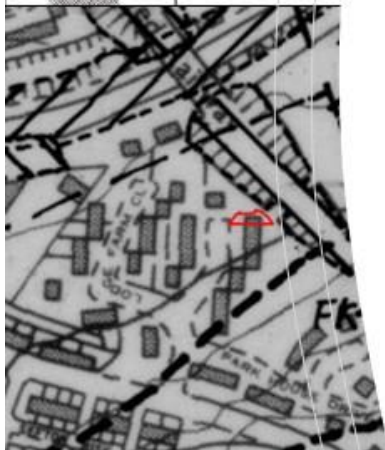




EARTH ENVIRONMENTAL
& GEOTECHNICAL

Coal Mining Risk Assessment

14 Thornhill Park Avenue

Dewsbury

August 2023

On behalf of

Amarjit Mann

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COAL MINING RISK ASSESSMENT

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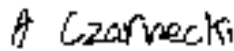
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Report No. A5561/23/CMRA

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Report Title:	14 Thornhill Park Avenue, Dewsbury Coal Mining Risk Assessment	
Report Reference:	A5561/23/CMRA	
Client:	Amarjit Mann	
Issue Date:	17th August 2023	
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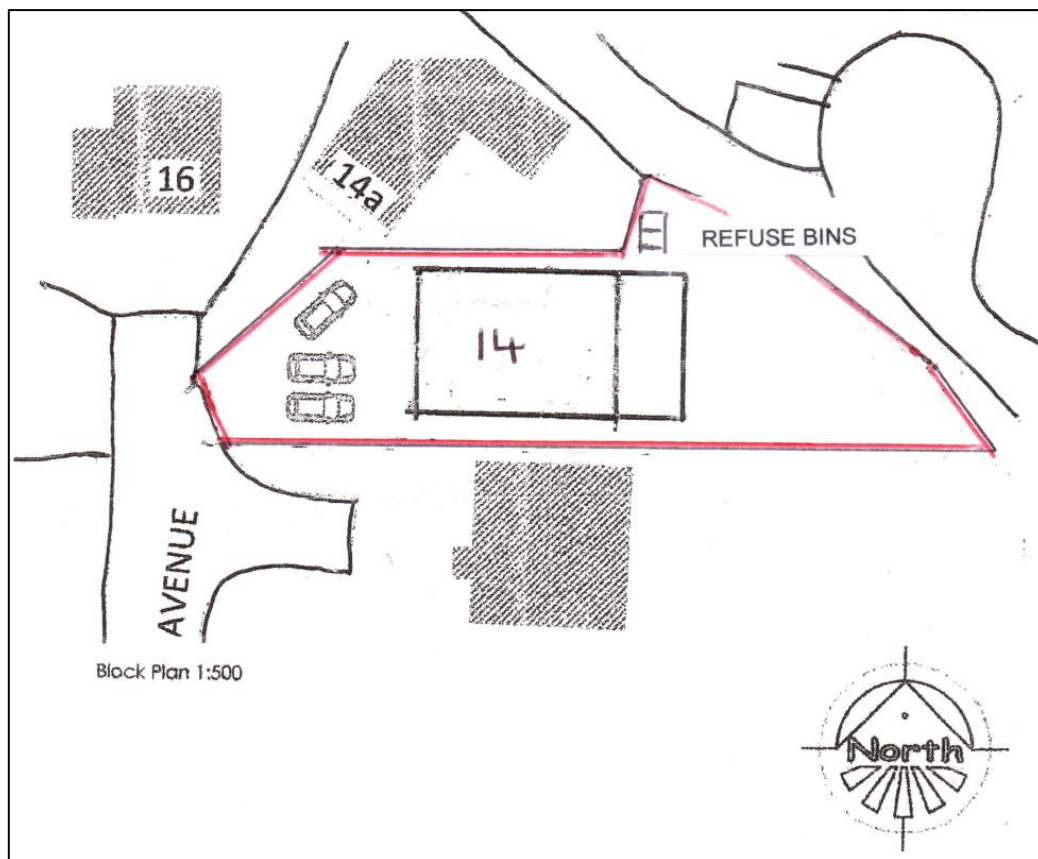
Appendix 1	Coal Authority Consultants Mining Report
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1.0 INTRODUCTION

