Coal Mining Risk Assessment
For
Garry Greetham Associates
c/o Mr M Crossley
86, Hoyland Road
Hoyland Common
Barnsley
S74 0AP

Client:-
Garry Greetham Associates
Westwood House
18, Carr Lane
Tankersley
Barnsley
S75 3BE

Design - it
Structural Solutions Ltd

37 Hall Bank, Barnsley, S75 1EX
Tel: 01226 291367
Mob: 07794 510438
Email: designit.struct@gmail.com

Contents

Executive Summary

Proposal	A pair of 2 storey detached dwellings each with detached double garages.
Current land use	Residential with detached dwelling, hardstanding and soft landscaping. Average levels are approximately 153.0m AOD falling to the southwest.
Mining related site history	Numerous former mine entries (shafts) are recorded just north of the site. Several collieries, coal pits and opencast coal mining were present locally. The site lies within an area significantly affected by historic mining activities.
Geology	Directly underlain by the Barnsley Rock sandstone and partly by undifferentiated strata of the Middle Coal Measures. The Barnsley coal seam outcrops either just southwest of or within the extreme southwestern part of the site and, together with the Dunsil coal seam, lies beneath the site at shallow depth.
Mining history and context	The site lies within an area of probable past shallow coal mining and is within a Development High Risk Area as defined by the Coal Authority. The Barnsley coal seam has been historically worked along its outcrop by shafts locally, and potentially the underlying Dunsil coal seam. Mining related subsidence is historically recorded in a nearby property.
Mining related risks	There is a potential for shallow mining beneath the site potentially leading to surface instability – **High**. Unrecorded former mine entries may be present on the site – **Moderate to High**. Mine gases may be present on the site – **Moderate to High**.
Mitigation of risks	Proof drilling is recommended to confirm the status of the underlying Barnsley and Dunsil coal seams. If shallow mining is confirmed as potentially affecting surface stability, drill and grout may be required. Vigilance during site enabling works to check for former unrecorded mine entries. Incorporation of protection measures for mine gases may be required within new development, subject to the advice of regulators.

1. Introduction

1.1 Design IT were appointed by Garry Greetham Associates (GGA) on behalf of Mr M Crossley to undertake a Coal Mining Risk Assessment (CMRA) for a site located at 86, Hoyland Road, Hoyland Common, Barnsley which is proposed for development with a pair of detached 2 storey dwellings each with detached garages. It is understood that a planning application has recently been submitted to Barnsley Metropolitan Borough Council (BMBC). The site is identified as lying within a Coal Authority (CA) Coal Mining Development Referral Area, thus necessitating the requirement for a CMRA in order to provide BMBC with information on historic coal mining and an assessment of its potential impact on land stability. In addition, correspondence with South Yorkshire Mining Advisory Service (SYMAS) identifies the site as being within a high risk referral area.

1.2 The purpose of this CMRA 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 necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development, 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

1.3 To this end the study has included an inspection of published historical maps, published geological data, publicly available planning information, SYMAS correspondence and a review of a CA mining report, together with other sources as indicated within the report.

1.4 This report presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the scope of works outlined above.

1.5 The comments and opinions presented in this report are based on the findings of the available desk study assessment carried out by Design IT. Responsibility cannot be accepted for any conditions not revealed by this desk study and which have not been taken into account by this assessment.

1.6 This report has been prepared for the sole use of Garry Greetham Associates and their client Mr M Crossley. No other third party may rely upon or reproduce the contents of this report without written approval of Design IT. If any unauthorised third party comes into possession of this report, they rely on it entirely at their own risk and we do not owe them any Duty of Care or Skill.

2. Site location and description

2.1 The site is centred on National Grid Reference 435880mE 400350mN and located on the northern side of Hoyland Road (B6096), northwest of the town of Hoyland, within the hamlet of Hoyland Common approximately 6.0km south of Barnsley town centre. The site is located within a residential area. A site location plan is included as **Appendix A.**

2.2 An inspection of recent aerial imagery indicates the northern part of the site to comprise an existing 2 storey dwelling with an access drive through the approximate centre of the site. Hedgerows with bushes and semi-mature and mature trees occupy the majority of the remainder of the site with an area of rough grass behind the dwelling in the extreme northern part of the site. The site lies at approximately 153.0m AOD with levels locally falling steadily towards the southwest.

Proposed development

2.3 It is proposed to construct 2 no. detached 2 storey dwellings each with a detached double garage to the front and associated shared driveway, following demolition of the existing property. The proposed dwellings are to be located immediately south of the footprint of the existing dwelling in the approximate centre of the site. Details of the proposal are included as **Appendix A.**

Site history

2.4 Historical maps for the site and its surroundings, available from internet based sources, have been reviewed and a summary of this information, specifically relating to mining related features, is provided below.

