

MINING RISK ASSESSMENT REPORT

Batley Shopping Centre

Alfreds Way, Batley, West Yorkshire

Report: 487003MRA-v2

Date: October 2019

Client:

Zaf Properties Ltd
The Birches,
Langwith Drive, Collingham,
Leeds,
LS22 5DJ

MINING RISK ASSESSMENT REPORT
Batley Shopping Centre, Alfreds Way, Batley

DOCUMENT VERIFICATION SHEET

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Signature:	REDACTED	REDACTED

SUMMARY

Site Grid	424400E	Site Level	58.2 to 60.2	Site Area	
Ref:	424280N	(m AOD):		(ha):	0.64

Development proposals: Retail units (shisha lounge and food hall).

Past site development: Mill building then shopping centre open space.

Made Ground: Made ground anticipated associated with previous site use.

**Anticipated
Ground
Conditions**

Superficials: No superficials. Residual clay anticipated.

Bedrock: Undifferentiated lower coal measures.

Groundwater: Groundwater anticipated at level of coal seam.

Shallow mining: Shallow coal and iron stone workings possible.

Remediation: Drilling and grouting may be required, subject to intrusive Mining Investigation (MI).

Foundations: Subject to MI.

Drainage: Soakaways are not considered suitable. Off-site drainage will need to be considered.

Further Investigation: Rotary open holes with water-flush.

MINING RISK ASSESSMENT REPORT
Batley Shopping Centre, Alfreds Way, Batley

TABLE OF CONTENTS

1. INTRODUCTION.....	1
2. OBJECTIVES.....	2
3. THE SITE	2
4. HISTORY	3
5. GEOLOGY	4
6. MINING RISK ASSESSMENT & QUARRYING	5
7. ANTICIPATED GROUND CONDITIONS	5
8. GEOTECHNICAL CONSIDERATIONS	6
8.1. General	
8.2. Mining Precautions	
8.3. Foundations	
8.4. Floor Slabs	
8.5. Hardstanding	
8.6. Drainage	
8.7. Chemical Precautions	
9. REGULATORY APPROVAL	7
10. FURTHER INVESTIGATION	7

APPENDICES

APPENDIX A - SITE PLANS.....	A
APPENDIX B - COAL AUTHORITY CONSULTANTS REPORT	B
APPENDIX C – BGS ARCHIVE BOREHOLES	C
APPENDIX D - FURTHER REPORTING.....	D

MINING RISK ASSESSMENT REPORT

Batley Shopping Centre, Alfreds Way, Batley

1. INTRODUCTION

On behalf of Zaf Properties Ltd, a Mining Risk Assessment was carried out by Abbeydale Building Environment Consultants Ltd (Abbeydale BEC) on a site off Alfreds Way, Batley. The site is situated near the centre of Batley at National Grid Reference 424400N, 424280E, with a site area of around 0.64 ha. See Figure 1.

