

Report No. BC/MB/02.24.02.

**Coal Mining Risk Assessment: Land at Block B,
Sparks House, Western Industrial Estate,
Caerphilly.**

Prepared on behalf of:

Creazione Fitness Village.

By:



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Coal Mining Risk Assessment: Land at Block B, Sparks House, Western Industrial Estate, Caerphilly.

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Appendix II: Copy of Public Health England's Radon Report.

Coal Mining Risk Assessment: Land at Block B, Sparks House, Western Industrial Estate, Caerphilly.

1 Introduction

This report has been prepared on behalf of our client:

*Creazione Fitness Village,
Sparks House,
Western Industrial Estate,
Caerphilly,
CF83 1BQ*

and relates to the above parcel of land at Sparks House, where it is proposed to extend the building. This report considers the geology and mining history of the Site and assesses the risk from both to the proposed extension.

The following sources of data have been used in the preparation of this report,

- i) Research of published geological records;*
- ii) Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) Inspection of The Coal Authority's interactive map, accessed on the 13th February 2024;*
- iv) The findings of the Coal Authority's mining report reference no. 61004252651001;*
- v) Public Health England's Radon report and*
- vi) the archive records of Blandford Consulting.*

The findings of this report are necessarily based upon the data used in its compilation and may be amended in the future in the light of additional material information. The report must only be used in its entirety for its stated purpose.

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2 Brief Description of the Site

The plot of land that is the subject of this report, ‘the Site’ is located at Sparks House on the Western Industrial Estate, which is in the south-western quarter of Caerphilly approximately 1.6 miles south-west of the commercial centre of Caerphilly. The Site is situated at the south-west edge of the industrial estate, adjacent to a mixed residential area that includes a school and nature reserve area (see Figure 1 and *General Location Plan, drawing no. BC/MB/02.24.02.01*). The Site is presently occupied by Creazione Fitness Village, a dance, fitness and gym facility with car parking space, it is roughly triangular in outline and occupies an area of approximately 0.53 hectares. The Site is at an approximate elevation of 100m aod.

Figure 1
Aerial View of Site
(Google Earth Pro)



