

Coal Mining Risk Assessment

Beaumont Street, Huddersfield

Reference : 20078-R-001-V01

Date : 06 April 2021

**SOIL AND
STRUCTURES**

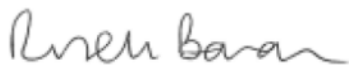
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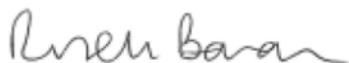
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Executive Summary

In conclusion, the Coal Mining Risk Assessment finds that;

- > The risk rating of the Site is assessed as Moderate to Low at worst but generally Low or no hazards identified.
- > No further assessment is recommended.
- > No risk mitigation is recommended.

Recommended follow-on work includes:

1. [Review of risk register](#) (Table 1, 2 and 3) presented herein;
2. [Submission of the Coal Mining Risk Assessment](#) to the local planning authority and the project design team;
3. [Response plans](#) for hazards that are not indicated to be present but may nonetheless be unexpectedly encountered. The appointed Contractor is advised to have in place plans for dealing with such occurrences. Outline advice is given in Table 2.

Cross-referencing these recommendations with those of any other ground-related reporting is also recommended.

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- 1. Coal Mining Risk Assessment – Scope and Context**
- 2. Coal Mining Risk Assessment – Background Threat and Risk**

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- A. Drawings:** Site Location and Development Plan
- B. Calculation Sheet:** Coal Seam Projection
- C. Supporting Information:** Terra Firma CON29M (Non-Resi) Report

Appointment

Soil and Structures Ltd were instructed by Stonehouse & Co Ltd on behalf of Care Counts Ltd (the Client) in March 2021 to prepare a Coal Mining Risk Assessment (this Report) for a parcel of land off Beaumont Street, Huddersfield (the Site). The Report has been commissioned in support of development of a commercial extension on the Site.

Scope and Context

The Coal Mining Risk Assessment offers advice on coal and non-coal mining related hazards with respect to the proposed development of the Site.

The legal context of this advice relates to an assessment of potential coal and non-coal mining related hazards that may affect the development.

The assessment of potential coal mining related hazards is governed by both health and safety law (various acts) and also rooted within national planning policy that is governed by planning law (various regulations and orders).

In practice, this necessitates acceptance of this report and its findings by the Coal Authority, a statutory consultee on planning applications.

For further information on the scope and context of the Coal Mining Risk Assessment please refer to Annex 1.

References

The Coal Mining Risk Assessment has been written with reference to various sources of information including existing ground and coal mining related reporting. These are either appended or listed within Section 5.0 and referenced throughout this report in brackets, e.g. (M1).

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1.0 Introduction

1.1 The Site

Location and size: The proposed development Site comprises a rectangular parcel of land 17 m by 1.6 m in size that forms the western boundary of an existing building (Care Counts Ltd). The Site is located at the junction of Beaumont Street and Williams Street, Huddersfield (Figure 1).

Access: The Site is accessed on foot or by car off Beaumont Street.

Topography: The Site is located on the lower reaches of the western banks of the River Colne valley at an elevation of around 72.5 mAOD (the River Colne lying around 60 mAOD locally to the east). On Site, there is a very slight fall in levels from west to east.

Existing structures: At the point of instruction the Site is occupied by the existing Care Counts Ltd office building (single storey masonry construction) and associated access footpaths and informal soft landscaping.

Existing reports: Planning permission has previously been sought on the Site (Kirklees Council planning portal) however no existing ground-related reports are either available, or have been made available, for review. Nearby historic planning applications appear to offer limited information with respect to the ground and local mining history.

A CON29M (non-residential) report prepared by Terra Firma was supplied that presents and summarises relevant coal mining data relating to the Site.

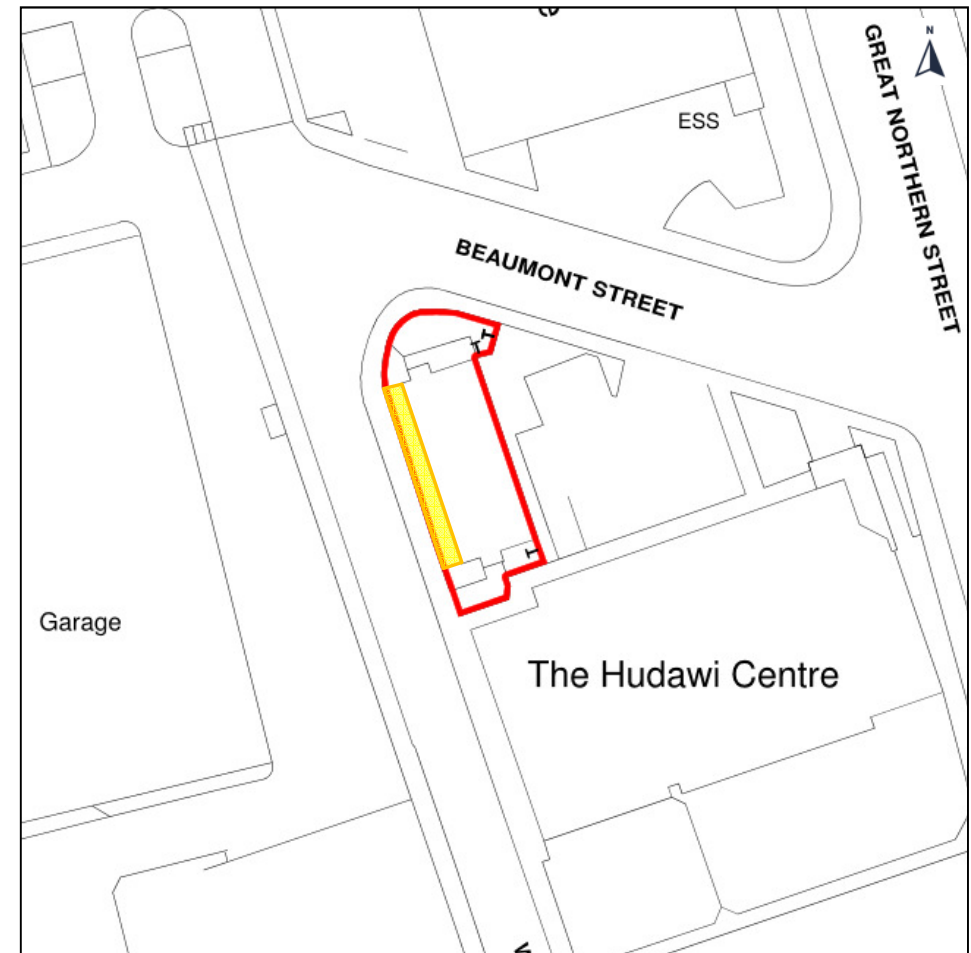


Figure 1: Site location plan

- > Extract from appended Kirklees Council drawing ref. 'Strategic Assets'.
- > Land ownership boundary illustrated by red boundary.
- > Proposed development area highlighted in yellow.

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1.2 The Development

Development proposals include for the construction of a single storey extension to the western elevation of the existing structure (Figure 2).

An appreciation of the construction processes is essential for development-focused risk assessments given the groundworks stand to significantly alter the risk rating, e.g. outcropping coal seams being exposed.

To enable this development, the following groundworks are likely to be required, N.B. listing is outline only and not exhaustive.

- > **Preparation:** Site clearance across proposed development site.
- > **Excavations:** Reduced level excavation to suit development levels for the new extension and its curtilage.
- > **Utility Excavations:** Excavation of any drainage and other utility alignments if and where required.
- > **Foundations:** Construction of sub-structures (foundations) followed by super-structures.
- > **Surfacing:** Formation of new hard and soft-landscaping areas (limited).

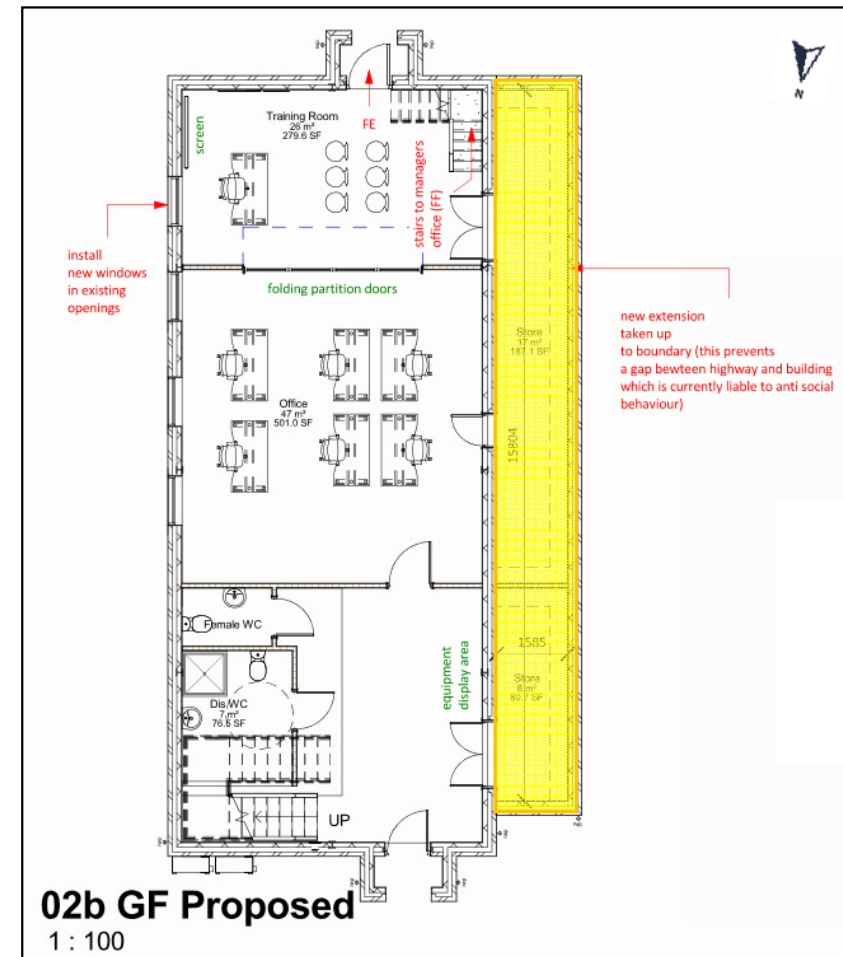


Figure 2: Development plan extracts

- > Extracts from appended Stonehouse & Co Architectural Design drawing ref. 'Proposed – Sheet 2'.
- > Approximate extent of development area highlighted yellow (as per Figure 1).

2.0 Site Characterisation

2.1 History

The Site has been subject to a two recorded uses since 1890s (the date of the earliest available ordnance survey mapping available from various online sources):

- > **The first phase:** occurred between the 1890s until at least the 1980s when the Site was occupied by the grounds of a larger school site with associated outbuildings present on Site.

No evidence of coal mining features, e.g. old shafts or soughs, is recorded on the Site over this phase. Within 250 m of the Site, no evidence of coal or non-coal mining features are recorded, e.g. 'old coal pits'.

- > **The second phase:** occurred between the 1980s/90s until the present day when the Site was cleared for the ultimate development of the current building.

The surrounding area is characterised by a history of mixed residential and industrial land uses consistent with an industrialised town within the coalfield region of the north of England.

Known mining areas locally to the Site include: the Brown Royd fireclay mining on eastern side of the River Colne valley around 750 m to the east of the Site; and, the Fieldhouse Collieries around 750 m to the north.

The author is also aware of unrecorded mine workings within the Soft Bed coal seam across the eastern portion of Huddersfield (evidence on BGS borehole records and previous local experience).

2.2 Geology

The Site is underlain by head deposits (superficial soils) over bedrock of the Pennine Lower Coal Measures (Figure 3; **M3**).

Exploratory hole records are not available for the Site itself however historic borehole records are available from the locality. These records reveal two key facts: i) bedrock is encountered around - 12 m depth within a well borehole 200 m to the north of the Site; 10 m depth within a borehole on the ring road 150 m south-west of the Site; and, 5.3 m depth within a borehole 150 m south-east of the Site; and, ii) the absence of coal seams within 60.9 m and 17.6 m depth within the borehole to the north and south-west respectively.

The availability of these nearby borehole records and relevant mining data offers a generally good level of desk-based data to map the Site's geology.

Three main materials are therefore expected beneath the Site.

Made Ground shallow (1.0 m) to moderate (<2.5 m) depths, likely comprised of engineering materials and possible demolition arisings from the former school.

Head deposits characterised by '*poorly sorted and poorly stratified angular rock debris and clayey hillwash and soil creep... locally with lenses of silt, clay or peat and organic material*' (**M3**). Locally these deposits include; clayey sand with gravel and boulders and very sandy clay.

Bedrock of the Pennine Lower Coal Measures characterised by '*sandstone interbedded with mudstone and siltstone with sub-ordinate seatearth, ironstone, marine bands and coal*'. Locally to the Site the bedrock is recorded dipping at a shallow angle (2.6 to 6 °) in a generalised easterly direction (bearing 79 to 117) (Figure 3; **M1**; **M3**) however faulting is present locally that may alter this.

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The structural geology locally to the Site is relatively simple with the faulting referenced above and located around 150 m north of the Site being the main features locally to the Site.

The plotting of geological and mining features within Figure 4 and 5 has been governed by the Coal Authority mining data (that is often more accurate than the British Geological Survey data, Figure 3) using data from the Coal Authority's online interactive mapping tool (M1).

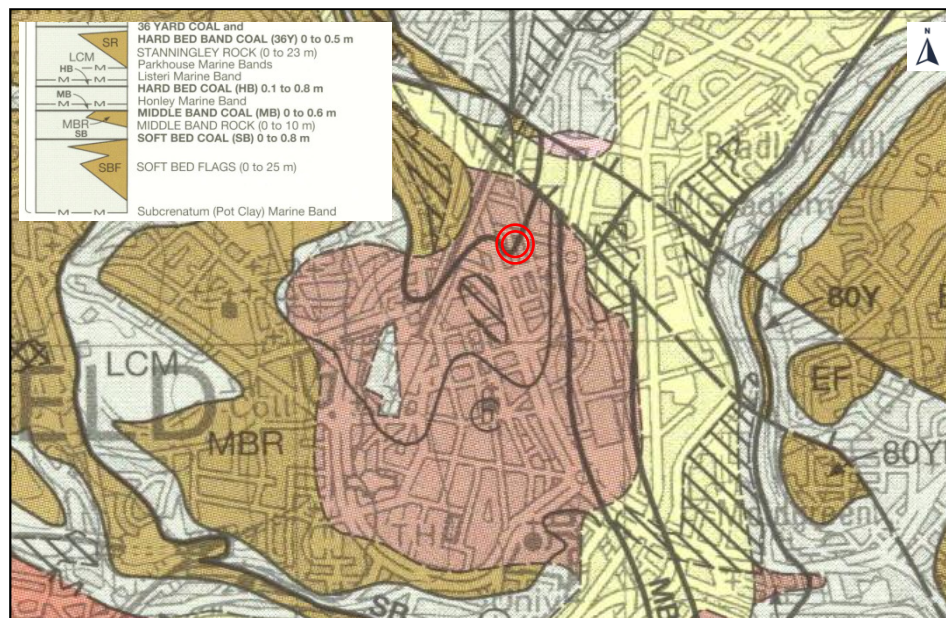


Figure 3: Geology of site and wider area

- > Extracted from the BGS 1:50,000 map for Huddersfield (Sheet 77) Solid and Drift Edition, under open government licence.
- > Site identified by red circle.
- > Insert: vertical aeoloical section from BGS mappina.

