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Geotechnical & Geoenvironmental Specialists

Intrusive Coal Mining Risk Assessment Report

Site: Plot 26 and 27, Close Dewi Sant,
Bryn

Prepared For: Ian Solomon Construction

Issue Date: April 2021

Job No: 16483

REPORT TITLE : **Intrusive Coal Mining Risk Assessment Report:
Plot 26 and 27, Close Dewi Sant, Bryn**

REPORT STATUS : **Final**

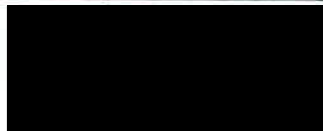
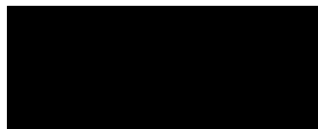
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	Name	Signature
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All amendments made to this document are detailed on the Document Revision & Amendment Register BMS-CR-002 and authorised by the appropriate personnel.



Executive Summary

Site Location and Proposed Development	<i>Ilan Solomon Construction (The Client) is proposing the development of three residential dwellings at plot 26 and 27, Close Dewi Sant, Bryn.</i> <i>The development site is square in shape and locates on a plot at Close Dewi Sant in Bryn. The site centres on an approximate National Grid Reference of 281397 192082, occupying a plan area of approximately 0.08 Hectares.</i>
Summary of Rotary Boreholes	<i>Coal seams were encountered; however, no mine workings were encountered in either of the boreholes to a final depth of 30m.</i>
Conclusion	<i>Based upon the lack of mine workings encountered in either coal seam, it is considered that there is negligible risk to the proposed houses from shallow workings.</i> <i>It is therefore recommended that no mitigation measures related to ground instability from the potential collapse of shallow workings are required as part of the construction of the proposed houses.</i>

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ANNEX A Coal Mining Risk Assessment
ANNEX B Boreholes- Logs

Drawings

Drawing 01 Proposed Site Layout

SECTION 1 Introduction and Proposed Development

1.1 Introduction

Ian Solomon Construction (The Client) is proposing the development of three residential dwellings at plot 26 and 27, Close Dewi Sant, Bryn.

Terra Firma (Wales) Limited have been commissioned by the Client to undertake a Intrusive Coal Mining Risk Assessment Report (ICMRA) of the site.

A Coal Mining Risk Assessment was undertaken by Blandford Consulting Ltd in 2006. The report discusses the geology and mining history of the site and the immediately surrounding area. The report states the site is at low risk of shallow mine workings, however exploratory boreholes are recommended in order to confirm that no shallow unrecorded mine workings are present. The report is presented in its entirety in **Annex A**.

The main objective of the ICMRA was to investigate if any from past shallow underground mining has occurred beneath the site.

In order to achieve the above objectives, Terra Firma (Wales) Limited carried out an assessment programme including a review of existing data.

1.2 Limitations and Exceptions of Investigation

The Client has requested that a ICMRA be carried out in order to undertake a qualitative mining risk assessment of the site.

The ICMRA has been conducted and this report has been prepared for the sole internal reliance of the Client and their design and construction team. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Terra Firma (Wales) Limited. If an unauthorised third party comes into possession of this report they rely on it at their peril and the authors owe them no duty of care and skill.

The report represents the findings and opinions of experienced geo-environmental and geotechnical consultants. Terra Firma (Wales) Limited does not provide legal advice and the advice of lawyers may also be required.

1.3 Quality Assurance

The quality and environmental aspects of the assessment comply with Terra Firma Wales Ltd business management system which is UKAS Accredited to ISO 9001:2015 and ISO 14001:2015 standards.

SECTION 2 Review of Existing Data

2.1 Physical Setting and Current Site Use

The development site is square in shape and locates on a plot at Clos Dewi Sant in Bryn. The site centres on an approximate National Grid Reference of 281397 192082, occupying a plan area of approximately 0.08 Hectares.

The site is currently unoccupied and slopes from an elevation in the east of 120mAOD to the west at an elevation 155mAOD.

The site location can be seen on
Figure 2.1 along with the proposed site layout on **Drawing 01**.



Figure 2.1 Site Location

2.2 Geological Setting

2.2.1 Geology

The 1:50,000 scale British Geological Map of the area was consulted for geology underlying the site. The site is shown to be underlain by the South Wales Middle Coal Measures from the carboniferous period.

Superficial deposits are recorded as Devensian Till.

2.2.2 Mining

The CMRA states the site situates within the South Wales coal fields. The general area has experienced underground operations for both coal and ironstone.

The Two Feet Nine and the Six Feet Seams were both mined underground in the locality of the site. The records of the mining operations indicate that neither seam was mined beneath the site.

SECTION 3 Field Investigation

3.1 Site Works

A site investigation comprising four rotary boreholes was undertaken between the 18/02/2021 and 22/02/2021.

The fieldwork was supervised by Terra Firma (Wales) Limited, who logged the exploratory holes to the requirements of BS 5930:2015+A1:2020. The proposed locations of the exploratory holes were determined by Terra Firma (Wales) Ltd in general accordance with BS 10175:2011+A2:2017 in order to assess the findings of the preliminary conceptual site model.

Boreholes reference BH01 to BH03 were formed using a track mounted rotary drilling rig. The borehole was advanced from surface using a tri-cone bit with water as the flushing medium.

On completion all boreholes were backfilled with bentonite pellets and the surface reinstated.

The borehole logs are presented in **Annex B**.

Exploratory hole locations are shown on **Drawing 01**.

3.2 Ground Conditions

The ground conditions encountered by the exploratory holes can in general be summarised as shown in **Table 3.1**.

