Contaminated Land Appraisals
Brownfield Remediation Solutions
Site Investigation Services
Earthworks Design and Control
Flood Risk Assessments

Mrs Jeanette Atkins
Flockton Green Club
153 Barnsley Road
Flockton
Huddersfield
WF4 4AA

1st May 2026
C762/03/GS

Dear Jeanette,

Ref: Ground Gas Risk Assessment - Land at Flockton Green Club, 153 Barnsley Road, Flockton, Huddersfield, WF4 4AA

In accordance with instruction received from yourselves, G&M Consulting Ltd have undertaken a ground gas risk assessment for the above site and present the findings and recommendations from a phase of ground gas monitoring.

The proposed development comprises an extension to the existing social club building present on site

The work has been undertaken in accordance with the requirements of the Phase 1 desk study report Ref C762, dated November 2025, prepared by G&M, which stated the following;

> Uncertainty about the potential for ground gas, associated with the identified shallow coal workings, to affect the site should be managed by further refining the conceptual model with respect to ground gas risks and developing a strategy that either;
>
> A suitably designed programme of ground gas monitoring at and around the location of the proposed property that will determine if ground gases that may affect the development are present. The monitoring should be followed by an appropriate risk assessment and recommendations for building protection.
> **OR**
> Gas protection measures should be provided for the new property. The gas protection measures should be in accordance with 'Characteristic Situation 2' as defined in CIRIA C665:(2007) 'Assessing risks posed by hazardous ground gases to buildings' and should be suitably verified.

Assessment Criteria for Ground Gas

Current guidance for the assessment of risk associated with the presence of hazardous ground gases (principally methane and carbon dioxide within ground gas) is provided in several documents, including the British Standard 'Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings' (BS8485:2015+A1:2019) and the CIRIA document 'Assessing risks posed by hazardous ground gases to buildings' (CIRIA C665:2007). The assessment present herein is based primarily upon the CIRIA document.

The Chestnuts, Brackenhill Road
East Lound, Haxey
Doncaster. DN9 2LR
Registered in England No. 5806528
VAT No. 772 3112 51

Tel: 01427 752788
Mob: 07743 319788
Mob: 07718 122766
Email: enquiries@soilexperts.co.uk
Website: www.soilexperts.co.uk

Hazardous ground gas can be considered as a type of land contamination, and qualitative risk assessment is based on a conceptual model similar to that used for soils and groundwater contamination. A semi-quantitative estimate of risk can be provided, based upon the qualitative risk model and gas monitoring results.

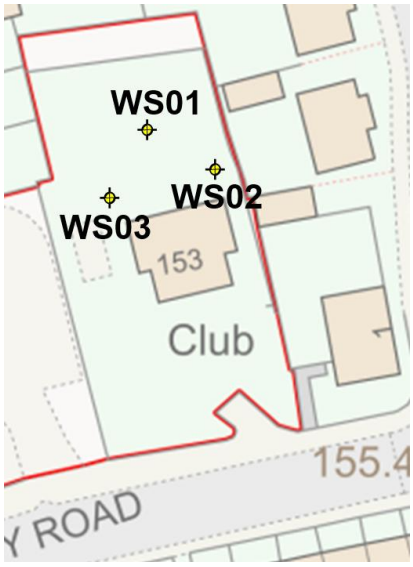
Potential Sources of Hazardous Ground Gas

- The previously referenced P1 report did not identify any current or historical landfill sites within 250m of the site.
- Little if any made ground likely to be present on site, including any putrescible materials.
- The site is not shown to be underlain by alluvial soils, which by their nature can include organic or degradable matter and therefore prone to the generation of ground gas
- Risks to the development from mine gas associated with any underlying coal seams/workings is considered moderate/high. The site was subject to an intrusive mining investigation (Ref:C753/01/ATS) undertaken by G&M, this report, the report notes possible coal extraction at depths of between 7.4 m and 7.7 m bgl and up to 1.2 m in thickness. Working of shallow coal seams historically can give rise to gas generation and migration. For completeness, a copy of the mining investigation report can be found in Attachment A of this report.
- Reference to the BRE document BR211 'Radon Guidance on Protective Measures for New Dwellings' (2015), indicate that the development at the site is not at risk from radon, and no such specific radon protection would be required.

Fieldwork and Installation Details

The fieldwork was carried out on the 10th February 2026 and comprised the drilling of three boreholes, referenced WS01 to WS03, using window sampling methods, to allow recovery of samples for geological description and the installation of combined gas/groundwater monitoring wells.

The location of the boreholes are shown below;



The aim of the work was to install monitoring wells of sufficient depth and coverage to adequately characterise potential ground gas flows and concentrations. The boreholes were drilled adjacent to the proposed footprint of the new extension to the rear of the existing building. The boreholes were drilled to depths of between 1.80 m and 2.00 m below ground level (bgl) and terminated within the underlying bedrock which precluded deepening of these wells; however, the wells were installed through any made ground and natural subsoils into the underlying bedrock.

The installations comprised 50mm diameter HDPE pipe, consisting of a lower slotted section of casing surrounded by single size non-calcareous gravel. The upper section of the well was constructed from plain casing sealed with a bentonite/cement seal. A flush lockable security cover was concreted into place and completed the well installation at the ground surface.

The fieldwork was carried out under the supervision of a G&M geologist.

Borehole WS01 encountered a gravel hardstand from surface to a depth of 0.15, beneath which a made ground comprising brown gravelly clay was encountered to 0.4 m bgl. The gravel component was noted as fine to coarse of brick. WS02 encountered a tarmac hardstand from surface, beneath which a similar made ground material was encountered to a depth of 0.3 m bgl. WS03 encountered a topsoil from surface to a depth of 0.3 m bgl, which comprised a dark brown very clayey fine to coarse sand with occasional rootlets. No made ground was encountered beneath the topsoil. Beneath the topsoil or made ground, natural subsoil was encountered in all three boreholes, which comprised an orange brown very clayey gravelly fine to coarse sand to depths of between 1.6 m and 1.9 m bgl. All three boreholes terminated in an extremely weak thickly laminated orange brown sandstone, which was recovered to surface as a very gravelly sand with low cobble content.

Recorded Ground Gas Regime
In order to determine the potential risks to the site from the possible ground gas sources a programme of monitoring of the wells was undertaken, considering the proposed end use of the development, a total of six visits were undertaken over a nominal three-month period. These included at least one visit where the barometric pressure was below 1000mb.

The results of the ground gas monitoring have been evaluated using guidance contained in CIRIA C665 which provides a classification system using both ground gas concentrations and the borehole flow rates to define a Characteristic Situation for the site based on the Gas Screening Value (GSV) for methane and carbon dioxide. The GSV is calculated by multiplying the borehole flow rate (l/hr) by the gas concentration (% v/v), using the maximum recordable concentrations of methane and carbon dioxide and the maximum recordable positive gas flow rate, or the monitoring instrument limit of detection (typically 0.1l/hr), where no flow is recorded.

The results of the monitoring can be summarised in the following table, which lists the highest value recorded for each gas for each well. The monitoring sheets and details of the equipment used are presented in Attachment B of this report;

BH No	CH_4 (Peak % v/v)	CO_2 (Peak % v/v)	O_2 (Min % v/v)	VOC (Max concentration) (ppm)	Flow (Peak l/hr)	BH Well Depth (mbgl)
WS01	0.0	2.5	14.4	0.2	0	1.8
WS02	0.0-0.1	3.9	17.0	0	0	2.0
WS03	0.0	7.5	11.9	0.1	0	2.0

Barometric pressure varied between 989 and 1014 mbar over the course of the visits and is recorded on the monitoring sheets in Attachment B.

Based on the above results, the highest carbon dioxide concentration recorded (Borehole WS03), with maximum (peak) concentration of 7.5% v/v (which is considered the most conservative value), and using the using the maximum recordable concentrations of carbon dioxide and the maximum recordable positive gas flow rate, or the monitoring instrument limit of detection (typically 0.1l/hr), where no flow is recorded, derives a site GSV of 0.0075l/hr. This corresponds with the CIRIA C665 (Table 8.5) Characteristic Situation (CS) 1, and that no gas protection measures are considered necessary. However, as the carbon dioxide concentrations recorded in WS03 are above 5% then in accordance with the above standards the CS value is increased by one band to CS2 (Refer to Table 8.5). CS 2 would require basic gas protection measures to be installed in the building.

Gas Protection Measures
Gas protection measures should be installed to the development in accordance with BS8485:2015+A1:2019. Based on a Type C development (commercial/public, Table 3 of the standard) and a Characteristic Situation CS2, a gas protection score (GPS) of **2.5** will need to be achieved (Table 4 of the standard).

BS8485 lists various measures for gas protection, each is given a value, by which a cumulative score can be obtained. The protection measures are provided by:

- Structural barrier (GPS between 0 and 2.5)

- Ventilation (GPS between 0.5 and 2.5)
- Membrane (GPS 2)

A minimum of two of the measures should be used to achieve the score.

The various options are detailed in Tables 5, 6 and 7 of BS8485 and expanded on in various Annexes to the standard.

Validation of the membrane should be in accordance with the following best practice guidance;

- Verification Requirements for Gas Protection Systems – Version 1.1, December 2016. (Yorkshire and Lincolnshire Pollution Advisory Group),

The installation of the membrane should be validated by a suitable qualified and experienced person/organisation, and the records submitted to the Local Authority as appropriate. In this instance validation shall be undertaken by Mr Howard Shaw of Geonation20. A Letter of Competency is presented in Attachment C of this report.