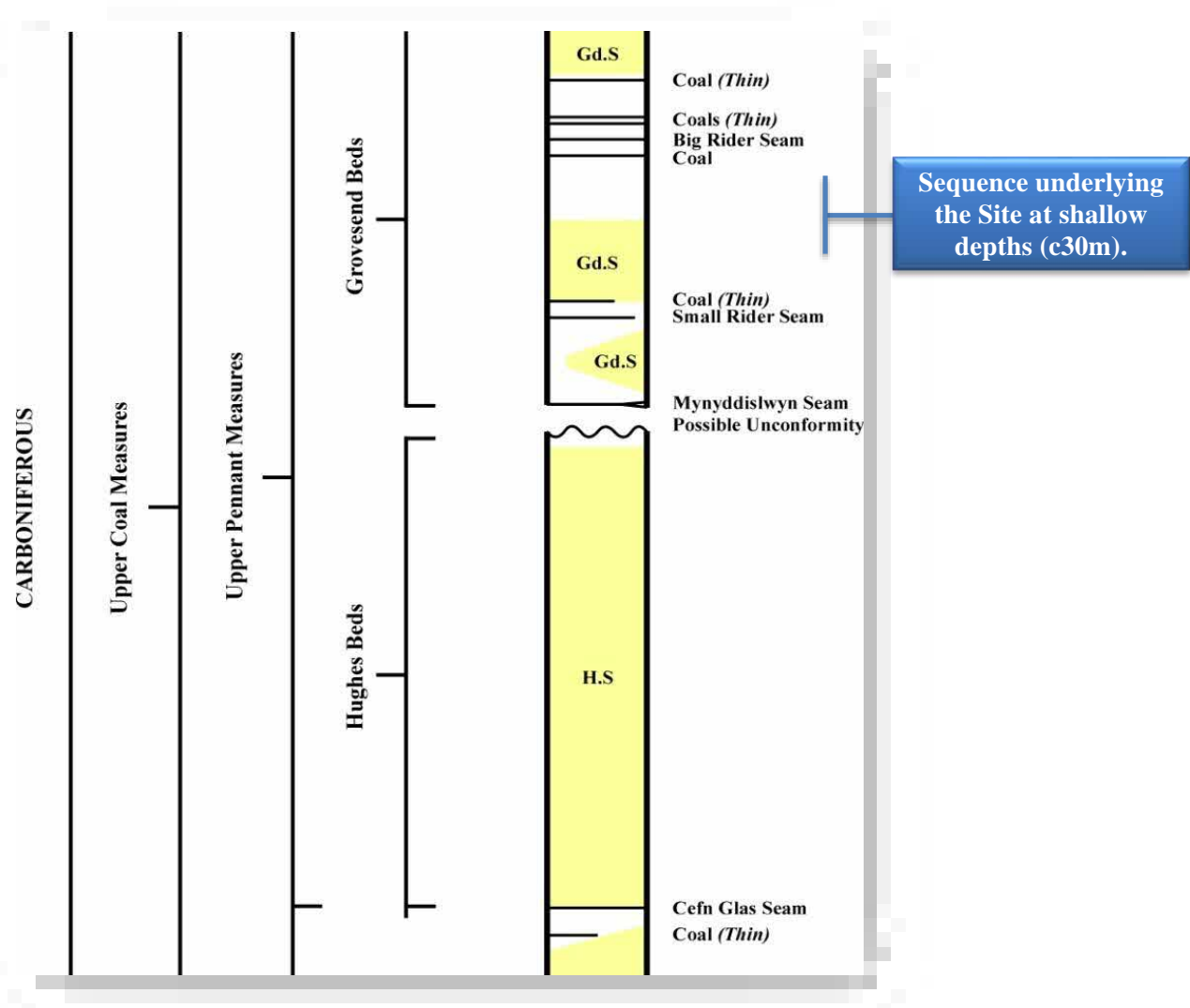
3 Geology of the Site

The published geological sheet for the area at a scale of 1:10,560 (ST 18 NW) indicates that the Site is underlain at shallow depths with strata assigned to the Grovesend Beds, the

/Cont....

uppermost sub-division of the Upper Coal Measures. The inferred position of the outcrop of the Mynyddislwyn (Llantwit) Seam is shown to be present approximately 150m south of the Site and underlies it. The shallow coal measures underlying the Site are those above the Small Rider Seam in the geological sequence, there are no coal seams underlying the Site at shallow depths that are thick enough to have supported underground mining operations (see Figure 2, Indicative Stratigraphic Column).

Figure 2
Indicative Stratigraphic Column
(after BGS ST 18 NW)



The measures of the South Wales Coalfield have been affected by large normal faults, frequently referred to as ‘cross faults’. In the Caerphilly area these faults have a sinuous trace at

the surface and average trends towards the north-west. Published geological information shows that the Site is not affected by any large faults.

The published geological sheet shows that the coal measures are overlain with glacial till, Boulder Clay across the area of the Site.

The published geological sheet shows that the Site is not affected by landslip conditions.

4 Mining History

The general area has experienced extensive underground operations for coal and for ironstone dating back at least to the very earliest part of the nineteenth century. The workings were prosecuted from a small number of adits driven into the hillside near the outcrop of coal seams and from shafts sunk to access deeper lying coal seams.

The Coal Authority's on-line interactive map and The Coal Authority's mining report identifies that the Site is not affected by shallow mine workings nor by 'probable' old workings, *i.e.* possible old workings for which The Coal Authority holds no plan records. The Coal Authority's mining report identifies that the Site is not within influencing distance of any mine workings.

The Coal Authority's mining report also identifies that there are no recorded disused mine entries within 20m of the Site.

The Site has not been part of an opencast site and there are no operating mines, opencast or underground, that could affect the stability of the proposed development.

