



Civil & Structural Engineers
Building Surveyors
Geo-Environmentalists

Fox Royd Drive,
Mirfield,
West Yorkshire

Coal Mining Risk Assessment

30685-SUT-Z1-00-RP-G-706-0001

Liverpool

T: 0151 227 3155

Manchester

T: 0161 817 5180

Wrexham

T: 01978 664071

London

T: 020 74 584136

Head Office

18-20 Harrington Street
Liverpool L2 9QA

T: 0151 227 3155

F: 0151 227 3156

E: enquiries@sutcliffe.co.uk

www.sutcliffe.co.uk

Client Name: Johnnie Johnson Housing

Revision: P01

Date: November 2019

SUTCLIFFE INVESTIGATIONS

Coal Mining Risk Assessment

Document Control Sheet

Report Reference: 30685-SUT-Z1-00-RP-G-706-0001

Issue: P01 Date: November 2019

Prepared by:

Name:	D Bowen		
Title:	Senior Environmental Scientist		
Qualifications:	BSc (Hons) FGS		

Checked/Approved by:

Name:	A Lewis		
Title:	Associate		
Qualifications:	BSc MSc AIEMA FGS		

Revision History:

Rev	Date	Description	Prepared	Checked	Approved
P01	November 2019	Final Report	DB	AL	AL

This document has been prepared by Sutcliffe Investigations within the terms of the Contract with the Client to whom this document is addressed. Sutcliffe Investigations disclaims any responsibility to the Client and others in respect of matters outside the scope of the said contract. No person other than the Client or agreed assignees shall rely on it in any respect and Sutcliffe Investigations shall owe no duty of care to any such third party.

Contents

1	INTRODUCTION	1
1.1	Terms of Reference.....	1
1.2	Development Proposal & Legislative Context	1
	Development Proposal.....	1
	Legislative Context.....	1
1.3	Site Location and Setting	2
1.4	Site Description and Layout.....	2
1.5	Previous Studies & Third Party Data.....	3
2	PRELIMINARY CONCEPTUAL RISK ASSESSMENT	4
2.1	Site History	4
2.2	Site Geology	4
2.3	Coal Mining Report	4
3	IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING RISKS	5
3.1	Introduction	5
3.2	Potential Coal Mining Issues	5
3.3	Risk Assessment and Mitigation Strategy	5
4	CONCLUSIONS & RECOMMENDATIONS	7
4.1	Summary of Risk	7
4.2	Recommendations	7
	Appendix A – Coal Authority Mining Report.....	A
	Drawing: FOXRO-WBA-SI-ZZ-DR-A-PL-004.....	B

1 Introduction

1.1 Terms of Reference

Sutcliffe Investigations was instructed by Johnnie Johnson Housing (the “client”) to undertake a Coal Mining Risk Assessment for the site at Fox Royd Drive, Mirfield, West Yorkshire, WF14 9ER.

The location of the site is presented as *Figure 1*. The site is centred on Grid Reference (NGR) 420010, 420913 and is approximately 0.12ha in area.

This report assesses the ground based risks, constraints and liabilities associated with former coal workings to the proposed development of the site. This is required in support of the discharge of contaminated land planning conditions assigned to the site and to allow the design of economic foundation solutions.

1.2 Development Proposal & Legislative Context

Development Proposal

It is understood that consideration is being given to redevelopment of the site with the erection of new bungalows. A proposed site layout has been provided and is presented as *Drawing Ref: FOXRO-WBA-SI-ZZ-DR-A-PL-004*.

Legislative Context

The purpose of the Report is to present a desk-based review of all available information on the coal mining legacy relevant to the Site, and then, propose further investigation or mitigation measures that address the coal mining legacy. The Report also sets out how the requirements of national planning policy with regard to development on unstable land are to be addressed.

This report has been written in general accordance with the Coal Mining Risk Assessment Model Report Template, January 2011 and intends to demonstrate to the Local Planning Authority (LPA) that the Site is, or can be, made safe and stable, to meet the requirements of the national planning policy with regard to Planning Policy Guidance Note 14 (PPG14) “Development on Unstable Land” DoE 1990.

