

Austerfield Quarry and The Mosaic Reserve
Austerfield Quarry, Highfield Lane, Austerfield near Bawtry
 Hanson Quarry Products Europe Ltd and The Mosaic Trust

BIG Challenge 2015 submission category: Community engagement

Project overview

Situated in the village of Austerfield in a semi-rural setting, the quarry has been worked since 1948 and was previously agricultural land.

In 2000 Hanson handed 29ha of the restored site to a charitable body, The Mosaic Trust, to manage the land as a nature reserve.

Adjacent to the reserve is a small field study centre established in 1973. The centre makes use of The Mosaic Reserve for visits by local colleges, schools and community groups.

Originally there were 8 members on the Trust including Sue and Peter Rose and Stewart Laws, the quarry manager. There are now over 5,000 visitors each year, including schools and the general public.

Restoration is an ongoing process carried out in partnership between Hanson and the Mosaic Trust with many people involved in the implementation over the years.



Photo: Community hedgerow survey

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

Prior to working the quarry was an agricultural field.

After mineral extraction, older parts of the quarry had naturally regenerated but more recent restoration was too 'smooth' and lacked biological diversity.

Some areas of interest for mosses lichens and liverworts were being overshadowed by scrub. Ragwort was proliferating.

Were there any specific conditions that led to you carrying out this work?

Work was carried out in response to ecological surveys to recreate the biological diversity on the older, naturally regenerated areas of the site.

There were no planning conditions requiring this extra work.

Habitats identified included those on national and local biodiversity action plans including:

- Lowland heathland/acid grassland mosaic.
- Lowland heathy oak woodland.
- Species rich hedgerows
- Small open water bodies

Lowland heathland is a national priority for conservation habitat.

Acid grasslands are widespread in the upland areas of Britain but lowland acid grassland is much more limited and is estimated to cover an area less than 30,000ha in the UK.

What were the biodiversity measures taken?

Restoration and enhancement works are replicable and the approach will be continued into the newly planned extension area. Both Hanson and the Mosaic Trust have Management Plans in place for the quarry/reserve.

Successive ecological surveys over have shown a biodiversity net gain.

The works contributes towards both the UK and the LBAP with:

- Lowland heathland/acid grassland mosaic
- Lowland heathy oak woodland
- Hedgerows Workers and staff from the Mosaic Trust (volunteers),

Hanson and the wider public have been involved in the implementation of biodiversity measures. Hanson staff took part in volunteer ragwort pulling days.

Hanson earthworks contractors have been used to undertake additional



Photo: Pond dipping

enhancement works such as creating ponds and sand martin faces.

Machines have also been used to clear scrub to allow areas of open ground for the mosses, lichens and liverworts that the site is designated for, to flourish.

Volunteers undertake all day to day management works on the reserve. New areas of habitat to be created as part of the recent planning application include:

- 3km of species rich hedgerow
- 4ha of heathy oak woodland
- 13ha of acid grassland

Reuse of materials is part of the ethos of the Mosaic Trust and is undertaken in many ways.

Composting and recycling is undertaken on site and the principles are espoused in the education programme.

Waste material such as the brushings from scrub clearance is used on site in the creation of hibernacula. Tree guards and stakes supplied by Hanson as part of planning are all reused by the trust when they undertake any additional planting.

Sue has been known to put 'found materials' to good use with an old ice cream sign upcycled for an advert for an 'Apple Day' event.

A volunteer carpenter on site re-uses pallets to a variety of good uses including new blackboards.

How would you best describe the project?

An enhancement.

Further information

Overburden was used to raise levels and clay was used line ponds.

The surrounding area was thinly seeded with a basic short lived nurse crop to allow locally occurring seeds in adjacent areas to colonise.

The terrain may look rough and unfinished but this is a deliberate policy aimed at creating micro-climates. In fact, initial restoration works were too smooth and so the machines got to work again to create the uneven, hilly surface seen today.

The surrounding tree planting was carried out with oak and birch to match the locality. Some vertical sand faces were deliberately retained for the benefit of sand martins and invertebrates.

Restoration is on-going and when machines are available on site they are put to use to modify and improve areas already 'restored'.

For example, the area around 'Clare's Pond' was cleared of scrub by Hanson machines to maintain areas of open heath habitat.



Photo: Stewart Laws Unit Manager and Peter Rose Trust on site

The scrub was piled on site to create hibernacula.

Successive ecological surveys show an increase in biodiversity on site and the objectives of creating LBAP habitats hand increasing the range of mosses, liverworts and bryophytes have been met.

Lessons learnt for future similar sites would be not to plant silver birch in the woodland mix as it will come in naturally and can overwhelm the open areas.

What was your personal motivation for carrying out the enhancement?

As a landscape architect working for Hanson I have been involved on this site along with Stewart Laws (Unit Manager) and Sue and Peter Rose (The

Mosaic Trust) for many years. Sue and Peter are both committed full time volunteers with a passion for the environment and environmental education.