

Mugen
Geo Ltd.

COAL MINING RISK ASSESSMENT

of

**LAND
ADJACENT
TO
11 PARK VIEW
CLECKHEATON
BD19 3AN**

Document Status: FINAL
Revision: v1

For
L Broadbent
c/o HOLME LANE
BRADFORD
BD4 0PY

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Job N° MGEO 2302 BD19 3AN

Date: February 2023

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Note: This report has been formatted to be read as a PDF.

1 INTRODUCTION

Mugen Geo Ltd (Mugen Geo) was commissioned on behalf of L Broadbent to undertake a Coal Mining Risk Assessment of 'Land adjacent to 11 Park View Cleckheaton BD19 3AN' (the site).

1.1 Scope and objective of the report

This report has been prepared in support of a planning application with Bradford Council for new residential development at the site. This Coal Mining Risk Assessment which has a simple purpose:

- to demonstrate that the developer has sufficient understanding about the ground conditions and how they will be mitigated to demonstrate that the development will be safe and stable.

The conceptual site model in this report and the environmental data and background information used in its development are taken from public record information and the Coal Authority 'Consultants Coal Mining Report' (Coal Authority ref: GS-8325869) which was purchased as part of the assessment. The Coal Authority data and map is included as appendix B.

The study has not included checks on services on or adjacent to the site, and no structural, ecological or asbestos surveys have been carried out.



Figure 1 – Extract Image of submitted Site Location Plan

1.2 Site Location

Site Setting

The site was accessed Park View (a road) and was an irregular parcel of land forming the garden of 11 Park View in Cleckheaton. The site was located within an urban residential area with houses on surrounding land.

The site location is shown on the indicative plan presented in appendix A and in the indicative maps and plans in this section (figure 1) and the appendices.

Site details are summarised in Table 1 below:

Detail	Remarks
Location	Land adjacent to 11 Park View Cleckheaton BD19 3AN
NGR	418133E 425496N
Area	Estimated to be >0.1Ha
Known services	Underground sewers, drainage, telecoms, electricity, gas suspected and water pipe identified crossing the central area.

Table 1 – site summary

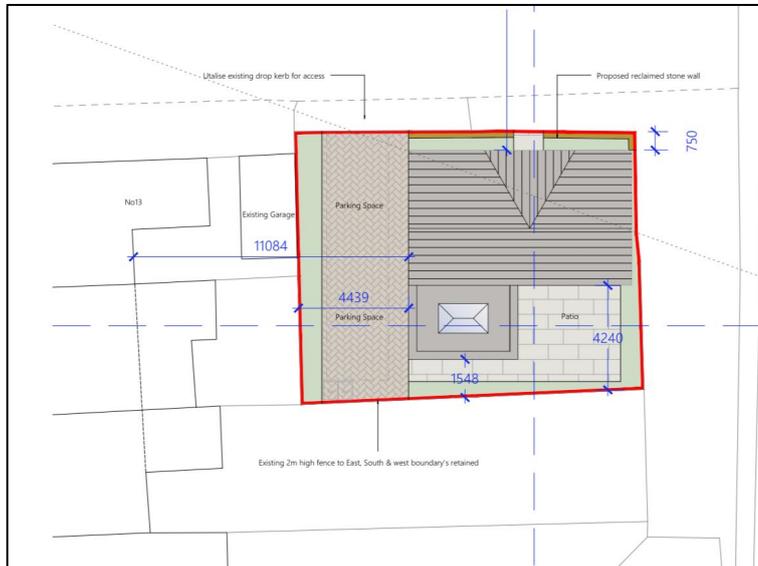


Figure 2 – Extract Image of submitted Site Development Plan

1.3 Limitations

This report has been prepared for the sole use and reliance of the Client named above and cannot be relied upon by any other parties without the express written authorisation of Mugen Geo Ltd. Any unauthorised third party relies on this report at their own risk and the authors owe them no duty of care.

Draft versions of this report cannot be relied upon and Mugen Geo Ltd accept no liability for decisions made based upon any draft versions circulated as part of project development. Please refer to the FINAL report only for decision making purposes.

