

BURLINGTON

Environmental Report & Waste Management - Mission Statement

Burlington seeks to encourage and implement a range of practises that actively minimise the impact on the surrounding environment from its slate quarrying operations and endeavours to extend its waste management techniques to maintain a sustainable industry for the future.

1.00 INTRODUCTION

Since Burlington first began quarrying slate as early as 1842, it has always taken its responsibilities to the environment very seriously. As the company today operates seven quarries in and around the English Lake District - one of the largest and oldest National Parks and most scenic areas of Britain - Burlington constantly works closely with local planning authorities and environmental groups in order to minimise any impact that its operations may have on the landscape.

As a result such co-operation, Burlington was proud to become a member of the Corporate Forum for the Council for National Parks in 2000 that meets regularly to discuss potential planning applications and forthcoming changes in Government policy. Since its membership, Burlington has consulted with both the Council and their local counterparts - the Friends of the Lake District - on two successful planning applications that has resulted in a much better relationship with these groups and with local communities. A representative from Burlington has also recently been invited to join the steering committee for Cumbria RIGS - Conserving Regionally Important Geological and Geomorphological Sites. Their aim is to identify geologically important sites in Cumbria, negotiate access and publicise their position and details.

2.00 BURLINGTON'S STRATEGY FOR THE ENVIRONMENT

2.01 Efficient methods of Extraction

The method of extraction used in all Burlington's quarries involves the use of 'diamond wire sawing' technology originally pioneered in the marble industry of Italy. This consists of drilling two holes beneath the rock face and undercutting the whole area using a diamond impregnated wire to ensure that as much rock is released prior to 'soft' explosives being used. The explosive used is gunpowder that has a slow velocity of detonation and thereby minimises the creation of faults. Large blocks are then reduced, again using gunpowder, to a more manageable size for conversion to roofing or architectural products.

2.02 Energy Efficiency

As Burlington's main plant at Kirkby-in-Furness has high-energy requirements necessary to power circular saws, frame saws and polishers, the company works closely with the local electricity supplier to improve its power factor correction in order to maintain a steady load. The company has also installed 'soft starters' on machinery motors, new transformers in the site substation and continues to update machinery in order to make energy savings. Likewise, all water used on the main site is recycled with the addition of a flocculant to separate the solid content before the clean water is returned to the machine. Despite an increase in machinery, this has resulted in a reduction in the use of water.

2.03 Landscape Impact & Restoration

Given that slate quarrying has historically produced high levels of waste, Burlington welcomes any scheme designed to reduce its impact, particularly as some of the company's quarries are at a high altitude. One of Burlington's proposed schemes is a 'crag and scree' effect using small waste and ensuring that all future tipping is confined within the existing quarry boundaries and the tips are reshaped into a more natural landform allowing local indigenous plant life to re-colonise the area.

Fine material from the quarrying operation is stored and spread over the finished tip in order to encourage the growth of this plant life.

Leafmould is another successful method of restoration employed by Burlington at its Elterwater and Kirkby quarries. Obtained from the local Council and the result of sweeping the Lakeland roads during the winter months, leafmould is a product which, after approximately two years' composting, can be used as a cover for the tips and a growing medium for any future tree planting (the schemes of working for these quarries will involve the eventual planting of some 6000 trees over the next few years). Also, as Burlington stores the leafmould at its quarries, the Council avoids high landfill charges.

A large area of moorland surrounding the Broughton Moor quarry has been planted under the Woodland Challenge Fund. Incorporating at least eight species of native woodland, including - alder, sessile oak, juniper, rowan and birch, it is not only better use of the land, but the creation of an eventual screen for the quarry. A new footpath complete with wooden walkways over the boggiest areas and a small car park for use by members of the public is also included in this 80 hectare scheme. This will change and evolve as the trees become established in the landscape.

At the Kirkby quarry, most of the tipping takes place within old quarry voids. Recommended by English Nature as being the most effective way of establishing natural vegetation, the eventual result will be a return to original ground profiles and the encouragement of heather growth by the spreading of seed and mulch. It will also extend the boundary of the surrounding Site of Special Scientific Interest.

Re-working of the old waste tips to create 'weathered' walling stone is an operation that has grown in recent years. It provides local builders and individuals with a material which matches existing walls and therefore blends in with the surroundings as much of the older property within the National Park was built in the past using such stone. For those sites that are close to private dwellings and public rights of way, Burlington takes all possible care to minimise the impact of goods vehicles by strict working hours and, in the case of one of the quarries, the company has introduced a partial one-way system through the village. The local residents' association is kept fully informed about any new developments.