Yours sincerely

Andrew Swinbourne
For and on behalf of **G&M Consulting Ltd**

Attachments

ATTACHMENT A

MINING INVESTIGATION REPORT

Contaminated Land Appraisals
Brownfield Remediation Solutions
Site Investigation Services
Earthworks Design and Control
Flood Risk Assessments

Mr Simon Fish
Cape Site Services Ltd
Unit 2, Rear of Castle Buildings
275 Carlton Road
Barnsley
S71 3HX

10th June 2025

Ref C753/01/ATS

Dear Simon,

Ref: Shallow Mining Investigation on land at Flockton Green Club, 153 Barnsley Road, Flockton, Huddersfield, WF4 4AA

1. Introduction

On the instructions of the Flockton Green Club, Cape Site Services Ltd have undertaken an intrusive mining investigation on land at Flockton Green Club, 153 Barnsley Road, Flockton, Huddersfield, WF4 4AA. The work was carried out in support of a planning application associated with an extension to the existing social club building present on site.

The investigation work was undertaken to provide information on the underlying ground conditions and assess the likelihood of historical shallow mine workings affecting the site. G&M was present on site during the fieldwork, and this report presents the findings of the investigation.

The site has been subject to a coal mining risk assessment (CMRA), Report Ref 4678-24 CMRA, dated February 2024, prepared by Geoenviro Solutions Ltd, details of which are summarised in Section 2 of this report and a full copy is presented in Attachment A of this report.

The site is located immediately north of Barnsley Road, in the centre of the village of Flockton, approximately 10 km east of Huddersfield town centre. The grid reference for the site is SE 241 150.

The site currently comprises a building used as a social club (Flockton Green Club) with Tarmac driveway to the front and an area of hardstand car parking to the rear.

The comments and opinions presented in this report are based on the findings of a review of available information and ground conditions encountered during the intrusive investigation work. There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been taken into account by this report

Responsibility cannot be accepted for conditions not revealed by the investigation. Any diagram or opinion of the possible configuration of ground conditions between exploratory holes is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

2. CMRA

The CMRA should be read in conjunction with this report. A summary of the findings from the CMRA are as follows:

Mapping information derived from the BGS Geoindex Onshore suggest that no Made Ground or superficial deposits underlie the site.

The site is recorded to be underlain by the Pennine Lower Coal Measures Formation (PLCM), which is generally described as *'interbedded grey mudstone, siltstone and pale grey sandstone and thicker coal seams in the upper part'* (BGS Lexicon Description).

No faults are recorded to run through the site.

The Coal Authority Interactive Viewer provides an indication as to the proximity of coal outcrops to the site, an excerpt is shown as Figure 4.1, below.

Figure 4.1: Approximate Location of Coal Outcrops

The CACR identifies nine historically worked seams within influencing distance of the site, as reported in Table 4.1, below.

Table 4.1: Historically Worked Seams

Colliery	Seam	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FLOCKTON THIN	25	Beneath Property	3.02.5	South-East	51	1827

Colliery	Seam	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FLOCKTON THIN	31	Beneath Property	2.3.05	South-East	51	1824
unnamed	MIDDLETON MAIN	94	North-West	2.4	East	63	1861
unnamed	MIDDLETON MAIN	98	South	2.5	South-East	69	1913
unnamed	WHEATLEY LIME	116	South	2.9	South-East	84	1944
unnamed	SILKSTONE	137	Beneath Property	2.8	South-East	56	1966
unnamed	SILKSTONE	141	Beneath Property	2.4	East	61	1966
unnamed	TOP BEESTON	190	Beneath Property	3.0	East	76	1975
CAPHOUSE	TOP BEESTON	190	Beneath Property	3.0	South-East	66	1974

The CACR identifies that there are 38 mine entries within 100 m of the site, all of which are classified as shafts. Two shafts are described as having reinforced concrete caps. One shaft is recorded as "drilled and pressure grouted to the surface". Four shafts are described as "grouted to full depth in 1.5 m lifts." 29 shafts are reported as "Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895." There is no treatment description provided for two shafts.

The CACR identifies that probable unrecorded shallow workings are present within influencing distance of the site.

Reference to Coal Authority Interactive Viewer provides an indication as to the most probably areas where unrecorded shallow workings took place within influencing distance of the site and is shown on Figure 4.5, below:

Figure 4.5: Probable Unrecorded Shallow Workings

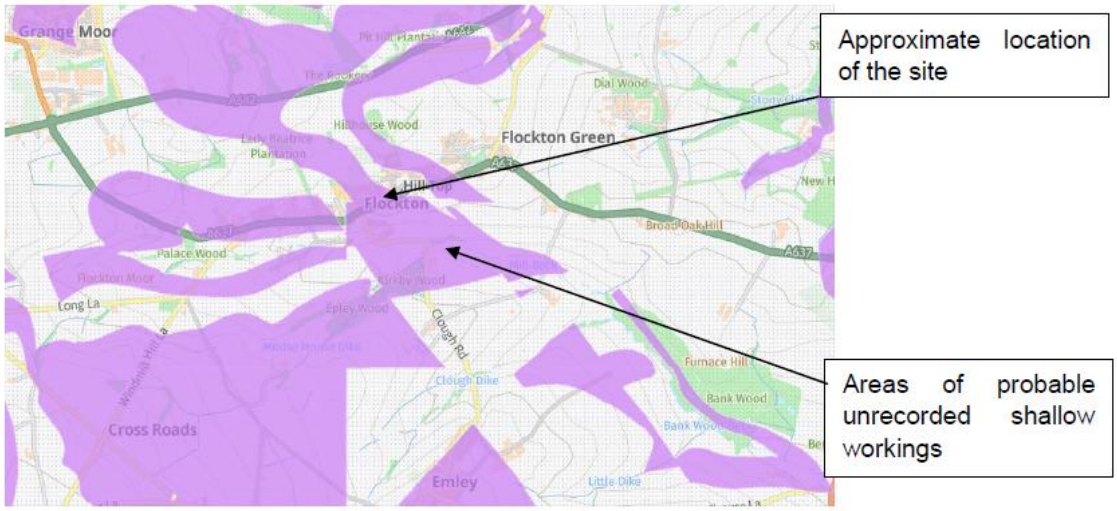


Table 5.1 below summarises the potential risks associated with coal mining legacy for the proposed development site, identified from the preceding information.

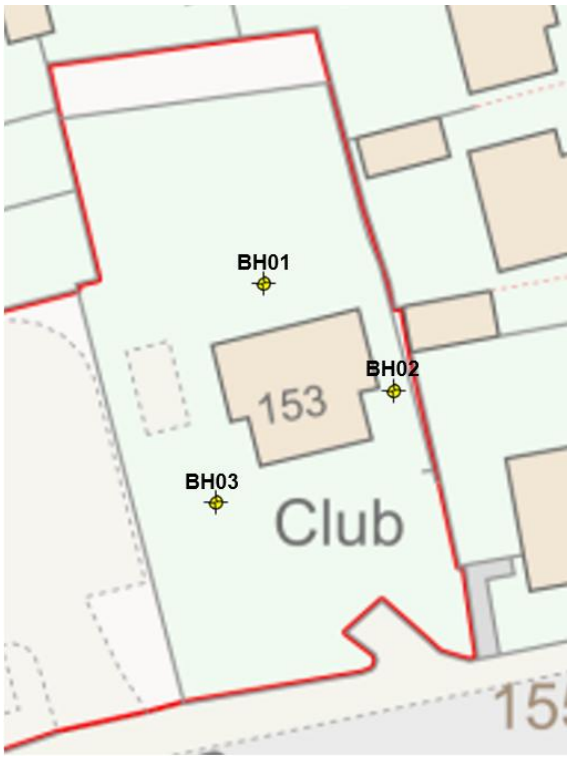
Table 5.1: Coal Mining Risk Assessment,

Coal Mining Issue	Yes	No	Risk Assessment
Underground coal mining (recorded at shallow depths)	x		The mining report identifies coal present under the site that may have been worked. **High** risk.
Mine entries (shafts and adits)	x		There are records of mine entry shafts within 100m from site boundary without record of capping. **High** risk.
Coal mining geology	x		The mining report and mapping identifies coal present under the site that may have been worked. **High** risk.
Record of past mine gas emission or potential		x	No record of past mine gas emissions/problems in vicinity of site. **Low** risk.
Recorded coal mining surface hazard	x		The site lies within an area where surface mining has occurred nearby, alongside probable unrecorded shallow works in the vicinity of the site. **Moderate** risk.
Surface mining (opencast workings)	x		Open cast works to the south. The site lies within an area of likely unrecorded shallow works, **Moderate** risk.
Recorded coal mining surface hazard		x	No hazard identified on site, however coal mining legacy noted in the immediate area, **Moderate** risk.
Development Risks	x		Site located within a Development High Risk Area. **High** risk.

3. Fieldwork

The fieldwork was carried out on the 27th May 2025 and comprised the drilling of three rotary open-holes, referenced BH01 to BH03 inclusive, which were drilled to depths of between 10.0 m and 30.0 m below ground level (bgl), to allow logging of the soils and solid strata through examination of flush returns and rate of penetration of the drill bit. Drilling was initially progressed using 150mm diameter augers through the superficial soils, and a casing set into the underlying bedrock, to aid flush returns.

The locations of the exploratory holes are shown below.



The drilling works were undertaken by Cape Site Services Ltd, using a Beretta T24 tracked rotary drilling rig and carried out under the Terms and Conditions of the Mining Remediation Authority (MRA) Permission No 29890, a copy of which is presented in Attachment B of this report.

Drilling was undertaken using water flush and the boreholes were backfilled on completion.

4. Ground Conditions

The Driller records a thin veneer of either 'hardcore' or 'Tarmac hardcore' in all of the boreholes, immediately underlain by a 'sandstone brown silty weathered', further underlain by a 'sandstone brown silty', to depths of between 2.7 m and 3.1 m bgl, in all three boreholes. The Driller records a predominantly mudstone sequence to the base of each of the boreholes below the sandstone.