The findings and opinions conveyed in this report is based on information obtained from sources which Mugen Geo Ltd believe are reliable. All reasonable endeavours have been made to source the information from reputable organisations; however, Mugen Geo Ltd accepts no responsibility for inaccuracies in the data supplied or for opinions based on any such inaccurate data. No attempt has been made to independently verify any data collected by others or from other sources. The Report does not constitute any legal advice. As such, the advice of a Solicitor may also be required.

The purchased environmental dataset reports are based upon known, published information and may not comprise a complete record of all features of relevance. An explanation of the datasets used, their sources, assumed definitions and limitations is available on request.

Mugen Geo Ltd reserves the right to amend their conclusions and recommendations in the light of further information that may become available.

2 GEO-ENVIRONMENTAL SETTING

2.1 Geology

The British Geological Survey (BGS) 1:50,000 scale maps solid & drift Digital Geological Map of Great Britain indicate the site is underlain by Glacial Till over the Clifton Rock, a sandstone over the undifferentiated strata of the Pennine Lower Coal Measures Formation of Carboniferous age, a sequence of interbedded sandstones, mudstones and siltstones. The site is situated within an area of closely faulted blocks with a fault present immediately south of the site and oriented north east to south west.

The Wheatley Lime Coal seam is potentially present beneath with a recorded thickness of 0.4m to 1.2m. The Middleton Eleven Yard Coal seam may be is potentially present beneath with a recorded thickness of 0 m to 1.1m.

2.1.1 Regional Setting

The area is part of the elevated moorland plateaux of Carboniferous rocks that form the central part of Britain and comprise thick sequences of sediments which have been incised by glacial and alluvial valleys.

The bedrock geology of the District is predominantly sandstone, siltstone, mudstone with subordinate coal, seatearth and ironstone of the 'Millstone Grit' Series and Pennine Lower and Middle Coal Measures. These sedimentary rocks were deposited from about 310-315 million years ago during the Carboniferous period. In the late Carboniferous a phase of deformation, part of the Variscan Orogeny, resulted in the development of a complex network of faults across the district.

The present day topography was historically influenced and formed by numerous landslips which occurred across the Pennines and the north west following the Devensian glacial period approximately 10,000years ago.

2.2 Consultants Coal Mining Report

A 'Consultants Coal Mining Report' was purchased for the site (Coal Authority Report ref: 51003338009001). The report provides a detailed record of Coal Authority records relating to the site, summarised in table 3 below and included in appendix D.

Summary of Consultants Coal Mining Report Ref: 51003338009001	
MINING ACTIVITY AND GEOLOGY	
Underground Coal Mining	Past mining recorded: The Whinmoor Coal seam is recorded 97m below the site with an extraction thickness of 0.62m. Unrecorded shallow workings anticipated
Mine entries	None recorded within 20 metres of the enquiry boundary
Abandoned mine plan catalogue numbers	Three abandonment plans are recorded
Outcrops	No outcrops are recorded.
Geological faults, fissures and breaklines	No faults, fissures or breaklines recorded.
Opencast mines	None recorded within 500 metres of the enquiry boundary.
Coal Authority managed tips	None recorded within 500 metres of the enquiry boundary.
INVESTIGATIVE OR REMEDIAL ACTIVITY	
Site investigations	No recorded within 50 metres of the enquiry boundary.
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.
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.

Summary of Consultants Coal Mining Report Ref: 51003338009001	
MINING ACTIVITY AND GEOLOGY	
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.

2.3 BGS Borehole Viewer

The BGS has made available borehole records taken from the National Geoscience Data Centre and may be used for commercial purposes providing their source is identified.

An inspection of the available borehole records did not identify logs within the vicinity of the site that add additional information.

3 RISK ASSESSMENT

Table 5 below summarises the main coal mining issues that may impact the site and a detailed interpretation is provided.

