

Crown Farm Quarry
Sandiway, Cheshire, UK
Atkins/Tarmac

BIG Biodiversity Challenge Award Category: *Construction Phase Award*

Project overview

Atkins/Tarmac have implemented habitat enhancement, above and beyond planning requirements, at Tarmac Crown Farm Quarry (TCFQ) since 2003. This has included habitat enhancement and restoration but also pioneering work to re-wild areas of the site. Since Atkins involvement at TCFQ the biodiversity at the site has flourished.

What were the biodiversity conditions on site, prior to the enhancement?

Prior to mineral extraction at TCFQ the site mainly comprised arable land of low ecological value. During the mineral extraction phase at the site the arable land was removed and mineral extraction has created a number of waterbodies throughout the site and large vertical sand faces for sand martin colonies to utilise. Parts of the site have been restored and now contain species rich grassland (including a range of orchid species) and parts of the site have been left to re-wild naturally and now contain a diverse mosaic of short ephemeral vegetation and birch woodland

What were the reasons behind this project ?

Atkins and Tarmac strive to ensure that TCFQ is accessible to a range of wildlife during the mineral extraction phase of the work. The restoration work at the site is undertaken to discharge planning conditions but the habitats retained, enhanced or allowed to rewild through natural processes are measures taken above and beyond the planning conditions. These measures are taken to achieve biodiversity gains at the site by enabling a wide range of species to utilise a range of enhanced or naturally developing habitats following mineral extraction and alongside ongoing mineral extraction.



Species rich grassland embankments and one of the many waterbodies created at TCFQ



Common spotted orchids within a rewilded area of the site

What were the biodiversity measures taken?

A number of habitats created by mineral extraction, such as waterbodies and large areas of bare sand have been allowed to rewild, and this natural process has enabled a wide range of species (including pioneer species) to utilise a range of developing habitats. Direct restoration and enhancement alongside the active quarry has also led to huge biodiversity gains at the site in terms of habitats and species present, including a rich diversity of pollinators such as solitary bees and specialist grassland butterflies including the small heath, common blue, and small copper. Waterbodies created by mineral extraction have been left to establish naturally which has led to a huge increase in the great crested newt population at the site which is now deemed to be a regionally important population, grass snakes have also colonised the site in recent years and their range is expanding rapidly.

A variety of bat species forage over the rewilded areas of the site. In the active part of the quarry a number of large vertical sand faces are left undisturbed each year for sand martins to utilise for nesting and wide range of bird species utilise the habitats restored, enhanced or rewilded at the site for breeding and foraging including little ring plover, little grebe, lapwing and reed bunting.

One large area of the restored and rewilded quarry has recently been handed to the Cheshire Wildlife Trust to manage as a nature reserve and Tarmac have developed a 'discovery centre' at the site which allows children and volunteers to engage with nature. The work undertaken at TCFQ is a fantastic example of what can be achieved through encouraging pioneering rewilding work, habitat restoration and enhancement work along with collaboration with ecologists and the local community. The work here is also easily replicable.



The great crested newt population at TCFQ has increased in size from a small population to a large population.:



Waterbodies created by mineral extraction and allowed to rewild support a wide range of invertebrates, amphibians, reptiles, birds, bats and other mammals.

Further information

The site has been restored, enhanced or rewilded in stages alongside ongoing mineral extraction. Once an area has been worked and minerals have been extracted the land will either be restored or allowed to rewild naturally depending on the final restoration requirements within the planning permission. Monthly ecological site visits are undertaken by Atkins at the site and great crested newt population monitoring takes place every other year. The ecological site visits over a total of 18 years have recorded a steady increase in the diversity of species utilising the site and the great crested newt population has increased rapidly over the last 18 years from a small population to a large population. TCFQ is a fantastic example of how biodiversity gains can be achieved even during the construction/mineral extraction phase of a scheme by using staged restoration, enhancement and rewilding techniques. The collaboration with Cheshire Wildlife Trust which has allowed a 17ha part of the TCFQ site to become a nature reserve, to benefit biodiversity but also to allow people to engage with nature, demonstrates the positive outcomes that have been achieved.

Project Team

- Tarmac / Atkins
- Cheshire Wildlife Trust

What was the motivation for carrying out the enhancement?

Tarmac and Atkins have worked together with a clear vision to ensure that mineral extraction at TCFQ would make a positive impact to biodiversity at the site. Restoration, enhancement and pioneering work into rewilding has helped to achieve this vision, and collaboration with the Cheshire Wildlife Trust has enabled people to visit the nature reserve and connect with nature which brings social and wellbeing benefits alongside biodiversity gains.



Wildflower embankments support a wide range of pollinators.



Part of the restored and rewilded TCFQ site has become a 17ha nature reserve allowing people to connect with nature