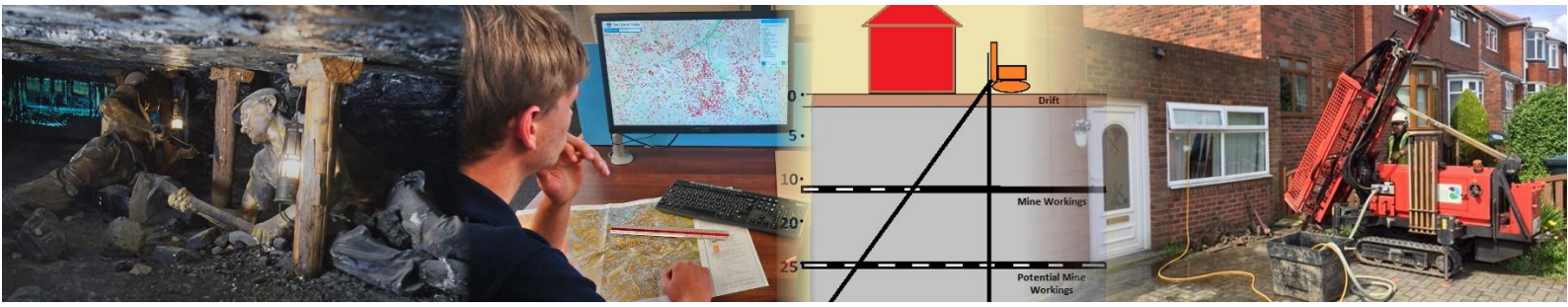
GEOLOGICAL
GEOTECHNICAL
GEOENVIRONMENTAL
CONSULTANCY
DRILLING & DATA ACQUISITION



GEOINVESTIGATE LIMITED

Coal Mining Risk Assessment (CMRA)

LOCATION	Land at Back Marriot Street, Dewsbury WF13 1PA
ISSUE DATE	13 May 2026
FOR	MIBZ Developments Ltd
CLIENT REF.	
OUR REF.	G26181

Prepared by

Jonathan Jones BSc (Hons),
Assistant Geotechnical Engineer

Checked by

Ross Nicolson BSc (Hons) MSc (Eng) CEng MIMMM
Principal Geotechnical Engineer

1. CMRA INTRODUCTION & COAL MINING HAZARDS

1.1 Site Location and Description

The boundary shown in RED on the Coal Authority (CA) report provided in Appendix A corresponds with the planning application area.

The approximate centre of the site lies at E424923, N422097 with ground levels between 60m to 63m AOD. The site is on a long narrow strip of land located on hillside falling the south-east with access from Battye Street in the south and Camroyd Street in the north. A three-storey Victorian warehouse is present on higher ground on its east side with circa 1970s style housing on the other. Google Street view images are provided in Appendix B. The site is currently overgrown (including trees) with access blocked from Camroyd Street by a low wall but open from Battye Street. The site is presently unoccupied.

It is proposed to develop the strip with two new residential dwellings Units 01 & 02 including a long driveway as per the development plan in Appendix C.

1.2 Historical Maps

A desk study of limited available historical OS maps shows the site occupied by Victorian "back to back" row housing c.1900 and Back Marriot Street providing access to the housing. A former Warehouse, Print Works and Reservoir are present on higher ground to the east of the property with several sandstone quarries and Caulms Edge and Kiln Croft Collieries shown in the distant surrounding area. The row housing at this locality was removed post 1975.

1.3 Anticipated Geology

The location of the property is shown on the extract of British Geological Survey (BGS) 1:10,000 Solid and Drift geology maps (Sheets SE22SW & SE22SE) presented in Appendix D. These maps together with the BGS's online GeoIndex platform, indicate the site to be underlain by little to no thickness of superficial deposits in turn underlain by Pennine Lower Coal Measures Formation bedrock lying at or near surface comprising mudstones, siltstones, and sandstones with subordinate coal horizons. A geological fault is present to the north with the site located on the downthrown south side of this fault.

The geology map suggests the site may be underlain within shallow depth by Flockton Thick Coal seam dipping northeast with the Flockton Thin Coal below it. Because the Flockton Thick Coal and to a lesser degree the Flockton Thin have been worked throughout the district both by underground and in places opencast extraction methods, it follows that it is possible that the area may be underlain by historical shallow coal workings posing a ground stability hazard to the new development. This however is speculation.

The tentative elevation of the site relative to the vertical geology column is shown below the map.

BGS Borehole Log SE22SW/924, located approximately 240m southwest of the property at a similar height the development area records underground mine working in the presumed Upper Leaf of the Flockton Thin Coal between 50.4m to 49.4m AOD with the intact possible Lower Leaf of the Flockton Thin at 47.9m AOD.

It is possible that the site may contain filled ground at its north end where the land may have been built-up to provide a platform for the warehouse at this end. This however is speculation.

