



Pant Howell Ddu
Briton Ferry
Neath
July 2015

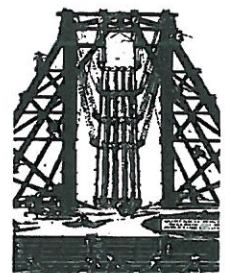
GOA/A/2057

Slowikowki, Blackshaw & Partners

The Maltings

East Tyndall St

Cardiff
CF24 5EA



CONTENTS

Coal Mining Risk Assessment Report

Photographs

Drainage Design

Slowikowski, Blackshaw & Partners

Consulting Engineers

The Maltings, East Tyndall Street,
Cardiff Bay, Cardiff CF1 5EA
Tel: 02920 451331
Fax: 02920 451344

REF.

GOA/A/2057

DRG.
NO.

Fig 1

Contract

Land off Pant Howell Ddu Briton Ferry Neath

REV.

Section

Location Plan

DATE

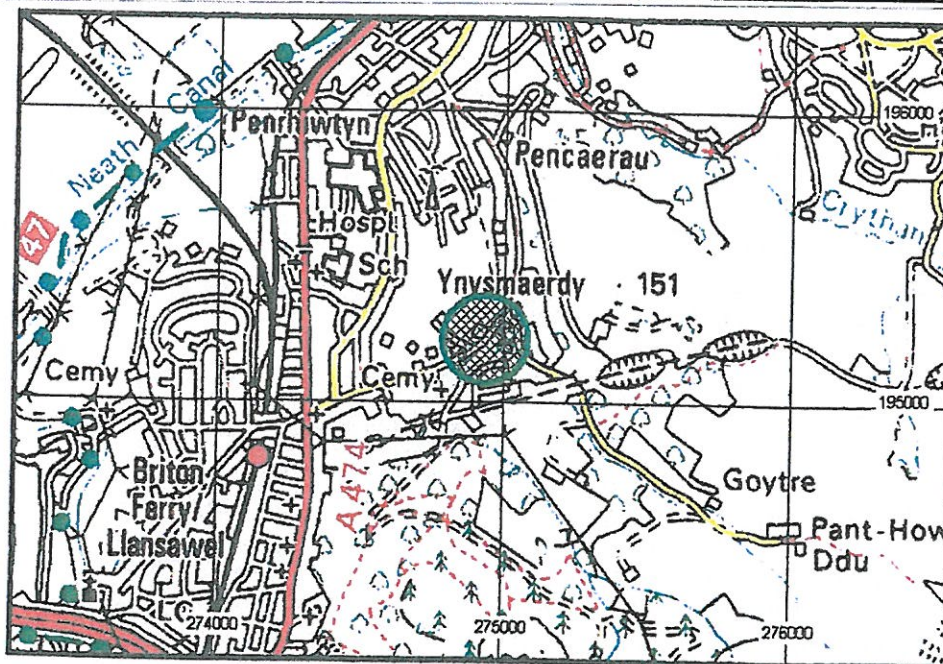
Scale

INITIALS

Location map



Approximate
position
of property



Enquiry boundary

These maps are reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office. © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. The Coal Authority. Licence number: 100020315. [2006]

Key

Approximate position of enquiry boundary shown



CONTENTS

1. INTRODUCTION
2. DATA RESEARCH
3. GEOLOGICAL SETTING
4. THE BRITISH GEOLOGICAL SURVEY DATA
5. AN ASSESSMENT OF THE RISKS COAL MINING POSES TO THE
PROPOSED DEVELOPMENT
6. CONCLUSION

Fig 1 Site Location Plan

Fig.2 Site Geological Plan 1:2500 (part of OS Plan SS7495-7595, 1970)

Fig.3 S to N Geological Section A----B, 1:500 natural scale

APPENDIX

The Coal Authority

Mine records Office

Search Results

The Maltings
East Tyndall Street
CARDIFF CF24 5EA
Tel:029 2045 1331

12 July 2015

Proposed New Dwellings

Tyla Morris Farm

Land off Pant Howell Ddu

Briton Ferry,1 Neath

1. INTRODUCTION

An application to develop the above mentioned site has been submitted to the Neath Port Talbot County Borough Council (LA) - *Planning Application P2015/0338 Re-consultation*. In reply the LA expressed concerns with regard to the presence of wide-spread past mining activity activities in the district and rightly referred the Application to the Planning Department of The Coal Authority (CA) in Mansfield, Nottinghamshire. In reply the CA responds "SUBSTANTIVE CONCERN":

"As you will be aware from our previous objection of 1st of May, 2015 the application site falls within the 'Development High Risk Area' therefore within the application site and surrounding area there are coal mining features and hazards which need to be considered in relation to the determination of the planning application'.

