

ATTA Properties Ltd
Office Three
Victoria Road
Barnsley
S70 2BU

LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY

Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 0788755580

Date: 5th December 2023
Your ref: (S70 4SB).
My Ref: CMRA 00327

FOR THE ATTENTION OF MR TOM AGUS

Dear Sirs,

COAL MINING RISK ASSESSMENT (CMRA) - FOR PROPOSED RESIDENTIAL DEVELOPMENT AT DARLEY YARD, WORSBROUGH BRIDGE, BARNSELY S70 4SB

Introduction

Planning permission is being sought for the development of two detached dwellings including separate garages at the above named site, the location of which can be seen on the attached plan No. 00327/A in Appendix 1, which also outlines the proposed development. The site is centred around national grid reference E: 435989 / N: 404016. A Coal Mining Risk Assessment is required for the proposals, in order to competently address the mining legacy for the site and determine what impact this may have had upon the land. The assessment is intended to be included as a supporting document to a future planning application to Barnsley MBC.

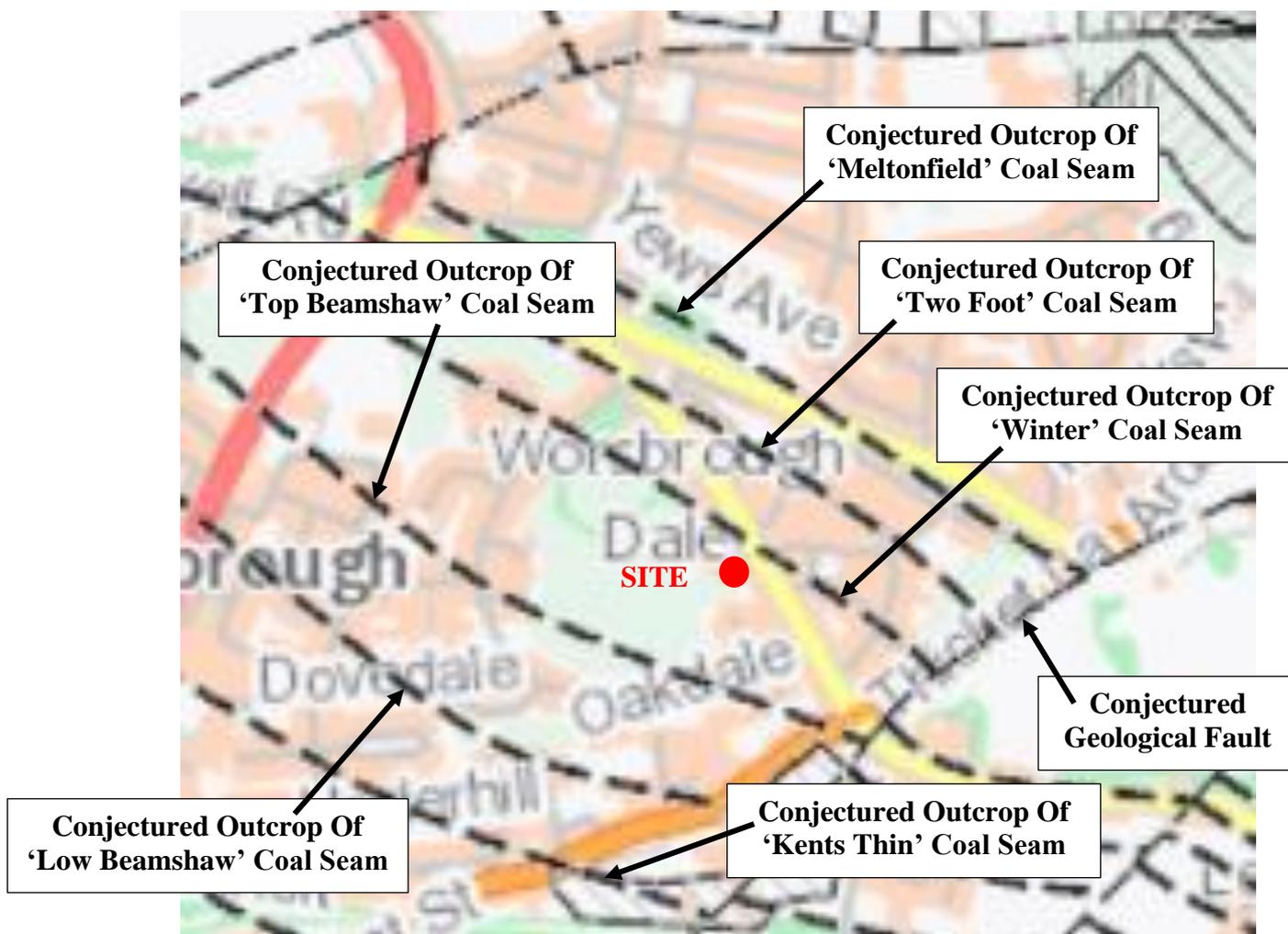
Scope of the Coal Mining Risk Assessment