1.4 Mine Workings & Mine Shafts

The CA report in Appendix A identifies no past shallow underground mining beneath the property while deeper workings in the surrounding area dip between 1.4° to 2.4° southeast.

However, the CA report places the site in an area of probable shallow coal mine workings. The CA define Probable Unrecorded Shallow Workings as *"Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface"* (i.e., less than 30m).

The CA identify outcrop of the Flockton Thin Coal 32m southwest of the site. According to the CA this coal is workable. However contrary to the BGS geology map the CAs report and the extract of CA online interactive mapping provided in Appendix F indicate the Flockton Thin Coal horizon is present beneath the site and not the Flockton Thick in which case BGS log SE22SW/924 suggests workings in the Flockton Thin may be expected between depths of 10m to 15m below the development area. This, however, is speculation.

The foregoing paragraph and section 1.3 of Geoinvestigate's CMRA report identify a surface ground stability hazard to the proposed development from unrecorded historical shallow mining requiring further intrusive site investigation.

The extract of Coal Authority's online interactive mapping provided in Appendix F shows the site falling within an area of probable shallow underground workings, with coal seam outcrop adjacent to it and several recorded mine entries in the surrounding area.

The Coal Authority report identifies four mine entries within 100m of the site boundary. While, in Geoinvestigates opinion, these mine entries are too distant to impact surface ground stability in the development area, their proximity raises further concern about underground mining at this locality.

The Coal Authority 'Summary of Findings' map also records an area of unlicensed opencast working to the southwest. Further research established this working relates to the construction of the Dewsbury Ring Road, with mine plan ref. 17097 identifying the coal recovered in this area as 'incidental coal' rather than deliberate opencast extraction.

In Geoinvestigate's opinion the possible presence of unrecorded mine working within shallow depth beneath the proposed new building poses a significant surface ground stability risk requiring further intrusive site investigation.

1.5 Geological Faults Fissures & Breaklines

The geological mapping identifies a geological fault to the north of the site, trending in an East to West direction with the site located on the downthrown side of this fault. However, this fault does not impact the development area.

1.6 Mine Gas

According to the CA report no mine gas incident or remediation have been recorded within 500m of the enquiry boundary and typically on the UK coalfields mine gas risk to surface development is low. Circumstances where gas risk increases include proximity (typically < 50m) to mine entries (adits and shafts), proximity to recorded mine gas incidents, where development is located above or adjacent to very shallow and shallow (< 30m) unflooded mine workings or roadway tunnels. In addition, increased mine gas risk may be attributable to: coal seams with a history of spontaneous combustion, natural or artificial pathways providing routes for gas migration e.g. permeable soil cover, pathways created by geological faults, mining induced breaklines/fractures, collapsed mine roof strata, mining subsidence, mining sinkholes/crown holes and unsealed boreholes.

This CMRA has indicated that conditions may exist at this site increasing mine gas risk namely the possible presence of shallow mine workings. However, the risk may be less as there has been no reported mine gas incident at this locality and typically surface mine gas is rarely a problem on the UK coalfields.

1.7 Previous Site Investigations

The CA reports 'Summary of findings' map shows two areas of previous site investigation. One at Eastborough Mills on the east of the development area obtained by means of Oldham Council's planning portal suggests there may be a shallow mining hazard beneath the Mills site, requiring intrusive investigation.

2. RISK ASSESSMENT OF SITE-SPECIFIC COAL MINING ISSUES

The risk assessment methodology adopted in this section is based on CA publication RISK BASED APPROACH TO DEVELOPMENT MANAGEMENT - GUIDANCE FOR DEVELOPERS Version 3, 2014 and Version 4 - 2017. The template contained therein is broadly adopted in the table below with amendments made by Geoinvestigate Limited. The factual information it is based on, is derived mostly from the CA Consultants Coal Mining Report and additional desk study information including available historical maps, geological maps & memoirs, BGS boreholes, online articles etc.

It is not an exhaustive desk study review. Therefore, if new information is released or found in the future, this CMRA may require updating.

The table also provides advice on next step mitigation and the likely planning decision.

RISK ASSESSMENT & MITIGATION		
Coal Mining Issues/Hazards	**Risk**	**Next Step Mitigation/Remarks**
Past/recorded underground coal mining	**NO**	
Probable unrecorded shallow workings	**M**	Drilling to enable further assessment
Outcrop	**L** **M**	Drilling to enable further assessment
Spine roadways at shallow depth	**NONE**	
Mine entries	**NONE**	
Geological faults, fissures and breaklines	**NONE**	
Mine gas	**M**	Drilling to enable further assessment
Opencast mines within 500m	**YES (1)**	Too distant to impact development
Coal mining subsidence claims within 50m	**NONE**	
Site investigations within 50m	**YES(2)**	Possible shallow mining hazard identified.
Likely Planning Decision	**Yes/No**	**Reason**
Is planning permission likely to be given with respect to coal mining legacy issues **CONDITIONAL** upon carrying out further intrusive investigation leading to possible building design mitigation at a future date but before construction begins?	**Yes**	Yes. Because the site is NOT impacted by known mine entry proximity hazard and the site-specific ground stability and possible mine gas risks to the proposed development identified in this CMRA **can be mitigated by further intrusive site investigation and if required thereafter by routine engineering solutions.**

Assessed risk level – High, Medium Low. NONE

3. CMRA OUTCOME & RECOMMENDATIONS

This CMRA has identified increased risk to the proposed development from possible shallow mine workings as well as perhaps mine gas. Drilling investigation is required to further assess both risks. However as both risks can be mitigated by routine engineering solutions **planning permission should not in our opinion be withheld with respect to coal mining legacy issues** providing further intrusive investigation is carried out at a future date and the permission is **CONDITIONED** accordingly.