Appointment

- 1.1 Earth Environmental & Geotechnical Ltd have been commissioned by Amarjit Mann (the Client), to undertake a Coal Mining Risk Assessment for a proposed development at land off 14 Thornhill Park Avenue, Dewsbury.
- 1.2 It is understood that the proposed development consists of the construction of an extension to the existing residential property.
- 1.3 Access to the proposed development will be provided from Thornhill Park Avenue to the west.
- 1.4 A proposed development plan has been provided and is shown as Figure 1.

Figure 1: Proposed Development Plan



Objective

- 1.5 The purpose of the Coal Mining Risk Assessment is to collate available geological, mining, and historical data in order to assess the potential for the site to be affected by underground mining.
- 1.6 This report has been drafted in accordance with the Coal Authority (CA) Guidance Risk Based Approach to Development Management, Version 4, 2017.

Sources of Information

- 1.7 The Coal Mining Risk Assessment compiles a review of the following information sources:
- British Geological Survey of England, SE21NW, 1/10,000, 1999 edition.
 - British Geological Survey of England, Huddersfield Sheet 77, 1/50,000, 2003 edition.
 - Coal Authority Interactive Map Viewer.
 - Coal Authority Mining Report.
 - British Geological Survey online borehole records.
 - Google Earth imagery.
 - Online Historical Ordnance Survey maps.
 - Site Investigations in Areas of Mining Subsidence, FG Bell, 1975.
 - The threat of abandoned mines on the stability of urban areas, Barry Clarke, IAE2006 Paper Number 379, The Geological Society of London, 2006.
 - The collapse of shallow coal mine workings, Durham theses, Durham University, Garrard, 1981.
 - Construction over abandoned mineworking's, CIRIA Special Publication 32, 2002.
 - Abandoned Mineworking's Manual, CIRIA 2019.
 - Kirklees Council planning portal.

Previous Planning Applications

- 1.8 A previous planning application (97/92763) was submitted in 1997 for the construction of a detached garage and utility room. The application was granted.
- 1.9 Multiple planning applications have been submitted for extensions to the existing dwelling. The majority of these applications were approved with the most recent application relating to the erection of a single-storey rear extension that was approved in 2022.

2.0 SITE LOCATION AND DESCRIPTION

- 2.1 The site is located on the southern edge of the market town of Dewsbury, approximately 10km northeast of Huddersfield town centre.
- 2.2 The National Grid Reference for the centre of the site is SE 24902 19660 (X: 424902, Y: 419660), with the closest postcode being WF12 0DA.
- 2.3 The site comprises a residential dwelling and garage with off-road parking and garden areas. Surrounding the site are residential properties with agricultural land and a canal also present nearby.
- 2.4 The site is accessed from Thornhill Park Avenue to the west.
- 2.5 A location plan is shown below as Figure 2 (below).

