

Welcome to Belshaw's Quarry Nature Reserve. This site is managed by the Northern Ireland Environment Agency and features a unique outdoor art gallery known as Belshaw's Quarry Sculpture Park.

For five decades in the last century, the 98% pure calcium carbonate limestone rock that was excavated from the quarry was processed at an industrial sized lime-kiln facility in the area. The resulting dry powder material was sold to a number of industries to be used in their products and also to agriculture merchants as a form of fertiliser. The labour-intensive excavation process ceased in the late nineteen fifties when cheaper larger bulk foreign imports saw a decline in the competitiveness of what was a local company.

Inspired by a Whitemountain & District Community Association project, twelve sculptures interpret, through the eyes of artists, over 250 million years of key geological features of this site and man's involvement in the quarry and use of its materials.

To get the most from your visit, a suggested starting point is through the gate adjacent to the main sign. Like any rural park, please wear appropriate foot ware for walking on uneven paths and wet grassy areas and be mindful of natural trip hazards. Pay particular attention to traffic and be aware of your surroundings. To avoid the larger stepped areas within the reserve it is possible to access the quarry floor area through the right-hand gate from the layby.

As this is an Area of Special Scientific Interest please do not remove any materials from the site, do not climb on any of the quarry walls or sculptures, do not pick any of the wild flowers or touch or disturb the wildlife as some of them are especially rare.

Also, in the interests of your well-being, do not touch the stinging nettles, thorny shrubs or any of the sap producing plants as these can create skin irritations.

Security cameras monitor this facility.

Please enjoy your visit and give us a "like" on our Trip Advisor or Facebook media pages on the internet. Guided tours may be booked through the website [www.bqsp.co.uk](http://www.bqsp.co.uk). It should be noted that Group tours, in general, require prior approval by NIEA (The Northern Ireland Environment Agency).

Pick up a leaflet as you enter the site through the pedestrian gate adjacent to the main sign for the reserve.

In front of you is a general information board that helps set the context of the geology in this park.

Whitemountain & District Community Association represents the interests of residents in the townland of Whitemountain and parts of the adjacent townlands. More information on townlands can be found at the end of the tour of the nature reserve in the remainder of The Limestone Way aspect of the tour.

The community project which resulted in a unique artistic interpretation of the site was funded mostly by the Alpha programme under the management of Groundwork NI with supplementary catalyst funding by Lisburn & Castlereagh City Council. As a result, the reserve is significant for both educational and tourist visitors alike.

Slabs set into the paths identify some of the major geological time periods within Earth's history, some of which are evident in this reserve.

Hundreds of millions of years ago, Earth's continents were grouped together in one super-continent called Pangea which in itself had already been subjected to the coming together of previous separate super continents and movements.

Approximately three hundred and fifty million years ago, within Pangea, the land mass that would become Ireland was South of the Equator in very tropical latitudes.

Approximately two hundred and fifty million years ago, when the oldest of the rocks evident in Belshaw's Quarry were formed, the land mass that would become Ireland had moved into the Northern part of the Pangea super-continent.

As a result of the land mass movements, Ireland is rich in varied geological features. Some 25% of Earth's geological history is evident in Northern Ireland alone.

Geologists that have used this facility for educational tours in the past state that there is no other metropolitan area of North West Europe with the diversity of rock strata than in the Greater Belfast Area.

Evidence of distinct geological time periods over approximately the last two hundred and fifty million years can be seen in this park, as well as the most recent influence of the last ice age.

The geological features in this reserve also form part of The Limestone Way tour which is an extended version of the tour.

- ☛ Walk over to the sculpture just behind the main entrance sign to the first stage of the tour.

The first sculpture. This sculpture, located behind the main gate sign, is called Nodule and is by Jason Mulligan.

The principal material mined at Belshaw's Quarry was a light-coloured rock called Limestone, a rock with high content of Calcium Carbonate. The Limestone at Belshaw's Quarry (and other similar quarries in Northern Ireland) is termed Ulster White Limestone and is 98% pure calcium carbonate, which makes the material somewhat special.

When roasted in a lime kiln, the resulting limestone powder or "quick-lime" could be used to sweeten soil, purify water, cleanse sewage/carcasses, make cement, prepare leather, etc and therefore was more valuable than the black basalt which was more typically produced from many other quarries in the area.