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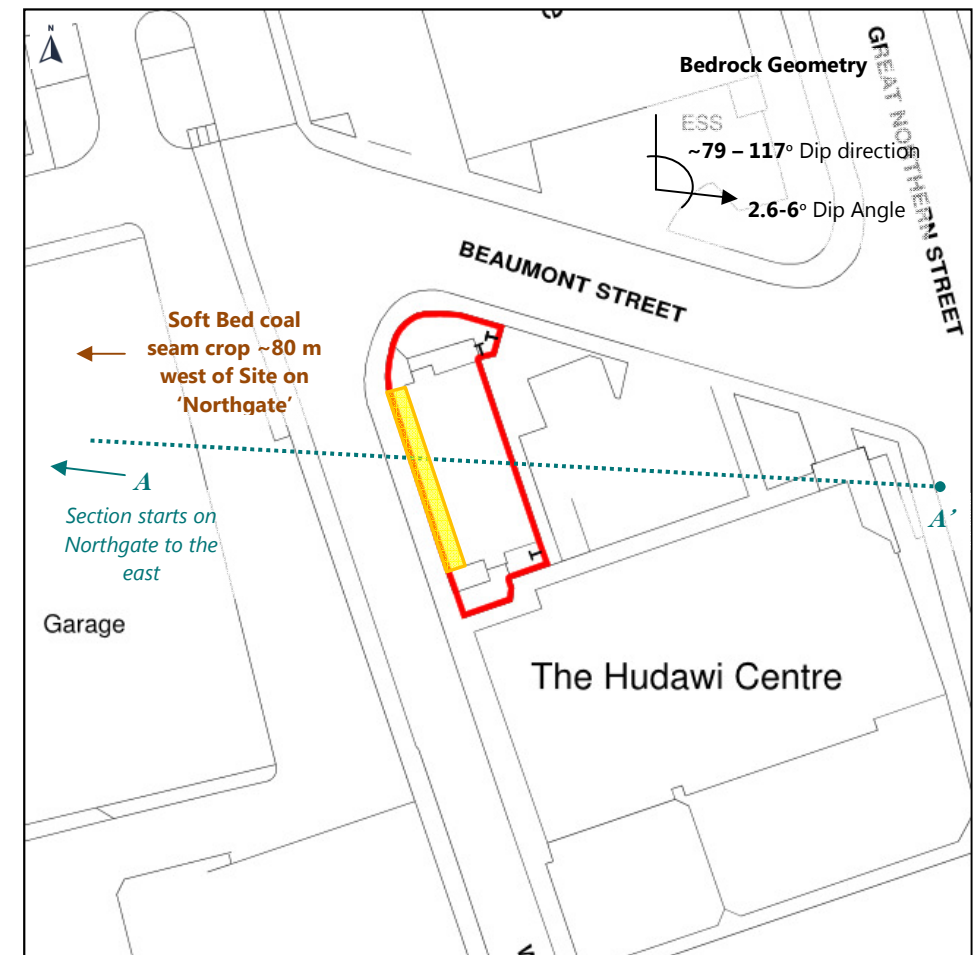


Figure 4: Geology of site and immediate area

- > Extract from appended Kirklees drawing ref. 'Strategic Assets'.
- > Coal or coal-related crops (where the seam appears in bedrock surface)
- > Section line A-A' relates to dip-aligned ground model (Figure 5).

2.3 Mining Geology and Mine Workings

Beneath the Site there are various mineral resources that had the potential to be extracted historically.

Of these mineral resources, those significant to the development include (in descending order within the geological sequence / depth from surface):

- > **The Soft Bed (SB) coal seam** (0.00 to 0.80 m thick) is recorded 'cropping' (present in bedrock surface) beneath the Site within BGS geological mapping (Figure 3) but, with reference to the historic borehole records and Coal Authority data, is likely to be cropping further east, likely as indicated on the Coal Authority interactive mapping (**M1**; Figure 4).

Based on this presentation and accounting for the depth to bedrock locally (likely around 10 m below ground level on Site and around the seam outcrop), the Soft Bed coal seam is expected to underlie the Site at a depth of around 14.75 m below ground level. The lack of recorded coal seams within the 60.9 m deep borehole to the north of the Site may indicate either unrecorded workings or the action of local faulting.

The Soft Bed is a low-sulphur coking coal that was mined historically across West Yorkshire (**M4**).

There is no direct evidence of this seam or local workings within this seam beneath the Site however mine workings that targeted this seam are recorded 250 m north of the Site. Given its relative position to the Site and proposed development, whilst unlikely, if unrecorded mine workings are present these are considered to be out-bound of Site and presenting an overall low risk of surface instability on Site.

- > **Subcrenatum (Pot Clay) Marine Band** (2.30 to 3.00 m thick including 'fireclay') is likely to underlie the Site (and proposed development) at depths of around > 50.00 m below ground level based on BGS mapping (Figure 3).

The Subcrenatum Marine Band rests at (and defines) the boundary between the Pennine Lower Coal Measures and Millstone Grit Group.

Whilst it was historically mined within West Yorkshire for either coal or fireclay, it is generally a low quality resource that is unlikely to have been mined beneath the Site. The presence of much better quality and easily extractable coal and fireclay deposits to the east of the Site (where workings are recorded) are much more likely to have been selected for extraction.

Notwithstanding the above, at the depths recorded, if and where mine workings were present, they are considered unlikely to present a risk of surface instability and are therefore not considered further.

- > **Opencast methods** are not evidenced or recorded on Site (**M1**).
- > **Very old / simple mining methods** may be present where shallow seams of coal and other coal-related minerals are recorded. Shallow mining is not suggested to have taken place in the local area with no clusters of mine shafts (**M1**) indicated locally. The depth of superficial soils would have made it a less viable to adopt these methods locally with the proximity to the valley bottom making groundwater ingress another likely constraint.
- > **Non coal mine workings** could, in theory, include sandstone (Soft Bed Flags, SBFs) however, underground mining of the SBFs is considered unlikely here.
- > **Mining records** including the Coal Authority's online interactive mapping and British Geological Survey of non-coal mining records do not record underground workings beneath the Site.

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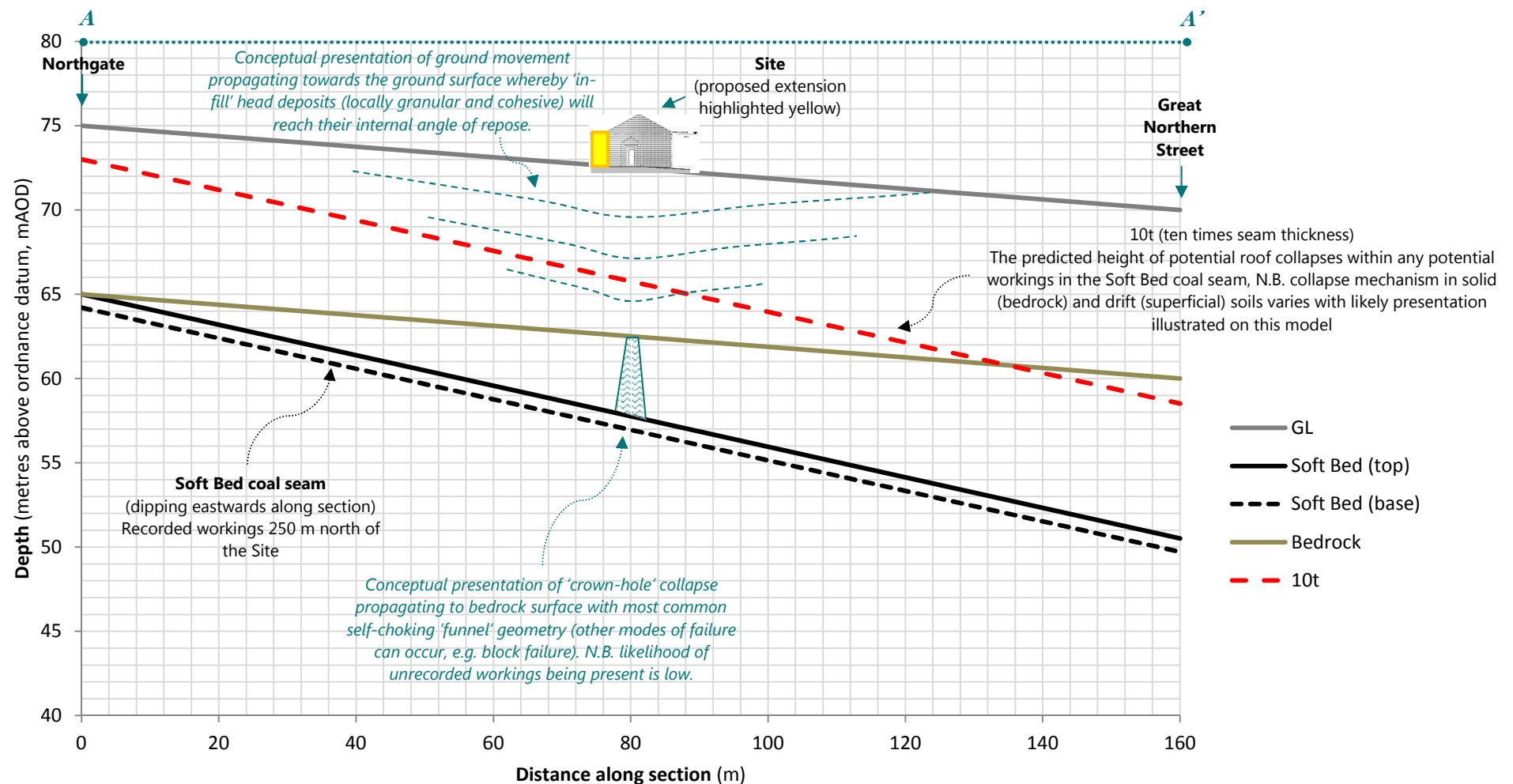


Figure 5: Preliminary ground model – Section Line A-A'

> Section line orientation illustrated on Figure 4.

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3.0 Hazard Screen and Preliminary Risk Assessment

The **Hazard Screen** (Table 1 and 2) is first stage of risk management – establishing whether a hazard exists (that could present a risk). These hazards cover seven main categories further detail on which is presented in Annex 2.

Preliminary Risk Assessment (Table 3) is the second stage of risk management – establishing if the risk presented by the identified hazard is acceptable or not and, if not, what action is required to either further assess or reduce this risk. This assessment adopts the risk ratings and classifications of CIRIA C552 (G2). Referencing ‘background threat’ (Annex 2) as part of the Preliminary Risk Assessment is intended to support transparency; offering further detail on the hazards as well as an indication of the relative threats they pose.

Figure 6 illustrates the sequential stages of risk management.

Lines of evidence are used across both stages to inform the assessment. These lines of evidence relate to both the Site itself, the inherent hazards in the ground, and also the proposed development. For example, an outcropping coal seam may be present on Site but if development isn’t planned over this area then, whilst a hazard, the risk is likely be acceptably low.

Unexpected encounters can arise even where lines of evidence indicate a hazard is not present, these will need to be responded to in a safe and appropriate manner. The appointed Contractor is advised to have in place response plans. Outline advice on these is given in the following tables.

The following tables (Table 1, 2 and 3) are intended to feed into the project **risk register** and to inform Construction Phase Plans for follow-on works.

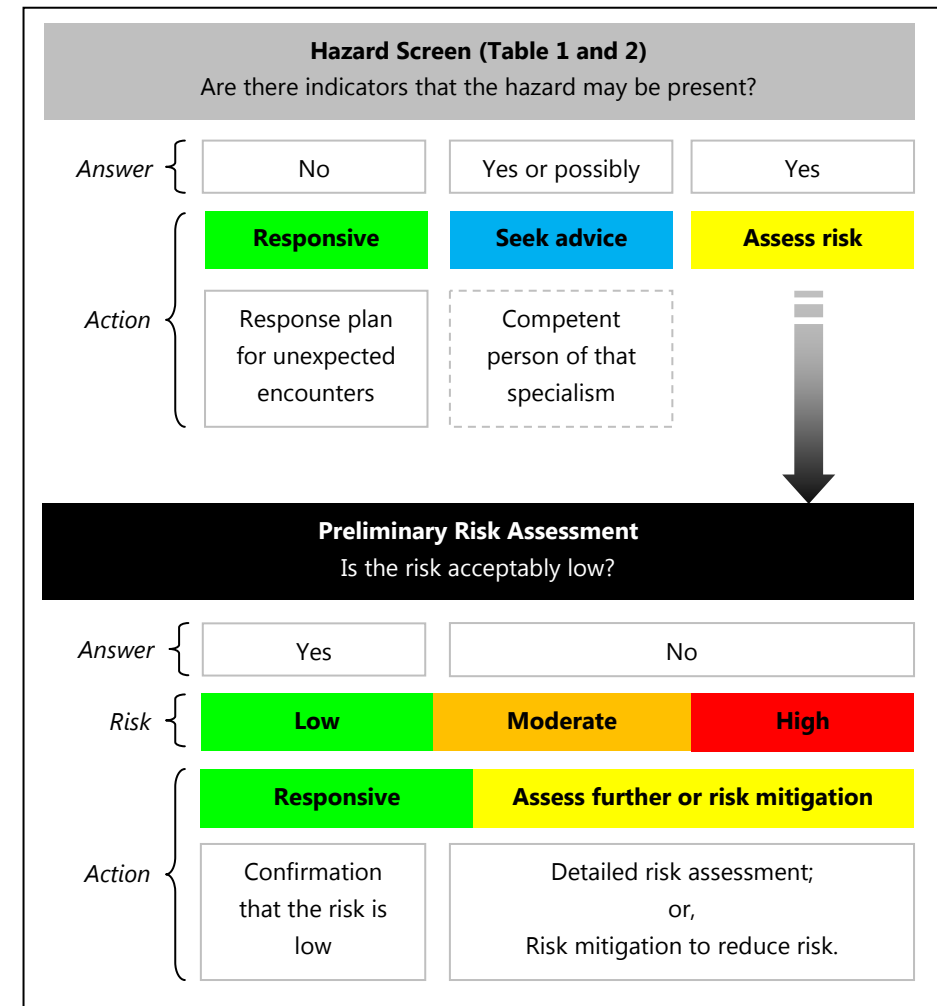


Figure 6: Decision making flowchart for risk management

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Table 1: Hazard Screen

	Indicators?	Commentary		Action
Mining Hazards				
Mine entries	No	None recorded on Site (Section 2.0)	>	Responsive
Mine workings (shallow)	No	No workings recorded within 30 m of Site surface. (Section 2.0)	>	Responsive
Mine workings (probable)	Yes	Presence of unrecorded workings locally is likely. (Section 2.0; Figure 5)	>	Assess risk
Mine workings (surface)	No	None recorded on Site. (Section 2.0)	>	Responsive
Mine gas sites and areas	Yes	Unrecorded workings locally are probable, mine gases a potential hazard. (Section 2.1)	>	Assess risk
Coal outcrops and sub-crops	No	No coal seams recorded cropping beneath the Site. (Section 2.1)	>	Responsive
Geological features	No	No faults recorded on Site or within 50 m. (Figure 3)	>	Responsive

Table 2: Hazard Screen – Action Summary

	Action	Outline detail of action (where 'responsive' action is recommended, confirm the suitability of response plan with the Engineer)
Mining Hazards		
Mine entries	Responsive	Notify Engineer of any evidence of circular or square changes of ground conditions (colour, composition, 'softness')
Mine workings (shallow)	Responsive	Notify Engineer of any evidence of marked changes of ground conditions (colour, composition, 'softness')
Mine workings (probable)	Assess risk	Refer to Table 3
Mine workings (surface)	Responsive	Notify Engineer of any evidence of marked changes of ground conditions (colour, composition, 'softness')
Mine gas sites and areas	Assess risk	Refer to Table 3
Coal outcrops and sub-crops	Responsive	Notify Engineer of any evidence of coal deposits in bedrock
Geological features	Responsive	Bedrock 'deep' locally and therefore unlikely to be encountered – whilst unlikely, if piling foundations refer Engineer to this report

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Table 3: Preliminary Risk Assessment

		Background Threat	Consequence	Likelihood	Risk	Action	
Mining Risks							
Mineworkings (probable)	Moderate	>	Medium <i>Harm:</i> falls into open or partially open crown-hole features, burial and crushing (low background threat)	Unlikely One coal seam is recorded beneath the Site that may be considered to be within influencing distance of the surface. The Soft Bed (BB) coal seam is the shallowest seam beneath the Site and is predicted to lie at depth of around c. 14.5 m below the surface based on the coal seam projection (Figure 5 and appended calculation sheet). This depth is considered likely to be conservative, i.e. the seam may be deeper. This seam was worked / mined historically within the local area with the extent of recorded workings ceasing around 250 m north of the Site. Working may have extended further south, towards the Site with local evidence of unrecorded mine workings in the Soft Bed coal seam (much further west, towards the outcrop of the coal seam). The lack of coal or evidence of workings in the 60.9 m deep borehole immediately south of the workings extent (250 m north of the Site) is suggestive of either the action of faulting or the historic log not reliably recording the present of historic workings. Whilst unrecorded coal mine workings may underlie the Site overall it is considered a low likelihood. Whilst their presence is considered a low likelihood, based on a ‘worst case’ seam thickness, it is likely that any potential collapses within unrecorded mine workings within the Soft Bed coal seam would result in ground movement at the surface of the Site. It is however noted that ground movement, if it were to occur, is likely to express as a widespread subsidence feature rather than a localised feature on Site, e.g. crown-hole collapse (Figure 5). This presentation would be primarily guided by the variable nature and variable strength superficial soils underlying the Site. Any ground movement is expected to impact a wider area and therefore considered Unlikely to; a) be clearly attributed to a collapse within potential workings directly beneath the site and, b) affect the Site in a discrete manner. The small scale of the proposed development, likely shallow nature of any groundworks and lack of historic subsidence claims within (50 m) also feed into this assessment.	Low	>	Responsive If any evidence of ground movement, e.g. very loose soils or partially voided soils is encountered, then the advice of a suitably qualified Engineer should be sought. Whilst considered unlikely, if any deep foundations are proposed, e.g. piles, then further assessment and additional investigation are likely to be recommended. Whilst not specifically recommended the provision of top and bottom reinforcement to new footings (or rafting) and dowelling in of new and old footings will offer inherent protection.
			<i>Other impacts:</i> Rapid and large ground movement with accompanying distortion / damage of structures or void presentation at surface (crownhole).				