The driller records 'Void lost water and returns' in BH01 and BH03, at depths of between 7.4 m to 8.5 m bgl and 7.7 m and 8.9 m bgl, respectively. Over a similar depth range, the Driller records 'coal' in BH02 between 7.5 m and 8.6 m bgl.

The exploratory hole records are presented in Attachment C of this report.

During the drilling, monitoring of methane, carbon monoxide, hydrogen sulphide and oxygen was undertaken at the borehole surface. No significant concentrations of methane, carbon monoxide or hydrogen sulphide were recorded, as detailed on the attached logs no gases were noted during drilling.

5. Conclusions/Recommendations

On the instructions of Flockton Green Club, Cape Site Services Ltd have undertaken an intrusive mining investigation on land a Flockton Green Club, 153 Barnsley Road, Flockton, Huddersfield, WF4 4AA. The work was carried out in support of a planning application associated with an extension to the existing social club building present on site.

The drilling works were carried out in accordance with the MRA permission 29890.

Based on the findings of this investigation, which the driller records likely shallow workings as 'void lost water returns' in boreholes BH01 and BH03 at depths of between 7.4 and 7.7 m bgl and upto 1.2 m in thickness Over a similar depth range, the Driller records 'coal' in BH02 between 7.5 m and 8.6 m bgl. It is therefore considered that there is insufficient rock cover above the likely worked seam (assuming as a general rule of thumb used to assess the risk from pillar and stall mining, the rule is 10x seam thickness for competent rock cover) and that therefore remedial action is warranted prior to any development works being undertaken. The recommendation of this report is that these shallow workings are stabilised by means of drilling and grouting.

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).

It is recommended that discussions are held with an experienced drill and grouting contractor to ascertain their views and budget estimate to carry out the works.

We trust this report and the attachments meet with your approval and are sufficient for your present needs. Your client should submit this document to the local authority for their comment/approval.

Yours sincerely

Andrew Swinbourne
For and on behalf of **G&M Consulting Ltd**
Attachments

ATTACHMENT A – CMRA

GEOENVIRO

SOLUTIONS LIMITED

COAL MINING RISK ASSESSMENT, DESKTOP STUDY

AT

BARNSLEY ROAD WAKEFIELD

FOR

FLOCKTON GREEN LTD

Report Reference: 4678-24 CMRA

GeoEnviro Solutions Ltd
Unit 7, Springvale Works,
Brookfoot Lane,
Brighouse,
HD6 2RA

www: geoenvirosolutions.com

QUALITY ASSURANCE

	Name	Position	Date
Prepared by:	Jacob Fenton	Geoenvironmental Engineer	February 2024
Reviewed by:	Andrew Dickinson	Associate Director	February 2024
Approved by:	Andrew Dickinson	Associate Director	February 2024

ISSUE STATUS

Version	Date	Description	Prepared	Reviewed	Approved
1	February 2024	First Issue	-	-	-

CONTENTS

APPENDICES

Appendix	Information
1	Drawings and Plans
2	Coal Authority Report

1. INTRODUCTION

1.1 BACKGROUND AND INSTRUCTION

GeoEnviro Solutions Limited (GES) were instructed by Flockton Green Ltd (the Client) to produce a Preliminary Coal Mining Risk Assessment Report (CMRA) for the site located at Flockton Green WMC, Barnsley Road, Flockton, Wakefield, WF4 4AA.

A site location plan is presented as Drawing 4678-24 – 01 in **Appendix 1**.

1.2 PROPOSED DEVELOPMENT

We understand current plans for the development of the site include:

Refurbishment and extension of the current on-site buildings.

An outline development drawing for the site as drawn by Cadvis3d, referenced A(10)-01, and dated December 2023, can be reviewed within **Appendix 1**.

The risk assessment undertaken in this report is therefore based on the proposed development as outlined here.

1.3 OBJECTIVES

The objectives of this CMRA report are to:

- Gain an understanding of any concerns of the regulatory authorities (Local Authority Planning, Building Control and the Coal Authority) regarding potential impacts of historical coal mining.

1.4 INFORMATION SOURCES

During the production of this report the following primary information sources have been utilised:

- BGS Open Geoscience online geological mapping tool.
- OS Open Data online mapping tool.
- Coal Authority Online interactive map.
- Coal Authority Consultants Coal Mining Report.

1.5 PREVIOUS INVESTIGATIONS

GES have not been provided with any previous investigation reports and are unaware that any have been carried out to date.

2. SITE LOCATION AND DESCRIPTION

2.1 SITE LOCATION

The site is located at Flockton Green Working Men's Club, Barnsley Road, Flockton, at approximate National Grid Reference (NGR): 424188:415009 (centre of the site).

2.2 SITE DESCRIPTION

At this stage, a site reconnaissance has not been carried out; the site description has been taken in part from Google Earth and Google Street View imagery.

A site walkover may be carried out either prior to or during any intrusive investigation and will be reported accordingly.

The site comprises a roughly rectangular shaped piece of land with an approximate area of 0.1 Ha.

The topography of the site is generally flat with a slope heading north upwards from Barnsley Road to the main building whilst Barnsley Road itself slopes downhill to the west.

The site is currently occupied by the current two storey working men's club building, with associated landscaping and parking infrastructure.

An approximate distribution of the surface covering is given below in Table 2.1.

Table 2.1: Site Surface Covering

Type of Surface Cover	Distribution (%)
Soft Ground (grassed and landscaped areas)	20
Hardstanding	10
Roadways	40
Buildings	30
Water (ponds, streams)	0

The site is bounded by Barnsley Road to the south, and residential properties to the west and east.

Access to the site is via Barnsley Road from the south.

A selection of photographs from the site walkover are presented in **Appendix B**.

Surrounding Area

The current surrounding land use to the site is generally residential and commercial properties in all directions.

The topography of the surrounding area slopes gently downhill to the west.

3. BRITISH GEOLOGICAL SURVEY INFORMATION

3.1 SITE GEOLOGY

Mapping information derived from the BGS Geoindex Onshore suggest that no Made Ground or superficial deposits underlie the site.

The site is recorded to be underlain by the Pennine Lower Coal Measures Formation (PLCM), which is generally described as *'interbedded grey mudstone, siltstone and pale grey sandstone and thicker coal seams in the upper part'* (BGS Lexicon Description).

No faults are recorded to run through the site.

3.2 BOREHOLE RECORDS

Mapping information derived from the BGS Geoindex indicates that there is a single borehole adjacent to the southeast boundary of the site. However, the data is confidential and unavailable for review.

4. COAL MINING INFORMATION

4.1 COAL AUTHORITY REPORT

A Coal Authority Consultants Report (CACR) has been commissioned from the Coal Authority. This report is provided in **Appendix 2** and, along with extracts from the Coal Authority Online Indicative Viewer, are summarized below.

4.2 COAL OUTCROPS

The Coal Authority Interactive Viewer provides an indication as to the proximity of coal outcrops to the site, an excerpt is shown as Figure 4.1, below.

Figure 4.1: Approximate Location of Coal Outcrops

4.3 UNDERGROUND COAL MINING

Past

The CACR identifies nine historically worked seams within influencing distance of the site, as reported in Table 4.1, below.

Table 4.1: Historically Worked Seams

Colliery	Seam	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FLOCKTON THIN	25	Beneath Property	3.02.5	South-East	51	1827

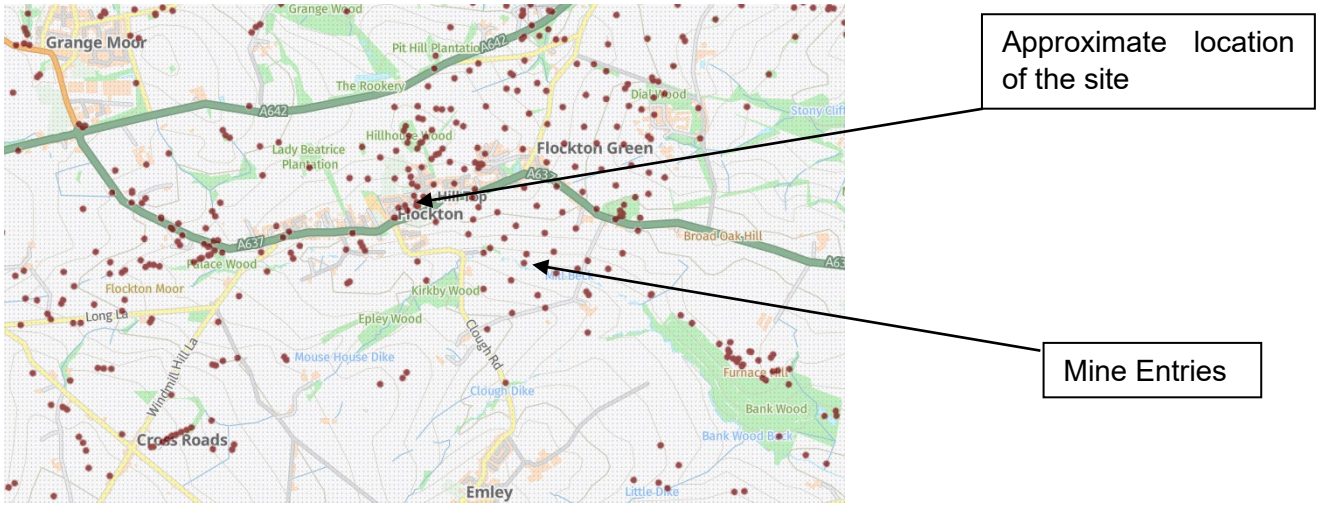
Colliery	Seam	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FLOCKTON THIN	31	Beneath Property	2.3.05	South-East	51	1824
unnamed	MIDDLETON MAIN	94	North-West	2.4	East	63	1861
unnamed	MIDDLETON MAIN	98	South	2.5	South-East	69	1913
unnamed	WHEATLEY LIME	116	South	2.9	South-East	84	1944
unnamed	SILKSTONE	137	Beneath Property	2.8	South-East	56	1966
unnamed	SILKSTONE	141	Beneath Property	2.4	East	61	1966
unnamed	TOP BEESTON	190	Beneath Property	3.0	East	76	1975
CAPHOUSE	TOP BEESTON	190	Beneath Property	3.0	South-East	66	1974

Mine Entries

The CACR identifies that there are 38 mine entries within 100 m of the site, all of which are classified as shafts. Two shafts are described as having reinforced concrete caps. One shaft is recorded as “drilled and pressure grouted to the surface”. Four shafts are described as “grouted to full depth in 1.5 m lifts.” 29 shafts are reported as “Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.” There is no treatment description provided for two shafts.