Date	On site features	Off site features (coal mining related)
1855 – 1893	Existing dwelling with detached outbuilding adjacent to southwestern elevation and associated land.	Ironstone pits, shafts and bell pits approximately 750 to 1km south and southwest.
1893 – 1907	No change.	Rockingham Colliery approximately 850m northwest and Hoyland Silkstone Collieries and Wharncliffe Silkstone Colliery approximately 1.5 to 2km

		northeast and southwest respectively. Lidgett Colliery (later Staindrop pit/Skiers Spring Colliery) and Skiers Spring brickworks approximately 1.5km southeast.
1907 – 1956	No change.	Hoyland brickworks approximately 1km north.
1956 – 1966	No change.	Opencast coal site approximately 100m north.

3. Geological setting and historical mining context

3.1 Information obtained from various sources pertaining to the site's geology and historical mining perspective is summarised in the table below with information sources identified as appropriate.

Information sources	British Geological Survey (BGS) 1:10 000 scale, sheet SE30SE Wombwell and 1:50 000 scale, sheet 87 Barnsley Solid and Drift Edition. BGS online Borehole Database. Geological Survey Memoir, Sheet 87 'Geology of the Country Around Barnsley', 1947. W H Wilcockson 'Sections of Strata of the Coal Measures of Yorkshire', 1950. BGS Internal Report IR/06/135 'The Pennine Lower and Middle Coal Measures Formations of the Barnsley District', 2006. CA online Interactive Viewer. CA mining report, Ref. 51001273783001, September 2016 (included as **Appendix B**). SYMAS correspondence (included as **Appendix C**).
Made ground	None shown on site, however given the historical development of the site some is expected.
Drift	None present.
Solid	Barnsley Rock sandstone of the Carboniferous Middle Coal Measures. Undifferentiated strata (mudstone, siltstone, sandstone and coal) are present beneath the southwestern part of the site.
Dip of strata	5 to 6^0 to the east.
Faults	The Wentworth Fault is indicated to the northeast trending northwest to southeast and downthrowing to the northeast. Another fault is present to the southeast trending northeast to southwest and downthrowing to the southeast. However, none are indicated to cross the site itself.
Coal seams	The Barnsley coal seam is conjectured as outcropping either within the extreme southwestern part or within close proximity of the southwestern site boundary and is considered to underlie the site at shallow depth. Beneath this coal seam in the stratigraphic sequence is the Dunsil coal seam, which may potentially underlie the site at shallow depth also. Local BGS recorded thicknesses for these coal seams are; Barnsley coal (2.39 to 2.64m) and the Dunsil coal (2.24 to 2.87m), the latter includes significant dirt partings. The memoir states that locally the intermediate measures between the Barnsley and the Dunsil coal seams are

	approximately 20 to 25m thick.
Shafts and collieries	Records for the nearby Hoyland Silkstone colliery show the Barnsley seam to be 1.9m thick and the Dunsil (including dirt partings) to be 0.85m thick, with a separation thickness of approximately 21.0m. The CA Interactive Viewer indicates numerous former mine entries (shafts) north of the site along the conjectured outcrop of the Barnsley seam.
Nearby intrusive information	No nearby intrusive information is publicly available.
Coal Authority mining report	The CA believes the site to be within the influence at the surface from past underground mining within 8 seams of coal at depths of between 230 and 350m last worked in 1948, any associated ground movement having ceased by now. However, the site is in an area where coal is understood to be at or close to the surface, which may have been worked in the past with the potential for shallow workings to be present. There is no present of future underground mining that may potentially affect the surface stability of the site. There are no recorded former mine entries on, or within 20m, of the site. The site itself is unaffected by any past, present or future opencast coal mining. There are no records of any mine gas emissions requiring action within the site boundary. There is a coal mining subsidence claim registered within 50m of the site (to the southeast).
Shallow mining	The CA Interactive Viewer indicates the site to lie within an area of probable shallow coal mining and is considered to be associated with the working of the Barnsley and, potentially, Dunsil coal seams. The site is located within a CA designated Development High Risk Area. The Barnsley seam is conjectured as outcropping either within the extreme southwestern part of the site or close to the southwestern site boundary.
Surface mining	Ordnance Survey (OS) historical mapping shows the presence of historic opencast coal mining approximately 100m north of the site. Information included within SYMAS communication indicates the presence of the former Hoyland Common Opencast coal site (1952) as within 70m to the north. In addition, CA information records both licensed (Rockingham) and unlicensed opencast coal mining just to the north of the site. However, none are present within the site itself.

4. Risk assessment

4.1 The potential risks to the redevelopment of the site associated with the coal mining legacy of the locality are summarised in the following table.

