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CONSULTANCY

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Date: 24th January 2022
Your ref: (S70 6QL).
My Ref: CMRA 00280

FOR THE ATTENTION OF MR TOM AGUS

Dear Sir,

COAL MINING RISK ASSESSMENT (CMRA) - FOR PROPOSED DWELLING EXTENSION AND OUTBUILDINGS AT 55 BROADWAY, BARNSELY S70 6QL

Introduction

Planning permission is being sought for a two storey dwelling extension along with new outbuildings of both two and single storey at the above named site; the location of which can be seen on the attached plan No. 00280/A in Appendix 1. The site is centred around national grid reference E: 432785 / N: 405913. 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 ref: 2021/1347.

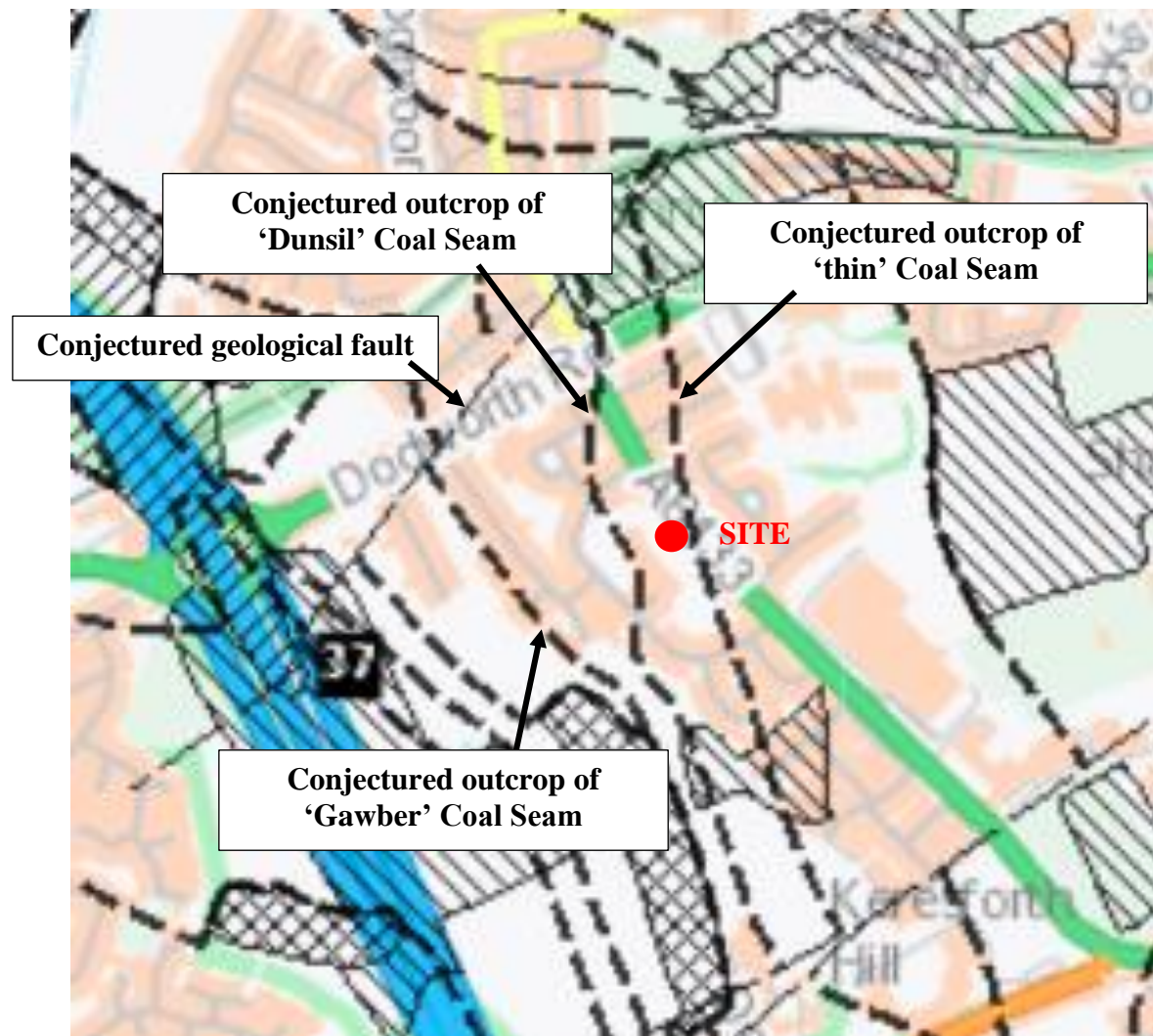
Scope of the Coal Mining Risk Assessment