1.3 Site Location and Setting

The site address is located at Fox Royd Drive, Mirfield, WF14 9ER at National Grid Reference (NGR) 420010, 420913 (*Figure 1*).

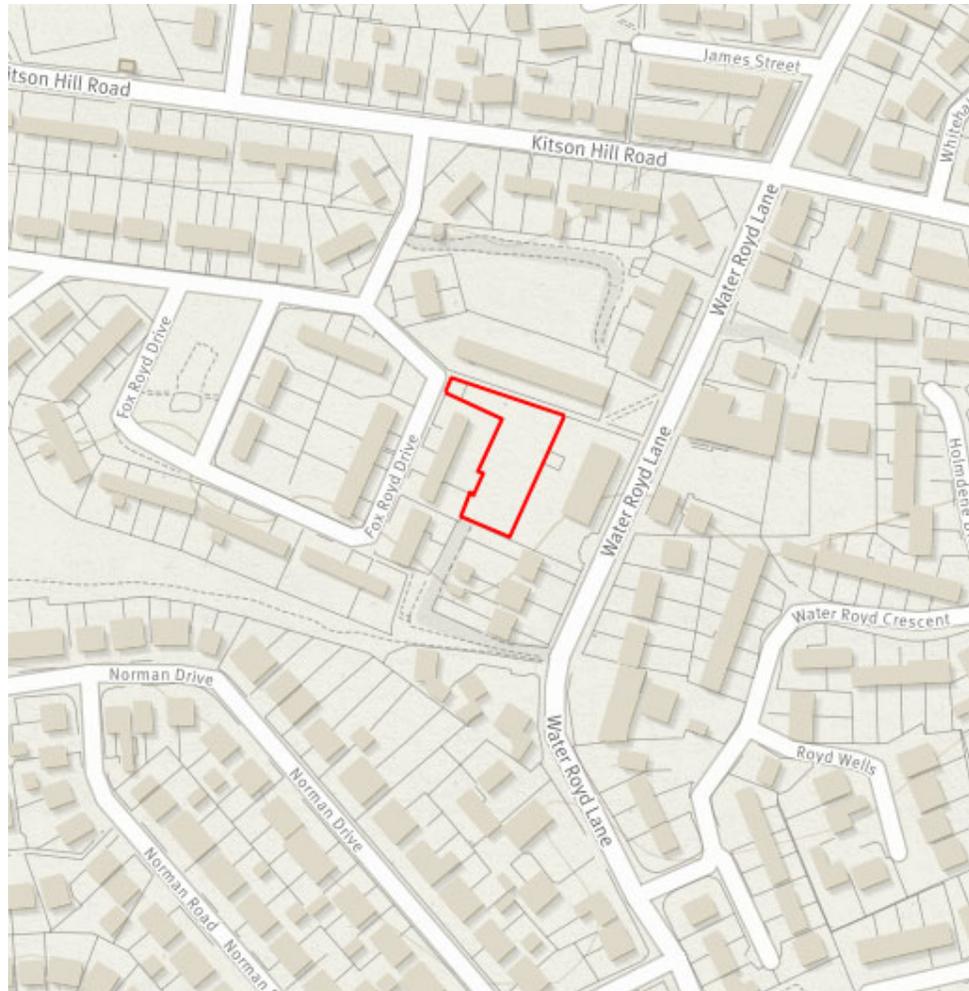


Figure 1: General Location of Site

1.4 Site Description and Layout

The site is irregular in shape, 0.12ha and can be accessed via Fox Royd Drive to the west. The site is currently undeveloped roughly vegetated land.



Figure 2: Aerial Photograph of the Site

1.5 Previous Studies & Third Party Data

This report should be read in conjunction with the previously completed reports and third party data listed below:

- *Subsurface Phase 1 Desktop Study Searches Source Data, July 2019*
- *Coal Authority Mining Report, Ref.:51002187357001*

2 Preliminary Conceptual Risk Assessment

2.1 Site History

The historical land use map from the Phase 1 shows that the site has previously been occupied by an industrial land use and consists of potentially infilled land. The details of this show that there was a colliery on site from the 1905 – 1938 mapping.