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Table 3: Preliminary Risk Assessment, continued

	Background Threat	Consequence	Likelihood	Risk	Action
Mining Risks					
Mineworkings (probable), continued from previous page	Moderate	> As above	Note on the rule-of-thumb: This rule-of-thumb (10t) is considered appropriate in this geological setting with no obvious indicators prompting increasing this ratio (G1). It is acknowledged that there is the potential for pillar failure to occur that could result in more widespread and significant ground movement to occur. However, the background threat of this failure mechanism is considered relatively low compared to localised crownhole formation that result from progressive roof collapse between pillars of intact coal (left in for support).	Low	> As above

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Table 3: Preliminary Risk Assessment, continued

	Background Threat	Consequence	Likelihood	Risk	Action
Mining Risks					
Mine gas sites and areas	High	Severe <i>Harm:</i> ingress and accumulation of asphyxiant, toxic or explosive gases into occupied spaces. <i>Other potential impacts:</i> damage to structures and sub-structures.	Unlikely The Soft Bed (BB) coal seam is the shallowest seam beneath the Site and is predicted to lie at depth of around c. 14.5 m below the surface based on the coal seam projection (Figure 5 and appended calculation sheet). This depth is considered likely to be conservative, i.e. the seam may be deeper. This seam was worked / mined historically within the local area with the extent of recorded workings ceasing around 250 m north of the Site (no coal or evidence of workings in the 60.9 m deep borehole immediately south of the workings extent). Working may have extended further south, towards the Site with local evidence of unrecorded mine workings in the Soft Bed coal seam (much further west, towards the outcrop of the coal seam). Whilst unrecorded coal mine workings may underlie the Site overall it is considered a low likelihood. These historic workings are likely to be fully flooded at this topographical elevation and therefore are therefore less likely to be stores of gases emitted from the exposed coal seam faces. Even if not flooded, without external influences, e.g. borehole drilling, this mine gases will be in a state of equilibrium with emissions below ground and degassing at the surface due to 'barometric pumping' (changes in air pressure) amongst other factors. The potential for mine gases to be emitted at the surface of a given plot of land is governed by viable pathways. Head deposits (recorded on Site) will offer highly variable permeabilities through which gas may pass. Similarly, fractured rock will allow gases to migrate through them but generally in a tortuous or diffuse manner. More viable, direct pathways include mine entries, boreholes and faults. On this Site, potential pathways for mine gas to be emitted at the surface are limited. Historic mine gas incidents have generally been linked to mine entries and boreholes that serve as open pathways for gases to travel to the surface and therefore, the potential for mine gases to be emitted beneath the proposed property is considered Unlikely.	Moderate / Low The lowest rating for a potentially 'severe' hazard	Responsive If any bubbling groundwater or odours are noted within excavations, then the advice of a suitably qualified Engineer should be sought

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4.0 Conclusion and Recommendations

Based on the available information the Site's mining legacy is considered to be well-characterised (within the scope of this reporting) and whilst unforeseen conditions always remain possible, e.g. unrecorded mine entries, these are considered unlikely.

In conclusion, the Coal Mining Risk Assessment finds that;

- > The risk rating of the Site is assessed as Moderate to Low at worst but generally Low or no hazards identified.
- > No further assessment is recommended.
- > No risk mitigation is recommended.

Recommended follow-on work includes:

1. **Review of risk register** (Table 1, 2 and 3) presented herein;
2. **Submission of the Coal Mining Risk Assessment** to the local planning authority and the project design team;
3. **Response plans** for hazards that are not indicated to be present but may nonetheless be unexpectedly encountered. The appointed Contractor is advised to have in place plans for dealing with such occurrences. Outline advice is given in Table 2.

Subject to the revealed ground conditions and foundation recommendations, the provision of top and bottom reinforcement to any new strip footings (if not rafted) is suggested together with adequate dowelling into existing footings.

Cross-referencing these recommendations with those of any other ground-related reporting is also recommended.

5.0 References

General guidance

G1: CIRIA Report C758 *Abandoned Mine Workings Manual* (2019)

G2: CIRIA Report C552 *Contaminated land risk assessment - a guide to good practice* (2001)

Site Specific and Mining-Related references

M1: <http://mapapps2.bgs.ac.uk/coalauthority/home.html> accessed 01/04/2021

M2: <https://www.bgs.ac.uk/Lexicon/> accessed 01/04/2021

M3: BGS 1:50,000 Mapping (Sheet 77 - Huddersfield).

M4: <https://selbycoalfield.home.blog/2019/12/25/geology/> accessed 01/04/2021

Context

The purpose of site investigation is to reduce uncertainty in the ground.

For all site investigations the [legal imperative for reducing uncertainty](#) is primarily governed by health and safety law; identifying hazards and, where present, limiting their potential for harm. In addition, the reduction of uncertainty also applies to: various environmental laws (relating to the prevention of pollution and harm); as well as, the commercial risk of potential abnormal groundwork costs.

Current [UK planning policy](#), the National Planning Policy Framework (NPPF)¹, makes reference to the need to ensure that *'a site is suitable for its proposed use taking into account of ground conditions and any risks arising from land instability and contamination'* (Paragraph 178). The NPPF also makes reference to the need to adopt Mineral Safeguarding Areas (Paragraph 204).

In practice, this policy is implemented through planning conditions. Where applied, these conditions compel the developer to demonstrate the site is ['suitable for its proposed use'](#) with respect to contamination and, in former mining areas, with respect to stability. Within Mineral Safeguarding Areas, planning conditions may also compel the developer to evaluate the viability of prior-extraction of a mineral before a development 'sterilises' the ground.

The assessment of other ground-related hazards, e.g. slope stability or collapsible soils, is typically not conditioned (unless a specific hazard locally) but rather an inherent part of the engineering design.

Scope

The first stage of a 'coal mining site investigation' is invariably a desk-based exercise and can either be part of a broader-focused Desk Study or, more commonly, a standalone report; the Coal Mining Risk Assessment. The scope of this first stage includes both: i) an assessment of coal and non-coal mining related risk; as well as, ii) preliminary advice relating to ground engineering that may be influenced by coal and non-coal mining hazards.

The [assessment of risk](#) is guided by a series of international standards including ISO 31000:2018² 'Risk Management – Guidelines'. The Coal Mining Risk Assessment is developed with reference to this guidance and other additional UK and sector-specific guidance that includes; the Construction (Design and Management) Regulations (2015)³ and, the Coal Authority's online guidance⁴.

The [preliminary advice relating to ground engineering](#) covers three engineering disciplines; structural, civil and mechanical. The inclusion of this advice is designed to offer practical advice and, alongside a description of the development design earlier in the Coal Mining Risk Assessment, a fuller picture of the likely changes that the site's ground will undergo. This feeds into the risk assessment with the groundworks invariably changing a site's risk profile.

The [value of a desk-based Coal Mining Risk Assessment](#) is in the early identification and assessment of mining hazards. A well-undertaken Coal Mining Risk Assessment is the most cost-effective way to reduce uncertainty.

¹

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

² <https://www.iso.org/iso-31000-risk-management.html>

³ <http://www.hse.gov.uk/construction/cdm/2015/index.htm>

⁴ <https://www.gov.uk/guidance/planning-applications-coal-mining-risk-assessments>

Annex

Context and Scope of the Coal Mining Risk Assessment

Risk is rated with respect to the routine detailed within *CIRIA C552 – Contaminated Land Risk Assessment; a guide to good practice (2001)*.

The following tables are adapted from CIRIA C552 and serve as the routine by which risk is assessed within the Report and the corresponding definitions of the different classifications.

Risk is assessed with respect to the condition of the Site at the point of issue that can therefore be subject to change over time.

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		Consequence			
		Severe	Medium	Mild	Minor
Likelihood	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

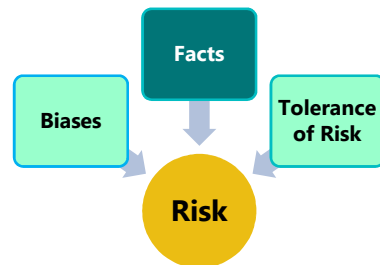
Very High	- There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. - This risk, if realised, is likely to result in a substantial liability. - Urgent investigation (if not already undertaken) and risk mitigation is likely to be required.
High	- Harm is likely to arise to a designated receptor from an identified hazard. - Realisation of the risk is likely to present a substantial liability. - Urgent investigation (if not already undertaken) is required and risk mitigation may be necessary in the short term and is likely to be required over the longer term.
Moderate	- It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that such harm would be severe, or if any harm were to occur, it is more likely that the harm would be relatively mild. - Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some and risk mitigation may be necessary in the longer term.
Low	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would be mild at worst.
Very Low	There is a low probability that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.

Background Threat and Risk for Coal Mining Hazards

This annex offers further reading and background information relating to the referencing of 'background threat' within the risk assessment process.

Introduction

Risk is an inherent part of all decisions and everyone has an appreciation of risk. How risk is assessed by both individuals and organisations is guided by three main influences; facts, biases and tolerance of risk.



Acknowledgement of this interplay is important given that, as well as informing the assessment; it also informs the response to risk – the practical outcome of the theoretical process. To support greater ownership of the assessment and any recommended actions, risk assessments should therefore aim to be; clear, proportionate and transparent (evidence-based).

Risk Assessment Influences

Biases: There are many types of biases that affect decisions or judgements including: i) *commercial bias*; does a given risk rating confer commercial opportunities or benefits on the person undertaking the assessment?; or, ii) *confirmation bias*; has the assessor not encountered any problems in similar scenarios and therefore generalised or under-assessed the risk rating.

Facts: The most important and ideally, guiding factor for the assessment of risk. Facts need to be evidenced clearly and assessed by a competent person¹.

Tolerance of Risk²: Is informed by both societal and individual factors. Societal factors may include: is the hazard acceptable at all, e.g. locating nuclear power stations within urban areas; or, balancing scientific and technological advances with possible burdens to society and the economy. An example of this for coal mining hazards are recent mine gas and mine instability incidents that will temporarily influence tolerances of risk. Individual factors may include: how a given risk affects them, their family and their values; or, accepting a higher risk for a greater reward.

Background Threat

Referencing 'background threat' as part of the Coal Mining Risk Assessment is intended to offer further detail on the hazards as well as an indication of the relative threats they pose. This aims to support; clarity, transparency and proportionality and help the reader better contextualise the risk and through this, have greater ownership of the risk and any recommended actions.

Within the following tables, details on plausible routes or 'exposure pathways' by which a hazard may result in harm or other outcomes are detailed together with commentary on the assigned 'background threat' levels. The rating of 'background threat' is traffic-lighted between; high, moderate and low, with the nuances of the rating drawn more fully out within the commentary provided.

¹ <http://www.legislation.gov.uk/ukxi/2015/51/contents>

² <http://www.hse.gov.uk/risk/theory/r2p2.pdf>

Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks		
Mine entries <i>Includes: mine shafts (vertical), adits (off-horizontal) and bell-pits that are characterised by voided or partially voided ground.</i>	High	Harm: falls from height, burial and crushing; and, ingress and accumulation of asphyxiant, toxic or explosive gases into occupied spaces. Other impacts: no-build zones; time-delays; and, damage to plant, structures and sub-structures. Aggregated incident data for harm and other impacts is not readily available however whilst considered a low likelihood, there are recent examples of mine-entries resulting in harm³ and possible harm⁴. Other impacts are likely to be frequent though generally non-reportable (some exceptions⁵⁶) as they're dealt with through the development process, e.g. mine entry filling, capping and no-build zones. The very rapidly developing nature of the hazard means that it does have an innate threat. Mine entries can occur anywhere throughout the UK where underground mineral extraction took place. Public perception of the threat 'mine shafts' pose is high⁷ given its perceived threat. Harm: With confirmed and possible links to recent injuries and fatalities, the threat of harm is considered high. Other impacts: With potentially large time and cost implications (on a site-by-site basis) for responding reactively to the adverse affects of collapsible soils the threat of other impacts is also considered high.

³ <https://www.scotcourts.gov.uk/search-judgments/judgment?id=eca78aa6-8980-69d2-b500-ff0000d74aa7>

⁴ <https://www.birminghammail.co.uk/news/local-news/couple-were-killed-by-fumes-from-old-27517> (possible unrecorded mine entry permitting mine gas emissions)

⁵ <https://www.manchestereveningnews.co.uk/news/local-news/two-middleton-bungalows-built-over-7644082>

⁶ <https://www.gov.uk/government/news/coal-authority-completes-works-to-secure-gosforth-mineshaft>

⁷ <https://hansard.parliament.uk/Commons/2016-05-26/debates/16052643000001/CoalAuthority%28CompensationProcedures%29>

Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks, continued		
Mine workings (shallow) <i>Includes: recorded coal mine workings either within 50 m or 30 m of the ground surface within which collapses (via various mechanisms) may result in ground movement at the surface.</i>	Moderate	Aggregated incident data for harm and other impacts is not readily available however, overall there are a low number of recorded public or non-coal mining workforce fatalities and incidents relating to shallow mine workings. Other impacts do occur on a more frequent basis⁸ with the Coal Authority responding to and dealing with around 250 cases of coal mining related subsidence substantiated per year⁹. The rapidly developing nature of the hazard means that it does have an innate threat. Shallow mine workings can occur anywhere throughout the UK where underground mineral extraction took place. Public perception of the threat 'mine workings' pose is likely varied given its technical nature. Harm: With no known fatalities but confirmed year on year incidents and potential for harm, the threat of harm is considered moderate. Other impacts: With potentially high time and cost implications (on a site-by-site basis) for responding reactively to the adverse affects of shallow mine workings the threat of other impacts may be deemed high however, with the overall low frequency, is considered moderate.
Mine workings (probable) <i>As for shallow mine workings but 'unrecorded' either due to the lack of records.</i>	Moderate	Probable mine workings carry the same background threat as shallow mine workings (above) albeit the assessment of this hazard needing to be more in-depth given that direct records of mining activities are unlikely to exist.