Coal mining issue	Risk		Risk assessment (Risk rating)
	Yes	No	
Underground coal mining (recorded at shallow depths)	-	**No**	Former mine entries (shafts) are recorded by the CA north of the site along the outcrop of the Barnsley coal seam. The Barnsley seam is conjectured as outcropping either within the extreme southwestern part of the site or in close proximity. Past shallow coal mineworkings are *not* recorded beneath the site by the CA, although shallow coal seams *are* present beneath the site – **Low**
Underground coal mining (probable at shallow depths)	**Yes**	-	The Barnsley seam is conjectured as outcropping potentially in the extreme southwest of the site or in close proximity and is present beneath the site at shallow depth together with the underlying Dunsil coal seam. The site lies within an area of probable shallow coal mineworkings and within a Development High Risk Area. Evidence of widespread historic coal mining in the locality would suggest potential shallow mining of the Barnsley and Dunsil coal seams – **High**
Mine entries (shafts and adits)	**Yes**	-	Numerous former mine entries (shafts) are recorded to the north of the site, in the vicinity of the Barnsley seam outcrop. The potential outcrop on site of the Barnsley seam would suggest the possibity for exploitation via adits and the presence of unrecorded mine entries either on or within influencing distance of the site cannot be discounted – **Moderate to High**
Coal mining geology (fissures)	-	**No**	CA information and published geology does not indicate any geological weaknesses on site as a consequence of mining related activities – **Low**
Record of past mine gas	**Yes**	-	CA information states no mine gas related

emissions			issues in the locality. However, potential for mine gas as shallow mining is probable beneath the site – **Moderate to High**
Recorded coal mining surface hazard	-	**No**	CA information does not record the presence of any mining surface hazards on site which have undergone remedial works, but a past surface hazard (subsidence claim associated with shallow mining) is recorded in close proximity the site – **Low**
Surface mining (opencast workings)	-	**No**	CA information states the site to be unaffected by any past, current or future opencast coal workings. However, both licenced and unlicenced past opencast coal mining are recorded within the vicinity of the site – **Low**

5. Discussion

5.1 The risk assessment above highlights several potential mining related risks posed to the site during redevelopment; namely potential for shallow coal workings, potential for unrecorded mine entries and associated mine gas emissions, cumulatively assessed as **moderate to high**. These risks are discussed in turn more fully below.

Shallow mineworkings

5.2 The Barnsley coal seam is recorded as outcropping either within the extreme southwestern part of the site or close to the southwestern boundary, underlying the site at shallow depth. The deeper Dunsil coal seam underlies the site at shallow depth. It is estimated that the Barnsley seam is likely to be present beneath the site at approximately 1 to 5m below the surface and the underlying Dunsil coal at approximately 22 to 26m depth. Beneath the site, depth to rockhead is likely to be within a metre of the surface. Published geological information indicates the Barnsley seam as having a thickness of 2.4 to 2.6m (locally 1.9m). The deeper underlying Dunsil coal (including dirt partings) is recorded at 2.2 to 2.9m thick (locally 0.85m thick) and some 21m beneath the overlying Barnsley seam. There is considered to be *insufficient* competent rock cover above the Barnsley seam, but potentially sufficient cover above the Dunsil seam to maintain surface stability in the event of these seams having been worked beneath the site. This assumption is based upon having a minimum of 10 times intact total seam thicknesses (coal and mudstone partings, if present) of competent rock strata present above these seams. However, the surface stability at the site can only be comprehensively determined through undertaking intrusive works. Such intrusive investigations will determine whether mineworkings are present within the Barnsley and Dunsil seams and to what extent, as well as confirming the depth to these seams and their respective thicknesses beneath the site.

Mine entries

5.3 Numerous former mine entries (shafts) are recorded close to the site, associated with the outcropping Barnsley seam. Also, as a consequence of the on-site or nearby conjectured outcrop of the Barnsley seam, the presence of other on-site or adjacent unrecorded former mine entries

associated with the exploitation of this seam and potentially deeper coal seams cannot be discounted. Pre 1849, it was not a statutory requirement to record mine entries and mining plans.

Such features are considered as presenting a potential risk to development by way of instability and potential collapse. A zone of influence would be associated with any such mine entry whereby any proposed development within this zone would be affected by potential instability. Intrusive investigations would be required to locate potential past mine entries beneath the site.

Mine gas

5.4 The potential for upward migration of mine gases beneath the site cannot be discounted. Such gases are particularly prevalent in former pillar and stall workings that remain open and allow them to build up over time. Mine gases pose a potential significant human health risk to the future occupants of dwellings and existing occupants of adjacent dwellings. Deep made ground, if present, may potentially present a ground gas source.

6. Proposed mitigation strategy

6.1 A review of geological and historical mining information at the site has shown that there is a risk to surface stability from shallow mineworkings that may be present within the Barnsley coal seam and a potential risk associated with the potential exploitation of the deeper Dunsil coal seam. Additionally, the site's surface stability is at risk from possible unrecorded mine entries associated with the proximity of the outcrop of the Barnsley seam together with a potential risk posed by upward migration of mine gases.