In Geoinvestigate's opinion a minimum of 3 rotary open boreholes (without need for core sample recovery) should be sunk at the site to depths up to 30m (but not necessarily reaching 30m) to establish bedrock depth and mine workings depth (if any) beneath the site.

A Coal Authority Permit needs to be obtained (ahead of) further intrusive exploratory drilling. As per the table below Water Drill Flush to be used when drilling. The permit application must state **WATER ONLY DRILL FLUSH** for the safety of the public and drill crew**. Failure to do so may result in prosecution by the HSE and a hefty fine.**

Risks for Different Drilling Scenarios					
Air flush	Mist flush	Foam flush	Water flush	Mud flush	Additional controls
HIGH	HIGH / MED'M	HIGH / MED'M	LOW	LOW	• Monitoring at rig and other open holes. • Seal boreholes

Boreholes must be sealed on completion.

Gas monitoring MUST be carried out during drilling and may provide further indication of mine gas risk.

However, if the drilling investigation encounters shallow mine working longer term gas monitoring in specially installed gas wells may be required to further assess the ground gas risk.

Alternatively, longer term gas monitoring may be avoidable if the installation of precautionary gas protection measures are included in the design of the new buildings in line with “Characteristic Situation 2” (CS2) based upon the CIRIA 665 (revised) report – “Assessing the risks posed by hazardous ground gases to buildings”. However, agreement will be required from the Local Planning Authority for this alternative proposal.

Additionally in this instance given the possible presence of filled ground shallower intrusive geotechnical and geoenvironmental investigation is also likely to be required to enable foundation design and to check the land for the presence of ground contamination.

WHAT TO DO NEXT? Obtain quotes for the intrusive site investigation works. The cost of the SI works should be a **“lump sum” fixed price.** Geoinvestigate can provide advice and assistance with helping you find suitable site investigation & drilling contractors. Call us on 01642 713779 or email enquiries@geoinvestigate.co.uk.

Appendices:

A. CA Consultants Coal Mining Report issued 11 May 2026 ref. 51003569632001
B. Site Images
C. Proposed Development
D. Geology Map Extracts
E. BGS Borehole Record
F. CA Online Information

APPENDIX A
COAL MINING REPORT

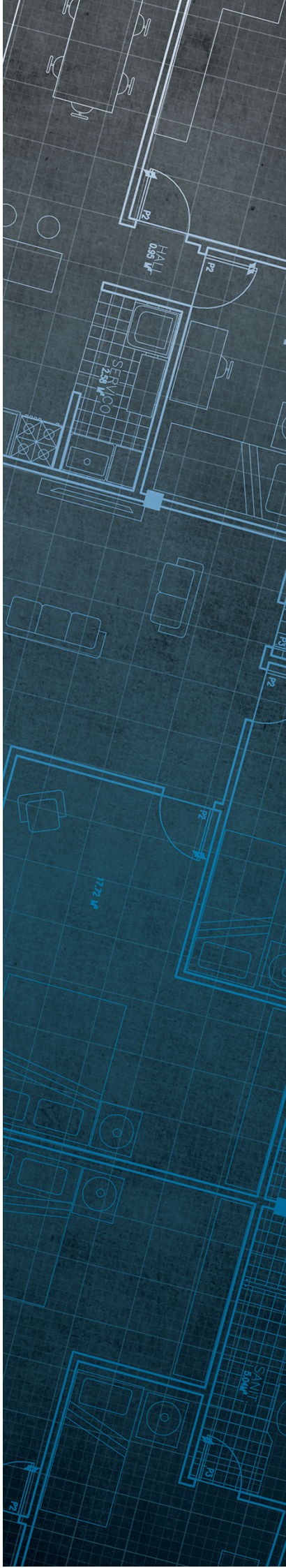
The Coal Authority

Consultants

Coal Mining Report

Land At
Back Marriot Street
Dewsbury
Kirklees
WF13 1PA

Date of enquiry:	**11 May 2026**
Date enquiry received:	**11 May 2026**
Issue date:	**11 May 2026**
Our reference:	**51003569632001**
Your reference:	**G26181**



