

# FWS Geotechnical & Environmental Consultants

## COAL MINING RISK ASSESSMENT ON LAND AT EAST HOUSE COTTAGE, CHESWICK

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PROJECT NUMBER	4231	
PROJECT TITLE	East House Cottage, Cheswick	
CLIENT	Northpoint Consulting Ltd. 14 Brenkley Way Seaton Burn Newcastle upon Tyne NE13 6DS	
REPORT TITLE	Coal Mining Risk Assessment on Land at East House Cottage, Cheswick	
REPORT REFERENCE	4231OR01	
REVISION	Date	Checked
Rev00	15/02/2023	CM

# CONTENTS

1	INTRODUCTION .....	1
1.1	Site Location and Description .....	1
1.2	Scope of Coal Mining Risk Assessment .....	1
2	SOURCES OF INFORMATION .....	1
3	SITE GEOLOGY .....	2
4	IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING RISK .....	2
4.1	Summary of Potential Risks .....	2
4.2	Assessment of Mineral Instability .....	2
4.2.1	Underground Coal Workings.....	2
4.3	Assessment of Mine Gas Risk.....	3
5	MITIGATION STRATEGY PROPOSED.....	3
6	REFERENCES .....	5

## APPENDICES

1	DRAWINGS
	5340/10 LOCATION PLAN
	5340/13/A PROPOSED SITE PLAN
	5340/14/B PROPOSALS
2	COAL AUTHORITY REPORT
3	NOTES ON LIMITATIONS

# COAL MINING RISK ASSESSMENT ON LAND AT EAST HOUSE COTTAGE, CHESWICK

## 1 INTRODUCTION

### 1.1 Site Location and Description

The 0.1 ha site is located at approximate National Grid Reference 403083E,646590N, and is located approximately 9 km from Berwick Upon Tweed and is currently a residential stone cottage on a working farm. It is proposed to build an extension to the western wall of the small cottage. The location of the site is shown on Client's Drawing 5340/10 Location Plan (Appendix 1).

The site slopes gently to the southeast from an elevation of approximately 28 m AOD

### 1.2 Scope of Coal Mining Risk Assessment

FWS Consultants Ltd (FWS) have been commissioned to prepare a Coal Mining Risk Assessment Report of the proposed development site, in order to provide the Local Planning Authority with information on coal mining and an assessment of its potential impact on land stability.

The Coal Mining Risk Assessment has been undertaken in accordance with the principles of current guidance including the Coal Authority's guidance document "Risk Based Approach to Development Management - Resources for Developers Version 4" (2017) (Ref. 1) and CIRIA "C758 Abandoned Mine Workings Manual" (2019) (Ref. 2).

The purpose of the Coal Mining Risk Assessment Report is to:-

- present a desk-based review of available information on the coal mining issues that are relevant to the application site;

- use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact issues; and

- demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

## 2 SOURCES OF INFORMATION

This report is based on the current information of past mining activities relevant to the site. The following sources of information have been used:-

- A site-specific Consultants Coal Mining Report (6 February 2023) from the Coal Authority (Appendix 2),

- BGS Sheet 1&2 1:50,000 scale geological map,

- Geological Survey of Great Britain, Northumberland (New Series) Sheet No. IV SE and Memoir,

- Coal Authority interactive website.

### 3 SITE GEOLOGY

The BGS Geological Map and the BGS GeoIndex boreholes shows the site to be overlain by glacial till of approximately 5 to 10 m thickness. The underlying bedrock consist of the Stainmore Formation of Upper Carboniferous Age comprising interbedded sandstones, siltstones, mudstones, thin limestones, and some thin coals. One seam, the Lickar Main(Little Limestone Coal), is inferred to outcrop 10 to 20 m north of the site. This seam is reported to be approximately 0.8 m thick (Ref.3) and dips approximately 10° to the south. Rock head is at approximately 18 m AOD (approximately 8 m bgl). Two further coal seams underlie the site (Dryburn Limestone and Coal, and Sandbanks/Lowdean Limestone and Coal reported to be thin at <less than 0.3 m thick.

There are a number of pit shafts located between approximately 90 to 200 m south of the site, within an area underlain by the Lickar Main, and it is assumed that this seam was worked from these shafts.

### 4 IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING RISK

#### 4.1 Summary of Potential Risks

The table below summarises the potential risks associated with coal mining legacy for the proposed development site identified from the available sources of information.

Table 01: Summary of Mining Legacy Issues

COAL MINING ISSUE	YES	NO	SUMMARY RECORDS
Underground coal mining (recorded at shallow depth)			The property is not in the likely zone of influence of past or present underground coal workings.
Underground coal mining (probable at shallow depth)			The site may be within the zone of influence from ancient (unrecorded) workings in the Lickar/Little Limestone Coal Seam at a shallow depth.
Mine entries (shaft or adits)			There are no reported mine entries on or within 20 m of the site. The closest is approximately 90 m from the southeastern boundary of the site.
Coal mining geology (fissures)			There are no coal mining geology structures within 50 m of the site.
Record of past mine gas emissions or potential			There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the site, however there is a potential risk of gas migration from unrecorded workings beneath the site.
Recorded coal mining surface hazard			The Coal Authority has no records of coal mining surface hazards relating to the site or immediate surrounding area.
Surface mining (opencast workings)			The site is not located within the boundary of a historical opencast site and does not lie within 500 m of a current opencast site.
Other potential shallow worked minerals			There is no evidence of quarrying having been carried out on site.

#### 4.2 Assessment of Mineral Instability

The principal factors influencing mineral instability for this site are summarised below.

##### 4.2.1 Underground Coal Workings

Surface settlement above areas of total coal extraction (goaf) is typically rapid and can generally be assumed to be complete after a certain period. Settlement above pillar and stall workings, or old roadways, can be sudden and abrupt; and can occur long after abandonment, sometimes creating surface features known as crown-holes. It is generally considered that a cover of

competent rock strata equivalent to ten times the height of the working provides adequate protection against crown-hole development (Ref. 2). Less rock cover can be adequate in certain circumstances (e.g. if the rock cover is particularly strong). Drift deposits give less protection than competent rock, and depending on the nature of the drift material (e.g. whether stiff boulder clay or running sand) considerably more cover may be needed to minimise the risk of surface ground movement. Where mining is identified within seams of less than 1 m thickness, it has been assumed that to accommodate for roadways the minimum worked height will be 1 m, otherwise the working height is assumed to be the seam thickness unless otherwise identified.

