Coal Mining Risk Assessment
at
Pine Lodge
Stainborough Lane
Hood Green, Barnsley
For
Mr Peter Dimberline

Client:-
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Barnsley
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Executive Summary

Proposal	A replacement 2 storey dwelling and detached garage.
Current land use	Residential dwelling with annex, hardstanding, an access road and soft landscaping. Levels for the existing dwelling are approximately 161.0m AOD falling significantly towards the south.
Mining related site history	A former opencast coal site occupied part of the site. Numerous former mine shafts are recorded both on and within close proximity to the site. Several collieries, coal pits and opencast coal mining were present locally. The site lies within an area significantly affected by historic mining activities.
Geology	Directly underlain by undifferentiated strata of the Lower Coal Measures. The Joan coal and Tankersley Ironstone seams outcrop within the site with the Flockton Thick coal seam outcropping just southwest of the site and, together, all seams lie beneath the site at shallow depth.
Mining history and context	The site lies within an area of probable past shallow coal mining and is within a Development High Risk Area as defined by the Coal Authority. The Joan coal and Tankersley Ironstone seams have been historically worked along their outcrops by shafts locally. More recently the site has been affected by opencast coal mining.
Mining related risks	There is a potential for shallow mining beneath the site potentially leading to surface instability – **High**. Recorded and unrecorded former mine entries are/may be present on the site – **High**. Surface mining is recorded at the site – **High**. Mine gases may be present on the site – **High**.
Mitigation of risks	Proof drilling is recommended to confirm the status of the underlying Joan coal, Tankersley Ironstone and Flockton Thick coal seams. If shallow mining is confirmed as potentially affecting surface stability, drill and grout may be required. Intrusive investigation to determine the presence of recorded mine

	entries, the nature and depth of opencast backfill and the presence of highwalls. Vigilance during site enabling works to check for former unrecorded mine entries. Incorporation of protection measures for mine gases may be required within new development, subject to the advice of regulators.

1. Introduction

1.1 Design IT were appointed by Peter Dimberline, on behalf of his client, to undertake a Coal Mining Risk Assessment (CMRA) for a site occupied by Pine Lodge, Stainborough Lane, Hood Green, Barnsley, which is proposed for redevelopment. A planning application is to be submitted to Barnsley Metropolitan Borough Council (BMBC) and the site is identified as lying within a Coal Authority (CA) Coal Mining Development Referral Area, thus necessitating the requirement for a CMRA in order to provide BMBC with information on historic coal mining and an assessment of its potential impact on land stability.

1.2 The purpose of this CMRA is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development, and
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land

1.3 To this end the study has included an inspection of published historical maps, published geological data, publicly available planning information and a review of a CA mining report, together with other sources as indicated within the report.

1.4 This report presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the scope of works outlined above.

1.5 The comments and opinions presented in this report are based on the findings of the available desk study assessment carried out by Design IT. Responsibility cannot be accepted for

any conditions not revealed by this desk study and which have not been taken into account by this assessment.

1.6 This report has been prepared for the sole use of Peter Dimberline and his client. No other third party may rely upon or reproduce the contents of this report without written approval of Design IT. If any unauthorised third party comes into possession of this report, they rely on it entirely at their own risk and we do not owe them any Duty of Care or Skill.

2. Site location and description

2.1 The site is centred on National Grid Reference 431740mE 402724mN and located to the north of Stainborough lane, approximately 600m southeast of the village of Hood Green and approximately 4.5km southwest of Barnsley town centre. The site is located within a rural area. A site location plan is included as **Appendix A.**

2.2 An inspection of recent aerial imagery indicates the site to comprise an existing single storey dwelling and garage/pool annex within the northern part with associated areas of hardstanding and an access road extending southwards to join Stainborough Lane. The remainder of the site comprises formally grassed areas of soft landscaping with numerous semi mature and mature trees. The existing dwelling lies at approximately 161.0m AOD, however, levels fall significantly southwards across the entire site from approximately 168.0m AOD in the north to approximately 152.0m AOD at the southern boundary with Stainborough Lane.

Proposed development

2.3 It is proposed to construct a 2 storey dwelling with an adjacent detached garage to the northeast, following demolition of the existing property. The proposed dwelling is to be located predominantly within the footprint of the existing. Details of the proposal are included as **Appendix A.**

Site history

2.4 Historical maps for the site and its surroundings, available from internet based sources, have been reviewed and a summary of this information, specifically relating to mining related features, is provided below.

Date	On site features	Off site features (coal mining related)
1855 – 1906	Dwelling (main part) occupies the northern part of the site with a walled enclosure immediately to the south. Remainder is open land.	2 no. coal pits approximately 400m southeast. Brick field approximately 400m southwest. Unnamed colliery approximately 850m

		southeast. Cooper's Wentworth pit approximately 900m northwest. Strafford colliery approximately 1.3km northeast. Stanhope Silkstone Main colliery and Cliffe Bridge colliery approximately 1.5km southwest.
1906 – 1931	An extension to the northeastern elevation of the dwelling. A track leads to the dwelling from the north.	Wentworth Silkstone colliery (formerly Cooper's Wentworth) approximately 900m northwest.
1931 – 1965	Building appears to be 2 separate adjoining dwellings with an extension to the southwestern elevation and gardens immediately south.	Opencast mining approximately 850m southeast.
1965 – 1978	A single dwelling with an outbuilding (glasshouse) to the south.	No change.
1978 – present	Dwelling (main part) remains. Although not mapped, extensions are constructed at the southeastern elevation and an annex immediately northeast.	No change.

3. Geological setting and historical mining context

3.1 Information obtained from various sources pertaining to the site's geology and historical mining perspective is summarised in the table below with information sources identified as appropriate.

Information sources	British Geological Survey (BGS) 1:10 560 scale County Series 2nd Edition 1932, sheet 282NW, Thurgoland, bedrock and superficial BGS 1:50 000 scale, sheet 87, Barnsley, Solid and Drift Edition. BGS online Borehole Database. Geological Survey Memoir, Sheet 87 'Geology of the Country Around Barnsley', 1947. 'The Geology of the Yorkshire Coalfield', 1878 Green et. al. BGS 'The Pennine Lower and Middle Coal Measures formations of the Barnsley District', Report IR/06/135. BMBC online Planning Applications Search. CA online Interactive Viewer. CA mining report, Ref. 81002914079001, May 2019 (as part of the Enviro All-in-One report included as **Appendix B**). Historic Ordnance Survey (OS) online mapping.
Made ground	None shown on site, however, given the historical development of the site some is expected.
Drift	None present.
Solid	Undifferentiated strata (mudstone, siltstone, sandstone and coal seams) of the Carboniferous Lower Coal Measures.
Dip of strata	Estimated 4 to 5^0 to the northeast.
Faults	2 no, faults are indicated; 1 no. to the southeast trending southwest to northeast and downthrowing to the southeast and 1 no. to the southwest trending northwest to southeast and downthrowing to the northeast. However, none are indicated to cross the site itself.
Coal seams	The Joan coal seam is shown as outcropping within the northern part of the site (at or close to the location of the existing dwelling) and subsequently underlies the site a shallow depth. The Flockton Thick coal seam is indicated as outcropping just beyond the southwestern boundary of the site and is considered to underlie the site at shallow depth. Although not indicated on geological mapping, the Tankersley Ironstone lies between the Flockton Thick coal seam and the overlying Joan coal seam and is considered to outcrop across the approximate centre of the site and is also present beneath the site at shallow depth.