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 which will dip beneath the land to the ENE at around 1 in 12 (5°). No superficial deposits are indicated in the vicinity of the site itself. 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

No geological faulting is known or conjectured within 300m of the site and as the underlying bedrock is shown to be shales and mudstones the likelihood of any fissuring would be remote.

Coal Seam Outcrops

As outlined on the extract image above from the BGS Onshore Interactive Viewer, a 'thin' coal seam is conjectured to outcrop just to the east which will dip away clear of the site. As this is based on conjecture a slight potential will exist for discovering this coal within excavations beneath surface soils/made ground.

The next coal seam down in stratigraphical order will be the Dunsil seam, conjectured to outcrop some 30m away to the SW of the site as shown on the above image. Local records suggest this coal to be in the region of 600mm thickness which is likely to include a dirt band of around 150mm. This coal would be expected a few meters deep beneath the south-western part of the site.

Below the Dunsil coal seam lies the Gawber seam, which the 'Craven' opencast site of the 1950's (over 1km away to the NW) proved as around 900mm thickness but with a dirt band of 400mm.

Made Ground

No made ground is indicated beneath the site. There will be a slight potential for discovering an element of made/infilled ground associated with historic 'digging out' of shallow coal.

Opencast Coal Workings.

No opencast coal operations are known within the site or to within 150m of its boundary.

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

As very little records are known of any associated underground workings associated with either the Dunsil or Gawber coal seams the likelihood of any unrecorded workings causing a stability issue to the proposed development is considered very low. This is reflected in the fact that the Coal Authority details suggest the majority of area to be subject to risk from 'Coal Outcrop' alone, rather than being in an area of 'Probable Shallow Workings'.

The Coal Authority information does indicate the south-western part of the site to be located in an area of 'Past Shallow Coal Workings' which appears to relate to the Swallow Wood coal seam workings from the former Dodworth Road Colliery which was abandoned in 1878. After reviewing the available information it is considered that these workings (with a seam thickness in

the region of 900mm) would be too deep to cause a stability concern to the proposed development, calculated at over 30m beneath the site itself (given that the interval between the Dunsil and Swallow Wood is known locally to be in the region of 30m); which corresponds to CIRIA C758D guidelines.

Mine Entries

No mine entries are known within 20m of the site itself. Some potential will exist however for other mine entries being encountered which there are no records considering the relatively shallow Swallow Wood coal seam.

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 any shallow exposed coal.

Historical Records

According to the historical records, no nearby indications of any mining or quarrying activities are noted within the site itself.

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)	Low to Moderate
Geological faulting	Low
Geological fissures	Low
Fugitive gas emissions	Low to Moderate
Surface mining (opencast workings)	Low
Aggressive ground	Low to Moderate
Coal exposed / near foundation level	Moderate to High

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) None Known (Dunsil/Gawber)
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** Unnecessary
Advised critical depth beneath 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 NW 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 the **Deep Coal Mining** perspective, and as no coal fields now remain this position should continue for the foreseeable future.
- 2) Given the **Shallow Coal Mining** position from the available information we would not suggest that any further intrusive works are required to determine any associated risks. As such, usual foundation designs could be utilised in conjunction with the appointed building control officer at the time of development should it proceed. ***It would be prudent to confirm this position however with the Coal Authority themselves prior to any future works.***
- 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) 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.
- 5) A similar watching brief should be employed during future grounds works for any signs of made ground that may be associated with small scale 'digging' out of shallow coal. Appropriate foundation design considerations may be required.

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. 00280/A
(Not To Scale)
Site centred at O.S. 432785 / 405913