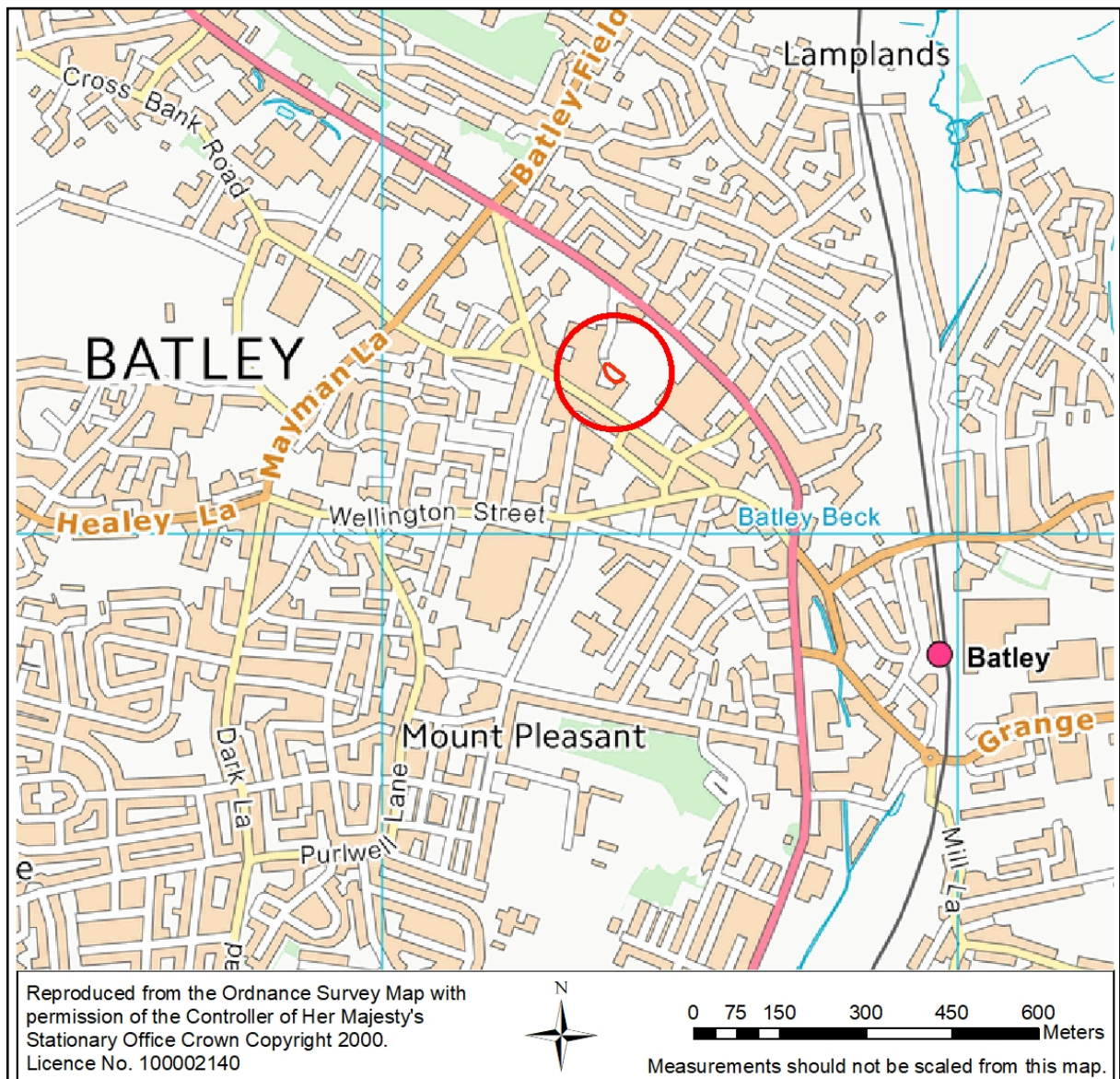


FIGURE 1 - LOCATION PLAN

This report was produced for our client, Zaf Properties Ltd, and their advisors and financiers and should not be relied upon or transferred to any other parties without

the express written authorisation of Abbeydale BEC and our client. If any other 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.

The comments and recommendations presented in this Mining Risk Assessment report are based on the findings of a review of available information. There may be other conditions prevailing on the site which have not been recorded by the available information and therefore have not been taken into account by this report. Responsibility cannot be accepted for unrecorded information.

When writing this report the proposed development was for a new two storey coffee shop retail unit with a FFL of 60.25m AOD, and renovation of an existing retail unit. If there are changes to these proposals, then some modification to the comments and recommendations given may be required. The proposed site layout is shown on the site plan in Appendix A.

2. OBJECTIVES

This report has been undertaken to evaluate the potential risk from shallow mining beneath the footprint of the proposed development. The report evaluates the current site proposals (where known) with regard to geotechnical and engineering considerations to determine what impact the existing ground conditions will have on the integrity of the proposed building. As part of this evaluation the report gives foundation and drainage recommendations.

3. THE SITE

No site walkover has been undertaken as part of this Mining Risk Assessment, the following description is based purely on third party information. The site is understood to be a roughly L-shaped parcel of land consisting of a grassed area in the north-west and an existing vacant retail unit to the east. As part of the development it is proposed to renovate the existing retail unit. The proposed site layout is shown on the plans in Appendix A.

The site is bound to the north by Tesco Car Park, with a retaining wall at the boundary. To the south and west is a car park serving several retail units along Commercial Street to the south-east.

Currently the surface of the site is under construction, prior to which it was soft landscaping with hard standing near the boundaries associated with car parks and footways. See Figure 2.