Consultants
Coal Mining Report

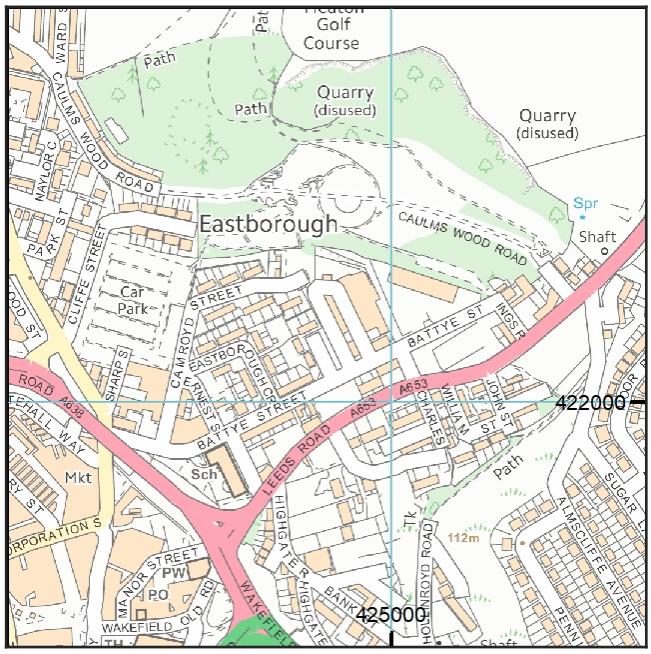
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GEOINVESTIGATE

Enquiry address

Land At
Back Marriot Street
Dewsbury
Kirklees
WF13 1PA



Approximate position of property

Map data

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

reports@miningremediation.gov.uk

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	TOP BEESTON	Coal	6NKD	178	North	2.4	South-East	75	1963
unnamed	BLACK BED	Coal	6NLD	255	North-East	2.1	South-East	69	1929
unnamed	BLACK BED	Coal	6J0A	278	South-East	1.4	South-East	76	1924

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
Adit	424421-001	424903 421985	Treatment details unknown.*	Coal	
Adit	424421-002	424893 421997	Treatment details unknown.*	Coal	
Shaft	424422-002	424934 422194	Treatment details unknown.*	Coal	
Adit	424422-004	424831 422065	Treatment details unknown.*	Coal	

*For your information, before the coal industry was nationalised in 1947, there was no requirement for a mine operator to record mine entry treatment details when a mine was abandoned. Therefore, it is not unusual for us to have no treatment details for many of the 176,000 recorded mine entries on our database. Despite this lack of information, please be assured that the fact we have no treatment recorded does not necessarily mean that the mine entries were left untreated when abandoned.

Abandoned mine plan catalogue numbers

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

NE1047	8026	17097

For assistance in identifying the specific abandoned mine plans relevant to your requirements, **please contact us at InformationManagers@MiningRemediation.gov.uk**.

Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
FLOCKTON THIN	Coal	Yes	32.2	South-West	135

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
10.6	South
46.2	North-East

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 email us at reports@miningremediation.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 **email us at reports@miningremediation.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.