⁸ <https://www.gov.uk/government/publications/coal-authority-technical-guidance-note-tgn012019>

⁹ <https://www.todaysconveyancer.co.uk/partner-news/associated-risks-with-coal-mining-subsidence/>

Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks, continued		
Mine workings (surface) <i>Includes: open cast mine workings, one common type of which is open cast coal sites (OCCS), that have been backfilled or left open.</i>	Moderate	Incident data for harm is not readily available however the generally slow developing nature of the hazard (unless via inundation that occurs under very specific conditions) means that it doesn't have an innate threat. Other impacts are recorded as case-studies within technical guidance¹⁰ that have resulted in significant remedial costs. Public perception of the threat of 'quarries' is relatively high but the perception of 'buried' open cast coal sites likely low. Harm: The slow onset of this hazard means it is more likely to be observed before a threat of harm can develop and is therefore considered low. Other impacts: With potentially large time and cost implications (on a site-by-site basis) for responding reactively to the adverse affects of surface mineworkings, the threat of other impacts is considered moderate.

¹⁰ Building on fill: geotechnical aspects 3rd edition 2015 (FB 75)

Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks, continued		
Mine gas <i>Includes: carbon dioxide (from natural degradation and underground fires); carbon monoxide (from underground fires); methane (from natural degradation); hydrogen (from fossil fuel deposits including coal); and hydrogen sulphide (from natural processes and underground fires).</i>	High Harm: ingress and accumulation of asphyxiant, toxic or explosive gases into occupied spaces. Other impacts: damage to structures and sub-structures.	Aggregated incident data for harm and other impacts is not readily available however there are recent examples of mine-gases resulting in harm¹¹¹²¹³ and possible harm¹⁴ that indicate the hazard is a present threat. Other impacts are likely to be frequent though generally non-reportable as they're dealt with through the development process, e.g. installation of gas protection. The very rapidly developing nature of the hazard means that it does have an innate threat. Mine gases can arise anywhere throughout the UK where underground mineral extraction took place with 'coal mine gases' being particularly prevalent and potent. Public perception of the threat of 'mine gas' is likely varied given the technical nature but tending to be high given the association with 'gas hazards' in general. Harm: With confirmed and possible links to recent injuries and fatalities, the threat of harm is considered high. Other impacts: With potentially large time and cost implications (on a site-by-site basis) for responding reactively to the adverse affects of mine gas the threat of other impacts is also considered high.

¹¹ <https://www.constructionnews.co.uk/archive/pipe-layers-valiant-rescue-bid-turned-to-tragedy-after-he-succumbed-to-deadly-gas-bravery-of-son-who-gave-his-life-for-dad-03-06-1999/>

¹² <https://www.birminghammail.co.uk/news/local-news/couple-were-killed-by-fumes-from-old-27517>

¹³ <https://www.bbc.co.uk/news/uk-scotland-edinburgh-east-fife-27905611>

¹⁴ <https://www.birminghammail.co.uk/news/local-news/couple-were-killed-by-fumes-from-old-27517> (possible unrecorded mine entry permitting mine gas emissions)

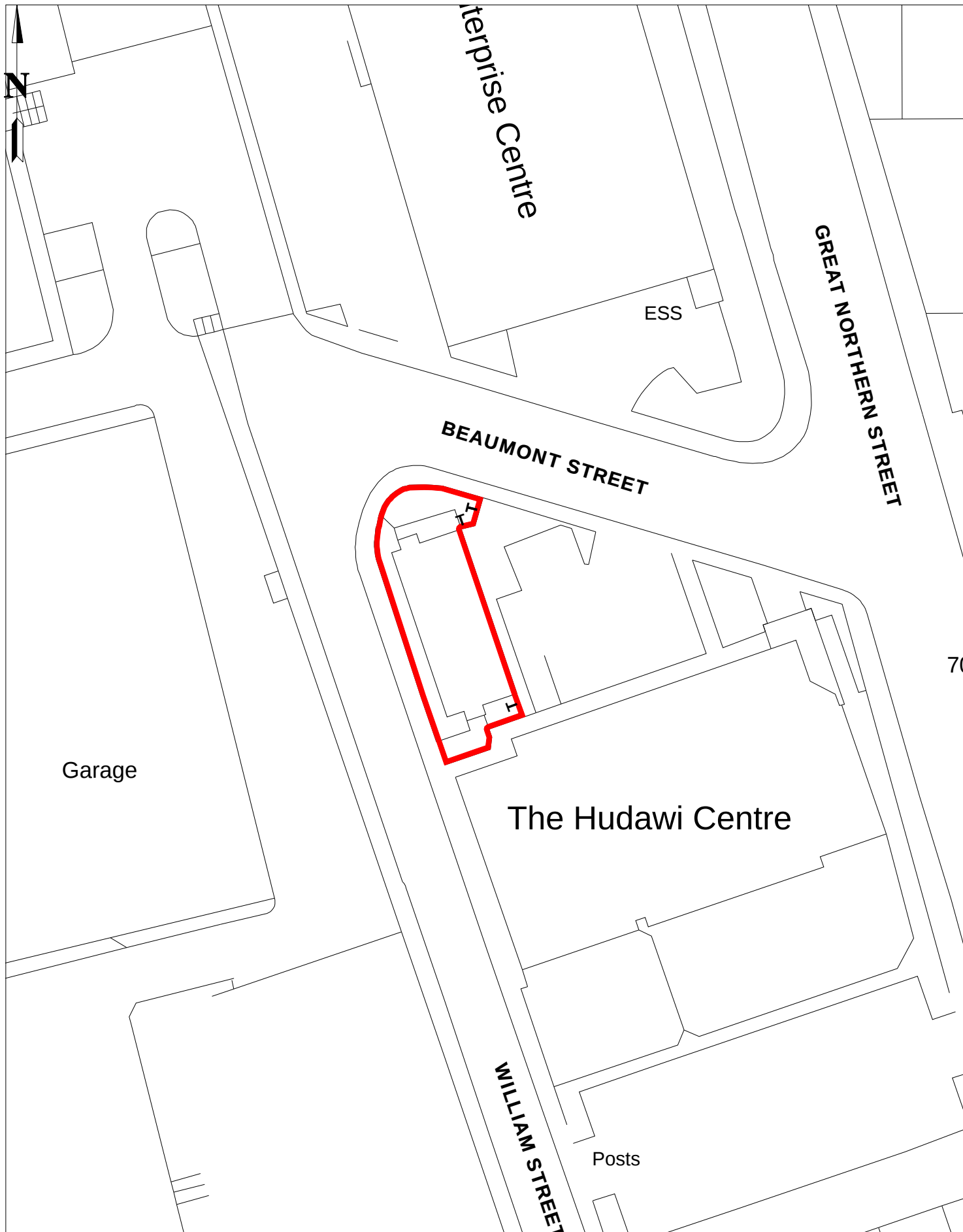
Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks, continued		
Coal outcrops <i>Includes: all mineral outcrops but with particular reference to coal with the potential for spontaneous combustion and also degradation.</i>	Moderate	Harm: explosion or emission of asphyxiant, toxic or explosive gases. Other impacts: time delays and damage to plant, structures and sub-structures. Incident data for harm and other impacts is not readily available however there are recorded instance of underground fires¹⁵ and instances of spoil heap fires (a related phenomenon)¹⁶. The rapidly developing nature of the hazard means that it does have an innate threat. Coal or mineral outcrops can occur anywhere in the UK however, given the greater threat posed by coal outcrops (potential for burning) it generally relates to the former coalfield regions. Public perception of the threat of 'coal outcrops' is likely low given the technical nature. Harm: The potentially rapidly developing nature of the hazard means the threat of harm is considered high with the relatively low likelihood of incidents reducing this to moderate. Other impacts: With potentially high time and cost implications for responding reactively to the adverse affects of coal outcrop the threat of other impacts may be deemed high however, with the overall low frequency, is considered moderate. For other impacts, basis engineering design, e.g. not founding on coal deposits, can mitigate against ground movement associated with degradation of the coal; a lesser but none-the-less important pathway.

¹⁵ <https://www.bbc.co.uk/news/uk-england-stoke-staffordshire-28244420>

¹⁶ <http://www.dmm.org.uk/news19/9370327m.htm>

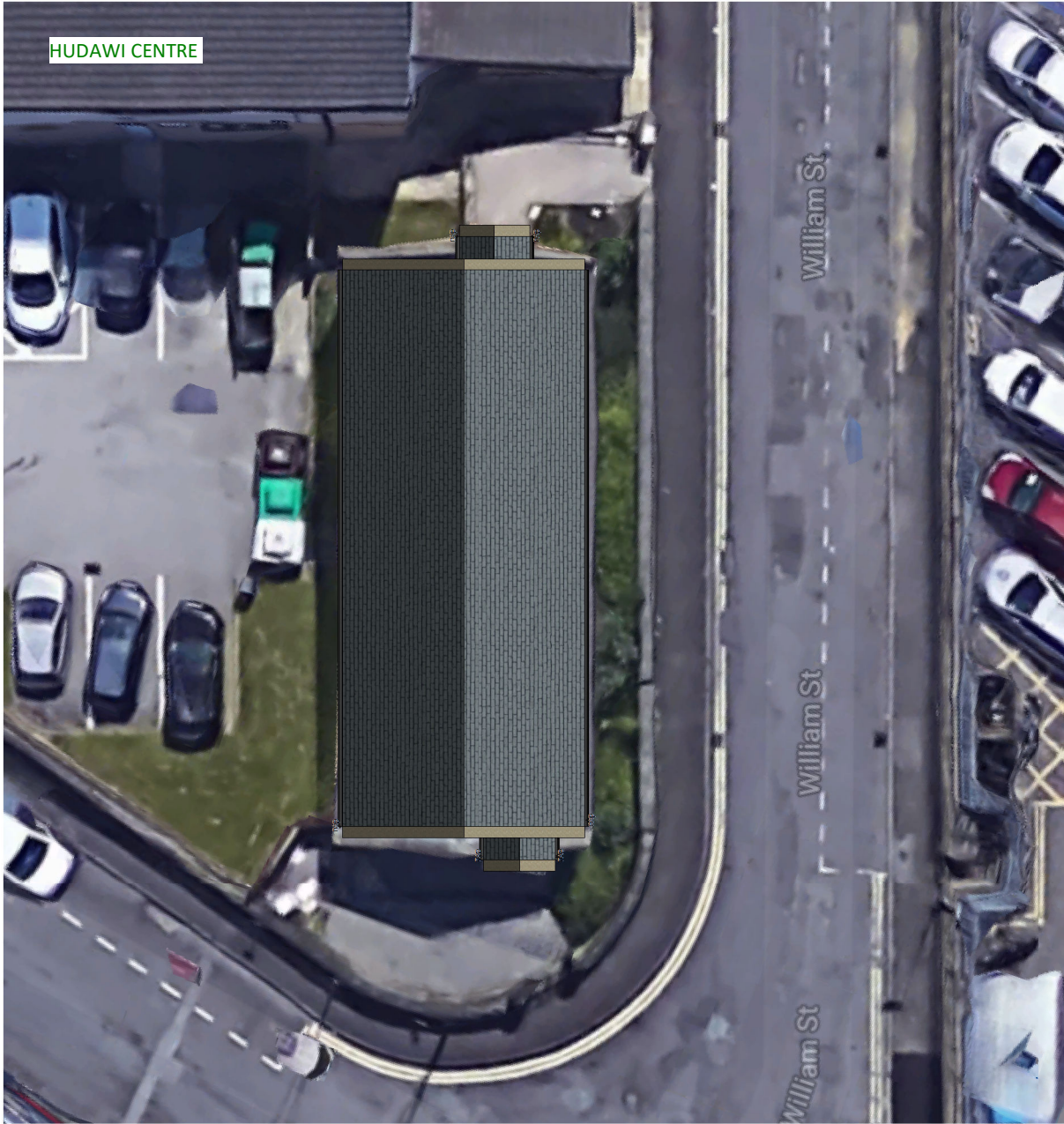
Background threat	Exposure pathway	Rationale for assigned level of threat (Incident data, public perception and general commentary on harm and other impacts)
Mining Risks, continued		
Geological features <i>Includes: faults that can be re-activated when the hydrogeological / groundwater regime changes, generally a historical hazard when deep mine pumps were stopped (primarily in coal mines) – that have largely all ceased in the UK.</i>	Low	Incident data for harm and other impacts is not readily available however nationally significant incidents have taken place that are not known to result in direct harm but significant other impacts¹⁷. However, the frequency with which this hazard manifests is considered to be low particularly in current context of very limited deep mines and actively managed / pumped closed mines. Public perception of the threat of 'faults' is likely varied given the technical nature but tending to be high given the association with seismic activity. Harm: The rapidly developing nature of the hazard means the threat of harm is considered high however the low frequency of incidents (none known to have been recorded in recent decades) reduces this to low. Other impacts: With potentially high cost implications for responding reactively to the adverse affects of geological features the threat of other impacts is considered high however the low frequency of incidents reduces this to low.

¹⁷ <https://pubs.geoscienceworld.org/qjeh/article-abstract/39/1/5/114636/A-review-of-coal-mining-induced-fault-reactivation?redirectedFrom=fulltext>



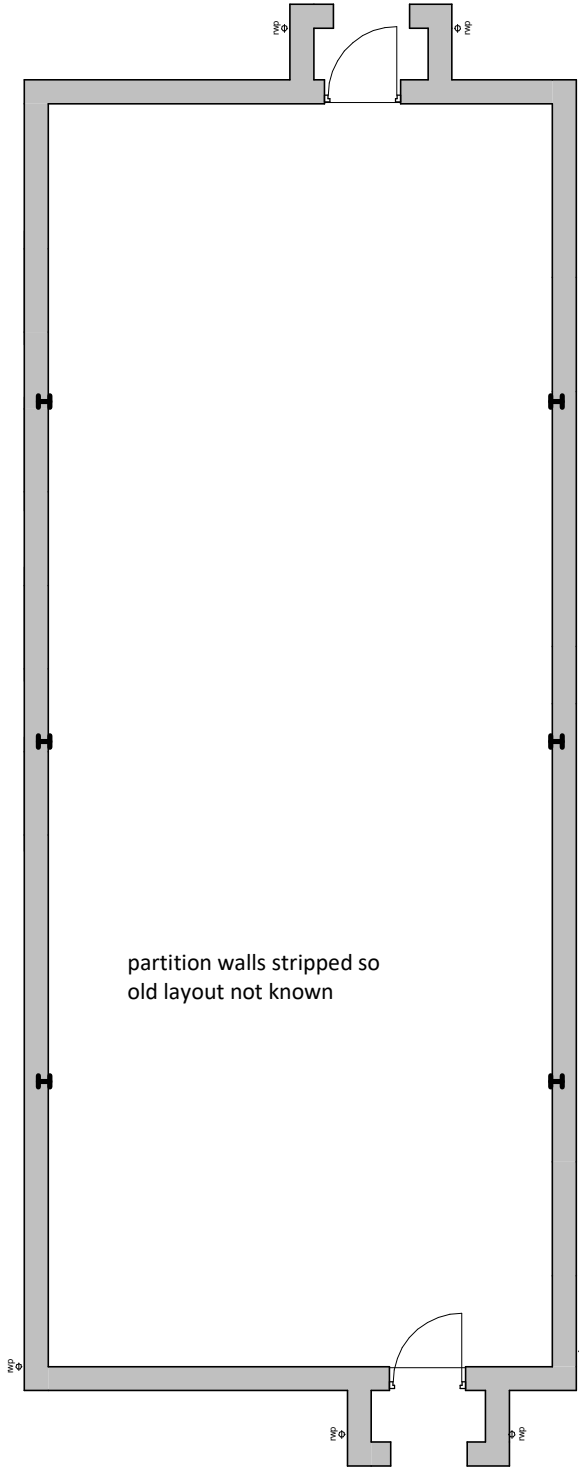
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Plan No: 19-0129
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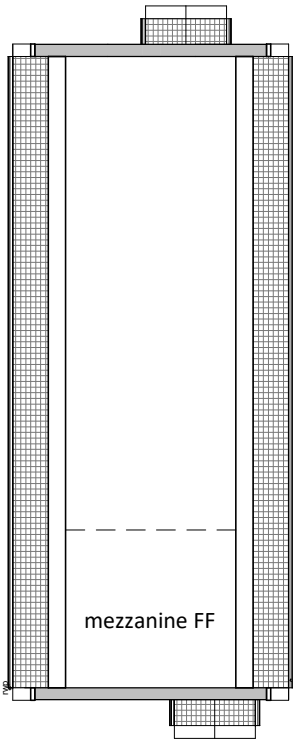
00 Site Plan - Existing