5 Mine Gases

When coal is mined gases, including methane, are released and may accumulate in the voids left by the mining operations. These gases may later vent to atmosphere or be displaced by mine water flooding the mining voids and forced to the surface. Mine gases may, in certain

/Cont....

Figure 3
Print-out of The Coal Authority's Interactive Map
(Accessed 13th February 2024)



circumstances, accumulate within voids within buildings and result in asphyxiation or explosion. A number of studies of the old workings across South Wales and dating back to the mid to late twentieth century have shown that there is little risk from mine gases. This may be as a result of the nature of the coal seams or because the shallow old workings have vented most of the mine gases to atmosphere or is as a result of the combination of the two.

There are no mine workings underlying the Site that could act as a source for venting mine gases and no nearby disused mine entries that could act as a source for venting mine gases. Underground mine workings in coal seams high in the Upper Coal Measures, including the Mynyddislwyn Seam, were ‘naked light’ as a result of the very low methane content/emission. There have been no mine gas incidents at the Site that have required The Coal Authority to take any action. The Site is overlain with deposits of Boulder Clay that would inhibit the passage of gases. The risk to the development from mine gases on the Site is considered to be low.

6 Radon Gas

Government’s advice to assess the risk from Radon gas for new buildings has been followed by obtaining from Public Health England a Radon report for Sparks House. The report identifies that the Site lies within an area that is not affected by Radon, the appropriate response for building control purposes is NONE.

7 Discussion and Recommendations

There are no recognised risks to the proposed development arising from the solid geology.

There is no recognised risk to the proposed development arising from the mining history of the area.

The Site lies within an area that is not affected by Radon, the appropriate response for building control purposes is NONE.

No particular measures are required in the foundations to mitigate against risk from the solid geology nor from the mining history of the area and shallow spread foundations (conventional strip/trench, pads or raft) will be appropriate subject to an assessment of the soil conditions on the Site. The published geological sheet for the area identifies the presence of Boulder Clay on the Site, Boulder Clay typically has a bearing capacity of up to 125 kN/m².



