9.0 LONG TERM HUMAN HEALTH RISK ASSESSMENT

9.1 Updated Conceptual Model

The preliminary ground model developed from the desk study (**Section 2**) has been updated using the findings of the ground investigation and is presented in **Section 5**. This ground model is the basis for the geo-environmental assessment presented in the following section.

9.2 Updated Exposure Model

Following the ground investigation, the plausible contaminant sources, receptors and pathways identified in the preliminary geo-environmental exposure model, have been updated or confirmed as follows.

Sources

No potential sources have been removed from, or added to, the exposure model.

Receptors

No potential receptors have been removed from, or added to, the exposure model.

Pathways

No pathways have been removed from, or added to, the exposure model.

Using the updated ground model and updated exposure model, generic risk assessment is undertaken as presented below.

9.3 Soils – Long Term Human Health

This is a Tier 2 assessment using soil screening values applicable to the residential CLEA land use scenario.

The soil screening values used are generic assessment criteria (GAC). It should be noted that Category 4 Screening Levels (C4SL) for Lead have been used as there is no recognised GAC for lead and the use of the term 'GAC' in this report includes the C4SL for Lead.

The critical issue is sample numbers. For data sets with low sample numbers and where sampling is targeted at specific areas, individual sample test results are compared directly with the screening values.

The phrase 'further assessment required' is used to denote soil concentrations that are equal to, or exceed, a GAC. This does not necessarily mean that the soil is 'contaminated' or not otherwise suitable for use. The assessment and any mitigation required are to ensure the site does not pose an 'unacceptable risk'.

9.4 Risk Assessment Approach

Generic risk assessments have been undertaken in accordance with the principles of LCRM (Environment Agency, 2019) using the CM that has been updated following the ground investigation.

The risks associated with the identified potential contaminant linkages have been estimated using standardised methods (typically involving comparison of site data with published 'screening values').

The data sets used in the assessment comprise the analytical results obtained by CRC as listed in **Section 4**.

9.4.1 Identification of Contaminants of Concern

The results of the soil analysis from the investigation are included in **Appendix 6**. These results were then compared against the relevant GAC's for residential development end use reproduced in **Appendix 8**.

The results of the chemical analyses have revealed the strata beneath the site does not exhibit any degree of contamination, with all determinands tested for revealing concentrations, detected below their respective assessment criteria (published SGV's, GAC's, in-house criteria, etc.,) for the proposed residential development and therefore does not pose a risk to human health.

9.5 Conclusions

Currently the site does not pose a risk to human health from soil contamination and therefore no formal remediation works will be required as part of the redevelopment.

If during the proposed development of the site, any isolated area/s with visual or olfactory evidence of contamination is/are encountered, then further advice from a suitably qualified and experienced geo-environmental engineer should be sought.

10.0 LAND CONTAMINATION RISKS AND REMEDIATION REQUIREMENTS

10.1 Revised Conceptual Model

Based on the findings of the human health, the preliminary conceptual model has been revised and finalised as shown in **Figure 5**. The drawing shows all contaminant linkages from the preliminary conceptual model, identifying those which remain relevant.

10.2 Discounted Contaminant Linkages

10.2.1 Controlled Waters – Groundwater

Groundwater Resource

The UK DWS Leachate screening identified no exceedances that could pose a risk to the Undifferentiated Secondary or Secondary A Aquifer.

10.3 Remaining Potential Contaminant Linkages

10.3.1 Long Term Human Health

Currently the site does not pose a risk to human health from soil contamination and therefore no formal remediation works will be required as part of the redevelopment.

If during the proposed development of the site, any isolated area/s with visual or olfactory evidence of contamination is/are encountered, then further advice from a suitably qualified and experienced geo-environmental engineer should be sought.

Construction workers may be exposed via dermal contact, ingestion and inhalation of soil/dust during the construction period. Adjacent site users may also be exposed to contaminated soils via inhalation of dust generated during the construction phase.

10.3.2 Ground Gas

Based on the ground gas data obtained over 4 number site visits, the ground gas monitoring results indicate that the site has been classified as CS2. Therefore, gas protection measures shall be required for the residential building structures and which will require specialist mitigation measures to be constructed in accordance with BS8485 (2015) (+A1) 2019.

11.0 RECOMMENDATIONS

Based on the findings of the ground investigation and interpretation of the information and data the following actions are recommended:

- Currently the site does not pose a risk to human health from soil contamination and therefore no formal remediation works will be required as part of the redevelopment.
- No evidence of instability or broken ground was noted during formation of the rotary exploratory holes that were undertaken on site therefore risks presented by shallow mine workings or mine gas emission is considered negligible and no formal remedial works are required at the site.
- Good hygiene practices should be employed during construction work. In addition, the findings of this investigation should be included within the contractors Health and Safety File and an assessment of risks associated with short term human health completed. No consumption of food or smoking should occur without prior hand washing. If dust is encountered, dust masks should be worn and dust suppression employed.
- Radon gas protection measures are not expected to be required for the proposed development.
- Complete the outstanding 2 number ground gas monitoring visits in order to confirm the CS₂ gas protection measures design for the residential development in accordance with BS8485 (2015) (+A1) 2019.
- The ground gas membranes for the residential development on site shall be installed in accordance with the general guidance set out in BS8485:2015, BRE414 and CIRIA documents C665 and C735. The works shall be validated by a suitably qualified person and on completion the verification information submit to the Local Authority.

END OF REPORT

September 2024



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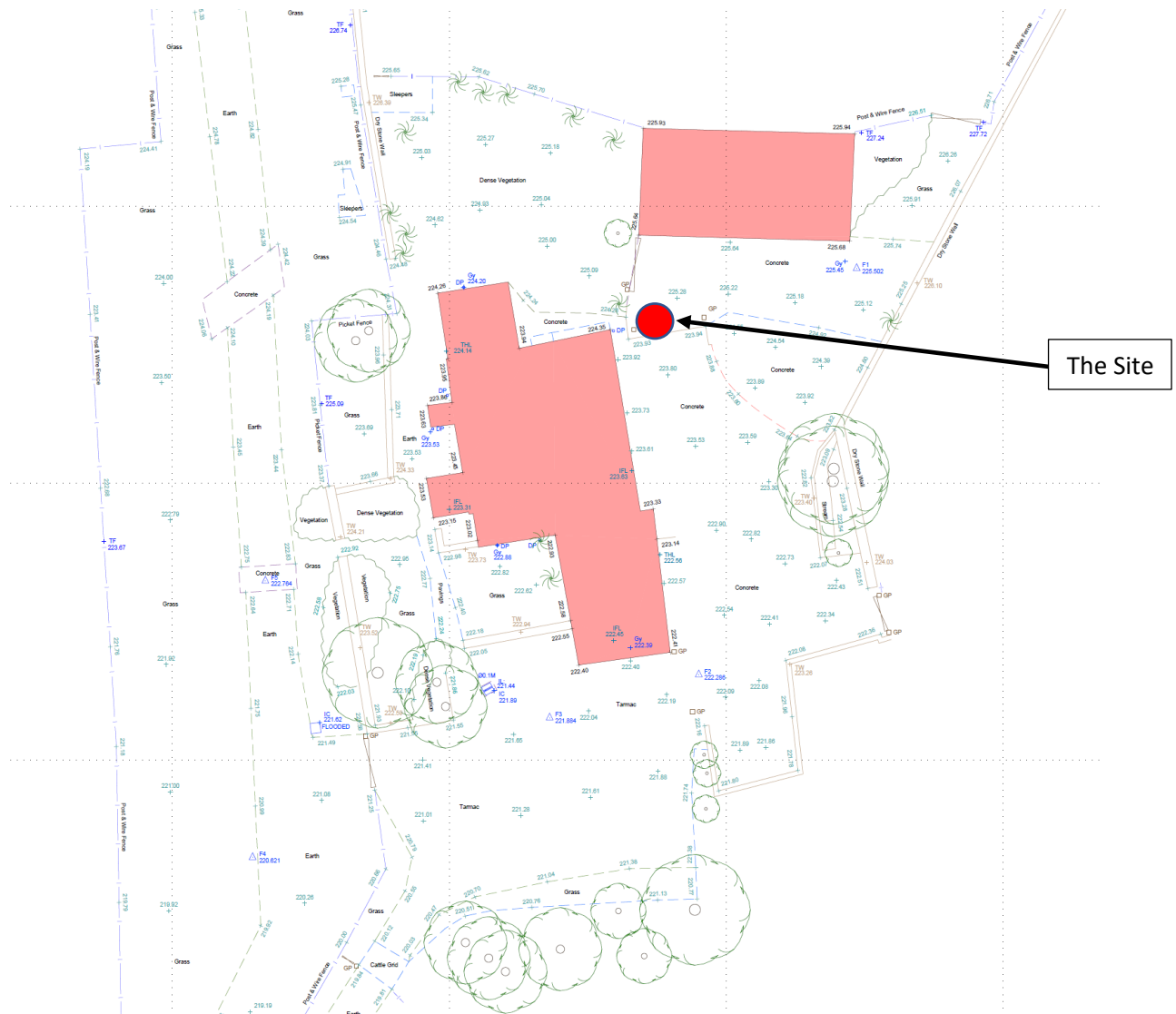
FIGURES

FIGURE 1
SITE LOCATION PLAN



Client:	Fourways Project Ltd
Figure No.:	Figure 1
Figure Title:	Site Location Plan
Date:	4 September 2024

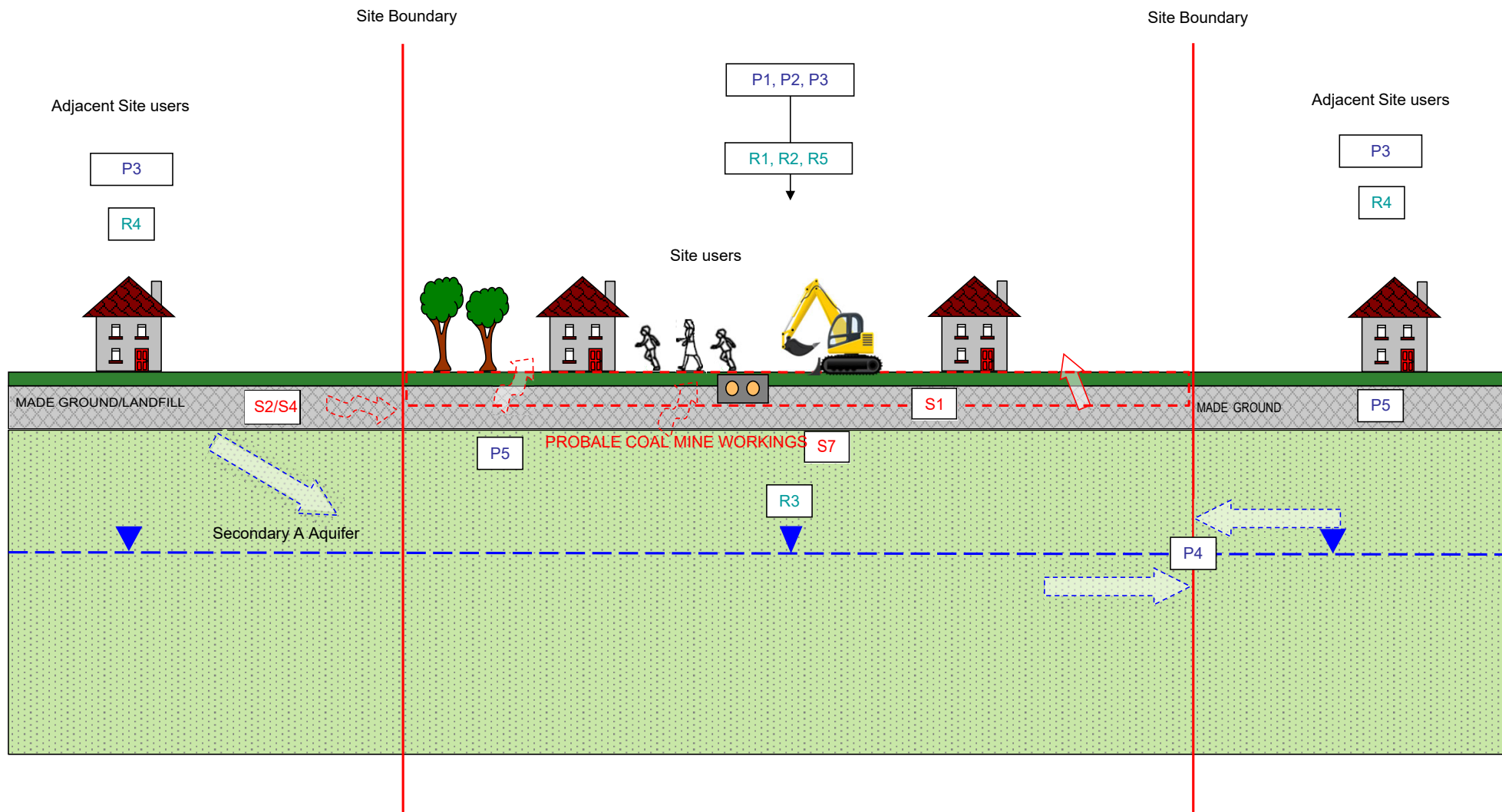
FIGURE 2
SITE LAYOUT PLAN



Client:	Fourways Project
Figure No.:	Figure 2
Figure Title:	Site Layout Plan
Date:	4 September 2024

FIGURE 3

PRELIMINARY CONCEPTUAL SITE MODEL



Key

S1 – Potentially Contaminated Soil - On and offsite

R1 Future site Users

R2 Construction Workers

R3 Controlled waters

R4 Adjacent Site Users

R5 Infrastructure & Buried services

P1 Direct Contact

P2 Ingestion

P3 Inhalation

P4 Leaching & Migration

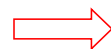
P5 Vertical & lateral migration of ground gas



Ground gas migration



Leachate migration



Direct contact/ ingestion



Underground services

	Client: Fourways Project		
	Project: Longley Hey Farm, Littleborough		
	Title: Preliminary Conceptual Site Model (CSM)		
Purpose: Report	Draft		Scale (at A3)
	Issue	1	Not to scale
Issuing Office: Manchester	Drawing number: Figure 3		Version
Telephone: 0161 240 3536			A

FIGURE 4
EXPLORATORY HOLE LOCATION PLAN

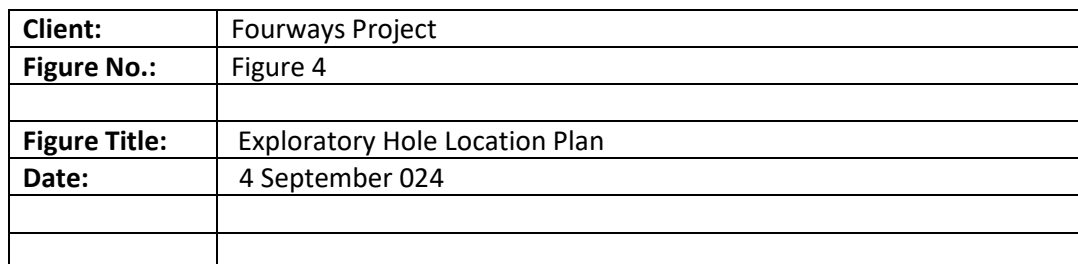
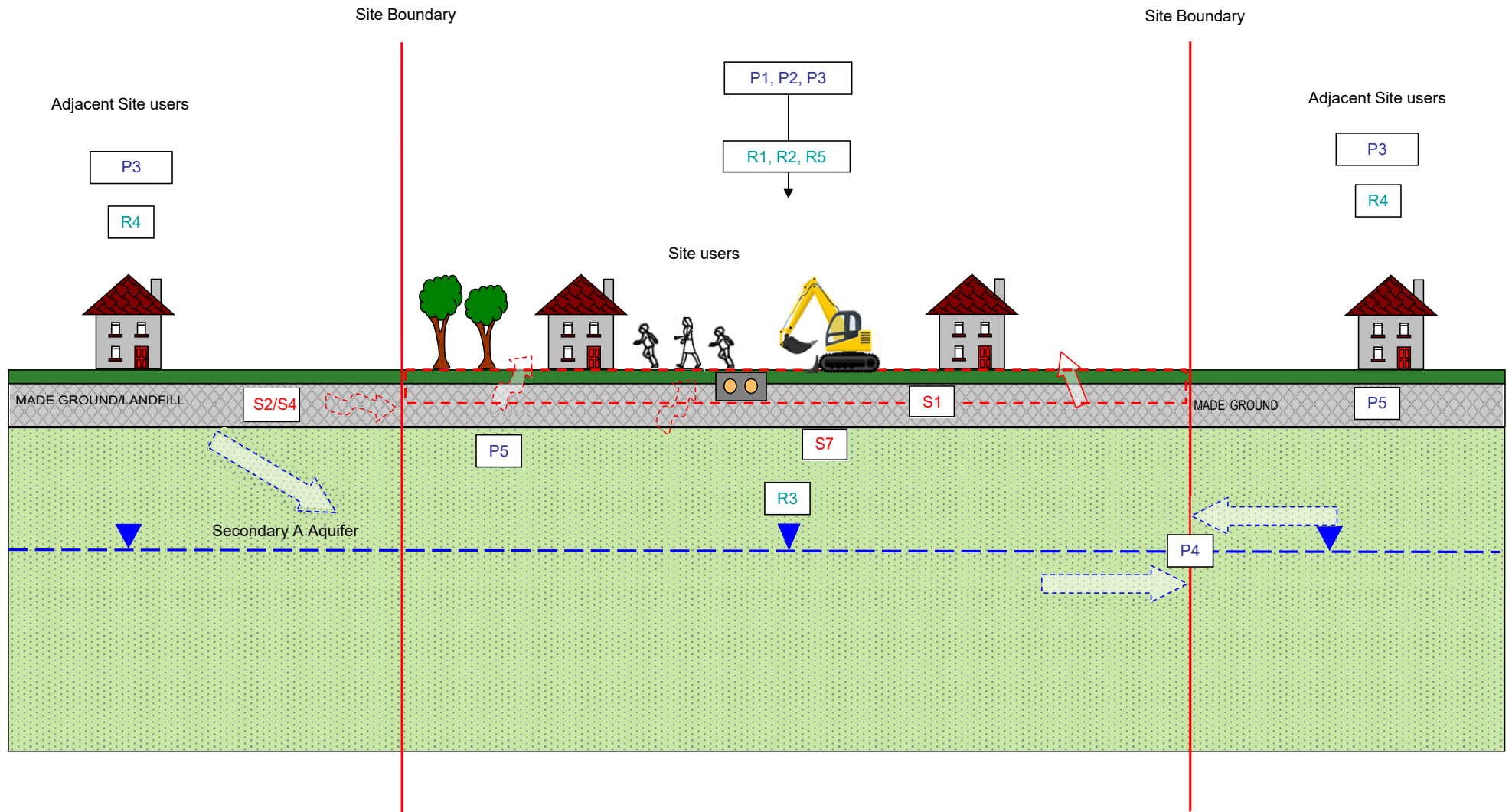


FIGURE 5
REVISED CONCEPTUAL SITE MODEL



Key

S1 – Potentially Contaminated Soil - On and offsite

R1 Future site Users

R2 Construction Workers

R3 Controlled waters

R4 Adjacent Site Users

R5 Infrastructure & Buried services

P1 Direct Contact

P2 Ingestion

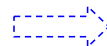
P3 Inhalation

P4 Leaching & Migration

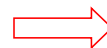
P5 Vertical & lateral migration of ground gas



Ground gas migration



Leachate migration



Direct contact/ ingestion



Underground services

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	Project: Longley Hey Farm, Littleborough		
	Title: Revised Conceptual Site Model (CSM)		
Purpose: Report	Draft		Scale (at A3)
	Issue	1	Not to scale
Issuing Office: Manchester	Drawing number: Figure 5		Version
Telephone: 0161 240 3536			A

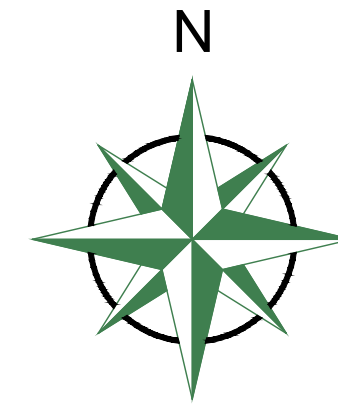
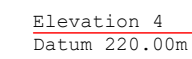
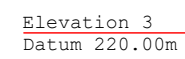
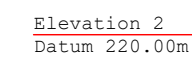
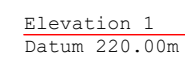
APPENDICES

APPENDIX 1

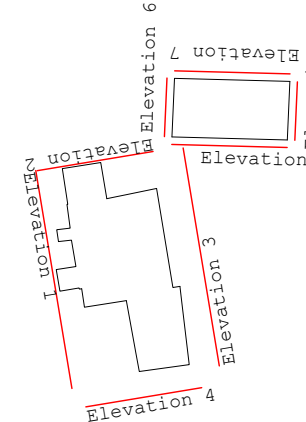
PLANNING PERMISSION

APPENDIX 2

DEVELOPMENT LAYOUT PLANS



Site Notes:



MEASURED BUILDING SURVEY KEY:-

	ROOM HEIGHT			SANITARY WARE
—	ROOF SLOPE (DOWN)			
hh	HEAD HEIGHT			
fh	FLOOR TO HEAD			
dh	FLOOR TO HEAD			
t/s	UNDERSTAIR			
s/c	TOPSIDE			DOORS
	SUSPENDED CEILING			WINDOW
fp	ROOF FRIEZE			BUILDING LINE
sd	FIREPLACE			WALL
cup	SLIDING DOOR			BEAM
elec	FLOOR JOISTS			RAFTER
d'	CUPBOARD			
'	ELECTRICS			
htr	RADIATOR			
hwt	HEATER			
	HOT WATER TANK			

Fosse Surveying Limited
The Old Vicarage, Market St, Castle Donington, DE74 2JB
Tel: 0116 2325169
Mobile: 07940 147244
Email: mail@fossesurveying.co.uk / Website: www.fossesurveying.co.uk

Client	Fourway Projects
Project	Longley Hey Farm Halifax Road, Littleborough OL15 0LB

Title	Elevations 1-4
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Surveyed: LS Date: 20/03/2023

Quality Ref: 2091 Scale: 1:200@A1

Level Datum: OS GNSS	Grid: OS GNSS
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3rd No	2001	Page
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Job No. 2091	Rev.
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No Scale factor has been applied to the survey therefore

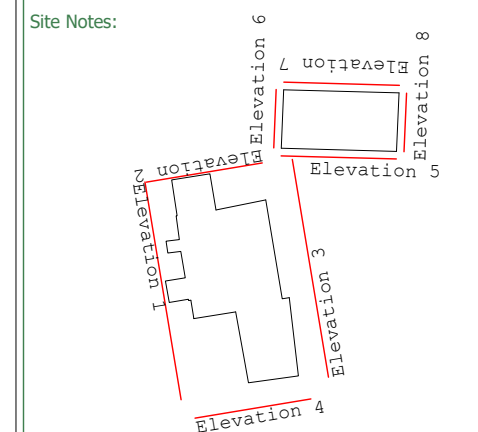
coordinates shown are arbitrary and not true OS which factor applied.