Coal Mining Issue	Yes	No	Risk Assessment
Underground coal mining (recorded at shallow depths)		X	No past mining recorded at shallow depth – Low risk
Underground coal mining (probable at shallow depths)	X		Unrecorded shallow workings anticipated – Moderate risk
Mine entries (shafts and adits)	-	X	None recorded – low risk
Coal mining geology (fissures)			None recorded – low risk
Record of past mine gas emissions or potential	X		None recorded – low risk
Recorded coal mining surface hazard	-	X	None recorded – low risk
Surface mining (opencast workings)	-	X	None recorded – low risk

Table 5 - coal mining issues summary

3.1 Interpretation

The Coal Authority has identified that the property falls within a Development HIGH Risk Area. The Coal Authority believe there is coal at or close to the surface. This coal may have been worked at some time in the past.

Mining was formerly an important industry and principal concerns relate to ground instability caused by the collapse of unsupported shallow workings. This may be evident as general ground subsidence or as the development of crown holes. Collapse of shaft fill, linings or capping may also result in surface subsidence.

The geological map and Coal Authority records indicate the site is potentially underlain by the Wheatley Lime Coal seam at shallow depth with a recorded thickness of 0.4m to 1.2m.

To provide an appropriate assessment of ground conditions with regards to shallow coal mine workings, rotary open holed boreholes would need to be drilled to a sufficient depth, i.e. with at least a proportion necessary to at least 30m bgl to assess the potential presence of shallow ground workings or mining activity.

It is considered that this Coal Mining Risk Assessment has been able to demonstrate that the ground conditions are sufficiently understood to ensure that the development will be safe and stable.

3.2 Uncertainties & Limitations

This report has presented a risk assessment with respect to development that are considered technically feasible and in line with current good practice. Copies of this report should be forwarded to the relevant regulatory authorities (Coal Authority) for their comment/approval.

Mugen Geo Ltd believes however, that the current investigation accurately models the site and that the suggested development strategy is adequate for the conditions already encountered and likely to be encountered on clearance of the site.

4 REFERENCES

1. Fookes, P.G., Baynes, F.J. & Hutchinson, J.M. 2000. Total geological history: a model approach to the anticipation, observation and understanding of ground conditions. *GeoEng 2000*, Melbourne, 1, 370-460.
2. Hencher, S. 2011. *Practical Engineering Geology, Applied Geotechnics*.
3. *Structural Foundations Manual for Low-Rise Buildings*. Atkinson, M.F. 2003
4. *ICE Manual of Geotechnical Engineering Vol. 1&2*. Burland, J. 2012.
5. BGS Technical report WN/95/3 Wigan: A geological background for planning and development.

APPENDIX A
SITE LOCATION PLAN



SITE LOCATION PLAN
[Not to scale]

↑
NORTH

APPENDIX B
COAL AUTHORITY DATA



The Coal
Authority

Consultants Coal Mining Report

418133 425496
West Yorkshire

Date of enquiry: 9 February 2023
Date enquiry received: 9 February 2023
Issue date: 9 February 2023

Our reference: 51003338009001
Your reference: GS-9347827



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

GROUNDSURE LIMITED

Enquiry address

418133 425496
West Yorkshire

How to contact us

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200 Lichfield Lane
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NG18 4RG

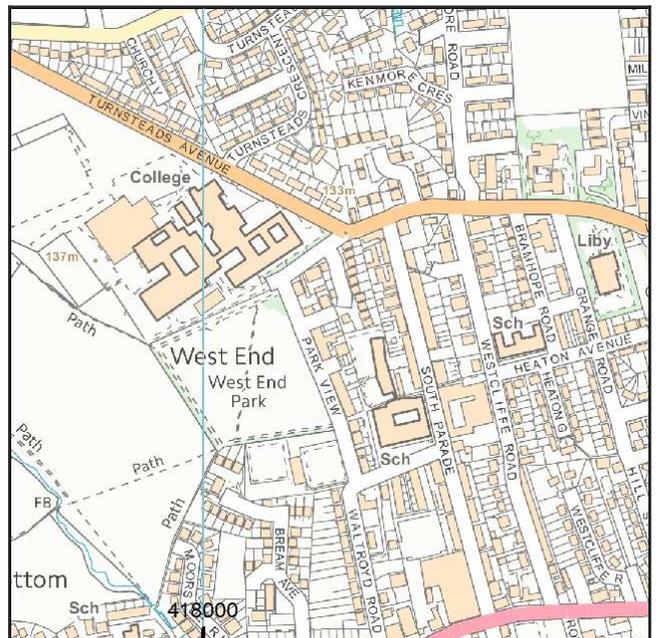
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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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	WHINMOOR	Coal	6NK1	97	West	3.8	South-East	62	1911