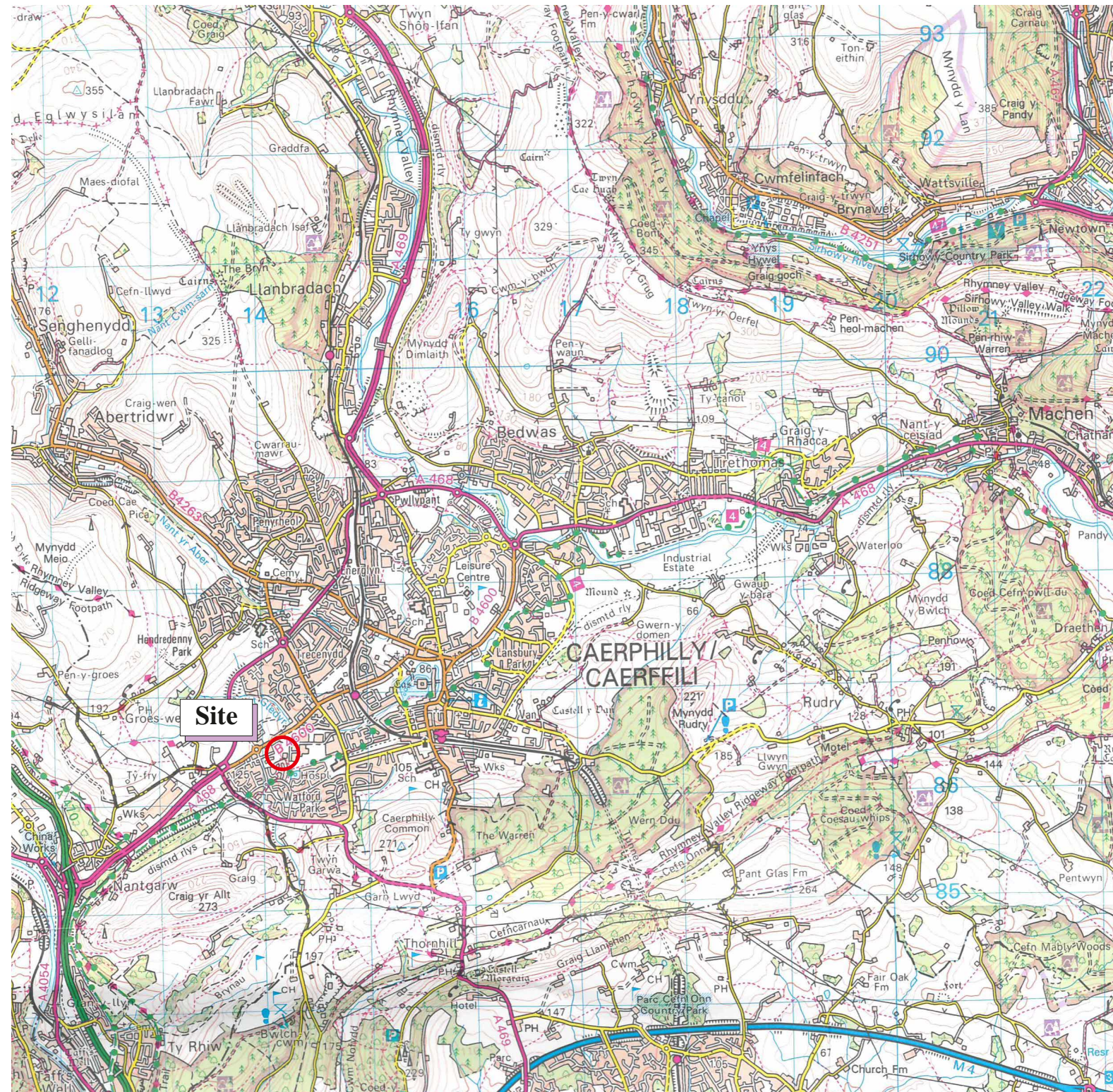
*Blandford Consulting,
Consultant Geologists and Geotechnical Engineers,
The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, CF48 4DR.
Tel. No. (01443) 693353. Fax. No. (01443) 693351.*

Plans

Study on Land at Creazione, Sparks House,
Western Industrial Estate, Caerphilly.

General Location Plan.

Plan Scale: 1:50,000.



Key to Symbols:



Approximate Position of Site.

Note:

North is at top of plan.

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South Wales,
CF48 4DR.