All critical dimensions to be verified on site before design construction takes place. All dimensions shown are in mm.

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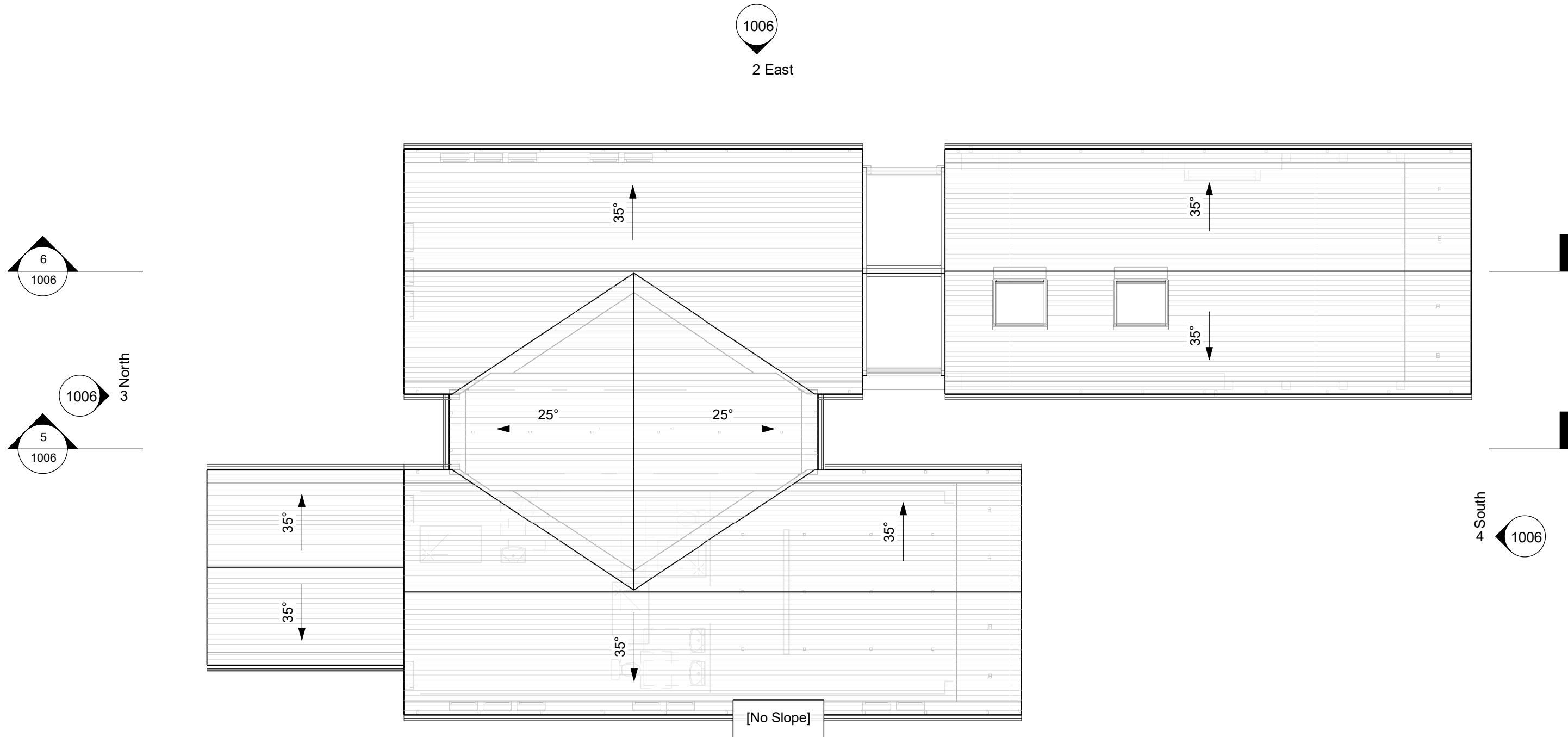
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fh	HEAD HEIGHT		
dh	FLOOR TO HEAD		
u/s	DOOR HEIGHT		DOORS
a/c	UNDERSIDE		
tp	TOPSIDE		
sd	SUSPENDED CEILING		WINDOW
cup'd	ROOFLIGHT		
elec	FIXED FLOOR		BUILDING LINE
	SUSPENDED FLOORBOARDS		
	CUPBOARD		BEAM
	FLOORBOARDS		RAFTER
	ELECTRICS		
	RADIATOR		
	HEATER		
	HOT WATER TANK		

Client	Fourway Projects	
Project	Longley Hey Farm Halifax Road, Little Borough OL15 0LB	
Title	Elevations 5-8	
Surveyed:	LS	Date: 20/03/2023
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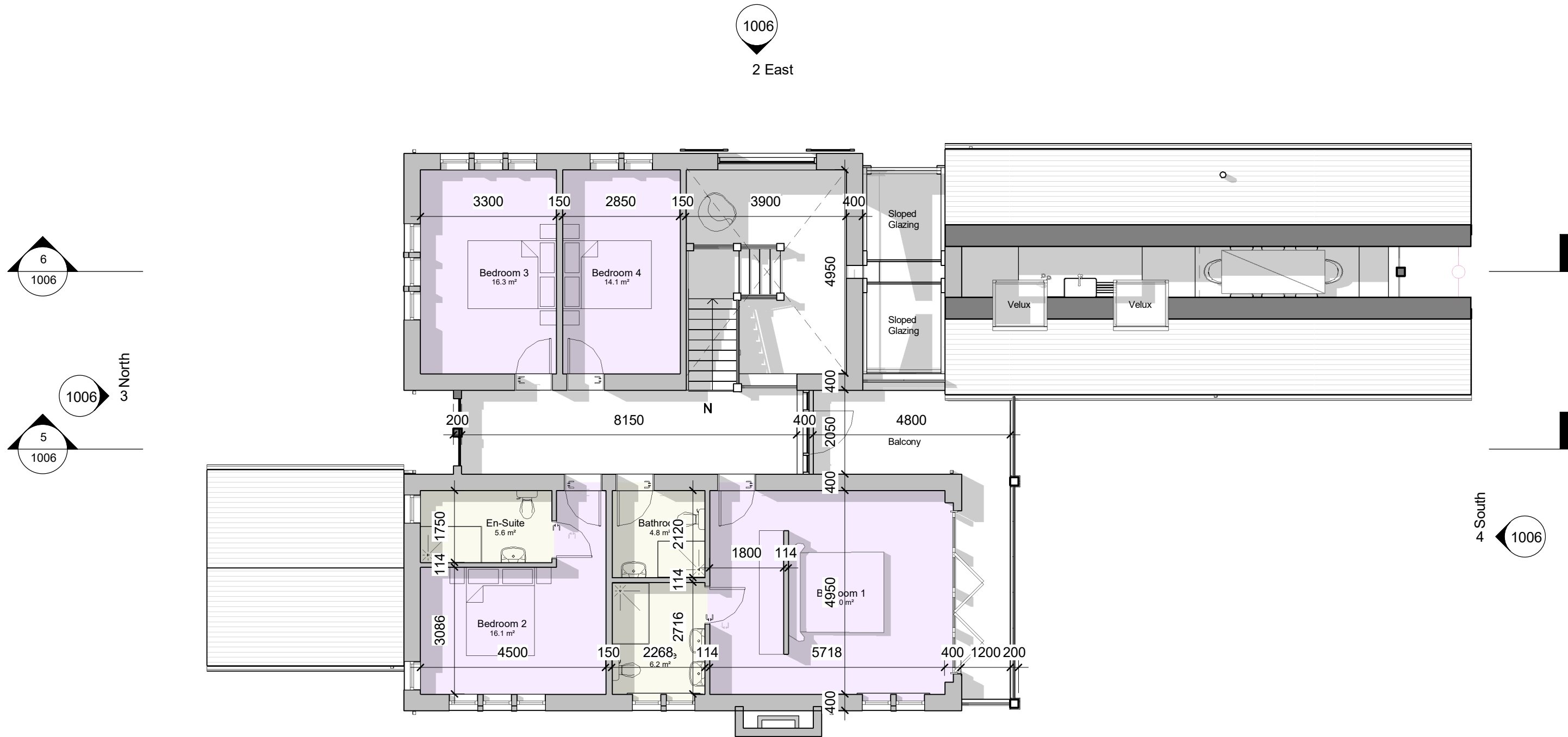
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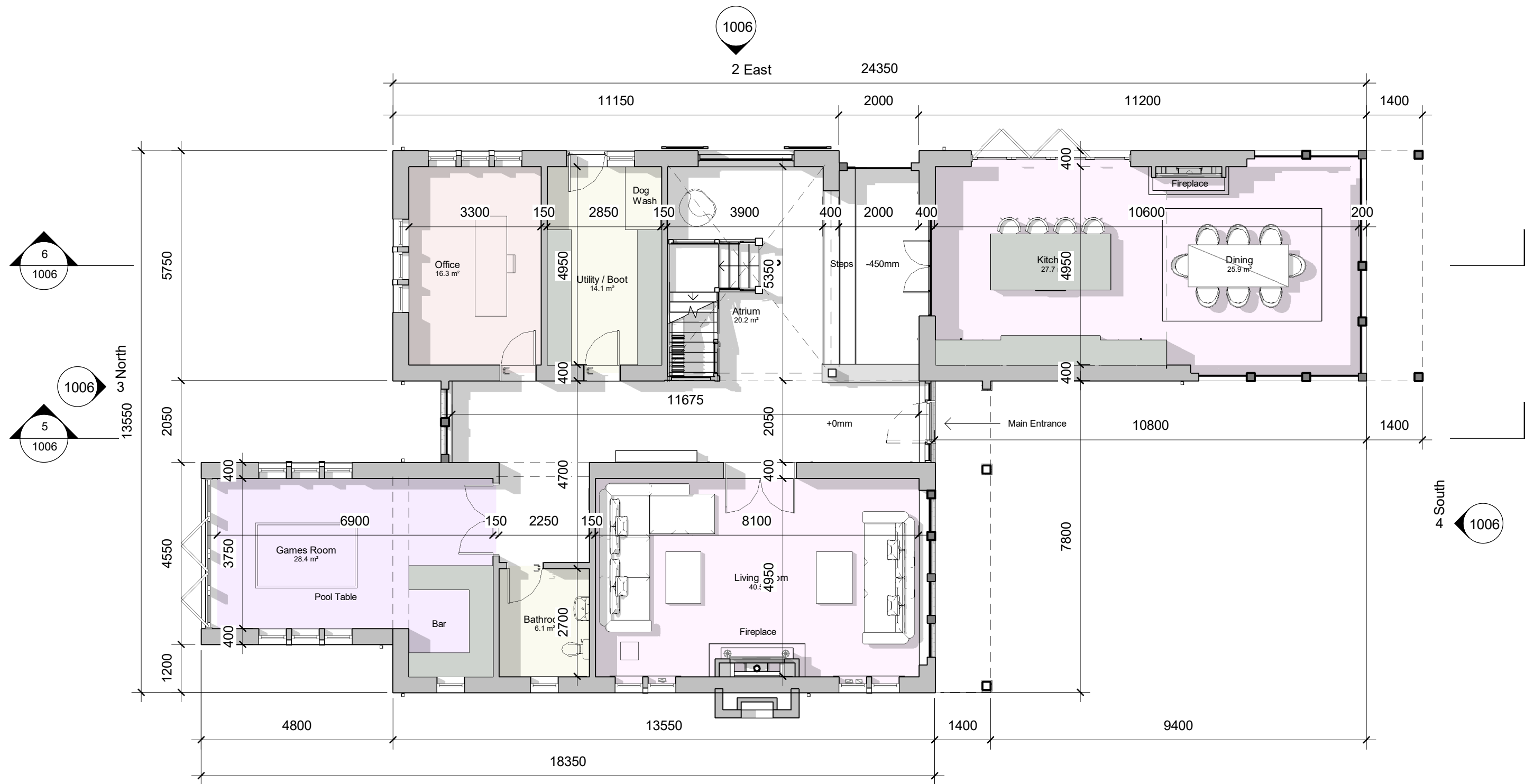
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■ CHECK ALL DIMENSIONS ON SITE
■ DRAWING TO BE READ IN CONJUNCTION WITH THE HEALTH AND SAFETY PLAN AND ALL RELEVANT RISK ASSESSMENTS



Roof Plan
1 : 100

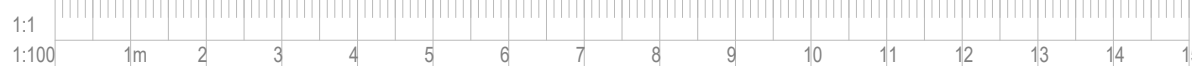


First Floor Plan
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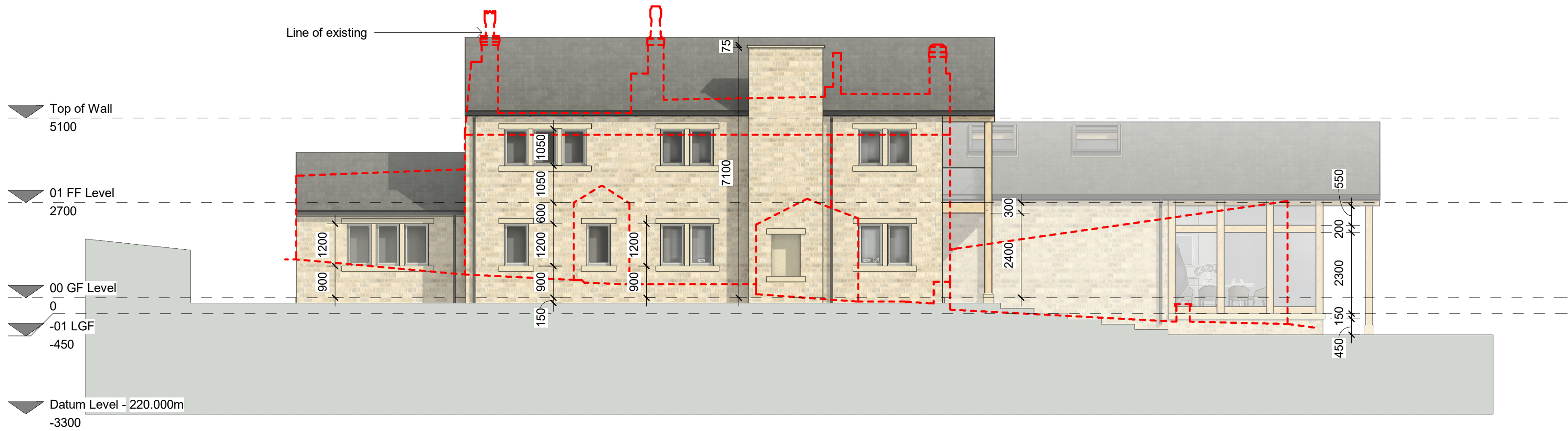


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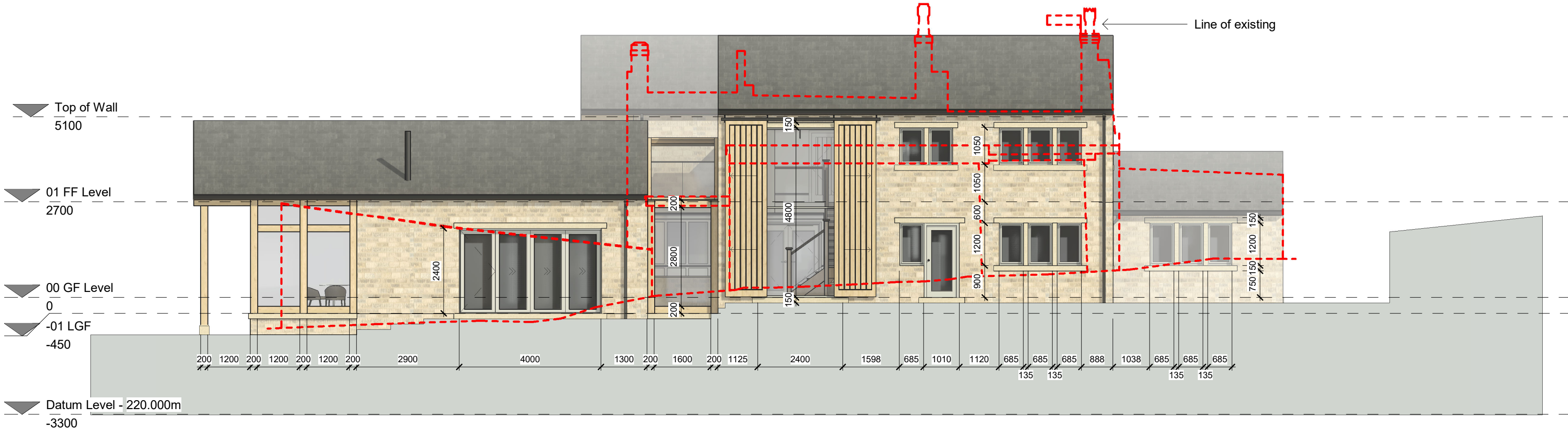
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PROJECT					
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CLIENT					
Mr & Mrs Slicker					
DRAWING					
Proposed Floor Plans					
SCALE	SHEET SIZE	DRAWN	CHECKED	DATE	
1 : 100	@ A1	AH	CA	21.07.23	
CREATIVE ARCHITECTURE					
A: 1 The Long Stables, Rochdale Rd, Denshaw, OL3 5UE					
T: 07788 200 255					
E: adam@creativearchitectureltd.co.uk					
W: www.creativearchitectureltd.co.uk					
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STATUS		Planning			