Table 3.1 Summary of Typical Ground Conditions

Depth (m)		Thickness (m)	Stratum
0.00	-	4.60 – 9.00	4.60 – 9.00
			Boulder CLAY and GRAVELS (Drillers Description)
4.60 – 9.00	-	10.50 – 19.00	5.00 – 13.80
			MUDSTONE with sandstone bands
10.50 – 19.00	-	10.50 – 19.40	0.20 – 0.40
			COAL
10.50 – 19.40	-	19.70 – 20.90	2.90 – 10.10
			MUDSTONE with sandstone bands
19.70 – 20.90	-	20.00 – 22.60	0.30
			COAL
20.00 – 22.60	-	30.00	7.40 – 10.00
			SILTSTONE

SECTION 4 Conclusions

4.1 Identified Shallow Coal Seams

The site investigation shows the following generalised strata to a depth of 30m:

- Clay and gravels
- Mudstone
- **Coal**
- Mudstone
- **Coal**
- Siltstone

Four rotary boreholes were drilled across the site.

No mine workings were encountered in the boreholes to a depth of 30m.

4.2 Shallow Mine Workings

No shallow mine workings were identified within the strata to a depth of 30m. The two coal seams encountered during the site investigation are considered to be of inferior quality and too small to warrant mining.

Based upon the lack of mine workings encountered in either coal seam, it is considered that there is negligible risk to the proposed house from shallow workings.

It is therefore recommended that no mitigation measures related to ground instability from the potential collapse of shallow workings are required as part of the construction of the proposed house.

ANNEX A
Coal Mining Risk Assessment

Report No. BC/MB/07.20.06.

**Coal Mining Risk Assessment:
Land at Plot 27, Clos Dewi Sant, Bryn.**

Prepared on behalf of:

Glen's Developments.

By:

The logo for Blandford Consulting features a stylized 'B' and 'C' intertwined within a shield-like shape, rendered in a light purple or lavender color.

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Liability.

Blandford Consulting does not accept any liability other than arising out of the information that forms the basis of this report.

Coal Mining Risk Assessment: Land at Plot 27 Clos Dewi Sant, Bryn.

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6. Radon Gas	5
7. Discussion and Recommendations	7

List of Plans

Drawing No:		Scale:
<i>BC/MB/07.20.06.01.</i>	<i>General Location Plan.</i>	<i>1:50,000.</i>
<i>BC/MB/07.20.06.02.</i>	<i>Geology Plan.</i>	<i>1:10,560.</i>
<i>BC/MB/07.20.06.03.</i>	<i>Detailed Location Plan.</i>	<i>1:2,500.</i>

Appendices

Appendix I: Copy of The Coal Authority's mining report 51002292754001.

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

Coal Mining Risk Assessment: Land at Plot 27 Clos Dewi Sant, Bryn.

1 Introduction

This report has been prepared on behalf of our client:

*Glen's Developments.
Unit 12,
Atlantic Point,
Barry, CF63 3AA*

and relates to the above parcel of land at Clos Dewi Sant in Bryn, where it is proposed to erect a detached dwelling. This report discusses the geology and mining history of the Site and the immediately surrounding area as they may affect the proposed development and thereby assesses the risk from the mining heritage and from the geology. Exploration boreholes are recommended in order to confirm the absence of shallow mine workings.

The following sources of data were used in the compilation of this report:

- i) Research of published geological records;*
- ii) Research of mining records held at The Coal Authority's archive in Mansfield;*
- iii) The findings of The Coal Authority's mining report, ref. no. 51002292754001;*
- iv) Inspection of The Coal Authority's interactive map, accessed on the 5th August 2020;*
- v) The findings of Public Health England's Radon gas 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 Site is located at the south-western extremity of Bryn, approximately 5km north-east of the centre of Port Talbot and 4km north-west of the centre of Maesteg; it is on the southern side of the FFrwd Wyllt. The Site is on the southern side of Clos Dewi Sant, between the development's internal road and a disused railway; it is immediately outside the north-western edge of Margam Forest (see *General Location Plan, drawing no. BC/MB/07.20.06.01*) in Cwm Farteg. The Site is presently unoccupied, it slopes gently northwards, and the centre is at an approximate elevation of 118m aod. The Site is roughly irregular in outline and has maximum dimensions of approximately 17m by 27m.