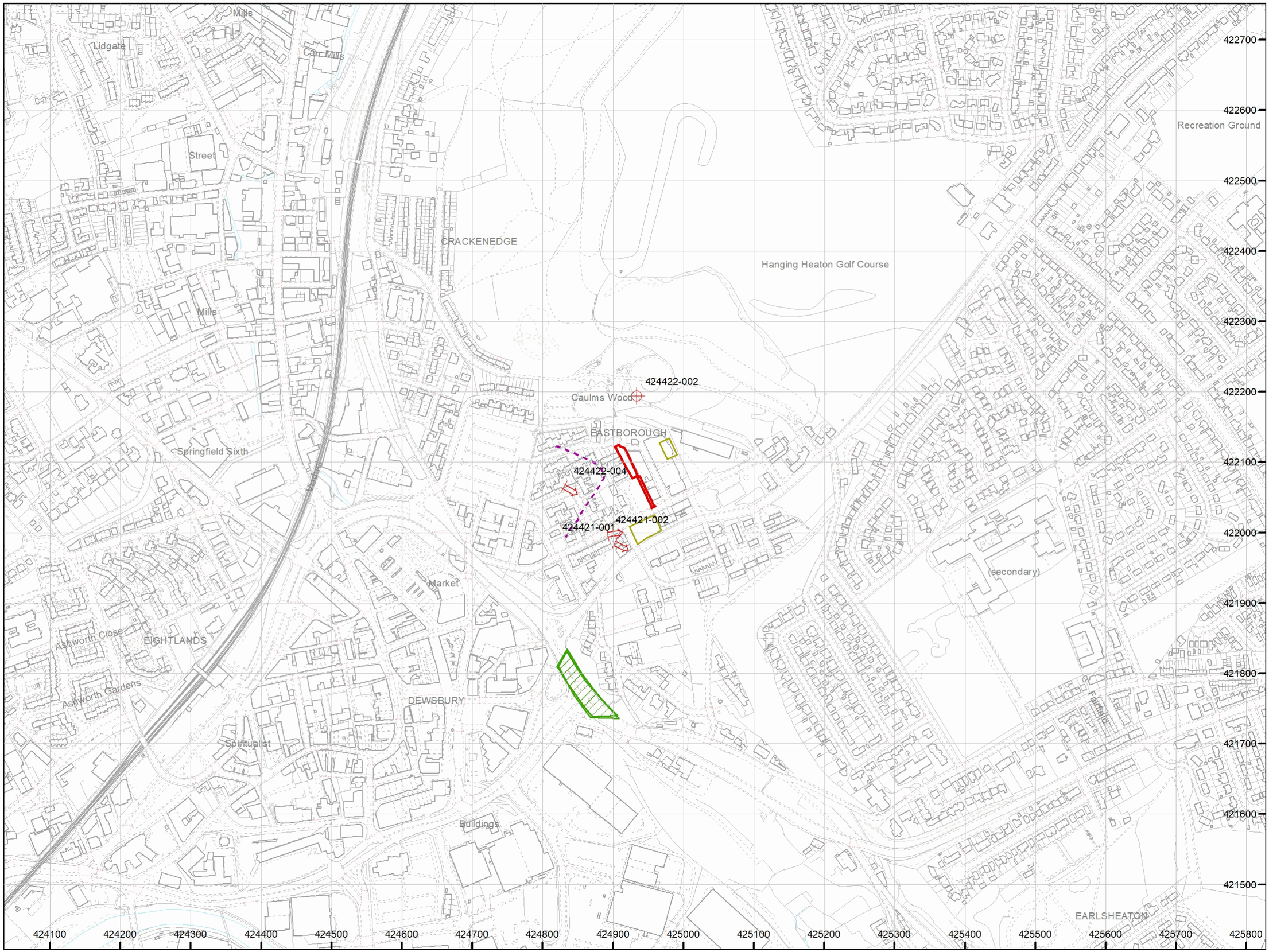
The Coal Authority

Summary of findings

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

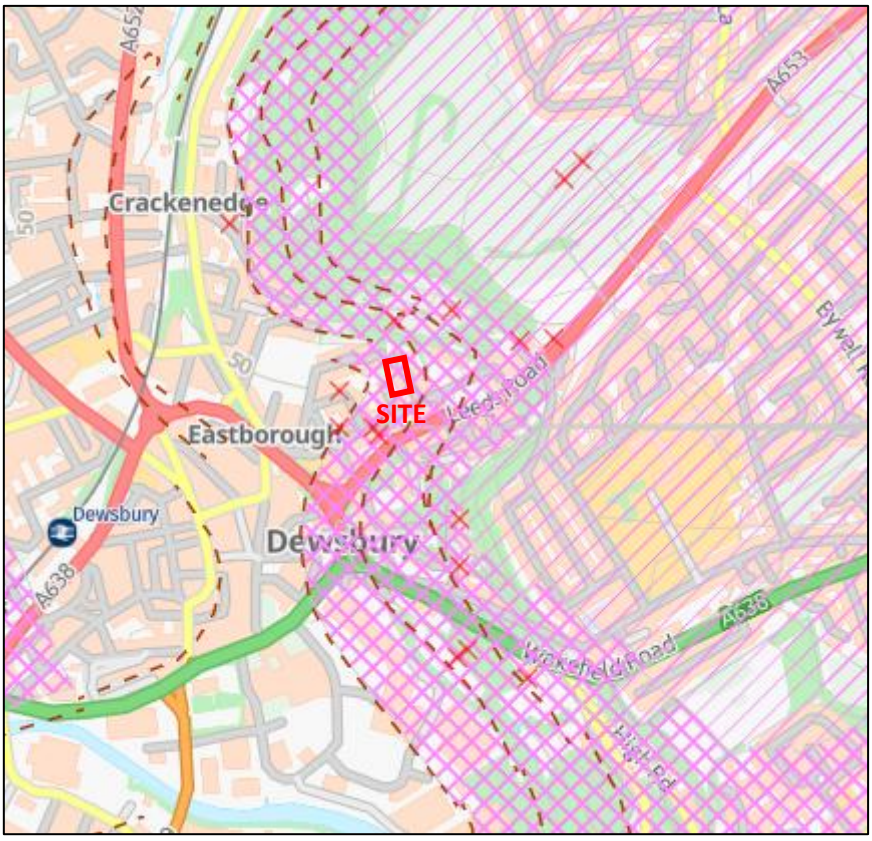
Key

- Approximate position of the enquiry boundary shown
- Disused mine shaft
- Disused adit
- Outcrop (Conjectured)
- Unlicensed opencast site
- Site investigations