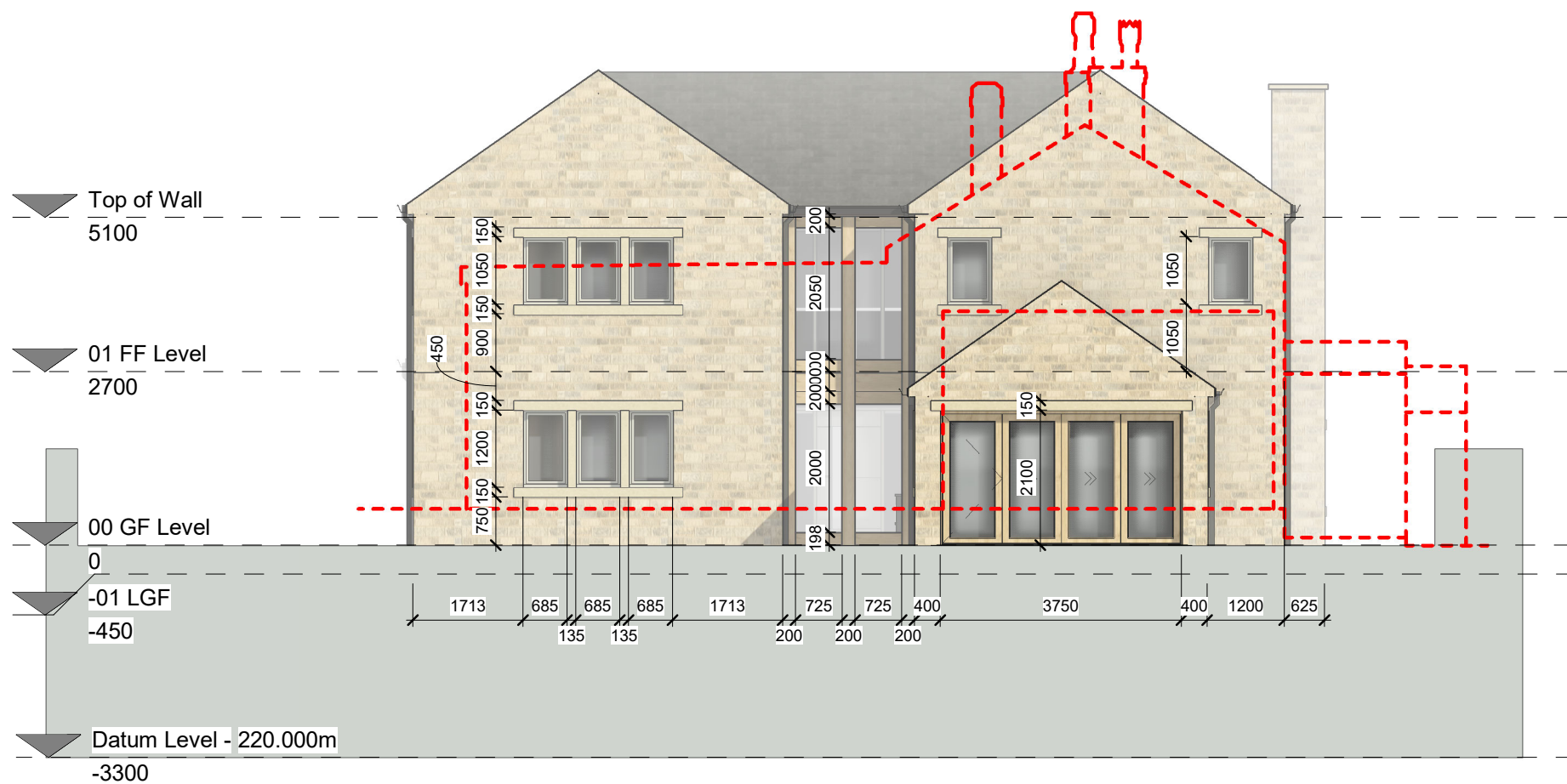
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■ CHECK ALL DIMENSIONS ON SITE
■ DRAWING TO BE READ IN CONJUNCTION WITH THE HEALTH AND SAFETY PLAN AND ALL RELEVANT RISK ASSESSMENTS



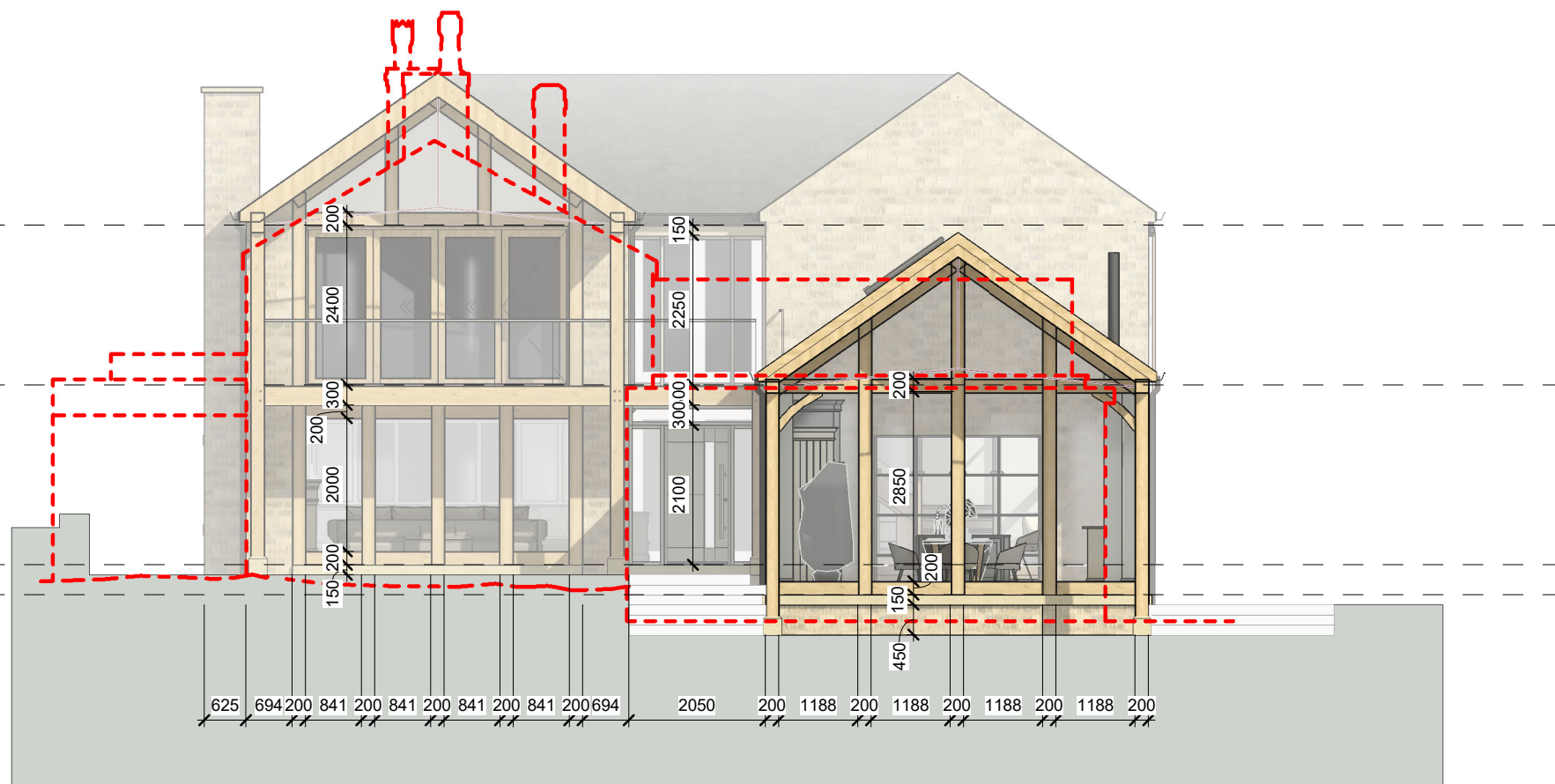
West
1 : 100



East
1 : 100



North
1 : 100



South
1 : 100



Section AA
1 : 100



Section BB
1 : 100

REV. | DATE | DRN. | CHKD.

PROJECT
Longley Hey Farm,
Littleborough

CLIENT
Mr & Mrs Slicker

DRAWING
Proposed Elevations and
Sections

SCALE | SHEET SIZE | DRAWN | CHECKED | DATE
1 : 100 | @ A1 | AH | CA | 21.07.23

CREATIVE ARCHITECTURE
A: 1 The Long Stables, Rochdale Rd, Denshaw, OL3 5UE
T: 07788 200 255
E: adam@creativearchitectureltd.co.uk
W: www.creativearchitectureltd.co.uk

JOB No
22-014

DRAWING No
1006

REVISION
STATUS
Planning



APPENDIX 3

LANDMARK SEARCH REPORTS

Thank you for ordering your environmental report from Groundsure. Before you read your search results as normal we wanted to explain some recent improvements that have been made to your report. We want to let you know what **ClimateIndex™** is and what it is designed to do, so we've provided some explanation below as to why we have added climate data and the **ClimateIndex™** assessment into our reports.

What have we updated in ClimateIndex™

£525 billion worth of property could be written off due to climate change in the long term*. So now more than ever, it's important for property owners to be aware of the potential impact of climate change to their property.

In March 2023, we've made some updates to our **ClimateIndex™** based on feedback we've been collecting since our launch last year. In this update we have:

- Removed the 1 year milestone
- Removed our variance score, and replaced it with a low/moderate/high rating for individual perils
- Added guidance based on the individual perils flagged as part of the overall score

In November 2022, Groundsure released a [microsite](#) to provide further help and information in addition to the detailed guidance you will find on **page 10**. The [new site](#) features Stephen Tromans' KC opinion on a firm's duty of care regarding climate change, as well as [commercial clauses](#) that can be inserted directly into your documentation to fulfil that duty of care.

The Law Society's Planning and Environment Committee is now in the final stages of reviewing the development of a climate risk practice note alongside existing environmental notes. The inclusion of **ClimateIndex™** in this report enables solicitors to become compliance-ready for these future changes now.

* XD Analysis Report 2021

About ClimateIndex™

In this report we've added our new **ClimateIndex™** to the cover page (**page 2**), which shows a rating of the future climate risk of the property, for 5 years and 30 years.

On the cover page, past and current perils are flagged on the left-hand side, and the forward view of **ClimateIndex™** can be found on the right.

On **page 10** you can find a more detailed review of these calculations, including a breakdown of the different physical and transition risks and their relative impact on the property, and detailed guidance and next steps tailored to the property's rating and the perils that make up that rating. The physical and transition risks used in the calculation are flooding (undefended), natural ground stability and coastal erosion.

Help and feedback

If you need to speak to one of our climate experts please contact climate@groundsure.com. We have a survey that you can fill out about the **ClimateIndex™** feature [here](#).

We are currently recruiting for our Groundsure Customer Advisory Board. Members of the board get a unique opportunity to input into Groundsure's product direction, as well as exclusive insight into our product roadmap and work in progress.

If you'd like to take part, please let us know at feedback@groundsure.com.

LONGLEY HEY FARM, HALIFAX ROAD, LITTLEBOROUGH, OL15 0LB

Key results

-  **Contaminated land liability**
Action Required page 12
-  **Flooding**
High page 12
-  **Coal mining (CON29M)**
Potential risk page 20
-  **Other mining (non-coal)**
Further action page 26

For information

-  **Radon** page 12
-  **Infrastructure** page 40
-  **Ground stability** page 33
-  **Planning constraints** page 58
-  **Planning applications** page 58

Groundsure IQ

Based on cost, effort or time associated with next steps to case progression

Avista Action Alert**Likely transaction delay** **ClimateIndex™**

ClimateIndex™ projects changes in physical and transition risks from:

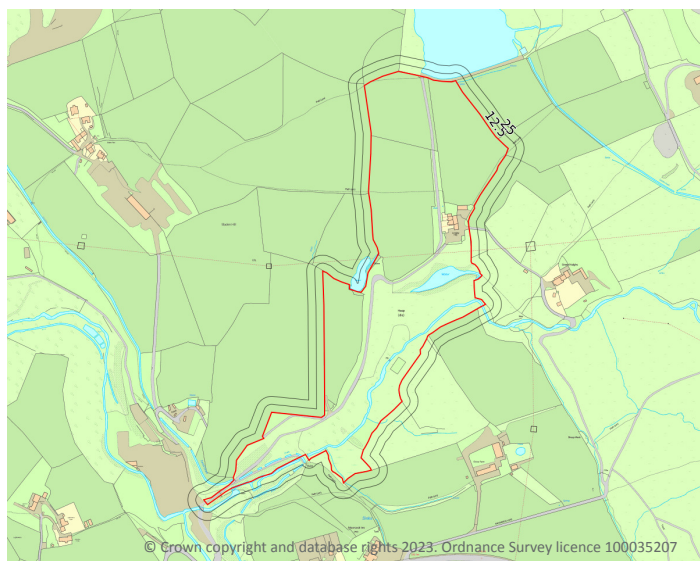
**Flooding****Ground stability****Coastal erosion****5 years****Severe risk predicted****30 years****Severe risk predicted**

Please refer to page 10 for details and guidance

To save you time when assessing the report, we only provide maps and data tables of features we have identified to be of note.

You can view a full list of the information we have searched on **page 71**.

Site Plan



Useful contacts

Rochdale Metropolitan Borough Council:
<http://www.rochdale.gov.uk/>
council@rochdale.gov.uk
01706 647 474

Environment Agency National Customer
Contact Centre (NCCC):
enquiries@environment-agency.gov.uk
03708 506 506

Avista Action Alert

5

Key results

These are findings that should be acknowledged and potentially addressed before completion of the transaction, and relate to identified risks that may have liability implications, affect insurance premiums, property values and/or a lender's willingness to lend.



Contaminated Land

The property is assessed to have potentially significant contamination risks due to the presence of the following potentially contaminative historical land uses:

1. Unspecified tanks on site between 1891 and 1949,
2. Unspecified mill on site between 1892 and 1979, identified as a fulling and dyeing mill in 1911.

Furthermore, one or a number of landfill sites were identified by this report. Landfill sites pose a risk to residential properties as some landfill sites can produce gas and leachate (a toxic liquid), which can move through soils, service conduits and some types of rock strata. Furthermore, if a landfill is located directly



beneath a property, structural and subsidence problems can become apparent if such issues were not taken into consideration during site design and construction.

These sites are detailed as follows:

3. A historical landfill has been identified on site, noted to have accepted inert and industrial waste between 1988 and 2004,
4. Refuse tip has been identified on site between 1961 and 1966. This has been identified from historical Ordnance Survey mapping,
5. A recently active landfill has been identified on site. The site is noted to have held an Environmental Permit for accepting Non- Biodegradable waste.

Next steps for consideration:

- if the property was built after 1999, you can find out if its NHBC Buildmark Certificate includes contaminated land cover by emailing a copy of the NHBC certificate to info@groundsure.com, quoting your report reference. If so, our experts will review your report free of charge and, if appropriate, revise to a pass free of charge
- investigate the insurance on offer for the property to ensure any implications on premiums are fully understood before completion
- if the property was built after 1985, consider contacting the planning department of the relevant Local Authority to clarify any conditions placed in the original planning consent documentation regarding investigation/remediation (cleaning) of contamination on the site. Evidence that these conditions were complied with will also need to be obtained. Our experts will review any such conditions identified and if appropriate revise to a pass free of charge
- consider contacting the Contaminated Land Officer within the Environmental Health Department of the relevant Local Authority to ask about the previous land use of the area (as specified above), written details confirming whether the land has been designated 'Contaminated Land' (as defined under Part 2A of EPA 1990), and if the Local Authority plans to take any further action. If the Local Authority are considering further action the level of priority assigned to this site and timescale of potential investigation will also be required.
- if speed is a priority, or other methods have failed, insurance might be the best option. However, at this stage it may be expensive, and it is not always possible to get suitable insurance. Numerous companies offer environmental insurance. If you are considering this option you can get in touch with Groundsure who will be happy to provide further details



Flooding

Flooding

An elevated level of flood risk has been identified at the property.



Next steps for consideration:

- check to see if the property is eligible for the Flood Re scheme, which enables many properties at risk of flooding to be insured at reasonable rates: <http://www.floodre.co.uk/homeowner/about-us/>
- investigate the insurance on offer for the property to ensure any implications on premiums are fully understood before completion
- the assessment in this report is based on the highest flood risk found within the site boundary. The detailed maps within the flood section clearly highlight which parts of the site are affected by flooding, allowing you to visualise whether flood risk affects the buildings or the associated land. If you would prefer an assessment that provides separate flood ratings for the main dwelling and the associated land, Groundsure can provide this for a fee of £35 plus VAT
- if the property has recently been constructed, the flood risk assessment contained within this report will not take into account any measures put in place by the developer to deal with flooding. You should seek further information from the developer on flood risk mitigation for the site
- investigate the various forms of flood resistance and resilience measures that will help protect your property in the event of a flood



Coal mining

We consider there to be a potential risk to the property from past coal mining activity. For further details refer to: Past underground coal mining, Shafts and adits (mine entries).

Shafts and adits (mine entries)

One or more mine entries are recorded to lie within the boundary of the property.

Next steps for consideration:

- Site investigation works may be undertaken to prove the location and condition of any shafts. Subsequent securing works may then be recommended. These works should be undertaken by a suitably qualified and experienced person, with appropriate licensing from the Coal Authority.
- No further remote searches would be of value. Please read on for details on Coal Authority responsibilities in the event of subsidence issues relating to this mine entry, and also refer to the Shafts and adits (mine entries) section on **page 23** for further details.

In the event of damage resulting from the subsidence or settlement of this mine entry, property owners can make a claim against the mine owner or responsible person (usually The Coal Authority) under the provisions of the Coal Mining Subsidence Act 1991. The mine owner or responsible person will treat the mine entry and arrange for repairs to the property to be carried out to the reasonable satisfaction of the owner.



Past underground coal mining

Potential risk due to past underground coal mining has been identified within the boundary of the property. Whilst no further searches are required, it should be noted that in the event of coal mining settlement or subsidence occurring the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

Next steps for consideration:

- A visual inspection of the property by a suitably qualified and experienced person may be of value in identifying any currently identifiable mining related settlement or subsidence effects.

Coal Mining Subsidence Act 1991

If any coal mining subsidence damage has occurred, as determined by the appropriate persons/bodies, the property will benefit from the protection of the Coal Mining Subsidence Acts of 1991 and as amended 1994.

This Act, however, does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester. In this instance it would be prudent to have the property visually inspected for signs of mining related settlement or subsidence by a suitably qualified and experienced person, who could be sought through <https://www.ricsfirms.com/>.

The Coal Authority provide a call out service on 01623 646 333 to take remedial action concerning the movement or collapse of any coal entries or coal mining surface hazards. Further details can be found on www.groundstability.com.

CON29M reports are a requirement for conveyancing and are recommended throughout the official Coal Mining Reporting Area. This is the area within which it is deemed prudent to clarify the risk presented by coal mining, using the questions laid out in the Law Society's CON29M form. The need for a CON29M does not always translate to an identification of risk, and reports will often be assessed as free from risk or 'Passed' even though they are within the official Coal Mining Reporting Area.

Development risk

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

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

Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.





Non-coal mining

We consider there to be a non-coal mining-related risk to the property. Please refer to the assessment of mining experts Groundsure below for further details.

Mining types: Stone, Unspecified

Past mining activity

A former quarry is recorded to lie within the property. We have not confirmed the full lateral and vertical extent of the quarry and the nature of in-fill. In-fill or remnant quarry faces may be a potential settlement or subsidence risk.

Current and future mining

According to our archive the property does not presently lie within an area with planning permission for non-coal mineral development. We are not aware of any planned future mining activity.

Next steps for consideration:

- Groundsure recommends that further action is carried out. This may take the form of a site walkover carried out by a suitably qualified and experienced person.
- This should be carried out by a suitably qualified and experienced person, who could be sought through <https://www.ricsfirms.com>.

For information

These are findings to be aware of that do not necessarily require immediate action.



Radon

The property is in an area where elevated radon levels are expected to be found in 5-10% of properties.



Next steps for consideration:

- if the property is a new build, you can check compliance on radon protection with the developer
- if you are buying a currently occupied property, ask the present owner whether radon levels have been measured and, if so, whether the results were above the radon Action Level. If they were, ask what remedial measures were installed, were radon levels re-tested and did the re-testing confirm the measures have been effective
- if testing has not been carried out, it would be a sensible precaution to arrange for the property to be tested with radon detectors. If initial short-term radon screening tests are inconclusive, or the purchaser would prefer to carry out a full three-month test, it may be possible to arrange a 'radon bond'
- high levels of radon can be reduced through carrying out remedial works to the property
- basic radon protection measures will be required to be installed in the event that any new buildings or extensions are added to the property
- all basement and cellar areas are considered at additional risk from high radon levels. If an underground room such as a cellar or basement makes up part of the living or working accommodation, the property should be tested regardless of radon Affected Area status
- see <http://www.radonassociation.co.uk/guide-to-radon/information-for-house-buyers-and-sellers/> for further information



Ground stability

The property is indicated to lie within an area that could be affected by infilled land.