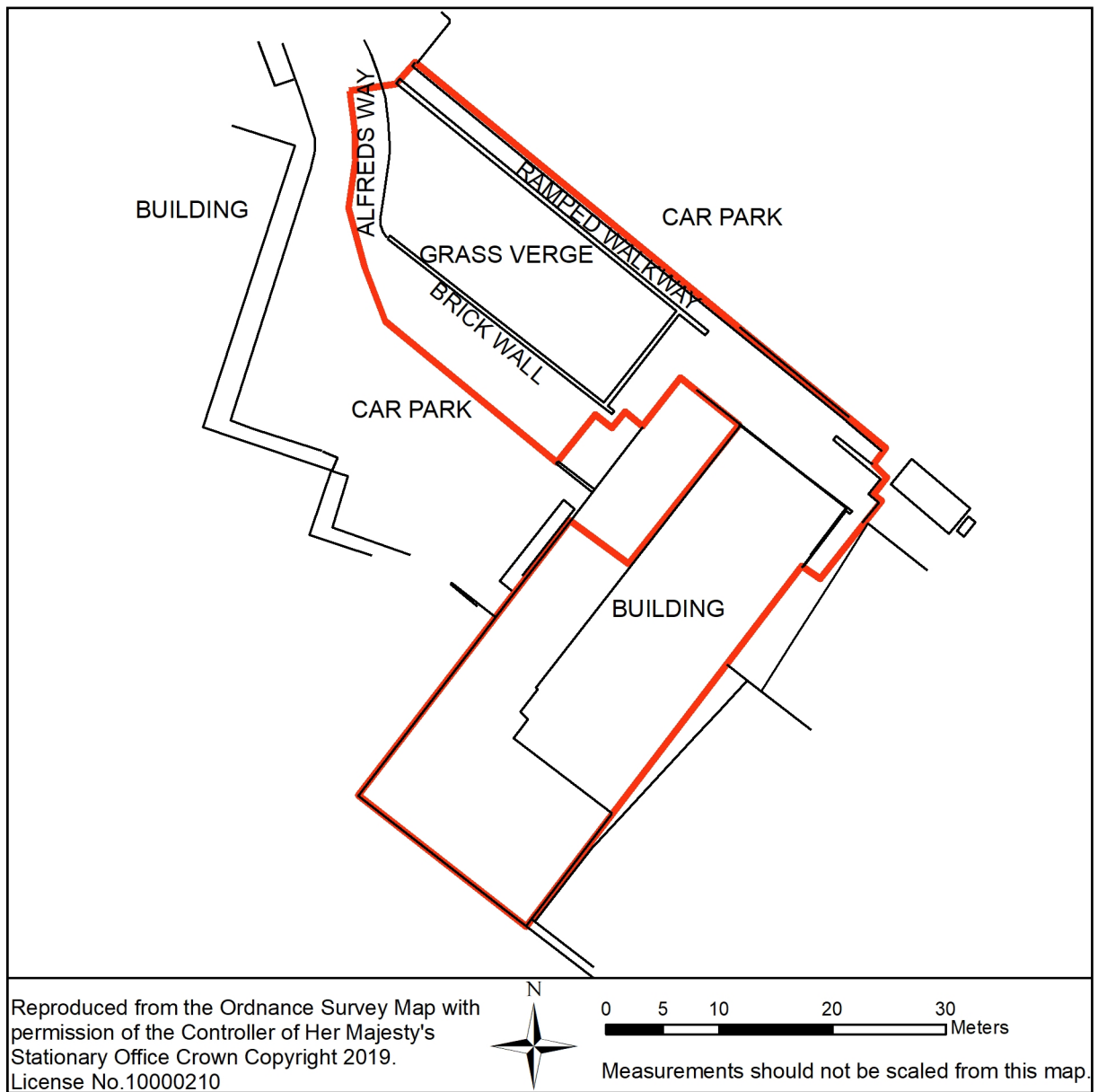


FIGURE 2 - SITE PLAN

4. HISTORY

The historic Ordnance Survey (OS) maps of the site and surrounding area have been assessed. All measurements stated are approximate distances from the site boundaries to the recorded features.

The earliest OS map of 1854 depicts 'Batley Woollen Mill' on site, later noted as 'Old Mill (Woollen)', until c.1982 when the site was redeveloped to its present form.

Historical maps of the surrounding area feature a Bank Foot Brick Works ~180m North and Batley Colliery ~350m northwest.

5. GEOLOGY

The geological survey maps of the area, Sheet SE22SW and Yorkshire County Series Sheet 232 SE have been examined. The site is shown to be underlain by undifferentiated Lower Coal Measures; dipping to the east from an assessment of outcrop patterns on the geological maps. The site is stratigraphically at the top of the Lower Coal Measures, immediately above the Flockton Thick Coal and below the Joan Coal. See Figure 3.

The nearest geological fault is conjectured approximately 15m to the east of the site, trending northeast-southwest and downthrowing strata to the southwest. Another fault is located ~100 north of the site, trending northwest-southeast, with downthrow to the southwest towards the site.

No superficial deposit are recorded on site, the closest being alluvium associated with the Batley Beck ~50m north of the site. Residual clay is anticipated below the site.

No made ground is recorded on site. However, made ground would be anticipated associated with previous site uses.

A BGS archive hole is recorded on site (Ref. SE22SW252, dated 19/10/77), the ground level for which is unknown. This depicts made ground to 1.5m bgl, residual silty clay and clayey silt to 2.5m bgl, siltstone to 4.8m bgl, and mudstone to the base of the hole at 6m bgl. Water was struck at 4.5m with a standing level of 2.5m bgl.

The nearest deep BGS borehole located 15m southeast (Ref. SE22SW267), dated 12/11/77, reports a 1.4m thick coal seam at 12.5m bgl with 9.5m of rock cover. Another nearby hole 17m west (Ref. SE22SW266, dated 11/11/77), recorded possible workings from 15.5m to 17.0m bgl.

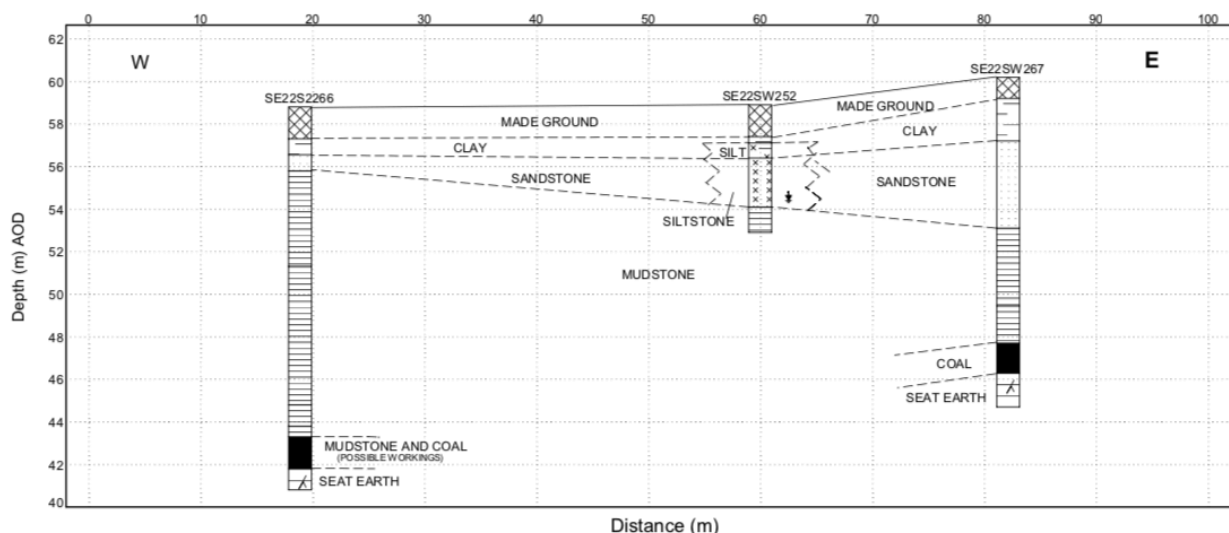


FIGURE 3 -GENERALISED SECTION

6. MINING RISK ASSESSMENT & QUARRYING

The presence of rock and mineral seams, including coal, which may have been mined or quarried in the area has been determined by the published geological maps and memoirs of the area, and the appended Coal Authority (CA) Consultants report included in Appendix B.

The CA report states that no past mining is recorded, however unrecorded shallow workings are probable. No mine entries have been recorded within 100m of the site boundary. Two abandoned mine catalogue numbers are reported to intersect the site boundary (CT16 and 12676), these have not been obtained from CA.

The CA interactive online map depicts the closest recorded mine entries to be 200m north of the site, beyond a fault.

The geological maps indicate the Flockton Thick to outcrop to the north of the site, dipping below the site. To the west of the site the Flockton Thick coal outcrop is marked as being worked by bell pits and adits, with a recorded thickness of 3'9" (1.14m). Approximately 10m stratigraphically below the Flockton Thick is the Flockton Thin Coal, up to 1.4m thick, known to be worked in the Batley area.

