

## Tovil Embankment Scheme

### Tovil, Kent

Kent Multi-Functional Framework (COSTAIN), Client: Network Rail

**BIG Biodiversity Challenge Award Category:** Medium Scale Permanent Award

#### Project Overview

The Tovil Embankment Scheme involved stabilisation of a section of railway embankment which was slowly slipping towards the River Medway. The remedial solution involved the combination of a sheet piled retaining wall, tied back with tension piles. Localised re-grading of the over-steepened sections of the rail ballast shoulder was also undertaken.

An existing section of drainage ditch, carrying water from a natural spring within the nearby Fant Nature Area, was renewed through the embankment.

Remedial works were carried out from within Network Rail land, with minimal impact on the adjacent Fant Nature Area. The River Medway was utilised for transporting plant and materials to and from the worksite. A bespoke barge constructed from modular floats was utilised. Agreement with the Environment Agency was sought and approved as part of Flood Defence Consent requirements.

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

A full ecological survey was completed prior to works starting and no protected species or nesting animals were identified. Vegetation in the area was degraded, with nettle, bramble and dense stands of the noxious weed, Himalayan balsam, present. Prior to de-vegetation occurring, herbicide application and removal of the Himalayan balsam flower stems was required.

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

No client or planning requirements necessitated anything other than basic landscaping. However at an early stage, the site team identified biodiversity opportunities which would benefit the local community, in addition to providing an educational resource for local schools.



*An overview of site works, picnic area and saplings/wildflower seed which were planted and sown.*

The River Medway and the Fant Nature Area are two important wildlife corridors which run adjacent to the site. The scheme went above and beyond what was required to keep in line with adjacent nature reserves and to consciously create new habitats for pollinating insects and protected fauna species.

### What were the biodiversity measures taken?

An Environmental Management Plan was developed to ensure personnel were aware of the environmental impacts of the works and to ensure the workforce were engaged in the promotion of biodiversity. The team looked beyond the 'Do Minimum' approach and sought to maximise the benefits for the environment and the local community. To ensure Costain's rehabilitation legacy remains intact, Maidstone Council were engaged to discuss ongoing maintenance, once site works were completed.

Due to logistical implications of moving plant and material via the River Medway effective reuse of materials was a key component of the rehabilitation efforts. Four new hibernacula's and a border for the picnic area were constructed using small trees which had been previously felled. The reuse of vegetative material diverted approximately 30 tonnes of surplus timber from landfill, saving the project thousands of pounds in transportation costs and associated carbon emissions. To further enhance the recolonisation of invertebrates and fauna, the hibernacula were further complimented with installation of three bat boxes, 12 insect hotels and the spreading of 4000m<sup>2</sup> of wildflower seed to help repopulate declining bee numbers. Two wooden benches were also installed for the local community to use.

75 saplings (comprising alder, willow and poplar) were also planted, to provide numerous natural services including soil stabilisation, habitat for fauna and protection of the river bank. Not to mention the potential absorption of 11 tonnes of atmospheric CO<sub>2</sub> per hectare per year! The removal of bramble and noxious Himalayan Balsam weed, and replacement with saplings and 4000m<sup>2</sup> of wildflower seed equates to a net biodiversity gain. This was also in keeping with the Framework's Biodiversity Action Plan and goal of a net biodiversity gain.



*Examples of hibernacula's, insect houses and bat boxes onsite, with wildflowers in the background.*

The area was regraded and levelled to allow the picnic area to be formed and a low gradient south facing slope was graded in below the embankment to assist with wildflower seed germination. All landscaping was carried out voluntarily by the site team in parallel with the main site works.

### How would you best describe the project?

An enhancement.

### Further information

All landscaping works were planned and undertaken by the site team using available plant and facilities on site. The initial steps were to regrade where trees and wildflower were to be planted, followed by construction of the picnic area and installation of hibernacula's.

Advice was sought from the Bat Conservation Trust to determine ideal placement of the bat boxes. The 75 trees and 4000 m2 of wildflower seed were planted voluntarily by the site team under instruction from our green fingered General Foreman.

The hibernacula's, bat boxes and insect hotels were regularly inspected by the General Foreman while the works were taking place and numerous bees and other invertebrate species were identified. The Maidstone Council Parks and Leisure Manager and Fant Wildlife Group were contacted regarding the works to ensure the area is maintained once Costain have completed demobilisation.

Costain intend to implement these best practices and initiatives for other geotechnical works, where larger areas of de-vegetation will be required.

### What was your personal motivation for carrying out the enhancement?

The Kent MFF and Costain are committed to protecting the environment and ensuring a positive project legacy is left which enhances and maximises local biodiversity. This was clearly demonstrated at Tovil.

The site team have a personal interest and passion about the environment and used the project to demonstrate what can be done with good teamwork and enthusiasm.



*The bees have already moved in!*