2. DATA RESEARCH Mining & Geological

This report has been prepared with information obtained from the study of the following information and a detailed examination on site and environs:

i. Maps Published by The British Geological Survey(BGS):

1:10560 Sheets SS 79NW, SS79NE, SS79SW and SS79SE,

Maps Published by the Ordnance Survey (OS):

25" to the mile OS Sheet XXV1 1875 published 1878

1:2500 OS Sheet SS 7495 - 7595 published 1970

ii. 20# Plans held at the Abandoned Mines Records Office, Mansfield

Appointment pm 29th June 2015 - see list in Appendix 1

iii. Plans and records held at Slowikowski, Blackshaw & Partners, Cardiff and the Archives of Esterling Geological Associates (EGA).

iv. Site Surveys - both Topographical and Geological.

3. GEOLOGICAL SETTING

The Site is located as follows: OS Easting: 274950 OS Northing: 195120 - see Fig.1
The area is underlain by strata of Upper Carboniferous Age viz: the Upper Coal Measures (Pennant) at the junction of the Brithdir and Hughes Beds, marked by the

Hughes Coal Seam. Here the strata comprise thickly to massively bedded sandstones with rare argillaceous partings and occasional coal seams and seat earths. They are

mostly cross-bedded units with cathedral system jointing. These strata are superbly exposed along a clean north to south cliff, up to 8m in height, a few metres immediately west of the site. Superficial deposits, glacial sands and cobbly Boulder Clays of variable thickness, complete the picture. The district is situated in a highly disturbed geological environment with the NE to SW trending Neath Valley Disturbance (NVD) just over 200m to the west and the EW aligned Moel Gilau fault some 300m to the south. Here the sinistral strike-slip shearing effect movement along this feature (NVD), due to the probable Variscan Orogeny reactivation of this original basement Caledonian Age fault, has produced a series of crustal extension-related N to S trending faults. One such Fault, the Cwm Felin fault passes 40m from North-South, close to the eastern plot border. It has a downthrow locally of some 65m to the west.

At the site the general geological setting is one of thick to massive bedded sandstones dipping at 17 to 20 degrees to the north. The inferred crop (BGS) of the Hughes Coal Seam passes from west to east some 100m approximately to the south, while the Mountain Coal Seam outcrops 50m north of the proposed development. - See Fig. 2

4. THE BRITISH GEOLOGICAL SURVEY DATA

The BGS's long history, experience and accuracy is second to none in the field of geological mapping. In this area, along the south crop of the South Wales Coalfield, so much data has become available from centuries of coal mining, borehole data, mineral extraction

and very extensive rock outcrop locations that the resulting 1:10,000 and previous 1:10,560 plans can be relied upon with some degree of confidence.

Since the last Site Survey by the BGS District Geologist (1950-1951) the crop position of the Mountain Seam has been confirmed by the construction of a new farm track 100m to the northwest of the site. At this location, along a newly created vertical cliff feature, it is thin (200mm approx.) and overlain 3m above by another very thin coal trace on a seat earth. The site lies within the very SE corner of Sheet SS79NW and the vertical stratigraphical column on that map indicates the Hughes vein to be present 67m below the Mountain Seam. Following a detailed levels survey, a S to N Geological Section A - B has been constructed on a 1:500 natural scale - See Fig. 3. Using all available historical data present, survey results, relevant seam dip information and the vertical inter-seam interval of 67m, the crop position of the Hughes seam has been plotted. It now crops some 44m north of the inferred position illustrated on the BGS Sheet SS79NW. Here the strata dip almost due north increasing from 17 to 22 degrees and the surface crop alignment will be west to east (strike direction) - as shown on the BGS Sheet. However, no coal seam is to be seen along the fully exposed and continuous sandstone N - S cliff to the west of the plot i.e from grid reference E7488 N9517 and to the north. When plotted onto the geological section the most northerly possible position of the Hughes Seam passes 90m to the south of the site. Accordingly, locally the inter-seam interval between the Mountain Seam and the Hughes Vein is *greater* than 67m. This will appear to indicate that the BGS *inferred* position is close to being very accurate.