ABEC records identify the area to be in a zone of possible iron stone workings associated with the Flockton Thick / Flockton Thin strata.

Based on the above information the risk of shallow mine workings beneath the site is deemed to be **high**. Depending on the depth and thickness of any underlying shallow mine workings there is the potential for the workings to adversely affect the surface stability of the site, should collapse of any shallow coal workings occur. Considering the economic strata below the site is coal and ironstone, the risk of unrecorded quarrying is considered low. However, bell pitting and opencast mining may have been undertaken, the risk of which is considered as part of shallow mine workings.

7. ANTICIPATED GROUND CONDITIONS

The anticipated ground conditions have been interpreted from the geological maps and available archive information, including archive BGS borehole records across the surrounding area. This includes public sector information licensed under Open Government License v 2.0, which has been used in good faith to provide an indication of the possible ground conditions beneath the site. At this stage the information should be used for guidance purposes only and confirmation of the actual ground conditions should be considered if deemed critical.

Historical boreholes in the vicinity of the site lack ground level, hence it is tentatively assumed that ground levels at the time of drilling are similar to present ground level. Exact levels will need to be determined with further GI.

Made ground is anticipated across the site, underlain by residual silty clay and clayey site. Bedrock of highly weathered siltstone and mudstone is anticipated at c.3m bgl. The Flockton Thick coal seam, possibly worked, is expected below 10m bgl, with the Flockton Thin Coal approximately 10m further below, separated by the Emley Rock sandstone. Ground water is anticipated below 2m bgl.

8. GEOTECHNICAL CONSIDERATIONS

8.1. General

An outline plan was available when completing this report. It is understood that the proposed two storey retail unit is to be constructed with a FFL of 60.25m AOD, along with renovation of an existing retail building. The proposed ground loadings were not known but for the purposes of this report are assumed to be less than 100 kPa. If there are changes to these proposals, then some modification to the comments and recommendations given may be required.

8.2. Mining Precautions

Based on the above information the resultant risk of shallow mine workings affecting the site is considered to be high.

A shallow coal seam is anticipated beneath the site, hence there is a high risk of unrecorded workings below the site. Drilling will be required to determine the exact depth of the seam and identify if it has been worked.

If mine workings are identified with insufficient rock cover then drilling and grouting may be required prior to casting any foundations to consolidate the workings and negate the potential for any collapse of the workings that may propagate to the ground surface.

8.3. Foundations

Intrusive Ground Investigation is recommended prior to foundation design to confirm the ground conditions present and determine the depth to a suitable founding stratum.

If piled foundations are being considered, then further consideration will need to be given to investigate the ground below the workings for founding suitability.

8.4. Floor Slabs

Without knowledge of the ground conditions across the site suspended floor slabs should be considered at this stage.

8.5. Hardstanding

The design of hardstanding areas will be dependent on the ground conditions present. At this stage it should be assumed that a CBR value of less than 2.5% is available, requiring full construction thickness.

Once the ground conditions across the site are known it may be possible to revise the above depending on the depth to a suitable natural subgrade and the geotechnical properties of the natural strata.

8.6. Drainage

Soakaways will not be suitable if mine workings are encountered, and due to mudstone bedrock being anticipated across the site, hence off site drainage will need to be considered.

All drainage measures will need to be designed in accordance with Sustainable Urban Drainage Systems (SUDS) requirements.

8.7. Chemical Precautions

Without undertaking chemical analysis of any made ground and natural soils on the site it should be assumed that sulphate resistant concrete is required at this stage. Water supply pipes should also need to be resistant to any chemical contamination.

9. REGULATORY APPROVAL

The conclusions and recommendations in this report are based on a review of available information and observations made during the site walkover survey undertaken. The conclusions cannot be guaranteed to gain regulatory approval if this report is required as part of a planning application. If it is required as such it should be passed to the relevant regulatory bodies for their comment and approval.

10. FURTHER INVESTIGATION

Based on the findings of the Mining Risk Assessment undertaken it would be recommended to carry out a Mining Investigation to determine the depth and condition of shallow coal seam below the site.