Shallow mineworkings

6.2 Geological, historical and CA mapping information all demonstrate there to be a plausible risk presented by shallow mineworkings within the Barnsley and Dunsil seams present beneath the site. It would be prudent, therefore, to undertake proof drilling across the site to confirm the depth to rockhead and depth to/nature of the underlying coal seams. Boreholes should be put down to 30m below existing ground levels with appropriate permission and licences obtained from the Coal Authority prior to commencing any such works. If shallow mining of the above seam(s) is proved as presenting a risk to the surface stability of the site then drilling and grouting works would be required to consolidate the workings. Such intrusive works would be more effective on a cleared and demolished site.

Mine entries

6.3 The presence of potential unrecorded mine entries (adits and shafts) associated with the conjectured outcrop of the Barnsley seam, itself assessed as lying either beneath the extreme southwestern part of the site or close to the southwestern site boundary, should be confirmed. During site enabling works and a site strip the exposed sub soils should be checked for the presence of disturbed and potentially unstable ground associated with backfilling of such features. During such works vigilance should be taken with respect to any anomalous findings. If mine entries are identified on the site, then these may require treatment by grouting and capping at the surface and the siting of any new development footprint over these features or within influencing distance should be avoided.

Mine gas

6.4 The incorporation of robust gas protection measures during construction are considered likely within the new development. However, such measures are inherently incorporated within the construction of new buildings by way of use of a suspended floor slab (as appropriate) offering a passively vented underfloor void, incorporation of a radon protection membrane (if warranted) and a damp proof membrane together with the sealing of service entries. The requirement for a gas monitoring programme is considered warranted, subject to the results of an intrusive investigation. It is recommended that advice and approval is sought from regulators at an early stage.

7. Conclusions

7.1 There is a potential risk posed to the redevelopment of the site from shallow mineworkings that may be present in the underlying Barnsley and Dunsil coal seams. Such risks comprise surface instability from collapse of past shallow mineworkings and former mine entries. Proof drilling is recommended to better understand these risks.

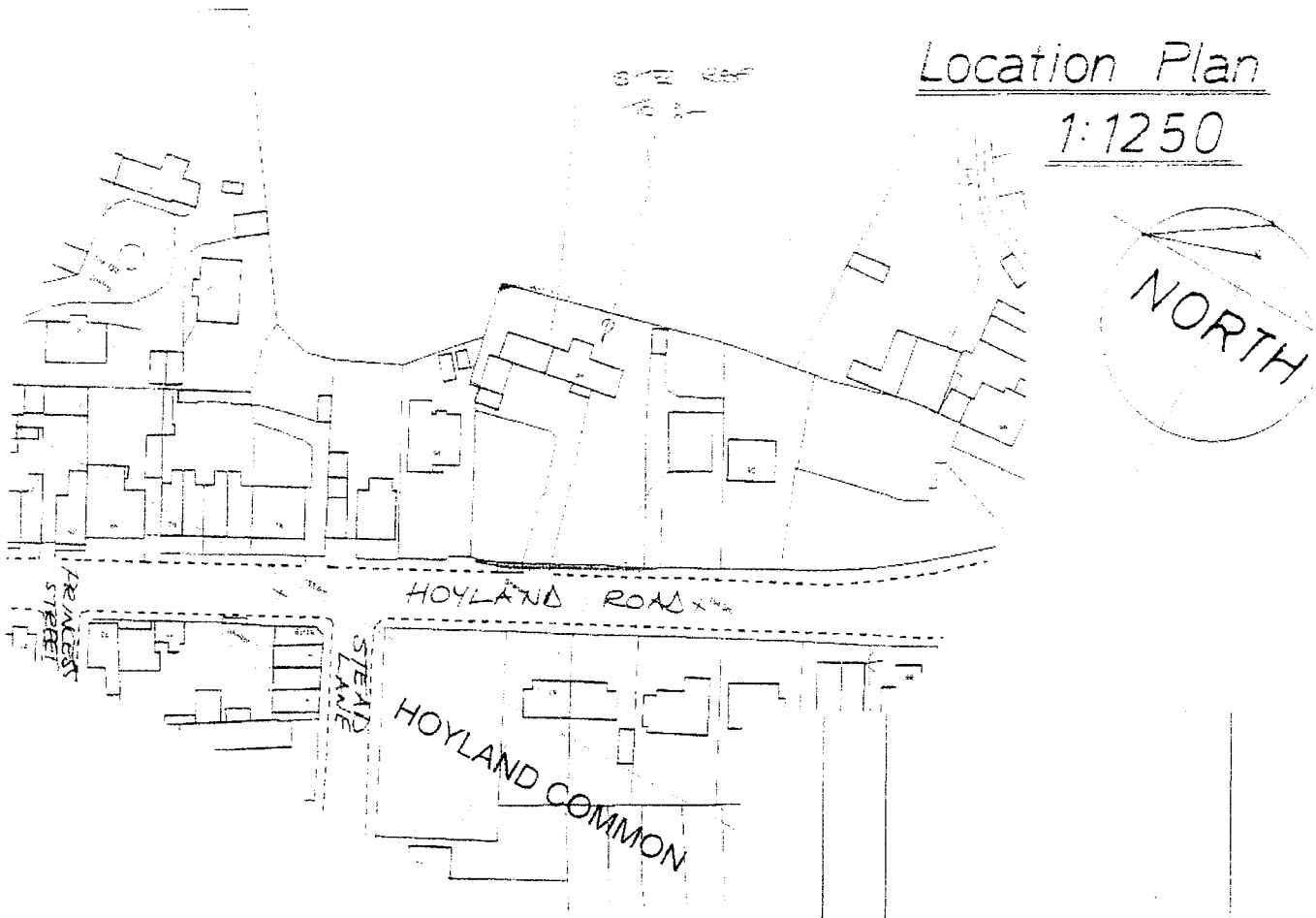
7.2 In addition, as there can never be total certainty with regard to both recorded and unrecorded mine entries, the developer should be made aware of this possibility during site stripping and excavation for foundations. Any evidence of the suspected presence of former mine entries should be investigated further.

