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East Ardsley
Leeds
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BY E-MAIL

Our Ref: LCF/01/EGH

28th July 2017

-- Dear Gavin

Barnsley Road, Silkstone
Coal Mining Stability Risk Assessment

In accordance with our commission, we are pleased to provide an assessment of the stability of the site with regard to coal mining. The site is located to the north of Barnsley Road, on the east side of the village of Silkstone, and the approximate site boundary is shown on the geological sketch and proposed development plans attached. It is proposed to construct three residential dwellings with private gardens.

Geology

The 1:10,560 scale geological map (Sheet SE20NW, Silkstone, Dodworth), and the latest British Geological Survey (BGS) electronic data at 1:50,000 scale, which is public sector information licensed under the Open Government Licence v2.0, have been used to assess the geology of the local area. The maps show the solid strata below the site to comprise sandstone of the Silkstone Rock, as part of the wider Pennine Lower Coal Measures Formation, which comprises undifferentiated sedimentary strata (mudstone, siltstone and minor sandstone), with no drift cover.

A fault is indicated approximately 17m to the southeast of the site, trending north-northeast – south-southwest, with the downthrow to the south-southeast. The fault may affect the site locally, around the south and southeastern corner. The proposed location for the plots may not be affected by the fault. According to the geological map, the general dip in the area is indicated to be 1 in 10 (approximately 5.74 degrees) to the northeast.

A northeast trending coal seam (Silkstone Coal) outcrops approximately 187m to the south-southeast of the site (91.4m AOD), but curves around as you move westwards for approximately half a kilometre, finishing up with a northwest trend. The general dip of the strata in the area is indicated to be 1 in 9 (6.5 degrees) to 1 in 12 (4.8 degrees) to the north-northeast, but could also be to a northwest direction; as a result the Silkstone Coal seam should underlie the site at a depth of between 15.8m (around 75.5m AOD) to 20.2m (71.2m AOD). The site lies at an elevation of approximately 91.4m to 94.5m AOD (similar elevation to the closest indicated Silkstone Coal outcrop, at the west of Silkstone Beck). The seam is indicated to be between 1.01m and 1.8m



thick, and is known to have been extensively worked in the area. An adit is shown to enter the Silkstone Coal, at 165m to the south-southeast of the site. Other adits and shafts are shown to enter the Silkstone Coal, and other coal seams, in the surrounding area. The Generalised Vertical Section on the geological map indicates that the next shallowest significant seam below the Silkstone Coal is the Blackband Coal, around 59m below. At such a depth, the Blackband Coal is not of concern for ground stability.

A second coal seam (Fourfoot Coal) is conjectured to outcrop at approximately 135m to the north of the site, curving from southeast to northwest trending, from 91.4m to 100m AOD. The general dip of the Fourfoot Coal is shown, in an adjacent fault block to the east, to be 1 in 5 (approximately 11.2 degrees) to the northeast. This direction is away from the property, and as a result the Fourfoot Coal should not underlie the site.

Coal Mining Stability and Coal Recovery

A Coal Mining Report (attached) was obtained from The Coal Authority. The Report is attached, and states that the property is in a surface area that could be affected by underground mining in two seams of coal at shallow to 70m depth, and last worked in 1970. This comment is concluded to refer to the Silkstone Coal and Blackband Coal seams identified earlier, which are likely to be present around 16m depth and 75m depth, beneath the site.

The property is not in an area which could be affected by present underground mining. The property is not in an area likely to be affected from any planned future underground coal mining. The report refers to reserves of coal which exist in the local area which could be worked at some time in the future.

There are no known coal mine entries, within, or within 20m of, the boundary of the property. However, there may be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

The site is not affected by any past, present, or future proposed, opencast coal mining. There are no known subsidence claims on or near the site.

Assessment of Coal Mining Instability - Conclusions

It is a generally accepted rule of thumb that unless there is at least 10 times the seam thickness of rock cover above any workings, they have the potential to adversely affect ground stability on the site. Therefore, based on the indicated position of the Silkstone Coal seam outcrop and the site, and assuming a worst-case scenario seam dip of 1 in 12 (approximately 4.8 degrees) between the outcrop and the site, any mine workings present in the maximum 1.8m thick seam would occur around 16m depth. As a consequence, any such workings pose a risk to ground stability, as there is less than the required 18m thickness of competent rock above.



Moreover, publically available local BGS borehole records (in the adjacent fault block to the east) indicate rockhead at between 2.6m (SE20NE116, thin band of brown weathered sandstone) and >6.55m (SE20NE111, dark grey ironstained weathered shaly mudstone); intact rock beneath the site will be reduced by these thicknesses.

It is, therefore, concluded that a rotary drilling investigation should be carried out to confirm the depth and thickness of the seam beneath the site, and any potential workings present. Such borehole investigations are usually carried out following the grant of planning permission, but before commencement of development. The planning permission will usually include a condition relating to the investigation and possible future treatment of mine workings.