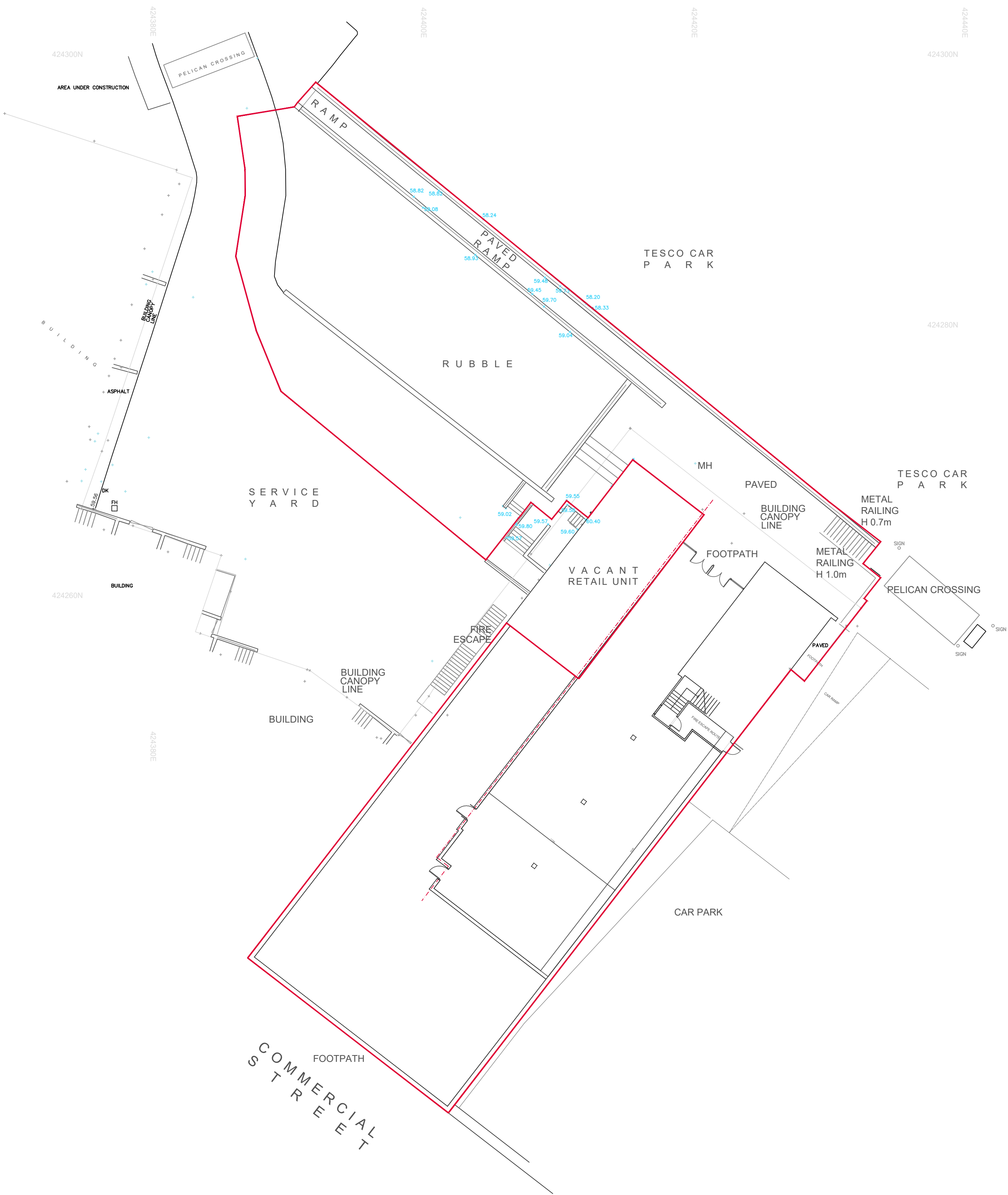
The Mining Investigation should consist of a series of rotary openhole boreholes to determine the depth and state of the Flockton Thick Coal seam and associated ironstone strata. The depth of the seam is unknown but is anticipated to be between 10m and 20m beneath the site, with the Flockton Thin Coal a further ~10m below. Any ironstone workings would be anticipated in the strata above the Flockton Thin coal. Due to the proximity to occupied buildings the rotary boreholes would need to be drilled using water flush techniques, and would require a permit to drill from the Coal Authority before undertaking the shallow mining investigation works.

If workings are encountered, then as part of the shallow mining investigation ground gas monitoring standpipes should be installed into a selection of the rotary openhole boreholes to facilitate post-investigation gas monitoring and a subsequent ground gas risk assessment.

If piles are to be used investigation holes should be deepened to determine the ground properties below workings.