Nodule is carved from a single large block of Portland Limestone which is a softer limestone, but none-the-less created in a similar way to the local rock millions of years ago. Portland Limestone was formed in the Jurassic era, in between the Triassic and Cretaceous eras. Within Belshaw's Quarry there are no rocks from the Jurassic era so in some respects this sculpture also represents a 'missing' part of Geological time.

Near the top surface of the sculpture some small voids can be seen with sea shells embedded in the material. Herein lies a clue that this Limestone was formed in one of the world's ancient seas. Within limestone though, are deposits of a very different silica based material called flint, which will be explained later. These deposits are arranged in different ways within the limestone including lump-like formations called nodules.

This sculpture is called Nodule because it represents the nodular shape of flint deposits within Limestone in this nature reserve. Since limestone was the key reason for the existence of Belshaw's Quarry, this sculpture pays homage to that material and man's extensive interaction with it within this quarry.

Almost all of the sculptures in this outdoor educational art gallery sit on basalt filled bases which will become overgrown with plants. Therefore, the sculptures over time will look like they are floating within the flora of the reserve.

The formation of limestone, flint, basalt and other rocks will be explained further in the tour.

- ☛ Now walk the short distance along the pathway to the next sculpture called Hydrosphere.

The second sculpture. The spherical sculpture is called Hydrosphere and is by Ngaire Jackson

The name of this sculpture comes from the Greek words *hydōr* for water and *sphaira* for sphere and represents a 'link' between earth and the source of the water in the adjacent stream.

When rain water percolates through the soil and underlying rocks of the earth, it contacts impervious materials, for example, mudstone like that which lies beneath Belshaw's Quarry. Since the water cannot penetrate such a rock, it travels along the impervious layer until it 'springs' out of the ground. Hence the term for a water spring. The adjacent stream is such a spring-fed stream with its source nearly two miles away according to ancient maps.

The sphere represents planet Earth where 71% of the surface is covered in water. The surface of the sphere plays with light and reflections, echoing the qualities of water and the adjacent springwater-fed stream.

The shape of this sculpture also represents the bubbles of life-giving air that form within the stream.

The surface design represents how the water tumbles and meanders over the rocks and clays on the surface of the earth before disappearing underground again.

It is important that all watercourses, including their sources such as spring-fed streams, do not get polluted as sometimes the rivers that they lead to take water into drinking water reservoirs.

- ☛ Now walk the short distance along the pathway to the the next two sculptures. Watch your step should you walk over the uneven grassed area.

The third sculpture. The metal sculpture to the left of the path is called *Earth as a Machine* and is by Jodi Coyne. The sculpture portrays the fundamental volcanic forces that created the rock in front of you.

The black rock is an igneous rock called Basalt, the term igneous being taken from the Latin word *ignis* meaning fire. The majority of the basalt visible in Belshaw's Quarry is termed Lower Basalt, having been created around 60 million years ago when red hot molten rock, termed lava, oozed out over the landscape from deep cracks within the surface of the earth. Basalt was formed in a number of events though with later formations around 55 million years ago termed Upper Basalts because they formed on top of previous lower formations.

Behind and slightly to the right of the sculpture you can see a difference in the structure of the black rock in what looks like a slightly curved near-vertical column. This is evidence that red-hot molten rock travelled up through a previous layer of black basalt. In this instance, the material is termed magma because it cooled below the surface as opposed to lava which cooled on top of the earth's surface.

The blasting of the quarry face has revealed this feature, which is called a dyke and the intruded material is called Dolerite.

The magma that was trapped within the dyke cooled in a way that formed roughly vertical columns with horizontal cracks creating partial blocks. This process is similar to that which created the world-famous hexagonal columns of basalt at the Giants Causeway on the North Coast.

The sculpture depicts the separating tectonic plates of Pangea and interprets the primary driving force that can be found beneath us.

The sign on the sculpture gives an idea to the sculptor's interpretation of events where below earth's crust there lies an ever-running convection engine where magnetic poles emanate and magma flows.

The centre of the sculpture depicts earth's core where, in a general sense, the liquid rock originates and the layers represent the different layers of the earth that the magma travelled through.