1 : 200



02a GF Existing

1 : 100



03a FF Existing

1 : 200

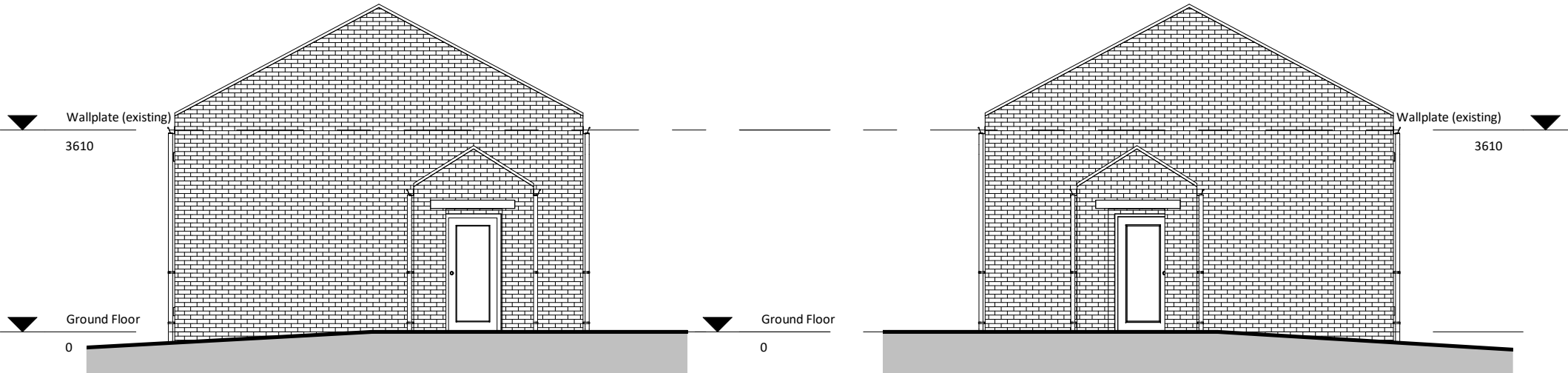
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SHEET Existing Sht 1		
CLIENT Care Counts Ltd		
Date 28.01.21	Project number J21-007	Scale (@ A3) As indicated
Drawn by bl	DRAWING NUMBER P00	REV

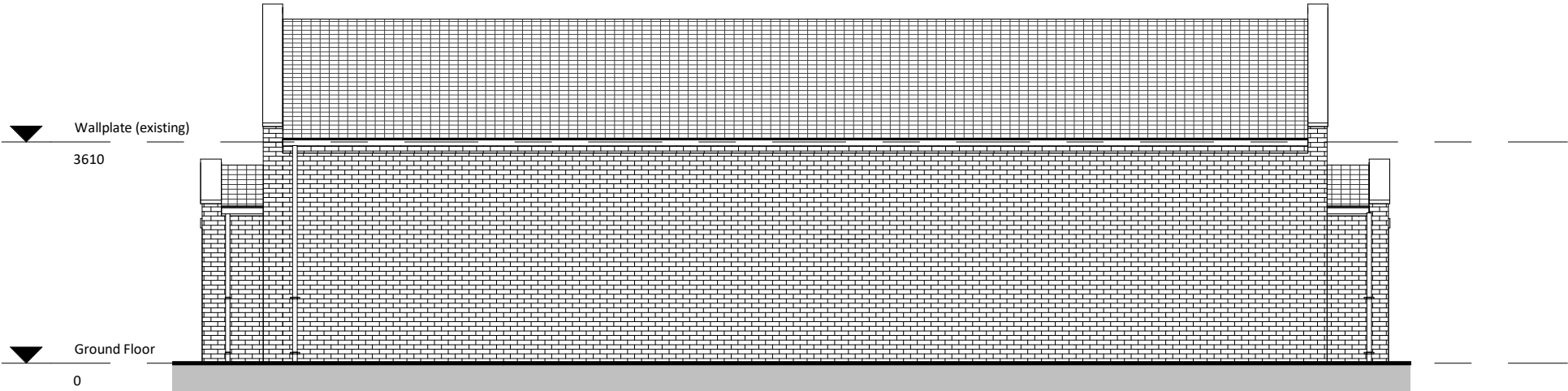
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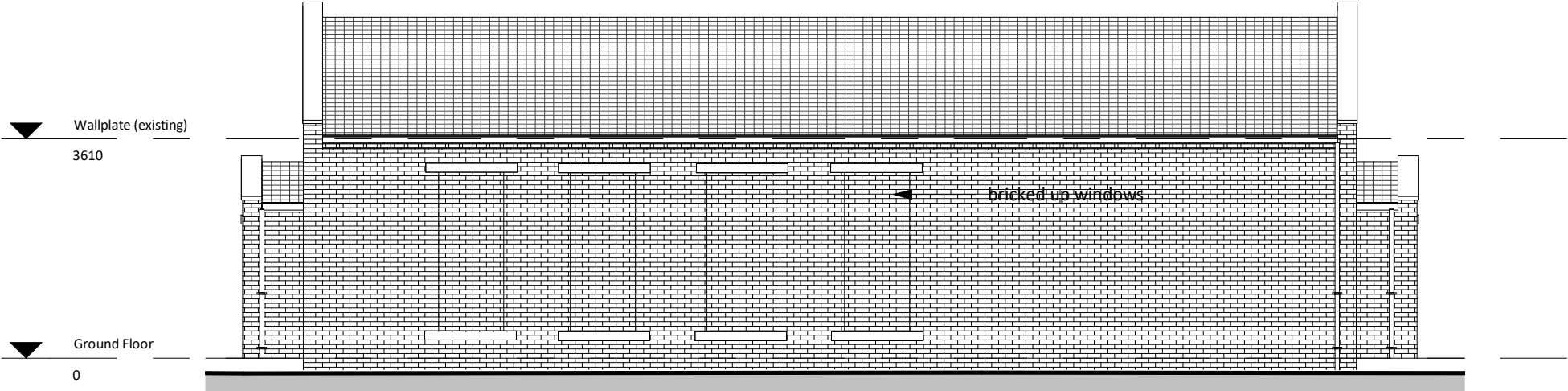


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10 Rear Existing
1 : 100

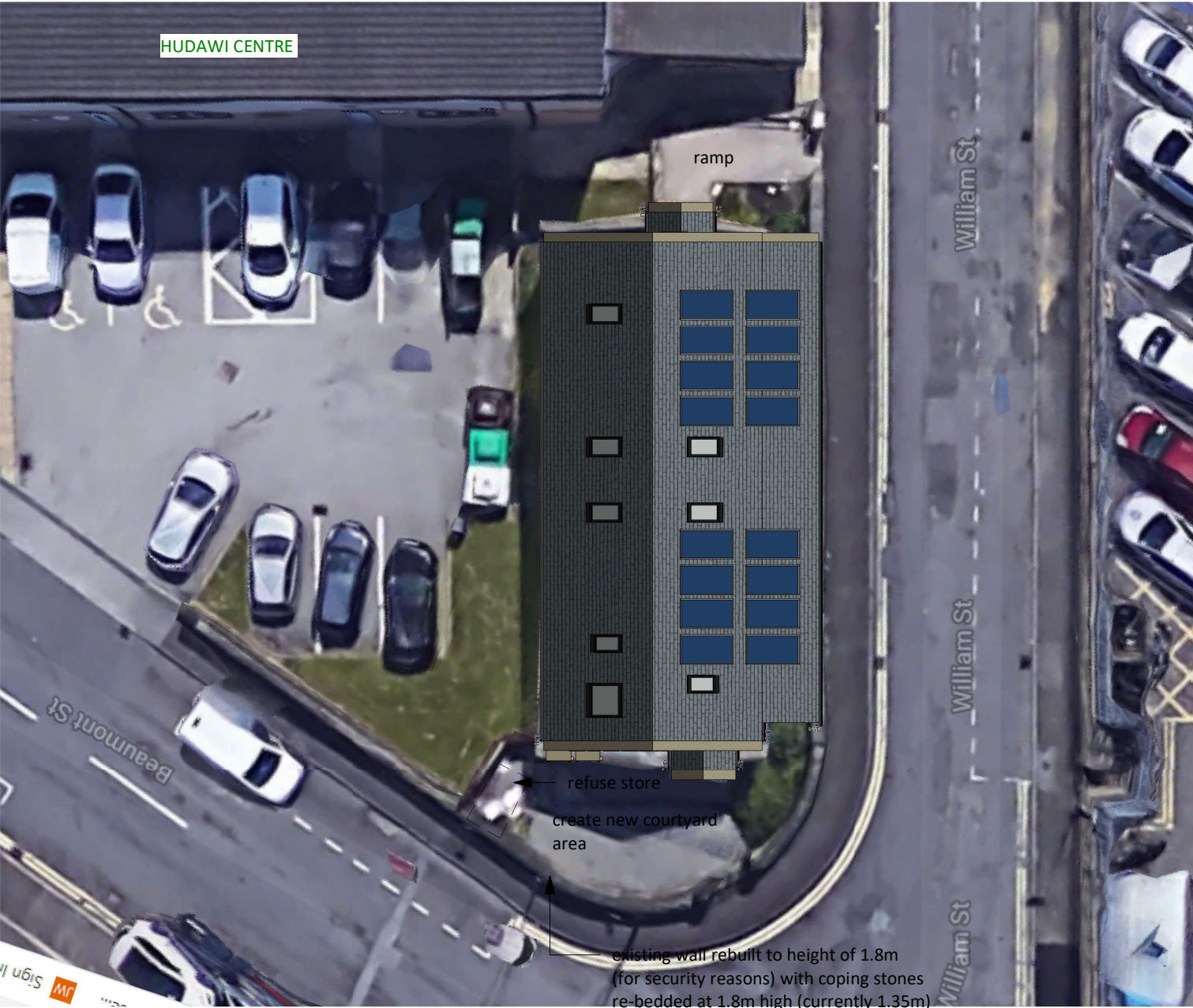


10 Side 1 Existing
1 : 100



10 Side 2 Existing
1 : 100

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00 Site Plan - Proposed
1 : 200

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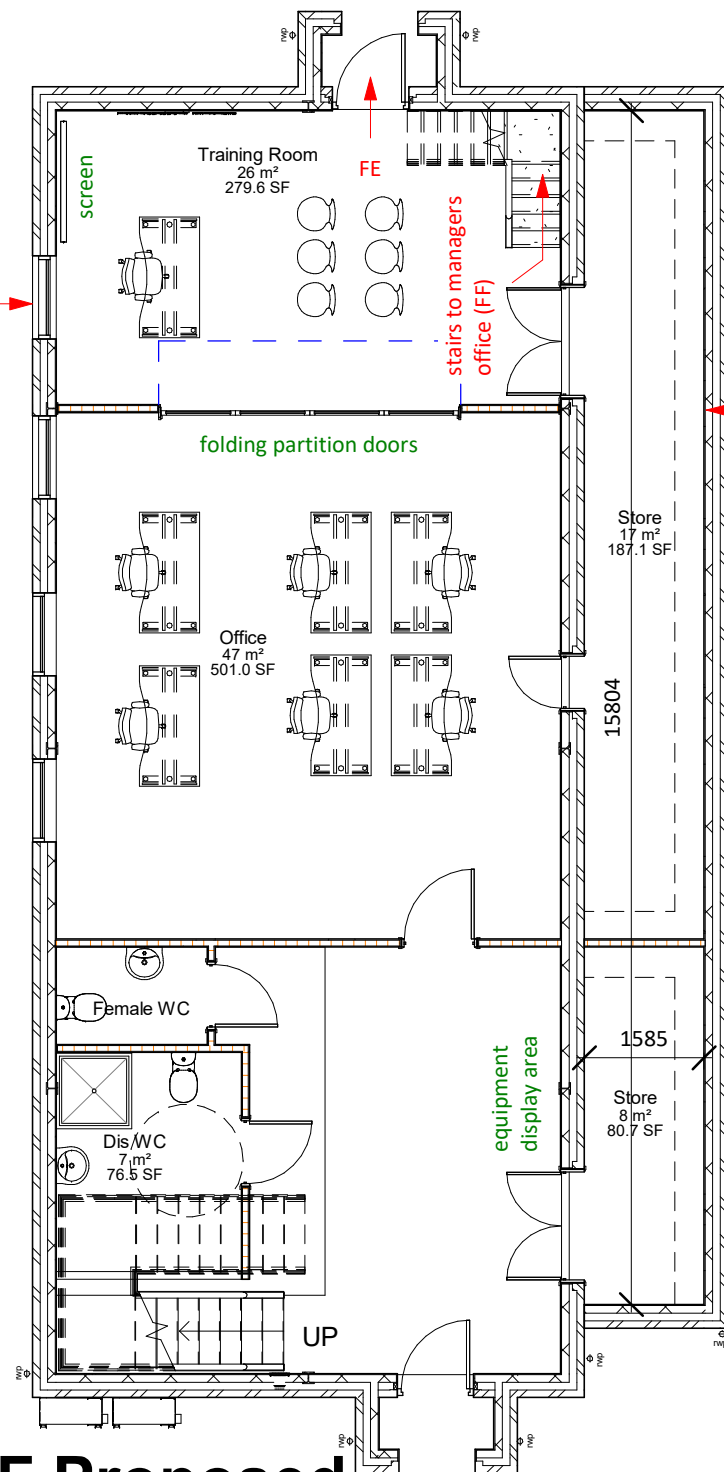
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SHEET Proposed Sheet 1		
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Date 28.01.21	Project number J21-007	Scale (@ A3) 1 : 200
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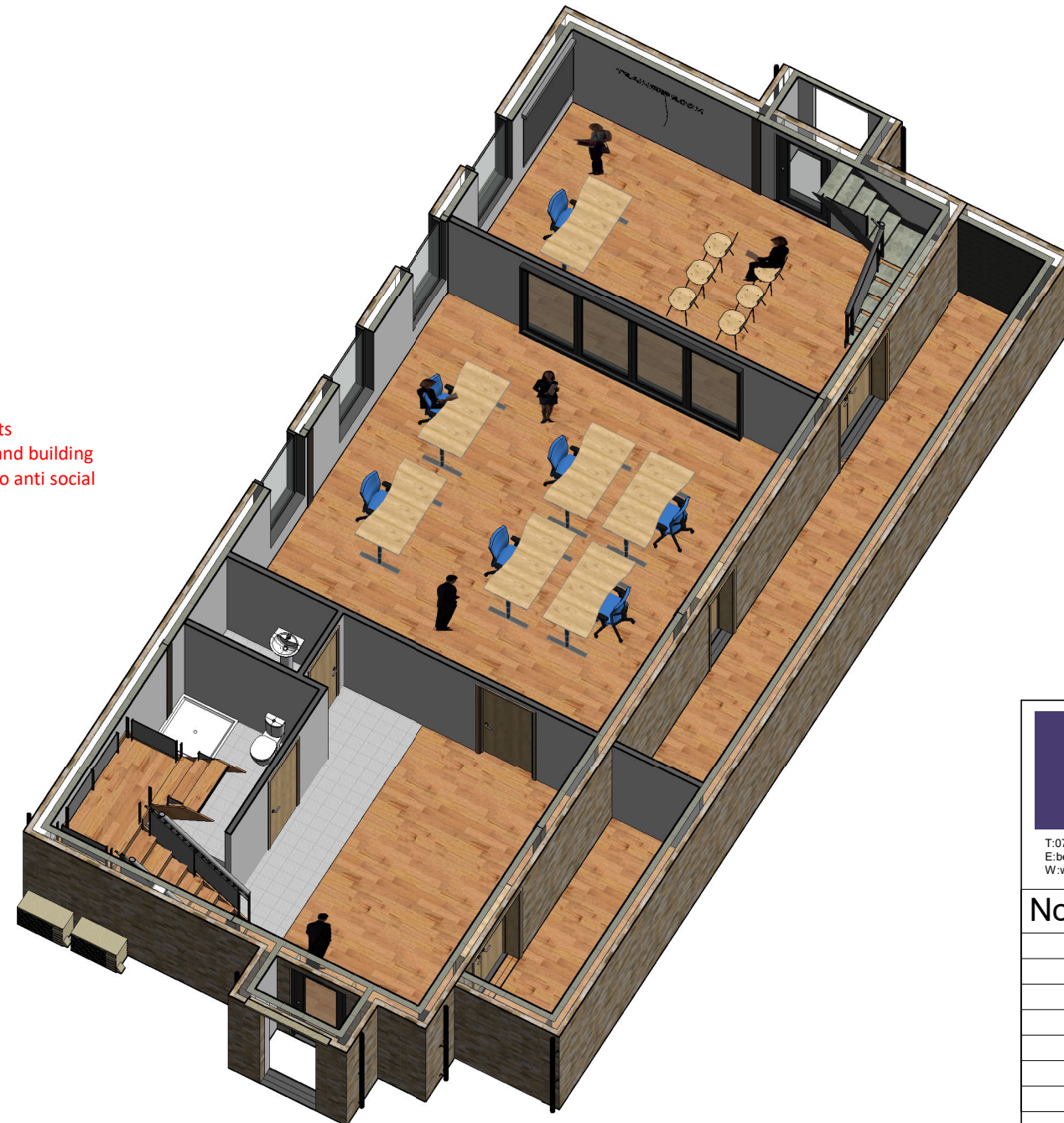
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02b GF Proposed