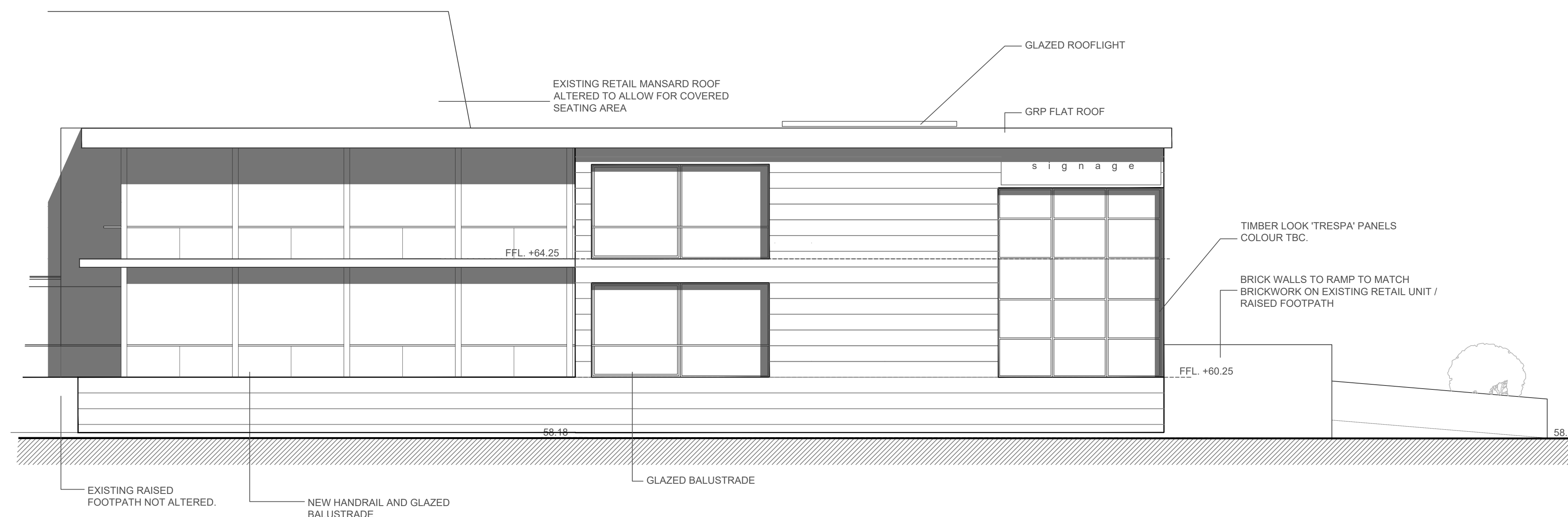
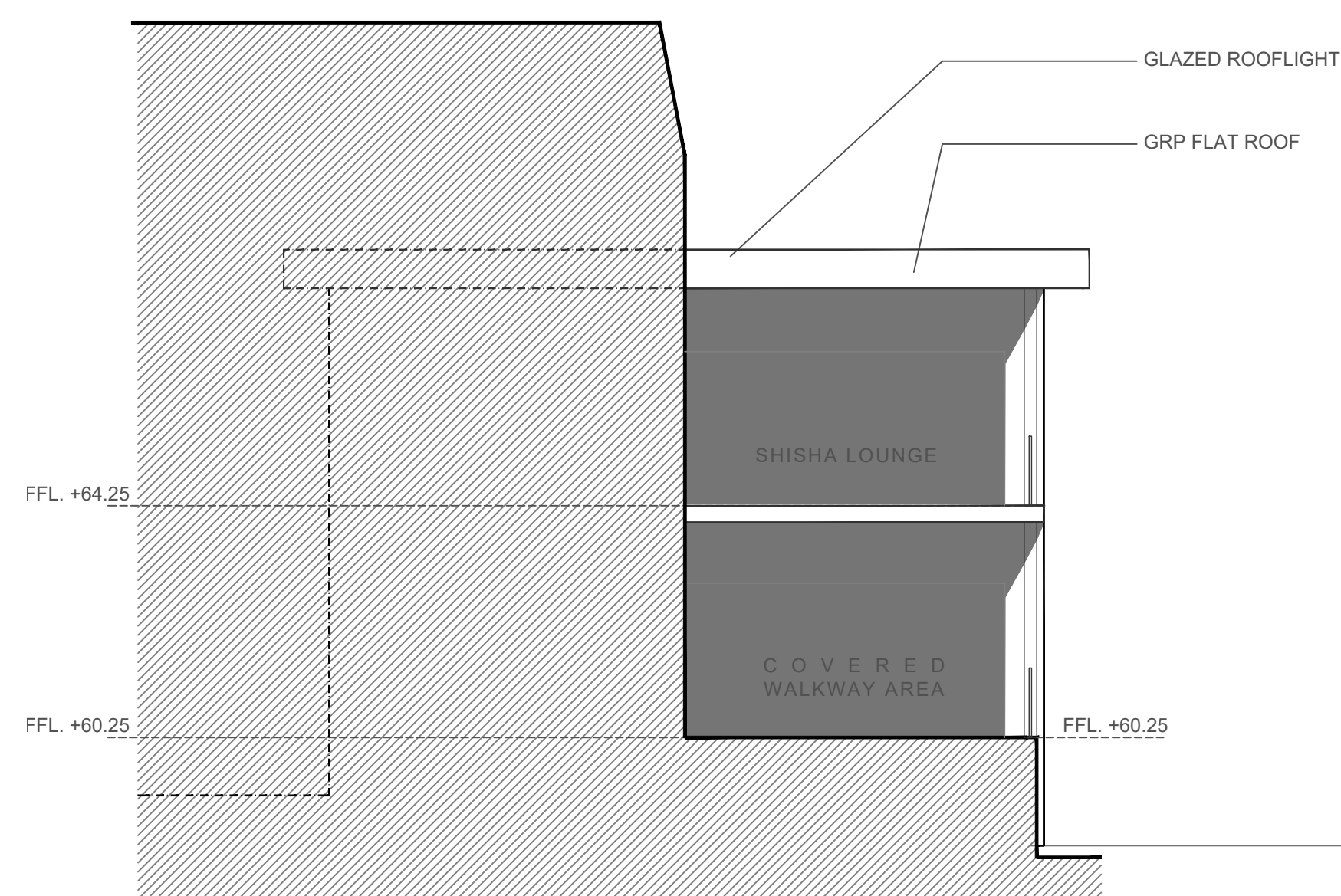
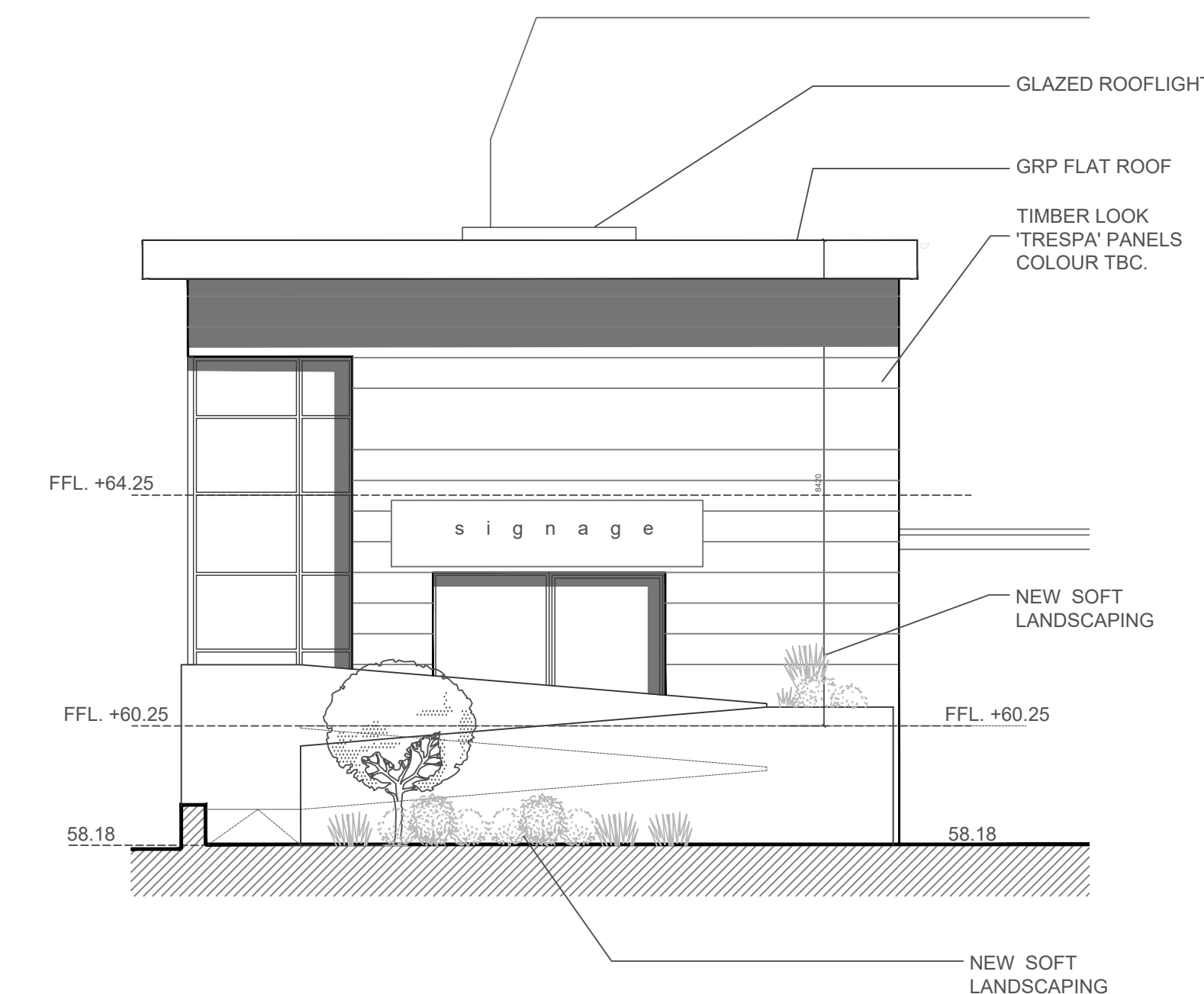
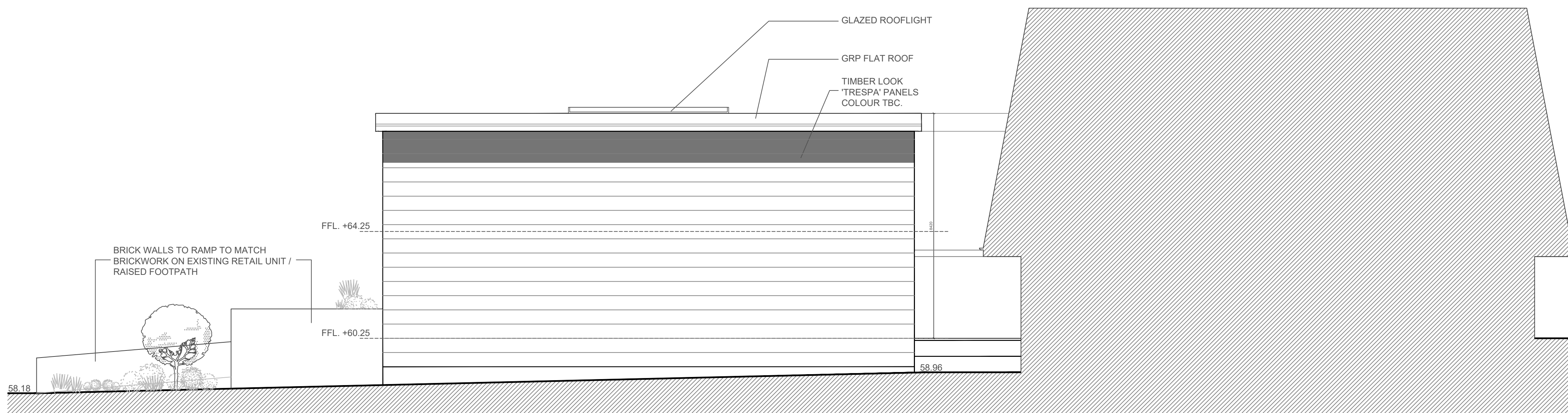
Report 487003MRA-v2 | October 2019