Reference to Coal Authority Interactive Viewer provides an indication as to the proximity of recorded mine entries and is shown on Figure 4.2, below:

Figure 4.2: Approximate Location of Mine Entries



Site: Barnsley Road, Wakefield
Prepared For: Flockton Green Ltd
Report Ref.: 4678-24 CMRA

Opencast Coal Mining

Reference to Coal Authority Interactive Viewer provides an indication as to the proximity of opencast mining and is shown on Figure 4.3, below:

Figure 4.3: Proximity of Opencast Mining

Coal Mining Subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres, since 31st October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property. The 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.

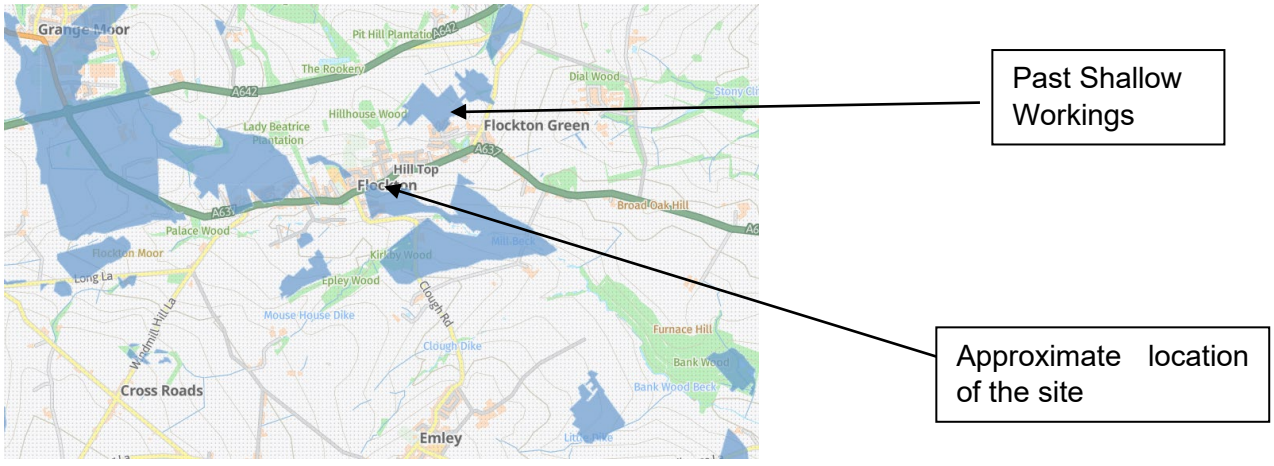
Mine Gas

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the enquiry.

4.4 SHALLOW MINING

Reference to Coal Authority Interactive Viewer provides an indication as to the most probably areas where unrecorded shallow workings took place within influencing distance of the site and is shown on Figure 4.4, below:

Figure 4.4: Past Shallow Workings

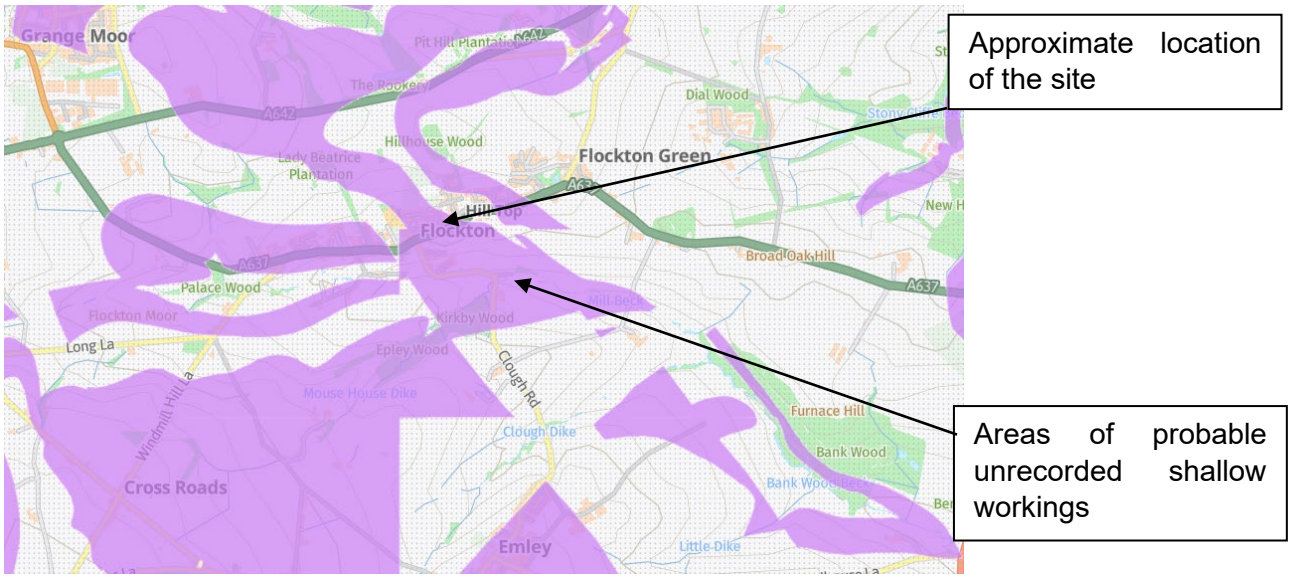


Probable Unrecorded Shallow Workings

The CACR identifies that probable unrecorded shallow workings are present within influencing distance of the site.

Reference to Coal Authority Interactive Viewer provides an indication as to the most probably areas where unrecorded shallow workings took place within influencing distance of the site and is shown on Figure 4.5, below:

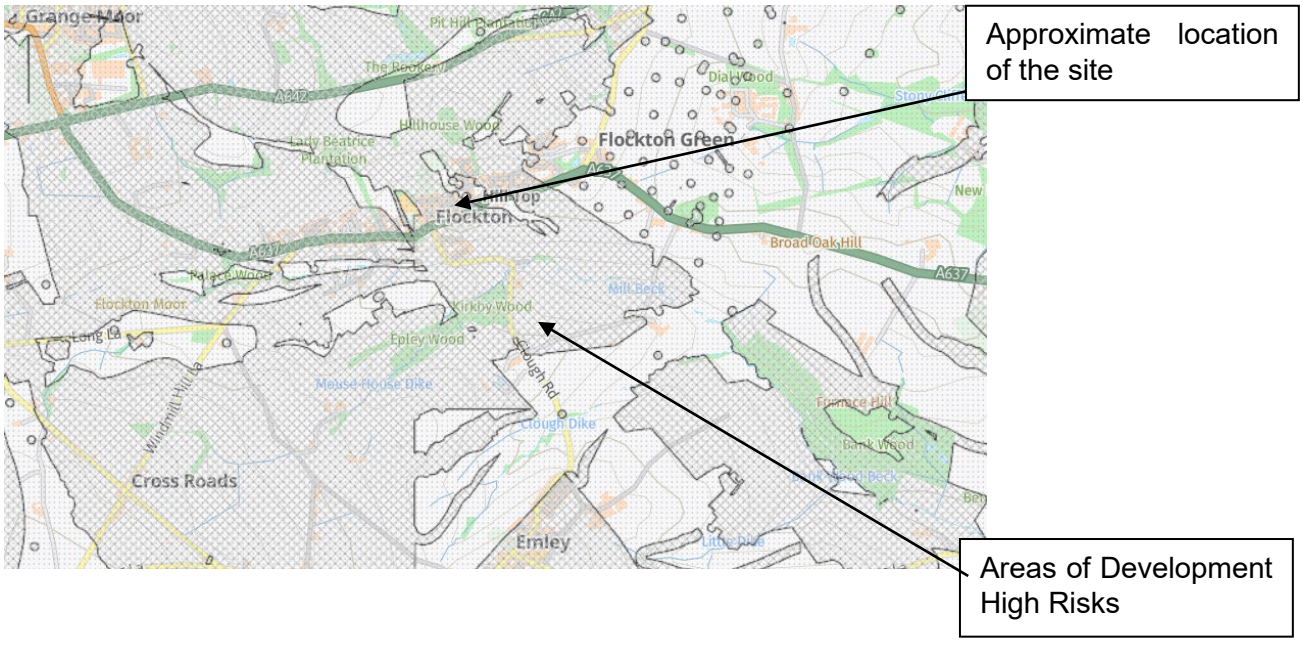
Figure 4.5: Probable Unrecorded Shallow Workings



4.5 DEVELOPMENTS RISKS

Reference to Coal Authority Interactive Viewer provides an indication as to those areas subject to a high risk to future developments from coal mining, and is shown on Figure 4.6, below:

F*igure 4.6: Development High Risk Area*



Site: Barnsley Road, Wakefield
Prepared For: Flockton Green Ltd
Report Ref.: 4678-24 CMRA

5. ASESSMENT OF SITE SPECIFIC COAL MINING RISKS

Table 5.1 below summarises the potential risks associated with coal mining legacy for the proposed development site, identified from the preceding information.