The property is indicated to lie within an area that could be affected by natural instability.

Next steps for consideration:

- if a survey has been undertaken at the property that considers ground instability and no issues were found, no further action is required
- however, based on the findings of this report, the purchaser should be encouraged to consider potential instability in any future development or alteration of the ground including planting and removing trees, and regardless of the survey outcome
- if no survey has yet been undertaken, we recommend one is carried out by a suitably qualified and experienced person
- if ground instability issues have been or are subsequently identified in a survey we recommend following any advice given in the survey findings
- if the property is in an area at risk of shrink-swell subsidence and has clay drainage pipes, consideration should be given to replacing these with a modern equivalent
- if a residential property, check whether it benefits from an NHBC guarantee or other builder warranty that often covers structural issues. Please note the presence of an NHBC guarantee wouldn't change the risk assessment of this report.





Energy

Wind

Existing or proposed wind installations have been identified within 10km.

Next steps for consideration:

- use the details given in the report to find out more about the potential impacts on the property
- contact the operating company and the relevant Local Authority for further information
- visit the area in order to more accurately assess the impact this wind development would have on the property

Electricity transmission lines

Electricity transmission lines have been identified within 50m.

Next steps for consideration:

- ensure the presence of overhead power lines and pylons near the property is considered before the transaction completes
- further information on electromagnetic fields from power lines can be found at <http://www.emfs.info>



Planning constraints

Environmental designations

The property lies within 50m of an environmentally protected site or area.

Next steps for consideration:

- seek further guidance from the local planning department on any likely restrictions if considering any property development



ClimateIndex™ physical and transition risks - Breakdown



Our ClimateIndex™ provides a climate score for your property, and projects changes in physical and transition risks from flooding (undefended), natural ground instability and coastal erosion. Climate change could have a significant medium to longer term impact on your property, which may be increasingly considered by your lender if you are arranging a mortgage. ClimateIndex™ provides ratings that indicate potential **physical risks** (loss and damage to property) and how these give rise to **transition risks** such as having a material impact on the ability to insure or mortgage the property in the medium to long term. In turn, this could affect the future resale value of the property.

You can see how these relate to the individual calculated risks in the breakdown below. The letter ratings should be used in conjunction with the change variance over the two time periods. Where an increase has been recorded we recommend following the additional advice below.

5 years



30 years



ClimateIndex™

Severe risk predicted

Severe risk predicted

These ratings provide an overall illustration of the individual peril breakdowns below. For example, you may have three individual perils that have been flagged as presenting a moderate or high risk, and collectively they could generate a C rating due to the combined severity of risks present on the property site.

Surface water flooding

High

High

River flooding - undefended

High

High

Coastal flooding - undefended

Negligible

Negligible

Ground instability

Negligible

Negligible

Coastal erosion - defended

Negligible

Negligible

Coastal erosion - undefended

Negligible

Negligible

Coastal erosion - complex cliffs

Negligible

Negligible



In 30 years time your property has a ClimateIndex™ rating of F: There are physical risks that could affect the property either now or in the future. The availability of insurance or a mortgage in the coming years could be significantly affected. In turn, this may impact upon the property's resale value. Projections may show that the property could also become uninhabitable in a worse case scenario.

Climate change is likely to increase the risk of flooding on this property over time. To best protect the property, and your investment, against this risk we recommend the following:

- Investigate the insurance on offer for the property to ensure any implications on premiums are fully understood before completion, and take into consideration that premiums could be impacted in the future if the risk increases due to climate change;
- Check to see if the property is eligible for the [Flood Re](#) scheme. Please note this scheme is due to end in 2039 and owners may be required to invest in improving flood resiliency of the property in order to obtain affordable insurance. Your insurance provider may be able to provide further information;
- Sign up for [flood warnings](#) provided by the government;
- Look into the various forms of flood [resistance](#) and [resilience](#) measures that will help protect your property in the event of a flood.

See **page 65** for further details.

Environmental summary



Environmental searches are designed to ensure that significant hazards and risks associated with this property are identified and considered alongside the investment in or purchase of a property.

Please see the Avista Action Alert on **page 3** for further advice.



Contaminated Land

Our Contaminated Land searches have found some potentially significant contamination risks. These could include risks relating to industrial processes, petrol stations, or landfill.

Please see **page 13** for details of the identified issues and **page 71** for our assessment methodology.

Contaminated Land Liability	Action Required
Past Land Use	Identified
Waste and Landfill	Identified
Current and Recent Industrial	Passed



Flooding

The property and area within the site outline is at risk from one or more kinds of flooding. Property's overall risk assessment for past flooding and river, coastal, surface water and groundwater flooding is high.

Please see **page 18** for details of the identified issues.

River and Coastal Flooding	Very Low
Groundwater Flooding	Low
Surface Water Flooding	Highly Significant
Past Flooding	Not identified
Flood Storage Areas	Not identified

FloodScore™ insurance rating

Very High

The rating is compiled by Ambiental, a leading flood risk analysis company. Please see **page 71**



Radon

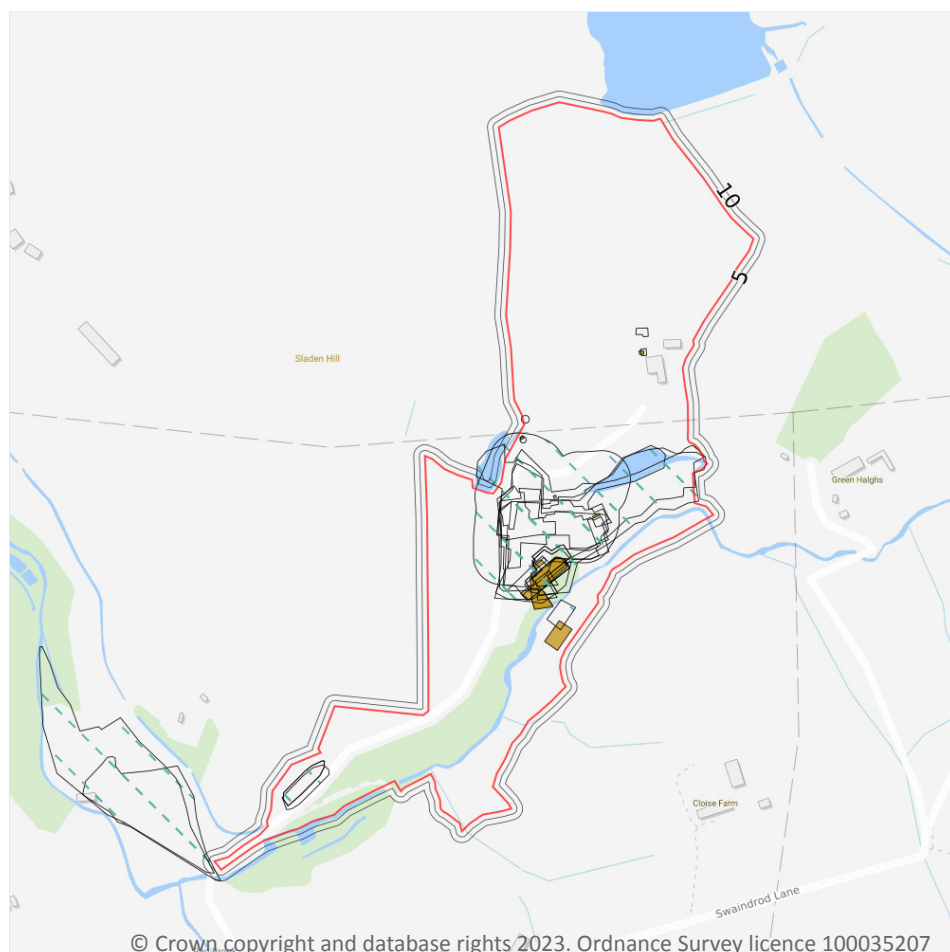
The property is in a radon affected area. This could mean that inhabitants are at risk from the harmful effects of radon. The percentage of homes estimated to be affected by radon in your local area is between 5% and 10%.

Please see **page 19** for details of the identified issues.

In a radon affected area



Contaminated land / Past land use



- Site Outline
- Search buffers in metres (m)
- Former industrial land uses
- Former tanks

Former industrial land use (1:10,560 and 1:10,000 scale)

These historical land uses have been identified from 1:10,560 and 1:10,000 scale Ordnance Survey maps dated from the mid to late 1800s to recent times. They have the potential to have caused ground contamination. Please see the Environmental Summary to find out how these could impact the site.

Please see the Avista Action Alert on **page 3** for further advice.

Distance	Direction	Use	Date
0	on site	Fulling Mill	1851
0	on site	Unspecified Mill	1892
0	on site	Filter Tanks	1909
0	on site	Unspecified Mill	1909
0	on site	Filter Tanks	1911



Distance	Direction	Use	Date
0	on site	Refuse Heap	1911
0	on site	Fulling and Dyeing Mill	1911
0	on site	Filter Tanks	1911
0	on site	Fulling and Dyeing Mill	1911
0	on site	Refuse Heap	1911
0	on site	Filter Tanks	1911
0	on site	Refuse Heap	1911
0	on site	Filter Tanks	1931
0	on site	Unspecified Tank	1931
0	on site	Unspecified Tank	1931
0	on site	Unspecified Mill	1931
0	on site	Unspecified Tank	1949
0	on site	Unspecified Mill	1949
0	on site	Unspecified Tank	1949
0	on site	Filter Tanks	1949
0	on site	Filter Tanks	1949
0	on site	Unspecified Mill	1979
3 m	SW	Unspecified Mill	1892
5 m	SW	Woollen Mill	1911

This data is sourced from Ordnance Survey/Groundsure.

Former tanks

These tanks have been identified from high detailed historical Ordnance Survey maps dating from the mid-late 1800s to recent times. Tanks like this can sometimes store harmful waste, chemicals or oil, as well as more benign substances. Liquids stored in these tanks can leak when the tanks rust or become damaged over time, which could have caused contamination at this site.

Please see the Avista Action Alert on **page 3** for further advice.

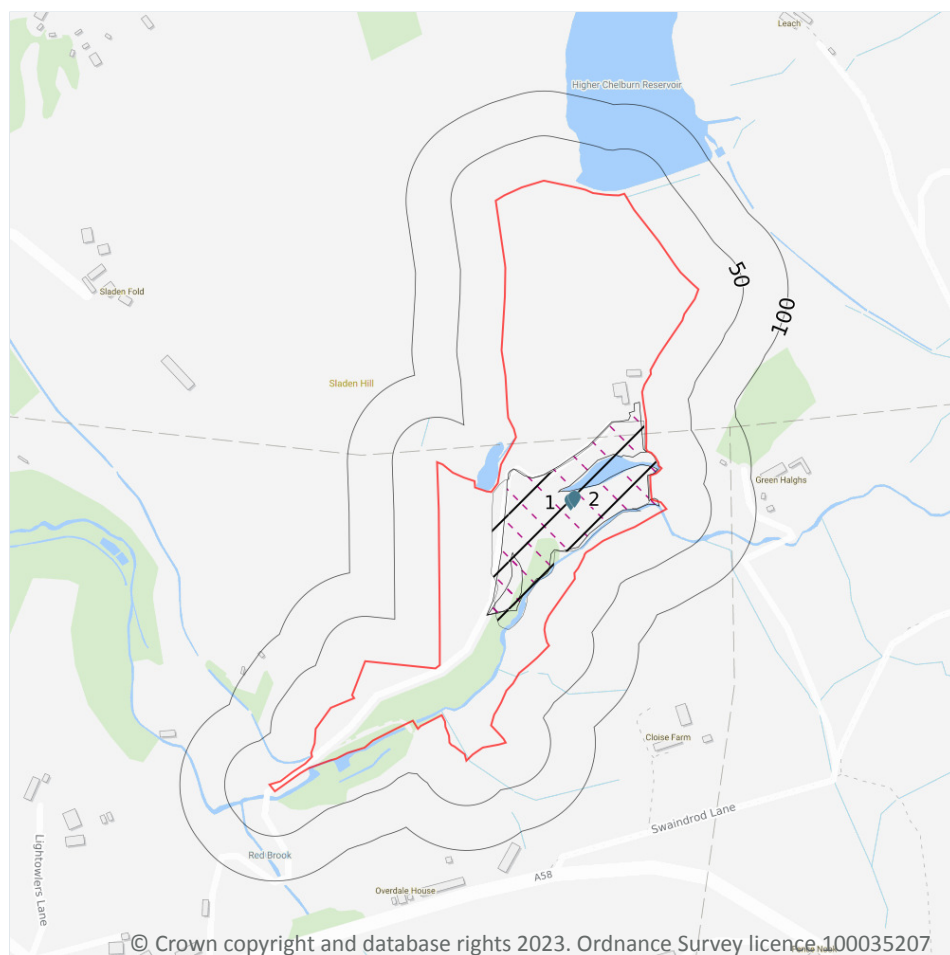
Distance	Direction	Use	Date
0	on site	Unspecified Tank	1891
0	on site	Unspecified Tank	1891



Distance	Direction	Use	Date
0	on site	Filter Tanks	1910
0	on site	Tanks	1930
0	on site	Filter Tanks	1930
0	on site	Filter Tank	1930
0	on site	Unspecified Tank	1930
0	on site	Unspecified Tank	1930

This data is sourced from Ordnance Survey/Groundsure.

Contaminated land / Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Former Landfill (EA records)
- Landfill sites (Groundsure records)
- Active or recent licensed waste sites

Former landfill (from Local Authority and historical mapping records)

These are records of former areas of landfill. These areas of land may have been redeveloped for other uses since the landfill closed. Depending on the nature of the waste these landfill sites accepted, they may still pose a risk of contamination (including from landfill gases). Former landfill sites can also cause issues with ground instability.

Please see the Avista Action Alert on **page 3** for further advice.

Distance	Direction	Site Address	Source	Data Type
0	on site	Refuse Tip	1996 mapping	Polygon
0	on site	Refuse Tip	1961 mapping	Polygon

This data is sourced from Ordnance Survey/Groundsure/Local Authorities.

Former landfill (from Environment Agency Records)

These are records of former areas of landfill. These areas of land may have been redeveloped for other uses since the landfill closed. Depending on the nature of the waste these landfill sites accepted, they may still pose a risk of contamination (including from landfill gases). Former landfill sites can also cause issues with ground instability.

Please see the Avista Action Alert on **page 3** for further advice.

Distance	Direction	Details		
0	on site	Site Address: Wellfield Mill Site, Longley Hey Farm, Halifax Road, Littleborough, Rochdale, Greater Manchester Waste Licence: Yes Site Reference: 4200/9241 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: NR1/L/PHU001	Licence Issue: 01/06/1988 Licence Surrendered: 20/09/2004 Licence Holder Address: Longley Hey Farm, Littleborough	First Input: - Last Input: - Control Measures: -

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

Active or recent licensed waste sites

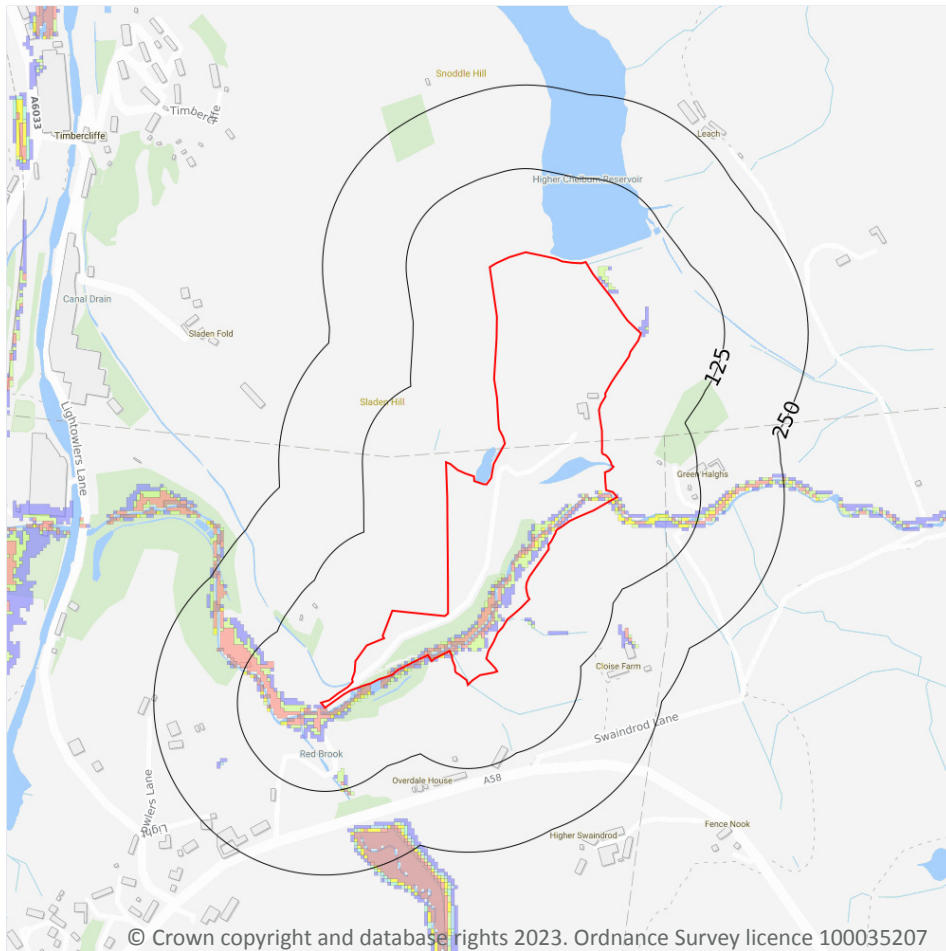
These are records of waste sites that are operated under licence. Waste operations require an environmental permit (from Environment Agency or Natural Resources Wales) if the business uses, recycles, treats, stores or disposes of waste or mining waste. The permit can be for activities at one site or for a mobile plant used at many sites. Depending on the nature of waste being accepted by these facilities, there could be risk of ground contamination. Some waste sites can also cause nuisance problems due to noise, dust and odour.

Please see the Avista Action Alert on **page 3** for further advice.