As noise can also be a problem for the quarrying industry, Burlington always ensures that any new machinery is supplied with the necessary silencing equipment. A new type of reversing alarm has also been tried successfully at one quarry, which is more directional and which means that the sound does not leave the confines of the quarry.

Dust generated by general quarry operations is not normally a problem, but at two of Burlington's quarries - Kirkby and Elterwater - where crushing of the waste slate is carried out, a system of dust suppression is used. This involves fine sprays on the crusher and screener and the use of a water carrier to keep the haul roads moist. Because of the relatively small quantities of explosives used, ground vibration is not a problem even for properties close to the actual quarry.

2.04 Waste Reduction/Recycling

Slate quarrying has been notorious in the past for the high levels of waste that it produces. There are many reasons why a piece of slate rock may not be of sufficient quality for the normal range of products such as geological faults in the rock and actual physical properties such as the inability to split.

For many years, Burlington has investigated various outlets for the waste material produced at its quarries and, during the last 2-3 years, this market has expanded considerably - particularly the Elterwater and Kirkby quarries. Such is Burlington's commitment to dealing with waste material, the company has recently established a separate department to deal solely with 'secondary products'. The aim is to make as much use as possible of the waste slate from all the various quarries.

3.0 WASTE MANAGEMENT

3.01 Waste Management at Elterwater Quarry

Burlington's Elterwater quarry is situated within the Langdale valley in the heart of the National Park. It is one of the few quarries worked by Burlington which has a reasonable road access, and hence the opportunity to try and make more use of the waste slate generated. A growth in the market for decorative stones prompted the company to investigate the potential for crushing more of the waste rock. This has gone hand-in-hand with an increase in demand for rough paving, walling, water features and general fill materials for road and footpath use.

Since 2001, there are no longer any extensions to the tips at Elterwater and every piece of stone extracted is used to produce a saleable product. As well as being able to supply a relatively inexpensive material for general fills that does not look out of place in the Lake District, Burlington's central location avoids the need to import 'foreign' materials into the National Park and reduces the effects of heavy goods vehicles traffic.

In 2003 the total level of sales for all of Burlington's crushed products reached over 100,000 tonnes, with the majority of this going to local building projects for foundation and road use. Material for footpaths has proved to be very successful within the National Park and several new sections of cycle-way having been created using fine crushed green slate. The same material has been used by the National Park Authority in the refurbishment of 'green roads' within the Park, notably the Walna Scar road, where Burlington contributed almost 300 tonnes of fill. These are rough tracks on which recreational vehicles are allowed and Burlington's slate is perfect due its colour and its ability to bind together.

The Forestry Commission has also taken various grades of material for trackways and paths suitable for disabled access, thus providing enjoyment of these semi-wild areas for a much greater cross section of people. And a local contractor has recently been successful in using the fines from the crushing operation for the manufacture of concrete bricks.

Along with this, other landscaping work includes tree planting (sessile oak) and some transplanting - particularly birch and larch - which then go on to successfully self-seed in subsequent years. To this end, some areas of the older parts of the site have been fenced off so that these trees can become established without interference from sheep and rabbits.

Some of the older tips contain small stone that is too old to have been sawn and is consequently in demand for matching old walls, both for re-instatement and for extensions of typical slate-built cottages in the area.

In an attempt to increase the use of waste slate still further, Burlington is investing in a bagging plant for the different grades of crushed stone. This will hopefully expand the market for smaller quantities sold to individuals.

3.02 Waste Management at Kirkby Quarry

A similar crushing plant has been used at this quarry over the last two years - mainly producing different grades of fill for road and site use. In 2003, just over 70,000 tonnes of waste slate from the tips were crushed. The decorative side of the business is also beginning to expand at this quarry.

Although this quarry is not within the National Park, Burlington's principle of making the most use of all the material quarried still applies. Since all the processing is done at this site for stone from each of the other quarries, this reduces the waste at those quarries with all the waste from manufacturing is now being crushed.

The waste generated by quarrying is currently far greater than the local market for crushed stone, but it is being deposited within the quarry boundary and will be available for crushing in the future should any large projects occur.

Kirkby also produces old building stone from the tips as at Elterwater and this is used by local builders to match the older houses, barns and field walls of the surrounding area.

3.03 Waste Management at Brandy Crag Quarry

Waste slate from this quarry has recently been used in the construction of a small weir by United Utilities to provide a 'compensation flow' from Levers Water near Coniston. It has also provided stone for the re-furbishment of part of the old Miner's Bridge.

