



**WALK AROUND
BRACKEN HALL COUNTRYSIDE CENTRE TO
LOOK AT THE ROCKS AND LANDSCAPES
OF SHIPLEY GLEN, BAILDON HILL AND
BAILDON BANK**
Grid Reference SE 130 391

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The rocks of the Baildon area are **Carboniferous** in age, about 310 million years old. The crags and quarries of Shipley Glen and Baildon Bank are made of **sandstone**. This particular rock is called Rough Rock by geologists. It forms a natural exposure 500m long in crags overlooking the wooded eastern slopes of Loadpit Beck. The rock is a medium to coarse-grained sandstone with some beds containing sub-angular to sub-rounded pebbles of quartz.

These rocks were laid down on the tops of **deltas** and floodplains of large rivers on the edge of a large continent, with mountains to north and south. Sands and muds were deposited by rivers in shallow water. Because the continent was close to the equator, the climate was warm and wet and tropical rain forest flourished. Dead plant material became trapped in stagnant swamps between river channels. Over geological time it was buried by muds and sands as the rivers in the delta changed position and built up more deposits. The water, oxygen and hydrogen were driven out of the plant remains, leaving carbon in **coal seams**.

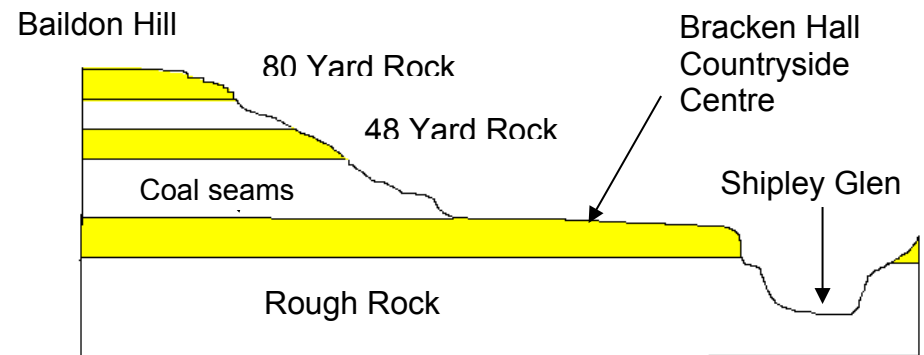
After the sediments were formed close to sea-level, they were **buried** by hundreds of metres of sediment and **compressed**. As the sea water moved upwards it carried minerals which **cemented** the sand and mud grains together to make a rock. Sandy sediment makes **sandstones** (often called grits if the sand grains are angular) and muddy sediments gives **mudstones**.

The crags at Shipley Glen contain structures which tell geologists how the rock was formed. There are prominent sets of **cross bedding** indicating the direction of rivers which deposited the sand. Weathering features include potholes and the widening of **joints**, which are weaknesses formed by tectonic action.

Areas of rock pavements in front of Bracken Hall (the Catten stones) have been exposed by the erosional effects of ice. The blocks of rock below the crags probably slid down the slope during periglacial times, after the last glacial period when the ground was frozen.

Baildon Green and Baildon Bank quarries show Rough Rock structures. As the faces are unstable, keep well away from them, but features like cross-bedding and bedding planes can be seen from a distance.

Baildon Hill is made from sandstones and mudstones and also contains coal seams and **ironstone nodules** which have been exploited from early times. From Bracken Hall we have a clear view of Baildon Hill and can see how the landscape is related to the geology. The sandstones are more resistant and form gentle platforms, while the mudstones are less resistant and form steeper slopes.



All white areas are made of mudstones, with several coal seams between the Rough Rock and the 48 Yard Rock

Cross section to show the geology of Baildon Hill and Shipley Glen