Table 5.1: Coal Mining Risk Assessment,

Coal Mining Issue	Yes	No	Risk Assessment
Underground coal mining (recorded at shallow depths)	x		The mining report identifies coal present under the site that may have been worked. **High** risk.
Mine entries (shafts and adits)	x		There are records of mine entry shafts within 100m from site boundary without record of capping. **High** risk.
Coal mining geology	x		The mining report and mapping identifies coal present under the site that may have been worked. **High** risk.
Record of past mine gas emission or potential		x	No record of past mine gas emissions/problems in vicinity of site. **Low** risk.
Recorded coal mining surface hazard	x		The site lies within an area where surface mining has occurred nearby, alongside probable unrecorded shallow works in the vicinity of the site. **Moderate** risk.
Surface mining (opencast workings)	x		Open cast works to the south. The site lies within an area of likely unrecorded shallow works, **Moderate** risk.
Recorded coal mining surface hazard		x	No hazard identified on site, however coal mining legacy noted in the immediate area, **Moderate** risk.
Development Risks	x		Site located within a Development High Risk Area. **High** risk.

6. CONCLUSIONS

The CACR report confirms there are records of workings to underly the site, and that the Coal Authority believe there is coal at or close to the surface which may have been worked and that there are workings in the immediate area.

The information reviewed suggests that there are coal seams present at shallow depths and the competent rock above the seam along with the nature and thickness and the potential of seam being worked needs to be understood. In view of this it is considered that there is a high risk from historic underground workings.

Whether a coal seam, and working of it, is present at outcrop or within shallow depth beneath the property depends on bedrock depth at this locality. In this instance drilling is required to establish the depth.

Therefore, it is our opinion that exploratory drilling is required to establish at what depth coal seams and mine workings occur beneath the site and what their condition is as well as to accurately establish bedrock depth, rock cover thickness and coal seam/mine working thickness and depth beneath the new development. Gas monitoring must be carried out during drilling. In addition, any mine abandonment plans should be sought from the Coal Authority.

The likelihood of encountering hidden unrecorded mine adits within the site is possible because of the potential presence of shallow coal seams and probable mine working along with the presence of adits nearby.

As mine entries are recorded within influencing distance of the site, these should be located using the GPS coordinates provided - with particular attention to records without information about capping - to ensure they are a safe distance from the site.

If mine entries are discovered during drilling or subsequently during the ground works, the appropriate remedial action can be taken then, as well as notifying the Coal Authority.

A safe method of advancing boreholes which will reduce the risk to drill operators and the public has been assessed. A Coal Authority Permit will be required before drilling takes place. This must state that only WATER FLUSH will be used for drilling. The CA permit must also cover surface excavation/trenching to locate mine shafts or coal outcrop if these activities are also carried out.

Depending on the outcome of the additional coal seam mining legacy investigation it may be necessary to stabilize mine workings using routine drilling and grouting techniques and/or adopt special foundation design measures and perhaps install gas protection measures.

If drilling confirms that hazardous mine gas is absent and that either no coal seam mine working exists beneath the site, or shallow workings are present, but rock cover is of adequate thickness no further investigation or mitigation would be required. In conclusion we see no reason why Planning Permission should not be granted in the interim and that these works form a condition on the planning approval.

7. RELIANCE AND LIMITATIONS

This report has been prepared by GES with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources.

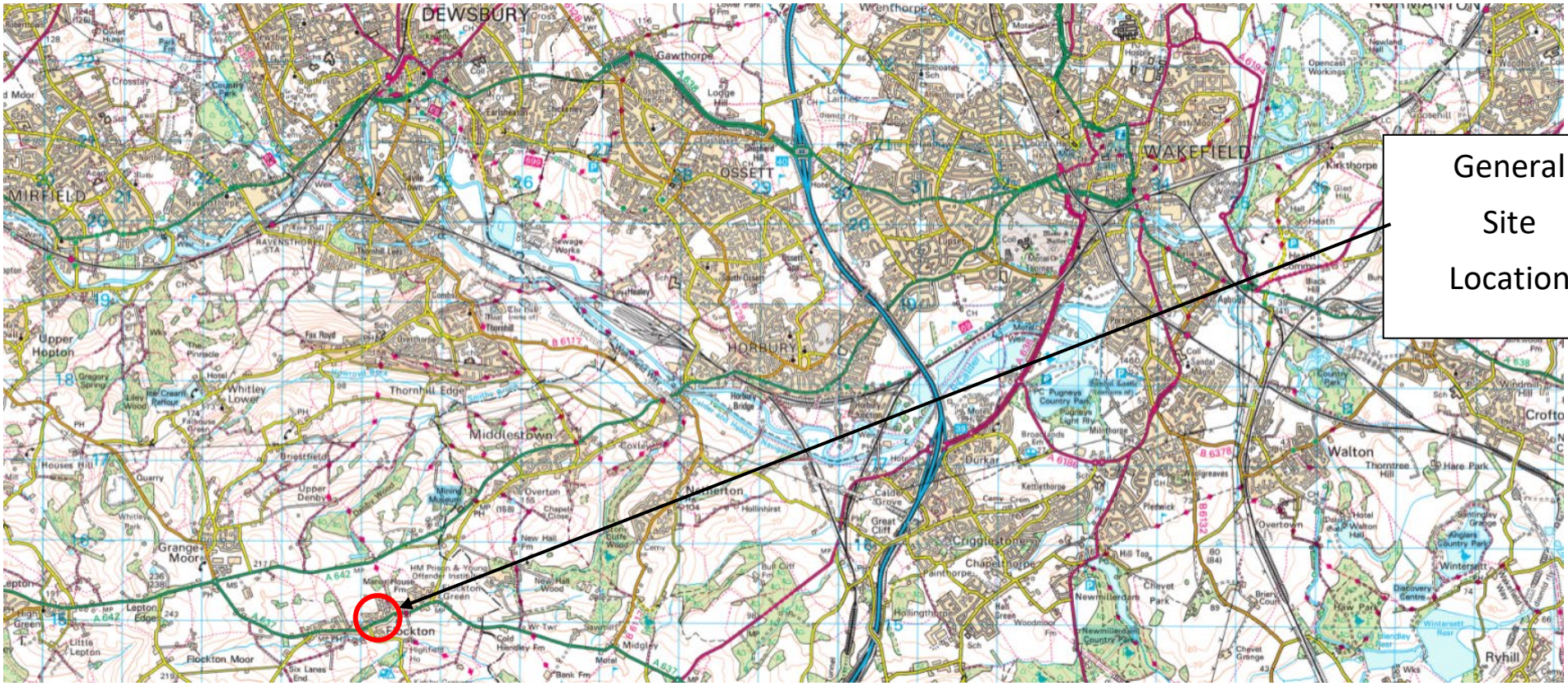
The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, GES reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site. This report is a Coal Mining Risk Assessment and does not consider the geotechnical implications for the site, its redevelopment and proposed future use. Further advice should be sought on geotechnical investigation requirements for the proposed development.

APPENDIX 1

DRAWINGS AND PLANS

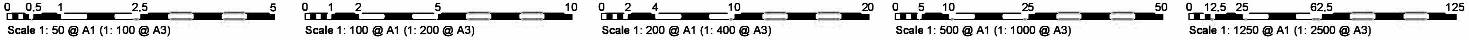


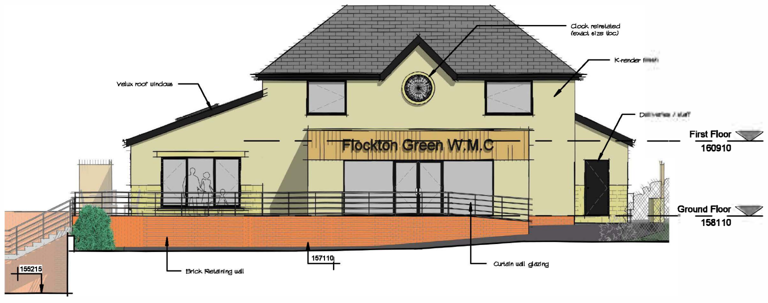
GEOENVIRO SOLUTIONS LIMITED

GeoEnviro Solutions Ltd
Unit 7 Springvale Works
Brighouse
West Yorkshire
HD6 2RA
Tel: 01484 986010
Email: info@geoenvirosolutions.com
Web: www.geoenvirosolutions.com

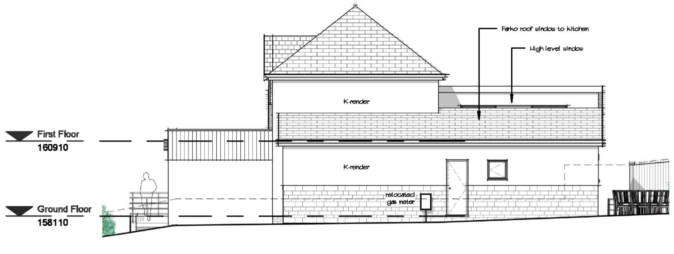
N

PROJECT NAME Barnsley Road, Wakefield **PROJECT NUMBER** 4678-24	**DRAWING NO.** 4678-24/01	**SCALE** N.T.S
TITLE Site Location Plan	**DATE** February 2024	**DRAWN BY** JF