The final eruption to the surface of the lava is depicted on the corner of the outermost sheet. The rusting coloured special steel of this sculpture

represents the red-hot lava as it cooled, and, the iron content of Basalt which is evident in the colour of some Basalt outcrops at surface level.

Quarrying activities removing the basalt to reach the commercially valuable limestone beneath revealed more secrets.

- ☛ Walk over to the circular black looking sculpture called Dark Whisper to find out more.



The fourth sculpture. Just beyond the top of a set of steep steps that lead down into the quarry you will see a circular sculpture called Dark Whisper, also by Ngaire Jackson.

Geologists have determined that around 60 million years ago there was dense undergrowth of plant life on Earth, which in earlier time periods would have been fodder for various animals including dinosaurs. There is little evidence to date of dinosaur remains or fossils in Northern Ireland and there is no evidence of dinosaurs in this quarry, the non-flying dinosaurs having become extinct around 66 Million years ago.

Scientific examination of the material near the top of the adjacent steps show evidence that it is of a material type in between the Limestone and Basalt formations. This is only evident at a few locations in Northern Ireland making this little part important within this Area of Special Scientific Interest and key nationally.

The location is an exposed area of Clay with Flints and represents around 10 Million Years covering from the time the limestone was exposed at the surface and the eruption of the basalt. The resulting material was formed by the weathering of the limestone which left behind the flint, and the clay came from mudflows and some ash fall related to the early phase of volcanism before the basalts were erupted.

Microscopic lifeforms (plants, fossils etc) found in this location help date the deposit and some have been discoloured from being roasted by the heat from cooling lava after it erupted over the surface of the earth. Lignite-type of material is also evident. Just like the roasting action in an oven, the plant life did not burn but was roasted.

As a result, please do not poke at the material as who knows what scientific examinations might be revealed here in the future.

Therefore, as the artist portrays in this sculpture, Geology reveals to us the secrets beneath our feet and Dark Whisper is a link to, and a whisper about, a nearby secret. Dark Whisper, with its black charred wood, stylised tree ring form and intricate plant-like structure detailing, is a strong link to, and intrigue for, the secret or reveal near the top of the nearby steps.

Cracks in the sculpture represent the way that lava materials crack as they cool. The rust-coloured steel rear face of the sculpture represents the red hot lava as it cooled on the surface of the earth.

The next part of the tour goes down the steps to a level that dates back to approximately 200 million years ago.

If you feel that there are too many steps into the quarry floor area you could walk back to the path beside the Whitemountain Cow sculpture. If you do, pay particular attention to road traffic. At that location is a slightly inclined side path that leads to a few steps down to another path into the quarry floor where the rest of the audio tour can be picked up at the edge of the bog area.

Take a few steps down the series of steps and you will be standing at a level equivalent to a time period around 66 million years ago. By that time, the continents formed from the break-up of Pangea had moved so far apart that Ireland had moved closer to where it is today on the globe. This is a very important time period at the end of the Cretaceous time period.

Geologists have found evidence in Mexico of a massive meteorite collision with earth around 66 million years ago. After this collision, all land dinosaurs and up to 75% of other land animals progressively became extinct, possibly due to world-wide climatic changes that destroyed the food chains supporting nearly all land animals. That time period is defined as the most recent of the five largest known mass extinctions during the history of earth.

The area at the bottom of the steps in the base of the quarry could be visualised as areas similar to where land dinosaurs may have roamed with airborne reptiles, termed Pterosaurs, flying overhead. Listen for the familiar screech call of families of buzzards nearby, which are large birds of prey, or raptors. Birds on Earth today are relatives of dinosaurs that somehow, presumably by flying, survived the mass extinction of land dinosaurs some 66 million years ago.

Watch your footing and carefully walk down each step. Note the use of limestone chips in the top of each step since for every step taken, one travels approximately 10 million years back in time through the Cretaceous period and into a time when the climate on earth was radically different to that when the largest land dinosaurs roamed.

At each step backwards through time, the tectonic plates of the super-continent of Pangea were closer together in a period of very active earthquakes as the continents moved and interacted.

At the bottom step you are standing at a geological time level of approximately 200 million years ago.

