

Green Hay Project

Batts Combe Quarry, Warrens Hill, Cheddar, Somerset

Hanson Quarry Products Europe Ltd.

BIG Challenge 2015 submission category: Most innovative

Project overview

Batts Combe Quarry is situated within the rural landscape of the Mendip Hills, Area of Outstanding Natural Beauty.

The quarry extraction area and surrounding landholding covers 191ha of quarry, woodland and grassland and includes The Perch SSSI.

The Green Hay Project was conceived and implemented in partnership with the Somerset Wildlife Trust (SWT) with Alexandra Pick (Hanson UK) and Nick Grey (SWT).

Post-project monitoring was carried out by SWT's Jake Chant and Matthew Marshall with Alexandra Pick.

The Quarry has ongoing phased quarry waste tipping requirements for waste material e.g. unsaleable toprock.

The Green Hay Project looked at using green hay to restore the most recent phase of tip restoration to lowland meadow.



Photo: Green Hay donor site and forage harvester

Approximately 1 hectare of lowland meadow has been created using the green hay methodology at a total cost of c. £4,000 to prepare the sites, cut, collect and spread the hay and to manage for 7 years.

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

Biodiversity within Hanson UK landholding was in a state of decline prior to 2007. This was as a result of permitted quarry development leading to woodland and grassland clearance.

A lack of land management operations on non-quarry

areas led to scrub encroachment on to grassland and sterile woodland habitats.

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

Quarry and tip restoration works must be carried out in accordance with planning permission conditions.

Although the Green Hay project was associated with planning conditions to restore the tip they did not require Hanson UK to restore the tip to lowland meadow, only pasture.

The project was driven by the Batts Combe Quarry site

Biodiversity Action Plan (BAP), which aims, amongst other targets to increase the extent of species-rich grassland.

The project was also driven by the partnership between Hanson UK and SWT's 'Living Landscape' project to map habitats across Mendip and look at how they may be enhanced and joined.

What were the biodiversity measures taken?

The Green Hay project aimed to increase the extent of species-rich grassland within the Mendip landscape.

It utilised innovative techniques for 2008 that through publicity, learning events and a best practice report are now more widely understood. It is easily replicable on other sites requiring restoration or on existing low diversity grassland swards that could be enhanced.

As a result of the project c. 1ha of new species-rich grassland has been created, this supports the aims of the site, local and UK BAPs and has provided a vital stepping stone and habitat link within the western Mendip Hills to aid the principles of 'bigger, better and more joined'.



Photo: Green Hay receptor site and muck spreader

Four years of post-project monitoring has shown that every year the species diversity of the receptor site sward has increased from 26 forbs and 5 grasses in 2008, prior to green hay strewing to 34 forbs and 15 grasses in 2012.

This diversity aims to support key invertebrates species associated with the grassland habitats and allow them to move across the landscape more easily.

The project would not have been possible without the partnership between Hanson UK and SWT and the individuals within the organisations with the additional help of volunteers to help spread the hay on the receptor site.

Management has been required to control scrub encroachment through cutting with stump treatment and herbicide applications to control noxious weeds e.g. creeping thistle that could infest the grazing unit.

Since 2009 the green hay area has been included in the adjacent cattle grazing unit and has been grazed every other summer to allow the balance of the need to control scrub re-growth and allowing the wild flowers to set seed.

Going forward the site will be managed by cattle grazing outside the flowering period i.e. October to April.

How would you best describe the project?

An enhancement.

Further information

The SWT's 'Living Landscape' project identified the donor site as species-rich lowland meadow and the freshly restored and soiled quarry waste tip (receptor site) as an ideal opportunity to try green hay strewing techniques to increase the extent of lowland meadow in Mendip.

Prior to the project the donor site had to be cleared of scrub and noxious weeds e.g. ragwort in order to prevent future management issues.

The soil pH was also surveyed for suitability and more than 30% bare ground (minimum amount) confirmed.

Base line species surveys were carried out and a hay cut using a tractor and forage harvester taken from c.3,000m² from the donor site and spread over c.1ha of receptor site by muck spreader and by hand.

For 4 years the receptor site was monitored which showed an increase in species diversity year on year and a net increase of lowland calcareous indicator species from 2008 to 2012.

Since 2008 scrub and weed encroachment has been managed through grazing and herbicide applications



Photo: Green Hay receptor site species monitoring

which are essential tools. The partnership was vital to share knowledge and work and the aims have been achieved as 1ha of lowland meadow has been created as survey results.

The use of green hay is highly recommended if you have a donor site within 1 hours distance and have access to farm machinery. It is a cost effective alternative to commercial seed mix (£295 v. £1200) and maintains the local seed bank.

What was your personal motivation for carrying out the enhancement?

The role of Landscape Architect includes achieving the corporate biodiversity, restoration and sustainability targets of

Hanson UK in the southern region. More importantly however having good personal relationships with the individuals within the partner organisations and those involved in the project has proved vital.