APPENDIX A - SITE PLANS



EXISTING LAYOUT PLAN

COLE GORNALL CROSS ARCHITECTS 15 WOODHALL PARK CRESENT EAST PUDSEY, LEEDS, LS28 7HG 077866 34314	PROJECT PROPOSED RETAIL UNIT / COFFEE SHOP AT REAR ALFRED'S WAY, BATLEY FOR Z&F PROPERTIES LTD.	TITLE PROPOSED PLANS		SCALE 1:200@A1		JOB No. 1908		DWG No. A(PL)-02		REV.	DATE	DESC.	REV.	DATE	DESC.
		STAGE PLANNING		DRAWN MC	CHECK. MC	DATE 09.2019									



APPENDIX B - COAL AUTHORITY CONSULTANTS REPORT



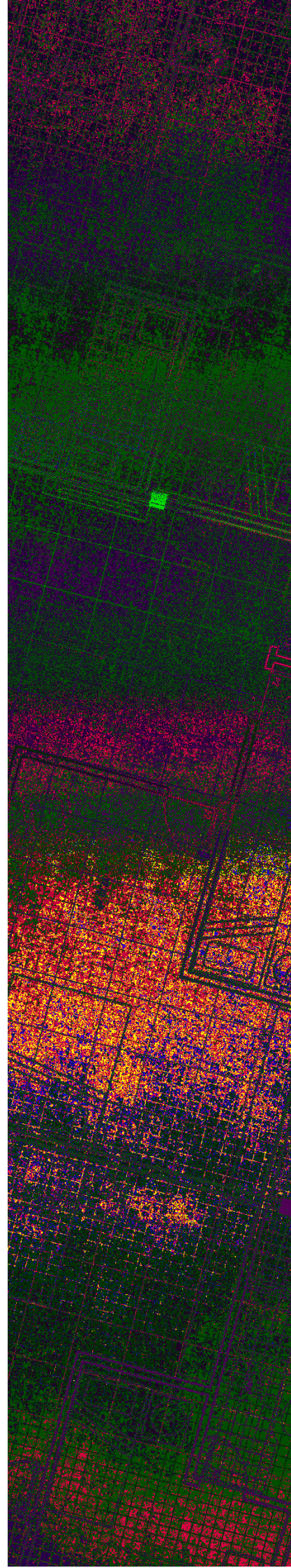
The Coal
Authority

Consultants Coal Mining Report

Batley Shopping Centre, Alfreds
Way, Batley, Wf17 5dr
West Yorkshire

Date of enquiry:	3 June 2019
Date enquiry received:	3 June 2019
Issue date:	3 June 2019