Table 02: Mineral Instability Risk Assessment

Seam Name	Seam Description	Workings	Assessment of Risk
The Lickar Main/Little Limestone Coal Seam	This seam is shown to outcrop 10 to 20 m north of the site. It is recorded at a depth of approximately 8 to 15 m bgl (13 to 8 m AOD). The seam is often banded and is approximately 0.8 m thick.	There are no workings recorded in the Coal Authority Report within this seam, however there is a nearby pit shaft that indicates that this seam could be affected by ancient unrecorded workings. Any such workings could have a worked thickness of 1 m.	The cover of competent rock strata is around 5 m which is less than ten times the height of the possible workings. As such, possible unrecorded workings in this seam may present a risk of mineral instability to the proposed development. The workings are not likely to have extended right up to the outcrop, beneath the glacial till deposits, where the seam is likely to be weathered. As such, it is possible that such workings would not extend beneath the existing site buildings or proposed small extension. However, given the uncertainty about the exact location of the outcrop, any unrecorded workings would present a low to medium risk of mineral instability to the proposed residential change of use in the southwest.
The Dryburn Limestone and Coal	This seam is shown to outcrop approximately 130 m north of the site and underlies the site at a depth of approximately 20 to 30 m bgl. The seam thickness is approximately 0.3 m.	There are no recorded workings within this seam and given the seam thickness, and of the presence of unrecorded workings is considered low.	As this seam is unlikely to have been of workable thickness and the cover of competent rock strata is around 10 to 15 m which is greater than ten times the worked height of the seam, there is no significant risk of mineral instability to the proposed development.

### 4.3 Assessment of Mine Gas Risk

Based on the Coal Authority report (Appendix 3), the potential unrecorded shallow mine workings, the presence of mine shafts, and the presence of approximately 5 to 10 m of low permeable cohesive glacial till beneath the site, which will limit vertical gas migration, there is a low risk of mine gas emission within the site boundary.

## 5 MITIGATION STRATEGY PROPOSED

As detailed in section 4.2.1, unrecorded workings in the Lickar Main Coal present a low instability risk to the proposed development.

It is recommended that three rotary boreholes are drilled on the site. The purpose of this investigation is to:-

- determine the nature, thickness, and depth of the Lickar Main Coal Seam,
- determine the presence of unrecorded workings,
- determine the thickness of competent rock cover, and thickness of glacial till beneath the development.

This investigation will determine the requirement of any mitigation measures and inform their design if required.



G HIRST  
GEOENVIRONMENTAL SCIENTIST



C MILLER  
DIRECTOR

## 6 REFERENCES

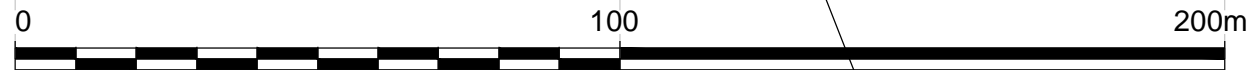
- 1 Coal Authority, 2012. Risk Based Approach to Development Management Resources for Developers
- 2 CIRIA, 2019. C758D Abandoned Mine Workings Manual.
- 3 BGS Sheets 1 & 2, Berwick upon Tweed and Norham. 1:50,000 Scale.
- 4 CL:AIRE, 2021. Good Practice for Risk Assessment for Coal Mine Gas Emissions.



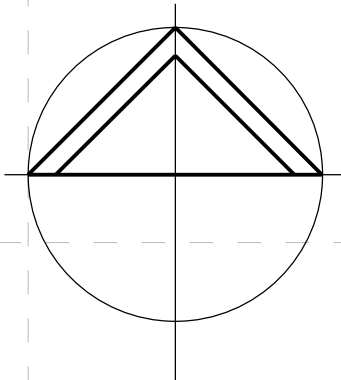
# APPENDIX 1

## DRAWINGS

Scale



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Cheswick

East House Cottage

East House

Smithy Cottage

Meridan House

The Old Schoolhouse

TCB

LB

Cheswick House

Ladythorne Cottages

Notes :

Grid Reference :  
NU 403094 / 646595

What3Words :  
emailed.baker.beauty

Project :  
EAST HOUSE COTTAGE  
EAST HOUSE  
CHESWICK  
BERWICK UPON TWEED  
TD12 2RL

Client :  
CHESWICK ESTATE

Title :  
LOCATION PLAN



The Lumen  
St James Boulevard  
Newcastle Helix  
Newcastle upon Tyne, NE4 5BZ  
Tel 0191 917 1444  
www.savills.co.uk

Scale :  
1:1250 @ A3

Drawn : I.M.

Date : SEPT. 2022

Drawing Number :

5340 / 10



Notes :



Existing stone wall, west side.



Existing stone wall, east side.

The existing stone wall is to be carefully taken down, rebuilt in the new position to the height shown elsewhere, copes reset and pointed. Any shortfall to be made up with secondhand stone to match the existing.

Project :  
**EAST HOUSE COTTAGE**  
**EAST HOUSE**  
**CHESWICK**  
**BERWICK UPON TWEED**  
**TD12 2RL**

Client :  
**CHESWICK ESTATE**

Title :  
**PROPOSED SITE PLAN**



The Lumen  
 St James Boulevard  
 Newcastle Helix  
 Newcastle upon Tyne, NE4 5BZ  
 Tel 0191 917 1444  
 www.savills.co.uk