	Beneath the Flockton Thick coal seam in the stratigraphic sequence is the Flockton Thin coal seam, which is not considered to underlie the site at shallow depth. Locally, BGS stratigraphic section thicknesses for these coal seams are, Joan coal (0 to 1.4m), Tankersley Ironstone (no thickness given) and Flockton Thick coal (0 to 3.7m). BGS information for the Barnsley district records the Joan coal as thin to approximately 0.7m in thickness and the Flockton Thick as thin to 2.9m in thickness, the latter present as 2 leaves. The Tankersley Ironstone is recorded as up to 4.0m thick near its outcrop, however, not all the formation may be economically workable. The ironstone typically occurs between approximately 5 and 15m above the underlying Flockton Thick coal seam.
Shafts and collieries	The CA mining report records a total of 9 former mine entries (shafts) on or within 20m of the site boundary, 5 no. of which are on the site and in the vicinity of the existing dwelling. Similarly, the CA Interactive Viewer records a significant number of former mine entries (shafts) on the site and extending in a line northwest and southeast. These are associated with the outcrop of the Joan coal and Tankersley Ironstone seams. Additionally, the County Series geological map indicates the presence of bell pits within and in the vicinity of the site, associated with the historic exploitation of the Tankersley Ironstone seam. Historic records relating to the informal working of the Flockton Thick coal seam at Lowe Wood approximately 500m northwest indicates a total thickness of 1.8m (as 2 leaves). Also, past information for workings at Rockley, approximately 1.9km southeast, record the Tankersley Ironstone seam as approximately 1.0m thick and the underlying Flockton Thick coal seam as having a total thickness of 2.1m, again as 2 leaves. These seams are approximately 5.0m apart. Shaft records for the Strafford colliery located some 1.3km northeast of the site, show the Joan coal to be approximately 0.5m thick, the Tankersley Ironstone as approximately 1.2m thick and the Flockton Thick coal as approximately 1.9m thick. Separation thicknesses for the Joan coal and the underlying Tankersley Ironstone are approximately 15.2m and for the Tankersley Ironstone and the underlying Flockton Thick coal are approximately 4.0m.
Nearby intrusive information	Publicly available BGS archive borehole information close to the northeast record superficial clays to approximately 2.7m depth underlain by mudstone proved to a maximum depth of some 5.0m.
Coal Authority mining report	The CA believes the site to be within the influence at the surface from past underground mining within 7 seams of coal at shallow depth to 210m, last worked in 1979. There is no present of future underground mining that may potentially affect the surface stability of the site. There is a total of 9 recorded former mine entries (shafts) on, or within

	20m, of the site boundary. There are no records as to any treatment, if any, undertake with respect to these mine entries. Further unrecorded mine entries may be present. The eastern part of the site is recorded as being within the boundary of former opencast coal mining. There are no records of any mine gas emissions requiring action within or in close proximity to the site boundary. There are no coal mining subsidence claims registered as within 50m of the site and no remedial works have been undertaken with respect to coal mining hazards.
Shallow mining	The CA Interactive Viewer indicates the site to lie within an area of probable shallow coal mining which is considered as being associated with the working of the Joan coal, Tankersley Ironstone and possibly the Flockton Thick coal seams. The site is located within a CA designated Development High Risk Area. BGS geological mapping records historic bell pits on and within the vicinity of the site. An area of recorded past shallow coal mining is located immediately north of the site. The Joan coal and the Flockton Thick coal seams are recorded as outcropping on the site or close to the southwest of the site, respectively. Additionally, it is considered that the Tankersley Ironstone seam outcrops within the southern part of the site. Collectively, all these seams are likely to have been exploited at shallow depth beneath the site.
Surface mining	BGS mapping records former opencast coal mining as having occurred across the eastern part of the site. The CA Interactive Viewer indicates past unlicensed opencast coal mining to have taken place across the eastern part of the site.

4. Risk assessment

4.1 The potential risks to the redevelopment of the site associated with the coal mining legacy of the locality are summarised in the following table.

Coal mining issue	Risk		Risk assessment (Risk rating)
	Yes	No	
Underground coal mining (recorded at shallow depths)	-	**No**	Historic shallow mining is recorded immediately north of the site. Numerous former disused shafts are recorded on the site itself, including bell pits. The Joan coal (and Tankersley Ironstone seam) are mapped as outcropping within the site. Shallow coal and ironstone seams underlie the site – **Low**
Underground coal mining (probable at shallow depths)	**Yes**	-	The Joan coal, Tankersley Ironstone and Flockton Thick coal seams are all present beneath the site at shallow depth. The site lies within an area of probable past shallow mine workings and is within a Development High Risk Area. Numerous disused shafts (including bell pits) are present within the site. Evidence of widespread historic mining in the locality associated with these seams would suggest potential shallow mining beneath the site – **High**
Mine entries (shafts and adits)	**Yes**	-	A total of 5 no. former shafts are recorded within the site and 4 no. within close proximity to the site boundary. Areas of the site (and the existing dwelling) are within the potential zone of influence of these shafts. In addition, other unrecorded mine entries may potentially be present on the site. The outcrop of the Joan coal and Tankersley Ironstone seams across the site would suggest the potential for their historic exploitation – **High**
Coal mining geology (fissures)	-	**No**	CA information and published geology does not indicate any geological weaknesses on site as a consequence of mining related activities – **Low**
Record of past mine gas emissions	**Yes**	-	CA information states no mine gas related issues in the locality. However, potential

			for mine gas as shallow mining is probable beneath the site – **High**
Recorded coal mining surface hazard	-	**No**	CA information does not record the presence of any mining surface hazards on site which have undergone remedial works. However, past surface hazards (shafts) are indicated as present both on and within close proximity to the site – **Low**
Surface mining (opencast workings)	**Yes**	-	CA information states the site to be affected by past opencast coal workings – **High**

5. Discussion

5.1 The risk assessment above highlights several potential risks posed to the site during redevelopment; namely potential for shallow coal mine workings, recorded and potentially unrecorded mine entries, associated mine gas emissions and former opencast mining, cumulatively assessed as **high**. These risks are discussed in turn more fully below.