Walk over the gravel pathway to the sculpture in front of the Limestone quarry face to find out more about this Area of Special Scientific Interest.

Be careful as you walk along the pathway from the bottom of the steps. Observe closely some of the plant life and see if you recognise them in the next sculpture on this tour.

The fifth sculpture. The slightly leaf-shaped sculpture on the edge of the boggy area is called Flora & Fauna and is by Helen Hanse.

This carved Portland limestone sculpture reflects on the decades since quarrying ceased when plant material, like a form of compost, progressively enabled plant life to establish. Again, being made of Portland Limestone this sculpture also represents the Triassic geological time step which is not evident within this quarry.

That growing medium is only a few centimetres deep in places, so this quarry in itself is a growing natural experiment showing how plant life can gradually take over nearly every surface in a quarry. Each side of the sculpture reveals the developing richness of the quarry floor wetland area and how nature is progressively creating a wonderful landscape of texture, shape and colour.

The layers which cut through this leaf shaped sculpture, echo the seams in the quarry face surrounding it.

One side of this sculpture reflects on the seasonal cycles of insect and pond-life visible around us such as caterpillars, butterflies, frog-spawn, tadpoles and frogs. Watch out for this wildlife at the different times of the year.

The other side of this sculpture reflects on plant life that can be seen in this quarry including bulrushes, wild angelica, meadowsweet, horsetails, brooklime, common twayblade, various umbellifers and the common spotted orchid.

Flora and fauna reflect only a few decades of time but they stand at a geological time level of approximately 200 million years ago.

Walk over to the sculpture in front of the Limestone quarry face to find out more about this area of special scientific interest.

As you go, watch your footing but watch out for signs of underlying rock showing through as patches which demonstrates just how thin the growing medium is at those locations within the quarry.

The sixth sculpture. In front of the quarry face is a layered sculpture called Geological Cake by Patricia Crossey & Tracey Crossan of Compass North Glass.

Behind the sculpture in this natural amphitheatre is a summary of the history of approximately 200 million years of geology at this location on earth.

At the very top of the quarry face is the youngest material, now farmland, comprised of soil and clays created by glacial processes before the end of the last ice age which was around 11,000 years ago.

Below that is the black basalt rock which is created from lava that hardened after it erupted through the underlying materials in the earth's crust around 60 million years ago. You do not see the full depth of basalt that may have actually existed due to the huge carving action during the ice age.

The limestone layer below the basalt is not an igneous rock like basalt but is a sedimentary rock predominantly made of calcium carbonate which formed from shells and microscopic bones in ancient seas as discussed more in the next sculpture.

Within the limestone there are layers of grey coloured flint which formed in those ancient seas from an entirely different silica-based material which is understood by scientists to have originated from sea-sponge life forms. In Northern Ireland, flint is only found within limestone from the Cretaceous era between 145 and 66 million years ago.

Below the limestone quarry floor beneath your feet are hidden layers of mudstone some 230 million years old, created from desert sand and muds in the Triassic period which ended around 200 million years ago.

The Jurassic time period between the Triassic of the quarry floor and the Cretaceous of the quarry floor is not evident in this quarry. Even so, this sculpture represents all the materials that quarrying has revealed here, just like slicing through a geological cake over 250 million years old.

Clear glass segments balance between each section of stone, translating to the viewer the clear transition from one geological episode into another separating the layers of time and land change.

You can walk closer to the quarry face to see the materials. However, do watch out for the stinging nettles in the area or chunks of limestone that you could trip over. The quarry face itself is not considered stable so you are advised not to touch it.

Now walk over to the circular sculpture sitting on the ground to find out about the Limestone itself.

The seventh sculpture. The circular sculpture sitting on the quarry floor is called Coccolith and is by Kevin Killen.

Scientific examination of the limestone of the type in this quarry shows that it is made up of the microscopic circular shaped shells of dead microscopic sea life. These microscopic shells are called Coccoliths from a plankton like sea-life form called a Coccolithophore.

Although Coccolithophores are evident in today's seas, these lifeforms existed in ancient seas in much greater concentrations in time periods that spanned the Cretaceous and Jurassic time periods, the latter not actually being evident in this quarry. The Ulster White Limestone in this quarry is Late Cretaceous in age and an estimate of its formation is approximately from 83 million years ago to approximately 72 million years ago.