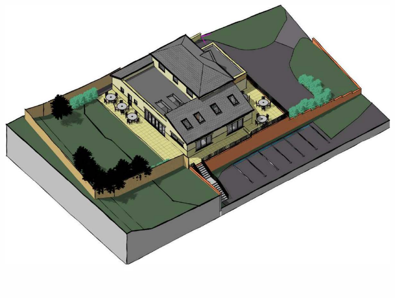




Front Elevation (South Facing)
1 : 100



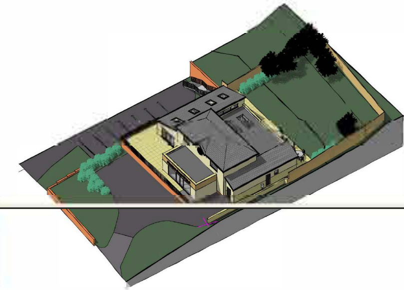
Side Elevation (East Facing)
1 : 100



Isometric View B

Side Elevation (West Facing)
1 : 100

Rear Elevation (North Facing)
1 : 100



Isometric View A

GENERAL

DO NOT SCALE FROM THIS DRAWING.
ALL DIMENSIONS ARE TO BE CHECKED ON SITE AND CONFIRMED TO AUTHOR.
ALL FEASIBILITY STUDIES ARE SUBJECT TO FULL SITE SURVEY + LOCAL AUTHORITY APPROVALS.
ANY DISCREPANCIES OR VARIATIONS SHALL BE NOTIFIED TO CADVIS3D BEFORE WORK ON THE RELEVANT SECTION COMMENCES.
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT CONSULTANTS AND / OR SPECIALISTS DRAWINGS / DOCUMENTS.
THE MATERIALS AND WORKMANSHIP OF ALL RELEVANT TRADES AND BUILDING OPERATIONS SHALL COMPLY WITH THE RECOMMENDATIONS OF CURRENT BRITISH STANDARDS AND CODES OF PRACTICE.
AS FAR AS REASONABLY PRACTICABLE, THIS DESIGN HAS BEEN PREPARED IN SUCH A WAY AS TO REDUCE THE RISKS TO THE HEALTH AND SAFETY OF PERSON(S) WHO MAY BE AFFECTED.
RISK ASSESSMENTS, PRE-CONSTRUCTION INFORMATION & HEALTH & SAFETY FILES CAN BE PROVIDED IF CADVIS3D IS INSTRUCTED IN WRITING BY CLIENT TO TAKE ON ROLE OF PRINCIPLE DESIGNER. FOR FULL GUIDELINES ON CLIENTS DUTIES / DESIGNER/CONTRACTORS CDM ROLES, PLEASE VISIT RELEVANT CDM/HSE GOVERNMENT WEBSITE FOR MORE INFORMATION

NOTES

IMPORTANT NOTES

ALL MEASUREMENTS MUST BE CHECKED ON-SITE PRIOR TO COMMENCEMENT OF ANY WORKS.

ANY UNDERGROUND DRAINAGE ROUTES ARE INDICATIVE ONLY. TBC BY BUILDER ON-SITE & APPROVED BY YW AND BC PRIOR TO COMMENCEMENT OF ANY WORKS.

CADVIS3D HOLDS NO RESPONSIBILITY FOR UNDERGROUND DRAINAGE ON-SITE. YORKSHIRE WATER MAPPING REQUEST RECOMMENDED TO CHECK FOR EXISTING UNDERGROUND DRAINAGE RUNS (IF AVAILABLE)

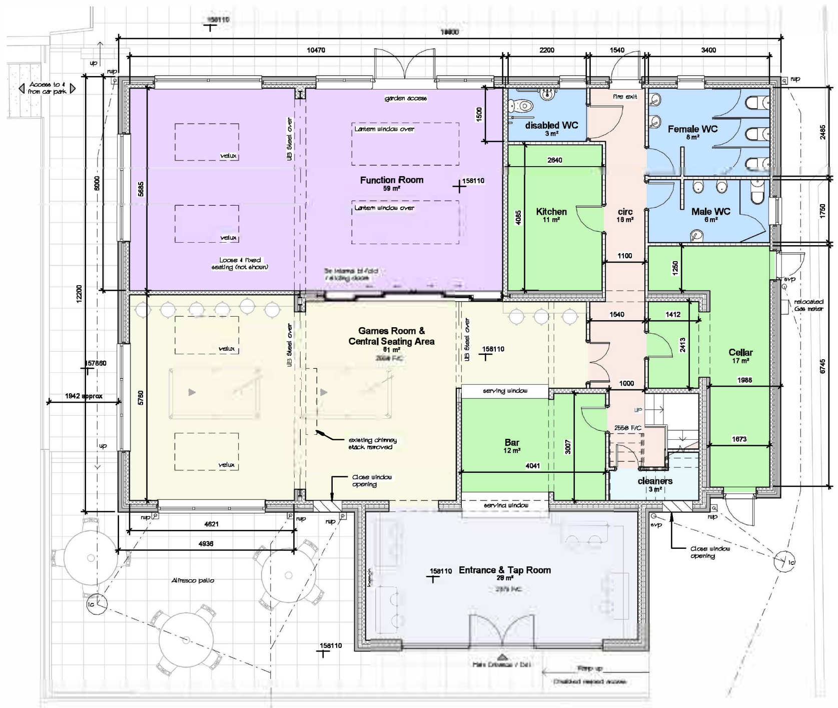
ALL STRUCTURAL ALTERATIONS TBC BY APPOINTED STRUCTURAL ENGINEER. ANY ALTERATIONS TO PROPOSED DESIGN DUE TO STRUCTURAL CONSTRAINTS IDENTIFIED BY ENGINEER TO BE AGREED/APPROVED BY CLIENT PRIOR TO COMMENCEMENT OF ANY WORKS

CDM DUTIES TO BE CARRIED OUT BY PRINCIPLE CONTRACTOR. PRE CONSTRUCTION INFORMATION & HEALTH AND SAFETY FILE TO BE PROVIDED BY PRINCIPLE DESIGNER PRIOR TO COMMENCEMENT OF ANY WORKS.

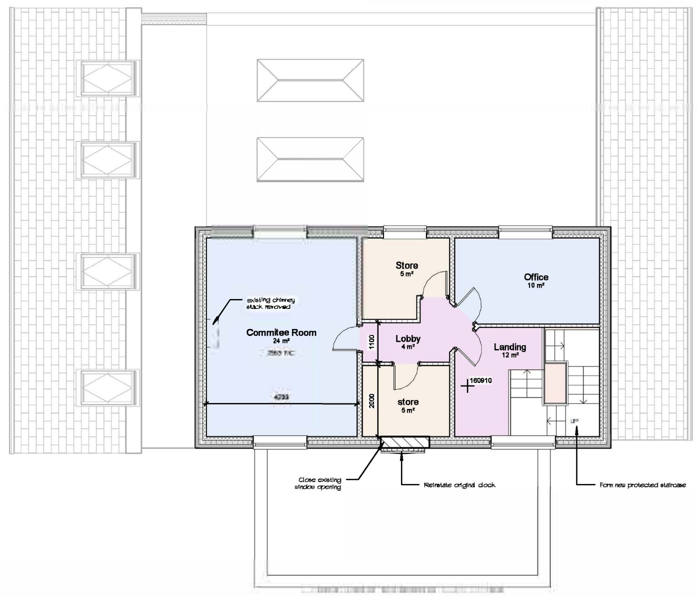
CLIENT TO BE MADE AWARE OF DUTIES UNDER CDM AND ENSURE HEALTH AND SAFETY MEASURES ARE IN PLACE. ALL CONTRACTORS AND DESIGNERS TO BE COMPETENT TO CARRY OUT THEIR DUTIES UNDER CDM. SEE RELEVANT GOVERNMENT WEBSITE FOR MORE INFORMATION

WORK MUST NOT COMMENCE UNTIL ALL RELEVANT BUILDING REGULATIONS APPROVALS ARE IN PLACE & CDM / HSE DOCUMENTATION IS COMPLETE AND ISSUED TO ALL RELEVANT PARTIES

DRAWING TO BE USED FOR PLANNING PURPOSES ONLY NOT FOR CONSTRUCTION



Ground Floor
1 : 75



First Floor
1 : 75

NOTE: SEE CT SURVEYS TOPOGRAPHICAL SURVEY FOR DETAILED SITE LEVELS & LAYOUT

No.	Date	Dr	Description

scale: As indicated | drawn: PSI | apprv: FWMC
date: DEC 2023 | path: G:\Architectural Jobs\2074 - Flockton WMC, Flockton\Arch\Proposed\2074 - proposedPLANNING.rvt
status: PLANNING
job no: 2074 | dwg no: A(10)-01 | rev:

Cadvis3d
....making dreams happen
ARCHITECTURAL DESIGN SERVICES
Head Office:
The Towers, 237 Wakefield Rd, Lepton, Huddersfield, West Yorkshire, HD8 0DH
Tel: 01484 937123
Email: info@cadvis3d.co.uk
www.cadvis3d.co.uk
multi-award winning design

project: Refurbishment & Extensions at, Flockton Green WMC, 157 Barnsley Road, Flockton, Wakefield WF4 4AA

client: Flockton WMC

title: Plans & Elevations - As Proposed

APPENDIX 2

COAL AUTHORITY REPORT

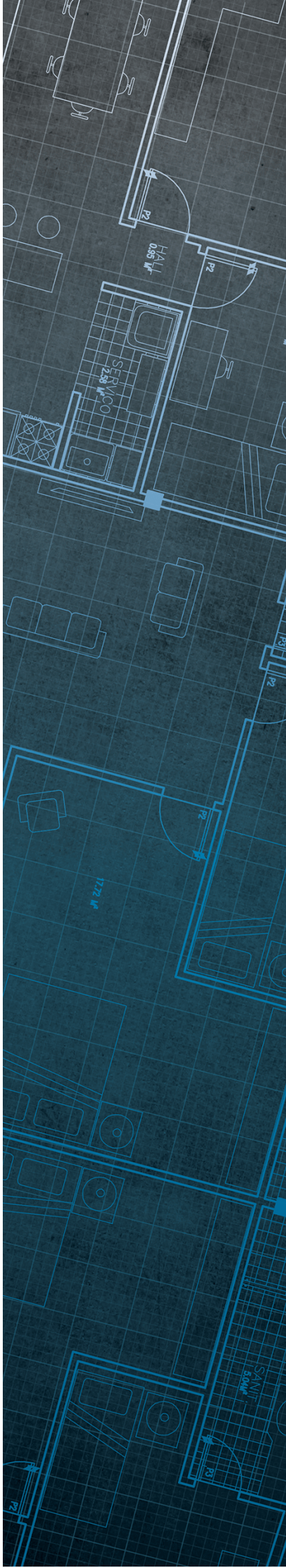
The Coal Authority

Consultants

Coal Mining Report

Flockton W M C, 153
Barnsley Road
Flockton
Wakefield
West Yorkshire
WF4 4AA

Date of enquiry:	**31 January 2024**
Date enquiry received:	**31 January 2024**
Issue date:	**31 January 2024**
Our reference:	**51003402335001**
Your reference:	**333369109_1**