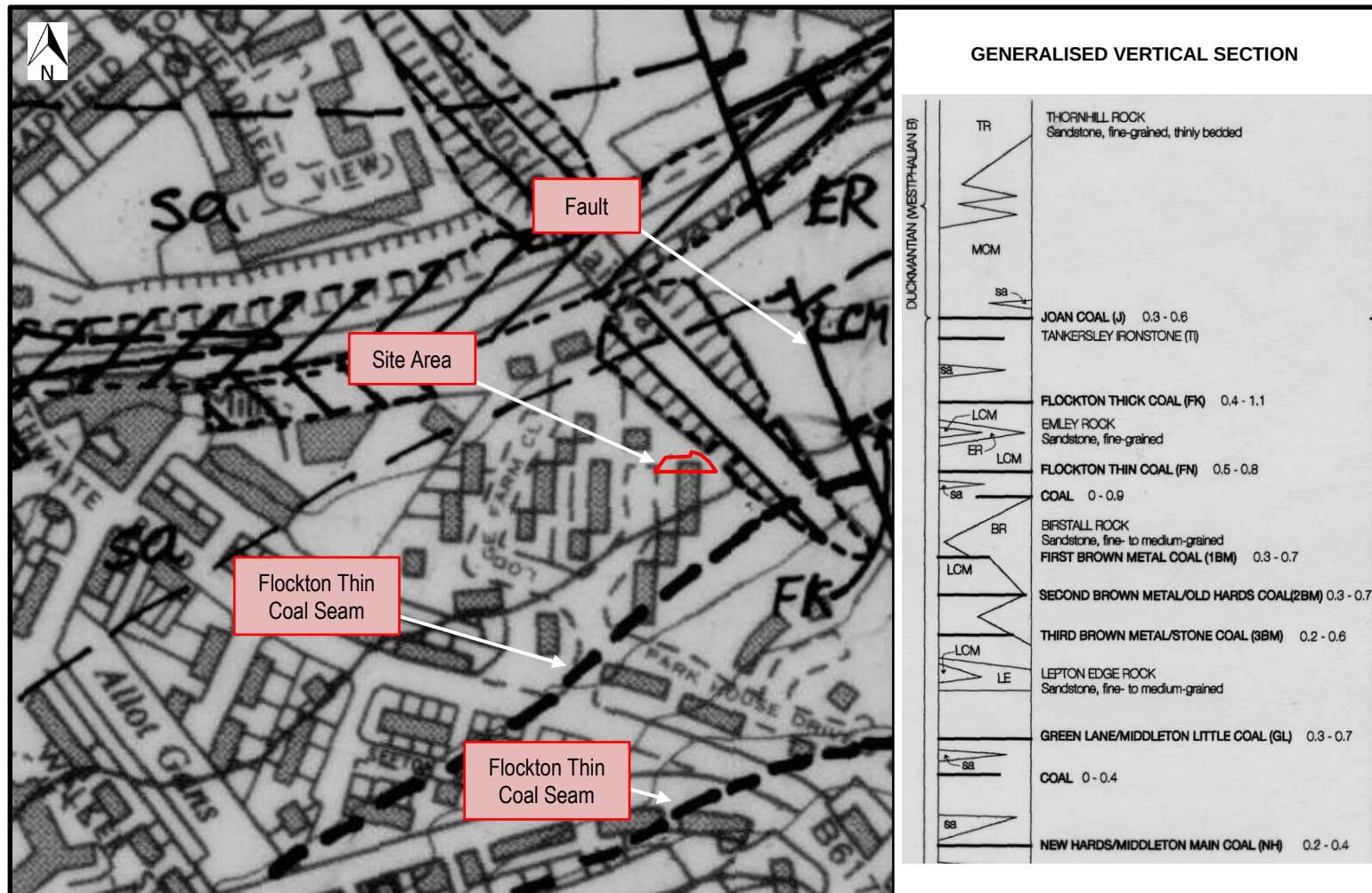
Figure 2: Site Location Plan



bedrock to start at 0.55m depth, followed by intermixed mudstones and shaley mudstones with sandstone bands from 1.55m to 8.00m depth. The is underlain by shale, followed by an intact coal seam from 8.50 to 9.50m. A layer of shale is present in the coal from 9.00m to 9.20m. Mudstone/shale is present for the remainder of the borehole to 10.00m depth.

- 3.6 However, another borehole log located 250m south of the site, dated 1984 and drilled to 18m, records the superficial deposits to extend to 4.10m. Coal/shale with potential workings was encountered at 15.00 to 16.60m.
- 3.7 An extract from the most recently published geological map (1:10,000) showing the approximate site location and key local geological features are presented in Figure 4.
- 3.8 No coal outcrops are recorded to be located on site. However, identified from the geological mapping, the Flockton Thin Coal Seam is shown to outcrop 30m southeast of the site. Additionally, the Coal Authority Mining Report and Interactive Viewer show a coal outcrop 7m north of the site. This additional outcrop is not marked on the geological mapping.
- 3.9 The inferred direction of dip of strata is to the east/southeast with a local dip angle of 2.3 degrees to 2.5 degrees.
- 3.10 An area of Made Ground has also been identified to the northeast of the site. However, this is associated with a historical railway embankment.