Subsequently the sites use is listed as Garage on the 1967-1974 mapping.

2.2 Site Geology

According to the BGS Geology of Britain Viewer and the relevant British Geological Survey (BGS) Solid and Drift Sheets at a scale of 1:50,000 the following geological succession has been identified below in *Table 2.1*.

Table 2.1: Site Geology

Strata	Description	Age	Rock Type
Solid Geology	Pennine Lower Coal Measures Formation	Westphalian	Mudstone, Siltstone & Sandstone

2.3 Coal Mining Report

Based upon the information provided within the Coal Authority report obtained by Sutcliffe the following is of note:

- *The property is in a surface area that could be affected by underground mining in 3 seams of coal at shallow to 200m depth, and last worked in 1930.*
- *Two mine entries are noted on or within 20m of the site, information on status and location of the entries can be found in the Coal Authority Report in Appendix A.*

3 Identification and Assessment of Site Specific Coal Mining Risks

3.1 Introduction

Identification and assessment of the Site's coal mining risks has been undertaken from existing desk based information.

Assessing risks from coal mining is based upon guidance provided by the Coal Authority following a 'risk-based' approach implemented through PPG 14.

3.2 Potential Coal Mining Issues

The potential risks to the development of the site from historic coal workings and remediation to these features as identified within the Coal Authority Report are summarised below in *Table 3.1*.

Table 3.1: Potential Coal Mining Issues

Coal Mining Issues	Yes	No	Risk Assessment
Underground coal mining (recorded at shallow depths)	✓		Required
Underground coal mining (probable at shallow depths)	✓		Required
Mine Entries (shafts and adits)	✓		Required
Coal mining geology (fissures)		✓	Not required
Record of past mine gas emissions		✓	Not required
Recorded coal mining surface hazard	✓		Required
Surface mining (opencast workings)		✓	Not required

3.3 Risk Assessment and Mitigation Strategy

Based on the information obtained from this assessment, a risk assessment has been formulated, which identifies plausible risks at the Site in the context of the proposed end-use. These are detailed in *Table 3.2* below.

Table 3.2: Identified Risks and Mitigation Strategy

1. Hazard Identification	2. Risk Estimation	3. Risk Evaluation	4. Managing the Risk
Mine Entries	Medium to High	<p>From the information provided by the Coal Authority there are 2 mine entries either within the site boundary or within 20 metres of the site.</p> <p>Treatment details are provided for 1 of these mine entries, with both of these being identified as being offsite.</p>	<p>Following obtaining a copy of a Mine Entry Interpretive Report & Mine Entry Plan and Data Sheets positions for undertaking trench excavations will be undertaken in the areas where the capped mineshaft and untreated mine shaft may encroach onto the site to determine if they will affect the proposed development and to determine what treatment may be required to ensure the development is safe from any risk associated with the mineshafts.</p>
Shallow Workings	Medium to High	<p>The Coal Authority report states that there is coal at or close to the surface that may have been worked at some time in the past.</p>	<p>It is proposed to undertake 3no. 30 metre water mist rotary boreholes within the proposed building footprint to determine the presence of shallow workings that may affect the development. These boreholes will be looking to identify the presence of any voids that may be indicative of the removal of coal from within the shallow underlying strata, along with any unworked coal.</p>
Surface Hazards	Medium	<p>The Coal Authority report states that there has been a claim within 50m of the site relating to coal mining subsidence.</p>	<p>Obtain a Subsidence Claims 50m Buffer Report.</p>

4 Conclusions & Recommendations

4.1 Summary of Risk

In its current state there are two main sources of risk to the development from the former coal workings, these are;

- Unidentified mine shaft caps within the proposed development area,
- Past shallow workings to be present on site.

Further works would be proposed to investigate the risk posed by the identified areas of concern, recommendations of which are outlined below.