Shallow mine workings

5.2 The Joan coal and Tankersley Ironstone seams are recorded as outcropping within the site and the Flockton Thick coal seam as outcropping close to the southwest, all considered as underlying the site at shallow depth. It is estimated that the Joan coal seam is likely to be present at surface to approximately 5m below, the Tankersley Ironstone seam at surface to approximately 10m below and the Flockton Thick coal seam at between approximately 5 and 20m below the surface. Beneath the site, depth to competent rockhead is likely to be between 2 and 3m as proved in nearby intrusive works. Historic colliery records indicate the Joan coal seam as approximately 0.5m thick and nearby historic information indicates the workable Tankersley Ironstone seam as approximately 1.2m thick. The Flockton Thick coal seam is locally recorded as approximately 2.1m thick (including dirt partings). Separation intervals for the Joan and underlying Tankersley Ironstone are locally some 15m with the Flockton Thick coal seam some 4 to 5m beneath the Tankersley Ironstone. There is considered to be *insufficient* competent rock cover above all these seams to maintain surface stability in the event of these seams having been worked beneath the site. This assumption is based upon having a minimum of 10 times intact total seam thicknesses of competent rock strata present above these seams. However, the surface stability at the site can only be comprehensively determined through undertaking intrusive works. Such intrusive investigations will determine whether mine workings are present within the Joan coal, Tankersley Ironstone and Flockton Thick coal seams and to what extent, as well as confirming the depth of these coal seams and their respective thicknesses beneath the site.

Mine entries

5.3 A total of 5 no. recorded former mine entries (shafts) are recorded on the site itself with another 4 no. shafts as being present within close proximity of the site boundaries. Geological

mapping records historic bell pits as present on the site and within the immediate area of the site. Such intensive exploitation is regarded as a consequence of the outcrop of the Tankersley Ironstone and Joan coal seams in an approximate northwest to southeast direction across the site. The presence of other on-site unrecorded former mine entries cannot be discounted. Pre 1873, it was not a statutory requirement to record mine entries and mining plans.

Such features are considered as presenting a potential risk to development by way of instability and potential collapse. A zone of influence would be associated with any such mine entry whereby any proposed development within this zone would be affected by potential instability. Intrusive investigations would be required to locate past mine entries beneath the site.

Surface mining

5.4 The site is recorded as being affected by historic opencast coal mining within the eastern part of the site. This will have been backfilled with unknown materials prior to redevelopment with the existing land use. The presence of opencast backfill presents a stability hazard in that it is often inadequately engineered resulting in excessive settlement beneath structures founded on such materials, especially without the incorporation of adequate mitigation measures. In addition, if structures straddle a buried highwall as part of the former backfilled workings then differential settlement across such a feature could adversely affect any structures

Mine gas

5.5 The potential for upward migration of mine gases beneath the site cannot be discounted. Such gases are particularly prevalent in former pillar and stall workings that remain open and allow them to build up over time. Mine gases pose a potential significant human health risk to the future occupants of dwellings and existing occupants of adjacent dwellings. Deep made ground, if present, may potentially present a ground gas source.

6. Proposed mitigation strategy

6.1 A review of geological and historical mining information at the site has shown that there is a risk to surface stability from shallow mine workings that may be present within the Joan coal, Tankersley Ironstone and Flockton Thick coal seams. Additionally, the site's surface stability is at risk from numerous recorded (and unrecorded) on site and adjacent mine entries, there is a potential risk posed by upward migration of mine gases and likewise a risk is presented to the site's surface stability from recorded past opencast coal mining at the site.

Shallow mine workings

6.2 Geological, historical and CA mapping all demonstrate there to be a plausible risk presented by shallow mine workings within the Joan coal, Tankersley Ironstone and Flockton Thick coal seams present beneath the site. It would be prudent, therefore, to undertake proof drilling across the site to confirm the depth to rockhead and depth to/nature of the underlying coal and ironstone seams. Boreholes should be put down to 30m below existing ground levels with appropriate permission and licences obtained from the Coal Authority prior to commencing any such intrusive works. If shallow mining of the above is proved as presenting a risk to the surface stability of the site, then drilling and grouting works may be required to consolidate these workings and/or a modified foundation design. In light of the proposed redevelopment, such intrusive works would be more effective on a cleared and demolished site.

Mine entries

6.3 The presence of both recorded (shafts) and unrecorded mine entries (shafts or adits) should be confirmed by undertaking a targeted intrusive investigation of these features. Additionally, during site enabling works and a site strip the exposed sub soils should be checked for the presence of disturbed and potentially unstable ground associated with backfilling of such features. During such works vigilance should be taken with respect to any anomalous findings. If mine entries are identified on the site, then these may require treatment by grouting and capping at the surface and the siting of any new development footprint over these features or within influencing distance should be avoided.

Surface mining

6.4 The presence of disturbed ground associated with historic opencast coal mining at the site will need confirming. There is the potential for deep made ground to underlie part of the site associated with backfilling of the former opencast site. Intrusive ground investigation by either trial pitting or drilling should be undertaken to determine the nature of the sub soils and whether any remnant highwalls are present. Again, given the proposed redevelopment, such intrusive works would be more effective on a cleared and demolished site. If the above features are confirmed beneath the area of proposed redevelopment, then advice should be sought as to adopting an appropriate foundation solution, which may involve piling or the use of a raft foundation.

Mine gas

6.5 The incorporation of robust gas protection measures during construction are considered likely within the new development. However, such measures are inherently incorporated within the construction of new buildings by way of use of a suspended floor slab offering a passively vented underfloor void, incorporation of a radon protection membrane (if appropriate) and a damp proof membrane together with the sealing of service entries. Given the proposed redevelopment of a single dwelling, the requirement for a gas monitoring programme is not considered warranted at this stage, subject to the results of an intrusive investigation. It is recommended that advice and approval is sought from regulators at an early stage.

7. Conclusions

7.1 There is a potential risk posed to the redevelopment of the site from shallow mine workings that may be present in the underlying Joan coal, Tankersley Ironstone and Flockton Thick coal seams. Such risks comprise surface instability from collapse of past shallow mine workings and former mine entries. Additionally, past opencast mining beneath the site presents a potential instability risk to redevelopment. Proof drilling together with trial pitting are recommended to better understand these risks.