Just think for a second about how much material must have been deposited continuously in the seas to form the limestone face.

It is estimated that approximately five metres of lime mud was needed, compressed progressively under its own weight over millions of years to form each metre of limestone

In those same seas, larger squid-like creatures called Belemnites also existed. When they died within the muds they left behind a tapered void in the soft forming limestone which in turn filled with other materials or minerals to form a trace fossil.

This sculpture is in a circular Coccolith cross sectional shape but is tapered to represent a length of the tapered protective part of the Belemnite.

The coloured bands in this sculpture represent the predominant materials within this quarry, with the different sea creatures of the time depicted by impressions in the surface of the sculpture.

The predominant material of the sculpture is concrete, a man-made construction material that consists of limestone for the cement, with basalt rock, sand and water in the mix.

Now walk towards the upright sculpture that sits on a metal cube base to find out more about man's workings in the quarry.

The eighth sculpture. The upright sculpture that sits on a rusting metal cube base is called Tool & Waste – Man's Conflict with Flint and is by Ngaire Jackson.

Quarrying operations required the use of explosives to blast sections of material from the quarry face.

After the basalt was removed, the limestone was taken to a facility about one mile away where lime kilns were used to roast the limestone. The resulting powdery material was, and still is, used in all kinds of products from toothpaste, paints (including whitewash), fertiliser for agriculture and in the manufacture of steel.

Flint had to be extracted out of the limestone because the heat of the lime kiln would have caused the flint to form into a glass-like material which would have blocked the lime kilns and in some instances have led to a kiln explosion.

The artwork comprises a flint filled wire 'waste basket' representing flint as a 'waste' product of the quarrying. The flints and top soil removed during quarrying which was simply used to fill up holes in surrounding fields.

The flint arrow and stylised human shape is recognition of flint in the Stone Age when flint was the most technologically advanced material known to man.

Therefore, comparing these two uses of flint, this sculpture represents the human conflict with flint i.e. both as a technologically advanced tool or weapon and surplus waste.

The figure like shape of a person represents both the stone age man who once shaped tools from flint and the modern man who worked at Belshaw's Quarry creating flint waste. From shaping tools to surplus waste, this is man's conflict with flint.

Stone age man may well have created tools from outcrops of limestone and flint in this area. Within Northern Ireland, flint is only found within limestone from the Cretaceous era so Stone Age man was somewhat lucky to find flint materials. Carefully created tools made from flint can be found in ploughed fields in Northern Ireland. Archaeologists believe that during the Stone Age there was trade of such locally made tools with what we now call Europe.

Walk further along the path to find out more about the human activity during the quarrying process.



The ninth sculpture. The bright steel sculpture located at the base of one of the three sets of steps down to the quarry floor area is called Hard Labour and is by Alan Burke.

The process of separating the waste flint from the valuable limestone could only be done by hand. That work was backbreaking, and hours were long.

One such labourer recalled how he started his working life at fourteen years old in this quarry. The work entailed using various sized sledgehammers to smash the flint from the limestone. The limestone pieces that were to go into the limekiln had to be small enough in size for the roasting process in the kiln. Limestone was broken into small pieces with sledgehammers or what are termed two-pound weight hammers.

Hard-wearing hob-nailed boots were standard foot ware and little in the way of gloves were used.

The limestone pieces were shovelled into carts which were horse-drawn out of the quarry to the 'industrial' type of lime kiln about a mile away.

As the sculptor says: this sculpture represents a broken sledge hammer as testament to all those who toiled in sweat and blood, and had to hue the rock from the ground in this quarry. A blunt end and a pointed end to the hammer shape can be seen.

The hammer shape itself a symbol of force; its potency diminished by its broken shaft.

The decorative elements on the head represent geological history and the purpose to this quarry, limestone excavation. Raised relief in the artwork shows fossils of ancient plants and ferns that once grew on earth.

More recent motifs of wheat and grass are a link to the quarried lime which would be processed into an agricultural fertiliser supplement to "sweeten" the ground.

The broken shaft tells of sore hands and stiff backs. Yet its splintered structure could easily be mistaken for a city scape of towers and high rise which were built using materials that relied on limestone.