**5. AN ASSESSMENT OF THE RISKS COAL MINING POSES TO THE
PROPOSED DEVELOPMENT**

- a. *There are no recorded coal mine entries within the site or within 20m of the site boundary.*** This was confirmed following our visit to the Mines Records Office. At our request was also confirmed by the duty surveyor at the time.
- b. *The proposed development is not in the likely zone of influence of past underground coal mining.*** Because of the concern with regard to possible underground workings being present at shallow depth Section A-B has been constructed. Assuming a possible underground working is present with a perhaps generous 2m height, a **minimum** ratio of unbroken rock cover to void is 6 to 1 in such a massive thickly bedded sandstone sequence. Here the minimum depth to the roof of the possible working beneath the plot varies from at least 27m to 38m or 13.5 : 1 and 19 : 1 even allowing for a 2 to 3m overburden - see Fig.3. Consequently it is considered **not** necessary to investigate the depth to the Hughes Seam by intrusive methods in this case.
- c. *The proposed development is not in the likely zone of influence of any present underground coal workings.***
- d. *The proposed development is not within the likely zone of influence of any underground coal workings at shallow depth (depths of less than 30m).***
This topic is covered by the discussion in 5b. above.
- e. *Under the circumstances there is very little likelihood of there being any un-recorded shallow mine workings and/or mine entries at the site - see geology and earlier discussions.***
- f. *There are no records of mine gas emissions within the site boundary.***

- g. The Coal Authority is not determining or has granted a license to remove coal by underground methods.*
- h. There no faults or other lines of weakness due coal mining at the site.*
- i. The site has not been subject to remedial works by, or on behalf of, The Coal under its surface hazard call out procedures.*
- j. The site is not within the boundary of a surface mining/opencast site from which coal has been removed by surface mining/opencast methods.*
- k. The site is not within 200m of a surface mining/opencast site from which coal is being removed.*

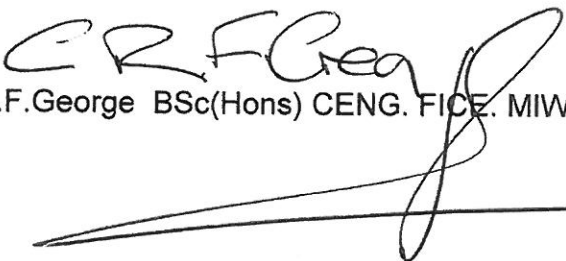
CONCLUSIONS

- i. With the lack of precise geological markers at the time of the last BGS 1950-51 survey the subsequent establishment of the outcrop position of the Mountain Coal seam has provided a vital datum marker for this study.
- ii. The extensive sandstone exposure running from N to S a few metres to the west of the proposed development has provided vital relevant dip and strike data. Here the strata dip to the north at angles varying from 17 to 22 degrees and increasing northwards as the Cwm Felin Fault Zone is approached (downthrow 65m west).
- iii. No coal was present from location E7488 N9517 in this exposure.
- iv. The BGS 1:10560 Geological Sheet SS79NW (1970) indicates only the inferred position of the Hughes Seam which suggests, at the time, there was no information in the records about any past activity in this locality in this seam.
- v. The most northerly possible position of the Hughes Seam is indicated in Fig 3.

- vi. All underground mining activity to the east of the Cwm Felin Fault can be discounted for this development. However, some mine tailings could be present at the site fringes.
- vii. The minimum strong sandstone rock cover at the site varies from 27m to 38m. This translates to a void to rock cover of 13.5 to 1 and 19 : 1 respectively. Fig. 3 indicates a zone within which the Hughes Seam is probably positioned.
- viii. Even if this seam has been worked in the past, the thickness and strength of the sandstone cover means that the proposed development will not be affected.
- ix. Drilling to establish the depth to the seam is not required.
- x. We are not aware of any problems related to shallow mining activity being reported in the properties immediately to the south of the proposed development.



A Stradling BSc (Hons), CGeol.



C.R.F. George BSc(Hons) CENG. FICE. MIWEM. MConsE. MaPS.