The presence of underground workings is not a significant obstacle to development, and there are economical engineering solutions available. ARP provides advice on and designs such treatment solutions on a regular basis.

Coal is unlikely to be encountered within foundation excavations on the site and it is unlikely to be viable to remove any coal from the site by excavation prior to development.

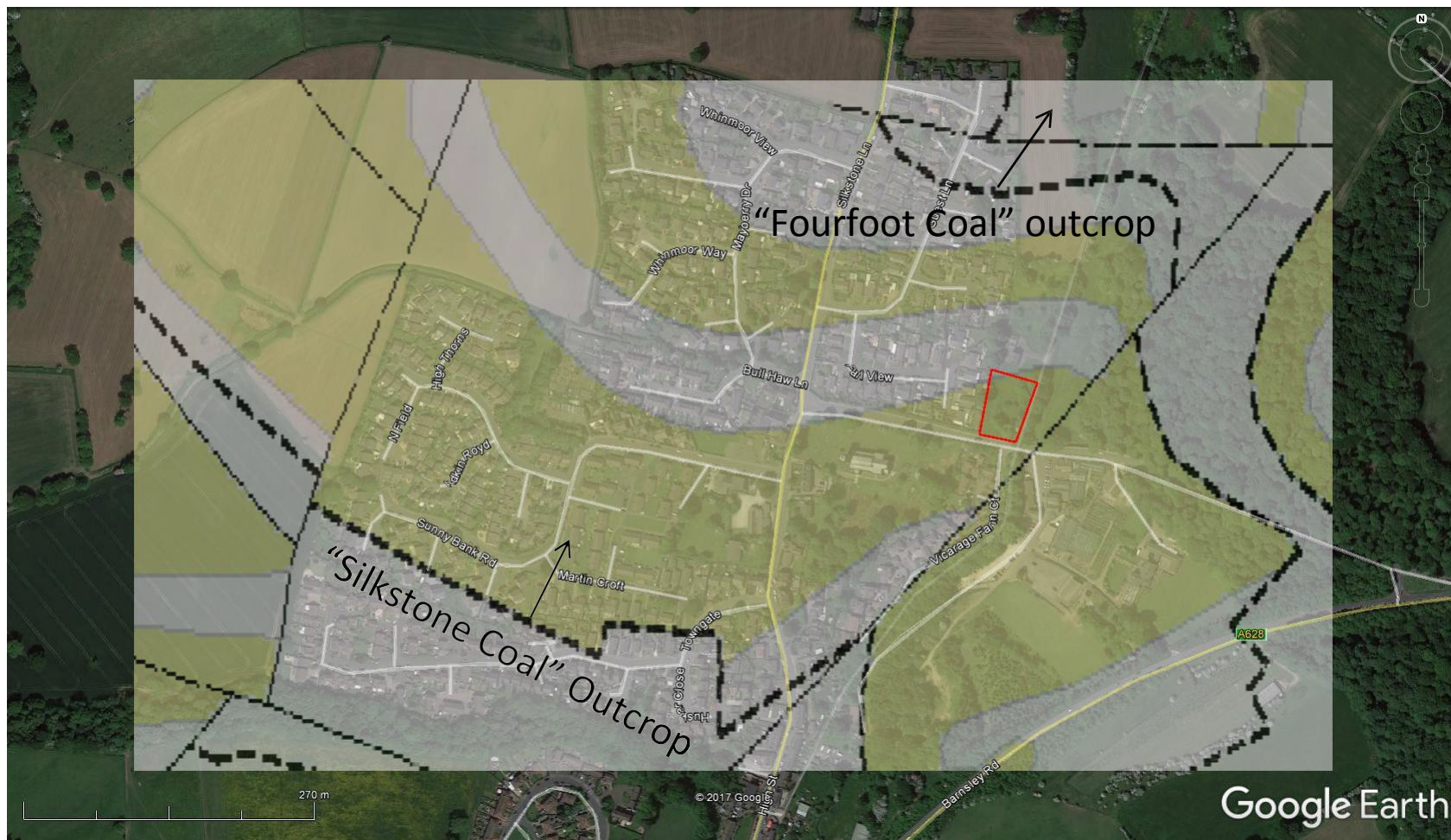
There is a slight risk of unrecorded mine entries on the site. In our view, this does not require any investigative work to be carried out, but any suspect features uncovered during site clearance or excavations on the site, should be inspected by a Geotechnical Engineer.

We trust the above information is sufficient for your purposes, but if you have any queries, please do not hesitate to contact us, at your convenience.