Figure 1
Aerial View of Site



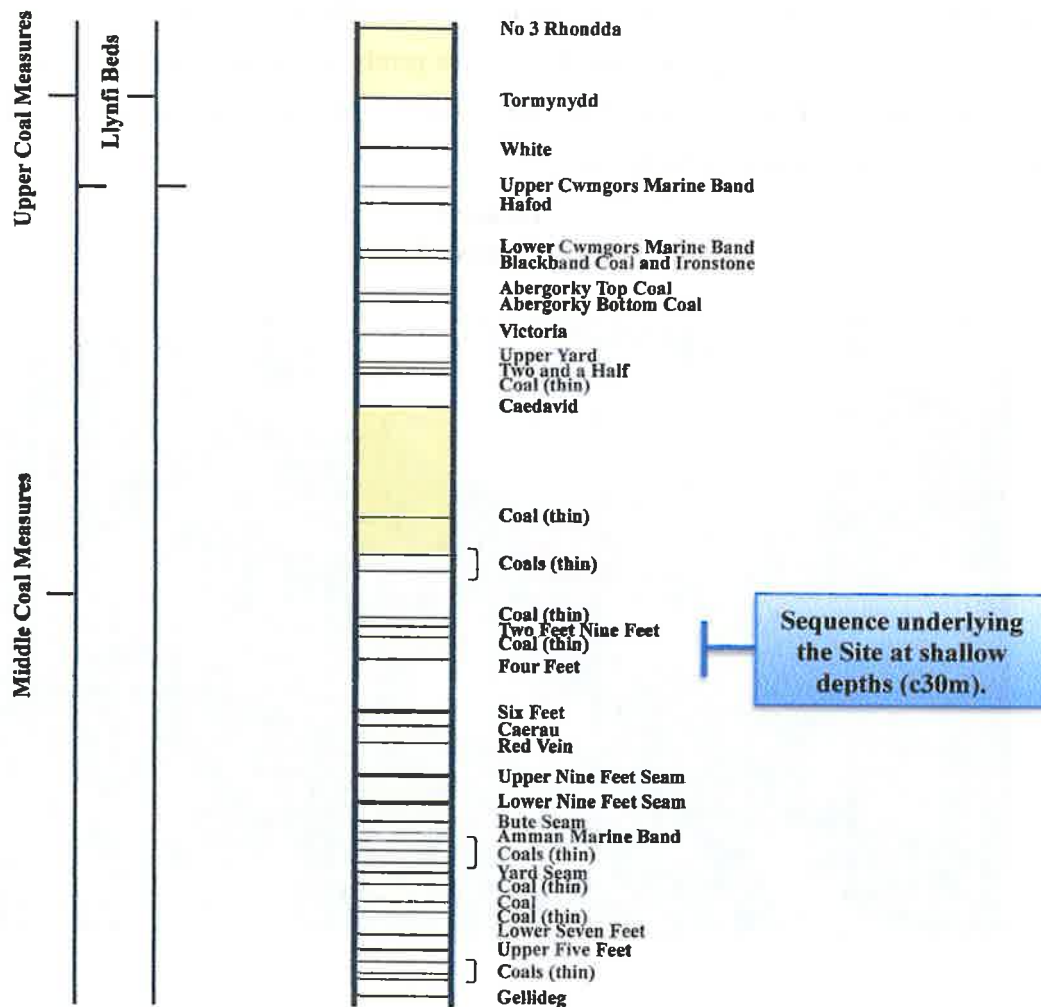
3 Geology of the Site

The Site is located centrally on the former South Wales Coalfield and is underlain at shallow depths with strata assigned to the Middle Coal Measures, a sub-division of the Upper Carboniferous Period. The published geological sheet for the area at a 1:10,560 scale, Glam XXV S.E., shows the inferred positions of the outcrop of the Two Feet Nine Seam to pass

/Cont....

through the Site (see *Geology Plan, drawing no. BC/MB/07.20.06.02*). The average dip of the strata in the district is between 1 in 2 and 1 in 4 towards the north, but the rate and direction of dip of the strata is locally affected by faults and folds.

Figure 2
Indicative Stratigraphic Column.



The measures of the South Wales Coalfield have been affected by large normal faults, frequently referred to as 'cross faults'. In the Bryn area these faults have a sinuous trace at the surface and an average trend towards the north; published geological information indicates that there are no such faults within influencing distance of the Site. In addition, the measures in the Bryn area have been affected by a large east-west trending fault known as the Moel Gilau Fault. The published geological sheet for the area shows the inferred surface position of the fault to be

/Cont....

approximately 300m south of the Site's boundary. The fault is, therefore, beyond influencing distance of the site.

Published information indicates that the Site is not affected by landslip and the measures are covered with glacial deposits of Boulder Clay.

4 Mining History

The general area has experienced fairly extensive underground operations for both coal and ironstone dating back to the early nineteenth century. The workings were prosecuted from a number of adits driven into the valley sides at or near the outcrops of coal seams or ironstone veins, or else from shafts sunk near the valley floor. For the greater part the past underground mining operations were prosecuted on the northern side of the Ffrwd Wyllt (see Figure 3).

The Two Feet Nine (locally known as the Fiery) and the Six Feet Seam (known locally as the Big) Seams were both mined underground in the locality of the Site. There were only very limited mining operations in the Four Feet Seam, probably because the Seam has a poor roof in the area as a result of a rider coal just above the Seam. The records of the mining operations indicate that none of the seams were mined beneath the area of the Site. Additionally, the mining records indicated that the collieries that mined the two seams had no convenient underground access that would have permitted mining operations to have taken place beneath the Site. Our searches found no record of past underground mining operations that extend beneath the Site, a situation confirmed by The Coal Authority's interactive map.

The Two Feet Nine is the only coal seam that is thick enough to have supported underground mining operations and that may underlie the Site at shallow depths. The published geological sheet shows the inferred position of the outcrop of the Seam to pass through the Site such that the Seam would underlie the Site at extremely shallow depths. Where coal seams are as close to the surface as the Two Feet Nine Seam is at the Site, the seam and the surrounding coal measures are subject to the effects of weathering. It is generally the case that coal seams cannot be mined underground where they are affected by weathering processes because the roof

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measures above the seam cannot be supported when the coal is removed. In the Bryn area the Two Feet Nine Seam has a thinly bedded mudstone roof that is particularly prone to the effects of weathering. The Coal Authority's interactive map shows 'probable shallow' mine workings beneath the Site, interpreted as being in the Two Feet Nine Seam.

Our searches found no record of a disused mine entry, shaft or adit, within the confines of the Site or within 20m of it. There are no working collieries in the locality that would affect the proposed development. The Site has not been part of an opencast coal site (OCCS), and there have been no opencast mining operations close enough to the Site to affect the structural integrity of the proposed development.