Scale :  
**1:500 @ A3**

Drawn : **I.M.**  
 Date : **SEPT. 2022**

Drawing Number :  
**5340 / 13 / A**

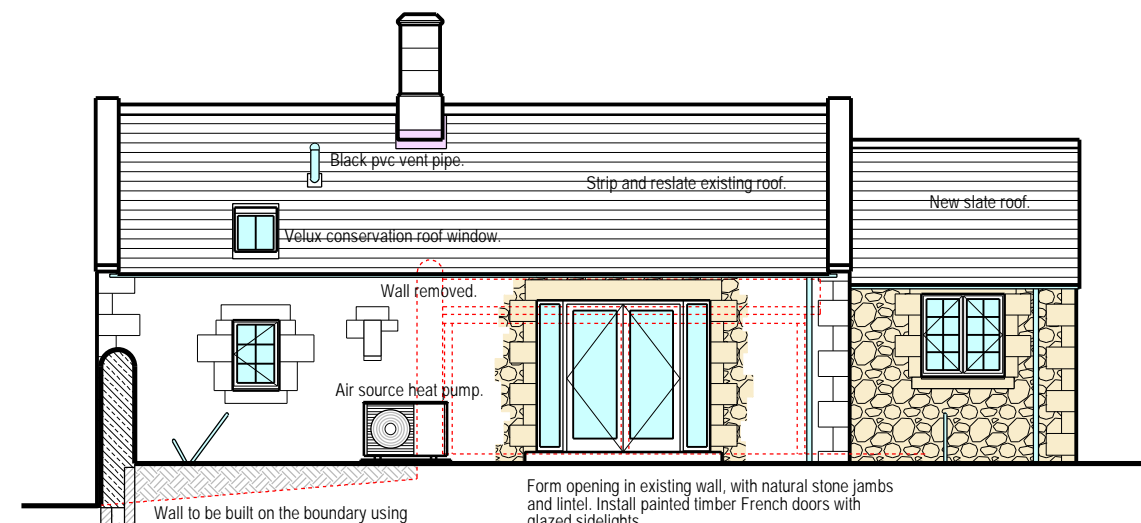
LEGEND.

- Gravel (existing and new to match)
- Grass.

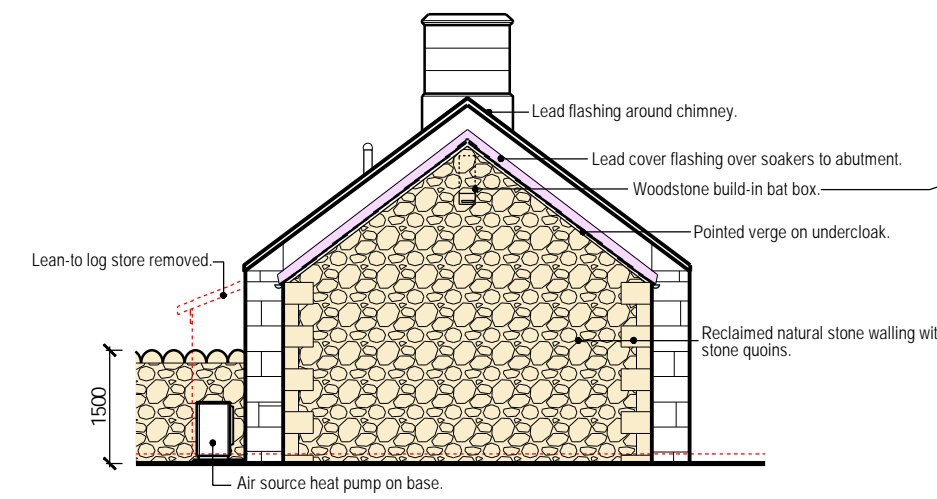


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 Licence number 100024244

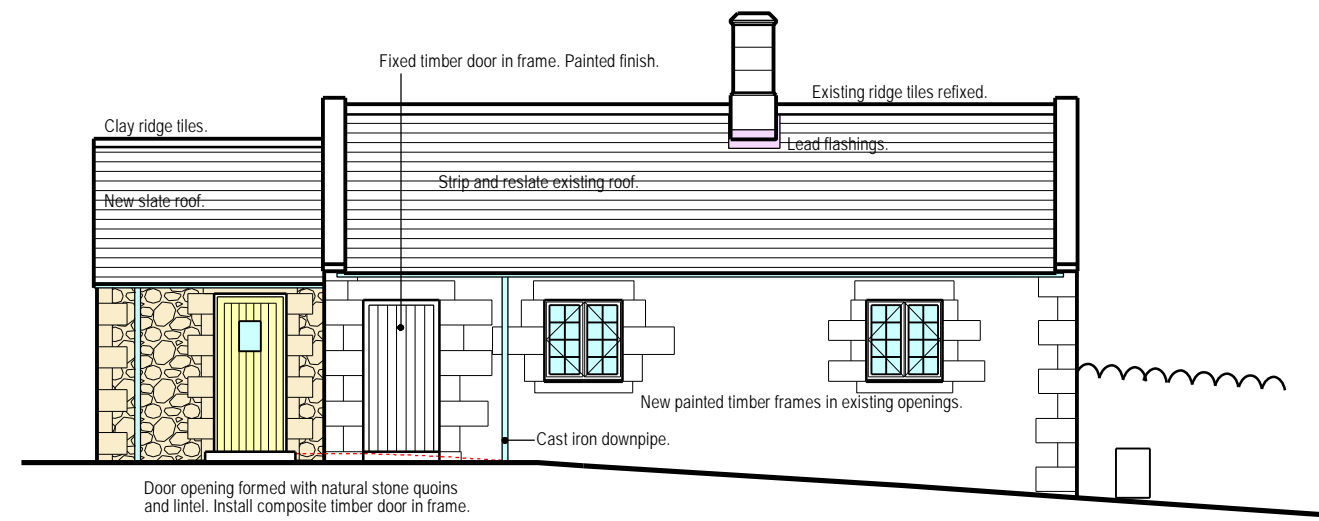
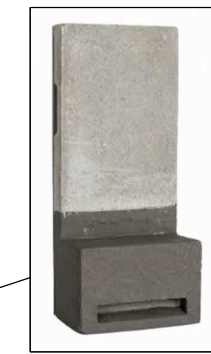