1 : 100



new extension
taken up
to boundary (this prevents
a gap between highway and building
which is currently liable to anti social
behaviour)



I1 Ground Floor Isometric

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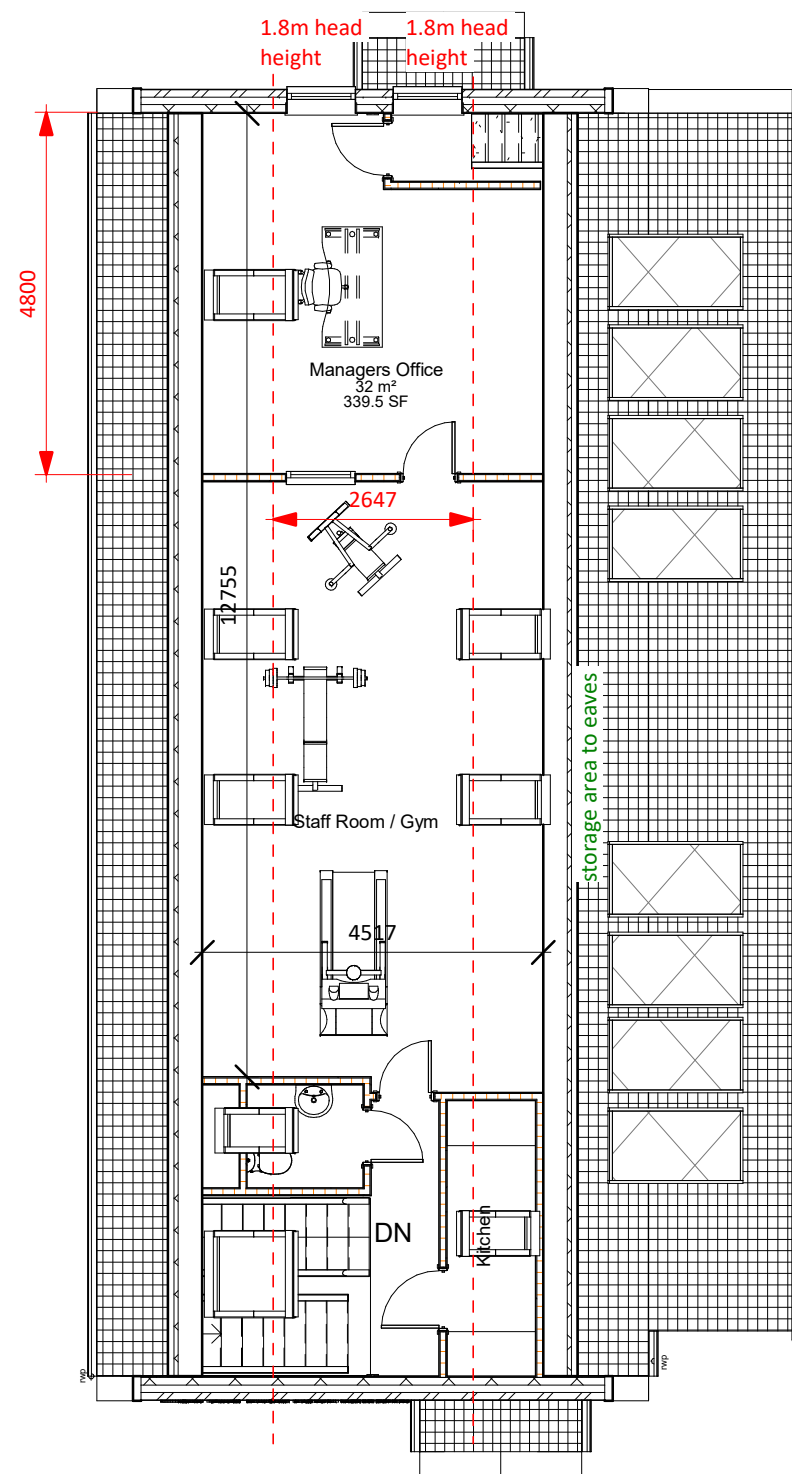
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PROJECT
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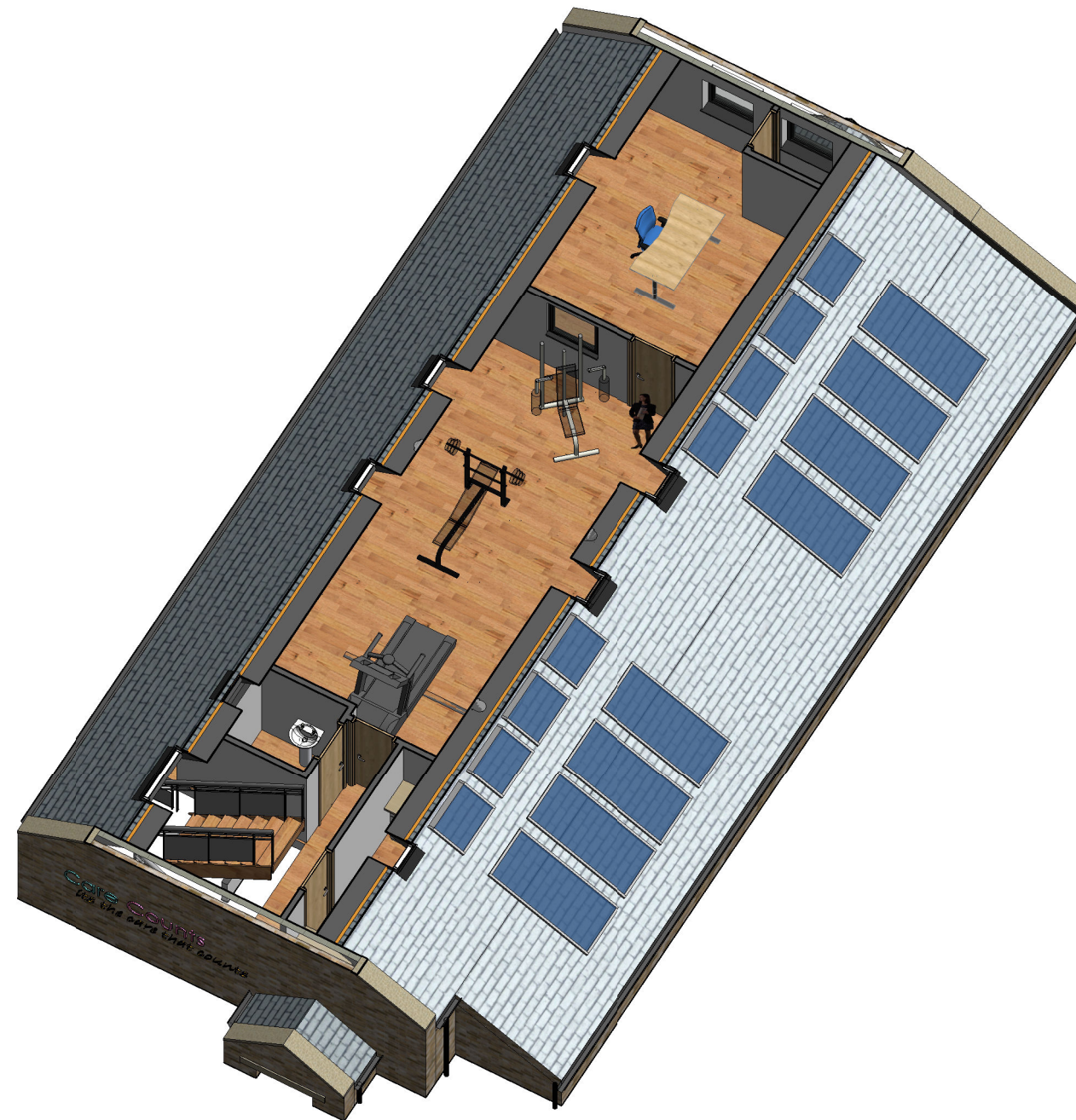
SHEET
Proposed Sheet 2

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03b FF Proposed
1 : 100



I2 First Floor Isometric

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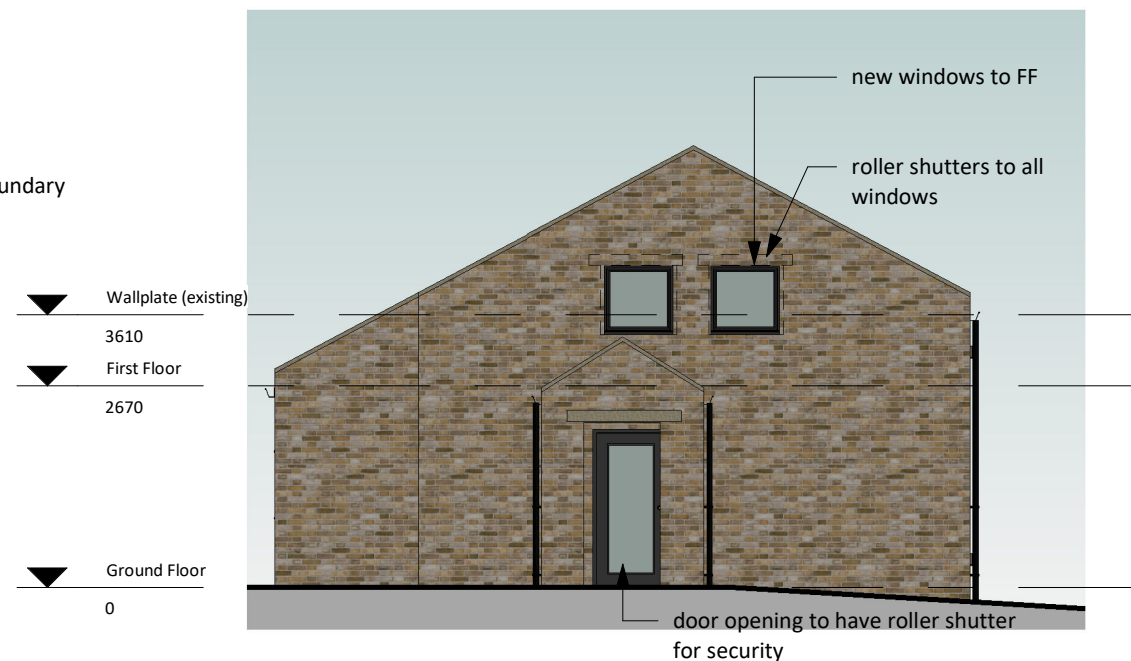
SHEET
Proposed Sheet 3

CLIENT
Care Counts Ltd

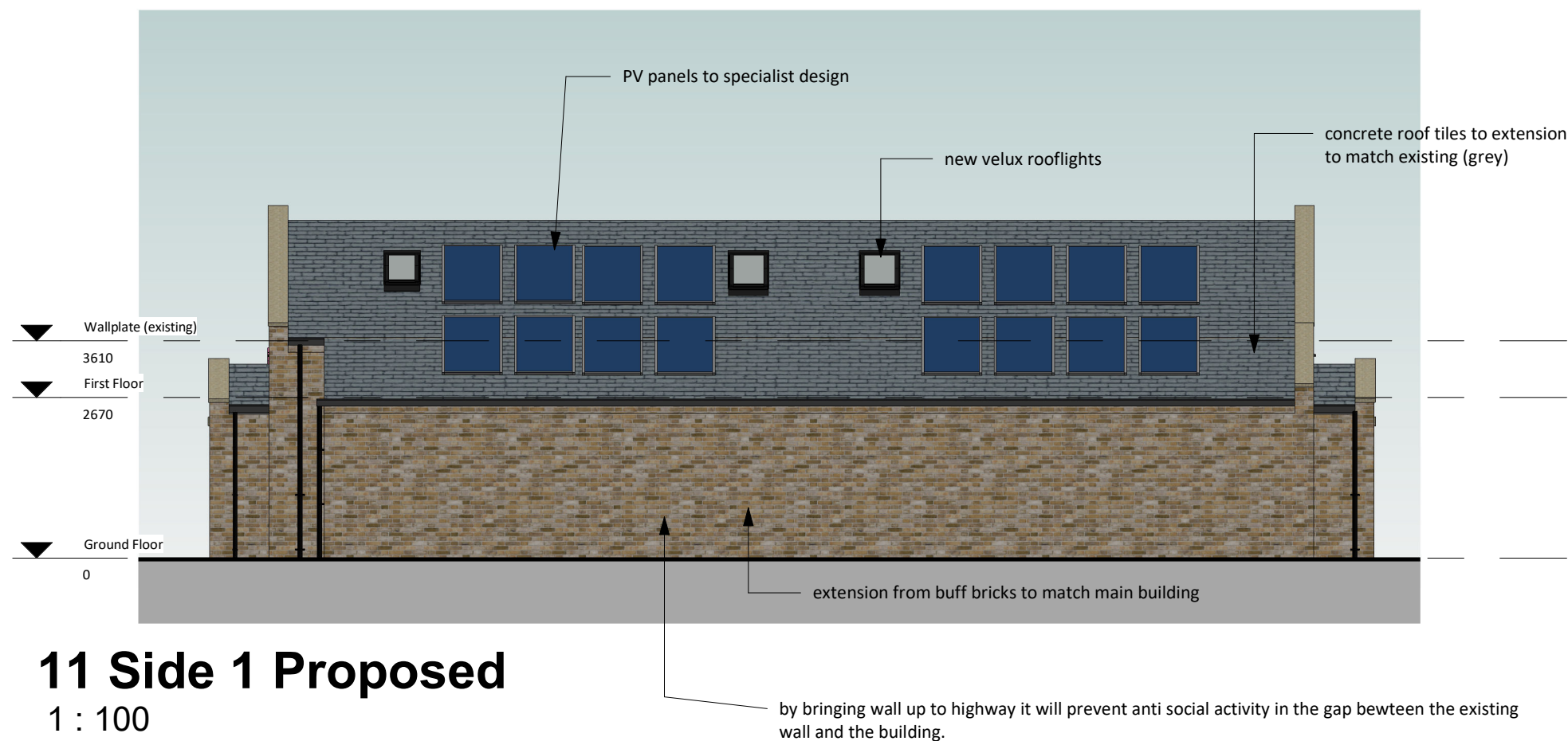
Date 28.01.21	Project number J21-007	Scale (@ A3) 1 : 100
Drawn by bl	DRAWING NUMBER P12	REV