4.2 Recommendations

The first stage of proposed works to mitigate the identified risk would be the drilling of 3no. 30 metre deep rotary boreholes within the proposed building footprint to identify the presence of any shallow workings that may affect the development. This will allow the identification of any potential voids that may be present at a shallow depth that would require remedial works to be undertaken before the development can take place, along with any unworked coal seams.

The second stage would be to identify the mine shaft caps in close proximity to the proposed development. At this stage it is proposed to undertake the investigative works in the area of the unidentified mine caps by excavating trenches to expose any mineshaft cap or back fill.

Completion of these proposed works would allow the risk identified to be fully assessed in the context of the proposed development.

Appendix A – Coal Authority Mining Report



The Coal
Authority

CON29M

coal mining report

FOX ROYD DRIVE, MIRFIELD, WEST YORKSHIRE, WF14 9ER



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Coal mining subsidence	Page 6



Further action

These additional reports can give further detail on the risks identified:

- Mine entry interpretive report
- Mine entry plan and data sheets
- Subsidence claims 50m buffer report

For more information please see our **Further action reports on page 10**



Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. In view of the coal mining circumstances we would recommend that any planned or future development should follow detailed technical advice before beginning work on site. Please see **page 3** for further details on **Future development**.

Your reference: **223250663_1**
Our reference: **51002187357001**
Date: **31 October 2019**

Client name:
**LANDMARK INFORMATION
GROUP LIMITED**

If you require any further assistance please
contact our experts on:
0345 762 6848
groundstability@coal.gov.uk



The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



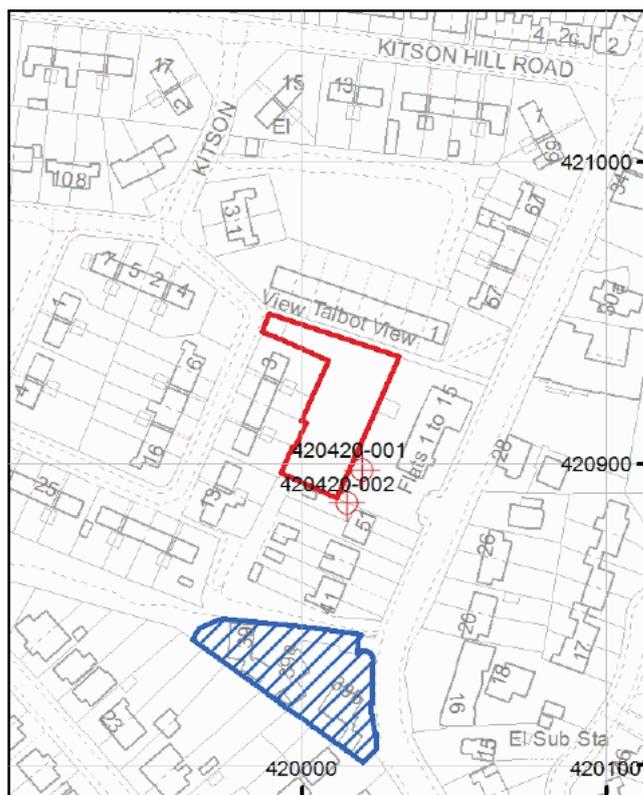
Disused mineshaft



Coal claims



We can confirm that the location is
on the coalfield



Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2018. All rights reserved.
Ordnance Survey Licence number: 100020315.

This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.



Accessibility

If you would like this information in an alternative format, please contact our communications team on **0345 762 6848** or email communications@coal.gov.uk.

Professional opinion



Mine entries

The enquiry boundary shows the approximate location of the disused mine entry/entries referred to in this report. Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage caused by disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by visiting www.coal.gov.uk. Please note this Act is not valid where coal was worked or extracted 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.

If you wish to discuss the relevance of any of the information contained in this report, you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wishes to examine the source plans from which the information has been taken, these are available to view, at our Coal Authority head office in Mansfield. To book an appointment please call **01623 637 225**. Should you or your advisor wish to carry out a physical investigation that may enter, disturb or interfere with any disused mine entry, prior permission must be sought from the owner. For coal mine entries, the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency, 24 hour call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). To report an emergency you can call **01623 646 333**.



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. 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.