7.3 Advice should be sought from regulators as to adoption of appropriate measures to protect against ground (mine) gases within the new development.

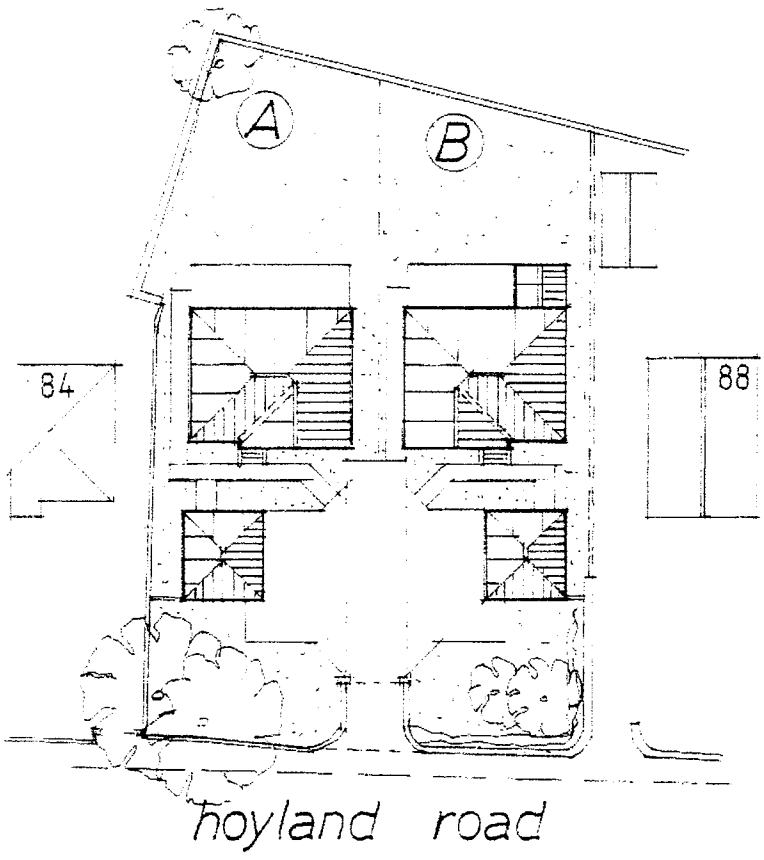
Appendix A

Site location plan and proposed development

Location Plan
1:1250



Rev	Notes	Date



Site Layout 1:500

B/Regs:

Planning:

Garry Greetham Associates
Residential Design Consultant
Westwood House
18 Carr Lane
Tankersley
Barnsley S75 3BE
Tel(01226)746573

PROJECT	2 No. Detached Dwellings
CLIENT	Mr. Mark Crossley
TITLE	Site and Location Layouts
ADDRESS	86 Hoyland Road, Hoyland Common, Barnsley. S74 0AP
DRAWN BY	ggg
SCALE	as shown
DATE	Sept16
DRAWING No	841-02
REV	