ID	Distance	Direction	Address	Type	Size	Status
1	0	on site	Halifax Road, Littleborough, Lancashire, OL15 0LB	Landfill taking Non-Biodegradable Wastes	Small	Surrendered
2	0	on site	Halifax Road, Littleborough, Lancashire, OL15 0LB	Landfill taking Non-Biodegradable Wastes	Large	Surrendered

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

Flooding / Surface water flood risk



— Site Outline
Search buffers in metres (m)

Surface water flood risk

- Highly significant
- Significant
- High
- Moderate to high
- Moderate
- Low to moderate
- Low

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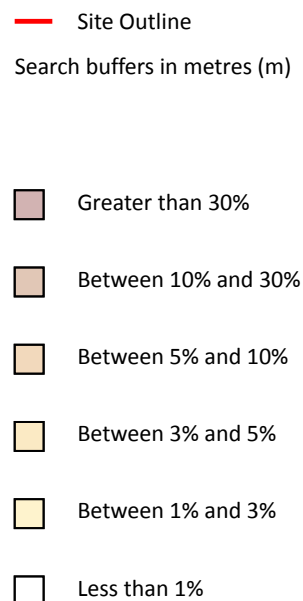
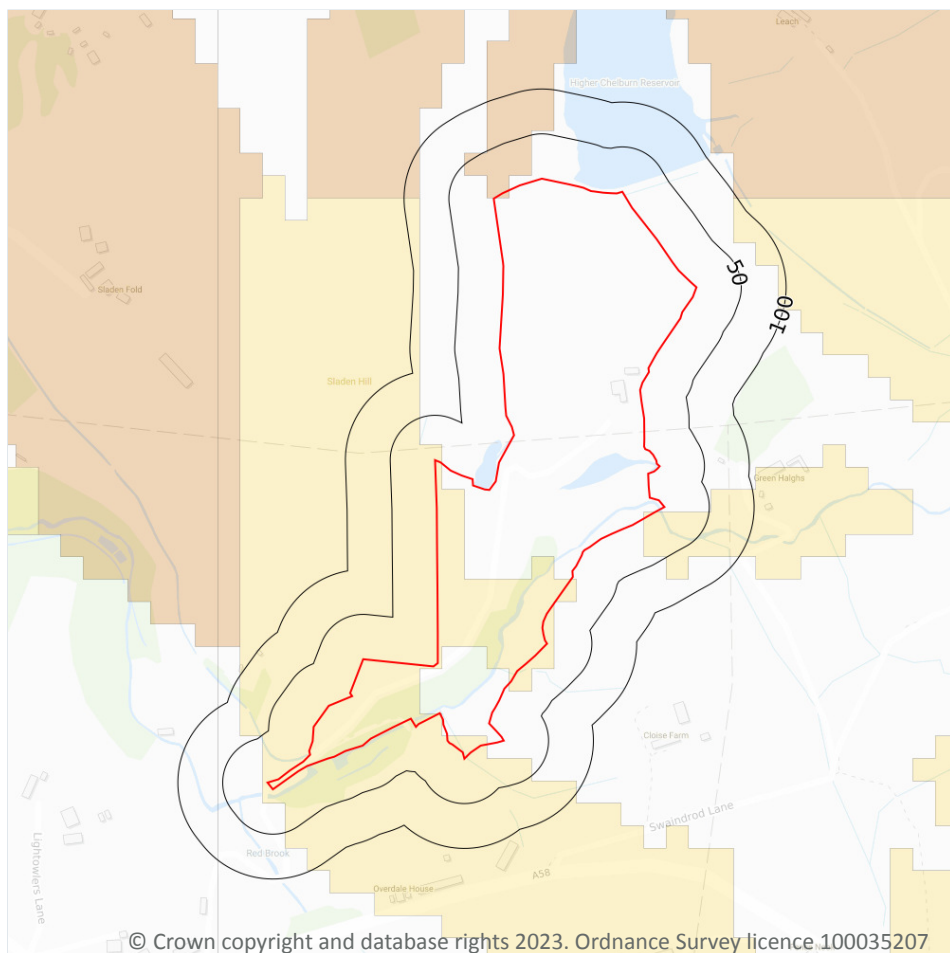
Surface water flood risk

The property is likely to be prone to flooding following extreme rainfall, which may have an impact on insuring the property against flood risk. However, if built before 2009, it may be eligible for insurance assistance from the Flood Re scheme: <http://www.floodre.co.uk/>

The area in which the property is located has been assessed to be at a Highly Significant risk of surface water flooding. This area is considered to have a 1 in 30 probability of surface water flooding due to rainfall in a given year to a depth of greater than 1m. However, as is the case with probability statistics and predictions, this information should be used as a guideline only. The area may flood several years in a row, or not at all for many years. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

These risk calculations are based on Ambiantal Risk Analytics maps.

Radon



The property is in a radon affected area, meaning there is an increased risk that properties will contain elevated levels of radon.

In order to determine if there is a problem at your property, a radon measurement in the building must be taken. Access to a testing service and further information on radon is available from UK Health Security Agency (UKHSA) or www.ukradon.org.

Radon is a colourless, odourless radioactive gas present in all areas of the United Kingdom, usually at levels that pose a negligible risk. However, the property is situated in an area where levels of radon can be much higher and pose a health risk. High levels of radon can cause lung cancer, particularly for smokers and ex-smokers. The higher the level and the longer the period of exposure, the greater the risk.

Please see the Avista Action Alert on **page 3** for further advice.

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



Coal mining (CON29M) summary



Coal mining (CON29M) summary

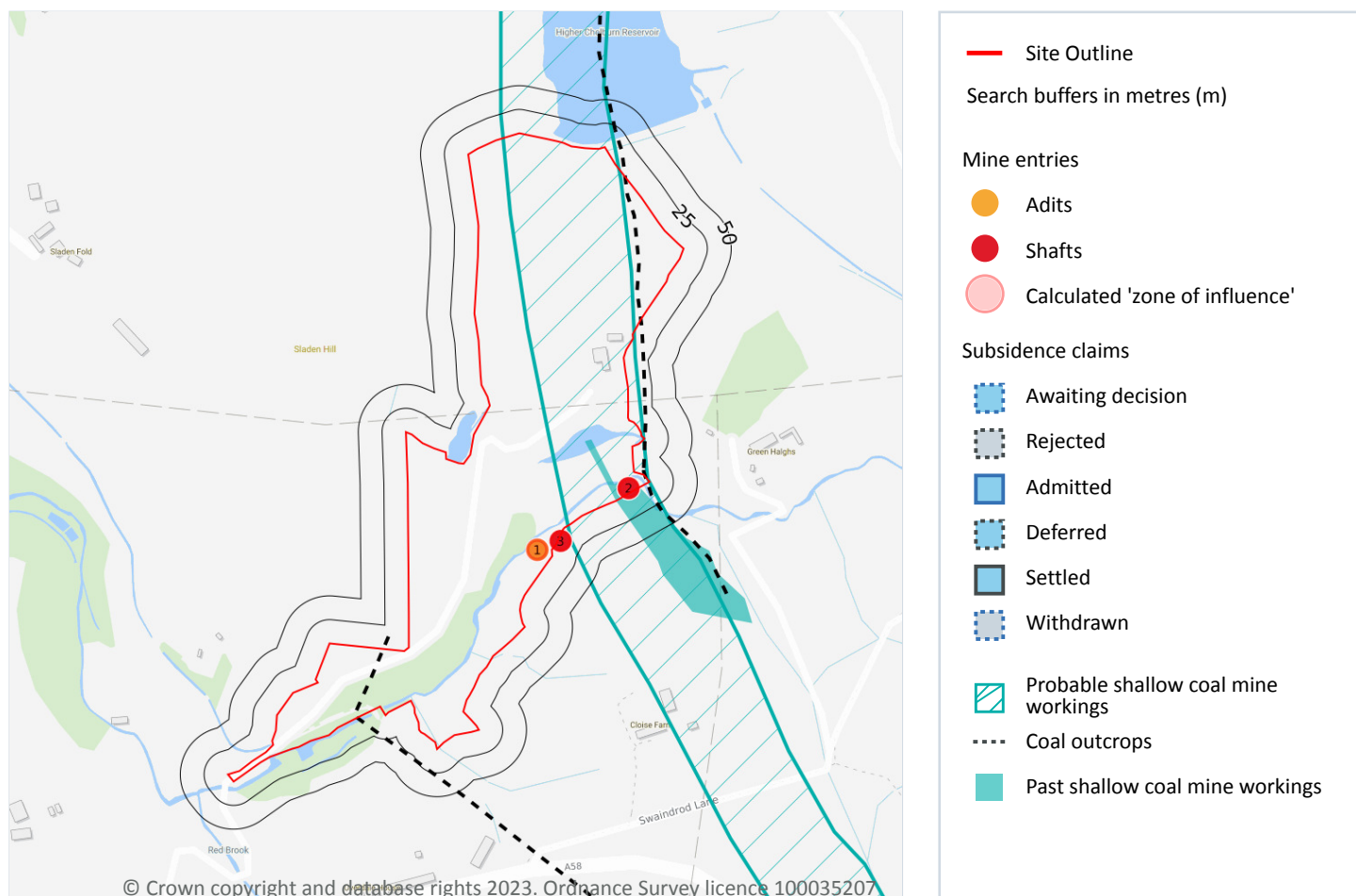
Features of concern have been identified relating to past, present or future coal mining. The risk posed by coal mining has been assessed using official Coal Authority data and in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation of mine entries has also been carried out where necessary.

See **page 21** for further details and **page 5** for recommended next steps.

1. Past underground	Identified
2. Present underground	Not identified
3. Future underground	Not identified
4. Shafts and adits	Identified
5. Coal mining geology	Not identified
6. Past opencast	Not identified
7. Present opencast	Not identified
8. Future opencast	Not identified
9. Subsidence claims	Not identified
10. Mine gas emissions	Not identified
11. Emergency Call Out	Not identified



Coal mining (CON29M)



Coal mining (CON29M)

The map above shows relevant, mappable hazards identified that could constitute a risk to the property. It does not necessarily show all features or potential issues identified in this report. Further details of any features shown indicating the location of Mine Entries or Subsidence Claims can be found in the relevant sections of this report (4 and 9 respectively).

Responses to the Law Society CON29M Coal Mining search enquiries are produced using official Coal Authority data and the expert interpretation of Groundsure. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation and calculation of mine entry zones of influence has also been carried out by Groundsure using Coal Authority and British Geological Survey data.

Please read this report carefully, and in particular any sections flagged with an amber 'i'.



The Law Society

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1. Past underground coal mining



Is the property within the zone of likely physical influence on the surface of past underground coal workings?

- The property lies within the potential zone of influence of recorded workings in 1 seam(s) of coal. The most recent underground working in the area was in 1880. Workings lie between a shallow depth and 45 metres below surface.
- The property is indicated to lie in an area where coal deposits have been worked at shallow depth in the past but for which no plan exists.
- A coal outcrop is recorded to pass through the property boundary. There is a possibility of unrecorded mining features associated with this coal outcrop within the property boundary.

2. Present underground coal mining



Is the property within the zone of likely physical influence on the surface of present underground coal workings?

- The property does not lie within the boundary of an underground site from which coal is being removed by underground methods.

3. Future underground coal mining



(a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?

- The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods.

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?



- The property does not lie within the boundary of an underground site for which a licence to remove coal by underground methods has been granted.

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?

- The property does not lie within the zone of likely physical influence on the surface of planned future underground workings.

(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?

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

4. Shafts and adits (mine entries)



Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

- Coal mine entries are recorded to lie within 20 metres of the property.

ID	Distance	Details	Dimensions	Treatment
1	0	Type: Adit Mineral: Coal Reference: 395417-003 Name: LANCS Owner: CA	Assumed diameter (m): 3 Confirmed diameter (m): - Depth (m): - Accuracy (m): 8 Source: Ab plan 1242	Details: - Date: -
2	0	Type: Shaft Mineral: Coal Reference: 395417-001 Name: LANCS Owner: CA	Assumed diameter (m): 2.5 Confirmed diameter (m): - Depth (m): 2.7 Accuracy (m): 8 Source: Ab plan 1242	Details: - Date: -
3	3 m	Type: Shaft Mineral: Coal Reference: 395417-002 Name: LANCS Owner: CA	Assumed diameter (m): 2.5 Confirmed diameter (m): - Depth (m): - Accuracy (m): 8 Source: Ab plan 1242	Details: - Date: -

5. Coal mining geology



Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?



- No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.

6. Past opencast coal mining



Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

- The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.

7. Present opencast coal mining



Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

- The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining



(a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?

- The property does not lie within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods.

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

- The property does not lie within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence claims



(a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 31st October 1994?

- We have no evidence of a damage notice or subsidence claim for the property or within 50m of the property since 31st October 1994.

(b) In respect of any such notice or claim has the responsible person given notice agreeing that there is a remedial obligation or otherwise accepted that a claim would lie against them?



- Not applicable.

(c) In respect of any such notice or acceptance has the remedial obligation or claim been discharged?

- Not applicable.

(d) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?

- There are no current Stop Notices delaying the start of remedial works or repairs to the property.

(e) Has any request been made under Section 33 of the 1991 Act to execute preventive works before coal is worked, which would prevent the occurrence or reduce the extent of subsidence damage to any buildings, structures or works and, if yes, has any person withheld consent or failed to comply with any such request to execute preventive works?

- There is no record of a request that has been made to carry out preventive works before coal is worked under Section 33 of the Coal Mining Subsidence Act 1991.

NB. Records of damage notices or subsidence claims before 31st October 1994 are excluded from The Coal Authority data from which this search is compiled.

10. Mine gas emissions



Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

- No mine gas emissions are recorded within the boundary of the property.

11. Emergency Surface Hazard Call Out incidents



Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

- No Emergency Surface Hazard Call Out procedures are recorded against the property.

Non-coal mining summary



Mining records

Records relating to recorded mining areas or activity have been identified in the vicinity of the site.

See **page 27** for details. The Non-coal mining assessment on **page 7** will cover any next steps relating to these features, if applicable.

Mining features	Identified
Mine plans	Not identified
Researched mining	Not identified
BritPits	Identified
Mineral Planning Areas	Not identified
Non-coal mining areas	Not identified
Mining cavities	Not identified
Coal mining areas	Identified
Brine areas	Not identified
Gypsum areas	Not identified
Tin mining areas	Not identified



Historical features

Historical mapping has identified mining features in the vicinity of the site.

See **page 30** for details. The Non-coal mining assessment on **page 7** will cover any next steps relating to these features, if applicable.

Non-coal mining	Identified
Coal and associated mining	Not identified
Industry associated with mining	Identified



Geological features

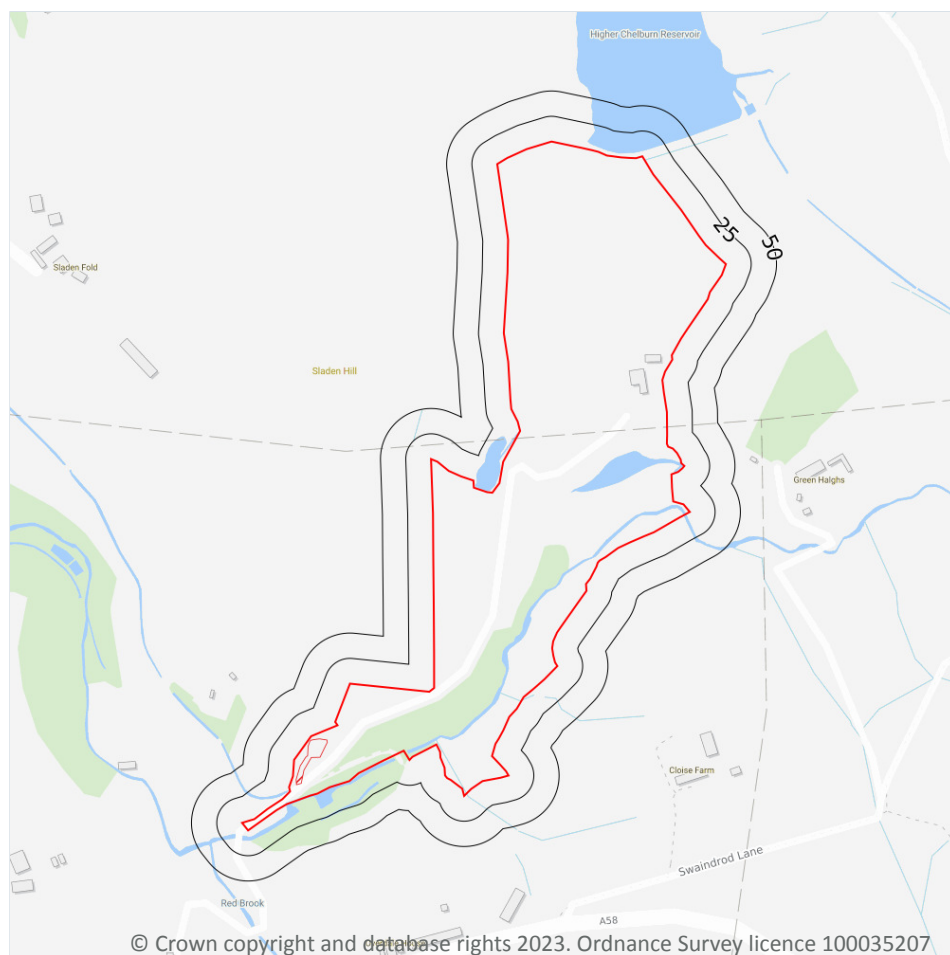
There are geological features that could indicate the presence of mining operations in the area or other sources of ground instability.

See **page 32** for details. The Non-coal mining assessment on **page 7** will cover any next steps relating to these features, if applicable.

Artificial and made ground	Identified
Mineral veins	Not identified



Non-coal mining / Mining features



- Site Outline
- Search buffers in metres (m)
- Shaft
- Portal
- Surface Outcrop
- Undefined Elevation
- Surface working
- Tin streaming
- Quarry
- Aerial Photographic Anomaly
- Suspect enclosure
- Wasteland
- Pond
- Cutting
- Adit
- Tunnel
- Underground mining extent
- Reported subsidence
- Dump (mine waste tip)
- Secured feature
- Licence boundary

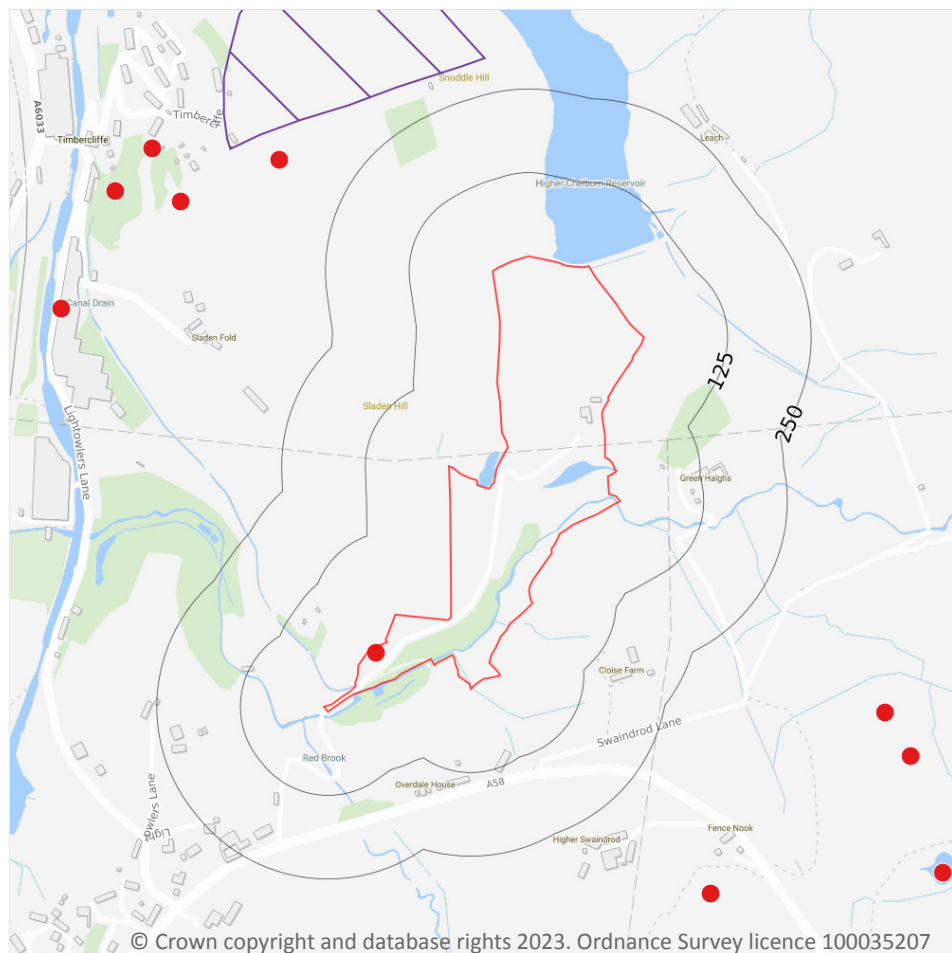
Surface workings

Surface workings identified from OS, BGS Geological mapping, Lidar data, and mine plans sourced from the BGS and various collections and sources.

