



Dawlish Sandstones well exposed in cliffs alongside the mainline railway and seawall at Dawlish.

Devon Geology Online

Online Information about Devon's Geology is a new project in 2009 for Devon County Council by David Roche GeoConsulting. With contributions from our team of consultants including **Dr Clive Nicholas, Dr Deryck Laming, David Allen, Phil Stephenson** and **David Roche**, a series of thirteen short pictorial essays have been created – from Devonian slates and schists in South Devon over 400 million years old to recent deposits in North Devon less than 1 million years old – so that Devon's geology and some of its best examples and accessible locations will be introduced to a wide audience via Devon's website – www.devon.gov.uk/geology.



IDENTIFY these five examples of Devon's Geology and you can enter your name in our prize draw See list of strata names below. Email entries to ad@drgeo.co.uk.

The 13 strata groups used for Devon's Geology:
Lower Devonian Schists
Devonian Limestones
Devonian Slates, Sandstones and Volcanics
Carboniferous Sandstones and Shales
Dartmoor Granite
Permian Breccias, Sandstones and Volcanics
Triassic Pebble Beds, Sandstones and Mudstones
Lower Jurassic Mudstones and Limestones
Upper Greensand and Gault
Chalk
Lundy Granite
Tertiary Deposits
Quaternary Deposits and Landforms

Our 2010 Calendar will feature photographs of our Devon Geology project. To order your copy email us at drgeo@drgeo.co.uk.

REWARDS ... Introduce David Roche GeoConsulting by word-of-mouth referral to a new client and/or project, and we will give you a token of our appreciation.

see over for ...

**Meldon Quarry
Rock Park**

Exe Tunnel

**Steep Ascent
at Axmouth**

**... and our
Contact details**

MELDON ROCK PARK

- showing the rocks and geology
of Meldon Quarry



Placing the first boulder - Phil Stephenson supervises the selection of boulders from the quarry and the arrangement of the Rock Park area, with assistance from Bardon Aggregates and Bardon Contracting.

Boulders from the adjacent Meldon Quarry have been placed in the Rock Park to show the great variety of the rocks and geology found in the quarry. As a working quarry, there is no safe access for the general public or for geological studies, and the Rock Park has been created to allow close examination of the rocks in a safe location. The boulders are a representative selection of the main rock types of Meldon, and have been placed in an order reflecting a north-south section across the quarry. The rock types include chert, hornfels, slate-with-lenticles, chistolite slate, crystalline tuff and dolerite dykes. The geology of Meldon Quarry is complex with rocks of great age (about 350 million years old) with large folds and faults, which have been altered by thermal metamorphism due to intrusion of the nearby Dartmoor Granite.

The Rock Park project was created in 2009 with funding from the Aggregates Levy Sustainability Fund (ALSF) through the Devon RockETS scheme administered by Devon County Council, and with contributions in-kind. The project was arranged and undertaken by David Roche and Phil Stephenson of David Roche GeoConsulting, with specialist geologist assistance by Steve Parkhouse (GeoServe) in the selection and description of the rocks. The work was carried out in close collaboration with Aggregate Industries and Bardon Aggregates who own and operate the quarry, and with Dartmoor Railway and Dartmoor National Park Authority. The works involved levelling and new surfacing to the Rock Park area, moving and placing boulders, new picnic tables, gates and fences, direction signs and an information board.

A fine example of geodiversity/geoconservation, bringing the hidden geology to the public and enthusiasts for their study and enjoyment in a safe and pleasant location.

DR DERYCK LAMING JOINS THE TEAM

Dr Deryck Laming has joined our team of consultants. He is available to work with David Roche GeoConsulting and he will also continue his independent consultancy work with Herrington Geoscience. Deryck is a specialist in sedimentary geology, and his particular expertise is the New Red Sandstone of Devon. He also has wide experience in applied geology for coastal dam and reservoir projects, and in the role of an expert witness.

Recent collaboration on the Exe Tunnel project involved both **David Roche** and **Deryck Laming** as independent expert witnesses for Byzak, subcontractor for the gas pipeline tunnel, in a claim for difficult and unforeseen ground conditions. Working as Herrington, Deryck was involved in describing and interpreting the geology found along the tunnel drive from various samples obtained as it progressed through the red rocks beneath the estuary from Lypstone to Powderham during 2007/8. Highly variable ground was encountered in breccia, sandstone and mudstone rocks cut by several major step faults. Neither the sudden variability nor the faulting were expected. Buried river channels filled with gravels were also encountered.



Tunnel Boring Machine (TBM) emerges into Powderham reception shaft after its 2km drive under the River Exe estuary to create a gas pipeline tunnel. (photo - D Laming)

Following completion of the tunnel drive, David Roche was brought in to advise on the tunnel ground problems, in particular the engineering geology, and to prepare and present expert evidence for Byzak at the subsequent adjudication hearings.

Steep Ascent at Axmouth

A Feasibility Study for Natural England to create a new length of coastal footpath from Axmouth up the steep cliff slope and onto the Undercliffs Landslips was completed in early 2009. Based upon engineering geological slope mapping survey, desk study review of historic maps, air photographs and landslip literature, and cliff slope stability assessment, the illustrated report prepared by David Roche GeoConsulting identifies the alignment for the proposed footpath and steps, including safety and design recommendations for the very steep ascent route.

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