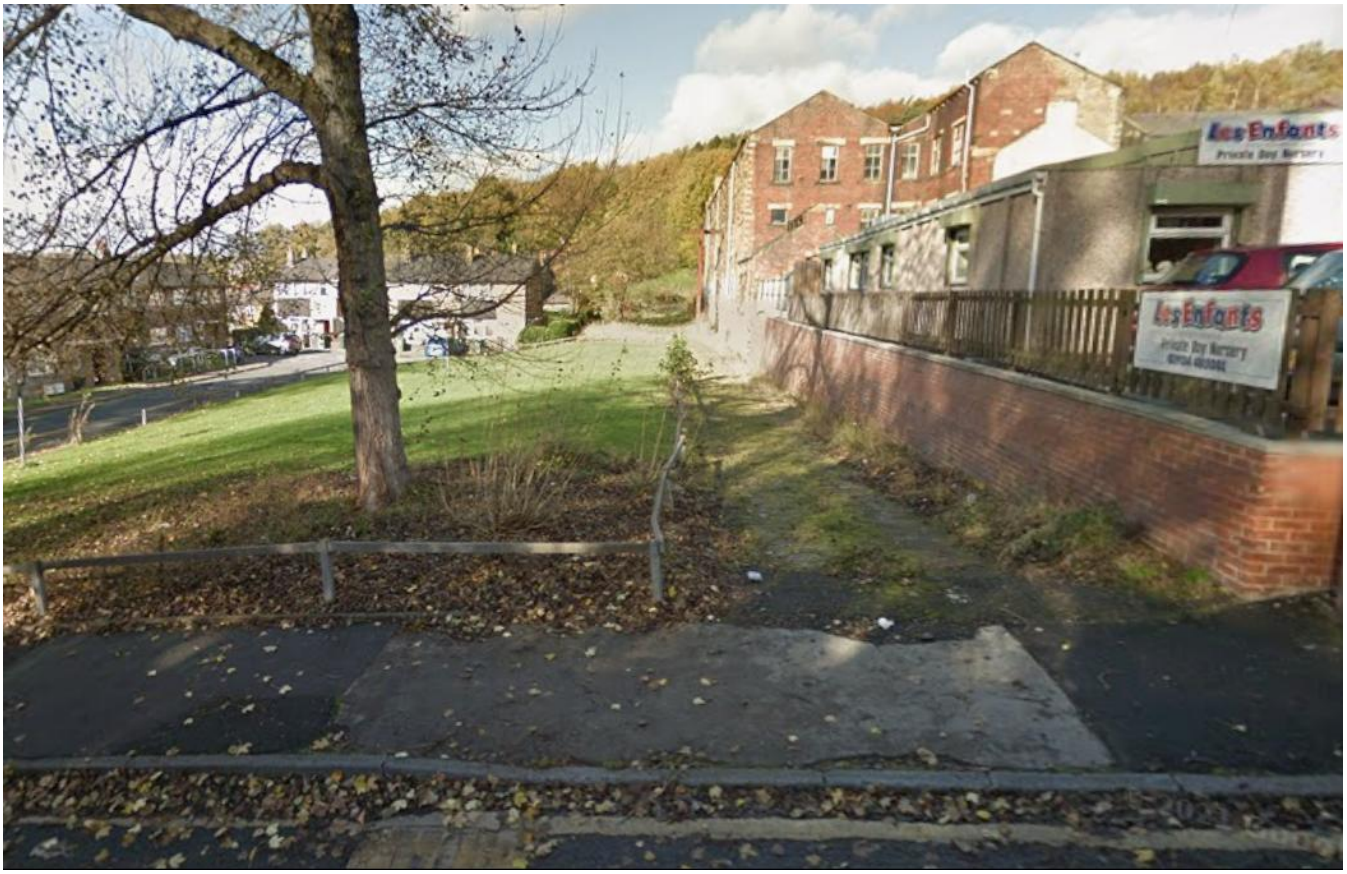


How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
reports@miningremediation.gov.uk

