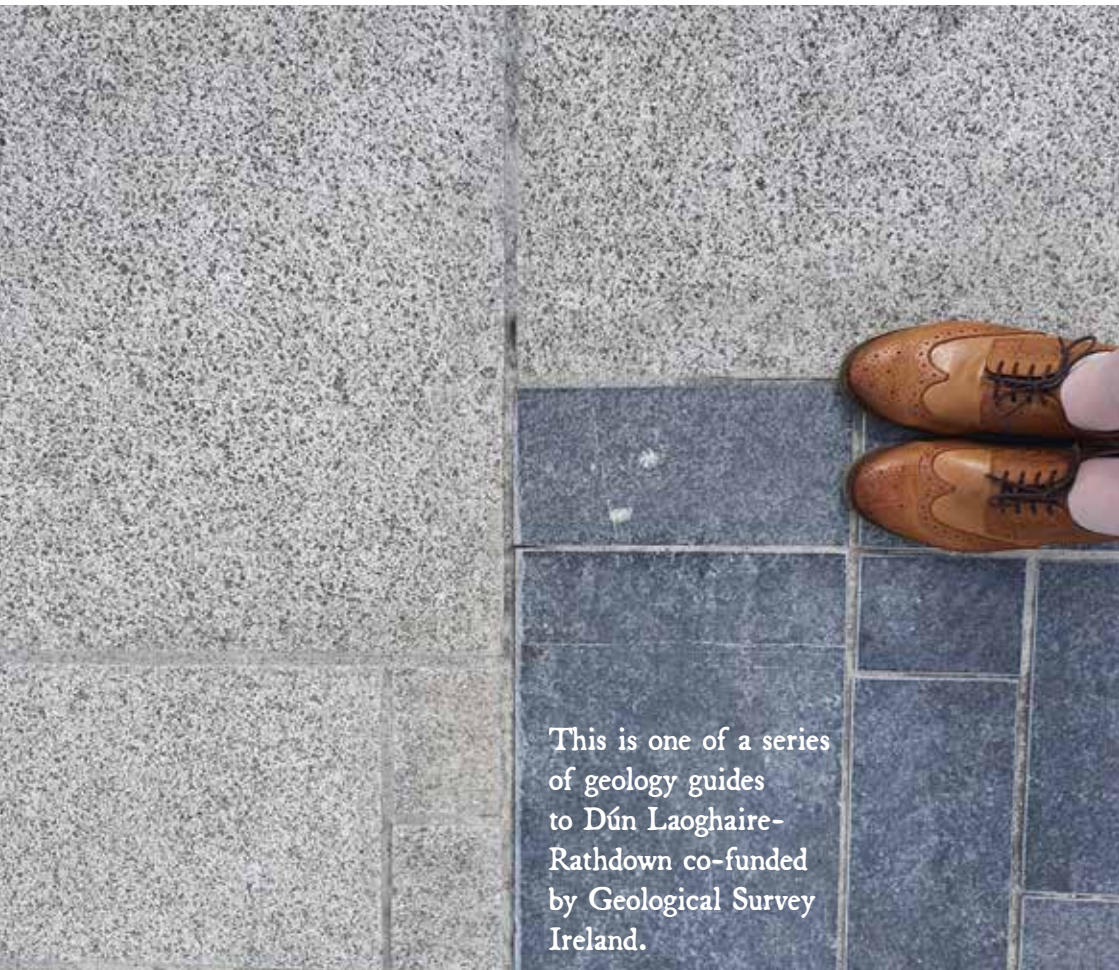


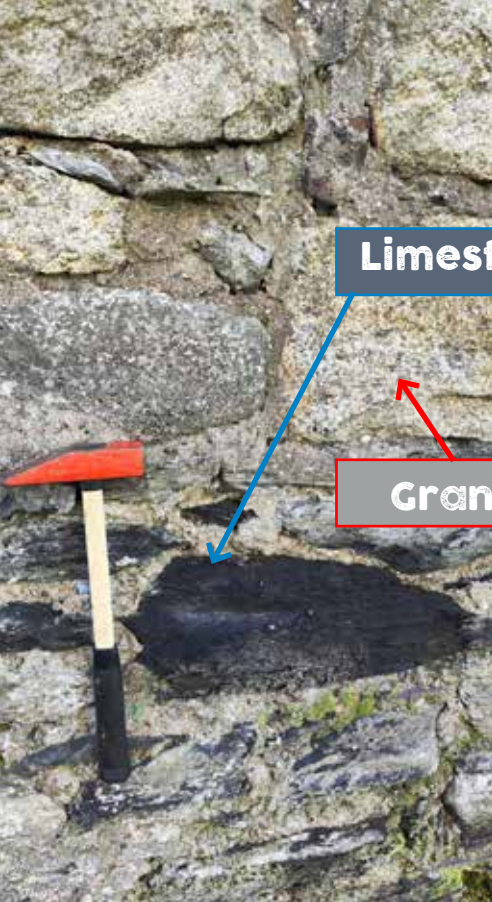
The Geology of Dún Laoghaire-Rathdown

Blackrock Park

- the stories in the walls



This is one of a series
of geology guides
to Dún Laoghaire-
Rathdown co-funded
by Geological Survey
Ireland.