The purpose of this Coal Mining Risk Assessment Report 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 further works that may be necessary; 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.

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on shales and mudstones of the Middle Coal Measure series from the Carboniferous formation. No superficial deposits are indicated in the vicinity of the site itself. Strata is shown to dip towards the NNE (north-north-east) at around 5° (1 in 10) in this vicinity. A summary of the surface geology is illustrated on the image below which is an extract from the BGS Onshore Interactive Viewer:



Fault Planes or Fissures

A geological fault is conjectured to pass clear of the site by over 200m away to the south-east as indicated above, which throws the strata down to the south-east. No fissuring of bedrock is known in the vicinity and considering the geology the likelihood of such would be considered a low probability.

Coal Seam Outcrops

As outlined above, the 'Winter' coal seam (of around 0.8m thickness) is conjectured to outcrop some 20m away to the north-east, which dipping away from the site in the same direction should not be present beneath the site. The same will apply to the 'Two Foot' and 'Meltonfield' coal seam which outcrop further away to the north-east.

The shallowest coal seam beneath the site will be the 'Top Beamshaw' seam, only of around 0.3m thickness in these parts, which is conjectured to outcrop some 120m away to the south-west of the site. This seam would be expected at around 15m deep or more beneath the site.

The 'Low Beamshaw' and 'Kents Thin' coal seams (both of circa 0.6m thickness) are also shown to outcrop further to the south-west as indicated, which will lie beneath the site at over 30m deep.

Made Ground

No made ground is shown in the vicinity of the site.

Opencast Coal Workings.

No opencast coal operations are known within 250m of the site.

Underground Coal Workings - Deep

Deep coal mining (over 50m deep) has taken place beneath the site in various coal seams, all settlement from which will be long complete. As no coalfields now exist, the site should remain stable from the deep coal mining perspective for the foreseeable future.