Yours sincerely
for ARP GEOTECHNICAL LTD

E G Heatherington

Encs



LCF/01
Land at Barnsley Road, Silkstone
Geological Plan
July 2017

Key

 Site boundary

 Interpreted dip direction



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

LAND AT BARNSLEY ROAD
SILKSTONE
BARNSLEY
SOUTH YORKSHIRE

Date of enquiry: 10 July 2017

Date enquiry received: 10 July 2017

Issue date: 10 July 2017

Our reference: 51001523025001

Your reference: 131614651_1|



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

LANDAT BARNSELY ROAD, SILKSTONE, BARNSELY,
SOUTH YORKSHIRE

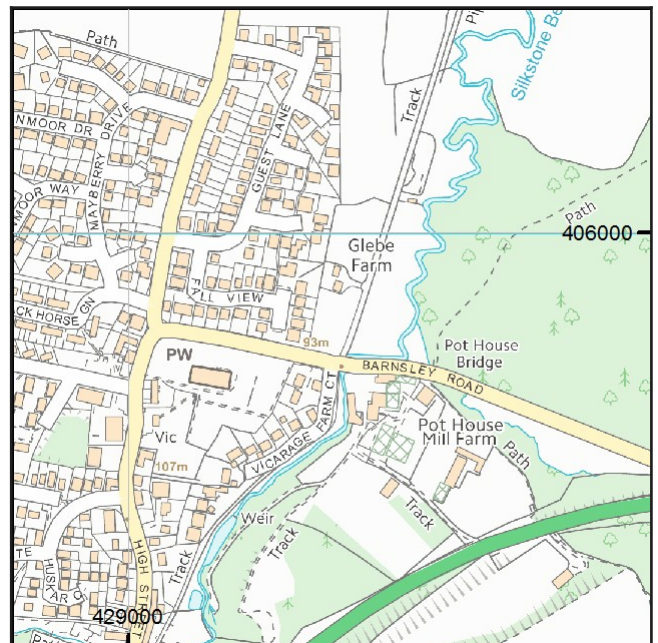
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Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	Yes
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	Yes
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is in a surface area that could be affected by underground mining in 2 seams of coal at shallow to 70m depth, and last worked in 1970.

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 plans to grant a licence to remove coal using 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

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

There may however be mine entries/additional mine entries in the local area which the Coal Authority has no knowledge of.

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 not 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, 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. Minegas

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 Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

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.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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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 and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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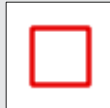
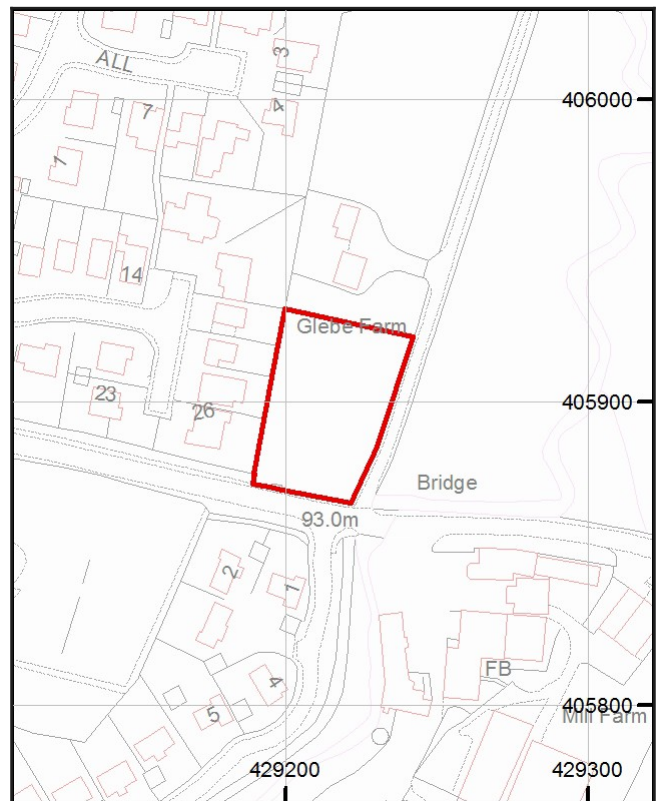
Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown



How to contact us

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Revisions		
Site Boundary	2,180 sq.m.	Grid Ref. - SE 2921 3 05893
Existing Trees		
Proposed Landscaping	- 289 sq.m.	
Paved Area (within plot)		
Private Drive	Length (including turning head) - 76 m.	Area - 373 sq.m.
Plot 1 - 791 sq.m.	Two storey dwelling - 178 sq.m.	Double garage - 30 sq.m.
Plot 2 - 689 sq.m.	Two storey dwelling - 194 sq.m.	Double garage - 30 sq.m.

RevA Reduain of site area - removal of plot SJW. 07 07 2017

planners | urbanists | architects

@spawforth

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Client Name

Project No 4049	Project Title Priority Spac_Silkston			
Drawn By SJW	Reviewed By SJW	Scale 1/500@A2	Discipline Design	Date Jan 2 17
rawing No. 0001 0002	Drawing Title Proposed Site Layout - ViSi ility Splays	Revision A		

File Path

Important notice:
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