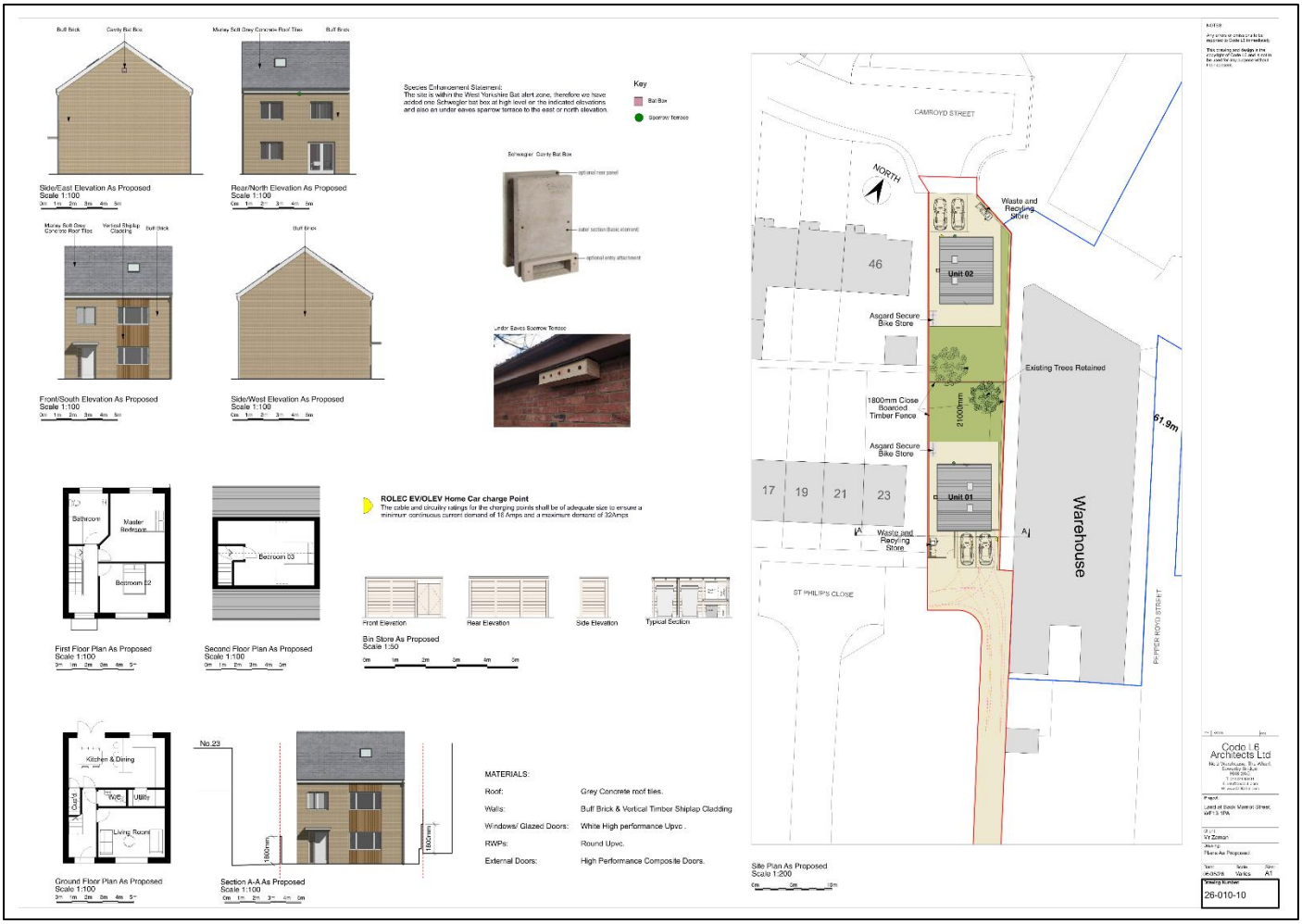
APPENDIX F
CA ONLINE INTERACTIVE MAPPING