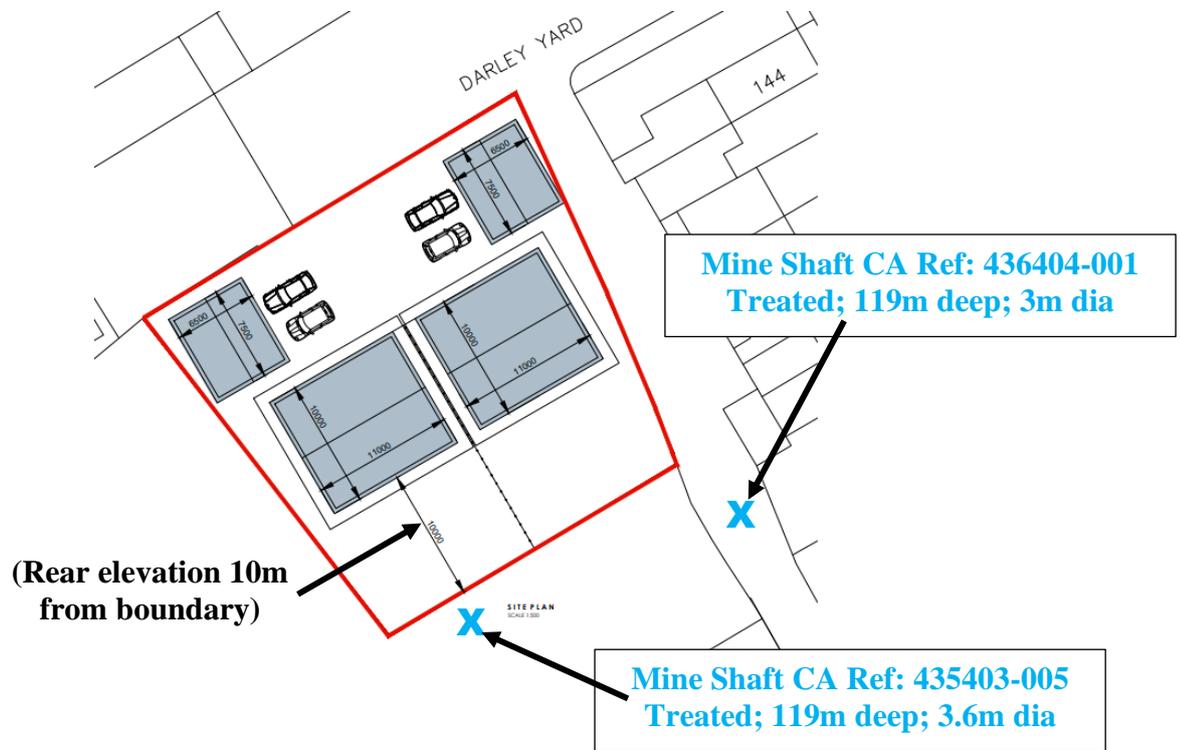
Underground Coal Workings - Shallow

According to Coal Authority details the site does not lie in an area of 'probable shallow workings', given that the 'Winter' coal seam will have outcropped and therefore not be present beneath the property at any significant depth to be of such concern; along with the fact that the shallowest coal seam beneath the site (Top Beamshaw) is anticipated to be at a depth that will not cause a stability concern in consideration of its nature/thickness.

Mine Entries

Two old mine shafts which formed the 'Darley Main Colliery' are located just to the south and south-east of the site boundary as indicated in the image below. Both shafts are recorded as been treated to 119m deep. The shaft cap (expected to be reinforced concrete) of shaft ref: 435403-005 is likely to extend to beneath the site by a few meters or so depending on its precise location (this

position should be checked with the Coal Authority). It should also be noted that a slight potential will exist for other ‘unrecorded’ mine entries being encountered.



Fugitive Gases

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. However, there will be some risk for associated gases in relation to the nearby mine shafts. These risks will be far greater should any unrecorded mine entries be discovered within the site.

Coal Mining Risk Assessment (based on the above).

| Coal Seam / Coal Mining Issue | Risk Assessment (VeryHigh/High/Moderate/Low/VeryLow) |
|---|---|
| Underground coal mining (at shallow depths) | Low |
| Mine entries (shafts and adits) | Moderate |
| Geological faulting | Low |
| Geological fissures | Low |
| Fugitive gas emissions | Moderate to High |
| Surface mining (opencast workings) | Low |
| Aggressive ground | Moderate |
| Coal exposed / near foundation level | Moderate |

Defined Risk Assessment

(Where 'Underground Coal Mining' above = Very High to Moderate)

| | |
|---|--|
| Extent of known underground mining in this/these shallow coal seam/s in the wider vicinity | (Extensive / Much / Occasional / None Known) N/A |
| Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals). | (Required / Recommended / Unnecessary)** N/A |
| Advised critical depth beneath rock-head /foundation level to investigate considering geology and nature of the shallow coal/s* | N/A |

Key:

* The critical depth is calculated according to Ciria C758D guidance which details that for the land to be regarded as stable from any voided mineworkings, then a suitable section of competent rock cover above the workings should be proved that is equal or greater than ten times the 'in-tact' coal seam thickness. The advised critical depth to investigate to in this report takes into account the available geological information, any nearby mining records and may include a contingency for the seam to be of a slightly greater thickness than anticipated. Due care and diligence should be employed on-site to ensure that sound information is gathered of the in-tact seam thickness, particularly if concluding that old workings are outside the critical depth of affecting stability for the proposed development.