5 Mine Gases

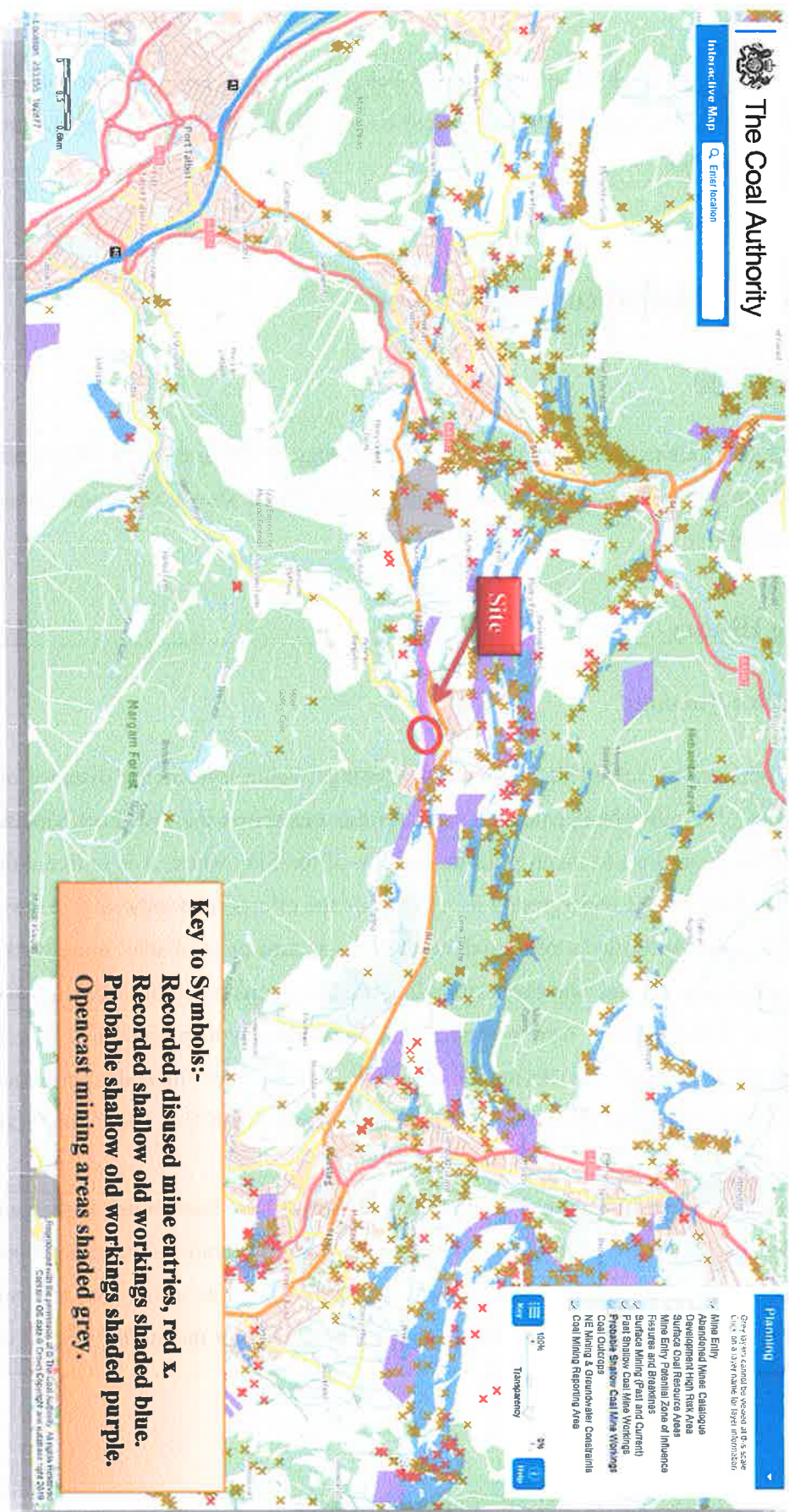
When coal is mined gases, including methane, are released and may accumulate in the voids left by the mining operations. These gases may later vent to atmosphere or be displaced by mine water flooding the mining voids and forced to the surface. Mine gases may, in certain circumstances, accumulate within buildings and pose a risk of asphyxiation, fire 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 shallow mine workings underlying the Site that could act as a source for mine gases.

6 Radon Gas

Government guidelines recommend that the potential for Radon gas should be assessed for all new dwellings; in practice the advice now extends to all new buildings. The advice has been implemented by obtaining from Public Health England a Radon gas report for the immediately adjacent Glan-yr-afon. The geology at Glan-yr-afon is the same as at the Site so that the Radon information is applicable to the Site. The report identifies that the Site is in an

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Figure 3
Print-out of The Coal Authority's Interactive Map
(Accessed 5th August 2020)



/Cont...

area where the estimated probability of the property being above the action level for radon is: 3-5%. The appropriate action for a new development on the Site under Building Regulations for Radon protection is BASIC.

7 Discussion and Recommendations

7.1 Solid Geology

There are no features associated with the solid geology of the Site that would affect the structural integrity of the proposed dwelling and the Site is shown to be unaffected by landslip conditions.

7.2 Mining History

7.2.1 Mine Workings

There are no recorded, shallow old workings within influencing distance of the Site. The published geological sheet for the area shows the Two Feet Nine Seam to be at or close to outcrop in the vicinity of the Site, where it is unlikely that it has been mined underground as a result of the effects of weathering. However, The Coal Authority's interactive map shows an area of 'probable' mine workings underlying the Site and the surrounding area, *i.e.* unrecorded old workings within 30m of the surface. Any 'probable' workings that may be present may have been prosecuted from the Bryngyrmnos Colliery, which was situated approximately 100m west of the Site at the position of the outcrop of the Two Feet Nine Seam.

The Two Feet Nine, Four Feet and Six Feet Seams have been mined in the general locality, but there is no record of any of the mining operations extending beneath the Site. The underground arrangements of the collieries in the area that mined the Four Feet and Six Feet Seams made it impractical for the mining operations to have extended beneath the Site.

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The risk of shallow mine workings being present beneath the Site is low but cannot be entirely dismissed; there are no active underground mining operations in the locality and the Site has not been part of an opencast coal site. It is recommended that a series of exploratory boreholes are drilled in order to confirm the absence of shallow mine workings. The borehole programme should be designed and supervised by a Chartered Geologist and will require a permit from The Coal Authority.

7.2.2 *Mining History: Disused Mine Entries*

Our searches found no record of a disused shaft or adit within the confines of the Site or 20m of it. The risk of a disused mine entry being present is extremely low to negligible but cannot be entirely dismissed given the mining history of the district. If any unusual features are encountered during excavation works on the Site then the works must be stopped immediately and advice sought from a Chartered Geologist or other competent person or from The Coal Authority.

7.2.3 *Mine Gases*

There are no shallow mine workings beneath the Site that could act as a source of mine gases and no risk of the dwelling being affected by mine gases; no measures are required to protect the dwelling from mine gases.