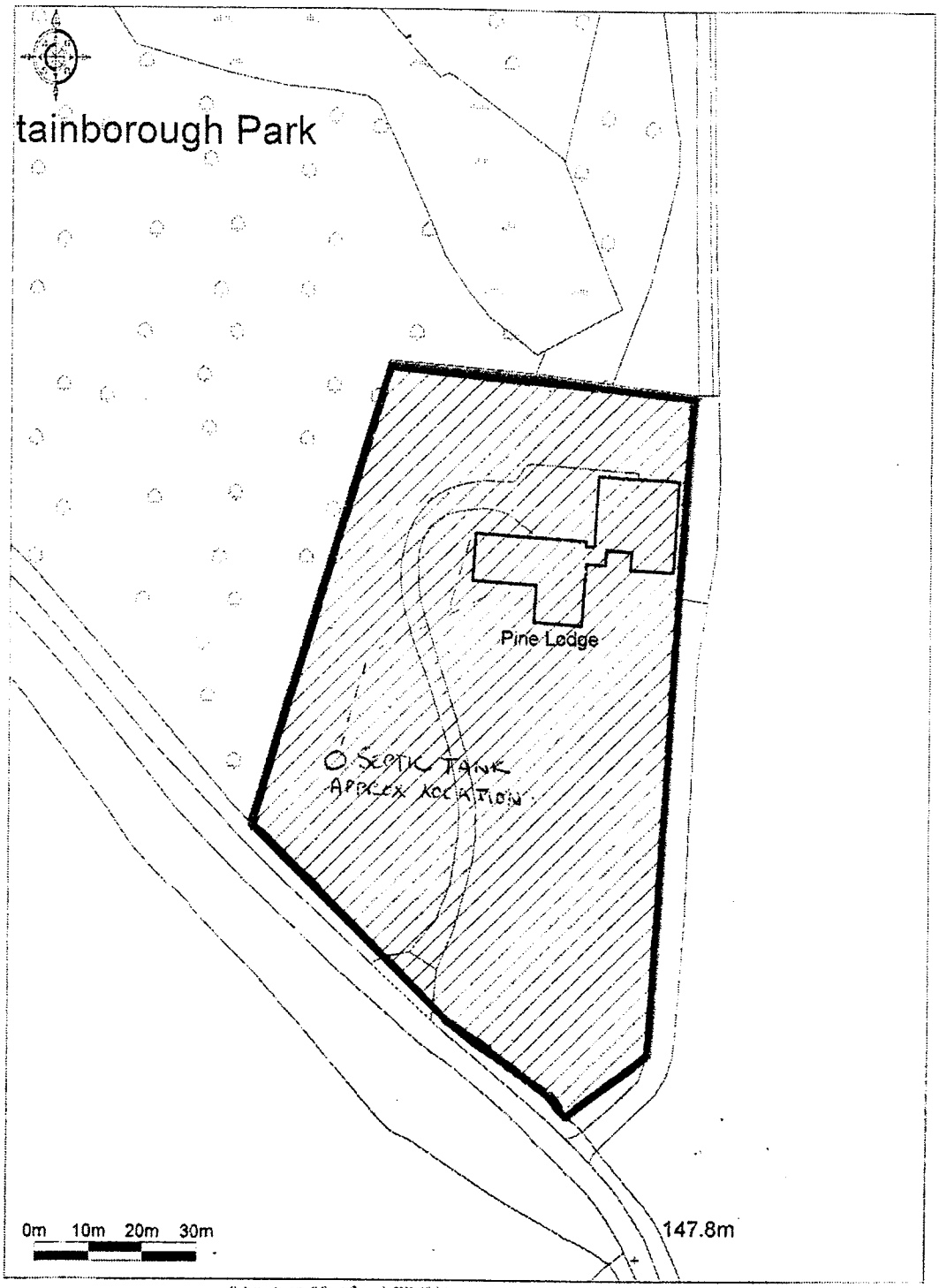
7.2 In addition, as there can never be total certainty with regard to both recorded and unrecorded mine entries, a targeted intrusive investigation prior to redevelopment is warranted. The developer should be made aware of this possibility during site stripping and excavation for foundations. Any evidence of the suspected presence of former mine entries should be investigated further.

7.3 Advice should be sought from regulators as to adoption of appropriate measures to protect against ground (mine) gases within the new development.

Appendix A

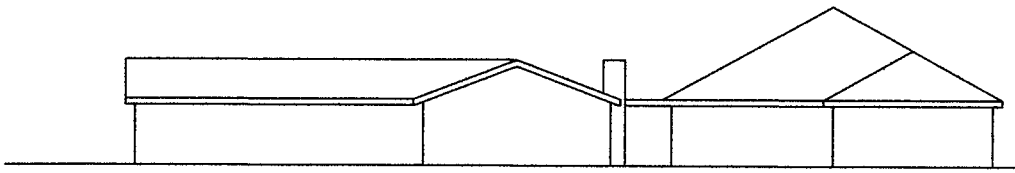
Site location plan and proposed development

Pine Lodge

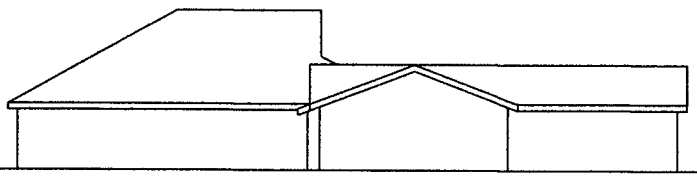


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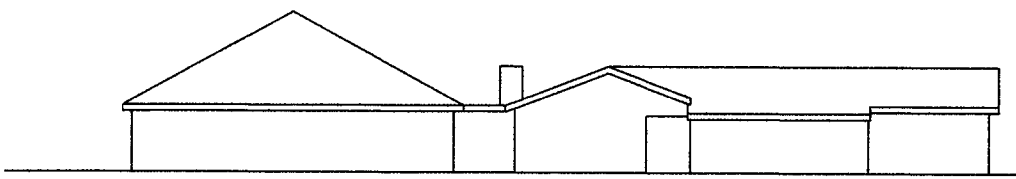
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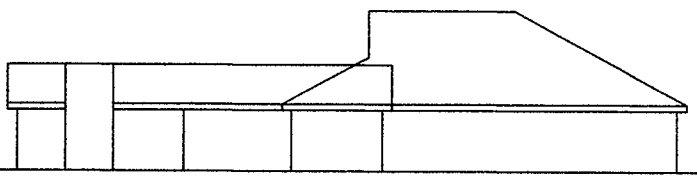
south elevation