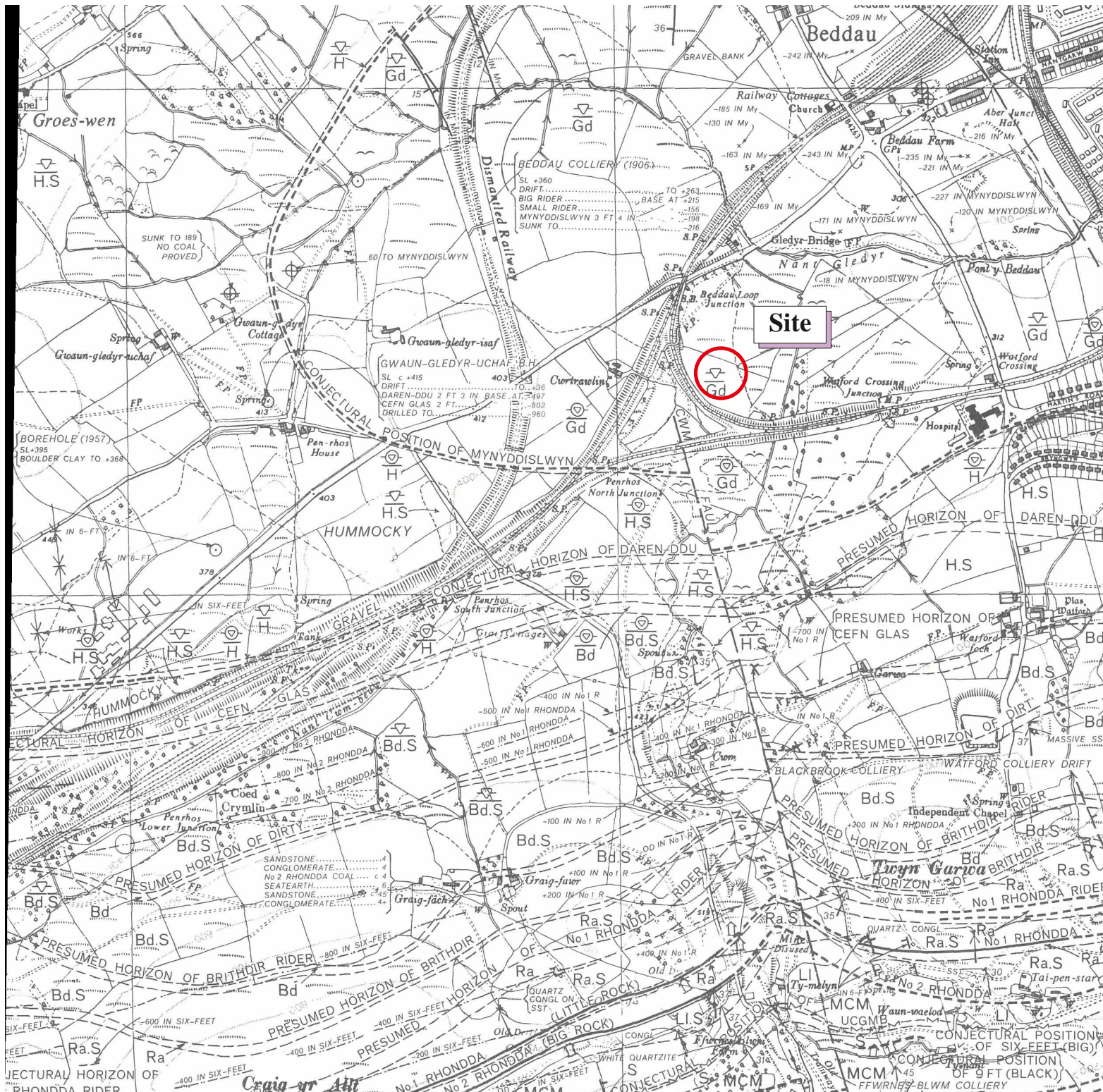
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Drawing No: BC/MB/02.24.02.01.

Study on Land at Creazione, Sparks House,
Western Industrial Estate, Caerphilly.

Geology Plan.

Plan Scale: 1:10,560.



Key to Symbols:



Approximate Position of Site.

Note:

North is at top of plan.

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Study on Land at Creazione, Sparks House,
Western Industrial Estate, Caerphilly.

Detailed Location Plan.

Plan Scale: Approx 1:2,500.

Key to Symbols:

 **Approximate Site Boundary.**

Note:
North is at top of plan.

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Drawing No: BC/MB/02.24.02.03.



Appendix I

Copy of The Coal
Authority's Mining
Report, Reference N
610042526510C



The Coal
Authority

CON29M

coal mining report

BLOCK B, SPARKS HOUSE, WESTERN INDUSTRIAL ESTATE, CAERPHILLY
CF83 1BQ



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5
Withdrawal of support	Page 6



Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit www.groundstability.com



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: 3346591
Our reference: 61004252651001
Date: 15 February 2023