Location	Feature	Mineral	Mining type
On site	Quarry	Sandstone	Stone

This data is sourced from Groundsure

Non-coal mining / Mining records



- Site Outline
- Search buffers in metres (m)
- BritPits
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

BritPits

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

Location	Details	Description
On site	Name: Hollow Field Quarry Address: Calderbrook, LITTLEBOROUGH, Lancashire Commodity: Sandstone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

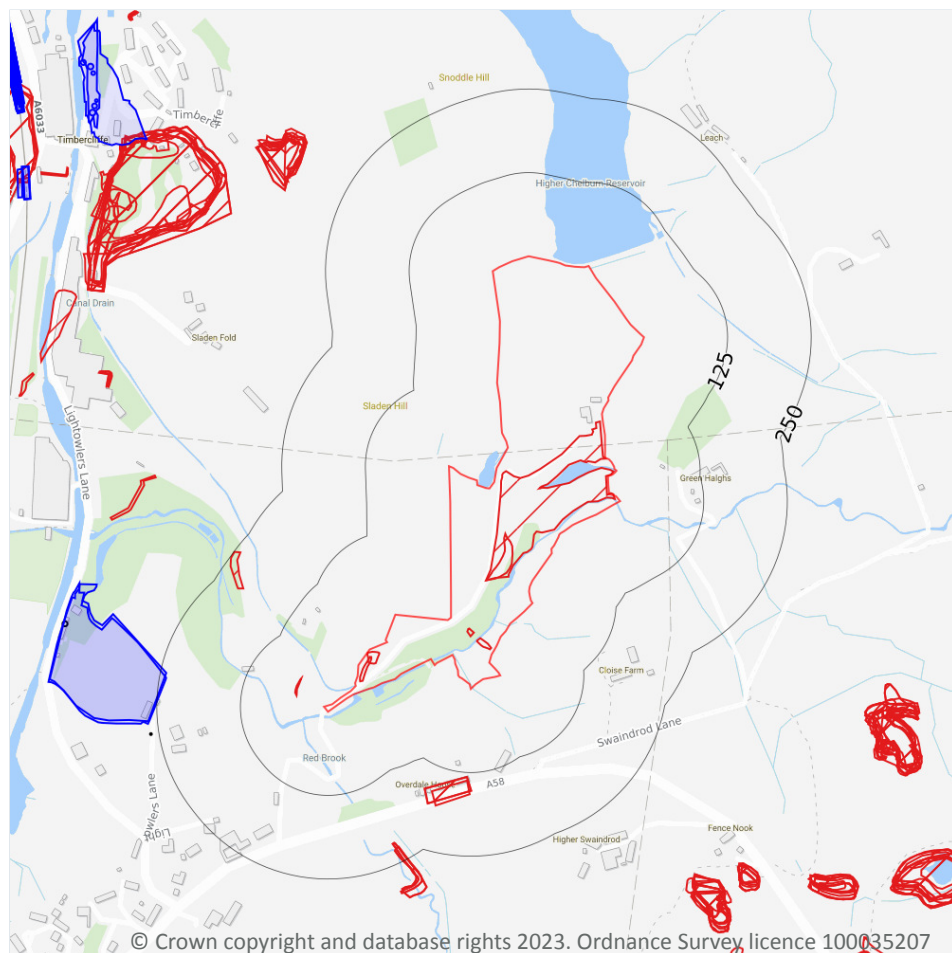
This data is sourced from the British Geological Survey.

Coal mining areas

The property is within a generalised area that could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

Non-coal mining / Historical features



- Site Outline
- Search buffers in metres (m)
- Non-coal mining
- Coal and associated mining
- Industry associated with mining

Non-coal mining

Historical land uses identified from Ordnance Survey mapping that involved mining for substances other than coal.

Location	Land use	Date
On site	Refuse Tip	1961
On site	Unspecified Pit	1996
On site	Unspecified Pit	1996
On site	Refuse Tip	1996
On site	Quarry	1891
On site	Sandstone Quarry	1851

Location	Land use	Date
44m SW	Refuse Tip	1961
132m S	Lime Field	1930
132m S	Lime Field	1909
137m S	Lime Field	1891
207m SW	Ground Workings and Heap	1930
220m S	Ground Workings	1928
220m S	Ground Workings	1910
227m S	Unspecified Ground Workings	1930
227m S	Unspecified Ground Workings	1909

This data is sourced from Groundsure.

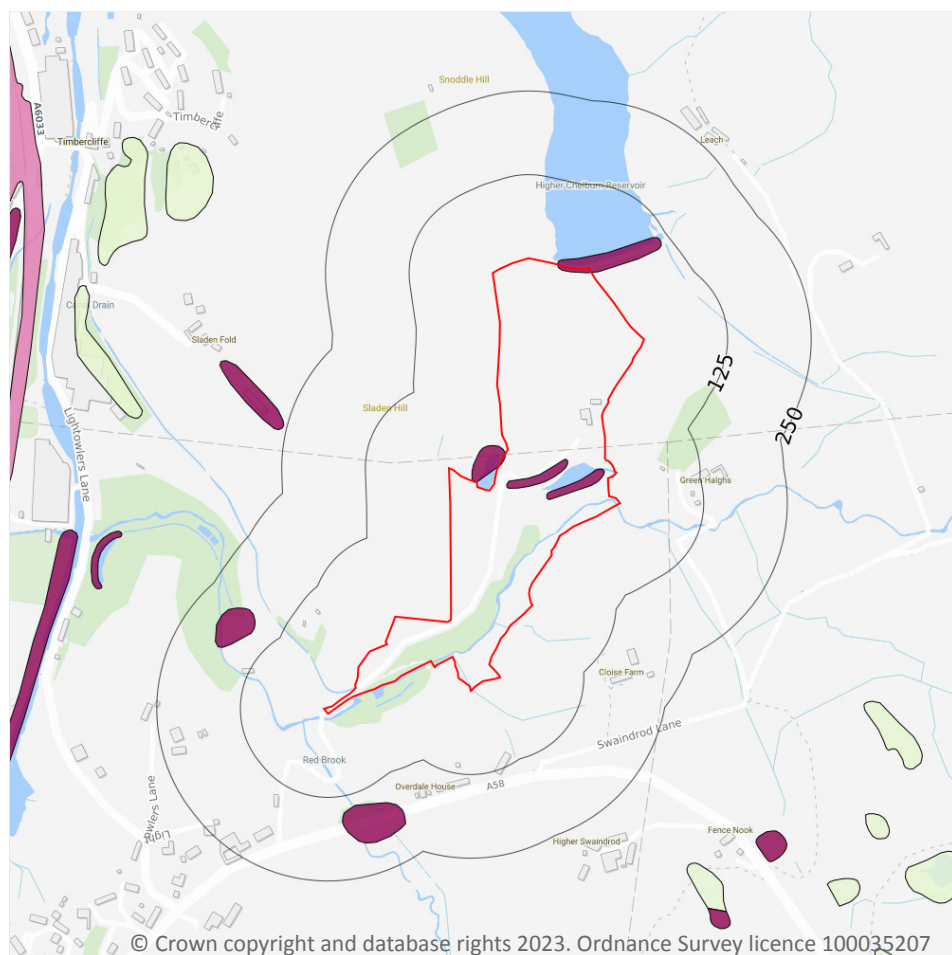
Industry associated with mining

Historical land uses identified from Ordnance Survey mapping that indicate the presence of industry which was often associated with mineral extraction. Extraction sites were often located in close proximity to these land uses.

Location	Land use	Date
240m SW	Unspecified Disused Works	1930
241m SW	Unspecified Disused Works	1949

This data is sourced from Groundsure.

Non-coal mining / Geological features 10k



- Site Outline
- Search buffers in metres (m)
- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground
- Mineral veins

Artificial and made ground (10k)

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

Location	LEX Code	Description	Rock description
On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
On site	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Ground stability summary



Satellite monitoring

Satellite radar measurements have not detected any notable ground movement in the vicinity of the property.

SatSense Rating

Green

Ratings provided by SatSense Ltd, experts in analysis of InSAR ground movement data from satellite radar.



Natural instability

Searches of natural ground stability data have identified potential ground stability risks.

See **page 34** for details and **page 8** for recommended next steps.

Shrink-swell hazard

Natural ground subsidence

Landslides

Natural cavities

Coastal erosion

Non-Plastic

Moderate

Identified

Not identified

Not identified



Infilled land

Areas of infilled land or landfill have been identified in the vicinity of the site.

See **page 36** for details and **page 8** for recommended next steps.

Infilled land

Historical landfill sites

Identified

Identified



Sinkholes

No records of sinkholes have been identified in the vicinity of the property.

Reported recent incidents

Recorded incidents (BGS)

Recorded incidents (Stantec)

Historical incidents

Not identified

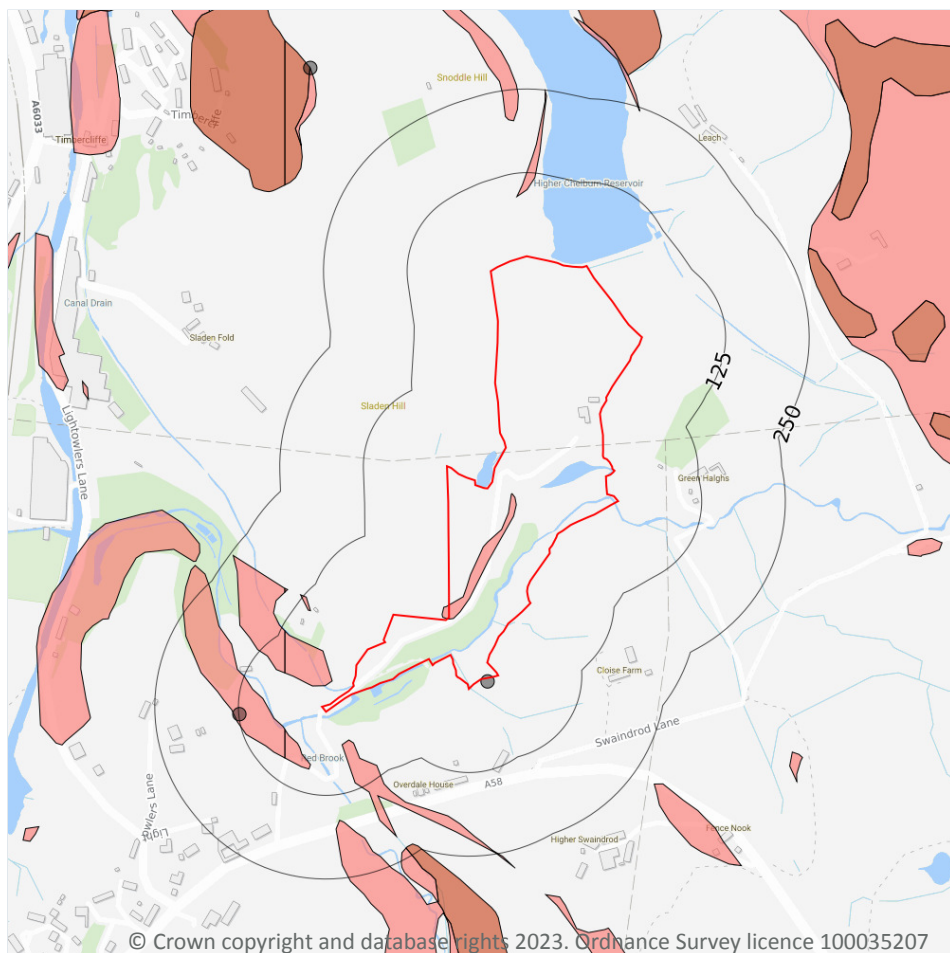
Not identified

Not identified

Not identified



Ground stability / Landslides



- Site Outline
- Search buffers in metres (m)
- Slope instability
 - Moderate
 - High
- National landslide database
 - Landslide record

Landslides

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

Location	Hazard rating	Details
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
26m SW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
54m SW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

Location	Hazard rating	Details
64m SW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
65m SW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.

This data is sourced from the British Geological Survey.

National landslide database

The BGS National Landslide Database holds nearly 18,000 records of landslides and is the definitive source of landslide information for Great Britain. It is drawn from BGS paper and digital maps, memoirs and sheet explanations, reports and articles as well as non-BGS reports, council records, media reports and inherited databases. 83% of the records in this database have been validated by the BGS.

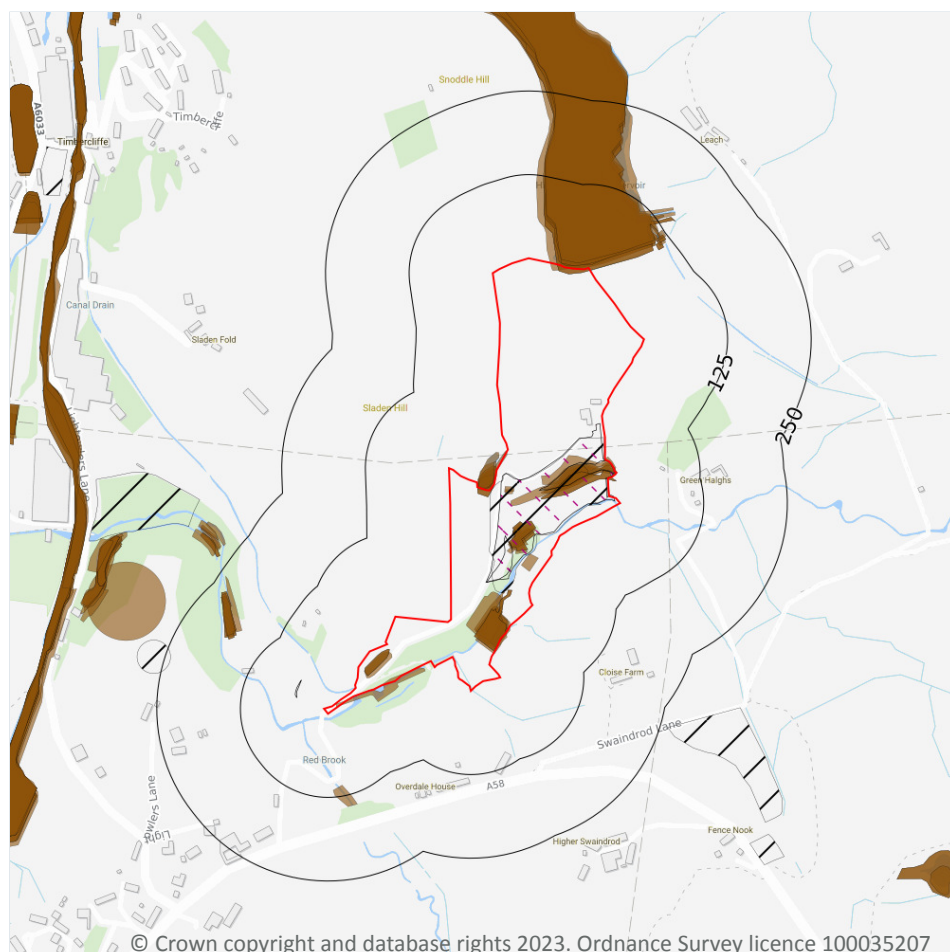
It is a point dataset and does not reflect the total extent of the landslide. Where possible, each point is located at the highest point of the landslide backscarp feature. Where this is not known, the highest point of the mapped landslide is used if available, otherwise the point is assigned an approximate location.

Each landslide record has an accuracy level assigned. Over 86% of the records in the database have an accuracy of +/- 100m, and Groundsure will not display any records that do not meet this minimum level. The absence of data in this section does not confirm that a landslide has not occurred at this location.

Location	BGS reference	Accuracy (m)	Link	Validated
On site	100004440	10	http://www.bgs.ac.uk/geoindex/gdi/landslides/landslide_referencesDetail.cfm?ls_id=100004440	Validated to assigned accuracy
114m SW	100004439	10	http://www.bgs.ac.uk/geoindex/gdi/landslides/landslide_referencesDetail.cfm?ls_id=100004439	Validated to assigned accuracy

This data is sourced from the British Geological Survey.

Ground stability / Infilled land



- Site Outline
- Search buffers in metres (m)
- Active landfill sites
- Historical landfill (LA/mapping)
- Infilled Land
- Historic landfill sites

Infilling from historical mapping

These are records of areas of land that have been potentially infilled with unknown materials. Groundsure have identified these areas from our comprehensive collection of historical maps. Depending on the nature of the materials that have been used for infilling there is the potential for these areas to settle over time. As such, any buildings situated on these areas could be at risk from ground instability or subsidence.

Location	Year of mapping	Land Use	Mapping scale
On site	1931	Filter Tanks	10560
On site	1909	Filter Tanks	10560
On site	1911	Reservoir	10560
On site	1911	Reservoir	10560

Location	Year of mapping	Land Use	Mapping scale
On site	1911	Reservoirs	10560
On site	1911	Pond	10560
On site	1911	Reservoir	10560
On site	1911	Reservoirs	10560
On site	1892	Reservoir	10560
On site	1892	Pond	10560
On site	1892	Ponds	10560
On site	1892	Reservoir	10560
On site	1891	Reservoir	10560
On site	1911	Filter Tanks	10560
On site	1911	Refuse Heap	10560
On site	1949	Reservoir	10560
On site	1949	Reservoir	10560
On site	1949	Pond	10560
On site	1949	Filter Tanks	10560
On site	1949	Filter Tanks	10560
On site	1911	Filter Tanks	10560
On site	1911	Refuse Heap	10560
On site	1911	Reservoir	10560
On site	1911	Filter Tanks	10560
On site	1911	Refuse Heap	10560
On site	1911	Reservoir	10560
On site	1911	Reservoirs	10560
On site	1851	Reservoir	10560
On site	1851	Pond	10560
On site	1851	Pond	10560
On site	1931	Reservoir	10560
On site	1931	Reservoirs	10560

Location	Year of mapping	Land Use	Mapping scale
On site	1931	Reservoir	10560
On site	1909	Reservoir	10560
On site	1909	Reservoirs	10560
On site	1909	Reservoir	10560
On site	1930	Reservoir	10560
On site	1909	Reservoir	10560
0m W	1911	Reservoirs	10560
1m SW	1979	Pond	10000
3m N	1979	Reservoir	10000
4m N	1911	Reservoir	10560
9m N	1949	Reservoir	10560

This data is sourced from Groundsure.

Historical landfill (from Environment Agency records)

These are records of former areas of landfill. These areas of land are likely to have been redeveloped for other uses since the landfill closed. Depending on the nature of the waste these landfill sites accepted, they may still pose a risk of contamination (including from landfill gases). Former landfill sites can also cause issues with ground instability.

Distance	Direction	Details		
0	on site	Site Address: Wellfield Mill Site, Longley Hey Farm, Halifax Road, Littleborough, Rochdale, Greater Manchester Waste Licence: Yes Site Reference: 4200/9241 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: NR1/L/PHU001	Licence Issue: 01/06/1988 Licence Surrendered: 20/09/2004 Licence Holder Address: Longley Hey Farm, Littleborough	First Input: - Last Input: - Control Measures: -

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

Historical landfill (from Local Authority and historical mapping records)

These are records of former areas of landfill. These areas of land are likely to have been redeveloped for other uses since the landfill closed. Depending on the nature of the waste these landfill sites accepted, they may still pose a risk of contamination (including from landfill gases). Former landfill sites can also cause issues with ground instability.

Location	Site address	Source	Data type
On site	Refuse Tip	1996 mapping	Polygon
On site	Refuse Tip	1961 mapping	Polygon
44m SW	Refuse Tip	1961 mapping	Polygon

This data is sourced from Groundsure.

Transportation summary



HS2

No results for Phase 1 or Phase 2 of the HS2 project (including the 2016 amendments) have been identified within 5km of the property. However, HS2 routes are still under consultation and exact alignments may change in the future.

Visual assessments are only provided by Groundsure if the property is within 2km of Phase 1 and 2a. Other assessments may be available from HS2.

HS2 Route	Not identified
HS2 Safeguarding	Not identified
HS2 Stations	Not identified
HS2 Depots	Not identified
HS2 Noise	Not assessed
HS2 Visual impact	Not assessed



Crossrail

The property is not within 250 metres of either the Crossrail 1 or Crossrail 2 project.

Crossrail 1 Route	Not identified
Crossrail 1 Stations	Not identified
Crossrail 2 Route	Not identified
Crossrail 2 Stations	Not identified
Crossrail 2 Worksites	Not identified
Crossrail 2 Safeguarding	Not identified
Crossrail 2 Headhouse	Not identified



Other Railways

Our search indicates the property is within 250 metres of railways or railway stations, subway or DLR lines, active railways, historical railways or tunnels.