Walk back down the path and reflect on man's interactions with quarrying and the quarried materials. Walk onwards past Coccolith representing the history

of Limestone and then climb the steps adjacent to the angled quarry face to find out more about the huge changes in the earth through its history.

If you arrived in the quarry floor via the side path near the Whitemountain Cow and you feel there are too many steps out of the quarry floor, then simply return along the side path to the Whitemountain Cow sculpture and walk down the path to pick up the rest of this audio tour.

The tenth sculpture. At the top of the set of steps that lead upwards from the dry part of the quarry floor area is a three-block sculpture called Plate Tectonics & Mini Earthquake and is by Brian Connolly.

This sculpture is comprised of a number of blocks, including angled faces and layers to represent the fault lines in the predominant layers of materials within the quarry.

This sculpture stands at a geological time level of approximately 200 million years ago. It is almost level with the base of the basalt face at the opposite end of the quarry which is around 60 million years of age.

Therefore, how can rocks at the same height and only one hundred metres apart be nearly one hundred and forty million years different in age?

Well, quarrying activities have revealed yet another secret within Belshaw's Quarry. The angled face behind the sculpture is evidence of an uplifting of this whole end of the quarry by nearly 6 metres. The very distinct angle of the section of the fault and fine gouges on its face, called Slickensides, is evidence that the uplifting was very rapid, possibly lasting only a few seconds.

Therefore, where one stands now is right at the fault line of a mini-earthquake like event.

The basalt on top of the area has been mostly blasted away by quarrying or eroded by the ice age and suggests the fault occurred sometime after the capping of the limestone by lava.

This fault was created by the American continent moving away very slowly from Europe as Pangea continued to break up.

The tectonic plate that Ireland is within is relatively stable now a days - so don't panic that you might get caught up in another mini earthquake!

About three steps down the steps, at the base of the angled limestone face is the start of an underlying layer which scientific examination of the material under a microscope indicates is both mudstone and sandstone. This material is termed Mercia Mudstone and includes rounded grains in the manner of desert sand, that has blown along and been rounded off into little spheres.

Note how distinct the changes are between the underlying soft grey-brown material, the sometimes greenish silt-sand and the hard limestone. These reflect the changing conditions when the sediments were laid down. Distinct

changes are common in the geological history of the earth and are represented in both this sculpture and in the Geological Cake sculpture located at the base of the steps.

The mini earthquake has therefore revealed another secret about the geology of earth when the Pangea break-up saw major changes from desert and river deltas to flooded shallow seas.

Now walk over to the sculpture just a few metres away.

The eleventh sculpture. The black 'framed' orange centred sculpture located at the top of the set of steps that lead upwards from the dry part of the quarry floor area is called Volcanic Slicing and is by Patricia Crossey & Tracey Crossan of Compass North Glass.

In the left and right-hand corners of this elevated 'bench' area, the near-black or dark grey volcanic rock called Dolerite is evidence of red hot molten magma that travelled up through a narrow crack in the earth's crust, including the layer of the limestone that you see in front of you. The quarrying operations have cut through this filled crack, or dyke. This process was explained earlier when visiting the sculpture number 3 "Earth As a Machine" on the opposite quarry bench.

Because the magma in this dyke cooled within a very different material i.e. limestone, a metamorphic event occurred right at the interface of the Limestone and Dolerite, forming a narrow band of marble-like material.

At the centre of the sculpture you can see a sun-lit coloured glass which depicts the core of the earth where lava originated.

This sculpture brings together two fundamental materials, compressed wood and glass, in a celebration of Volcanic Slicing.

Rock formed from magma is an igneous rock, the term taken from the Latin 'ignis' meaning fire. The impression of charred wood symbolically represents the formation of igneous rock. Pairing this burnt appearance with orange-coloured fused glass creates a dynamic story and feeds into our imagination the excitement found in volcanoes.

Glass is a super cooled-liquid that has solidified from a molten state. Sharing these similarities with lava, this sculpture brings to life the historical story at this location within the quarry.

You can walk closer to the quarry face to closer see the dyke. However, do watch out for the stinging nettles in the area. The quarry face itself is not always stable so you are advised not to touch the quarry face or the dyke.