Member of the Chartered Institute of Architectural Technologists

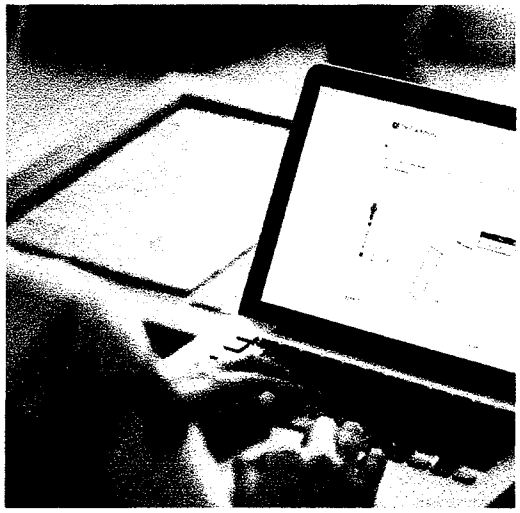
Appendix B

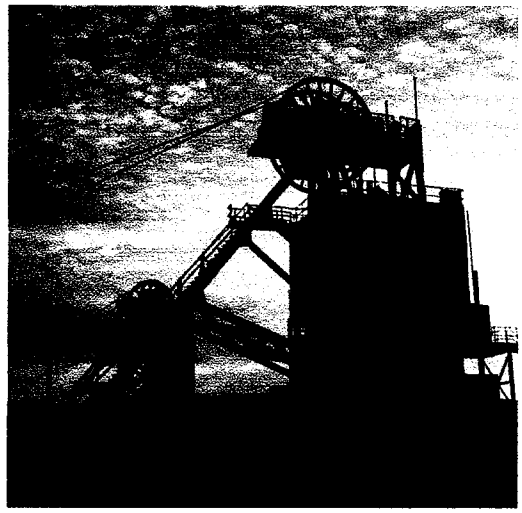
Coal Authority mining report

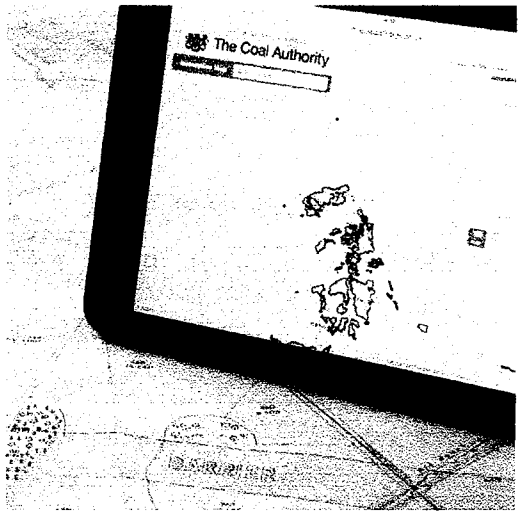
The Coal Authority

Resolving the **impacts** of mining

CON29M Residential Mining Report







86 HOYLAND ROAD
HOYLAND COMMON
BARNSLEY
BARNSLEY
S74 0AP

Date of enquiry:	30 September 2016
Date enquiry received:	30 September 2016
Issue date:	30 September 2016
Our reference:	51001273783001
Your reference:	

CON29M Residential Mining Report

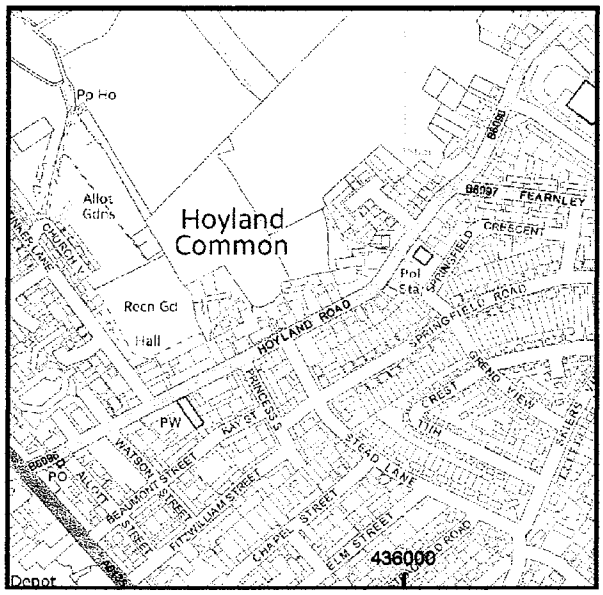
This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

Ian Thorpe

Enquiry address

86 HOYLAND ROAD, HOYLAND COMMON, BARNSLEY, BARNSLEY, S74 0AP



Approximate position of property

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

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	No
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	Yes
10	Mine gas	No
11	Hazards related to coal mining	No
12	Information from the Cheshire Brine Subsidence Compensation Board	No

Further recommended reports

Coal mining subsidence claims 50m buffer report

Coal mining subsidence claims history

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 8 seams of coal at 230m to 350m depth, and last worked in 1948.

Any movement in the ground due to coal mining activity should have stopped.

In addition the property is in an area where the Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered prior to any site works or future development activity. Your attention is drawn to the Comments on the Coal Authority information section of the report.

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.

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
There are 1 claim(s) within 50 metres of the property boundary that do not match the property address. These are shown on the enquiry boundary plot.

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.

If further subsidence damage claims information is required, please visit www.groundstability.com.

10. Mine gas
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. Information from the Cheshire Brine Subsidence Compensation Board
The property lies outside the Cheshire Brine Compensation District.