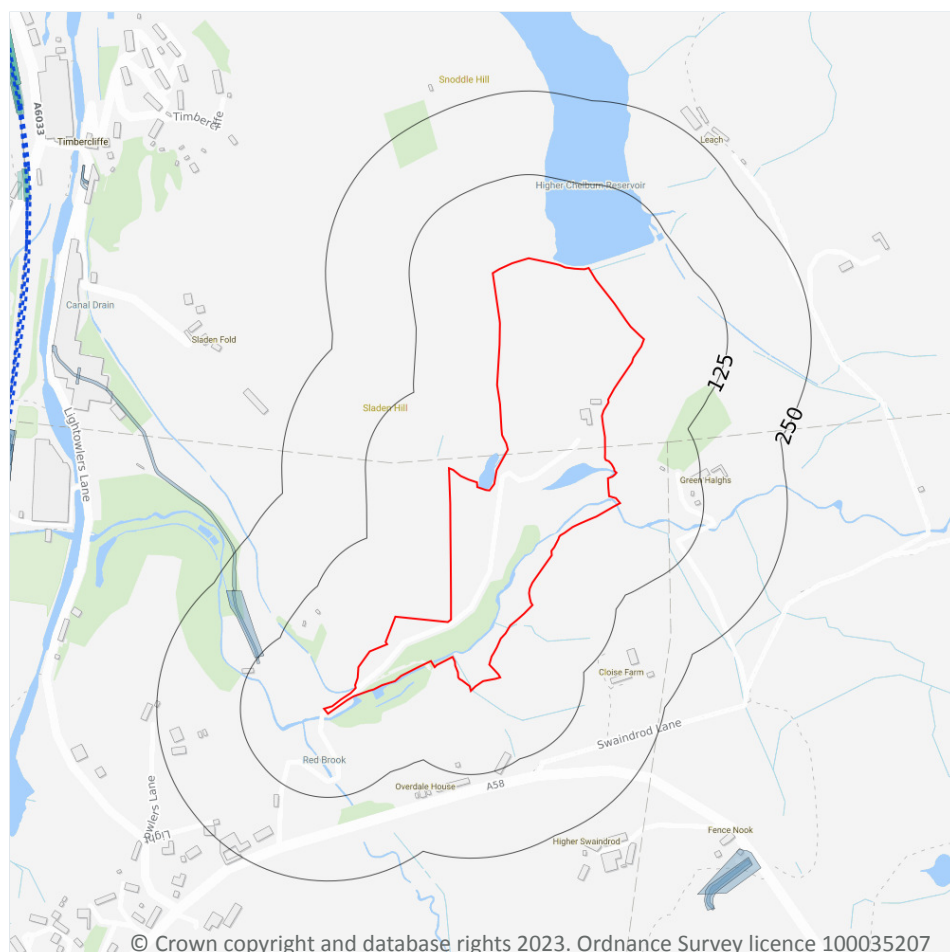
The Underground assessment includes London Underground, DLR, Tyne and Wear Metro, Merseyrail and Glasgow Subway.

Additionally, see **page 41** for details of the identified issues.

Active Railways and Tunnels	Not identified
Historical Railways and Tunnels	Identified
Railway and Tube Stations	Not identified
Underground	Not identified



Transportation / Railways and Underground



- Site Outline
- Search buffers in metres (m)
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels

Historical railway infrastructure

The property is situated within 250m of a railway or tunnel feature identified on historical mapping. Please note that many historical railways noted in this section will still be in use today.

Please note that for reasons of clarity only the closest record identified will be shown in the table below, though the full extent of records identified can be seen on the map.

Distance	Direction	Feature	Year
118 m	SW	Tramway Sidings	1891

Energy summary



Oil and gas

No historical, active or planned wells or extraction areas have been identified near the property.

Oil and gas areas
Oil and gas wells

Not identified
Not identified



Wind and Solar

Our search of existing and planned renewable wind and solar infrastructure has identified results.

Please see the Avista Action Alert on **page 3** for further advice. Additionally, see **page 43** for details of the identified issues.

Planned Multiple Wind Turbines

Identified

Planned Single Wind Turbines

Identified

Existing Wind Turbines

Identified

Proposed Solar Farms

Not identified

Existing Solar Farms

Not identified



Energy

Our search of major energy transmission or generation infrastructure and nationally significant infrastructure projects has identified results.

Please see the Avista Action Alert on **page 3** for further advice. Additionally, see **page 56** for details of the identified issues.

Power stations

Not identified

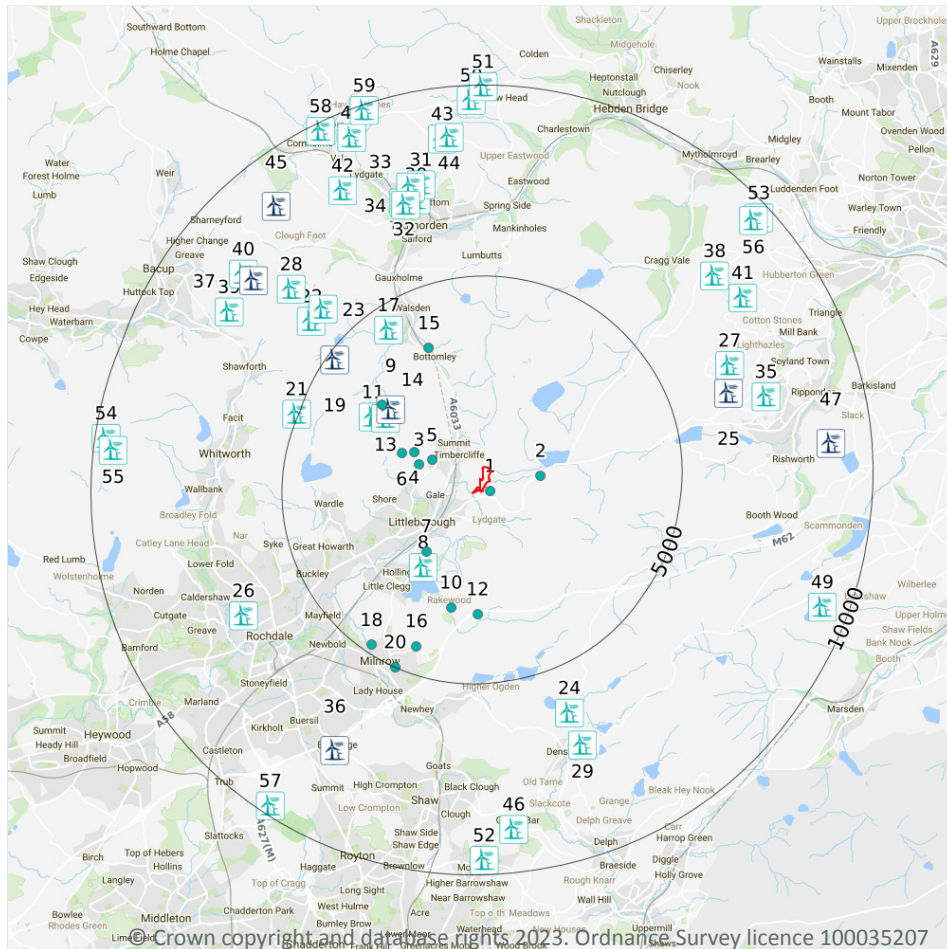
Energy Infrastructure Projects

Identified

Not identified



Energy / Wind and solar



Site Outline

Search buffers in metres (m)



Wind farms



Proposed wind farms



Proposed wind turbines



Existing and agreed solar installations



Proposed solar installations

Wind farms

An active wind farm, group of turbines or individual wind turbine has been identified within 10,000m of the property. See below for details of the operating company, number of turbines, project and turbine capacity.

ID	Distance	Direction	Details	
9	2-3 km	NW	Site Name: Crook Hill (Calderdale), Reddyshore, Scout Gate, Walsden, Todmorden, North West Operator Developer: Coronation Power Ltd Status of Project: Operational	Type of project: Onshore Number of Turbines: 4 Turbine Capacity: 3.4MW Total project capacity: 13.6 Approximate Grid Reference: 392904, 419496

ID	Distance	Direction	Details	
19	4-5 km	NW	Site Name: Crook Hill (Rochdale), Reddysore, Scout Gate, Walsden, Todmorden, North West Operator Developer: Coronation Power Ltd Status of Project: Operational	Type of project: Onshore Number of Turbines: 7 Turbine Capacity: 3.4MW Total project capacity: 23.8 Approximate Grid Reference: 391438, 420800
25	6-7 km	E	Site Name: Green Holes Farm, Coal Gate Road, Ripponden, Sowerby Bridge, Calderdale, Yorkshire & Humber Operator Developer: Landowner or private owner Status of Project: Operational	Type of project: Onshore Number of Turbines: 1 Turbine Capacity: 0.1MW Total project capacity: 0.1 Approximate Grid Reference: 401748, 419924
36	7-8 km	SW	Site Name: Beet Farm, Broad Lane, Burnedge, Rochdale, North West Operator Developer: Landowner or private owner Status of Project: Consented	Type of project: Onshore Number of Turbines: 1 Turbine Capacity: 0.1MW Total project capacity: 0.1 Approximate Grid Reference: 391438, 410575
37	7-8 km	NW	Site Name: Reaps Moss, Britannia, Hogshead Law Hill, Britannia, nr Bacup, North West Operator Developer: Coronation Power Ltd Status of Project: Operational	Type of project: Onshore Number of Turbines: 3 Turbine Capacity: 3.4MW Total project capacity: 10.2 Approximate Grid Reference: 389314, 422874
45	8-9 km	NW	Site Name: Todmorden Moor (Resubmission), NE of Bacup, Yorkshire & Humber Operator Developer: Coronation Power Ltd Status of Project: Operational	Type of project: Onshore Number of Turbines: 5 Turbine Capacity: 2.5MW Total project capacity: 12.5 Approximate Grid Reference: 389906, 424819
47	8-9 km	E	Site Name: Hazel Slack Farm (2nd Resubmission), Land South Of Gosling Lane, Barkisland, Sowerby Bridge, Yorkshire & Humber Operator Developer: Landowner or private owner Status of Project: Operational	Type of project: Onshore Number of Turbines: 1 Turbine Capacity: 0.25MW Total project capacity: 0.25 Approximate Grid Reference: 404428, 418613

This data is sourced from the UK Wind Energy Database supplied by Renewable UK. Groundsure recommends further independent research with Renewable UK of any sites of interest to determine exact locations and details of the projects.

Proposed wind farms

A wind farm or group of turbines or individual wind turbine has been proposed within 10,000m of the property. See below for details of the operating company, number of turbines, project and turbine capacity.

Please note some planning applications identified as having been refused, may have subsequently been granted on appeal without appearing as such within this report. Additionally, please be aware that as the identified records are taken from a planning record archive, the proposals identified may have already been undertaken.

ID	Distance	Direction	Details	
8	2-3 km	SW	Site Name: Higher Cleggswood Farm, Hollingworth Road, Rochdale, Littleborough, Greater Manchester, OL15 0AZ Planning Application Reference: 08/D50377 Type of Project: 2 Wind Turbines	Application Date: 2008-01-25 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises construction of 2 wt 6000 wind turbines. Approximate Grid Reference: 393753, 415366
11	3-4 km	NW	Site Name: Crook Hill, Wardle, Rochdale, OL12 Planning Application Reference: 08/01281/WDF Type of Project: Wind Farm	Application Date: 2008-08-10 Planning Stage: Detail Plans Granted Project Details: Scheme comprises 12 turbines which will be capable of providing enough electricity to meet the domestic energy needs of almost 25,000 homes. Each turbine will produce up to 3 MW of power, giving the site a potential total output of up to 36 MW. Approximate Grid Reference: 392441, 419303
13	3-4 km	NW	Site Name: Wategrove Reservoir, Crook Hill/Shore Moor, Oldham, Rochdale, Greater Manchester, OL12 9NE Planning Application Reference: AE/055493/08 Type of Project: 4 Wind Turbines	Application Date: 2008-07-31 Planning Stage: Early Planning Detailed Plans Submitted Project Details: Scheme comprises installation and operation of 4 wind turbines with associated ancillary infrastructure for generation of wind power. Approximate Grid Reference: 392383, 419666
17	4-5 km	NW	Site Name: Height Houses Farm Inchfield Road, Todmorden, Lancashire, OL14 7QP Planning Application Reference: 13/00188/FUL Type of Project: 2 Wind Turbines	Application Date: 2013-02-19 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of two micro scale wind turbines (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 392848, 421580
21	5-6 km	W	Site Name: Water Grove, Crook Hill/Shore Moor, Bury, Bury, Greater Manchester, IM4 7AR Planning Application Reference: 50351 Type of Project: 4 Wind Turbines	Application Date: 2008-08-04 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction and operation of 4 wind turbines with associated ancillary infrastructure for generation of wind power (revised proposal for previously submitted planning application D49 Approximate Grid Reference: 390442, 419381



ID	Distance	Direction	Details	
22	5-6 km	NW	Site Name: Land South West Of, Gorphey Resivor, Bacup Road, Burnley, Todmorden, Lancashire, OL14 7HG Planning Application Reference: NOT/2012/0502 Type of Project: 5 Wind Turbines	Application Date: 2012-11-28 Planning Stage: Early Planning Detailed Plans Submitted Project Details: Scheme comprises construction of 5 wind turbines of a maximum height of 125m to blade-tip and associated infrastructure, including 85m high metrological mast, switch gear/control building, crane hards Approximate Grid Reference: 390823, 421809
23	5-6 km	NW	Site Name: Land South West Of Gorphey Res, Bacup Road, Calderdale, Todmorden, Lancashire, OL14 7 Planning Application Reference: 14/00126/WDF Type of Project: 4 Wind Turbines	Application Date: 2014-02-05 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises construction of 4 wind turbines of maximum height to blade tip of between 110m and 125m, and associated infrastructure including turbine foundations, transformers, crane hardstanding Approximate Grid Reference: 390823, 421809
24	6-7 km	S	Site Name: Rough Hey Cottage, Ripponden Road, Denshaw, Oldham, Oldham, Greater Manchester, OL3 5UN Planning Application Reference: PA/333979/13 Type of Project: 2 Wind Turbines	Application Date: 2013-05-01 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of 2 micro scale wind turbine (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 397581, 411556
26	6-7 km	SW	Site Name: Edenfield, Rossendale, Bury, Greater Manchester, BL0 0 Planning Application Reference: N/A Type of Project: Wind Farm (26 Turbine)	Application Date: 2002-03-15 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of a 26 turbine windfarm with a 65MW output. Each turbine is to be 100 metre high with a total ground footprint of 130,700 square metres. Works also include 12km of road Approximate Grid Reference: 389050, 414100
27	6-7 km	NE	Site Name: Great Greave Farm Coal Gate Road, Ripponden, Sowerby Bridge, West Yorkshire, HX6 4NU Planning Application Reference: 11/00261/FUL Type of Project: Wind Turbine	Application Date: 2011-03-23 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises removal of two 6Kw, 15m turbines and replacement with one 15Kw, 15m turbine. Approximate Grid Reference: 401777, 420653

ID	Distance	Direction	Details	
28	6-7 km	NW	Site Name: Inchfield Moor between Bacup Road, Todmorden, Rossendale, Lancashire, BB4 Planning Application Reference: 2012/0526 Type of Project: 5 Wind Turbines	Application Date: 2012-11-26 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of 5 wind turbines of a maximum height of 125m to blade-tip and associated infrastructure, including 85m high meteorological mast, switch gear/control building, crane hardstandings and access tracks extending from Bacup Rd Approximate Grid Reference: 390300, 422650
29	7-8 km	S	Site Name: Huddersfield Road, Denshaw, Oldham, Oldham, Greater Manchester, OL3 5SB Planning Application Reference: PA/046136/03 Type of Project: Wind Farm	Application Date: 2003-12-18 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises of a wind farm with 7 wind turbines capable of generating approximately 14 megawatts of electricity, 1 temporary anemeter mast, 1 permanent anemeter mast, electrical switching bui Approximate Grid Reference: 397923, 410717
30	7-8 km	N	Site Name: Royd Farm The Royd Beech Avenue, Todmorden, Lancashire, OL14 8DN Planning Application Reference: 11/01028/FUL Type of Project: 3 Wind Turbines	Application Date: 2011-09-22 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises construction of 3 Unitron 10kw wind turbines. Approximate Grid Reference: 393566, 424995
31	7-8 km	N	Site Name: Royd Farm The Royd, Todmorden, Lancashire, OL14 8DW Planning Application Reference: 11/01463/FUL Type of Project: 2 Wind Turbines	Application Date: 2011-11-24 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of 2 unitron 10kw wind turbines on a 10m pole. Approximate Grid Reference: 393642, 425087
32	7-8 km	N	Site Name: Royd Farm Royd, Todmorden, Lancashire, OL14 8DW Planning Application Reference: 09/01387/FUL Type of Project: 2 Wind Turbines	Application Date: 2009-11-12 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises installation of two 18m wind turbines. Approximate Grid Reference: 393618, 425139
33	7-8 km	N	Site Name: Royd Farm Royd, Todmorden, Lancashire, OL14 8DW Planning Application Reference: 10/00396/FUL Type of Project: 2 Wind Turbines	Application Date: 2010-03-30 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of two 18m Wind Turbines. Approximate Grid Reference: 393618, 425139

ID	Distance	Direction	Details	
34	7-8 km	N	Site Name: Royd Farm Royd, Todmorden, Lancashire, OL14 8DW Planning Application Reference: 12/00574/FUL Type of Project: 2 Wind Turbines	Application Date: 2012-05-09 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of 2 aircon 10, 10kw wind turbines on a 10m pole with 7.6m diameter blades. Approximate Grid Reference: 393618, 425139
35	7-8 km	E	Site Name: Moor Barn, Cote Road, Ripponden, Calderdale, Sowerby Bridge, West Yorkshire, HX6 4LT Planning Application Reference: 12/00985/FUL Type of Project: 3 Wind Turbines	Application Date: 2012-08-16 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of three micro scale wind turbines (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 402729, 419835
38	7-8 km	NE	Site Name: Land at High Stones Hill, High Stones Road, Cragg Vale, Calderdale, Hebden Bridge, West Yorkshire, HX7 5TU Planning Application Reference: 14/01002/FUL Type of Project: 2 Wind Turbines	Application Date: 2014-08-15 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of 2 11kW Gaia wind turbines, 18.3m to hub with 13m diameter rotor. Approximate Grid Reference: 401381, 422998
39	7-8 km	NW	Site Name: Gowther Fold Farm, Rochdale Road, Bacup, OL13 9XF Planning Application Reference: 2016/0357 Type of Project: 2 Wind Turbines	Application Date: 2016-08-29 Planning Stage: Detail Plans Refused Project Details: Scheme comprises construction of 2 wind turbines with a total height of 33.5m and associated works. Approximate Grid Reference: 388676, 422055
40	7-8 km	NW	Site Name: Rossendale, Bacup, Lancashire, OL13 Planning Application Reference: 07/00349/WDF Type of Project: Wind Farm	Application Date: 2008-02-11 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of operation of 3 wind turbines with associated substation, met mast and access. The wind farm will have an output of 9MW, capable of providing enough electricity to meet Approximate Grid Reference: 389075, 422847
41	8-9 km	NE	Site Name: Shaws House Shaws Lane Top, Triangle, Sowerby Bridge, West Yorkshire, HX6 3EZ Planning Application Reference: 10/01142/FUL Type of Project: 2 Wind Turbines	Application Date: 2010-09-07 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises installation of Two 15kW wind turbines on 15m masts. Approximate Grid Reference: 402121, 422422

ID	Distance	Direction	Details	
42	8-9 km	NW	Site Name: Todmorden Moor, Flower Scarr Road, Todmorden, Lancashire, OL14 7JB Planning Application Reference: 10/01057/WDF Type of Project: 5 Wind Farm	Application Date: 2010-09-10 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of five 3MW wind turbines for 25 years (max. height to blade tip 125m) and ancillary infrastructure including crane hardstandings, control buildings, substation, on-site access tracks, permanent monitoring mast, site entrance Approximate Grid Reference: 391646, 425230
43	8-9 km	N	Site Name: Bungalow Farm Eastwood Road, Todmorden, Lancashire, OL14 8RY Planning Application Reference: 12/00467/FUL Type of Project: 2 Wind Turbines	Application Date: 2012-04-16 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises construction of 2 small scale wind turbines. Approximate Grid Reference: 394255, 426581
44	8-9 km	N	Site Name: Bungalow Farm Eastwood Road, Todmorden, Lancashire, OL14 8RY Planning Application Reference: 11/01293/FUL Type of Project: 2 Wind Turbines	Application Date: 2011-10-26 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises construction of 2 x 11kw Gaia wind turbines mounted on 18.0m lattice towers. Approximate Grid Reference: 394255, 426581
46	8-9 km	S	Site Name: Burn Springs Farm, Grains Bar, Oldham, Oldham, Greater Manchester, OL4 2JY Planning Application Reference: PA/334008/13 Type of Project: 2 Wind Turbines	Application Date: 2013-05-08 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of 2 micro scale wind turbine (14.97m to hub, 5.6m diameter blades) to provide renewable energy for use at the site. Approximate Grid Reference: 396125, 408508
48	9-10 km	N	Site Name: Hartley Royd Farm Blue Bell Lane, Todmorden, Lancashire, OL14 8SE Planning Application Reference: 11/00112/FUL Type of Project: 3 Wind Turbines	Application Date: 2011-01-31 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of 3 small-scale wind turbines to provide electricity for the farm house and associated farm buildings. Approximate Grid Reference: 391884, 426615