11 Front Proposed
1 : 100



11 Rear Proposed
1 : 100



11 Side 1 Proposed
1 : 100

NOTES

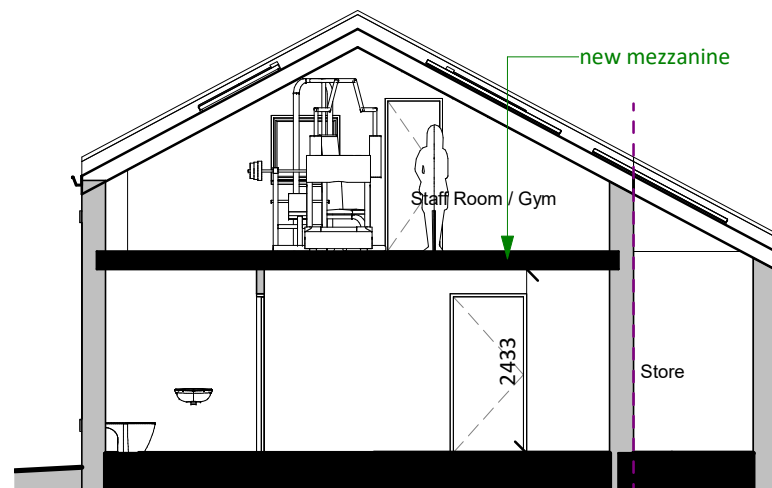
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SHEET Proposed Sheet 4		
CLIENT Care Counts Ltd		
Date 28.01.21	Project number J21-007	Scale (@ A3) 1 : 100
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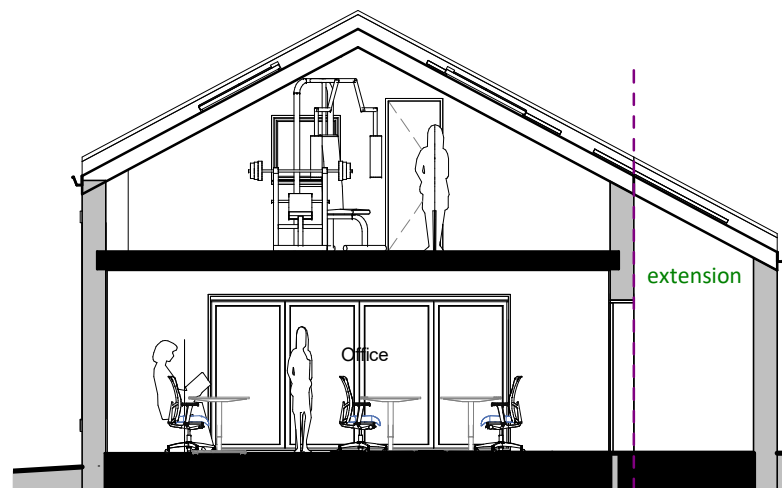
11 Side 2 Proposed

1 : 100



Section 1

1 : 100



Section 2

1 : 100

NOTES

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SHEET
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PROJECT Beaumont Street, Huddersfield		
SHEET Proposed Sheet 6		
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Date 28.01.21	Project number J21-007	Scale (@ A3)
Drawn by bl	DRAWING NUMBER P15	REV

Calculation Sheet
Coal Seam Projection

Project Details

Name Beaumont Street, Huddersfield
Reference 20086

Competent Cover Summary

	Seam Name	Seam Thickness (m)	Competent Cover (m)	
			Point 1	Point 2
Coal Seam 1	Soft Bed	0.80	-3.26	N/A
Coal Seam 2	N/A	N/A	N/A	N/A
Coal Seam 3	N/A	N/A	N/A	N/A
Coal Seam 4	N/A	N/A	N/A	N/A
Coal Seam 5	N/A	N/A	N/A	N/A

Key		
Less than -2.5 m	-2.5 to 2.5 m	More than 2.5 m
Likely insufficient	Marginal	Likely sufficient
Competent cover not present	Competent cover may not be present	Competent cover present

Author Russell Bowman
 BSc (Hons) MSc CEng CWEM MCIWEM

Signed Russell Bowman

Calculation Sheet

Coal Seam Projection

SOIL AND STRUCTURES

Coal Seam 1	Soft Bed				
Projection from:	Outcrop				
Coal Seam Details	Value	Units	Reliability ¹		Lines of Evidence
Ground level (at outcrop)	75.00	mAOD	✓✓	Fair estimate	OS mapping
Depth to top of coal seam (rockhead)	10.00	mbgl	✓✓	Fiar estimate	Deep superficial soils in all three local boreholes
	65.00	mAOD			
Dip angle of coal seam	5.2	deg	✓✓✓	Good estimate	Coal Authority interactive mapping (workings in SB)
Dip direction of coal seam	79	deg	✓✓✓	Good estimate	Coal Authority interactive mapping (workings in SB)
Seam thickness	0.80	m	✓✓✓	Good estimate	Worst case thickness on BGS mapping
On Site: Point 1	Value	Units	Reliability ¹		Lines of Evidence
Distance to crop	80.00	m	✓✓	Fair estimate	OS mapping and Coal Authority interactive mapping
Ground level	72.50	mAOD	✓✓	Fair estimate	OS mapping
Depth to rockhead	10.00	mbgl	✓✓	Fair estimate	Deep superficial soils in all three local boreholes
	62.50	mAOD			
Depth to top of coal seam	57.76	mAOD	✓✓	Calculated	Data tabled above using trigonometry, accounting for topographical level differences
	14.74	mbgl			
Depth to base of coal seam	56.96	mAOD	✓✓	Calculated	Top of seam less the seam thickness
	15.54	mbgl			
10t rule valid?	>>>	>>>	>>>	Yes, likely conservative	Based on guidance within C758 ^{2,3}
Comptent cover (10t rule) based on seam thickness	-3.26	m	✓✓	Likely insufficient	Competent cover not present
Comptent cover (10t rule) based on 1.50 m roadway	-10.26	m	✓	Likely insufficient	Competent cover not present
On Site: Point 2	Value	Units	Reliability ¹		Lines of Evidence
Distance to crop		m	✓✓✓		
Ground level		mAOD	✓✓		
Depth to rockhead		mbgl	✓✓		
		mAOD			
Depth to top of coal seam		mAOD	✓✓		
		mbgl			
Depth to base of coal seam		mAOD	✓✓		
		mbgl			
10t rule valid?	>>>	>>>	>>>		Based on guidance within C758 ^{2,3}
Comptent cover (10t rule) based on seam thickness		m	✓✓		
Comptent cover (10t rule) based on 1.50 m roadway		m	✓		

Notes

- 'Reliability' assessed based on quality and accuracy of the lines of evidence with further discussion in report
- Table 5.1 considering; dip angle, groundwater regime, extraction ratio, mutiple seams, available GI information and serviceability limits
- Superficial soil bulking factor neglected and assumed to not offer any competent cover

Overall Result:

PASSED

Expert Opinion:

Within the scope of this assessment, the Site is not considered to be susceptible to coal mining-related ground instability. Any identified coal mining features are considered unlikely to impact the value or security of the Site for normal lending purposes and there is no reason for them to impact upon the completion of this transaction.

Will coal mining activity impact the value of the property?

UNLIKELY TO IMPACT VALUE



Are there adverse mining features that should be brought to the lender's attention?

NO NEED TO NOTIFY LENDER



Are there mining hazards that should be brought to the purchaser's attention?

HAZARDS IDENTIFIED



It is important to be fully informed of all coal mining risks associated with a property before completing your purchase. **Please read the next steps section carefully.**

Within Coal Mining Reporting Area

YES

CON29M Questions	Assessment		
Q1. Past underground coal mining	YES	ADVISORY	
Q2. Present underground coal mining	NO	PASSED	
Q3. Future underground coal mining	NO	PASSED	
Q4. Shafts and adits (mine entries)	NO	PASSED	
Q5. Coal mining geology	NO	PASSED	
Q6. Past opencast coal mining	NO	PASSED	
Q7. Present opencast coal mining	NO	PASSED	
Q8. Future opencast coal mining	NO	PASSED	
Q9. Subsidence Claims (Incl. Subsidence Claims Buffer Report)	NO	PASSED	
Q10. Mine gas emissions	NO	PASSED	
Q11. Emergency Call Out incidents	NO	PASSED	
Q12. Withdrawal of support	NO	PASSED	
Q13. Working facilities orders	NO	PASSED	
Q14. Payments to owners of former copyhold land	NO	PASSED	

Official Coal Authority Licensed Data: V1_221_20210315_F | 19-03-2021

Report Address:

Beaumont Street Studios,
Beaumont Street, Huddersfield,
HD16BG

Report Details:

TF Reference:
TFC20210322080909-HD16BG

Client Reference: 2284281

Date: 22/03/2021

User Key:

Lender Attention

Conveyancer Further Action

Purchaser Advisory

Passed - No Further Action

These colour signatures are used throughout the report. Please see the back of the report for a full key.

Please see below Terrafirma's expert opinion and next steps with regards to the property. These may be copied into your Report on Title. No physical site inspection has been carried out. This official CON29M report highlights only the information which we have determined should be drawn to your attention however, other risks may be present. Relevant prudent enquiries for the purchaser are highlighted within the Next Steps section.

● ● Report Conclusions:

Mining features have been identified within the physical influence of the Site, resulting in a susceptibility to past, present and/or future ground movement. Below exist relevant interpreted conclusions based on the findings of this report (where applicable):

Unrecorded shallow coal mine workings are suspected in this area and where present, movement in any worked coal seams beneath the Site, may cause ground instability at the surface.

Any previous movement in the ground should already be present in pre-existing structural defects; please see the report recommendations for further information.

● ● Next Steps:

Terrafirma consider it prudent that an appropriate commercial RICS Structural and/or Building Survey is acquired for any properties/ structures present on the Site in question to assess, amongst other important considerations, their structural condition. This report will highlight any subsidence-related defects, which may relate to ground instability, while also noting any serious or dangerous issues that may require attention. This survey will also include advice on any defects, repairs or maintenance decisions. Should any future signs of subsidence or collapse be identified, then we recommend you seek further expert assistance, however currently, no further reporting on ground instability is required. Terrafirma can be contacted using the information supplied on the front page of this report.

In the event subsidence has previously occurred or occurs in the future, it is recommended Terrafirma are contacted immediately for advice on practical and appropriate next steps, including how one can make a compensation claim to the Coal Authority. For detailed information on the statutory cover available in coal mining areas, please see the back of this report.

● If you are planning on altering or developing the Site:

The Site is likely located within a 'High Development Risk Zone', as defined by the Coal Authority. Due to the presence of recorded and/or unrecorded coal mining activity, any future development of the Site may trigger ground collapse and/or subsidence.

It should be noted that prior to site works or future development, your local planning authority may require you to commission a full Coal Mining Risk Assessment (CMRA) or Site Investigation by a qualified mining geologist/engineer.

In the event, you require further professional support, please contact Terrafirma directly to discuss the appropriate further steps.

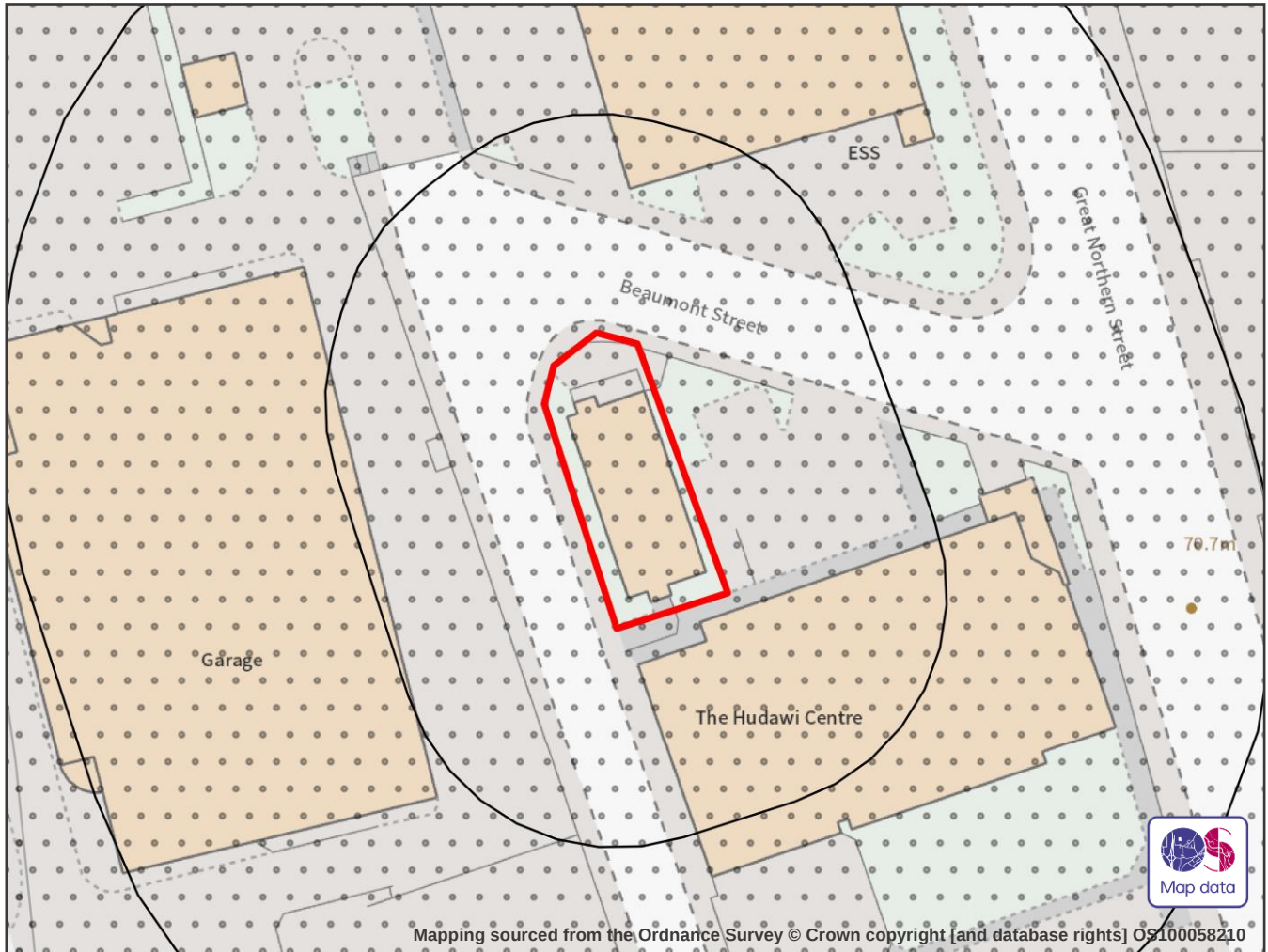
Contact the report author by calling the Terrafirma team on: 0330 900 7500



This official CON29M Non-Residential Coal Mining Report is a site-specific interpretation of coal mining activity. These enquiries are The Law Society CON29M Coal Mining search enquiries and are used with permission of the Law Society. The Law Society CON29M Coal Mining search enquiries are protected by copyright owned by The Law Society of 113 Chancery Lane, London WC2A 1PL. Terrafirma's Terms and Conditions are applicable at the time the report was produced.



Mining Hazard Map



Site Address: Beaumont Street Studios, Beaumont Street, Huddersfield, HD16BG

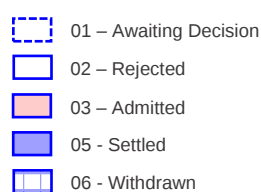
Hazard Map Key

Coal Authority Data

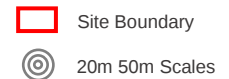
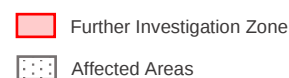
Mine Entries



Subsidence Claims



Hazard Zones



Mapping sourced from the Ordnance Survey © Crown copyright [and database rights] OS100058210



For any mining or ground related issues
please contact the experts at Terra Firma

Call us on: 0330 900 7500

Email our team: info@terrafirmasearch.co.uk

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Detailed findings of coal mining activity:

1. Past underground coal mining

ADVISORY 

Q. *Is the property within the zone of likely physical influence on the surface of past underground coal workings?*

A.

