

QUARRY RESTORATION: A DIVERSIFIED FUTURE

Moreton Cullimore, managing director of The Cullimore Group, discusses strategies to ensure quarry restoration schemes meet the UK's biodiversity and housing challenges.

As those of us who have been around in this industry for a long period of time understand, quarry management is today heavily regulated, and that includes strict guidelines especially around such aspects as the restoration and sustainability process. The truth of the matter is that the extraction of minerals from a quarry is only ever a temporary land use. What happens at the end of this process is critical, because it determines the future use of the land and, ultimately, its impact on the local community. Operators therefore need a strong vision of what the site will look like in the future beyond the extraction phase. This 'vision' increasingly needs to take into consideration third party requirements, such as those of local government especially, but also from the surrounding local communities and land owners.

Due to the restoration phase being such a key part of the quarrying process, it requires decisions to be made and agreed upon very early during the quarry application stage. As operators, we need to be able to look far into the future in order to decide what path the land/property is to take long before any machinery is brought to the site. In many cases, restoration involves returning the land to its original use. However, this is not always feasible or desirable. Through creative restoration planning, mineral extraction offers the opportunity to not only improve the environment in and around quarry sites, but to potentially create new land uses. This notion of potential use points the way

to strategies for quarry operators large and small to future-proof their business models. That's not just looking at the financial returns but importantly the stewardship of land, habitat and communities. Nowadays any business that consigns CSR (corporate social responsibility) to the 'nice to have' file is heading for a fall, because buy-in of stakeholders can make or break a land deal, from irate neighbours to unsupportive councils to name just a couple.

The restoration process

The type of restoration required will depend on a variety of factors including what the desired land use or after-use is as well as the type of mineral that has been quarried. For example, the site could be restored for a variety of purposes including:

- An agricultural or wildlife setting
- Habitat or wetland creation
- Social amenities
- Combined wildlife and social amenities
- Housing
- Leisure and recreation
- Flood storage
- Business or commercial properties

As a part of this restoration, The Cullimore Group, based in Gloucestershire, but with a footprint across the Cotswolds and the West of England, not only understands the process, but consistently goes above and beyond the stated requirements by restoring every piece of land to an even better state. This falls in line with the increasingly stringent requirements around sites, whereby

quarry management companies are being encouraged to be more sustainable during and after quarrying has finished. In addition, organisations are expected to restore or improve the site after they have extracted the rocks or minerals, not only to the benefit of future users but also for the surrounding communities. To ensure this, measures are consistently added to and implemented to enable this to happen in a more sustainable way.

The fact of the matter is that organisations must have both an environmental conscience as well as an ability to think about wider housing and community needs when restoring sites, because these are what are demanded by the wide variety of stakeholders that are often involved. If we can use the restoration phase as a way to utilise brownfield sites rather than encroaching on untouched green belt land, this will not only benefit those needing housing, but also the local council in their housing targets.

Overall, the restoration of any site is a complicated process with a multitude of hoops to go through, which are increasing year-on-year. Each site requires a tailor-made plan of its own completed at the beginning of the process, often nothing like anything completed previously. Not only this, the aftercare plans are strictly regulated, meaning organisations have to meet stringent requirements. What this necessitates is a deep understanding of every piece of legislation, alongside excellent communication links with communities and local stakeholders, to come together with an end product that fits every need. This is why organisations like The Cullimore Group always go above and beyond the framework by listening to the

TOP: An aerial view of Roundhouse Farm

ENVIRONMENT

RIGHT: Moreton Cullimore with a Cullimore Group truck **BELOW:** A crawler dozer at work on a Cullimore Group site

► needs of the local communities, in addition to the other concerned groups, in building the plan and framework.

In recent years, biodiversity has become a heavily used word when discussing the restoration phase of a quarry. Quarries are often important sites for biodiversity because they can be created to support a diverse mix of habitats, wetlands and substrates that do not exist elsewhere. Exposed rock faces, nutrient-poor soils, a diverse range of available niches, and closeness to large areas of semi-natural habitat also contribute to the potential wildlife value of quarries.