Comments on the Coal Authority information

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.

If this Report is for a residential property, insurance is included to cover any loss in property value caused by any changes in the information contained in this report. Please see the attached certificate of insurance for the terms and conditions of this insurance. The insurance does not cover non-residential property or interpretive reports.

Disclaimer

Alternative formats

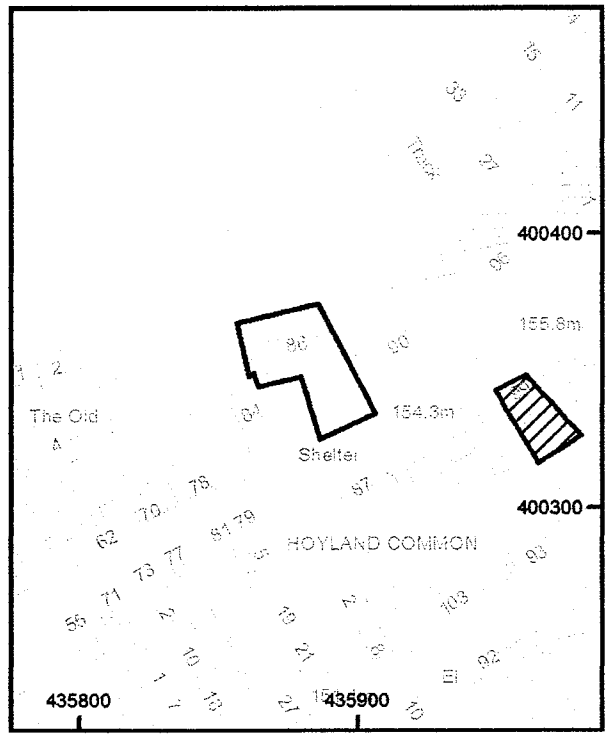
If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

Key

Approximate position of enquiry boundary shown

Coal claims



Map data

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

/company/the-coal-authority
/thecoalauthority
/coalauthority

Appendix C

SYMAS correspondence

PLACE DIRECTORATE
South Yorkshire Mining Advisory Service

BARNSLEY
Metropolitan Borough Council

To:	Development Management	**FAO:**	James Hyde
My Ref:	M2641/3	**Your Ref:**	2016/ENQ/00336
Date:	1st June 2016	**Enquiries to:**	Mr. M. Lyons **Ext:** 2690
Subject:	PROPOSED RESIDENTIAL DEVELOPMENT – 86 HOYLAND ROAD, HOYLAND, BARNSLEY S74 0AP.		

Further to your consultation request of the 23rd May 2016, regarding the above named proposals, I have the following comments.

From the Coal Authorities perspective the site does lie in a high risk referral area, therefore a Coal Mining Risk Assessment would be required by them – this should be provided by the applicant in any forthcoming application.

Our records show that this risk is in relation to the Barnsley Coal seam which is conjectured to outcrop in the south-western corner of the site as shown on the attached plan no. M2641/3A. This coal is the most renown coal seam of the Yorkshire coal field due to its quality and thickness of up to around 3m. Consequently it has been extensively worked via all mining techniques mainly since the turn of the 19th Century, but in some cases as far back as roman times. Many unchartered old workings have been encountered in this seam at shallow depth in the Barnsley area as a whole. SYMAS has no knowledge of any such workings within or in close proximity to the site itself, but there will of course be some potential for this issue causing a stability concern to the proposed development. The closest recorded workings is the former Hoyland Common Opencast site (1952) some 70m away to the north as shown on plan.

Considering the information and assuming the proposals would go to a full planning application, a condition would need to be applied for approval to ensure that a site investigation is undertaken to confirm the depth and nature of the coal/workings and determine whether any stabilization works of shallow voids is required. In our opinion, trenches or boreholes to the coal seam/workings or a maximum of 30m would be recommended to facilitate this. In the unlikely event that no coal or workings are encountered within the 30m at the extremities of the site/development footprints, and the strata is competent, then it can be regarded as stable. It is more likely that the seam or workings are encountered close to the surface, in which case it would be possible that any voids have slowly filled over the years with collapsing strata above. The competent engineer supervising the site investigation will have to formulate an opinion as to whether there is any potential for unstable ground/voids at a depth that may effect surface stability and thus advise whether any further boreholes are required to fully determine stable ground, or that stabilisation works are necessary. Should voids be encountered that could clearly affect surface stability for the structures then the investigation could be brought to a close as treatment works (such as grout injection) would be required for the building footprint at a later date. Alternatively, should it be advised that no treatment works are necessary then enough borehole information (or other suitable detail) should be provided to justify that opinion.

As coal is not suitable for bearing foundations either on or in close proximity to, considerations may be required around either coal removal or piling through the seam to the underlying strata. In such cases blinding off the coal with suitable inert materials to help prevent spontaneous combustion from occurring would also be required.