7.3 Radon Gas

A Radon gas report obtained from Public Health England identifies that the Site is in an area that is affected by Radon gas. The appropriate action for a new development on the Site under Building Regulations for Radon protection is BASIC.

7.4 Foundation Options

The findings of the recommended boreholes are required in order to assess what are the appropriate foundation options.

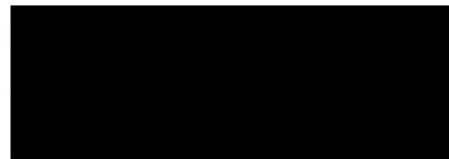
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7.5 Summary of Recommendations

There is a low risk of shallow mine workings being present beneath the Site in the Two Feet Nine Seam. Exploratory boreholes are recommended in order to confirm that no shallow mine workings are present.

The risk of a disused mine entry being present on the Site is extremely low to negligible but cannot be dismissed. Excavation work on the Site should be carefully monitored for any evidence of a disused mine entry and if any unusual features are observed then the work must be stopped immediately and advice sought from a Chartered Geologist or from The Coal Authority.

The appropriate response in respect of Radon gas for building control purposes is BASIC.



**Dr Malcolm Blandford,
Chartered Geologist.**

Report Date 5th August 2020.

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PLANS



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Geologists Working With The Environment....

Study on Plot 27 Clos Dewi Sant, Bryn.

General Location Plan.

Plan Scale: 1:50,000.

Key to Symbols:

 Approximate Position of Site.

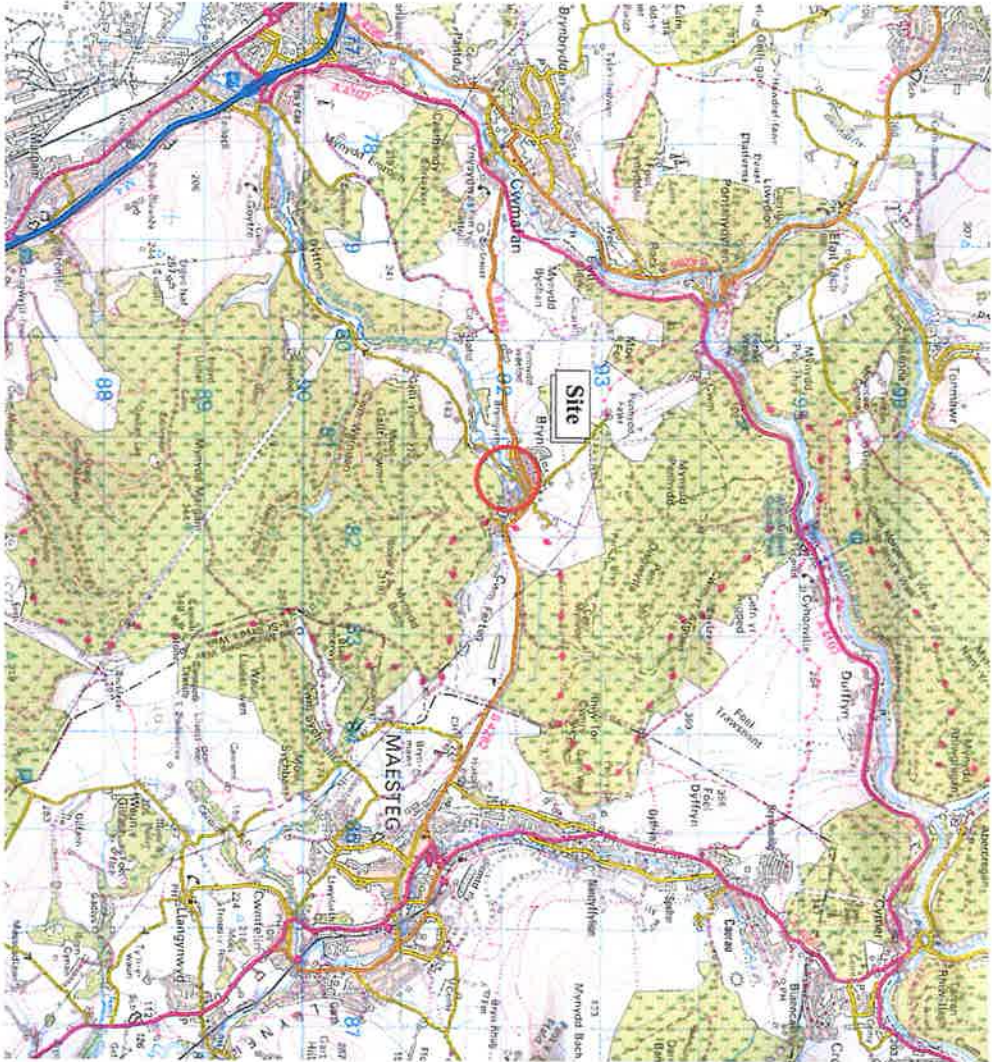
Note:
North is at top of plan.

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Drawing No: BC/MB/07.20.06.01.



Study on Plot 27 Clos Dewi Sant, Bryn.

Geology Plan.

Plan Scale: 1:10,560.

Key to Symbols:



Approximate Position of Site.

Note:
North is at top of plan.