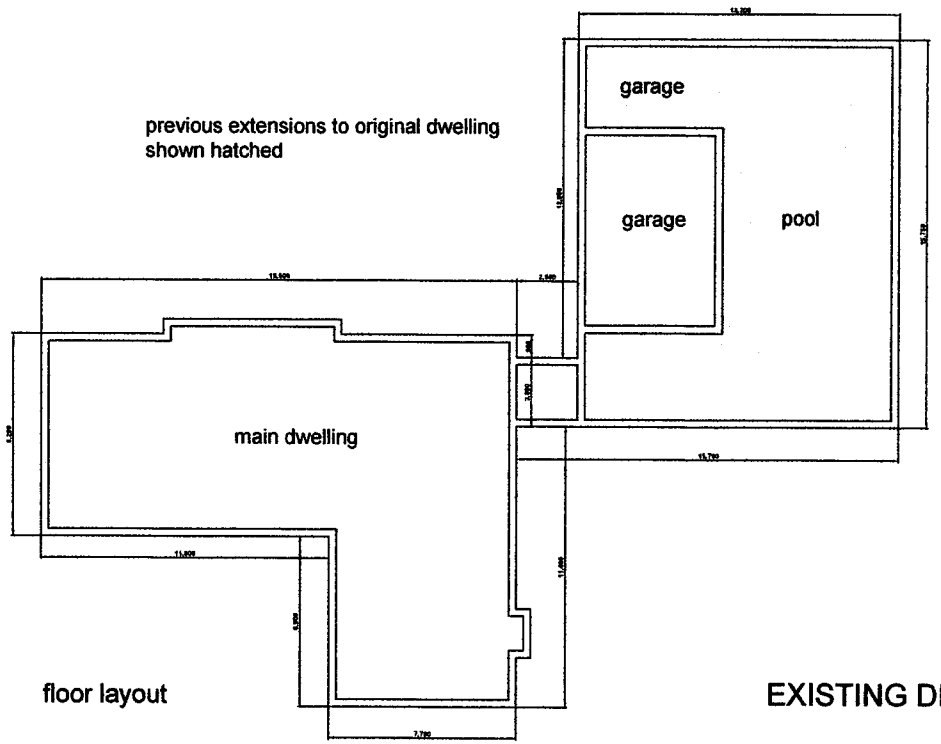
west elevation



north elevation



east elevation



floor layout

previous extensions to original dwelling shown hatched

O/all footprint = 433.51 sq m

Prev' extensions (hatched) and outbuilding (garage) = 213.00 sq m

Original dwelling footprint = 220.50sq m

100% increase would be 440.1 sq m (4737 sq ft)

EXISTING DETAILS

A Modifications made to floor areas

REVISIONS

PETER DIMBERLINE Dip Arch, RIBA
CHARTERED ARCHITECT

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CLIENT
Mr and Mrs Green

PROJECT
Proposed replacement dwelling
PRE - APPLICATION ENQUIRY to BMBC

LOCATION
Pine Lodge, Stainborough Lane,
Hood Green, Barnsley S75 3EZ

DRAWING
Existing dwelling details to identify footprint and elevation profiles

SCALES 1:200 at A3 DATE Mar' 19

DWING No. 2019/06/01 REV. A DRAWN BY PD

Appendix B

Enviro All-in-One report incl. Coal Authority mining report

The Coal Authority

Groundsure
LOCATION INTELLIGENCE

Enviro All-in-One

Residential search report



PINE LODGE, STAINBOROUGH LANE, HOOD GREEN, BARNSLEY, S75 3EZ

Professional findings

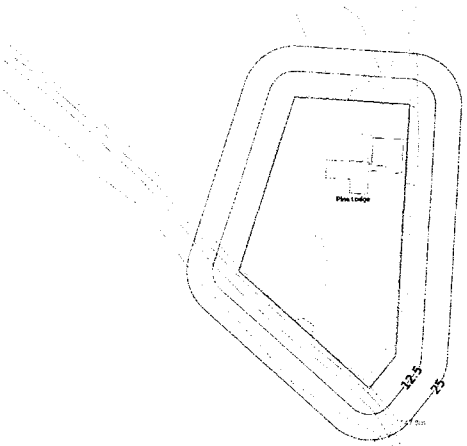
Coal Mining
Further action — Page 6

Contaminated Land Liability
Passed — Page 5

Flood Risk
Negligible

Addresses the Law Society guidance on Coal mining risks, Contaminated Land and Flood risk.

Site plan



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Further guidance

Other Ground Stability
page 5

Radon
page 5

Planning Constraints
page 16

Screenings

Energy
Identified — page 14

Transportation
Identified — page 15

Planning Applications
Identified — page 16

Full assessments for these risks are available in other Groundsure searches including the Groundsure Avista 7 in 1 report. Contact Groundsure or your search provider for further details.

The Property Ombudsman
SearchCode™

For coal mining related issues please contact:
groundstability@coal.gov.uk
0345 762 6848

For all other issues and assistance please contact:
info@groundsure.com
0844 415 9000

Coal Authority ref: 81002914079001
Reference: 51002127256001
Your reference: -
Grid reference: 431740 402724
Date: 24 May 2019

Enviro All-in-One

Coal Authority ref: 81002914079001
Reference: 51002127256001
Your reference: -
Grid reference: 431740 402724
Date: 24 May 2019

Useful contacts

Barnsley Metropolitan Borough Council:
http://www.barnsley.gov.uk/
online@barnsley.gov.uk
01226 773555

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

Overview of findings and recommendations

Coal mining

According to the records held by the Coal Authority at the time the report was produced, the search report has identified evidence, or the potential of, coal mining related risks. For detailed findings please read from **page 6**.

Further action is required because there is evidence of:

- Mine entries within, or within 20 metres of the subject property

Further recommended reports

Based on the findings, the following reports are available which give more information on the risks identified:

Mine entry interpretive report
Mine entry plan and data sheets

For further help with coal mining related enquiries, please contact our Mining Reports team on 0345 762 6848 or contact us online and a member of the team will call you back.

Environmental Findings

To save you time when assessing the report, we only provide maps and data tables of features within the search radius that we have identified to be of note. These relate to environmental risks that may have liability implications, affect insurance premiums, property values and/or a lender's willingness to lend.

You can view the fully comprehensive library of information we have searched on **page 19**.

Enviro All-in-One

Coal Authority ref: 81002914079001
Reference: 51002127256001
Your reference: -
Grid reference: 431740 402724
Date: 24 May 2019

Ground stability

The property is assessed to lie within an area that has; a moderate to high potential for natural ground subsidence, a risk of natural cavities being present, and/or non-natural ground subsidence risks present. Key recommended next steps:

- consider having a structural survey conducted by a Structural Surveyor to determine whether or not the property is affected. Note that any such structural survey will supersede the Groundsure report
- consider conducting a visual check at the property looking out for cracks and other signs of subsidence
- consider contacting the relevant Local Authority to ask for records of the property and local area relating to subsidence
- remember that professional advice should be sought before altering the ground in any way at the property, including by planting trees

Rn Radon

The property is in an area where elevated radon levels are detected in 1-3% of properties. Key recommended next steps:

- if the property is new build, you can check compliance on radon protection with the developer
- 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
- No radon protection measures will be required to be installed in the event that any new buildings or extensions are added to the property.
- See for example http://www.radonassociation.co.uk/guide-to-radon/information-for-house-buyers-and-sellers/ for further information

Other considerations

These are potential actions associated with non-environmental search returns such as mobile masts and planning constraints.

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

Visual and cultural designations

The property lies within 50m of a visually or culturally 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

Enviro All-in-One

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Date: 24 May 2019

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 **page 2** for further advice.

