



South Wales RIGS Group Site Record RIGS Description

SECTION A

General	South Wales
Site Name: Castell Coch Quarry	File Number: SITE_CCC_34
RIGS Number: 634	Surveyed by: South Wales Geologists' Association
Grid Reference: ST 1300 8261	Date of Visit: 4 th August 2007
RIGS Category: Scientific, historical	Date Registered: Owner: Unknown
Earth Science Category: Stratigraphic, Historical	Planning Authority: Cardiff County Council
Site Nature: Disused Quarry	Documentation prepared by: Linda Garfield and Rhian Kendall
Unitary Authority: Cardiff County Council	Documentation last revised: 1 st Sept 2009
OS 1:50,000 Sheet: 171	Photographic Record: Attached
OS 1:25,000 Explorer Sheet: 151	
BGS 1:50,000 Sheet: E249	
<p>RIGS Statement of Interest:</p> <p>The exposure of the Castell Coch Limestone Formation in Castell Coch Quarry has been proposed as a RIGS on account of its importance as the "Type locality" for this Formation. This means that this site was considered representative of this formation and as such is important to preserve both because of its historical importance and because of its value to geologists when examining the typical characteristics of the Castell Coch Limestone Formation.</p> <p>The exposure here has been described as the "best complete section" for this unit. The Formation represents the first shallowing event with limestone deposition on a shelf during a major marine transgression early in the Carboniferous, and as such is important in understanding of the development of the sediments laid down during this period.</p>	

Geological setting/context:

This is the type locality of the Castell Coch Limestone Formation (Carboniferous, Avon Group), and the quarry exposes the entire formation, including the upper boundary (Waters et al 2007).

The Castell Coch Limestone Formation, formerly known as the 'Bastard Limestone' (Strahan & Cantrill 1902), comprises thick to well bedded, commonly cross-bedded, skeletal and oolitic grainstones, rich in crinoidal debris (Waters and Lawrence 1987). Exposure along the outcrop in the area has been described in the past as 'generally good', with numerous disused quarries, but these are becoming increasingly overgrown.

The base is taken at the top of the highest mudstone bed in the underlying Tongwynlais Formation; it is sharp but conformable. The upper boundary is taken at the lowest bed of fully marine mudstone in the overlying Cwmyniscoy Mudstone Formation. Its thickness varies from 25m, to 9m in the south near the coast. "The Avon Group is interpreted as a mudstone dominated succession deposited within a shelf setting during a major phase of northward-directed marine transgression. The Castell Coch Formation represents the first regional shallowing event to affect the Tournasian shelf, with regional progradation of high-energy ooidal shoals" (Waters et al 2007).

The "best complete section" is at Castell Coch Quarry, where it is nearly 20m thick, with 0.7m of lagoonal beds, which are not seen elsewhere, in its upper part (Waters and Lawrence 1987).

Thick bedded limestones of the Castell Coch Limestone Formation are exposed in east face of this narrow, E/W linear quarry, below the castle. A small fault is visible and a large nodular bed. Dolomitization and hematite staining occurs. Shales are exposed on north face, especially where recent slips have occurred. This is the type locality of the Castell Coch Limestone Formation.

References:

STRAHAN, A and CANTRILL, T C. 1902. Geology of the South Wales Coalfield, Part III, the country around Cardiff, Memoir Geol. Surv. GB sheet 263 (first edition)

WATERS, C N, Browne M A E, Dean M T and Powell J H. 2007. Lithostratigraphical framework for Carboniferous successions of Great Britain (Onshore). BGS research report RR/07/01

WATERS, R A and LAWRENCE, D J D. 1987. Geology of the South Wales Coalfield, Part III, the country around Cardiff, Memoir BGS sheet 263 (third edition)

GAYER, R A, ALLEN, K C, BASSETT, M G, EDWARDS, D. 1973. The Structure of the Taff Gorge are, Glamorgan, and the stratigraphy of the Old Red Sandstone – Carboniferous Limestone transition. Geological Journal Vol 8 Part 2.

SECTION B

PRACTICAL CONSIDERATIONS:

Please score Accessibility and Safety Red Amber or Green

Accessibility:



X

Comment: Access is awkward and slippery.

Safety:



X

Comment: Steep slippery slopes can make this site slightly awkward to wove around

Conservation status:

There are no known conservation designations of this RIGS.

OWNERSHIP/PLANNING CONTROL:

Owner/tenant: Unknown

Planning Authority: Cardiff County Council

Planning status/constraints/opportunities:

There are no known planning constraints or opportunities

CONDITION, USE & MANAGEMENT:

Present use: None. Disused Quarry

Site condition: The quarry floor is covered in scrub and rubbish (below castle) and the main face is becoming covered by ivy and other vegetation.

Potential threats:

Site Management: Suggest that selected parts of this site are cleared of vegetation and rubbish every few years. Prohibit rubbish dumping.

SITE DEVELOPMENT:

Potential use (general): An interpretation board could be displayed in the car park at the top of the quarry.

Potential use (educational): Could be a good site to examine the Castell Coch Formation in its entirety. It could probably be cleared, with some effort, and access

improved around the site, again with some effort, to allow access to examine the whole or part of this horizon.

Other comments:

Photographic Record



Main face Castell Coch Quarry



Main face Castell Coch Quarry



Lower parts of Castell Coch Quarry

Photographs by Stephen Howe