ID	Distance	Direction	Details	
49	9-10 km	E	Site Name: Slaithwaite Moor, Off, New Hey Road, Scammonden, Huddersfield, HD3 Planning Application Reference: 2013/62/93683/W Type of Project: 3 Wind Turbines	Application Date: 2013-12-06 Planning Stage: Detail Plans Withdrawn Project Details: Scheme comprises installation of three 2.3 MW wind turbines on 64m masts and related equipment including substation, cabling, transformer and control buildings, temporary construction compound and access tracks. The associated works include sewer systems, landscaping, infrastructure, enabling and access roads. Approximate Grid Reference: 404202, 414327
50	9-10 km	N	Site Name: Warcock Hill Barn, Long Causeway, Blackshaw Head, Calderdale, Hebden Bridge, West Yorkshire, HX7 7JB Planning Application Reference: 08/00484/FUL Type of Project: 2 Wind Turbines	Application Date: 2008-03-30 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises construction of 2 new 10kw wind turbines on 12m hydraulic raise and lower unit. Approximate Grid Reference: 395012, 427595
51	9-10 km	N	Site Name: Warcock Hill Barn Long Causeway, Blackshaw Head, Hebden Bridge, West Yorkshire, HX7 7JB Planning Application Reference: 08/01436/FUL Type of Project: 2 Wind Turbines	Application Date: 2008-11-30 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of two new 10kw wind turbines on 12m hydraulic raise and lower unit. Approximate Grid Reference: 395013, 427596
52	9-10 km	S	Site Name: 684 Ripponden Road, Oldham, Oldham, Greater Manchester, OL4 2LP Planning Application Reference: HH/052016/06 Type of Project: 2 Wind Turbines	Application Date: 2006-09-12 Planning Stage: Early Planning Detailed Plans Submitted Project Details: Scheme comprises construction of two domestic scale wind turbines to the side elevation. Approximate Grid Reference: 395352, 407698
53	9-10 km	NE	Site Name: Crib Farm New Lane, Sowerby Sowerby Bridge, Luddendenfoot, Halifax, West Yorkshire, HX2 6JJ Planning Application Reference: 11/01170/FUL Type of Project: 2 Wind Turbines	Application Date: 2011-09-15 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of two 11kw gaia wind turbines on 18m lattice towers. Approximate Grid Reference: 402542, 424517

ID	Distance	Direction	Details	
54	9-10 km	W	Site Name: Land To The East And West Of, Rooley Moor Road, Rochdale, OL12 Planning Application Reference: 14/00877/FUL Type of Project: 12 Wind Turbines	Application Date: 2014-08-29 Planning Stage: Detail Plans Refused Project Details: Scheme comprises construction of 12 wind turbine generators (maximum height to tip of 125m), construction of access tracks and crane pads, formation of borrow pits for the extraction of stone for on site construction works, formation of 70m high meteorological mast and substation, transformer housings, control room and associated laydown area and construction compound, associated infrastructure and development ancillary thereto. Approximate Grid Reference: 385454, 418748
55	9-10 km	W	Site Name: Land To The East & West Of, Rooley Moor Road, Rochdale, OL12 6 Planning Application Reference: 2014/0388 Type of Project: 12 Wind Turbines	Application Date: 2014-09-12 Planning Stage: Detail Plans Refused Project Details: Scheme comprises construction of 12 wind turbine generators (maximum height to tip of 125m), construction of access tracks and crane pads, formation of borrow pits for the extraction of stone for on site construction works, formation of 70m high meteorological mast. The associated works include sewer systems, landscaping, infrastructure, enabling works, cable laying and access roads. Approximate Grid Reference: 385454, 418748
56	9-10 km	NE	Site Name: Haven Farm, Luddendenfoot, Halifax, West Yorkshire, HX2 6JJ Planning Application Reference: 11/00252/FUL Type of Project: Wind Turbine	Application Date: 2011-03-07 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises installation of two 11kW Gaia wind turbines on 18m lattice towers. Approximate Grid Reference: 402459, 424737
57	9-10 km	SW	Site Name: Thornham Fold Farm Thornham Lane, Middleton, Manchester, M24 2SD Planning Application Reference: 11/D54990 Type of Project: 2 Wind Turbines	Application Date: 2011-11-04 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of two 11kw wind turbines with hub heights of 18.3m. Approximate Grid Reference: 389753, 409126
58	9-10 km	NW	Site Name: Stones Cottage Pudsey Road, Todmorden, Lancashire, OL14 8NT Planning Application Reference: 11/00757/FUL Type of Project: 2 Wind Turbines	Application Date: 2011-08-03 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of two x 5Kw Evance R900 turbines on 15 meter masts. Approximate Grid Reference: 391067, 426787

ID	Distance	Direction	Details	
59	9-10 km	N	Site Name: Avoca, Kebs Road, Calderdale, Todmorden, Lancashire, OL14 8SB Planning Application Reference: 04/01964/FUL Type of Project: 2 Wind Generators	Application Date: 2004-10-03 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises of 2 wind generators. Approximate Grid Reference: 392209, 427328

This information is derived from planning data supplied by Glenigan, in some cases with further accuracy applied by Groundsure's experts. This search includes planning applications for wind farms with multiple turbines within 10,000m of the property. This data is updated on a quarterly basis.

If the existence of a planning application, passed or refused may have a material impact with regard to the decision to purchase the property, Groundsure recommends independent, thorough enquiries are made with the Local Authority. If any applications have been identified within this report, Groundsure have included the planning reference to enable further enquiries to be made.

Proposed wind turbines

Planning applications for individual wind turbines have been proposed within 5,000m of the property. See below for details of the operating company, number of turbines, project and turbine capacity.

Please note some planning applications identified as having been refused may have subsequently been granted on appeal without appearing as such within this report. Additionally, please be aware that as the identified records are taken from a planning record archive, the proposals identified may have already been undertaken.

ID	Distance	Direction	Details	
1	177 m	SE	Site Name: Swaindrod Lane, Rochdale, Littleborough, Greater Manchester, OL15 0LE Planning Application Reference: 13/00986/FUL Type of Project: Wind Turbine	Application Date: 2013-09-16 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises construction of an 18m high wind turbine. Approximate Grid Reference: 395507, 417370
2	1-2 km	E	Site Name: Broadhead House Halifax Road, Littleborough, Greater Manchester, OL15 0LG Planning Application Reference: 11/D54766 Type of Project: Wind Turbine	Application Date: 2011-08-23 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises construction of a 6kw 15m high wind turbine. Approximate Grid Reference: 396825, 417765

ID	Distance	Direction	Details	
3	1-2 km	W	Site Name: Near Hey Head Farm 3 Calderbrook Road, Littleborough, Greater Manchester, OL15 9NS Planning Application Reference: 12/56239/FUL Type of Project: Wind Turbine	Application Date: 2012-11-16 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of a single micro scale wind turbine (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 393642, 418056
4	1-2 km	W	Site Name: 2 Near Hey Head Farm Calderbrook Road, Littleborough, Greater Manchester, OL15 9NS Planning Application Reference: 12/56238/FUL Type of Project: Wind Turbine	Application Date: 2012-11-21 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of a single micro scale wind turbine (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 393617, 418076
5	1-2 km	W	Site Name: Near Hey Head Farm 1 Calderbrook Road, Littleborough, Greater Manchester, OL15 9NS Planning Application Reference: 12/56235/FUL Type of Project: Wind Turbine	Application Date: 2012-11-16 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of a single micro scale wind turbine (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 393599, 418079
6	1-2 km	W	Site Name: Far Hey Head Farm Calderbrook Road, Littleborough, Greater Manchester, OL15 9NS Planning Application Reference: 12/56249/FUL Type of Project: Wind Turbine	Application Date: 2012-11-21 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of a single micro scale wind turbine (14.97m to hub, 5.6m diameter blades). Approximate Grid Reference: 393392, 418135
7	1-2 km	SW	Site Name: Bank Top Farm, Hollingworth Road, Littleborough, OL15 0AU Planning Application Reference: 15/00581/FUL Type of Project: Wind Turbine	Application Date: 2015-05-26 Planning Stage: Detail Plans Refused Project Details: Scheme comprises installation of one 36.6m high (to tip) endurance e-4660 wind turbine. Approximate Grid Reference: 393839, 415789

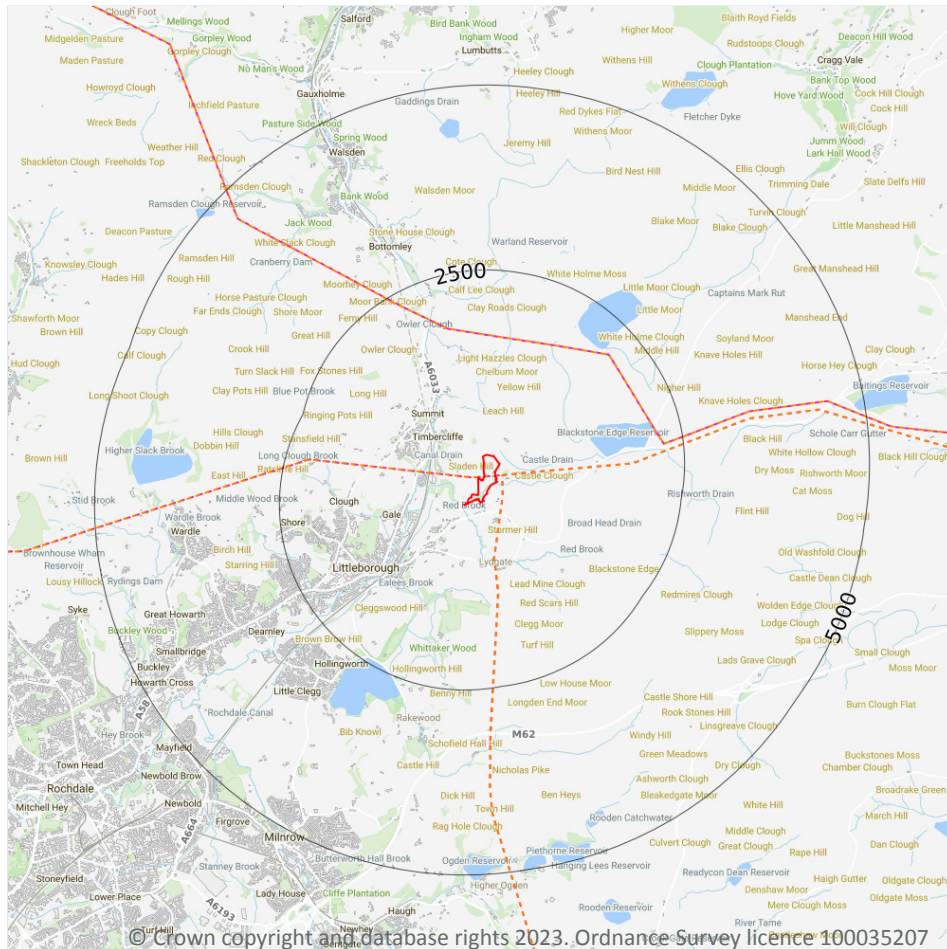
ID	Distance	Direction	Details	
10	3-4 km	S	Site Name: Rakewood Mill Rakewood Road, Littleborough, Greater Manchester, OL15 0AP Planning Application Reference: 11/D54253 Type of Project: Renewable Energy/Wind Turbine	Application Date: 2011-03-10 Planning Stage: - Project Details: Scheme comprises change of use to form a renewable energy centre, to include roof mounted solar panels and construction of one 100kw, 10meter high wind turbine, on land adjacent to mill. Approximate Grid Reference: 394483, 414318
12	3-4 km	S	Site Name: Lower Booth Hollins Farm, Rakewood Road, Littleborough, OL15 0AR Planning Application Reference: 15/00443/FUL Type of Project: Wind Turbine	Application Date: 2015-04-30 Planning Stage: Detail Plans Refused Project Details: Scheme comprises construction of a 225kw wind turbine with a hub height 24.8m and tip height 36.6m. Approximate Grid Reference: 395178, 414142
14	3-4 km	NW	Site Name: Morsgail, Uig, Western Isles, Isle Of Lewis, Western Isles, OL12 9NE Planning Application Reference: 08/00199/FUL Type of Project: Wind Turbine	Application Date: 2008-03-21 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of 6kw wind turbine and 9 meter mast. Approximate Grid Reference: 392383, 419666
15	3-4 km	NW	Site Name: Light Bank Lock Deanroyd Road, Walsden, Todmorden, Lancashire, OL14 6T Planning Application Reference: 09/01494/FUL Type of Project: Wind Turbine	Application Date: 2009-11-17 Planning Stage: Early Planning Detail Plans Withdrawn Project Details: Scheme comprises construction of polytunnel and 10m wind turbine to grow vegetables and teach market gardening skills. Approximate Grid Reference: 393906, 421107
16	4-5 km	S	Site Name: Lower Crows Nest Farm Kiln Lane, Milnrow, Rochdale, Greater Manchester, OL16 3TR Planning Application Reference: 09/D51918 Type of Project: Wind Turbine	Application Date: 2009-04-06 Planning Stage: Early Planning Detailed Plans Submitted Project Details: Scheme comprises installation of 25m high, 11kw wind turbine. Approximate Grid Reference: 393578, 413308
18	4-5 km	SW	Site Name: 30 Bealcroft Close, Milnrow, Rochdale, Rochdale, Greater Manchester, OL16 3XD Planning Application Reference: 07/D48548 Type of Project: Wind Turbine	Application Date: 2007-01-10 Planning Stage: Plans Approved Detail Plans Granted Project Details: Scheme comprises installation of 3.5m high wind turbine to rear elevation of house/flat. Approximate Grid Reference: 392401, 413337

ID	Distance	Direction	Details	
20	4-5 km	SW	Site Name: 2 Gorse Road, Milnrow, Rochdale, Greater Manchester, OL16 3EQ Planning Application Reference: 10/D53792 Type of Project: Wind Turbine	Application Date: 2010-10-20 Planning Stage: Early Planning Detail Plans Refused Project Details: Scheme comprises installation of a 8.5m high wind turbine and associated works. Approximate Grid Reference: 393020, 412758

This information is derived from planning data supplied by Glenigan, in some cases with further accuracy applied by Groundsure's experts. This search includes planning applications for single wind turbines only, within 5,000m of the property. This data is updated on a quarterly basis.

If the existence of a planning application, passed or refused, may have a material impact with regard to the decision to purchase the property, Groundsure recommends independent, thorough enquiries are made with the Local Authority. If any applications have been identified within this report, Groundsure have included the planning reference to enable further enquiries to be made.

Energy / Energy infrastructure



- Site Outline
- Search buffers in metres (m)
- Power stations
- Nuclear sites
- Gas sites
- Electricity substations
- Energy development projects
- Gas pipelines
- Electricity Lines
- Electricity Cable
- Electricity transmission lines and pylons

Electricity transmission lines and pylons

The nearest overhead transmission lines and/or pylon is located 0m from the property.

Overhead power transmission lines are known to emit electromagnetic fields (EMF). For further information on issues associated with transmission lines you may wish to contact the EMF Unit Public Information Line on 0845 7023270 or visit <http://www.emfs.info>. Guidance on electromagnetic fields resulting from transmission and distribution lines can also be found on the Public Health England (PHE) website.

This data is sourced from the National Grid. Groundsure provide the data for information only and do not make any judgment on the risks or otherwise of EMFs. However, if the existence of overhead power transmission may have a material impact with regard to the decision to purchase the property, Groundsure recommends contacting these organisations.

National Grid energy infrastructure

There is energy infrastructure, such as electricity or gas transmission or storage taking place on or near to the property. This could include high capacity electricity transmission lines, electricity substations, strategic gas pipes and feeders and other National Grid infrastructure associated with electricity generation and transmission and gas transmission.

This data is sourced from the National Grid.

Planning summary



Planning Applications

Using Local Authority planning information supplied and processed by Glenigan dating back 10 years, this information is designed to help you understand possible changes to the area around the property. Please note that even successful applications may not have been constructed and new applications for a site can be made if a previous one has failed. We advise that you use this information in conjunction with a visit to the property and seek further expert advice if you are concerned or considering development yourself.

4

Large Developments

searched to 750m

Please see **page 59** for details of the proposed developments.

7

Small Developments

searched to 500m

Please see **page 60** for details of the proposed developments.

5

House extensions or new builds

searched to 250m

Please see **page 61** for details of the proposed developments.

Please note the links for planning records were extracted at the time the application was submitted therefore some links may no longer work. In these cases, the application details can be found by entering the application reference manually into the Authority's planning website.

In order to understand this planning data better together with its limitations you should read the full detailed limitations on **page 73**.



Planning constraints

Protected areas have been identified within 50 metres of the property.

Please see **page 63** for details of the identified issues.

Environmental Protected Areas **Identified**
Visual and Cultural Protected Areas **Not identified**



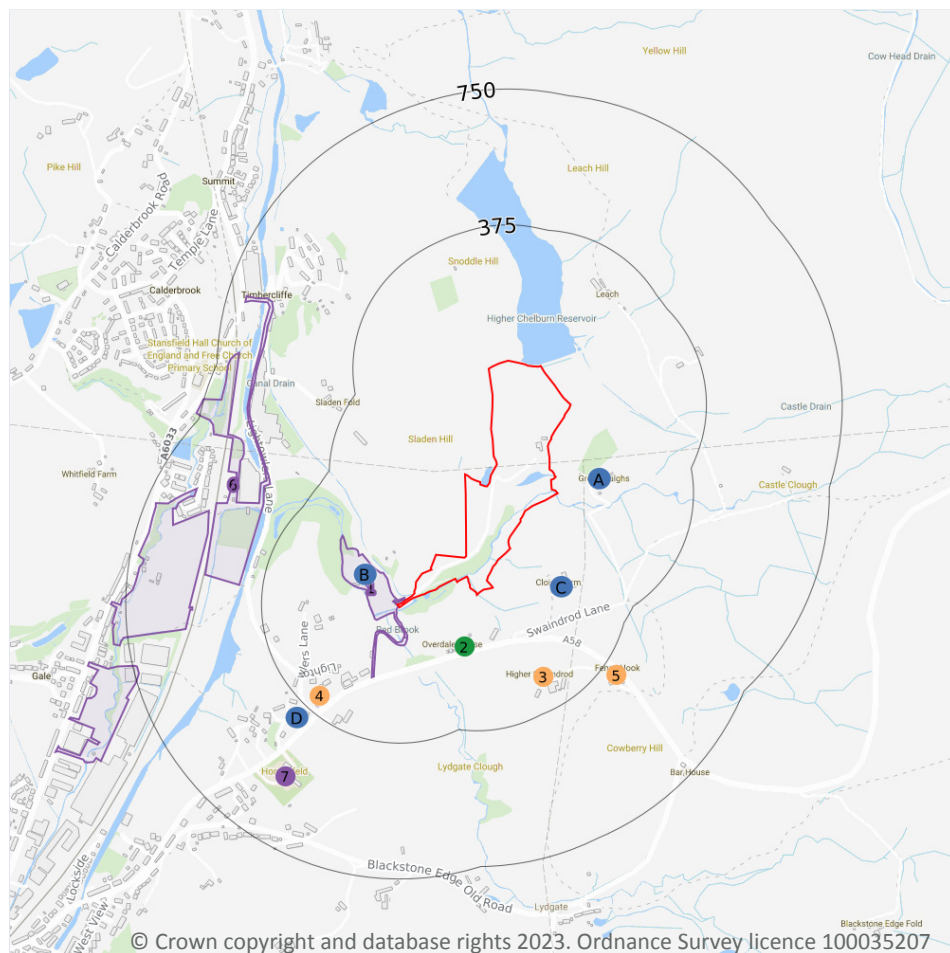
Telecoms

There are no mobile masts, mobile phone base stations or planning applications for mobile masts identified within 250 metres of the property.

Mobile phone masts **Not identified**



Planning Applications



- Site Outline
- Search buffers in metres (m)
- Grouped applications and/or mobile mast records
- Mobile mast planning records
- OFCOM Sitefinder mobile masts
- Large Project planning application
- Large Project planning application (polygon)
- Small Project planning application
- Small Project planning application (polygon)
- House Extension planning application

Large projects searched to 750m

4 large developments within 750m from the property have been submitted for planning permission during the last ten years. Large developments are considered to be residential builds of 10 or more houses (or 1-9 units if value is greater than £1 million) and all other projects with a value of £250,000 or more. Please see below for details of the proposed developments.

ID	Details	Description	Online record
ID: 1 Distance: 1 m Direction: SW	Application reference: 21/00950/REM Application date: 28/06/2021 Council: Rochdale Accuracy: Proximity	Address: Sladen Mill, Halifax Road, Littleborough, Greater Manchester, OL15 0LB Project: 25 Houses Last known status:	Link