From the applicants perspective, the Coal Authority is ultimately the regulator to satisfy on the coal mining issues, and should a future application acknowledge the above aspects and set out appropriate proposals for an intrusive investigation (utilising a suitably qualified professional) then that would be sufficient.

I trust this satisfies your enquiry at this time, however please consult SYMAS again should you require any further information or advice.

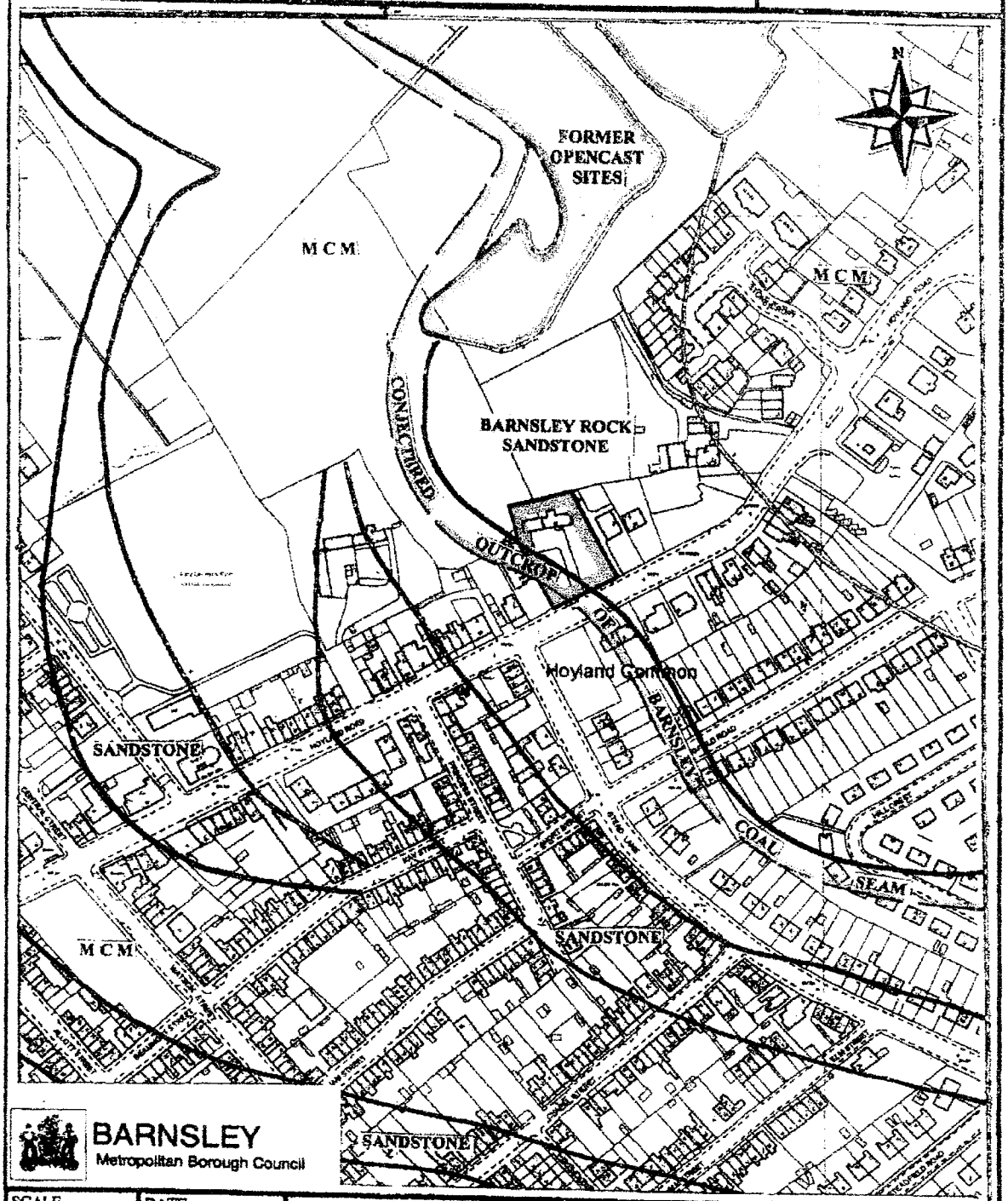
P. James,
Principal Mining Engineer.

DRAWING TITLE

RESIDENTIAL DEVELOPMENT
86 HOYLAND ROAD, HOYLAND
BARNSLEY S74 0AP
MINING & GEOLOGICAL INFORMATION

DRAWING NO.

M2641/3A



BARNSLEY
Metropolitan Borough Council

SCALE	DATE		O.S REFERENCE
1:2500	1.6.16	SOUTH YORKSHIRE MINING ADVISORY SERVICE	SE 3500
DRAWN BY: AS	CHECKED BY: MC		P. JAMES BSc (Hons) PRINCIPAL MINING ENGINEER