

Lee Forster
41 Darton road
Cawthorne
Barnsley
S75 4HY

LYONS CMC
COAL MINING & GEOTECHNICAL
CONSULTANCY

Web: www.lyonscmc.co.uk
Email: mark@lyonscmc.co.uk
Mob: 07887555580

Date: 18th December 2025
Your ref: (S71 4RF).
My Ref: CMRA 00439

FOR THE ATTENTION OF LEE FORSTER

Dear Sir,

COAL MINING RISK ASSESSMENT (CMRA)- FOR PROPOSED RESIDENTIAL DEVELOPMENT AT 59 HIGH STREET, ROYSTON, BARNSELY S71 4RF

Introduction

Planning permission is being considered to demolish the former workings mens club for new residential development at the above named site, the location of which can be seen on the attached plan No. 00439/A in Appendix 1. The site is centred around national grid reference 435918E / 411457N. 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.

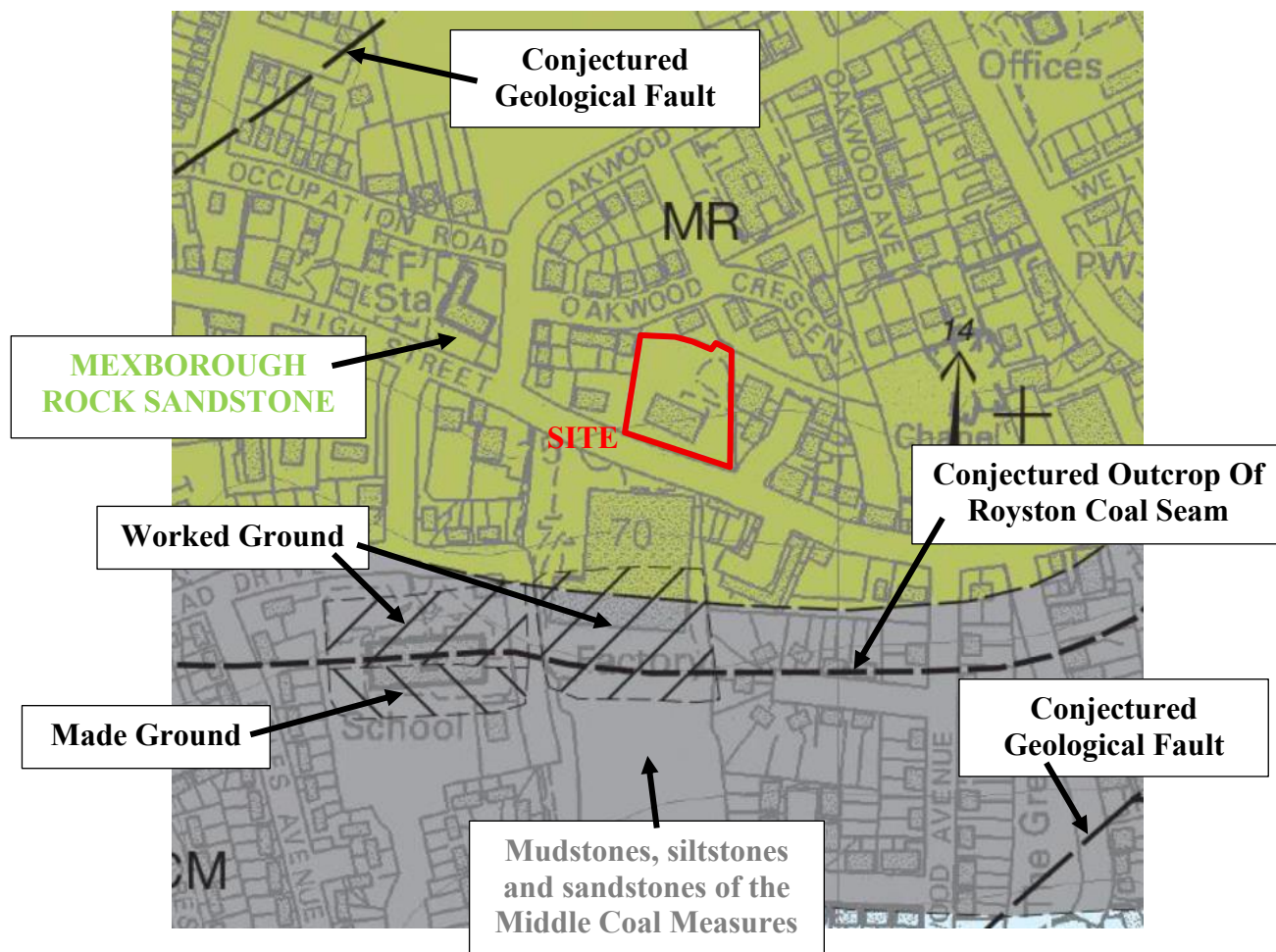
Scope of the Coal Mining Risk Assessment

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

Surface Geology (inc. any superficial deposits)

Records indicate the site to be located on the Mexborough Rock Sandstone of the Middle Coal Measure series from the Carboniferous formation. No superficial deposits are indicated in the vicinity of the site itself. The strata is shown to dip to the north at a relatively steep rate of around 1 in 4 (14°) in this vicinity. A summary of the surface geology is illustrated on the image below which is an extract from the BGS Sheet SE31SE 2005 Edition:



Fault Planes or Fissures

Geological faulting is conjectured to pass clear of the site by over 200m away to the north-west and south-east as indicated above. Although no fissuring of sandstone bedrock is known in this vicinity, there will be some potential for such natural features of which there are no records that may have been 'opened out' to some degree by the past deep coal mining in the area.

