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Date: 3rd July 2025
Your ref: (S75 6DY).
My Ref: CMRA 00418

FOR THE ATTENTION OF MR RICHARD RICHARDSON

Dear Sir,

COAL MINING RISK ASSESSMENT (CMRA) - FOR PROPOSED DEVELOPMENT AT LAND OFF CARR GREEN LANE, MAPPLEWELL, BARNSELY S75 6DY

Introduction

Planning permission is being considered for residential development at the above site, the location of which can be seen edged red on the attached plan No. 00418/A in Appendix 1. The site is centred around national grid reference 433175E / 409468N. A Coal Mining Risk Assessment is required 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.

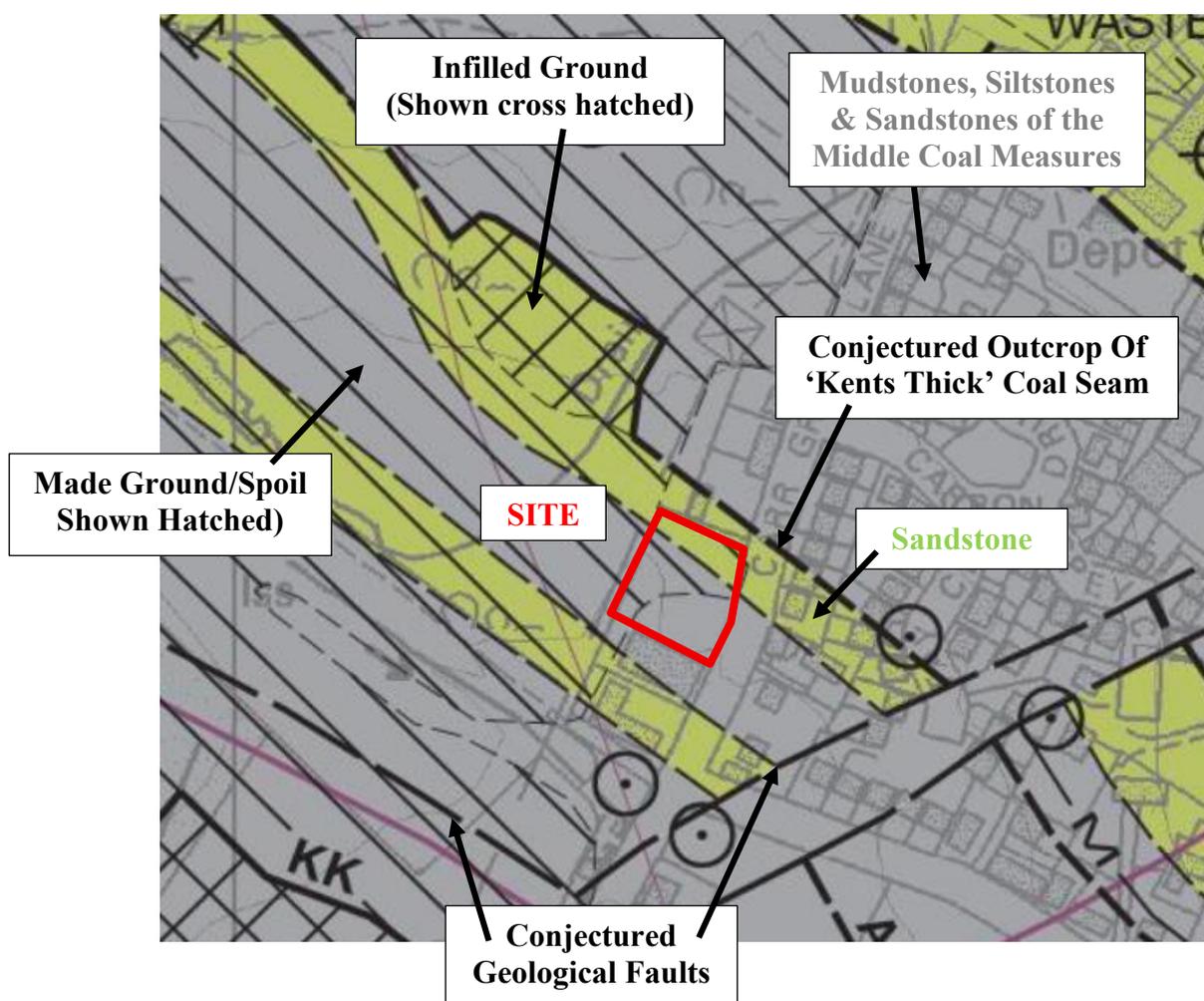
Scope of the Coal Mining Risk Assessment

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.
- The report will not consider other geotechnical and/or geo-environmental issues.

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on mudstones, siltstones and sandstones of the Middle Coal Measure series from the Carboniferous formation. No superficial deposits are shown beneath the site according to the BGS records, however, an area of made ground is shown to extend partly across the site which may contain colliery spoil from the past nearby colliery. Strata is shown to dip towards the north-north-east in this vicinity at a rate of around 1 in 14 (4°). A summary of the surface geology is illustrated on the image below which is an extract from the BGS SE30NW 2005 Edition:



Fault Planes or Fissures

No geological faults are known or conjectured within 40m of the site; the closest is shown some 50m away to the south-east as shown above. No fissuring is known in this vicinity, however a slight potential will exist for discovering such features which may have been 'opened out' by past deep coal mining in the area.