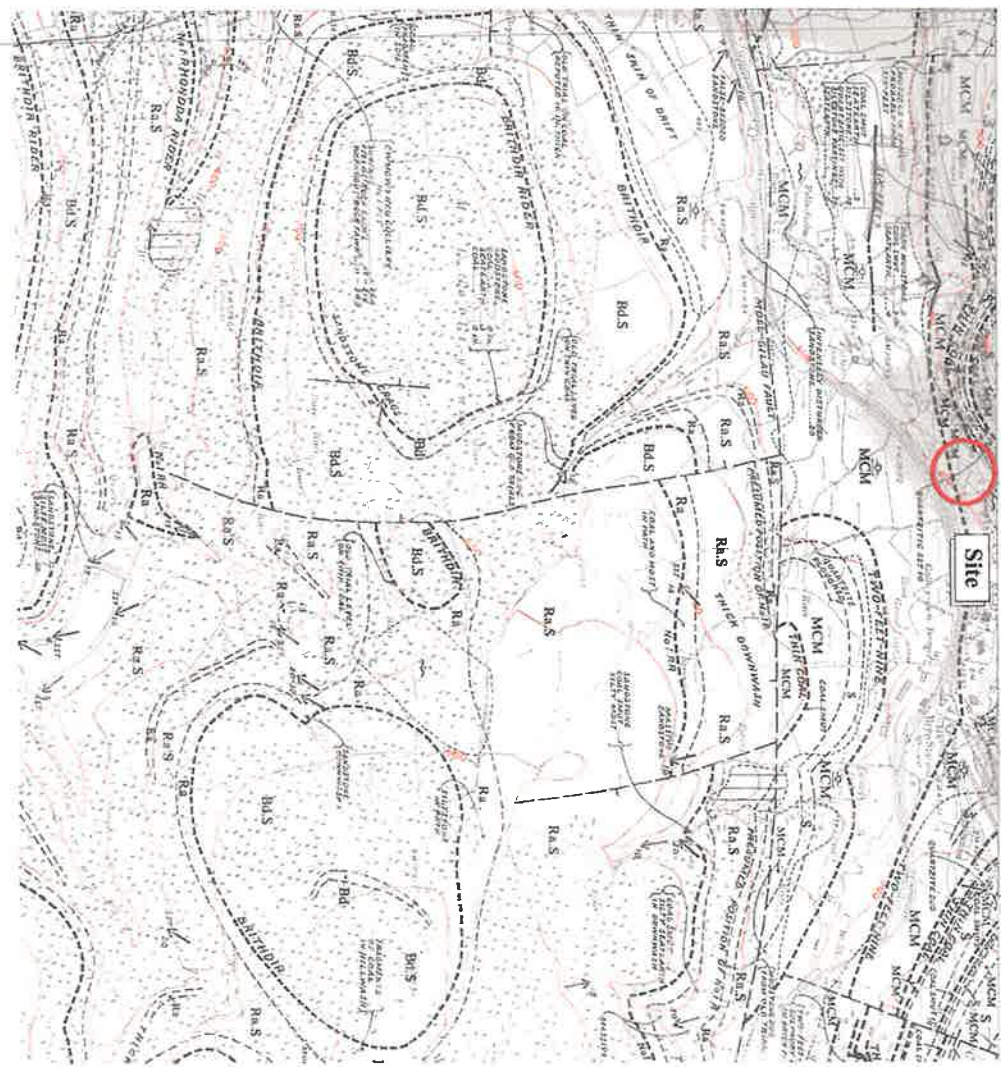
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1870

1871

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1876

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1878

APPENDIX I

THE COAL AUTHORITY'S MINING REPORT 51002292754001



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The Coal
Authority

CON29M

coal mining report

PLOTS 26 & 27 CLOS DEWI SANT, BRYN, NEATH PORT TALBOT, SA13 2RZ



Known or potential coal mining risks

Past underground coal mining	Page 4
Future underground coal mining	Page 4
Mine entries	Page 5



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: **BC/MB/07.20.05**
Our reference: **51002292754001**
Date: **29 July 2020**

Client name:
BLANDFORD CONSULTING

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



The Law
Society

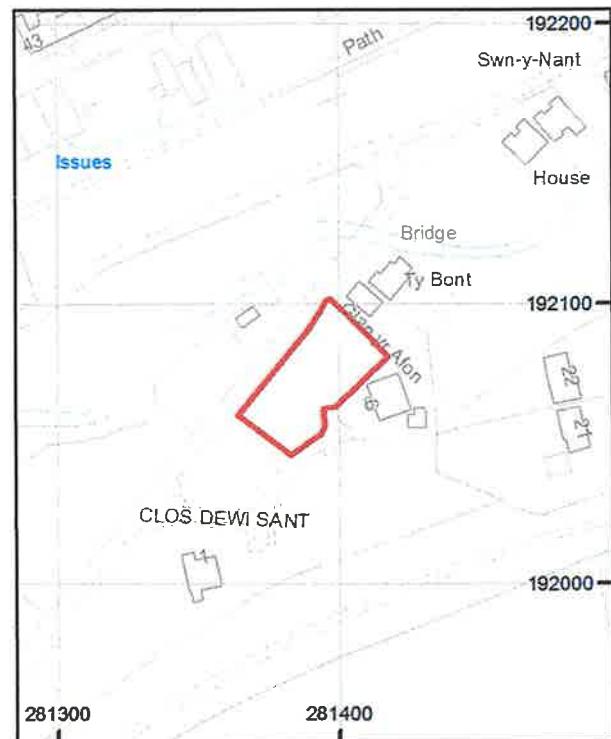
Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is
on the coalfield



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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.

Your reference: **BC/MB/07.20.05**
Our reference: **51002292754001**
Date: **29 July 2020**

Client name:
BLANDFORD CONSULTING

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

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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. 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.

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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 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

APPENDIX II

PUBLIC HEALTH ENGLAND'S RADON GAS REPORT



THE ENTERPRISE CENTRE,
MERTHYR INDUSTRIAL PARK,
PENTREBACH,
MERTHYR TYDFIL,
SOUTH WALES,
CF48 4DR.

BLANDFORD CONSULTING

Geologists Working With The Environment...