The Site is not within a surface area that could be affected by historic, known underground coal mining. The Site is not within a surface area that could be affected by historic, known shallow underground coal mining. The Site is suspected to be underlain by shallow coal mine workings. Coal may have been historically worked within at least one seam of coal at depths less than 30 metres beneath the surface. Therefore, shallow unrecorded mine workings may exist beneath or within the vicinity of the Site. Please see the report conclusions for further information.

2. Present underground coal mining

PASSED 

Q. *Is the property within the zone of likely physical influence on the surface of present underground coal workings?*

A.

The Site is not situated within an area which could be affected by currently active underground coal mining.

3. Future underground coal mining

PASSED 

Q. (a) *Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?*
(b) *Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?*
(c) *Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?*
(d) *Has any notice of proposals relating to underground coal mining operations been given under section 46 of the Coal Mining Subsidence Act 1991?*

A.

The Site is not situated within an area which could be affected by any future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future. The Site is not situated within the influence of a Section 46 Notice.

4. Shafts and adits (mine entries)

PASSED 

Q. *Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?*

A.

There are no recorded mine entries within 20 metres of the Site.

5. Coal mining geology

PASSED 

Q. *Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?*

A.

There are no recorded faults, fissures or breaklines that occur within the influence of the Site.

6. Past opencast coal mining

PASSED 

Q. *Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?*

A.

The Site is not situated within any past licence areas for the opencast extraction of coal.
There are no unlicensed opencast pits or extraction sites beneath the Site.

7. Present opencast coal mining

PASSED 

Q. *Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?*

A.

The Site is not situated within an area which could be affected by currently active opencast coal mining.

8. Future opencast coal mining

PASSED 

Q. (a) *Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?*
(b) *Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?*

A.

There are no plans by the Coal Authority to grant a licence to extract coal using opencast methods within 800 metres surrounding the Site.



9. Coal mining subsidence claimsPASSED 

Q. (a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 1st January 1994?
(b) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?
(c) Has any request been made under section 33 of the 1991 Act to execute preventive works before coal is worked?

A.

There is no record of any coal mining-related damage notices or subsidence claims for the Site or for any Site within 50 metres of the Site.

There is no record of a request that has been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

10. Mine gas emissionsPASSED 

Q. Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

A.

There are no records of any Mine Gas hazards within the influence of the Site and there is no record of any Mine Gas emissions requiring action.

11. Emergency surface hazard call out incidentsPASSED 

Q. Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

A.

The Site is not situated within the influence of a coal mining-related hazard.

12. Withdrawal of supportPASSED 

Q. (a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?
(b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?

A.

The property is not in an area where notices to withdraw support have 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.



13. Working facilities ordersPASSED 

Q. *Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?*

A.

The property is not in an area for which any orders have been made under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. Payments to owners of former copyhold landPASSED 

Q. *Has any relevant notice, which may affect the property, been given?*

A.

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.



FURTHER INFORMATION

Key and Colour Information

The below key provides further guidance on the colours used throughout this report.

Lender Attention	Terraforma has identified mining hazards within the vicinity of the Site, including features (e.g., mine shafts/ adits) that could affect the future value of the Site. A lender may want to be alerted to this adverse entry, due to requirements of UK Finance (formerly the Council of Mortgage Lenders), before deciding on whether to proceed with the transaction. The conveyancer is advised to follow the terms of the UK Finance Mortgage Lenders' Handbook and any additional instructions from the prospective lender in its consideration and determination of whether to refer any part of this report to the lender.
Conveyancer Further Action	Terraforma has concluded that further expert analysis of the Site is required. Terraforma does not believe that the transaction should continue until further actions have been undertaken to quantify the risk of subsidence or collapse to the Site. Terraforma recommends that the conveyancer liaises with all necessary parties regarding the report's findings.
Purchaser Advisory	The purchaser's attention is drawn to the prudent advice outlined in the report, which Terraforma recommends is read carefully. The report results should not hinder the transaction and Terraforma's Terms & Conditions are valid for the Site.
Passed No Further Action	Terraforma has not identified any mining features that influence the ongoing use or value of the Site. Terraforma does not believe that any further actions are required for this transaction and Terraforma's Terms & Conditions are valid for the Site.

Additional Remarks

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Future Development

In scenarios where mining activity has been identified, a prudent developer would seek appropriate technical advice before any works are undertaken.

In these areas, 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 good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority.

Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.



Notice of Statutory Cover

In the unlikely event of any future damage, the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994) may apply*, and the Coal Authority / Licensee has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land and/or property in connection with lawful coal-mining operations. Typically, these actions will not need to involve either your insurance company or mortgage lender and therefore the end user(s) should not incur any costs or liability. *Note: this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

In addition to the above, it should also be noted that the Coal Authority offer a Public Safety and Subsidence Department that provides a 24-hour 7 day a week call out service (Tel: 01623 646 333) to take remedial action in respect of hazards associated with the movement or collapse of any coal mineshaft or entrances to coal mines and from other coal mining related surface hazards. Further information can be found on their website: <https://www.groundstability.com/>.

Limitations

This CON29M Coal Mining Report has been carried out with reference to all available official Coal Authority licensed data, an extensive collection of abandoned mine plans, maps, and records. From this material, we have endeavoured to provide as accurate a report as possible. Any and all analysis and interpretation of licensed Coal Authority data in this report is made by Terrafirma.

Information provided by Terrafirma in this report is compiled in response to The Law Society CON29M Coal Mining search enquiries and ScotForm 2006 coal mining search in Scotland. The scope of the assessment is concerned only with the interpretation of past, present and future extraction of coal minerals. This report does not consider the impact from non-coal mining hazards and/or natural ground stability hazards, such as subsidence, landslip or coastal erosion. For an expert opinion on all mining and ground hazards and in order to meet the requirements of Law Society Guidance Notes (2018) and best practice guidance in the 25th Edition Conveyancing Handbook (2018), you may choose to obtain a Terrafirma Ground Report by contacting a member of the team.

This report is a 'remote' investigation and reviews only information provided by the client and from the databases of publicly available information that have been chosen to enable a desk based environmental assessment of the Site. The report does not include a Site Investigation, nor does Terrafirma make specific information requests of the regulatory authorities for any relevant information they may hold.

This report is concerned solely with the Site searched and should not be used in connection with adjacent properties as only relevant known mining features have been mentioned and any known features that could potentially have a direct influence upon the target Site. Other features which may be present in the general area may have been omitted for clarity.

The report is based upon the Site boundaries as shown on the supplied location plan. This report is confidential to the client, the client's legal advisor and the client's Mortgage lender, as defined in the Terrafirma & TerraSearch® terms & conditions, and as such may be used by them for conveyancing or related purposes. We have no liability toward any person or organisation not party to commissioning this report. This report or any part of it is not permitted to be reproduced, copied, altered or in any other way distributed by any other person or organisation.



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This report meets the principles and requirements of the Property Codes Compliance Board Compliance Note CN02J in respect of Coal Mining Searches.

The Search Code

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.



The Search Code

The Code's core principles (Firms which subscribe to the Search Code will):

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

CONTACT TERRAFIRMA IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details:

The Property Ombudsman scheme, Milford House, 43-55 Milford Street, Salisbury, Wiltshire SP1 2BP, Tel: 01722 333306, Fax: 01722 332296, Email: admin@tpos.co.uk, Web site: www.tpos.co.uk.

You can get more information about the PCCB from www.propertycodes.org.uk or from our website at <https://www.terrafirmaidc.co.uk>.

Complaints Procedure

If you want to make a complaint directly to Terrafirma, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

Complaints should be sent to: **Senior Executive, Terrafirma IDC LTD** - Address: 2440 The Quadrant, Aztec West Business Park, Almondsbury, Bristol, BS32 4AQ; Email: info@terrafirmaidc.co.uk; Telephone: 0330 900 7500.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk. We will co-operate fully with the Ombudsman during an investigation and comply with his final decision.

WE TRUST THIS REPORT PROVIDES THE INFORMATION YOU REQUIRE. PLEASE CONTACT US IF YOU HAVE ANY QUERIES OR IF WE CAN BE OF ANY FURTHER ASSISTANCE.



CON29M Coal Report Insurance Backed Guarantee

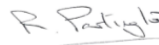
In the unlikely event that the coal data used by Terra Firma in order to compile their report is later found to be inaccurate, the purchaser of the report benefits from Loss of Value Protection of up to £100,000 and should the purchaser later suffer a financial loss, following their reliance on the report, are protected by Terra Firma.

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Policy Number: GESI 0035553CV

Insurer	Great Lakes Insurance SE, UK Branch Great Lakes Insurance SE is a German insurance company with its headquarters at Königinstrasse 107, 80802 Munich. Great Lakes Insurance SE, UK Branch, is authorised and regulated by Bundesanstalt für Finanzdienstleistungsaufsicht. Deemed authorised by the Prudential Regulation Authority. Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorisation, are available on the Financial Conduct Authority's website.
Insured	Terra Firma IDC LTD
Purchaser	The person who buys the Search Report from the Insured, and/or any of the following: 1. The person who asked for the Search Report in connection with the purchase of the Property (and their mortgagee). 2. The person who purchased the Property (and their mortgagee) if the person selling the Property has asked for a Search Report for the benefit of the Purchaser as part of a seller's pack or if the Property has been purchased by way of auction. 3. The owner of the Property (and their mortgagee) if they are re-mortgaging the Property or the owner of the Property who has chosen to obtain a Search Report. 4. Their estate and beneficiaries, to whom the benefit of the Policy will pass in the event of their death during the Period of Insurance.
Property	Any commercial property for which a Search Report is provided by the Insured for the benefit of the Purchaser during the Period of Insurance.
Search Report	The Terra Firma CON29M Coal Report (or relevant Coal assessment section of any attached Terra Firma report).
Limit of Indemnity	£100,000.00 in the aggregate in respect of any one Property
Effective Date	The date of the Search Report, provided by the Insured to the Purchaser being the date that cover will commence.
Period of Insurance	Cover for each individual Property will be from the Effective Date until the Purchaser of the Search Report either; (a) no longer has an interest in the Property, or, (b) until the date of a Subsequent Search Report is obtained by the Purchaser after the Effective Date, whichever is the sooner.
Insured Use	The continued use of the Property as a commercial property not exceeding 25 hectares as constructed and used at the Effective Date.
Cover	Subject to the terms and conditions of this Policy and provided the Property has been declared to the Insurer and the Premium inclusive of Insurance Premium Tax has been paid to the Administrator, the Insurer will indemnify the Insured during the Period of Insurance in respect of Loss arising from any claim by a Purchaser made against the Insured resulting from inaccurate data having been incorporated into such Search Report.
Market Value	The value of the Purchaser's interest in the title to the Property as determined by a surveyor appointed by agreement between the Insurer and the Insurer, but subject to General Condition 11.
Loss	1. The loss in Market Value of the Property directly attributable to any changes in the information revealed in a subsequent Search Report obtained by the Purchaser, which was not revealed in the Search Report provided to the Purchaser, which was carried out on the Effective Date, such loss in Market Value to be calculated at the date of the subsequent Search Report, and 2. All other costs and expenses which have been agreed in advance by the Insurer.
Exclusions	The Insurer will not be liable to indemnify the Insured for: 1. Loss which is or would otherwise be recoverable under a building's insurance policy. 2. Loss arising wholly or partly because of the wilful act or neglect of the Insured. 3. Loss if at the date of a claim the Purchaser is not the legal or beneficial owner of the Property. 4. Loss in relation to loss of a transaction for the sale or for the purchase of the Property and any costs incurred by the Purchaser in relation to the loss of such transaction.



	5. Loss in respect of structural or other physical damage caused to the Property by subsidence or flooding after the Effective Date. 6. Loss as a result of any change in information in response to sections 3 – Future underground coal mining and 8 – Future opencast coal mining of the Search Report carried out at the Effective Date. 7. Loss in respect of the information in any subsequent Search Report after the Effective Date if this information also appears on the Search Report issued to the Purchaser on that date. 8. Loss in relation to any change to the CON29M (2018) Search form and/or the Search Report made after the Effective Date which affects the Insurer's responsibility under this Policy, if Insurers would not have been responsible for the Loss before such change. 9. Loss in relation to the contents of any brine data whatsoever contained within the standalone Terra Firma CON29M Coal Report. 10. Loss in relation to any change in the interpretation of information upon which Search Report was produced provided such information remains unchanged. 11. Loss arising from claims made under this Policy by any party other than the Insured.
Claims Conditions	1. It is a condition precedent of the Insurer's liability under this Policy that the Policyholder and/or the Purchaser will give written notice to the Administrator at the address shown under "Making a Claim", below, as soon as reasonably practicable, of any circumstances likely to give rise to a claim for which the Insurer may be liable under this Policy and provide the Administrator with such information and documentation as may reasonably be requested. 2. The Insurer will be entitled to decide how to defend or settle a claim. 3. The Insurer will be entitled to participate fully in any defence, negotiation or settlement of a claim or circumstance and in any such event the Policyholder and/or the Purchaser will (to the extent reasonably practicable in the circumstances, but without limitation): (i) not incur any cost or expense without first consulting with and receiving written consent from the Insurer. (ii) not make any admission of liability, offer, settlement, promise, payment or discharge without first consulting with and receiving written consent from the Insurer. (iii) give the Insurer access to and provide the Insurer with copies of all correspondence and documentation available to the Insured in relation to the claim or circumstance and afford the Insurer sufficient time in which to review and comment on such documentation. (iv) inform the Insurer of any proposed meeting with any third party in relation to a claim or circumstance and allow the Insurer to attend such meeting and, if the Insurer so requests, provide a detailed written account of the subject and outcome of any such meeting or discussion at which the Insurer was not present. (v) conduct all negotiations and proceedings in respect of any claim or circumstance with advisers of which the Insurer has approved in writing and take such action as the Insurer may reasonably require to contest, avoid, resist, compromise or otherwise defend any claim or circumstance. (vi) provide the Insurer with such other information and assistance in connection with any claim or circumstance as the Insurer may reasonably request. 4. The Insurer will be entitled to all rights and defences it may have in respect of a claim by a Purchaser against any successor to that Purchaser. 5. If at the time of any claim made under this Policy, there is any other insurance in place whether effected by the Purchaser or by any other person under which the Purchaser may be entitled to make a claim the Insurer will be liable to pay or contribute in respect of a claim under this Policy only rateably with such other insurance. 6. If the Purchaser makes any claim knowing it to be false or fraudulent as regards amount or otherwise, this Policy will become voidable and all claims under it may be forfeited. 7. In the event of any claim under this Policy from a Purchaser where the Policyholder has failed to make the required declaration and/or has failed to pay the Premium due to the Insurer via the Administrator but the Insurer is still required to deal with the claim from the Purchaser, the Insurer will be entitled to seek recovery from the Policyholder of all claims monies paid to the Purchaser together with the amount of the Insurer's costs incurred in the handling of the claim.
Additional Information	This is a summary of the policy and does not contain its full terms and conditions. A copy of the general conditions is available on request. In the event of a claim, please contact Terra Firma IDC LTD (the 'Insured') in the first instance. Terra Firma's terms and conditions (https://www.terrafirmaidc.co.uk/terms_and_conditions) provide an assurance (section 3.8) that in the event of any successful claim, the award will be paid, in full, to the Customer/Purchaser.
Administrator	CLS Property Insight Limited, 17 Kings Hill Avenue, West Malling, Kent, ME19 4UA. CLS Property Insight Limited can be contacted by email at info@clspropertyinsight.co.uk or by telephone on 01732 753 910.   R P Partington Director  Signed by CLS Property Insight Limited on behalf and with the authority of the Insurer