Contaminated Land

No significant concerns have been identified as a result of the contaminated land searches.

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

Flood Risk

No significant concerns have been identified as a result of the flood risk searches. No action required.

Further explanation of flood risk assessment can be seen here groundsure.com/understanding-flood-risk

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

Floodability Rating Green

The rating is compiled by JBA, the UK's leading flood expert. Please see **page 22**

Ground stability

The property is assessed to have potential for natural or non-natural ground subsidence.
Please see **page 12** for details of the identified issues.

Natural Ground Stability	[illegible]
Non-Natural Ground Stability	Not identified

Rn Radon

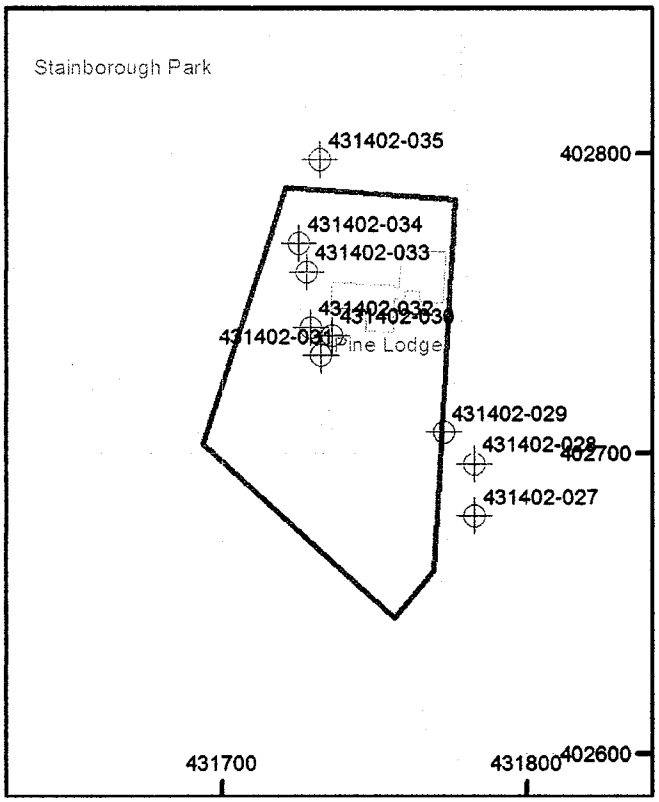
The property is in a radon affected area. This could mean that inhabitants are at risk from the harmful effects of radon. Percentage of affected homes in your local area is between 1% and 3%.
Please see **page 13** for details of the identified issues.

Enviro All-in-One

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Coal Mining

This report is based on, and limited to, the records held by the Coal Authority, at the time we answer the search.



Key

Approximate position of enquiry boundary shown

Disused mineshaft

Map data

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For any coal mining related issues please contact the Coal Authority:
0345 762 6848
groundstability@coal.gov.uk

For all other issues and assistance please contact Groundsure:
0844 415 9000
info@groundsure.com

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 7 seams of coal at shallow to 210m depth, and last worked in 1971.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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. Mine entries

Within, or within 20 metres of, the boundary of the property there are 9 mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

There is no record of what steps, if any, have been taken to treat the mine entries.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

The property is within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

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

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not 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

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

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

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

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

Comments on the Coal Authority information

The boundary plot shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991*). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.groundstability.com.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wish to examine the source plans from which the information has been taken, these are available to view, free of charge, at our Head Office in Mansfield. To book an appointment please ring 01623 637225. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission of the owner must be sought. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number is 01623 646333.

*Note, this Act 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 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 to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply 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.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. This report is prepared in accordance with the Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

Insurance is included as part of this residential report to cover loss in property value arising from any changes in the information contained in this report. Please refer to the attached Certificate of Insurance for the terms and conditions of this insurance. The insurance does not cover non-residential property or further recommended reports.

Disclaimer

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

Alternative formats

If you would like the coal mining section of this report in an alternative format, please contact the Coal Authority's communications team on 0345 762 6848 or email communications@coal.gov.uk.

Enviro All-in-One

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Date: 24 May 2019

Coal Mining Report Insurance Policy

On behalf of the insurer

Schedule

Policy number: **25823266**

The insurer: **Liberty Legal Indemnities – underwritten by Liberty Mutual Insurance Europe SE**

Binding Authority contract number: **RNMFP1903841**

Property: **PINE LODGE, STAINBOROUGH LANE, HOOD GREEN, BARNSLEY, S75 3EZ**

Reference: **81002914079001**

Limit of cover: **£50,000**

Dated: **24 May 2019**

This policy and schedule shall be read together and any word or expression to which a specific meaning has been attached in either shall bear such meaning wherever it may appear.

Where a Coal Mining Report has been obtained in connection with a sale of the property, cover is provided for the benefit of a purchaser and their lender; in the case of a re-mortgage or where the existing owner chooses to obtain a Coal Mining Report, cover is provided for the benefit of the owner and their lender.

The policy offers protection against loss sustained by the owner of the property if any new problems or adverse entries are revealed in a subsequent Coal Mining Report which were not revealed by the original report to which the policy was attached.

The insured shall at all times comply with the requirements of the Conditions of this Policy.

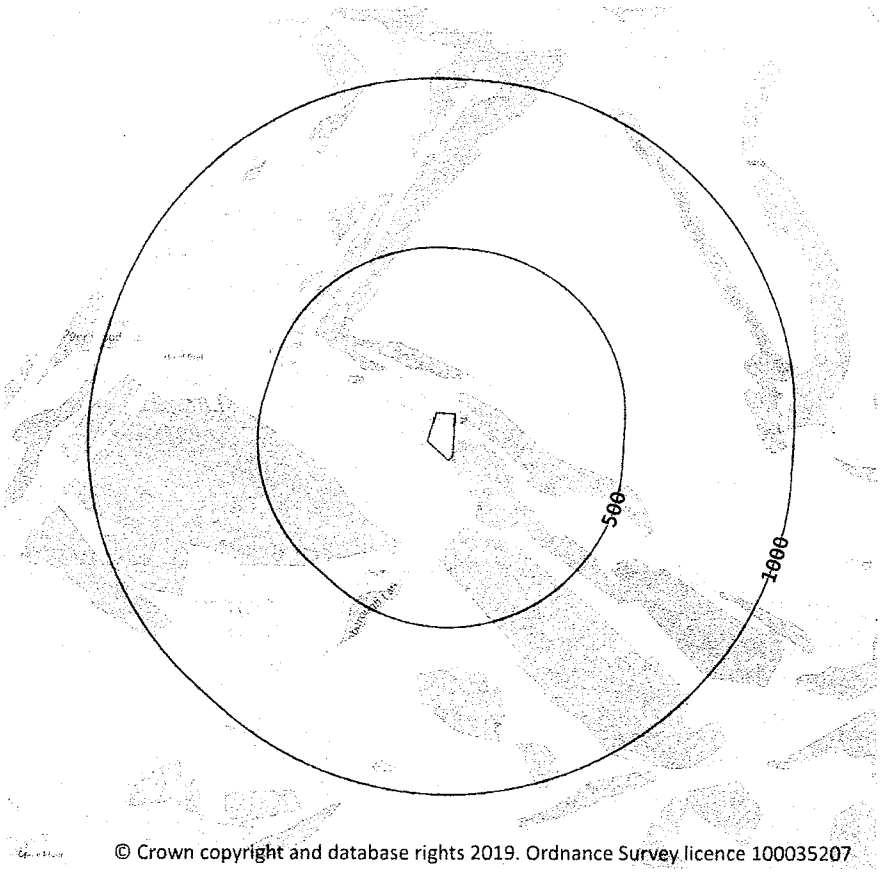
Coal Mining Report Terms and Conditions can be viewed online at this link:
https://www.groundstability.com/insurance/terms/20190404/terms.html