Client name:
PIE

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

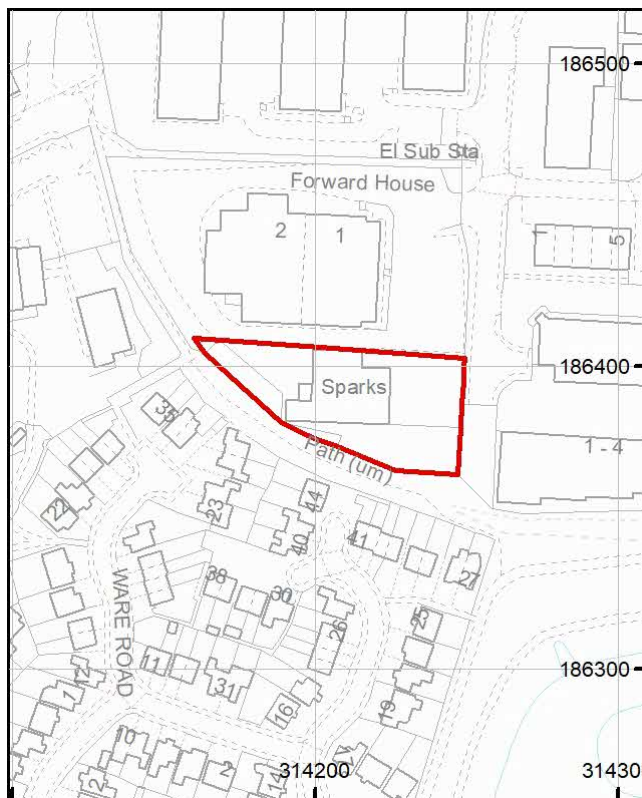


The Law
Society

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is **on the coalfield**



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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



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 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.

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.

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1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

However the property is in an area where the Coal Authority believes there is coal at or close to the surface. This coal may have been worked at some time in the past. The potential presence of coal workings at or close to the surface should be considered, particularly prior to any site works or future development activity, as ground movement could still be a risk. Your attention is drawn to the Professional opinion sections of the report.

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

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

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.

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

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.

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 in an area where a notice to withdraw support was given in 1984.

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 0800 288 4242. 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

mine gas - reports of alleged mine gas emissions received by the Coal Authority within 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

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

Appendix II

Copy of Public Hea
England's Radon Rep

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Address searched: Creazione Fitness Co, Unit A Block E, Sparks House, Western Industrial Estate, Caerphilly, CF83 1BQ

Date of report: 13 February 2024

Guidance for existing properties

Is this property in a radon Affected Area? - No

A radon Affected Area is defined as where the radon level in at least one property in every hundred is estimated to exceed the Action Level.

The estimated probability of the property being above the Action Level for radon is: 0-1%

The probability result is only valid for properties above ground. All basement and cellar areas are considered to be at additional risk from high radon levels.

The result may not be valid for buildings larger than 25 metres.

If this site is for redevelopment, you should undertake a GeoReport provided by the British Geological Survey.

This report informs you of the estimated probability that this particular property is above the Action Level for radon. This does not necessarily mean there is a radon problem in the property; the only way to find out whether it is above or below the Action Level is to carry out a radon measurement in an existing property.

Radon Affected Areas are designated by the UK Health Security Agency. UKHSA advises that radon gas should be measured in all properties within Radon Affected Areas.

If you are buying a currently occupied property in a Radon Affected Area, you should ask the present owner whether radon levels have been measured in the property. If they have, ask whether the results were above the Radon Action Level and if so, whether remedial measures were installed, radon levels were re-tested, and the results of re-testing confirmed the effectiveness of the measures.