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	418425-003	418070 425545		Coal	
Shaft	418425-009	418084 425563		Coal	

Abandoned mine plan catalogue numbers

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

6343	M31	M49
M8	BE9	PO0
9781	BE10	9782

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

None recorded 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

None recorded within 50 metres of the enquiry boundary.

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.

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.

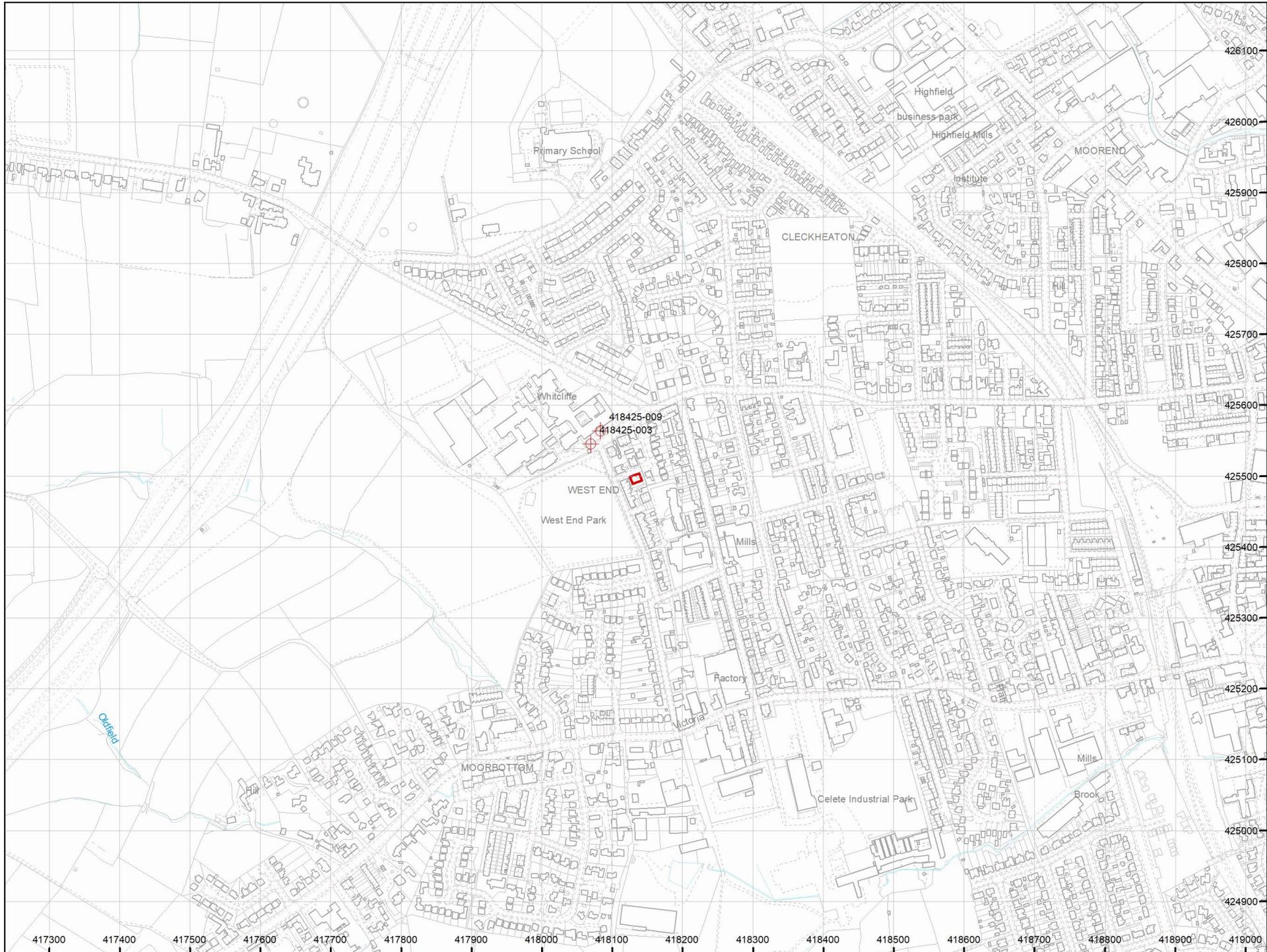
Payment to owners of former copyhold land