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

NLIS Hub

Enquiry address

Flockton W M C, 153
Barnsley Road
Flockton
Wakefield
West Yorkshire
WF4 4AA

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

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

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	FLOCKTON THIN	Coal	62YD	25	Beneath Property	2.5	South-East	51	1827
unnamed	FLOCKTON THIN	Coal	6Z2N	31	Beneath Property	2.5	South-East	51	1824
unnamed	MIDDLETON MAIN	Coal	6HUZ	94	North-West	2.4	East	63	1861
unnamed	MIDDLETON MAIN	Coal	62YO	98	South	2.5	South-East	69	1913
unnamed	WHEATLEY LIME	Coal	62YS	116	South	2.9	South-East	84	1944
unnamed	SILKSTONE	Coal	62YV	137	Beneath Property	2.8	South-East	56	1966
unnamed	SILKSTONE	Coal	6HT8	141	Beneath Property	2.4	East	61	1966
unnamed	TOP BEESTON	Coal	6HT9	190	Beneath Property	3.0	East	76	1975
CAPHOUSE	TOP BEESTON	Coal	62XZ	190	Beneath Property	3.0	South-East	66	1974

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	424414-020	424091 414970	This mine entry has a reinforced conrete cap, 3m x 3m x 0.6m, installed in October 2018	Coal	
Shaft	424414-021	424098 414969	This mine entry has a reinforced concrete cap 5m x 5m x 0.75m, installed in October 2018.	Coal	
Shaft	424414-022	424159 414989	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424414-023	424162 414995	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424414-024	424169 414999	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-059	424212 415102		Coal	
Shaft	424415-066	424235 415040	This mine entry was drilled and pressure grouted to the surface	Coal	
Shaft	424415-067	424229 415064		Coal	
Shaft	424415-068	424224 415045	This mine entry was grounted to full depth in 1.5m lifts.	Coal	
Shaft	424415-069	424157 415044	This mine entry was grounted to full depth in 1.5m lifts.	Coal	
Shaft	424415-070	424172 415012	This mine entry was grounted to full depth in 1.5m lifts.	Coal	
Shaft	424415-071	424117 415030	This mine entry was grounted to full depth in 1.5m lifts.	Coal	
Shaft	424415-072	424109 415050	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-073	424110 415036	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-074	424112 415048	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-075	424116 415039	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-076	424118 415051	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	424415-077	424123 415043	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-078	424123 415033	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-079	424127 415027	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-080	424121 415060	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-081	424127 415053	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-082	424129 415038	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-083	424133 415030	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-084	424136 415052	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-085	424137 415041	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-086	424137 415041	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-087	424138 415034	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-088	424143 415046	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-089	424148 415040	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-090	424164 415048	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	424415-091	424171 415053	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-092	424180 415058	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-093	424168 415007	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	
Shaft	424415-094	424175 415004	Fully treated through feature being grouted from base to surface by Sirius Drilling under Coal Authority Permit 13895.	Coal	

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

NE1079	SCC2	NE548
NE495	17778	NE66
BE46	NE685	PO0

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the “Summary of findings” map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

Distance to site investigation (m)	Direction
Within	N/A

See Section 4 for further information.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

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.

Mine gas

None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

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 specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

ATTACHMENT B

MRA DRILLING PERMIT

Mining Remediation Authority

Permit to Enter or Disturb Mining Remediation Authority Interests

Permit 29890

Name and Address of Permit Holder:

Flockton Green Club
153 Barnsley Road
Flockton
Huddersfield
West Yorkshire
WF4 4AA

Site Location:

Flockton Green Club
153 Barnsley Road
Flockton
Huddersfield
WF4 4AA

This certificate hereby grants the above named Permit Holder a Permit to carry out:-

Ground investigation by three boreholes to 30m to determine presence of shallow mine workings

within the Authority's interests at the identified site location above as shown on the Granted Permit Boundary (overleaf) for the period of **12 months** from the granted date shown below. *The granting of this Permit does not constitute advice given by the Authority in relation to the proposed operations. It is the Permit Holder's responsibility to obtain appropriate health, safety, environmental, technical and legal advice.*

Conditions:

- *Manned entry (i.e., into mine entries/workings) is strictly prohibited.*
- *Water flush*
- *Gas Monitoring CO, CH_4, CO_2, O_2, H_2S at borehole and rig*
- *Protection of Mining Remediation Authority Monitoring Point in south-east of Permit area*
- *Operators undertaking the work must be in possession of this certificate and the Permit boundary plan at the time of works*
- *Appropriate borehole sealing without delay and to withstand site level changes*

Signed: ..... Granted Date: .....

For and on behalf of the Mining Remediation Authority

Nominated Representative: Ruth Griffiths, Permitting Manager;

Mining Remediation Authority, Permitting Office, 200 Lichfield Lane, Mansfield, Notts, NG18 4RG

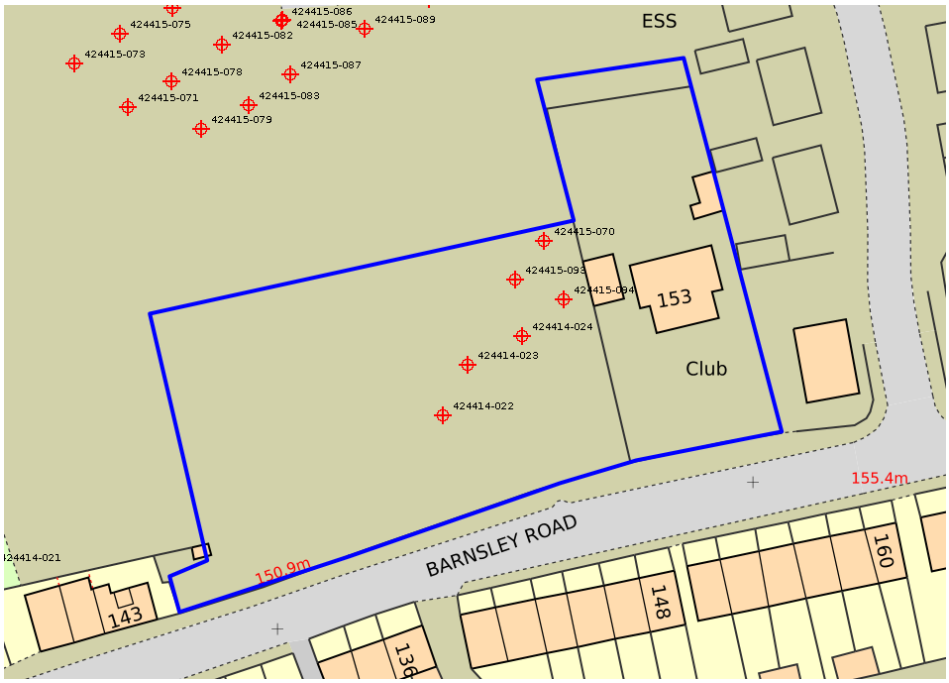
Tel: 01623 637450; E-Mail: permissions@coal.gov.uk

Mining Remediation Authority

Granted Permit Boundary

Permit Ref: 29890

Permit Boundary:



The Mining Remediation Authority is the trading name of the Coal Authority ('TCA') established pursuant to Section 1 of the Coal Industry Act 1994, of 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG. The Coal Authority remains the legal name of the Authority

ATTACHMENT C

DRILLER'S RECORDS

Client: G & M Consulting Ltd (FlocKton Green	Site: Flockton Green Club. 153 Barnsley Road, Flockton. Huddersfield. WF4 4AA		Cape Site Services unit 2, rear of Castle Buildings Carlton Road, Barnsley, S71 3HX
Date: 27/05/2025	Method: water flush	Permit No: 29890	
Driller: Ian Wiles		Driller Assistant: Richard Hawkins, Simon Fish, Jonathon Doughty	
		Page No: 1	

Measurements In Meters

BH No:	FROM	TO	THICKNESS	DESCRIPTION
1				
	0	0.1	0.1	Hardcore
	0.1	1.7	1.6	Sandstone brown silty weathered
	1.7	2.7	1	Sandstone brown silty
	2.7	6.8	4.1	Mudstone grey silty
	6.8	7.4	0.6	Mudstone black
	7.4	8.5	1.1	Void lost water & returns
	8.5	10	1.5	Solid
2				
	0	0.2	0.2	Tarmac hardcore
	0.2	1.5	1.3	Sandstone brown silty weathered
	1.5	3	1.5	Sandstone brown silty
	3	6.9	3.9	Mudstone grey silty
	6.9	7.5	0.6	Mudstone black
	7.5	8.6	1.1	Coal
	8.6	30	21.4	Mudstone grey silty with sandstone bands
3				
	0	0.2	0.2	Tarmac hardcore
	0.2	1.4	1.2	Sandstone brown silty weathered
	1.4	3.1	1.7	Sandstone brown silty
	3.1	7	3.9	Mudstone grey silty
	7	7.7	0.7	Mudstone black
	7.7	8.9	1.2	Void lost water & returns
	8.9	10	1.1	Solid