Further information is available from UKHSA or <https://www.ukradon.org>

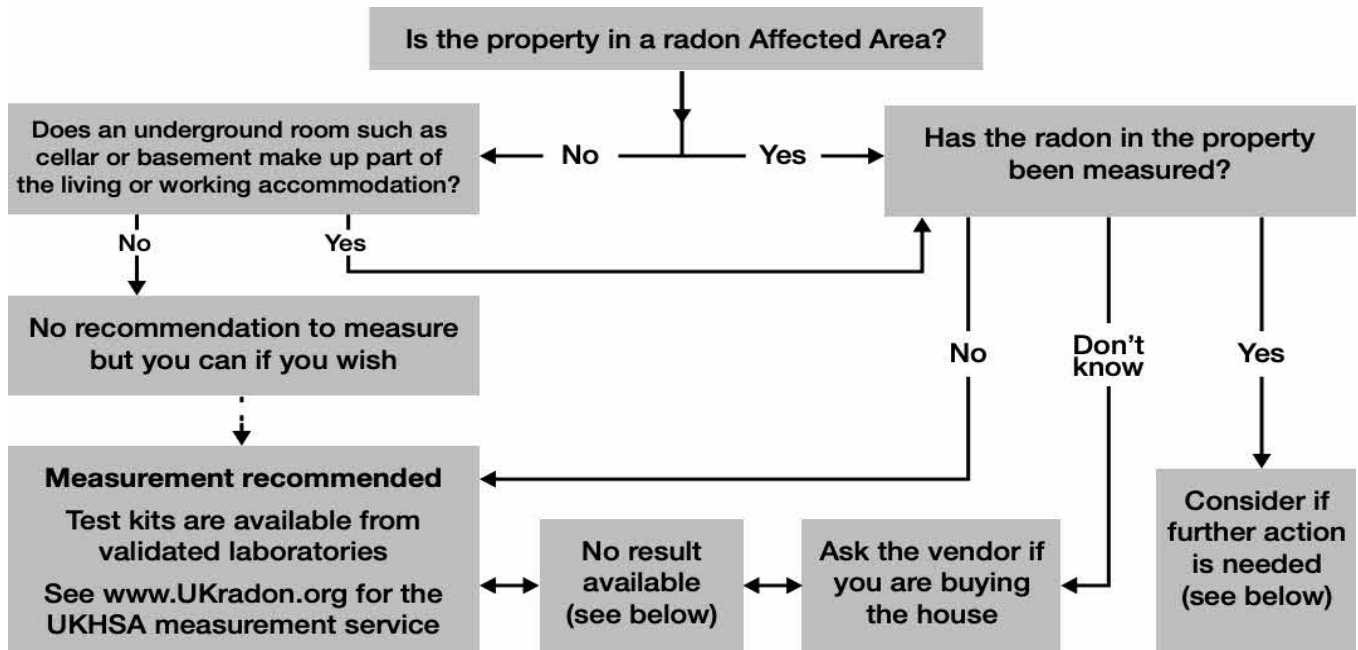
Guidance for new buildings and extensions to existing properties

What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - None

If you are buying a new property in a Radon Affected Area, you should ask the builder whether radon protective measures were incorporated in the construction of the property.

See the Radon and Building Regulations for more details.

UKHSA guidance for occupiers and prospective purchases



Existing radon test results: There is no public record of individual radon measurements. Results of previous tests can only be obtained from the seller. Radon levels can be significantly affected by changes to the building or its use, particularly by alterations to the heating and ventilation which can also be affected by changes in occupier. If in doubt, test again for reassurance.

Radon Bond: This is simply a retained fund, the terms of which are negotiated between the purchaser and the vendor. It allows the conveyance of the property to proceed without undue delay. The purchaser is protected against the possible cost of radon reduction work and the seller does not lose sale proceeds if the result is low. Make sure the agreement allows enough time to complete the test, get the result and arrange the work if needed.

High Results: Exposure to high levels of radon increases the risk of developing lung cancer. If a test in a home gives a result at or above the Action Level of 200 Becquerels per cubic metre of air (Bq/m³), formal advice will be given to lower the level. Radon reduction will also be recommended if the occupants include smokers or ex-smokers when the radon level is at or above the Target Level of 100 Bq/m³; these groups have a higher risk. Information on health risks and radon reduction work is available from UKHSA. Guidance about radon reduction work is also available from some Local Authorities, the Building Research Establishment and specialist contractors.

UKHSA designated radon website: <https://www.ukradon.org>

Building Research Establishment: <http://www.bre.co.uk/page.jsp?id=3137>



Blandford CONSULTING

The Enterprise Centre, Merthyr Industrial Park, Pentrebach, Merthyr Tydfil, South Wales, CF48 4DR. TEL: 01443 693353.