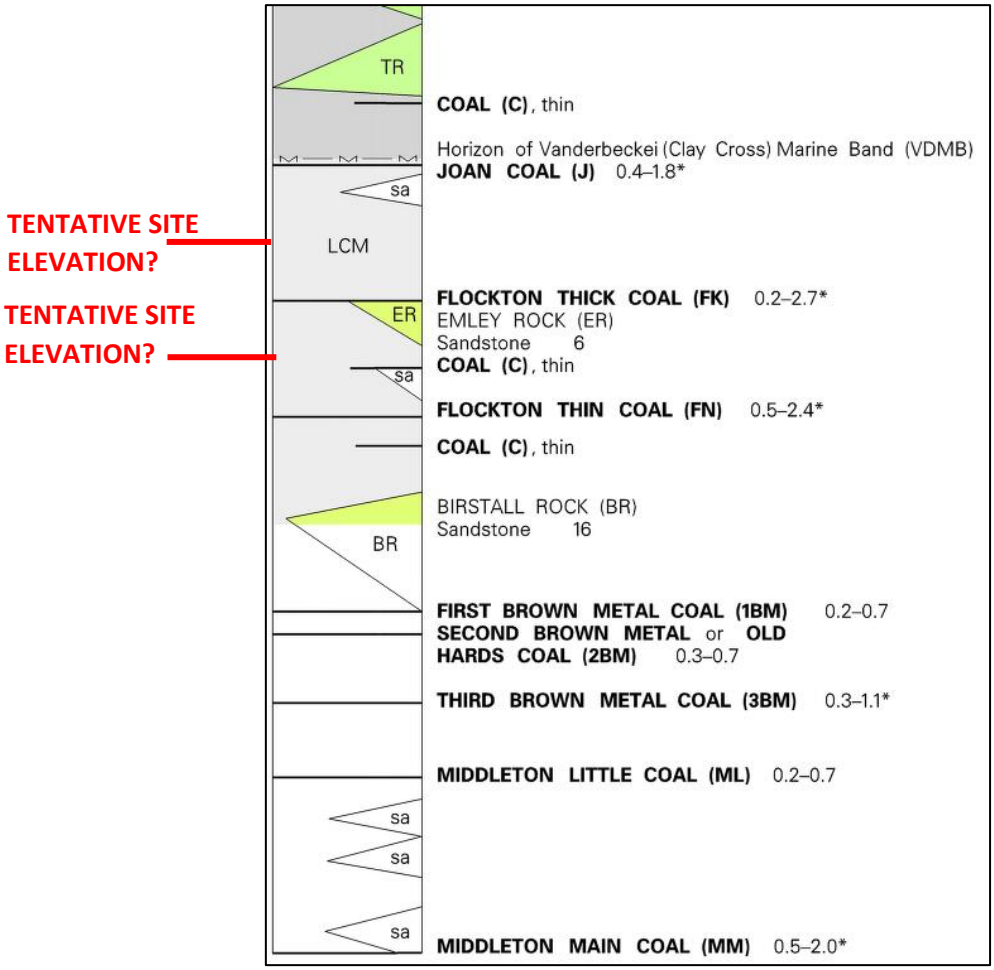
APPENDIX B
SITE IMAGES


Les Enfants
Les Enfants

APPENDIX C
PROPOSED DEVELOPMENT



APPENDIX D
GEOLOGY MAP EXTRACTS



APPENDIX E
BGS LOG

British Geological Survey

BGS ID: 78408 : BGS Reference: SE22SW924
British National Grid (27700) : 424890,421860

RECORD OF BOREHOLE NO. 22 SE22 SW 924

Ground level : 200.2ft above O.D.

Type of boring : Shell and Auger and Rotary Core Drilling

Dia. of boring : 8in to 9ft SF (4in core) to 36ft; HWX (3in core) to 61ft

Lining tubes : 8in to 9ft; 6in to 9ft H to 36ft

2489 2086

Daily Progress	Core Recovery or Samples: Depth	% or Type	Change of Strata: Legend	Depth	O.D. Level	Description of Strata
				0'6"	199.7	STONE SETTS
	0'6" - 2'0"	BD		1'0"	199.2	FILL (ashes and sandstone fragments)
	2'0" - 3'6"	U(4)				
	3'6"	D		4'0"	196.2	Firm grey and brown silty CLAY
	5'6" - 6'6"	U(4)				Yellow-brown silty CLAY with siltstone fragments
	6'6"	D		6'6"	193.7	
	7'0" - 9'0"	BD				
3.7.67	9'0"					
	9'6"	Not Cored				Weathered and ironstained grey sandy MUDSTONE, broken on numerous blackened and rusty joints. Many undulose sandy laminae, especially from 13ft to 14ft6in and 17ft6in to 18ft
	12'6"	100%				
	14'6"	100%				
	18'0"	100%		18'0"	182.2	
15.7.67	19'6"	100%		19'0"	181.2	Very weathered dark brown and grey slightly micaceous fine SANDSTONE, broken on blackened and rusty joints
	21'6"	100%		21'3"	179.0	Weathered and heavily ironstained, laminated white medium SANDSTONE with frequent rustyragged joints
	25'0"	100%		23'0"	177.2	
				25'0"	175.2	Very sandy laminated grey-yellow MUDSTONE; weathered and softened
		100%				Pale grey MUDSTONE, broken on many rusty joints. Mussel at 24ft6in
	30'0"					
17.7.67	31'0"	100%				Dark grey shaly MUDSTONE, passing downwards to black SHALE. Cores much broken on numerous rusty bedding-planes. Abundant mussels from 26ft to 28ft. Ironstone band (4in) with mussels at 31ft
		70%				
18.7.67	35'0"			35'0"	165.2	
	36'0"	Nil				Very broken and rusty black SHALE, some horizons crowded with mussels. Some fragments of cannelloid COAL and some ironstone bands. Some CAVITIES. Suspected old workings in Flockton Thin
		60%		38'0"	162.2	
	41'0"					Pale grey SEATHEARTH: very shaly at top, blocky and friable below, with many roots. Top surface apparently disturbed
		80%		43'0"	157.2	Bright COAL, core very broken. Presumed Tower leaf of Flockton Thin
				44'6"	155.7	
22.7.67	46'0"					Friable grey SEATEARTH, becoming pale grey and ironstained, with many roots, below 45ft6in
		100%		48'6"	151.7	
	51'0"					
		100%				Rather broken, heavily ironstained pale grey MUDSTONE Silty below 51ft. Dip about 10°, with steep jointing at 57ft6in
	56'0"					
		100%				
24.7.67	61'0"			61'0"	139.2	

Key to type of sample :
U (4) — 4 in. dia. undisturbed sample.
U ($1\frac{1}{2}$) — $1\frac{1}{2}$ in. dia. " "
D — disturbed sample.
BD — bulk disturbed sample.
V — vane test.
S ( ) — standard penetration test.
C ( ) — dynamic cone penetration test.
Figure in brackets is No. of blows for penetration given in depth column (see Notes, page 1).

Remarks : (Observations on ground-water, etc.)

Air circulation lost from 35ft to 38ft in presumed workings. No ground-water encountered.

DEWSBURY OVERPASS

Lab Ref No. S/5967

FIG. 20