ATTACHMENT B

GAS MONITORING SHEETS

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 15/02/2026

Job No: C762
Visit No: 1 **of** 6
Operator: VF **Project Manager:**

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	0.7	0.7	0	0	0	0	20.5	20.5	0.1		0				DRY	1.80				
WS02	0.1	0.1	0	0	3.8	3.7	0	0	0	0	17.0	17.2	0		0				DRY	2.00				
WS03	0	0	0	0	7.5	7.4	0	0	0	0	11.9	12.0	0.1		0				DRY	2.00				
Max	**0.1**	**0.1**	**0**	**0**	**7.5**	**7.4**	**0**	**0**	**0**	**0**	**20.5**	**20.5**	**0.1**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**0.7**	**0.7**	**0**	**0**	**0**	**0**	**11.9**	**12**	**0**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen	**Notes**
Wind:		Calm	X	Light		Moderate		Strong			NR- Not recorded
Cloud cover:		None		Slight	X	Cloudy		Overcast			
Preciptation:		None	X	Slight		Moderate		Heavy			
Barometric pressure (mbar):			1000	Before			1000	After			
Pressure trend:				Falling	X	Steady		Rising			
Air Temperature (Deg. C):				Before				After			

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 27/02/2026
Job No: C762
Visit No: 2 **of** 6
Operator: VF
Project Manager:

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	0.5	0.5	0	0	0	0	20.0	20.0	0.2		0				DRY	1.80				
WS02	0.1	0.1	0	0	3.5	3.4	0	0	0	0	17.5	17.5	0		0				DRY	2.00				
WS03	0	0	0	0	7.0	7.0	0	0	0	0	12.8	12.8	0.1		0				DRY	2.00				
Max	**0.1**	**0.1**	**0**	**0**	**7**	**7**	**0**	**0**	**0**	**0**	**20**	**20**	**0.2**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**0.5**	**0.5**	**0**	**0**	**0**	**0**	**12.8**	**12.8**	**0**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen	**Notes**
Wind:		Calm		Light	X	Moderate		Strong			NR- Not recorded
Cloud cover:		None		Slight	X	Cloudy		Overcast			
Preciptation:		None	X	Slight		Moderate		Heavy			
Barometric pressure (mbar):			989	Before			989	After			
Pressure trend:				Falling	X	Steady		Rising			
Air Temperature (Deg. C):				Before				After			

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 10/03/2026
Job No: C762
Visit No: 3 **of** 6
Operator: VF
Project Manager:

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	1.6	1.6	0	0	0	0	18.9	18.9	0		0				DRY	1.80				
WS02	0	0	0	0	3.9	3.9	0	0	0	0	17.9	17.9	0.1		0				DRY	2.00				
WS03	0	0	0	0	5.1	5.1	0	0	0	0	14.3	14.3	0.2		0				DRY	2.00				
Max	**0**	**0**	**0**	**0**	**5.1**	**5.1**	**0**	**0**	**0**	**0**	**18.9**	**18.9**	**0.2**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**1.6**	**1.6**	**0**	**0**	**0**	**0**	**14.3**	**14.3**	**0**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen	**Notes**	
Wind:		Calm	X	Light		Moderate		Strong			NR-	Not recorded
Cloud cover:		None		Slight	X	Cloudy		Overcast				
Preciptation:	X	None		Slight		Moderate		Heavy				
Barometric pressure (mbar):			1001	Before			1001	After				
Pressure trend:				Falling	X	Steady		Rising				
Air Temperature (Deg. C):				Before				After				

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 24/03/2026
Job No: C762
Visit No: 4 **of** 6
Operator: VF
Project Manager:

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	1.8	1.7	0	0	0	0	19.0	19.1	0.1		0				DRY	1.80				
WS02	0	0	0	0	3.3	3.3	0	0	0	0	17.9	17.9	0.1		0				DRY	2.00				
WS03	0	0	0	0	6.0	5.9	0	0	0	0	14.0	14.1	0.1		0				DRY	2.00				
Max	**0**	**0**	**0**	**0**	**6**	**5.9**	**0**	**0**	**0**	**0**	**19**	**19.1**	**0.1**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**1.8**	**1.7**	**0**	**0**	**0**	**0**	**14**	**14.1**	**0.1**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:		Dry	X	Moist		Wet		Snow		Frozen	**Notes**	
Wind:		Calm	X	Light		Moderate		Strong			NR-	Not recorded
Cloud cover:		None		Slight	X	Cloudy		Overcast				
Preciptation:	X	None		Slight		Moderate		Heavy				
Barometric pressure (mbar):			998	Before			998	After				
Pressure trend:				Falling	X	Steady		Rising				
Air Temperature (Deg. C):				Before				After				

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 10/04/2026

Job No: C762
Visit No: 5 **of** 6
Operator: VF **Project Manager:**

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	1.9	1.9	0	0	0	0	18.5	18.6	0		0				DRY	1.80				
WS02	0	0	0	0	3.8	3.8	0	0	0	0	17.7	17.7	0.1		0				DRY	2.00				
WS03	0	0	0	0	5.5	5.4	0	0	0	0	14.1	14.1	0.2		0				DRY	2.00				
Max	**0**	**0**	**0**	**0**	**5.5**	**5.4**	**0**	**0**	**0**	**0**	**18.5**	**18.6**	**0.2**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**1.9**	**1.9**	**0**	**0**	**0**	**0**	**14.1**	**14.1**	**0**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:	X	Dry		Moist		Wet		Snow		Frozen	**Notes**	
Wind:		Calm	X	Light		Moderate		Strong			NR-	Not recorded
Cloud cover:		None	X	Slight		Cloudy		Overcast				
Preciptation:	X	None		Slight		Moderate		Heavy				
Barometric pressure (mbar):			1005	Before			1005	After				
Pressure trend:				Falling	X	Steady		Rising				
Air Temperature (Deg. C):				Before				After				

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

Ground Gas and Groundwater Monitoring Record Sheet

JOB DETAILS:

Client: Flockton Green Club
Site: Flockton Green Club
Date: 27/04/2026
Job No: C762
Visit No: 4 **of** 6
Operator: VF
Project Manager:

Monitoring Point	GAS CONCENTRATIONS												VOLATILES		FLOW DATA				WELL AND WATER DATA					Comments
	Methane (%v/v)		%LEL		Carbon dioxide (%v/v)		Carbon monoxide (ppmv)		Hydrogen sulphide (ppmv)		Oxygen (%v/v)		PID Peak (ppm)	Product thickness (mm)	Flow rate (l/hr)		Differential borehole Pressure (Pa)	Time for flow to equalise (secs)	Water level (mbgl)	Depth of well (m)	Reduced level (mAOD)	Water level (mAOD)	Response Zone	
	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady	Minimum	Steady			Peak	Steady								
WS01	0	0	0	0	2.5	2.5	0	0	0	0	14.4	14.4	0.1		0				DRY	1.80				
WS02	0.1	0.1	0	0	2.0	2.0	0	0	0	0	18.7	18.7	0		0				DRY	2.00				
WS03	0	0	0	0	5.9	5.9	0	0	0	0	15.1	15.1	0		0				DRY	2.00				
Max	**0.1**	**0.1**	**0**	**0**	**5.9**	**5.9**	**0**	**0**	**0**	**0**	**18.7**	**18.7**	**0.1**	**0**	**0**	**0**	**0**	**0**						
Min	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**14.4**	**14.4**	**0**	**0**	**0**	**0**	**0**	**0**						
GSV (l/hr)	**0**																							

METEOROLOGICAL AND SITE INFORMATION: (Select correct box with X or enter data, as applicable)

State of ground:	X	Dry		Moist		Wet		Snow		Frozen	**Notes**	
Wind:	X	Calm		Light		Moderate		Strong			NR-	Not recorded
Cloud cover:		None	X	Slight		Cloudy		Overcast				
Preciptation:	X	None		Slight		Moderate		Heavy				
Barometric pressure (mbar):			1014	Before			1014	After				
Pressure trend:				Falling	X	Steady		Rising				
Air Temperature (Deg. C):				Before				After				

INSTRUMENTATION TECHNICAL SPECIFICATIONS:

Ground gas meter: GA 5000
Gas concentration: **CH_4** 0.2%@5%, 1.0@30%, 3.0@100% **CO_2** 0.1%@10%, 3.0%@30%,3.0%@100% **O_2**
Gas Range: **CH_4** 0 - 100% **CO_2** 0 - 100% **O_2** 0 - 25%
Gas Flow range: +100/-50 l/hour
Differential Pressure: (+/-) 1000 Pa
Date of last calibration: 30/01/2026
Date of next calibration: 29/01/2027

PID: MiniRAE 3000
Calbrated range:
Calibration gas:
Response time:
Accuracy:
Date of last calibration: On site calibration using 100ppm Isobutylene
Date of next calibration:

ATTACHMENT C

LETTER OF COMPETANCY

GEONATION20

Howard Shaw
27 Thornbridge Close
SHEFFIELD
S12 3AD
Tel: 07878795615

Mr. Graeme Swinbourne

Soil Experts Ltd.

Dear Graeme,

Your question about qualifications is one that is currently perplexing many in our industry.
There is now a qualification, NVQ2 for installers of gas membranes, and very recently a qualification, NVQ4 for validators; however, the vast majority of people and companies delivering these services are qualified by experience.
For my part with respect to ground gas remediation I too am qualified by experience, 30 years to be precise.
I have been providing independent validation services since 2013, I have many clients ranging from one off self -build to national organisations like Avant Homes, Vistry Partnership, and Crest Nicholson and to the satisfaction of local authorities from Hampshire to Northumberland; and including Rotherham where I am currently validating installations at Waverley.
My validation method meets with the approval of NHBC and follows those prescribed by Ciria C735 and BS8485;2015. I am a supporter member of CL:Aire.
I do hope this resolves your problem with the local authority.

Yours Faithfully

Howard Shaw.