In this day and age, an excellent knowledge of what is needed to create a biodiverse site is a must. This doesn't just mean understanding what the end result needs to be; it also means understanding what works together well and what it will take to make the site a success long-term, by for example, adding shrubs to increase certain plant species, or introducing particular plants, grasses, hedgerows and seeds to help particular animal or insect species to survive.

Taking this a step further, one of the main issues surrounding biodiversity within the restoration phase is to ensure that the species specified are sourced from



appropriate locations, and that natural regeneration is encouraged wherever practicable. If seed or plants are required, then sufficient time and funding should be allocated for this approach. It is advised that collections should take place over a period of several years and maybe used to establish stock cultivation. The same applies if grassland, reed beds or wetlands are being introduced. Once again, all take time to come to fruition, not only due to the length of time they need to grow and cultivate, but also because of the building-up phase.

With the creation of reed beds, The

Cullimore Group has considerable experience in this area. Our Roundhouse Farm site, for example, is in the latter stages of its restoration from sand and gravel extraction to predominantly reed bed, within which the new habitats and species are doing particularly well. This successful project has been built up over time, and is the culmination of 90 years of knowledge and excellent communication links between all stakeholders.

Moving away from biodiversity requirements, an extra consideration for quarrying companies is the consistent call for a trade-off between biodiversity



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► needs and other community requirements, such as wetlands and reed beds as well as housing, community parks and centres and leisure facilities. Bringing species to the UK that no longer exist or are rare can be done, but needs careful consideration as to how they will survive long-term. Continuing the theme of land use, with the amount of new homes being built year-on-year (139,030 were built in England in the year to June 2016, with a larger number expected by the end of 2017), woodlands and green belt areas are under growing pressure for development. In fact, there is a worrying trend for more proposals for housebuilding on the green belt, rising from 81,000 proposed new houses in 2012 to 275,000 in 2016 and 360,000 in 2017. Using quarrying sites for housing could be one way to protect essential green belt land, and provides options for local authorities in their never-ending quest to find land.

Leisure and recreational facilities are another option. For example, The Cullimore Group is currently going through the application process ahead of developing a new cable ski for the UK's fastest growing sport, wakeboarding. The plan is to create it at the UK's premier facility where the expectation is that it will host both the UK and World Championships in the future. Alongside this, the group will also plant extensive amounts of hedges, trees, reed beds and shallows to balance nature, biodiversity and recreation throughout the site.

As will be very clear by now, to implement any restoration approach successfully, careful planning, excellent coordination between each stakeholder and sticking to the agreed timelines are all

essential ingredients. As many *Aggregates Business Europe* readers will understand, outline proposals for the restoration phase are usually developed many years before the quarrying is started. At this stage, it is essential that the 'team' of required partners and contractors come together to agree who needs to do what and when. For example, natural regeneration can work very well on gravel workings and where open water will be left, but is not so good if the ground is likely to remain bare or only sparsely vegetated. Alongside this, natural regeneration can be a very long process, which for many quarrying companies will be unacceptable. For a wetland- or grassland-based restoration,

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ABOVE: A Cullimore Group quarry restoration project

the objectives must be decided at an early stage as these will dictate the species, methods and resources to be used. In addition, if a seedbed is required, it should be prepared in the autumn to enable the seeds to germinate. For an activity park or another community-based project, early decisions are needed so that the correct planning permissions can be sought ahead of the build itself. All of this takes time, something many people do not like, and in some cases, realise.

Quarry restoration valuable to communities

Despite the length of time the restoration phase takes, the end results benefit many stakeholders, including local councils, the communities that live close by, those that use the site and many more. In addition, quarry restoration can make a major contribution to achieving local council biodiversity targets. The truth is that after a quarry has been mined, its next purpose in life can have a huge impact on UK biodiversity, housing and leisure requirements. It is important that we recognise this but at the same time do not restrict or slow down the evolution of the site. AB

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