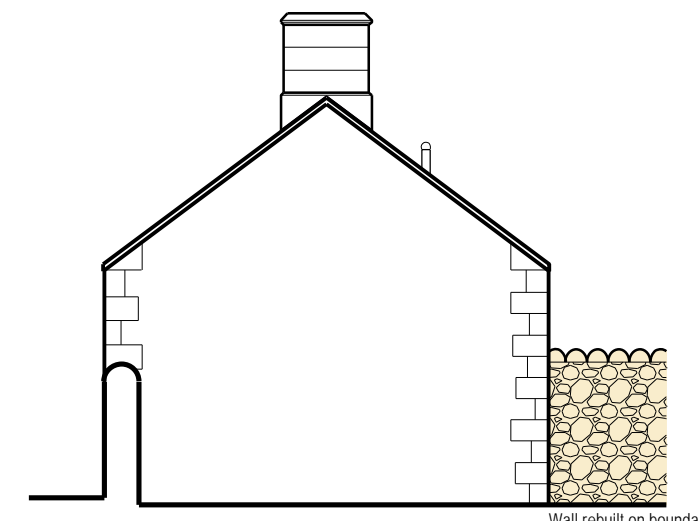
NORTH ELEVATION



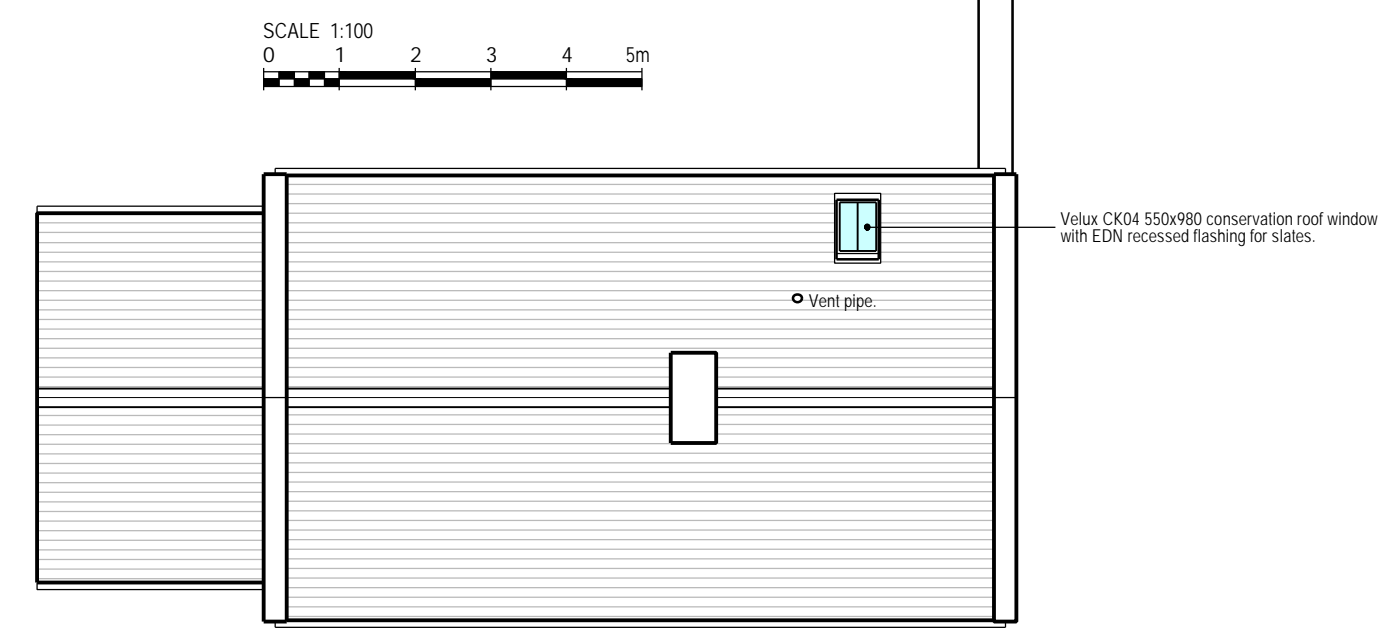
WEST ELEVATION



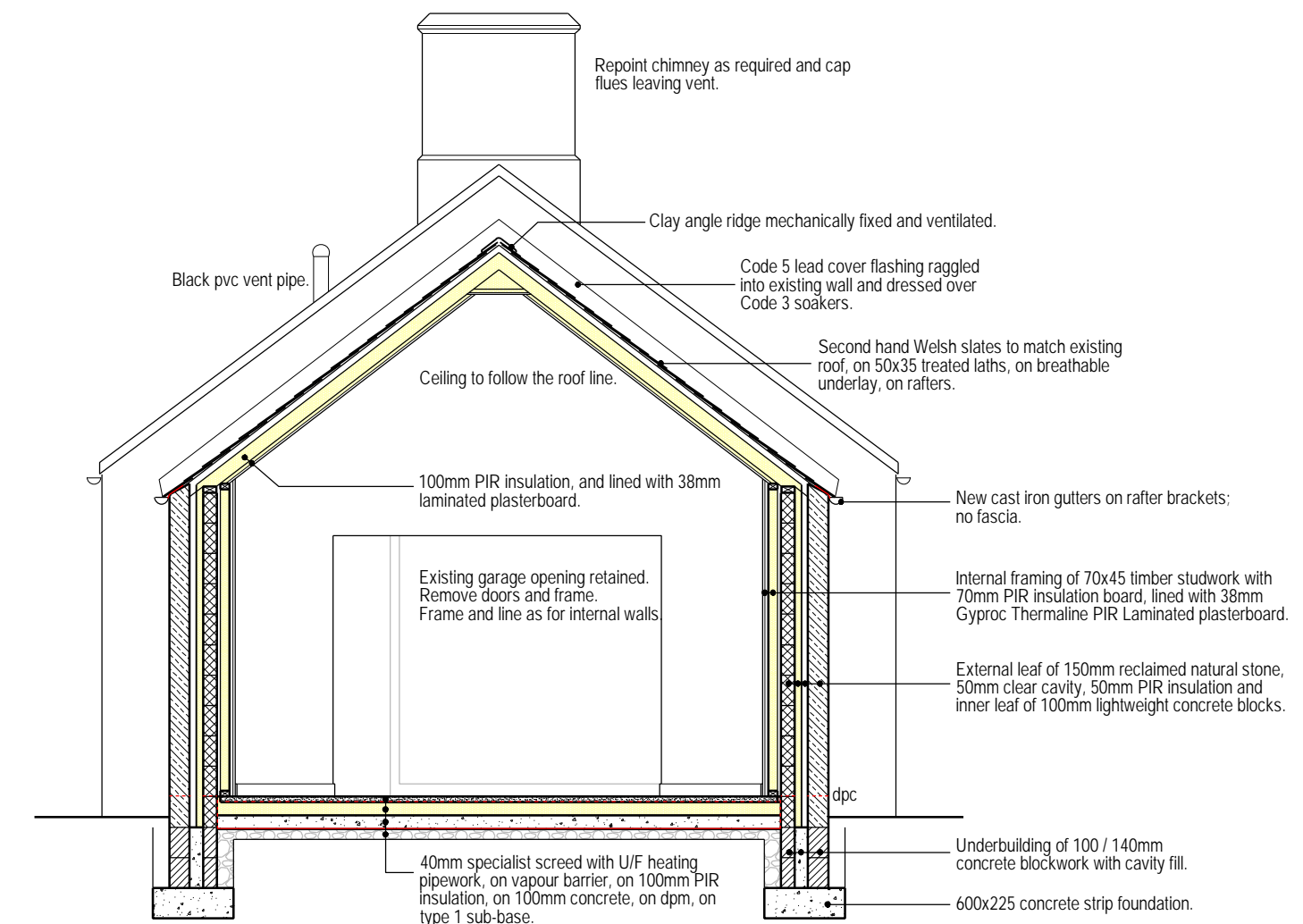
SOUTH ELEVATION



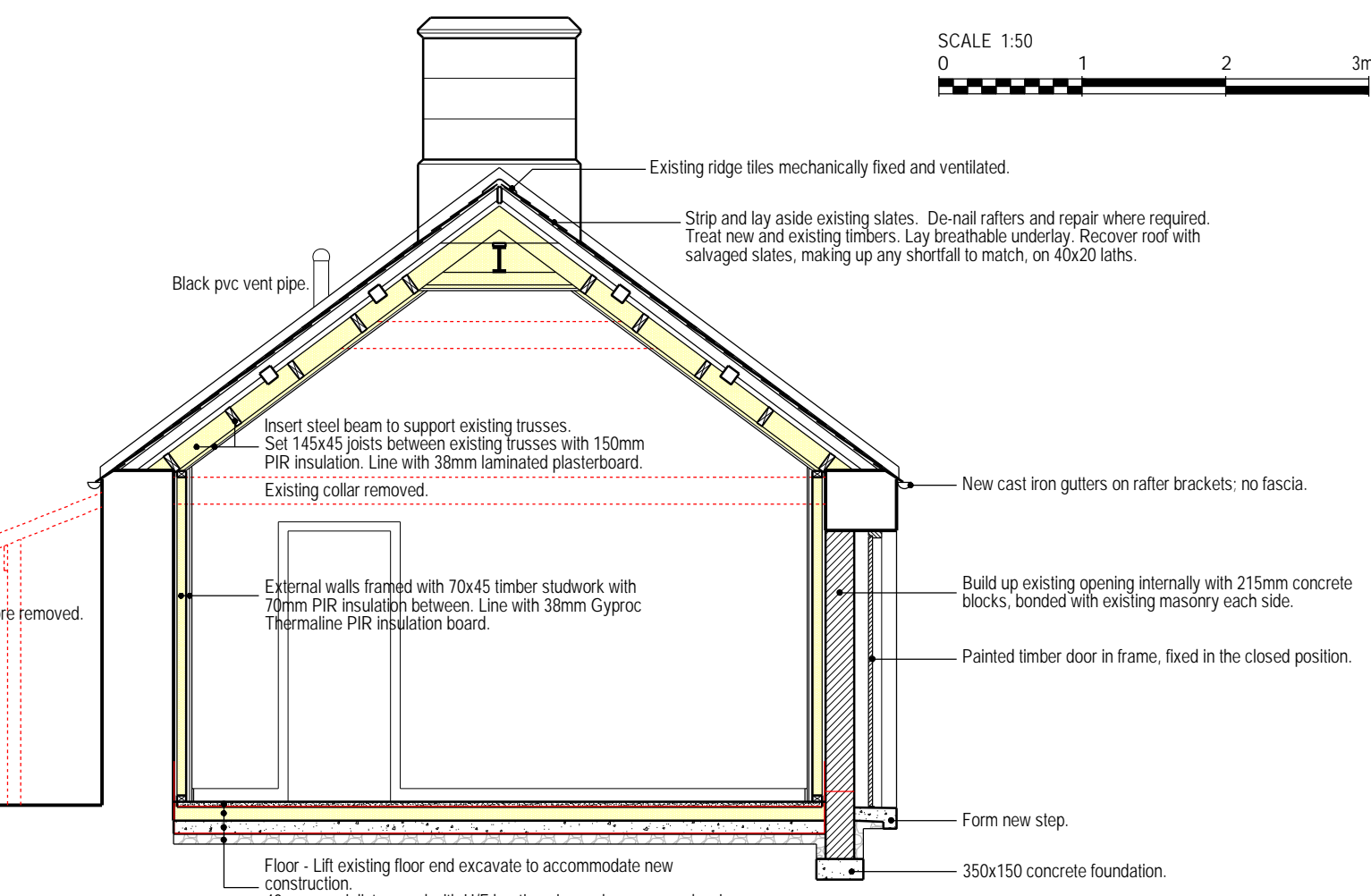
EAST ELEVATION



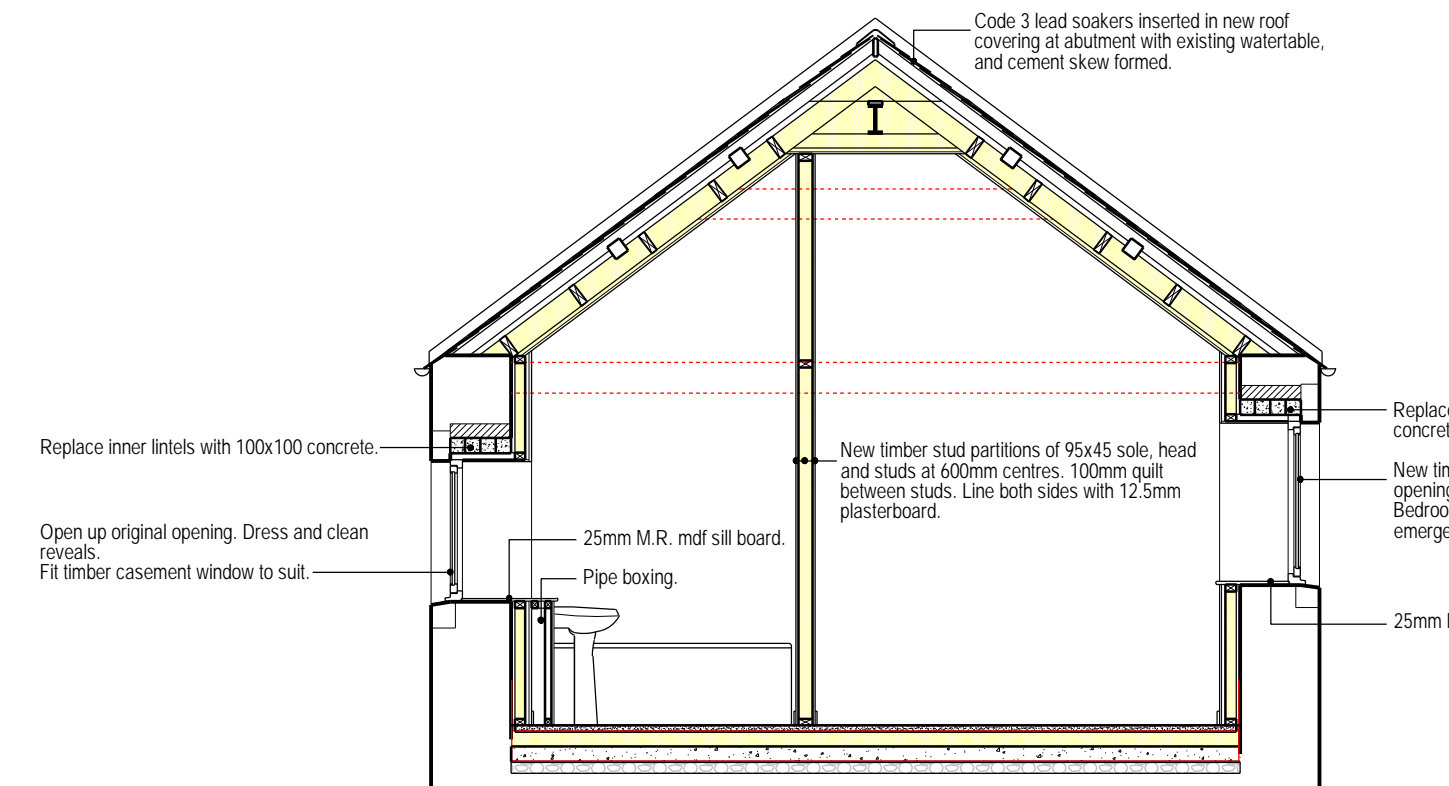
ROOF PLAN



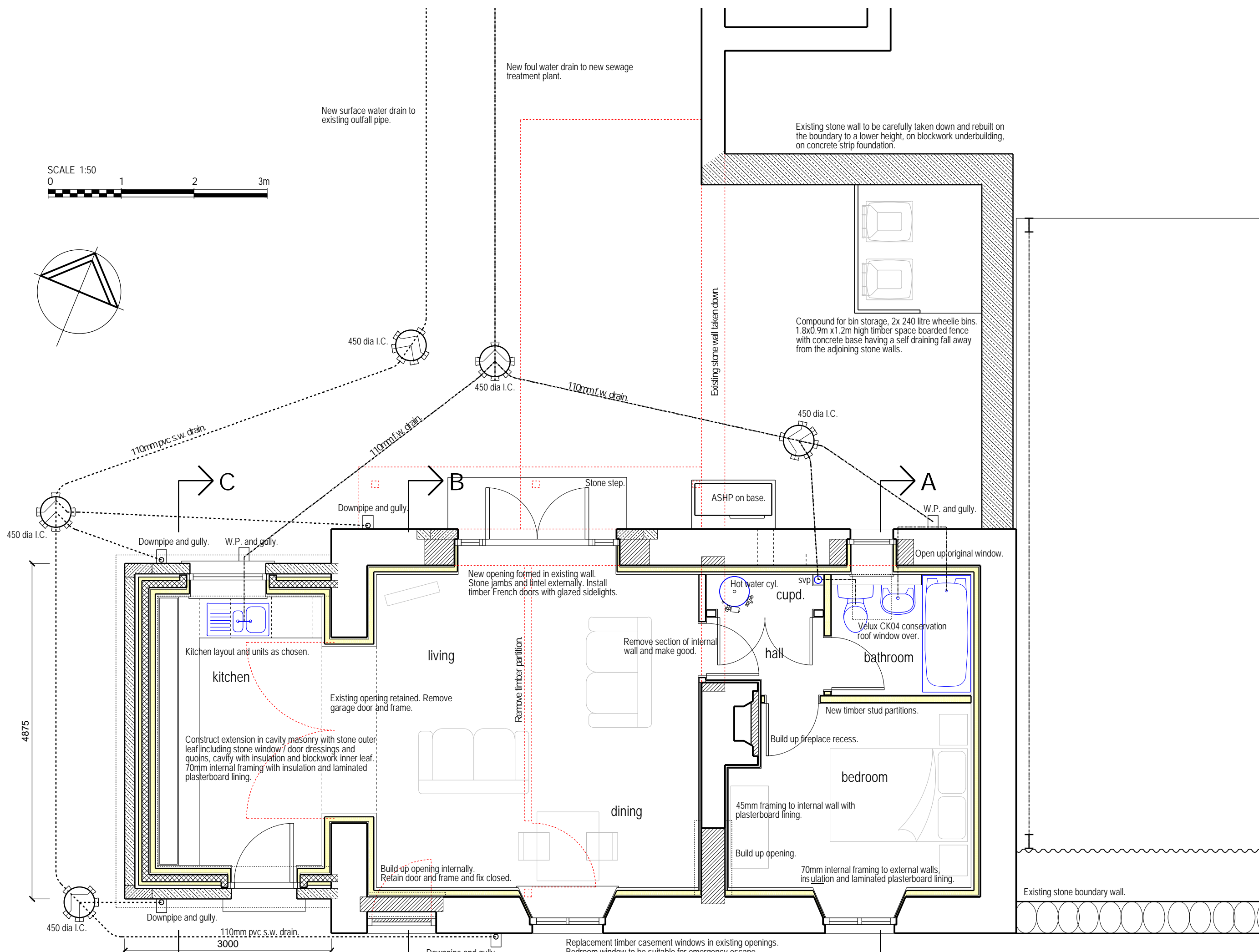
SECTION C-C



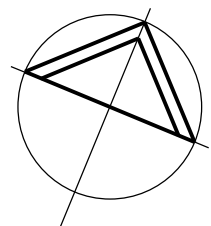
SECTION B-B



SECTION A-A



FLOOR PLAN



Notes :

**Ecology Mitigation :**

The work is to be carried out in accordance with the Ecological Impact Assessment and Bat Risk Assessment, East House Cottage, Cheswick, prepared by Ruth Haddon, Ryal Soil & Ecology.

**Summary -**

One integrated Build-in WoodStone Bat Box to be built into the west wall at 500mm below the wall top in the converted building.

Wooden beams and timbers will be treated only with 'bat friendly' products, permethrin or cypermethrin as insecticides for example. Further information is available if the contractor requires it.

A traditional bitumen felt (F1) or wood sarking that would give bats some grip will be used in the region of any bat roost potential and not a more modern smooth or breathable roofing membrane (BRM) that may fray and entrap bats. No BRM (Breathable Roofing Membrane) to be used in any areas where bats could gain access to roof as a result of new roost provisions.