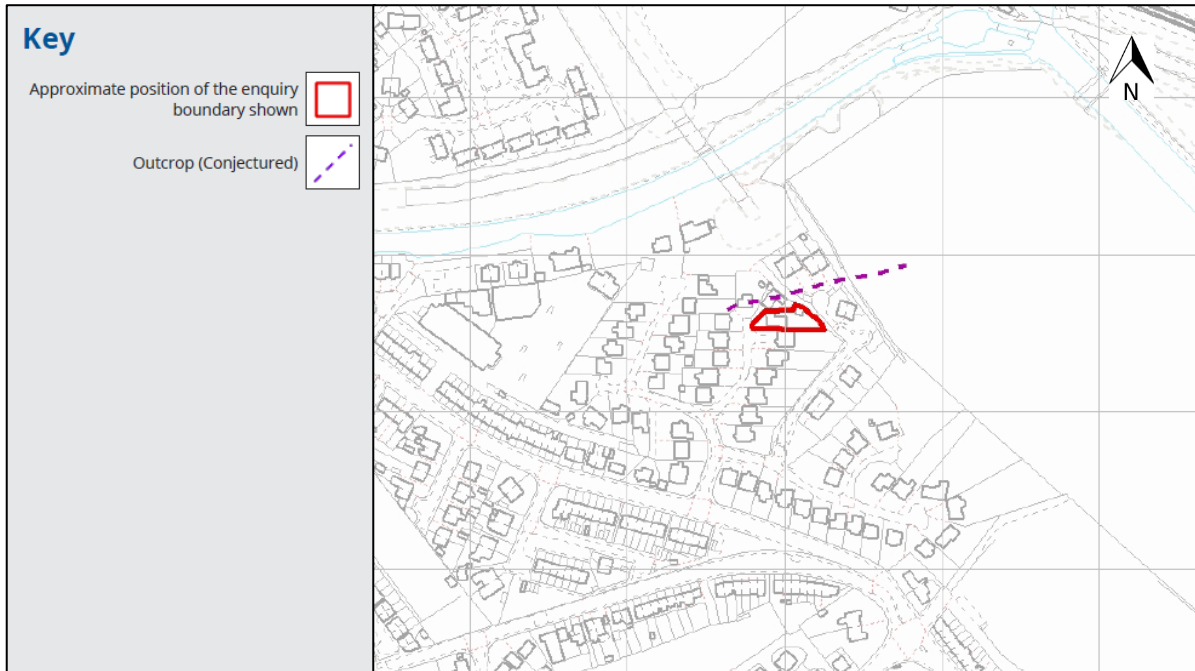
Figure 4: BGS Geology Map Extract 1:10,000 (1999)



Coal Authority Records

- 3.11 Reference to the Coal Authority Online Interactive viewer shows the site to be located within a Development High Risk Area and within an area of Probable Shallow Coal Mine Workings.
- 3.12 A Coal Authority Mining Report (extract shown as Figure 5) has been acquired for the site and indicates that there are past underground workings beneath the site. The shallowest record refers to the Middleton Main Coal Seam, located 65m below the site, dipping 2.3 degrees to the southeast with a recorded extraction thickness of 0.76m. The seam is recorded to have last been worked in 1878.
- 3.13 An additional shallower coal seam (Low Fenton) is also likely to be present beneath the site. This coal seam is seen to outcrop 7m north of the site, from the Coal Authority data, and if the seam follows the regional dip of up to 2.5 degrees to the east/southeast will be present under the site at a very shallow depth.
- 3.14 The report states that there are probable unrecorded shallow workings beneath the site.
- 3.15 There are no mine entries recorded within 100m of the site.
- 3.16 There are no faults, fissures or breaklines are recorded within the vicinity of the site.
- 3.17 There are no records of opencast mining within 500m of the site.
- 3.18 There are no records of claims regarding coal mining subsidence within 50m of the site boundary.
- 3.19 There are no records of any managed tips or remediated sites within 50m of the site.
- 3.20 No records of mine gas have been recorded within 500m of the site boundary.