Coal Seam Outcrops

As shown above, the 'Kents Thick' coal seam is conjectured to outcrop just adjacent the north-eastern boundary of the site as shown above. This seam is known to be of around 1m thickness in these parts. Given the dip of strata, the coal seam will not lie beneath the site at any significant depth, however, a slight possibility will exist for encountering part of this seam beneath surface soils in the northern/north-eastern part of the site.

No other workable coal seams will lie at an influencing depth (up to 30m) from a shallow mining aspect beneath the Kents Thick coal seam.

Opencast Coal Workings

As shown on the above image, the closest former opencast coal site lies around 45m away to the north-west, which was a part of the North Gawber Colliery complex. Those workings proved the Kents Thick seam as 1.02m thickness at that location. No associated effects from a stability aspect would be anticipated from those operations for the site considered.

Underground Coal Workings - Deep

Deep coal mining (over 30m 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 the Mining Remediation Authorities (MRA) interactive viewer information the site lies just within the edge of a referral area in the extreme north-east, which is in relation to the conjectured outcrop of the Kents Thick coal seam detailed above. As the seam will not lie at any significant depth beneath the site itself there will be no risks associated with potential shallow historic coal workings.

Mine Entries

No known mine entries are shown within the site or to 20m of its boundary. The closest is shown some 55m away to the east of the site (MRA ref: 433409-020) which is recorded as 77m deep to the Barnsley coal seam. It should be noted that a slight risk is always present in such mining areas of discovering mine entries of which there are no records; grey circular areas of fill material within natural ground/bedrock would be an indication of an old mine shaft for example.

Fugitive Gases

As far as we are aware, no evidence of shallow coal/mining related fugitive gas emissions are known within 250m of the site. However, possible presence of a coal seam beneath surface soils in the north, along with made ground that could contain colliery spoil, the potential for such should not be discounted. *Note: informative no. 3 in appendix 2.*

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
Geological faulting	Low
Geological fissures	Low
Fugitive gas emissions	Moderate
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 mine workings, 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 :*

<i>Required</i>	<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>
<i>Recommended</i>	<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>
<i>Unnecessary</i>	<i>Intrusive Site Investigation deemed unnecessary – given geological/mining information.</i>

Mining Remediation Authority (MRA)

Prior written permission from The Mining Remediation 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 MRA's permissions process can be found at:
www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet BGS SE30NW 2005 Edition*
- *British Geological Survey – Geology Of Britain Viewer*
- *MRA Interactive Viewer and Mine Abandonment Plans*
- *Historical Mapping*

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) Regarding the **Shallow Coal Mining** position, no further intrusive investigation works for potential shallow mining voids would be deemed necessary in this instance (*as outlined in informative(s) nos. 1 & 2 in appendix 2*), with the associated risks considered low. However, future foundation work/designs should take into account the potential for coal being present beneath any surface soils and/or made ground/spoil, with appropriate structural designs adopted.
- 3) Any exposed coal in future excavation/foundation work should be removed and blinded off using a sulphur resistant concrete to help mitigate from the risk of spontaneous combustion and chemical attack; with foundations sited on firm strata beneath the coal seam.
- 4) Should any colliery spoil and/or shallow coal be encountered in future ground/foundation works, ground gas mitigation measures (such as a methane membrane for example; which could also address radon issues if required) would be a prudent consideration within future foundation designs - unless a period of gas monitoring proves that this is not required (*note: informative no. 3 in appendix 2*).
- 5) Although a low risk, a watching brief should be employed during any future grounds works for any signs of unrecorded mine entries; circular areas of grey fill within natural ground/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. 00418A

(Not To Scale)

Site centred at NGR: 433175E / 409468N



Appendix 2 – Informatives

- 1) The relatively recently revised CIRIA C758D document titled ‘Abandoned Mine Workings Manual’, which replaced Special Publication 32 (1984), indicates that the use of empirical or ‘rule of thumb’ guides, as the design basis for treatment depth, has been successfully observed for many years for a wide range of abandoned mine workings and overlying rock/soil strata scenarios. As such, the guidance indicates that further design/ground stabilisation considerations will be required if there is less than 10 times the aggregate measured height of mine workings as competent rock cover above the workings.
- 2) For information, should the grouting of any mine workings be required, a 10:1 PFA/cement mix or similar would need to be injected into the workings and any other disturbed strata above it under pressure on an OS coordinated treatment grid approved by the Coal Authority (and Building Control/third-party Warranty provider as required). Specific proposals to treat any mine workings would need to be submitted in the form of a standalone ‘Specification’, with a separate permit to treat being obtained from the Coal Authority. The method of consolidation is dependent on the nature of the bedrock strata and the underground mining conditions encountered, although fissile strata, such as shales and mudstone deposits, do permit mining voids to migrate upwards to quite high levels. All grouting works would need to be supervised by a competent engineer, with a final validation report being produced to confirm what works were undertaken and whether they were successful or not.
- 3) Ground gas monitoring can be undertaken to confirm or discount the presence of an elevated gassing regime within the underlying soils. Elevated concentrations of mine gases (e.g. CO₂, CH₄) may be present within the coal seams, voids in or above any shallow mine workings, areas of made ground, and in any permeable bedrock strata (and any organic rich surficial soils). The period of monitoring to be undertaken should be broadly completed in accordance with current guidance [BS8485]. Piezometers would need to be installed (during drilling works for example) to facilitate this.