Limestone

Granite



Look carefully at the old walls in Blackrock and Booterstown – they tell the story of what lies beneath - the two types of bedrock that meet here; the Leinster Granite and the Dublin Carboniferous Limestone.

In the past, people generally quarried whatever rock was closest to build walls. South of Blackrock, granite is the most common rock you'll see in old walls while north of Blackrock, limestone is the most common rock you'll see. Around Blackrock and Booterstown, the walls are made of a mixture of granite and limestone indicating that you are close to the contact point between the two types of bedrock!

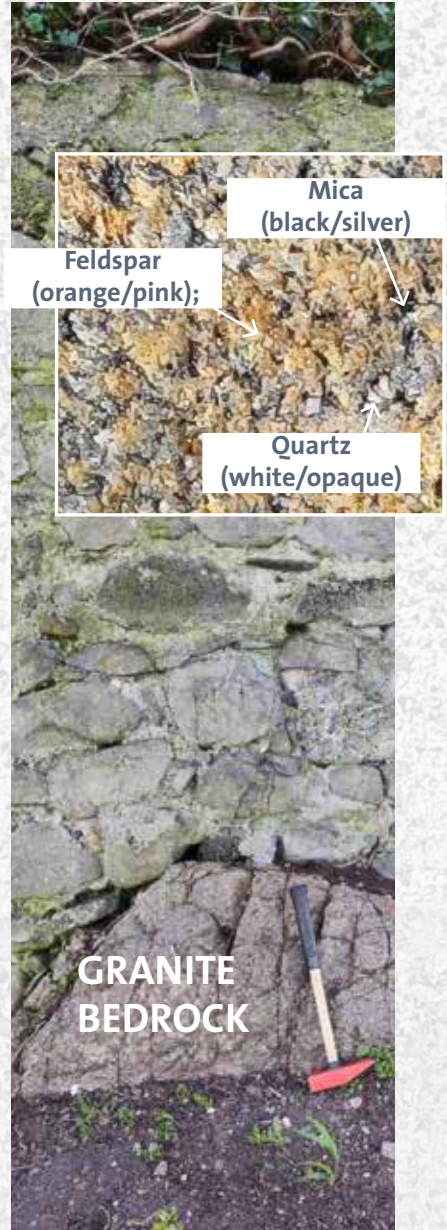
Granite

Granite is an igneous rock formed from magma (molten rock) deep beneath the ground. It is characterised by large crystals of three distinctive minerals, quartz, feldspar and mica, which are visible to the naked eye. The granite we see at Blackrock is the northeastern extent of a huge mass of rock that extends south-westward through south county Dublin and Wicklow and into county Carlow. Stretch your imagination and think of two continents colliding over 400 million years ago, the collision causing a huge mountain chain to fold upwards. Now stretch your imagination even further and think of this molten rock deep beneath the rising mountain chain, cooling slowly over millions of years to form the Leinster Granite we see here in the rock formations, and in the walls and buildings of this part of Dublin.

The reason we can see them now is because the mountain chain was gradually eroded away through the forces of nature.



The Leinster Granite



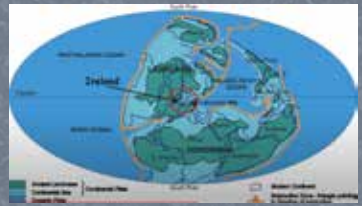
Limestone

Limestone is a sedimentary rock composed of calcium carbonate derived from the remains of marine animals and sea water. Limestone makes up approximately 65% of the landmass of the island of Ireland and is by far the most widespread bedrock in Dublin.

It was formed some 350 million years ago in the Carboniferous Period, at a time when what was to become Ireland was on the equator. The Atlantic Ocean still had to wait another 250 million years or so to open, and Ireland was attached to Newfoundland!

Not all limestone is the same...

Take a look at the limestone in the walls as you walk through Blackrock Park. How many of these can you spot? Can you find any other types?



