



South Wales RIGS Group Site Record

RIGS Description

SECTION A

General	South Wales
Site Name: Plymouth Great Wood	File Number: Site_SWGA_CCC_53
RIGS Number: 657	Surveyed by: South Wales Geologists' Association
Grid Reference: ST 1282 7688	Date of Visit: 30 th March 2009
RIGS Category: Scientific, Educational, Historical	Date Registered: Owner: Cardiff County Council Planning Authority: Cardiff County Council
Earth Science Category: Sedimentological, Stratigraphical, Industrial (Building Stone)	
Site Nature: Disused Quarry	Documentation prepared by: Rhian Kendall
Unitary Authority: Cardiff County Council	Documentation last revised: 1 st June 2009
OS 1:50,000 Sheet: 171	Photographic Record: Attached
OS 1:25,000 Explorer Sheet: 151	
BGS 1:50,000 Sheet: E263	
RIGS Statement of Interest:	
<p>Great Plymouth Woods has been suggested as a RIGS because of it is a good example of the Triassic Marginal Facies within South West Cardiff. It is also interesting as it contains a high percentage of Old Red Sandstone clasts compared to other sites which expose this age of rock in Cardiff which are dominated by limestone clasts. The clast assemblage may give indications of the areas of high ground that were being eroded during the times that the rocks in Great Plymouth Woods were being deposited. That is Old Red Sandstone from the limbs of the Cardiff-Cowbridge Anticline.</p> <p>The quarry would be an invaluable educational resource both to schools and universities, wanting to teach about this period in geological history and wishing to learn about the sedimentary features displayed here.</p>	

Geological setting/context:

Triassic sedimentation in the Cardiff district was governed by Triassic landscape which was dominated by the effects of the erosion of the Cardiff-Cowbridge Anticline. The Carboniferous limestone and Upper Old Red Sandstone units on the two limbs of the fold formed major ridges with the softer Lower Old Red Sandstone being easily eroded along its axis to form a south eastward trending basin which connected with the main Triassic Basin.

Only Late Triassic deposits are preserved in the Cardiff District. These are made up of up to 200m of lacustrine and continental deposits, comprising the Mercia Mudstone Group which progressively onlap the irregular Triassic topography. Towards the end of the Triassic, there was a change to marine conditions, continuing the onlap. This marine sequence is up to 12m thick and is known as the Penarth Group and is made up of mudstones with thin limestones.

The thickest accumulations of the Mercia Mudstone Group are to be found in Cardiff where it includes an argillaceous facies and a contrasting heterogeneous marginal facies. The argillaceous facies is made up of red mudstones, representing a lake or inland sea deposit. The marginal facies is made up of breccias, conglomerates, sandstones, siltstones, mudstones, evaporites, calcretes, limestones and dolomites. These rocks represent continental and shoreline or continental scree and alluvial fans and plains deposits.

Ref: Waters and Lawrence 1987

Plymouth Great Woods exposes rocks belonging to the Marginal Facies of the Mercia Mudstone Group. The site comprises a large quarry in conglomerates of the Mercia Mudstone Formation. The main face is about 10m high and exposes large, cross-bedded, red coloured conglomerates, which thicken eastwards. These contain well-rounded pebbles, mainly of Old Red Sandstone rocks. Some very large boulders occur in a bed at the east end where some of the boulders are quite angular.







The dominance of Old Red Sandstone clasts at Great Plymouth Wood is witness to the areas of high ground that provided source material at this time. The Cardiff-Cowbridge Anticline was a dominant feature and presumably, when these rocks were deposited, the limestone mantle of this structure was already eroded away explaining the relative lack of the limestone clasts that typify this formation elsewhere.

There are the possible remains of a lime kiln at the entrance to the site.

References:

WATERS, R A AND Lawrence, D J D. 1987. Geology of the South Wales Coalfield, Part III, the country around Cardiff. BGS

SECTION B

PRACTICAL CONSIDERATIONS:			
Please score Accessibility and Safety Red Amber or Green			
Accessibility:			X 
Comment: Quarry has been recently cleared so access is presently good with a short scramble from a well maintained footpath to enter quarry			
Safety:			X 
This quarry is reasonably safe with the cliffs being fairly stable. Parties should wear hard hats and there is a risk of a fall if approached from the south side where the faces are highest.			
Conservation status:			
There are no known conservation designations of this RIGS.			

OWNERSHIP/PLANNING CONTROL:
Owner/tenant: Cardiff County Council
Planning Authority: Cardiff County Council
Planning status/constraints/opportunities:
There are no known planning constraints or opportunities
CONDITION, USE & MANAGEMENT:
Present use: Forms part of Great Plymouth Woods countryside area.
Site condition: Good because of recent clearance works
Potential threats: Dumping of rubbish and general build up of vegetation
Site Management: Frequent removal of dumped rubbish and face clearance
SITE DEVELOPMENT:
Potential use (general): Would make an interesting adjunct to the natural history interpretation of this area which is currently enjoying interest from a local friends group.
Potential use (educational): Good safe site for the study of the Mercia Mudstone Group Marginal Facies
Other comments:



Photographic Record



View of Quarry looking west



View of Quarry looking east



View of quarry face showing variability of clast sizes and channel structure



General view of conglomerate