Our reference:	51002128535001
Your reference:	GS-6068347



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

Batley Shopping Centre, Alfreds Way, Batley, Wf17 5dr
West Yorkshire

How to contact us

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

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

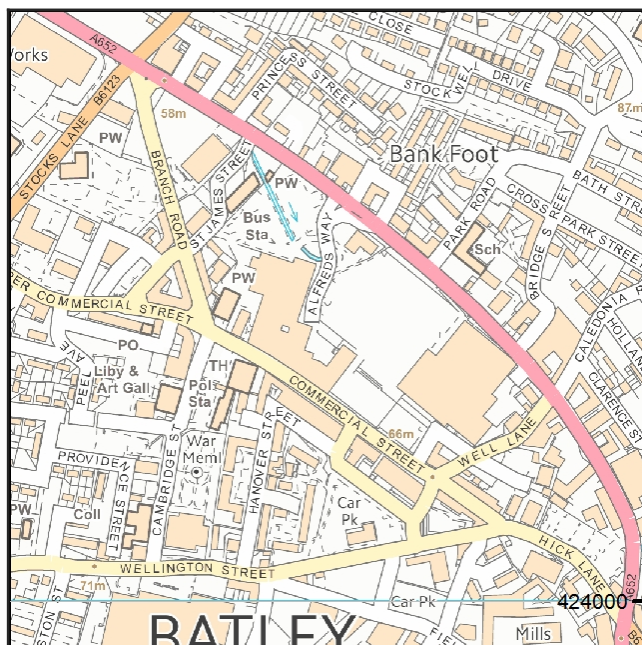
www.groundstability.com

 @coalauthority

 /company/the-coal-authority

 /thecoalauthority

 /thecoalauthority



Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

No past mining recorded.

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

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

CT16	12673	8420
12676		

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

Based on the responses in this report, no further information has been highlighted.

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.

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.

APPENDIX C – BGS ARCHIVE BOREHOLES

2

2441 2427.

Date.....19/10/77.

Water levels are subject to seasonal or tidal variations and should not be taken as constant.

Holst Soil Engineering Limited

Borehole No.

2

Contract No. F3758

BOREHOLE LOG

2437 2428

Location Batley

Sheet 1 of 1

Client Birkett, Stevens, Colman Partnership

Chainage

Method of Boring Rotary coring

Ground Level m.A.O.D.

Diameter of Borehole 100 mm

SE22SW 266

Date 9-11/11/77

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.Q.D. %	Daily Progress
MADEGROUND							
Black ash clay		1.50					
Soft brown CLAY		2.25					
Highly weathered highly fractured brown SANDSTONE		3.00					
Very highly weathered very highly fractured black shaly MUDSTONE with bands of clay					5.00	60%	
					6.00	50%	
					7.00	30%	
		7.50					
Very highly weathered very highly fractured light grey MUDSTONE					8.50	66%	
					10.00		
					12.00	30%	
					13.50	30%	
Highly weathered highly fractured grey silty MUDSTONE		14.00					
		15.00			15.00	100%	
Highly weathered moderately fractured dark grey black shaly MUDSTONE		15.50			16.00		
Dark grey black shaly MUDSTONE with coal fragments and bivalves (possible workings)		17.00				50%	
Highly weathered highly fractured light grey MUDSTONE SEATEARTH		18.00			18.00		

Type of Sample

- Is S.P.T. ☐ Undisturbed
 Ic. C.P.T. ☒ Vane
 O Jar ☒ Water
 ● Bulk ☒ Piezometer

Remarks (Observations of Ground Water etc.)

Water seepage from 7.50 m.

Water levels are subject to seasonal or tidal variations and should not be taken as constant

Holst Soil Engineering Limited

Borehole No.

3

Contract No. F3758

BOREHOLE LOG

2443 2426

Location Batley

Sheet 1 of 1

Client Birkett, Stevens, Colman Partnership

Chainage

Method of Boring Rotary coring

Ground Level m.A.O.D.

Diameter of Borehole 100 mm

Date 11/12/11/77

SE22SW 267

Description of Strata	Legend	Depth Below G.L. (m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	"N"/R.Q.D.%	Daily Progress
MADEGROUND - grey brown clay		1.00					
Light brown sandy CLAY weathered siltstone		3.00			3.00		
Highly weathered, highly fractured light brown grey weak fine silty SANDSTONE		7.10			79%		
Highly weathered, highly fractured light grey silty MUDSTONE with ironstone nodules		10.75			84%		
Moderately weathered moderately fractured dark grey black shaly MUDSTONE		12.50			90%		
COAL		13.90			95%		
Slightly weathered highly fractured light grey silty MUDSTONE SEATEARTH		15.50					

Type of Sample

- Is S.P.T. ☐ Undisturbed
 Ic. C.P.T. ☒ Vane
 O Jar ☒ Water
 ● Bulk ☒ Piezometer

Remarks (Observations of Ground Water etc.)

Water seepage from 6.00 m
 " struck at 12.00 m

Water levels are subject to seasonal or tidal variations and should not be taken as constant

APPENDIX D - FURTHER REPORTING

No further reporting requested at present