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.

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 



APPENDIX C
GENERAL TERMS & CONDITIONS

General Terms & Conditions Mugen Geo Phase II Investigations

This report describes a ground investigation to be undertaken on behalf of The Client and owner of the site) referenced above. The investigation proposed is been designed based upon information supplied by the client & on the assumption that the site is to be developed for residential use.

The objectives of the investigation are to obtain information relating to the ground conditions at the site in order to comply with a planning condition relating to the site. This report will be produced on behalf of The Client and no responsibility is accepted to any Third Party for all or any part.

The final report should not be relied upon or transferred to any other parties without the express written authorisation of Mugen Geo Ltd. If any unauthorised Third Party comes into possession of this report, they rely on it at their own risk and the authors owe them no duty of care or skill.

Whilst the prepared report may express an opinion on the possible configuration of strata, contaminants or gases between or beyond exploratory hole positions or on the possible presence of features based on either visual, verbal or published evidence, this is for guidance only, and no liability can be accepted for its accuracy.

The comments on groundwater and ground gas conditions will be based on observations made at the time of the investigation. It should be noted, however, that groundwater and ground gas levels may vary from those reported due to seasonal or other effects.

Consideration should be given to the possibility that exploratory holes excavated as part of this investigation, and indeed any previous ground i work by others, may be encountered beneath or within the influence of individual foundations. Mugen Geo Ltd cannot be held responsible for failure of excavations or structural failures caused by the location of foundations of any form of structure within the influence of exploratory holes.

Existing manhole covers will not be lifted and drainage runs will not be inspected during the course of this ground investigation.

Standard Procedure Notes for Phase 2 Reports:

The desk study and ground investigation have been carried out in accordance with the principles of BS EN 1997-1: 2004 "Eurocode 7 - Geotechnical Design - Part 1: General Rules", BS EN 1997-2: 2007 "Eurocode 7 - Geotechnical Design - Part 2: Ground Investigation and Testing", BS5930: 1999 and BS10175: 2001, and the terms of the client's brief.

It must be understood that any ground investigation only samples a small percentage of the ground. As a result changes in ground conditions and soil properties can occur between any two exploratory points, for example local features such as soft ground, pockets of contamination and faults. Unrecorded bell pits and shafts can also exist between exploratory points. The proposed ground investigation is designed to minimize such risks. Conclusions and recommendations are based on the information presented in this report, but unforeseen features may exist. Therefore, the actual ground conditions should be noted during construction and further advice sought if they differ significantly from those predicted.

Further investigation can be carried out to further reduce uncertainty and risk but ultimately these risks cannot be eliminated. In commissioning further research or investigation the costs, and the assumed benefit of doing so, must be considered.

Where buildings are present on a site, structural and asbestos surveys have not been carried out, unless specifically stated. An unexploded ordnance survey has not been carried out. In relevant situations it would be prudent to commission such surveys.

Where information has been obtained from Third Parties, no liability can be accepted for the accuracy or completeness of this information. Where anecdotal evidence or speculations are presented, they must be treated as such and cannot be relied upon.