Any external lights will be set on a motion detector and short timer and be positioned in such a way that they do not shine on any of the bat access positions or the buildings, as this can deter bats. Please see references Bat Conservation Trust/Institute of Lighting Engineers' Guidance 2018.

Any nesting bird species will be allowed access to the nest until the young have fledged.

B	Dec. 2022	Internal details.
A	Nov. 2022	Ecology.

Amendments :

**Project :**  
**EAST HOUSE COTTAGE**  
**EAST HOUSE**  
**CHESWICK**  
**BERWICK UPON TWEED**  
**TD15 2RL**

**Client :**  
**CHESWICK ESTATE**

**Title :**  
**PROPOSALS**



The Lumen  
 St James Boulevard  
 Newcastle Helix  
 Newcastle upon Tyne, NE4 5BZ  
 Tel 0191 917 1444  
 www.savills.co.uk

Scale :	1:50, 1:100 @ A1	Drawn :	I.M.
		Date :	SEPTEMBER 2022

Drawing Number :  
**5340 / 14 / B**

## APPENDIX 2

### COAL AUTHORITY REPORT





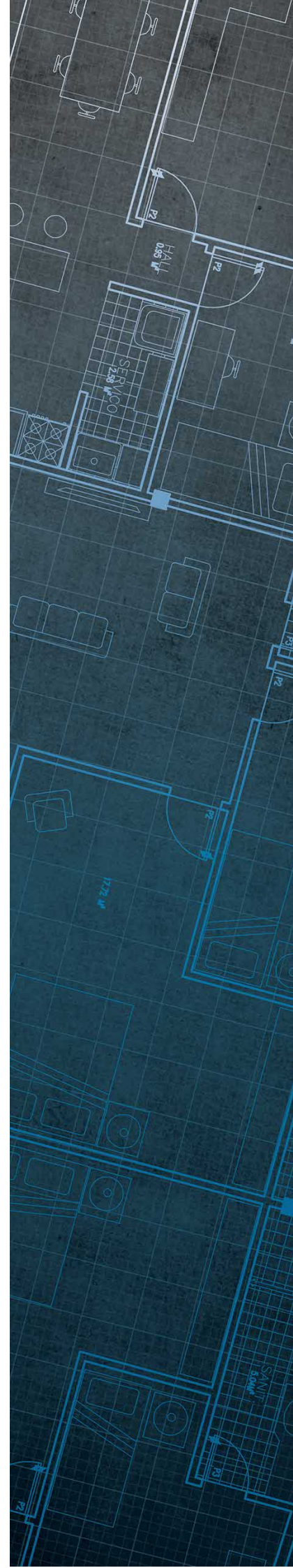
The Coal  
Authority

# Consultants Coal Mining Report

East House  
U19 Cheswick To Surface Change  
Cheswick  
Northumberland  
TD15 2RW

Date of enquiry: 6 February 2023  
Date enquiry received: 6 February 2023  
Issue date: 6 February 2023

Our reference: 51003337075001  
Your reference: 2023/5877



# 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

Georgia Hirst

## Enquiry address

East House  
U19 Cheswick To Surface Change  
Cheswick  
Northumberland  
TD15 2RW

## How to contact us

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

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Nottinghamshire  
NG18 4RG

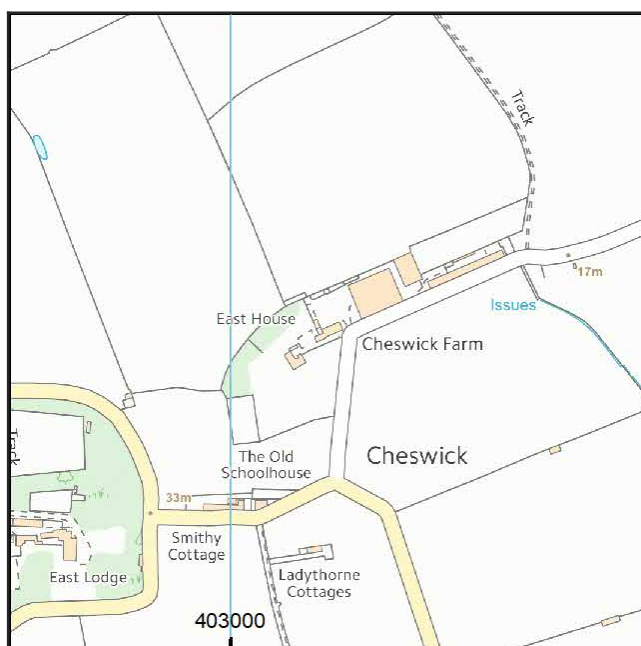
[www.groundstability.com](http://www.groundstability.com)

 @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

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	403646-004	403146 646537		Coal	

## Abandoned mine plan catalogue numbers

None available.

## Outcrops

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
LITTLE LIMESTONE	Coal	Yes	7.8	North	264