Walk along the pathway towards the lay-by and the twelfth sculpture called Whitemountain Cow.

If you arrived at this sculpture from the pathway leading from the lay-by then walk onwards to the adjacent three block sculpture called Plate Tectonics & Mini Earthquake. Pay particular attention if you plan to use the steep steps down into the quarry floor area. Alternatively, walk back along the path and use the side path near Whitemountain Cow and follow it to another gravel pathway into the quarry floor area.

The twelfth sculpture. The tour of this Area Of Special Scientific Interest is constructed to start at the gates leading into the site from the other end of the lay-by. If you started the tour and decided not to use the steps into the quarry then just past the Whitemountain Cow sculpture there is a slightly inclined side path to the left hand. That side path leads to a short slope down to another path that goes past two sculptures and into the quarry floor area where the rest of the tour can be picked up at sculpture number five called Flora and Fauna.

Whitemountain Cow is by Kevin Killen with significant involvement from the Whitemountain and District Community Association.

Whitemountain Cow is a contemporary and distinctive life-like Farm animal that links limestone to the agriculture of the townland areas. Inspired by geology and the lime kiln process, themed metal words are weaved together as the building blocks to the full-sized Cow.

See if you can identify the words related to geology, the universe and townland names and see if you can see the word “Welcome” in your language. Do not climb on the cow and watch out for the stinging nettles that surround the cow.

Within the sculpture are incorporated some of the machine parts of recycled horse-drawn farm machinery, in this case an early 20<sup>th</sup> century hay rake. This acts as a link to the hay making process used by farmers where crops benefited from both cow manure and/or limestone.

Roasted and processed limestone was a key fertiliser to ‘sweeten’ acidic ground and thus aid grass growth for cattle to graze on, hay production etc.

In the support base you can see samples of the three key materials on this site: Basalt, Limestone and Grey Flint.

As a reminder, the addition of twelve sculptures to this unique NIEA managed Area Of Special Scientific is due to a community led project by Whitemountain & District Community Association.

The majority of the project was funded by the Alpha programme under the management of Groundwork NI and supplementary funding by Lisburn & Castlereagh City Council.

If you visit us on Facebook or via our Trip Advisor page then maybe you could leave some comments.

## Private Tours

A private tour of this site and The Limestone way is possible by booking it through the website [www.bqsp.co.uk](http://www.bqsp.co.uk). Please note that visits by large groups require prior notification and approval by NIEA.

If this is the end of your self-guided tour then on behalf of all involved in this project thank you for your time to visit here today. Pick up one of our leaflets also and pass it on to someone else or come back another day.

The main tour of Belshaw's Quarry Nature reserve and sculpture part concludes at this point.

The geological features in the quarry are part of The Limestone Way tour and if you have time you could take in the remainder of The Limestone Way tour which is also summarised on our leaflet and described in the following pages.



## Limestone Way

Limestone from Belshaw's quarry is extremely pure Calcium Carbonate termed 'Ulster White Limestone' and went through a more industrialised process in a lime kiln facility nearby for use in construction industries.

The location of Belshaw's Quarry and the industrial limekilns were close to the industrialised city of Belfast and towns like Lisburn which have grown through time within the Lagan Valley.

If you stand up on the raised area at the head of the sculpture called Whitemountain Cow you can see across the Lagan Valley. Although heavily populated by man, the main shape of this valley goes back to the last ice age when the ice carved its way through Ireland.

In the distance, the different part granite land masses at the Dromara Hills, where the source of the River Lagan rises, can be seen with the granite rich Mourne Mountains beyond.

A thirty minute approximately round trip walk up the road leading away from the quarry will let you see other features of the area on The Limestone Way tour within the townland of Aghnahough.

In Ireland, Counties are uniquely divided into Civil Parishes and Parishes are further divided into townlands.

A townland, or bally, is a small geographical division of land used in Ireland. The townland system is of Gaelic origin, pre-dating the Norman invasion, and most have names of Irish Gaelic origin. However, some townland names and boundaries come from Norman manors, plantation divisions, or later creations during the mapping of the country in the early Ordnance Surveys of Ireland. There are currently 61,402 named townlands in Ireland, covering the whole island.