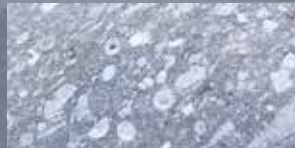
350 million years ago, our planet looked entirely different. The continents as we know them were in vastly different places and alignments. Ireland was located in a shallow tropical sea off the supercontinent called Laurasia.



Ireland was located at tropical latitudes close to the Equator, covered by a shallow ocean which was teeming with life: crinoids (sea lilies), sea-urchins, brachiopods, bivalves, corals, nautiloids and trilobites.



Cherty limestone – have you noticed layers of darker stone in the grey limestone? This is chert, which is the mineral form of silicon dioxide (SiO_2). Unlike the relatively soft limestone, chert is harder than steel. The best-known form of chert is flint, which occurs in chalk – a pure form of limestone.



Fossiliferous limestone – these rocks were formed in a shallow ocean that was teeming with life. The fossilised remains of the animals that lived in that sea, over 300 million years ago, can be seen if you look closely (below, coral; above, crinoids).



Keep an eye out for **holey limestone** that looks like a stone sponge. This surface feature was created long after the limestone was formed, when small animals that lived just under the water line, burrowed their way into the limestone, creating shelters. If you look carefully, you can sometimes see the remains of these organisms.

History



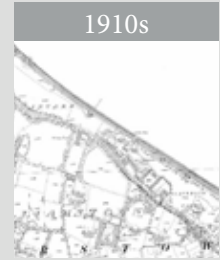
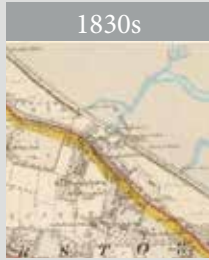
Rocque's maps of Dublin are a beautiful series of maps of Dublin city and county dating to the eighteenth century. They were surveyed by John Rocque, a French born Huguenot who lived most of his life in London. Rocque spent six years in Dublin (1754–60), where he produced a series of maps, including Dublin city and county. Maps of the southeast of Dublin, including Blackrock and Booterstown, were completed in 1757 and 1760, and give a wonderful insight into the coastline and streetscape of the time.



The Ordnance Survey of Ireland was established in 1824 as part of the British army under the Ministry of Defence. It was created to carry out a survey of the entire island of Ireland, for the purpose of updating land valuations for land taxation purposes. The original (first edition) survey, undertaken at a scale of 6 inches to 1 mile under the direction of Major General Thomas Colby between 1829 and 1842 was the first ever large-scale survey of an entire country. Acclaimed for their accuracy, these maps are regarded by cartographers as amongst the finest ever produced. The second edition survey was undertaken in the 1910s at a scale of 25 inches to the mile.

Clues in the landscape

We are lucky to have antiquarian drawings and old maps of the Booterstown area prior to the building of the railway line to Dún Laoghaire in 1834 (Ireland's first rail line!). These allow us to see what the coastline was like before Booterstown marsh, and the impact the railway embankment had on the local landscape.

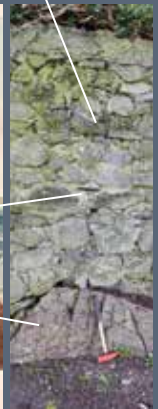


Between 1803 and 1808, 29 Martello towers were built in the greater Dublin area, as part of a nationwide building effort aimed at deterring an invasion by Napoleon (which of course never happened). In the decades following the building of the railway line, the area between the embankment and the original coastline

silted up or was infilled. This process is documented between the first (1830s) and second (1910s) editions of the Ordnance Survey maps, and resulted in the creation of Booterstown Marsh, a biodiversity oasis, and wonderful Blackrock Park.



The full height of the Martello tower, now partly underground



Some of the walls, as illustrated in the early 1800s, survive to this day. Now between 50m and 175m inland, it is interesting to think of these being buffeted by sea storms, protecting the houses and streets behind them.

Boosterstown DART station



The next time you walk along the Rock Road past the entrance to Booterstown DART station, look down! As part of the implementation of the Blackrock Park Masterplan 2020, the Parks Department of Dún Laoghaire-Rathdown County Council have cleverly represented the bedrock beneath the ground by using granite and limestone paving, separated by a fault line – art imitating nature!



Granite

Limestone



An intriguing feature in Blackrock Park, just above the lake, is a rectangular stone structure. Built mostly from limestone, with its entrances filled in, it looks almost out of place - until you remember that this was once the coastline and take a look at the early maps and note that there were a series of bath houses (changing rooms) for public use along the coast.

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