Radon Risk Report for addresses in England and Wales

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Address searched: Glan Yr Afon, Bryn, Port Talbot, SA13 2SG

Date of report: 6 August 2020

Guidance for existing properties

Is this property in a radon Affected Area? - Yes

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: 3-5%

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 Public Health England. PHE 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 PHE or <https://www.ukradon.org>

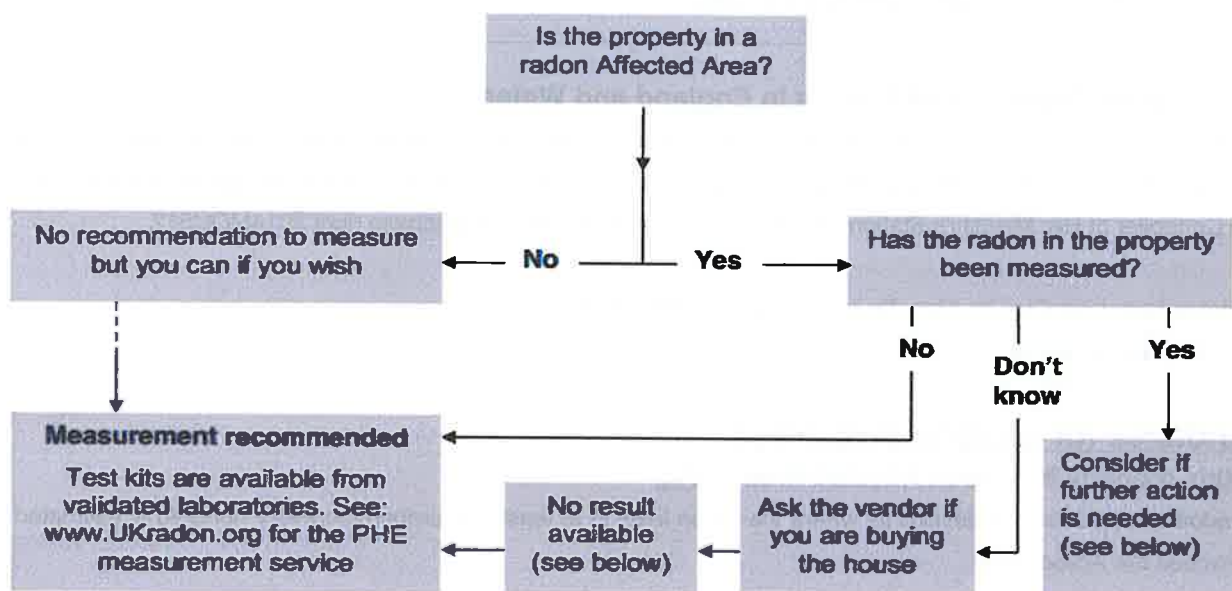
Guidance for new buildings and extensions to existing properties

What is the requirement under Building Regulations for radon protection in new buildings and extensions at the property location? - Basic Protection

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.

PHE 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 PHE. Guidance about radon reduction work is also available from some Local Authorities, the Building Research Establishment and specialist contractors.

PHE designated radon website: <https://www.ukradon.org>
Building Research Establishment: <http://www.bre.co.uk/page.jsp?id=3137>

ANNEX B
Boreholes Logs



Tel: 02920 735354
 info@terrafirmawales.co.uk
 www.terrafirmawales.co.uk

Borehole Log

Borehole No.

BH01

Sheet 1 of 2

Project Name:	Close Derwi Sant, Bryn	Project No:	16483	Co-ords:		Hole Type	RO
Location:	Close Derwi Sant, Bryn	Level:				Scale	1:100
Client:	Ian Solomon Construction	Dates:	18/02/2021 -			Logged By	JA

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				9.00				Boulder CLAY and GRAVELS	1
									2
									3
									4
									5
									6
									7
									8
								MUDSTONE with sandstone bands	9
									10
									11
									12
									13
									14
									15
									16
									17
									18
									19
									20

Remarks:



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Borehole Log

Borehole No.

BH01

Sheet 2 of 2

Project Name:	Close Derwi Sant, Bryn	Project No:	16483	Co-ords:		Hole Type	RO
Location:	Close Derwi Sant, Bryn	Level:				Scale	1:100
Client:	Ian Solomon Construction	Dates:	18/02/2021 -			Logged By	JA

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				20.10				MUDSTONE with sandstone bands	
				20.40				COAL	
								SILTSTONE	21
									22
									23
									24
									25
									26
									27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



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Borehole Log

Borehole No.

BH02

Sheet 1 of 2

Project Name: Close Derwi Sant, Bryn

Project No:
16483

Co-ords:

Hole Type
RO

Location: Close Derwi Sant, Bryn

Level:

Scale
1:100

Client: Ian Solomon Construction

Dates: 19/02/2021 -

Logged By

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
								Boulder CLAY and GRAVELS	1
									2
									3
									4
									5
									6
									7
				8.10					8
								MUDSTONE with sandstone bands	9
									10
									11
									12
									13
									14
				15.10					15
				15.30				COAL	16
								MUDSTONE	17
									18
									19
				19.70					20
				20.00				COAL	

Remarks:



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Borehole Log

Borehole No.

BH02

Sheet 2 of 2

Project Name:	Close Derwi Sant, Bryn	Project No:	16483	Co-ords:		Hole Type	RO
Location:	Close Derwi Sant, Bryn	Level:				Scale	1:100
Client:	Ian Solomon Construction	Dates:	19/02/2021 -			Logged By	

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
							xxxxxx	SILTSTONE	21
							xxxxxx		22
							xxxxxx		23
							xxxxxx		24
							xxxxxx		25
							xxxxxx		26
							xxxxxx		27
							xxxxxx		28
							xxxxxx		29
				30.00			xxxxxx		30
								End of Borehole at 30.000m	31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:



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Borehole Log

Borehole No.