Belshaw's Quarry Nature Reserve is located in what is called the Townland of Aghnahough. The stream down the side of the site is the boundary of Aghnahough and Knocknadonagh townlands. Many townland boundaries follow field boundaries and are sometimes termed a March ditch.

The townland of Whitemountain is now used as the name of the Lisburn & Castlereagh City Council Ward name. Whitemountain means Townland of the fort. The meaning of the names of the townlands that immediately bound Whitemountain townland are indicated as follows:

Mullaghglass (The green hill top),

Drumankelly (which nearly everyone seems to call Drumnakelly) (Ridge of the Church),

Ballyclough (Townland of the stones),

Knocknadonagh (hill of the Church),

Aghnahough (Field of the Yew wood),

Aghalislone (Field of Luans fort),

Kilcorig (wood of the Sheep).

The road that you stand on, Bensons Road, was also the site of the first motorcycle road race in the UK after the second world war, called the Ulster 100. The race featured many world famous names in road motorcycling but only ran for one year.

Walk along Bensons Rd, paying particular attention to road traffic on this narrow country road. Opposite a two storey house that sits right on the right hand road verge, a stone trough is located. Even in the driest of weather conditions, water still runs into the trough which suggests the water source for the trough is from a natural spring that possibly has its source as far away as the quarry on Whitemountain Road. This trough features on the early Ordnance Survey maps and is understood to be a trough for the watering of horses that were used as means of transport before automobiles.

A few hundred metres further up Bensons Road it is possible to get a near uninterrupted view of the Lagan Valley. On a clear day it is possible to see over all of Lisburn City and beyond towards Belfast on your left and the Mourne mountains beyond the far side of the Lagan Valley. Note the shallow 'U' shape of the Lagan Valley which results from glacial activity in the last ice age.

Further along the road, cross over to the 'top side of the road' and cross over Whitemountain Road, paying particular attention to traffic. Walk a few yards up Whitemountain Road to the large wide concrete surfaced entrance way. On the upper side of this entrance is an area of ground called a Site of Local Nature Conservation Interest, or SLNCI. On the lower boundary of the entrance way take a close look at what appears to be a large rock. That rock is actually a large piece of flint, probably from the adjacent quarry. The shape of the flint is what is called a Paramoudra, a name which is unique in the world

for such a 'egg' shaped mass of flint. Such a shape of flint is found within limestone quarry faces as near vertical large masses of flint that are usually isolated from the layers of flint. The source of the name itself is understood to have originated in limestone quarries in the Moira area. The term paramoudra is understood to have been discovered around 1817 and is understood to be a corruption of an Irish name, probably padhramoudras ('ugly Paddies') or peura muireach ('sea pears', presumably due to the shape of some Paramoudra). Geologists that have studied Belshaw's Quarry have considered the piece of flint as the largest Paramoudra that they have come across. Smaller Paramoudra were used in Victorian times as part of garden rockeries such was their difference to other rocks.

Walk down the left side of Whitemountain Road to the entrance to number 6B. Pay particular attention to traffic on this road. Visible from the roads edge is one of the few remaining near complete lime kilns of a type used by farmers many years back. Rather than purchase processed limestone, some farmers either bought limestone from the quarry or used limestone from localised outcrops on their land. That limestone was processed in a Limekiln like you see in front of you to create fertiliser for use on the farmland. The process was the same as used in the industrial scale processing of the Limestone quarried at Belshaw's Quarry. Unfortunately, the limekiln at 6B cannot be re-used due to a crack in its wall. However, you can see clearly the main 'fireplace' where the lime, termed quick-lime, could be extracted after the roasting process within the 'chimney' section of the limekiln.

Take care when on the road when you return back to the lay-by at Belshaw's Quarry Nature Reserve. You may see examples of Paramoudra at the end of some household driveway entrances or in garden rockeries.

At this point, again paying particular attention to traffic, you can make your way back to Belshaw's Quarry where you could pick up a copy of the leaflet on the sculpture park and Limestone Way.

Hopefully you enjoyed some of the local features of the area that together with the geological features of Belshaw's Quarry Sculpture Park comprise The Limestone Way tour.

Please do not hesitate to give our page on Facebook or Trip Advisor a 'like' and pass on a copy of the leaflet on the sculpture park and Limestone Way.