Enviro All-in-One

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Date: 24 May 2019

Other ground stability

Natural ground subsidence



Site Outline

Search buffers in metres (m)

- Moderate - high
- Low
- Negligible - very low

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Natural ground subsidence

The property, or an area within 50m of the property, has a moderate to high potential for natural ground subsidence. This rating is derived from the British Geological Survey's GeoSure database, and is based upon the natural qualities of the geology at the site rather than any historical subsidence claims or events. Additionally, this data does not take into account whether buildings on site have been designed to withstand any degree of subsidence hazard.

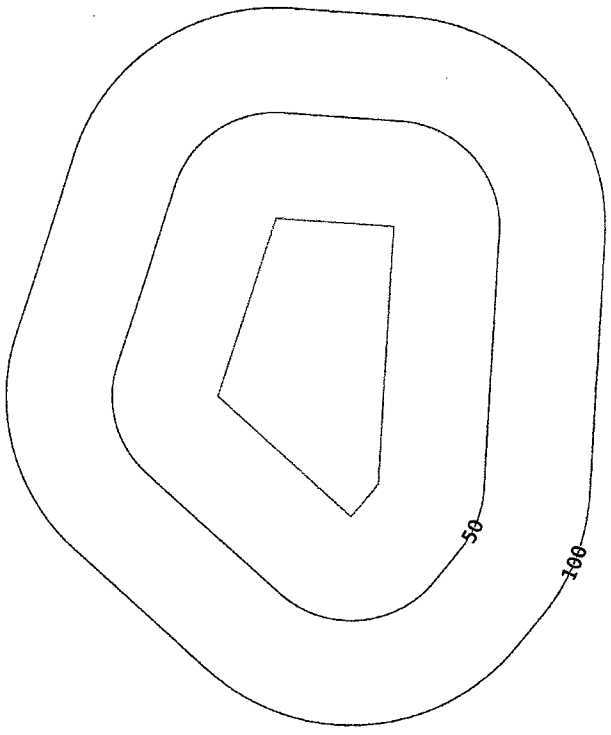
Please see **page 2** for further advice.

Surveyors are normally aware of local problem areas in relation to subsidence, however, this data provided by British Geological Survey (BGS) can highlight areas where a significant potential for natural ground subsidence exists and whether it may need particular consideration. The term "Subsidence" refers to ground movement that could cause damage to foundations in domestic or other properties.

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Radon



Site Outline

Search buffers in metres (m)

- ☐ Greater than 30%
- ☐ Between 10% and 30%
- ☐ Between 5% and 10%
- ☐ Between 3% and 5%
- ☐ Between 1% and 3%
- ☐ Less than 1%

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The property is in a radon affected area, meaning the area has a general radon level above the radon Action Level. 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 Public Health England (PHE) 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. If you are buying a currently occupied property in a radon affected area, ask the present owner whether radon levels have been measured and, if they have, whether the results were above the radon Action Level. If so, what remedial measures were installed, were radon levels re-tested and did the re-testing confirm the measures have been effective.

Please see **page 2** for further advice.

This data is sourced from British Geological Survey/Public Health England.

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Energy summary

The property has been identified to lie within 5km of one or more energy features. The Enviro-All-in-One report summarises these on this page.

If required, full details on these energy features including a detailed location plan relative to the property are available when you purchase a Groundsure Energy and Transportation Report via your preferred searches provider.

Oil and Gas

Active or planned wells or extraction areas (such as fracking sites) have been identified near the property.

Oil and Gas Areas	[illegible]
Oil and Gas Wells	Not identified

Wind and Solar

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

Planned Multiple Wind Turbines	[illegible]
Planned Single Wind Turbines	[illegible]
Existing Wind Turbines	[illegible]
Proposed Solar Farms	Not identified
Existing Solar Farms	Not identified

Energy Infrastructure

Our search of major energy transmission or generation infrastructure and nationally significant infrastructure projects has not identified results.

Power stations	Not identified
Energy Infrastructure	Not identified
Projects	Not identified

Transportation summary

The property has been identified to lie within the search radius of one or more transportation features detailed below.

If required, full details on these transportation features including a detailed location plan relative to the property are available when you purchase a Groundsure Energy and Transportation Report via your preferred searches provider.

HS2

Results for Phase 1 or Phase 2 of the HS2 project have been identified within 5km of the property. However, HS2 routes are still under consultation and exact alignments may change in the future.

HS2 Route	[illegible]
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 1 Worksites	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

The property is not within 250 metres of any active or former railways, subway lines, DLR lines, subway stations or railway stations.

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

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.

5 Total applications

This total includes large developments within 750 m, small developments within 500 m and house extensions within 125 m. If required, full details on these applications including a detailed location plan relative to the property are available when you purchase a Groundsure Planning Report via your preferred searches provider.

Planning constraints

Protected areas have been identified within 50 metres of the property.
Please see **page 17** for details of the identified issues.