Figure 5: Coal Authority Map Extract



Historical Mapping

- 3.21 Historically, the site had remained undeveloped until the 1980s when a residential dwelling was constructed. A garage was constructed in the 1990s. The site remains in a similar configuration until the modern-day. A railway line under construction can be seen near to east of the site in the 1908 mapping. This was subsequently dismantled.

4.0 COAL MINING RISK ASSESSMENT

Scope of Coal Mining Risk Assessment

- 4.1 Objectives of the coal mining risk assessment are to provide a desk-based assessment of available geological and mining information relating to the site (and wider area) and to use this information so as to identify risks present to the development from the legacy of mining.
- 4.2 As part of the risk assessment, potential mitigation measures (if required) should be considered, including any necessary remedial works.
- 4.3 The outcome of the risk assessment should demonstrate to the Local Authority that the proposed development is or can be made safe (and stable) to meet the requirements of the National Planning Policy Framework (NPPF).

Data Limitations

- 4.4 It should be appreciated that it did not become a legal requirement to deposit coal mining abandonment plans until the 1870's and that this requirement was not rigorously enforced for some time after. Many shallow coal seams were worked prior to the introduction of first edition Ordnance Survey Maps and information on these workings is often not available. Therefore, if coal seams were accessible then there is the potential that they could have been worked by formal or informal means.
- 4.5 It is also possible that if unrecorded workings are present then unrecorded mine entries may be present.

Coal Mining Risks

- 4.6 The risks associated with coal mining are as follows:
- Collapse of relict workings beneath buildings causing damage to the building fabric and infrastructure.
 - Migration of mine gases from old mine workings and mine entries resulting in accumulation of flammable and asphyxiating gases in confined areas.
 - Consolidation of relict workings and overlying strata causing structural defects in building fabric and infrastructure.
 - Failure of mine entries causing loss of ground beneath building and external areas.
 - Spontaneous combustion of old mine workings.

Conclusions

- 4.7 It is understood that the proposed development consists of the construction of an extension to the existing residential property.
- 4.8 The site lies within a Coal Authority Development High Risk Area and the Coal Authority report indicates that the site is located within an area of probable past shallow coal mine workings beneath the site.
- 4.9 The Coal Authority report also indicates there are two records of worked seams underlying the site, the shallowest is located 65m below ground level.
- 4.10 However, the Coal Authority data shows an additional shallower seam that outcrops 7m to the north that may be present at a shallow depth beneath the site.
- 4.11 Nearby boreholes drilled approximately 250m south and southwest of the site identified superficial deposits to a maximum depth of 4.10m bgl followed by alternating mudstone, siltstone, and sandstone. Coal seams were encountered at 8.50m to 9.50m bgl and 15.00m to 16.60m bgl.

Proposed Mitigation Strategy

- 4.12 Evidence suggests there could be a risk of historical shallow workings being present beneath the development area, therefore it is recommended that boreholes are drilled within the footprint of the proposed development area.
- 4.13 The site investigation will require a permit from the Coal Authority, together with the development of a risk and method statement.
- 4.14 This report should allow for planning permission to be granted with relevant conditions in relation to the site investigation and any possible remedial measures.

APPENDIX 1

COAL AUTHORITY MINING REPORT

APPENDIX 2

REPORT LIMITATIONS

REPORT LIMITATIONS

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The report was written in 2023 and should be read in light of any subsequent changes in legislation, statutory requirements, and industry best practices. Ground conditions can also change over time and further investigations, or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

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The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

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Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site.