** Where :

| | |
|--------------------|--|
| Required | <i>Intrusive Site Investigation required of the shallow coal/s and/or mine entries to determine any necessary stabilisation works for the given development.</i> |
| Recommended | <i>Intrusive Site investigation recommended – given a lower level of risk in relation to the nature of proposed development some proposals may reduce the risk to an acceptable level via suitable design considerations.</i> |
| Unnecessary | <i>Intrusive Site Investigation deemed unnecessary – given geological/mining information.</i> |

Coal Authority

Prior written permission from The Coal Authority is required for intrusive activities which will disturb or enter any coal seams, coal mine workings or coal mine entries (shafts and adits). Further information on The Coal Authority's permissions process can be found at:

www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet SE 30 SE 1980 Edition*
- *British Geological Survey – Geology Of Britain Viewer*
- *Coal Authority Interactive Viewer and Mine Abandonment Plans*
- *Historical Mapping – old-maps.co.uk*

CONCLUSIONS

- 1) The site can be regarded as stable from both the **Deep & Shallow Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future. As such, no intrusive borehole investigations of shallow coal would be deemed necessary in this instance.
- 2) It terms of the nearby mine shafts it should be first noted that they, or their caps, should not be investigated without the prior permission from the Coal Authority as custodians of the features. If the shaft cap position is known or indeed encountered during future ground works it should not be interfered with in any way so as to maintain its integrity. From a stability aspect it is usual practice that no building should be sited over the shaft or shaft cap or within an area bounded by a line drawn at 45° back from where the shaft side intersects rock-head. Given the current development plan as it stands (circa 12m away from the nearest shaft) this is very likely to be achieved for the proposed dwellings; providing that depths to bedrock/formation levels are not excessive (more than a couple of meters or so). A trenching exercise to natural ground could be undertaken to confirm this. If it is achieved then no re-positioning of the development would be necessary and usual foundation designs would be considered appropriate in line with the requirements of the appointed Building Control authority at the time of construction (*note conclusion no. 4 however*). Any landscaping works of a notable degree in the vicinity of the shaft/shaft cap may require considerations such as the use of geo-textile membranes within sub-soils for example, depending upon the Coal Authorities suggestions/requirements.

- 3) Any coal exposed at the surface beneath surface soils/clays will require appropriate considerations for removal and blinding off to help prevent chemical attack on foundations and reduce the risk of spontaneous combustion risks.
- 4) Given the nearby mine shafts it would be prudent to include gas protection measures (such as a methane membrane and/or positive ventilation layers) within foundation designs. All usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.
- 5) A watching brief should be employed during future grounds works for any signs of unrecorded mine entries. A site scrape to natural ground is the most effective procedure to check for such features; circular areas of grey fill within bedrock would be an indication. If suspected the Coal Authority (as owners) should be notified immediately for appropriate deliberations.

Note: should there be any uncertainty of actual conditions during future ground works Lyons CMC or indeed the Coal Authority themselves can be further consulted for on site assessment if necessary.

A suitably qualified and competent professional should be employed to use this report to determine the conditions on site, and ultimately advise on what action, if any, is necessary to safeguard the development. It should be noted that any future works to investigate any coal seam, mines of coal or associated mine entries will need the prior consent of the Coal Authority via their permitting procedure.

I trust that this satisfies your requirements, however please do not hesitate to contact myself at any time for further clarification or advice.

Yours Sincerely,

M Lyons

M. Lyons
Consultant Mining Engineer
BSc CSci MIMMM

Enc.

THIS COAL MINING RISK ASSESSMENT IS BASED ON AND LIMITED TO THE INFORMATION IN MY RECORD AT THE TIME THE ENQUIRY IS ANSWERED. It is based on my professional opinion in line with the guidelines set out in CIRIA C758D "Abandoned mine workings manual." The opinion may be overruled by Government Authorities decisions based on other information not in my record. If a site investigation is recommended then this risk assessment will be superseded by the factual findings of that investigation. All site investigation work should be carried out by a competent professional from which independent conclusions and recommendations for safe development should be provided. It should be noted that: no operation should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. The investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases; these risks both under and adjacent the site should be fully considered in any proposals both for personnel and public safety. Copyright in this CMRA belongs to M.A.Lyons. All rights are reserved and unauthorised use is prohibited. Copyright is not transferred to external parties by possession of this report, however, those for whom the report is compiled have the right to use it. If any unauthorised third party comes into possession of this report, they rely upon it entirely at their own risk and the author does not owe them any Duty of Care or Skill.

Appendix 1 – Location Plan No. 00327A

(Not To Scale)

Site centred at O.S. 435989 / 404016