Environmental Protected Areas	
Visual and Cultural Protected Areas	

Telecoms

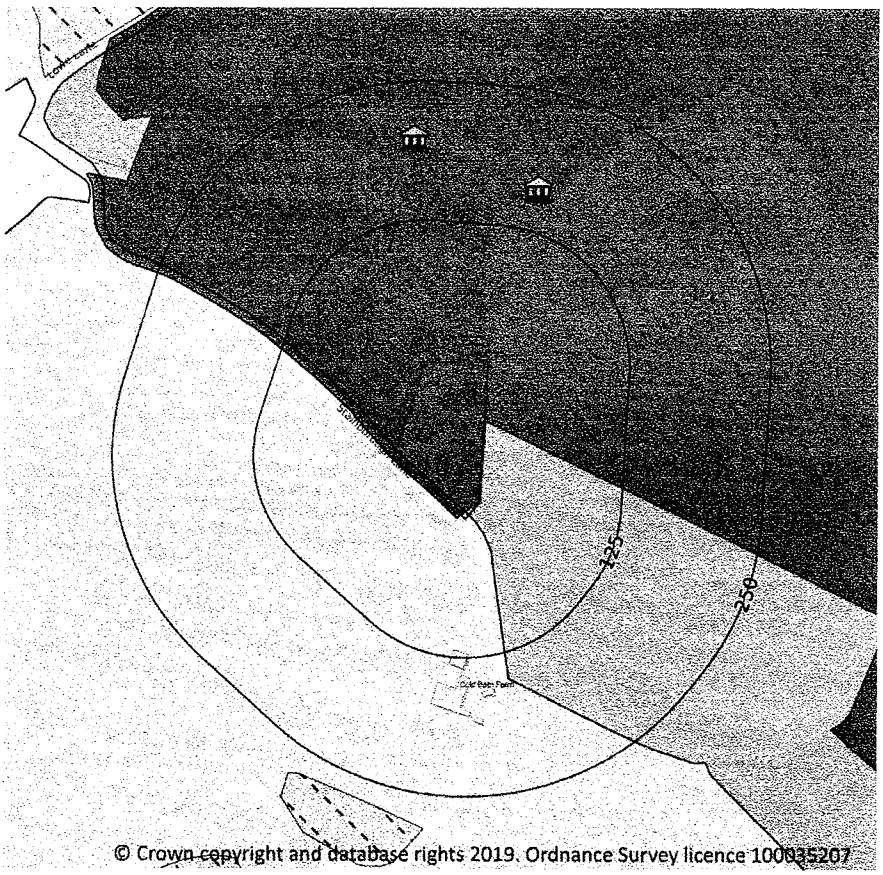
There are no mobile masts, mobile phone base stations or planning applications for mobile masts identified within 250 metres of the property.

Mobile phone masts	Not identified

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Planning Constraints



Site Outline

Search buffers in metres (m)

- Listed buildings
- Certificates of immunity from listing
- Conservation areas
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites
- Internationally important wetland sites (Ramsar Sites)
- Sites of Special Scientific Interest
- Designated Ancient Woodland
- Green Belt
- Local Nature Reserves
- Special Areas of Conservation
- National Nature Reserves
- Special Protection Areas (for birds)

Environmental Designations

Green Belt

Green Belts are intended to prevent inappropriate development by keeping certain areas of land open. The fundamental purpose of Green Belt is to prevent continued growth and merging of urban areas, hence the majority of Green Belt land being located on the fringe of large towns and cities, extending into the countryside. Whilst development can happen in the Green Belt, it should be subject to greater controls on the type and size of the development. However, the presence of a Green Belt designation is not in itself a complete barrier to development and the Local Plan should be consulted if a purchaser is concerned about any potential development in these areas.

Distance	Direction	Green Belt Name	Data Source
0	on site	Liverpool, Manchester and West Yorks Greenbelt	Barnsley District (B)

This data is sourced from the Local Authorities (Green Belt data contains Ordnance Survey data © Crown copyright and database right 2019). For more information please see https://www.gov.uk/guidance/national-planning-policy-framework/9-protecting-green-belt-land

Visual and Cultural Designations

Conservation Areas

Conservation Areas exist to protect special architecture and historic interest in an area. It may mean that the property is located in or close to a beautiful or architecturally interesting place to live. There may be extra planning controls restricting some development. This particularly applies to developing the outside of the building and any trees at the property.

Distance	Direction	Name	District
0	on site	Wentworth Castle and Stainborough Park	Barnsley

This data is sourced from the Local Authorities. For more information please see https://historicengland.org.uk/listing/what-is-designation/local/conservation-areas/.

Registered Parks and Gardens

Registered parks or gardens are a designed landscape considered of historic interest.

Although the inclusion of a historic park or garden on the register in itself brings no additional statutory controls, local authorities are required by central government to consider registration material in planning terms, so local planning authorities must take into account the historic interest of the site when determining whether or not to grant planning permission.

Distance	Direction	Name	Grade
0	on site	WENTWORTH CASTLE	I

This data is sourced from Historic England. For more information please see: https://historicengland.org.uk/listing/what-is-designation/registered-parks-and-gardens/pag-faqs

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Datasets searched

This is a full list of the data searched in this report. If we have found results of note we will state "Identified". If no results of note are found, we will state "Not identified". Our intelligent filtering will hide "Not identified" sections to speed up your workflow.

Contaminated Land	
Former industrial land use (1:10,560 and 1:10,000 scale)	Not identified
Former tanks	Not identified
Former energy features	Not identified
Former petrol stations	Not identified
Former garages	Not identified
Former military land	Not identified
Former landfill (from Local Authority and historical mapping records)	Not identified
Waste site no longer in use	Not identified
Active or recent landfill	Not identified
Former landfill (from Environment Agency Records)	Not identified
Active or recent licensed waste sites	Not identified
Recent industrial land uses	Not identified
Current or recent petrol stations	Not identified
Hazardous substance storage/usage	Not identified
Sites designated as Contaminated Land	Not identified
Historical licensed industrial activities	Not identified
Current or recent licensed industrial activities	Not identified
Local Authority licensed pollutant release	Not identified
Pollutant release to surface waters	Not identified
Pollutant release to public sewer	Not identified
Dangerous industrial substances (D.S.I. List 1)	Not identified

Contaminated Land	
Dangerous industrial substances (D.S.I. List 2)	Not identified
Pollution incidents	Not identified

Flood Risk	
Risk of flooding from rivers and the sea	Not identified
Flood storage areas: part of floodplain	Not identified
Historical flood areas	Not identified
Areas benefiting from flood defences	Not identified
Flood defences	Not identified
Proposed flood defences	Not identified
Surface water flood risk	Not identified
Groundwater flooding	Not identified

Ground stability	
Natural ground subsidence	**Identified**
Natural geological cavities	Not identified
Non-coal mining	Not identified
Mining cavities	Not identified
Infilled land	Not identified

Radon	
Radon	**Identified**

Energy Infrastructure	
Electricity transmission lines and pylons	Not identified

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Planning constraints

Sites of Special Scientific Interest	Not identified
Internationally important wetland sites (Ramsar Sites)	Not identified
Special Areas of Conservation	Not identified
Special Protection Areas (for birds)	Not identified
National Nature Reserves	Not identified
Local Nature Reserves	Not identified
Designated Ancient Woodland	Not identified
Green Belt	**Identified**
World Heritage Sites	Not identified
Areas of Outstanding Natural Beauty	Not identified
National Parks	Not identified
Conservation Areas	**Identified**
Listed Buildings	Not identified
Certificates of Immunity from Listing	Not identified
Scheduled Monuments	Not identified
Registered Parks and Gardens	**Identified**

Planning

Mobile phone masts	Not identified
Mobile phone masts planning records	Not identified