## 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.

### Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

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

## 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](mailto:groundstability@coal.gov.uk)**.

### Past underground coal mining

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

### Probable unrecorded shallow workings

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

### Spine roadways at shallow depth

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

### Mine entries

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

### Abandoned mine plan catalogue numbers

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

### Outcrops

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

### Geological faults, fissures and breaklines

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

### **Opencast mines**

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

### **Coal Authority managed tips**

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

### **Site investigations**

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

### **Remediated sites**

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

### **Coal mining subsidence**

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

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

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

### **Mine gas**

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

### **Mine water treatment schemes**

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

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

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

### **Future underground mining**

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

### **Coal mining licensing**

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

### **Court orders**

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

### **Section 46 notices**

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

### **Withdrawal of support notices**




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

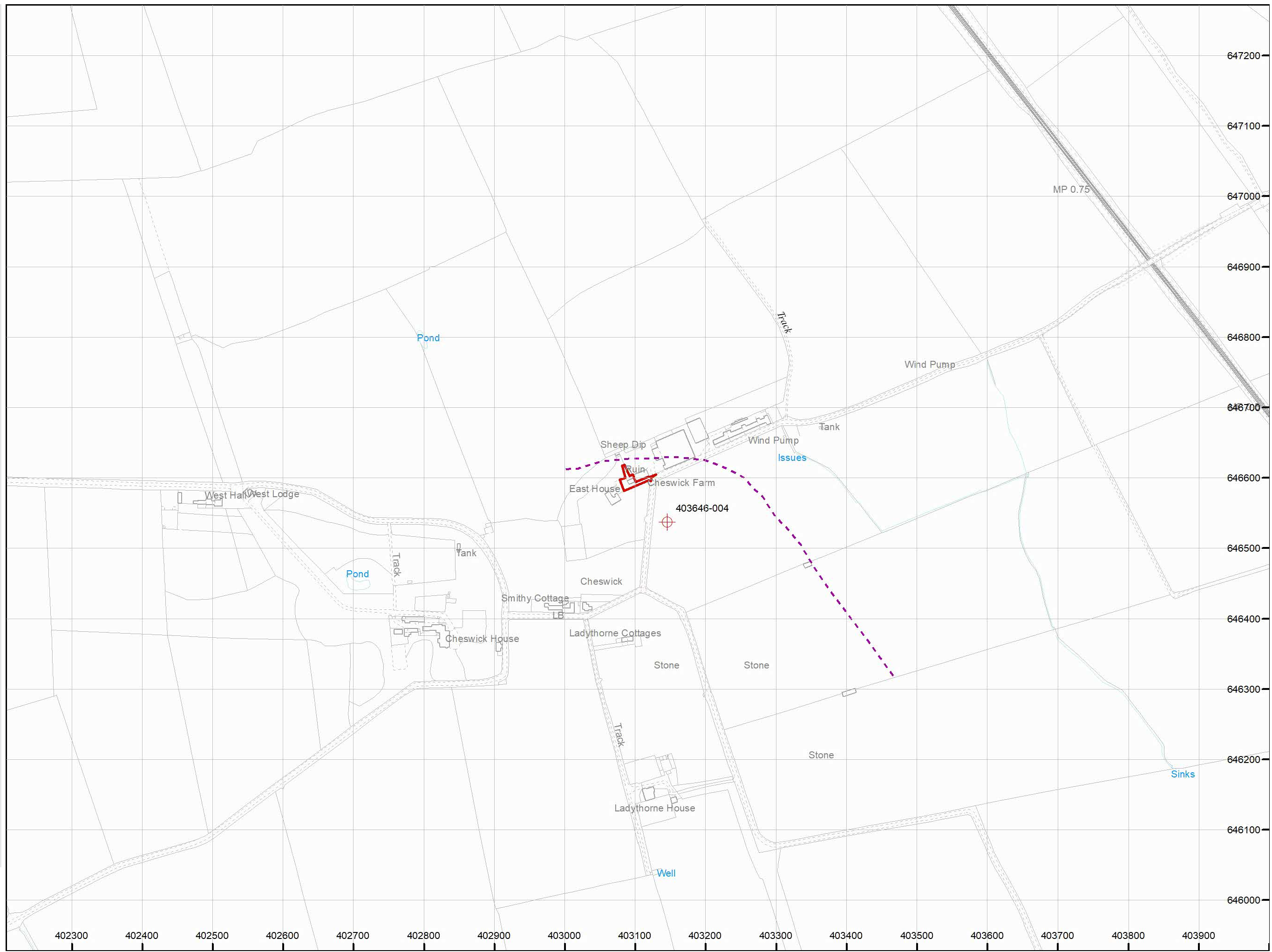
### **Payment to owners of former copyhold land**

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

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

**Key**

- Approximate position of the enquiry boundary shown 
- Disused mine shaft 
- Outcrop (Conjectured) 



**How to contact us**  
 0345 762 6848 (UK)  
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## APPENDIX 3

### NOTES ON LIMITATIONS



## NOTES ON LIMITATIONS

- 1 FWS Consultants Ltd (“FWS”) has prepared this report solely for the use of the client and/or his agent (the “Client”) on the basis of exchange(s) of written proposals and instructions, and FWS accepts no responsibility or liability:-
  - a) for use of this report by any party other than the person for whom it was commissioned, or;
  - b) for the consequences of the report being used for any purpose other than that for which FWS was instructed to prepare it.

Should any third party wish to use or rely upon the contents of the report, written approval from FWS must be sought.

- 2 All information supplied by the Client, the Client’s staff and professional advisers, local authorities, other statutory bodies, investigation agencies and publicly accessible databases, shall be provided to FWS in writing, and is accepted as being correct unless otherwise specified in writing by the discloser of the information.
- 3 The conclusions and recommendations in this report represent the professional opinions of FWS derived from currently accepted industry practices, and through the exercising of reasonable skill and care to be expected of a professional geosciences and environmental consultancy of similar size and experience. The assessments and judgments given in this report are directed by and limited to both the finite data on which they are based and the proposed works to which they are addressed.
- 4 Environmental and geotechnical desk studies comprise a study of available information obtained from various identified sources, authorities and parties. The information reviewed cannot be exhaustive and has been accepted in good faith as providing representative and true data pertaining to site conditions. For clarity, no independent verification of this data is carried out by FWS and it is accepted at face value. Any identified risks in desk study reports are perceived risks based on the information available at the time. Actual risks can only be assessed after carrying out a thorough physical investigation of the site that serves to validate such identified risks.
- 5 Data acquisition during site investigations is subject to the limitations of the methods of investigation used, site conditions and access constraints. Exploratory holes undertaken during fieldwork, particularly boreholes and/or trial pits, investigate a small volume of ground in relation to the size of the site and thus can only provide an indication of site conditions. The opinions provided and recommendations given in this report are based on the desk study information and ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions elsewhere onsite that have not been disclosed by the investigation and which therefore have not been taken into account in this report. FWS will take all due care and make commentary on the adequacy of data collection and therefore the ability to highlight the presence or otherwise of exceptional conditions.
- 6 Owing to the natural variation of the systems that are being investigated, and the anthropological impact similarly changing through time, the findings and opinions in this report are relevant to the dates of the site works and should not be relied upon to represent conditions after a reasonable passing of time. Site conditions will change over time due to natural variations and human activities. The comments made on groundwater, surface water and soil gas conditions are based on observations made at the time that the site work was carried out. It should be noted that these conditions will vary owing to seasonal, tidal and meteorological effects. Variation in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, or subsequent developments or activities on the site or adjacent area.
- 7 The scope of the investigation, as agreed between FWS and the Client, was undertaken based on the specific development proposals of the Client and may be inappropriate to another form of development or scheme.
- 8 The opinions expressed in this report regarding contamination, geotechnical and/or waste assessments are based on simple statistical analysis and comparison with available guidance values. No liability can be accepted for the retrospective effects of any changes or amendments to these values.