

GEOLOGICAL HISTORY

Edinburgh's landscape reflects the varied nature of the underlying rocks. Its seven hills - Castle Rock, Arthur's Seat, Corstorphine, Calton, Craiglockhart, Blackford and the Braid hills are igneous or volcanic in origin. They are composed of hard, erosion-resistant lavas, or intrusive igneous rocks of Devonian (410 million years old) to Carboniferous (340-320 million years old) ages. The hard volcanic rocks on the north-east end of the Pentland Hills also dominate Edinburgh's southern skyline. However, much of the city is low ground if not entirely flat, because this part is underlain by soft, easily-eroded sedimentary rocks. Locally, some harder beds of sandstone do form minor hills like Craigeith Hill and Ravelston Woods.

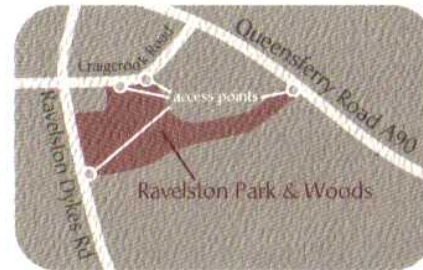
These are entirely sedimentary in origin and are composed of hard sandstone dipping to the south, with a scarp facing northwards above Ravelston Park. This sandstone was laid down by rivers in the Carboniferous Period when the area was part of a large delta. Locally, environments changed through time from organic rich tree-lined lagoons in which mud accumulated to sandy river banks and channels. The deposits of sand in the channels, on the banks and flood plains produced a considerable thickness of sandstone beds at Craigeith and Ravelston. These sandstones represent a small part of several thousand metres of sediment laid down in the Edinburgh area during the Carboniferous Period.

At the end of this time, about 300 million years ago, the area underwent a period of mountain building, and being largely terrestrial, the rock record shows no evidence of the Jurassic Period with its dinosaurs!

During the last two million years or so, ice sheets flowed from the west altering the landscape by eroding the softer sedimentary rocks, and leaving the harder, usually igneous, rocks as glacially streamlined hills (crags and tails of Castle Rock and Craiglockhart).

HOW TO GET THERE

Ravelston Park & Woods lie in Blackhall, North Edinburgh. The Park is most easily accessed from the eastern end of Craigcrook Road. The Woods can be accessed from the South side of the park, or directly from Queensferry Road.



The leaflet is published by:
The Friends of Ravelston Park & Woods Association

The Friends of Ravelston Park and Woods Association was established in 2001 to represent the different user groups of the Park and Woods and to act as a focal point for improvements to the area.



To join send your name and address with a cheque for £1 (made payable to FORWPA) to:

FORPWA, c/o Blackhall Nursery, Ravelston Park Pavilion, Craigcrook Road, Edinburgh, EH4 3RU.

The Friends of Ravelston Park and Woods Association is a recognised Scottish Charity (SC032547).

Compiled by:
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Lothian & Borders RIGS Group



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Ravelston Woods Local Nature Reserve

geological history & information

RAVELSTON QUARRIES

The quarries of Ravelston have supplied stone for many buildings in the city. Ravelston Quarry opened in the 17th Century. There is a recorded account of stone being used for the building of Holyrood Palace in the 1530s. Council records refer to the use of ashlar (squared and dressed stone) from Ravelston in the construction of Parliament House completed in 1632. Part of Heriot's School also used stone from Ravelston.

Geologically, the sandstone quarried in Ravelston Woods is part of the Craighleith Sandstone, as formerly seen in quarries at Maiden Craig and Craighleith, but now largely infilled. The sandstone quarried at the nearby Ravelston quarries on the south-east side of Corstorphine Hill is the slightly younger Ravelston Sandstone.

GEOLOGICAL TIME SCALE

MILLION YEARS

2.6	Quaternary
65	Palaeogene
146	Cretaceous
200	Jurassic
251	Triassic
299	Permian
359	Carboniferous
416	Devonian
443	Silurian
488	Ordovician
542	Cambrian
>542	Pre-Cambrian

RIGS

Regionally Important Geological & Geomorphological Sites

LaBRIGS is the local volunteer group set up to raise awareness of our Earth heritage, the importance of conserving geodiversity, and the promotion of a more general understanding of Earth history.

Contact us at: Lothian & Borders RIGS Group,
c/o British Geological Survey
Edinburgh, EH9 3LA
email: labrigs@bgs.ac.uk

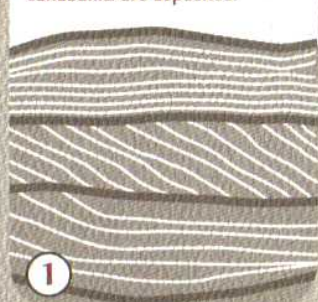


RAVELSTON WOODS: GEOLOGICAL POINTS OF INTEREST & WHERE TO FIND THEM

Cross bedding

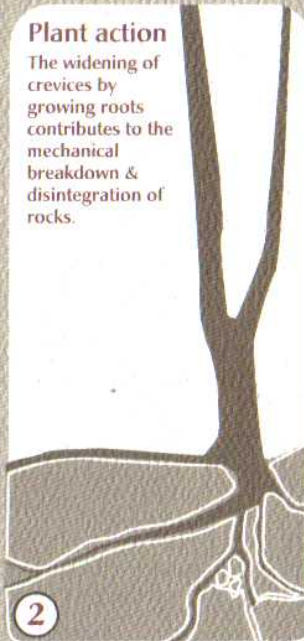
1a. Here we see steeply inclined bedding of sandstone deposited in shallow water under strong current action. All of us are familiar with ripples on the beach or on a river bed. Dissecting a sand ripple with a spade would show the inclined layering of sand similar to this illustration but on a smaller scale.

1b. Here we see examples of truncated cross bedding. With changes in condition of deposition, the upper part of the sandbank may be swept away & the bedding planes sharply truncated before another group of sandbanks are deposited.



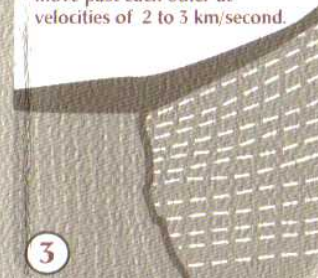
Plant action

The widening of crevices by growing roots contributes to the mechanical breakdown & disintegration of rocks.



Horizontal scratches

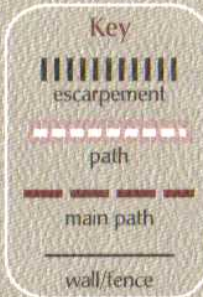
Here we can see smooth, grooved, polished surfaces (slickensides) produced by friction on the rock face indicating horizontal movement along a minor fault plane. When faults move producing earthquakes, it is hard to comprehend that the two sides move past each other at velocities of 2 to 3 km/second.



High quarry face with well bedded sandstone

In this quarry we see well bedded massive sandstone with regular horizontal bedding planes and vertical joints which allow the quarryman to extract rock without the use of black powder. This scarp face is well exposed with the beds dipping to the south at an angle of about 15 degrees.

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Queensferry Road

Keilh Row Keilh Terrace

Jeffrey Ave

Craigcrook Road

Ravelston Park

Old Quarry

Ravelston Dykes Road