BH03

Sheet 1 of 2

Project Name: Close Derwi Sant, Bryn

Project No:
16483

Co-ords:

Hole Type
RO

Location: Close Derwi Sant, Bryn

Level:

Scale
1:100

Client: Ian Solomon Construction

Dates: 18/02/2021 -

Logged By
JA

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				5.80				Boulder CLAY and GRAVELS	1
									2
									3
									4
									5
								MUDSTONE with sandstone bands	6
									7
									8
									9
									10
									11
									12
									13
									14
									15
									16
									17
									18
				19.00				COAL	19
				19.40				MUDSTONE	20

Remarks:

 Tel: 02920 735354 info@terrafirmawales.co.uk www.terrafirmawales.co.uk Geotechnical & Geoenvironmental Specialists				Borehole Log				Borehole No. BH03 Sheet 2 of 2	
Project Name: Close Derwi Sant, Bryn				Project No: 16483		Co-ords:		Hole Type RO	
Location: Close Derwi Sant, Bryn				Level:		Scale 1:100			
Client: Ian Solomon Construction				Dates: 18/02/2021 -		Logged By JA			
Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				22.30 22.60				MUDSTONE	21 22
								COAL	
								SILTSTONE	23 24 25 26 27 28 29
				30.00				End of Borehole at 30.000m	30 31 32 33 34 35 36 37 38 39 40
Remarks:									



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Borehole Log

Borehole No.

BH04

Sheet 1 of 2

Project Name: Close Derwi Sant, Bryn

Project No:
16483

Co-ords:

Hole Type
RO

Location: Close Derwi Sant, Bryn

Level:

Scale
1:100

Client: Ian Solomon Construction

Dates: 22/02/2021 -

Logged By
JA

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				4.60				Boulder CLAY and GRAVELS	1
									2
									3
									4
								MUDSTONE with sandstone bands	5
									6
									7
									8
									9
									10
				10.50				COAL	11
				10.80				MUDSTONE with sandstone beds	12
									13
									14
									15
									16
									17
									18
									19
									20

Remarks:



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Borehole Log

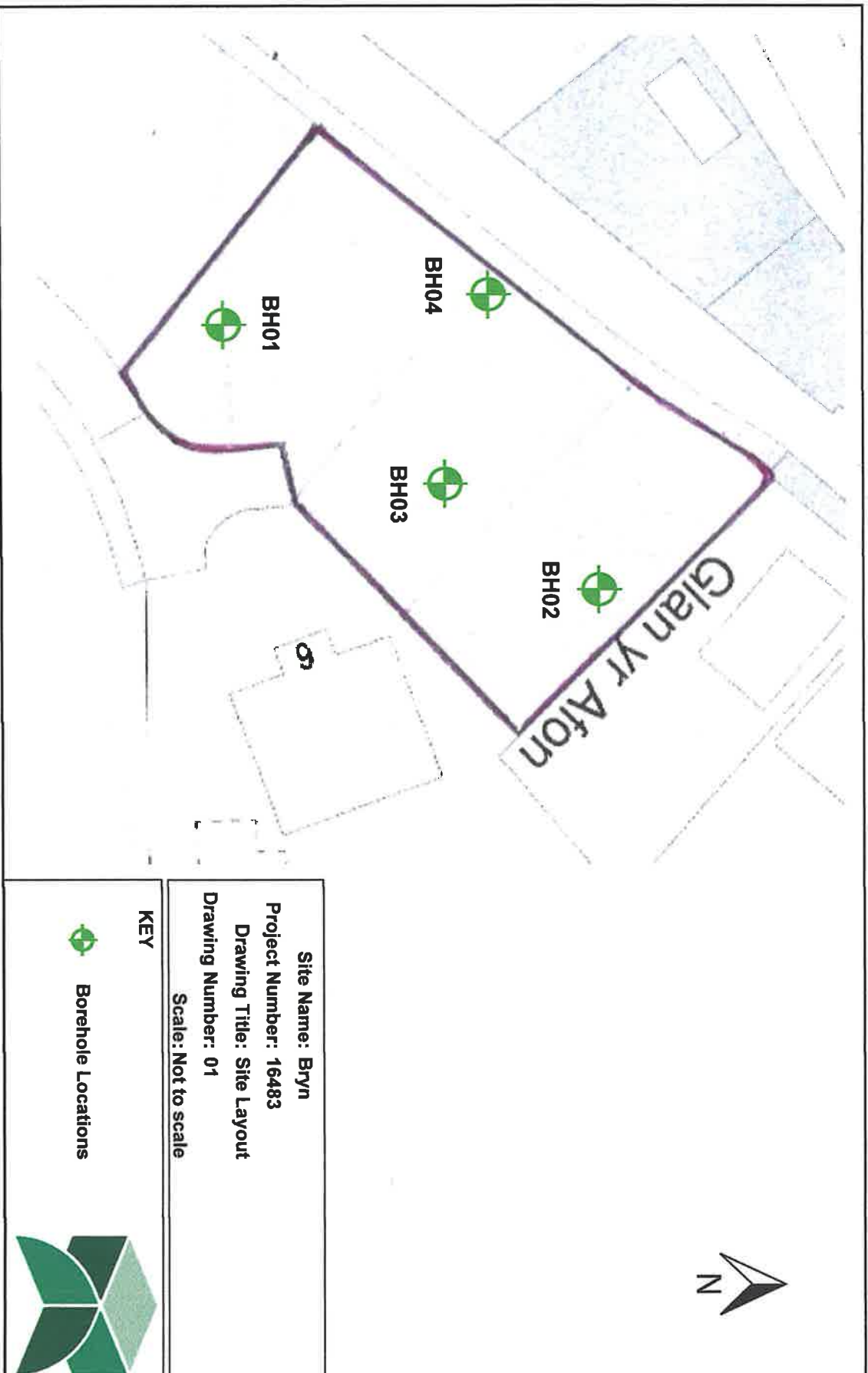
Borehole No.
BH04
 Sheet 2 of 2

Project Name:	Close Derwi Sant, Bryn	Project No:	16483	Co-ords:		Hole Type	RO
Location:	Close Derwi Sant, Bryn	Level:				Scale	1:100
Client:	Ian Solomon Construction	Dates:	22/02/2021 -			Logged By	JA

Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Well	Legend	Stratum Description	
	Depth (m)	Type	Results						
				20.90				MUDSTONE with sandstone beds	
				21.20				COAL	21
								SILTSTONE	22
									23
									24
									25
									26
									27
									28
									29
				30.00				End of Borehole at 30.000m	30
									31
									32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks:

DRAWINGS





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