If you are looking to develop, or undertake works, within a coal mining development high risk area your Local Authority planning department may require a Coal Mining Risk Assessment to be undertaken by a qualified mining geologist or engineer. Should you require any additional information then please contact the Coal Authority on **0345 762 6848** or email cmra@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

The Coal Authority owns the copyright in this report and the information used to produce this report is protected by our database rights. All rights are reserved and unauthorised use is prohibited. If we provide a report for you, this does not mean that copyright and any other rights will pass to you. However, you can use the report for your own purposes.

1 Past underground coal mining

The property is in a surface area that could be affected by underground mining in 3 seams of coal at shallow to 200m depth, and last worked in 1930.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

4 Mine entries

Within, or within 20 metres of, the boundary of the property there are 2 mine entries, the approximate positions of which are shown on the enquiry boundary plot. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Our records disclose the following information:

420420-001. according to the owner of the site this shaft is capped with an 8m x 8m x 1m thick concrete cap although this has not been confirmed by the Coal Authority.

Mine entry 420420-001 was conveyed to Petrofino (Gt. Britain) Limited in 1964.

420420-002. No treatment details.

This information is based on the information that the Coal Authority has at the time of this enquiry.

Based on the Coal Authority's knowledge of the mining circumstances at the time of this enquiry, there may be unrecorded mine entries in the local area that do not appear on Coal Authority records.

For an additional fee, the Coal Authority can provide a Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry/entries referred to in this report. It gives an opinion on the likelihood of mining subsidence damage caused from ground movement as a consequence of the mine entry/entries. It also gives details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie for development sites and new build).

For further advice on how to order this additional information please visit www.groundstability.com.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 Coal mining subsidence

There is a claim within 50 metres of the property boundary that does not match the property address. This is shown on the enquiry boundary plot.

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.

If further subsidence damage claims information is required, please visit www.groundstability.com.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

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.

13 Working facilities order

The property is not in an area where an order has 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 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.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please 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.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.

www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call **01623 646 333**. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary



Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings



Further action reports

Mine entry interpretive report - assesses the risk of ground movement from mine entries in, or within 20 metres of, the property boundary. To order this report, use the same boundary as the CON29M report, then draw the building on the additional map screen.

For more information and to order this report please visit:

<https://www2.groundstability.com/interpretive-report>

Mine entry plan and data sheets - give additional information on mine entries recorded on a piece of land. To order this report use the same boundary as the CON29M report and a member of our team will contact you to confirm the mine entries to include in this bespoke report.

For more information and to order this report please visit:

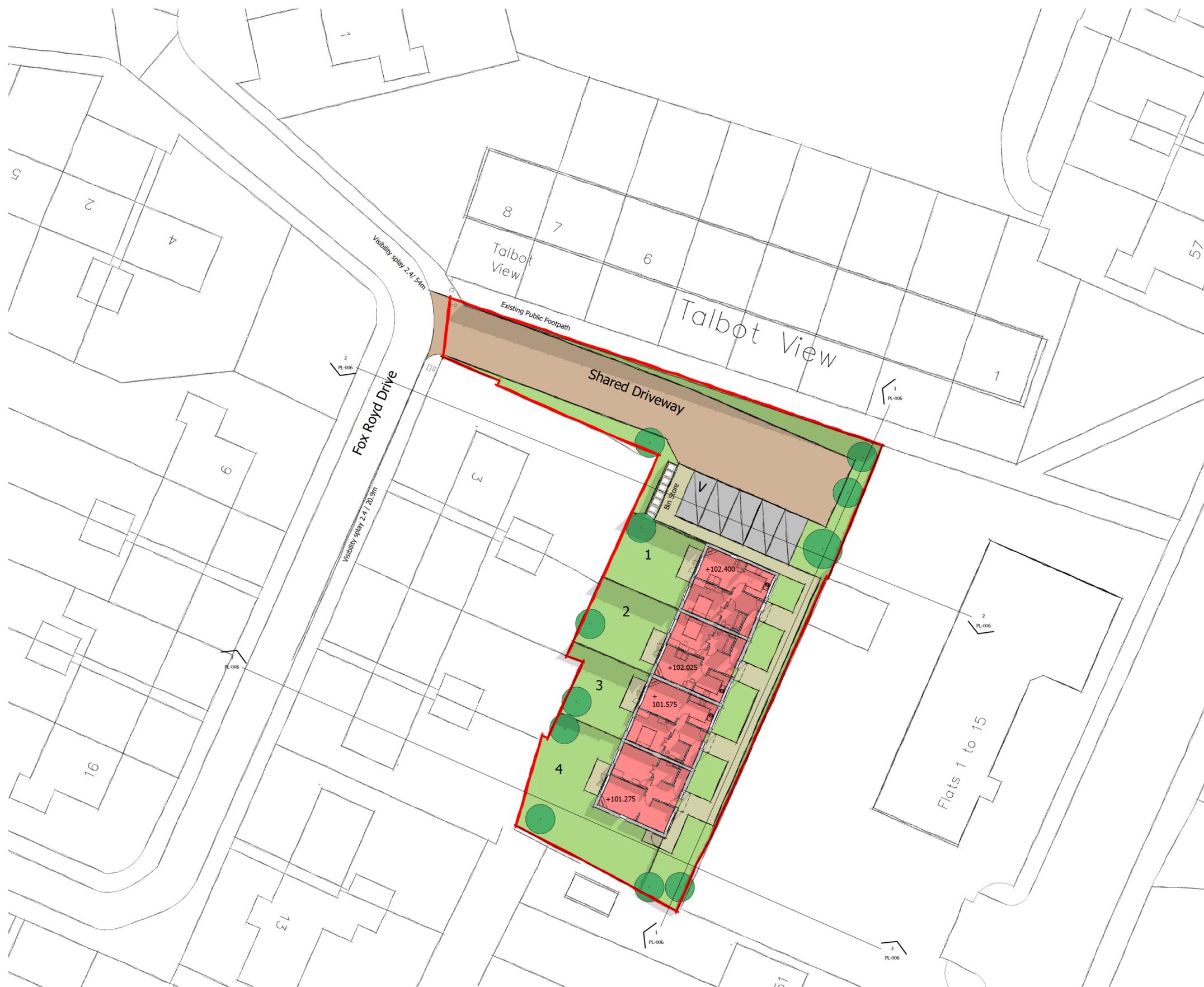
<https://www2.groundstability.com/plan-and-data-sheets>

Subsidence claims 50m buffer report - gives information on coal mining subsidence claims within 50 metres of the property boundary. To order this report, use the same boundary as the CON29M mining report.

For more information and to order this report please visit:

<https://www2.groundstability.com/subsidence-50m-buffer>

Drawing: FOXRO-WBA-SI-ZZ-DR-A-PL-004



Schedule Of Accommodation

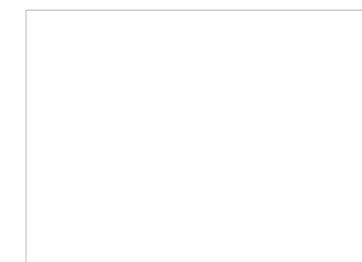
House Type	Quantity
HTA 1B2P Bungalow (50m ²)	4

Site Area

0.1181ha
 1181m²

Carparking

Quantity	
Private Parking Spaces	4
Visitor Parking Spaces	1
Total	5



Rev	Date	Drawn	Checked	Description
PL				Planning

New Residential Development

Site Layout

Location:
 Fox Royd Drive
 Mirfield

Client:
 Johnie Johnson Housing

UPRN Originator Zone Level Type Role Series/Number Revision:
FOXRO-WBA-SI-ZZ-DR-A-PL-004

Date	Drawn	Checked	Scale	Int. Job No.
08/21/19	GP	RJ	As Indicated	4039_03

WATSON BATTY ARCHITECTS

Shires House, Shires Road
 Guiseley, Leeds LS20 8EU
 Leeds Loughborough
 T: 01943 876 665
 E: enquiries@watsonbatty.com
 W: www.watsonbatty.com