Coal Seam Outcrops

As outlined on the extract image above, the 'Royston' coal seam (also known as the 'Sharlston Top' coal seam) is conjectured to outcrop some 110m away to the south, which will therefore dip beneath the site to the north. Should the conjectured detail be accurate the seam would be anticipated at over 25m deep at its shallowest beneath the site on the southern boundary, given BGS strata dip rates. Local mining information for the area suggests a likely seam thickness of this coal as up to around 0.9m.

Made Ground

BGS records show no made ground beneath the site.

Opencast Coal Workings.

No past opencast coal operations are known within 250m of the site (*however, an area of 'worked ground' is indicated on BGS records – as shown above – which coincides with the conjectured outcrop of the Royston coal seam; as such the coal may have been removed via old quarrying methods etc in that vicinity*).

Underground Coal Workings - Deep

Deep coal mining (over 30m deep) has taken place in various coal seams beneath this site, 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

Although no recorded workings are known in the Royston coal seam in this specific area, given its nature/thickness there will be some potential for unrecorded, possibly illicit, workings being present. **Note informative(s) nos. 1 & 2 in appendix 2.** Any historic coal workings would likely to have been via pillar and stall methods which follow the seam from its outcrop position via mine adits for example, or indeed any unrecorded mine shafts. Given the detail however, it is felt quite likely that the seam will lie too deep beneath the site be it worked or otherwise. However, as this is based on conjectured there is potential for the coal seam to be considerably shallower or deeper than anticipated. No other workable coal seam will lie beneath the Royston coal seam from a shallow mining instability aspect.

Mine Entries

No known mine entries are indicated within 250m of the site. Given the likely presence of shallow workable coal, a slight risk will be present for discovering old mine entries of which there

are no records. Grey circular areas of fill material within natural ground would be an indication of an old back filled mine shaft for example.

Fugitive Gases

As far as we are aware, no evidence of coal mining related fugitive gas emissions are known within 250m of the site. Given the information there will be some associated risks given the relatively shallow coal combined with porous sandstone deposits above. These risks will increase if old mining voids are proved and more so if any old mine entries are discovered.

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 to Moderate
Mine entries (shafts and adits)	Low
Geological faulting	Low
Geological fissures	Moderate
Fugitive gas emissions	Low to Moderate
Surface mining (opencast workings)	Low
Aggressive ground	Low
Coal exposed / near foundation level	Low

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) Occasional
Intrusive Site Investigation of Coal Seam / Mines of Coal (given nature of proposals).	(Required / Recommended / Unnecessary)** Required
Advised critical depth beneath foundation/rock-head level to investigate considering geology and nature of the shallow coal/s*	15m

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 :*

<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

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 Mining Remediation Authority's permissions process can be found at: www.coal.gov.uk/services/permissions/index.cfm

Information sources:

- *British Geological Survey Map Sheet SE31SE 2005 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 Mining** position an intrusive mining investigation should be undertaken to check the nature of Royston coal seam, if present. Given the nature of the proposals, between two to five water-flush boreholes to 15m below rock-head/foundation level would suffice for this in the outset – two located on the southern boundary to begin with. *Note informative(s) 1 & 2 in Appendix 2*. If the seam is not experienced at an influencing depth to affect stability, then only the two holes along the southern boundary would be required. If the seam is proved within a critical depth, then further holes should be carried out within the site to provide more information to conclude stability from. A permit from the Mining Remediation Authority should be secured prior to such an investigation. If any mining voids are encountered then further stabilisation works and/or appropriate foundation designs would need to be considered.
- 3) A watching brief should be employed during future ground/foundation 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.
- 4) A watching brief should be employed during future ground/foundation works for any signs of any opened-out fissures within sandstone bedrock. If encountered then foundations may need to be strengthened/redesigned as necessary and prior ground remediation/treatment may be required in sever instances.
- 5) In terms of the fugitive mine gas risks from the potential shallow workable coal, and considering the overlaying sandstone deposits (which may be fissured) it would be prudent, in the absence of any further gas monitoring (*note informative no. 3 in appendix 2*), to include gas protection measures (such as a methane membrane for example) within future foundation designs; which could also protect from radon issues if required. All usual safety precautions should be employed regarding possible fugitive gases in any deep excavation work taking place.
- 6) If no evidence of any shallow mining and/or mine entries are determined to be of effect for the development then usual foundation solutions can be considered in line with the appointed Building Control departments advice/requirements.

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. 00439/A
(Not To Scale)
Site centred at NGR: 435918E / 411457N



Appendix 2 – Informative(s)

- 1) The relatively recently revised CIRIA 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/opencast backfill, and in any permeable bedrock strata (and any organic rich surficial soils). Mine entries and/or geological fault lines/fissured bedrock will also provide pathways for gas to migrate. 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.