

A556 Knutsford to Bowdon Improvement Scheme Cheshire

Costain/Capita

BIG Biodiversity Challenge Award category: Large Scale Permanent Award

Project overview

A556 Knutsford to Bowdon Improvement Scheme is an urban infrastructure project based in Cheshire. Costain is the principle contractor, working on behalf of Highways England, with Capita as the schemes designer; a total of around 500 personnel at peak construction. The new major trunk road of 7.6km is programmed to run until the end of 2017 and is costing £196 million.

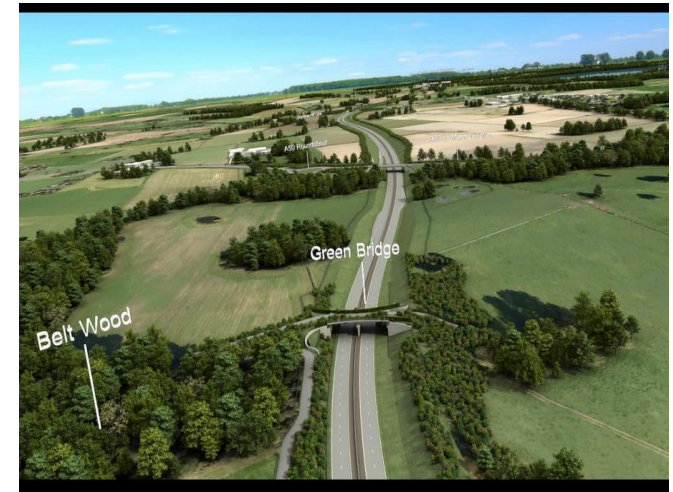
The project's aims are to make journey time along the existing road more reliable, improve traffic flow and air quality, reduce idle vehicles along the route and remove 90 degree side-road junctions to allow clearer visibility and improve the routes safety. Whilst the new road aims to facilitate vehicle traffic, the overall scheme has been designed to benefit non-motorised users; the existing road will be de-trunked to provide a non-motorised user route for pedestrians, cyclists and equestrian traffic.

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

The A556 Knutsford to Bowdon Improvement scheme passes through rural and agricultural landscape. Along its route there are numerous environmentally and ecologically sensitive features. The responsibility was to minimise the risk of damage upon the ecology of the site and to mitigate for any lasting damage caused.

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

Licensed ecological works were carried out for Great Crested Newts, Badgers and Bats, each with conditions for mitigation and enhancement works.



Concept image of the 'Green' bridge

Biodiversity improvements will be based upon 3 themes:

- The Natural Environment and Ecosystem Services
- The Built Environment
- Connecting with Nature

What were the biodiversity measures taken?

A **'Green Bridge'** being Highways England's first structure that has been designed specifically to maintain a connection between habitats dissected by the road. It provides a wildlife-friendly, safe corridor to the wider landscape, post-construction. **Being 11m wide, it's decking is covered with soils and planted with appropriate vegetation, integrated with planting on the land to either side.** A living Environmental screen softens its appearance from the road.

Twenty-one wildlife Mitigation Ponds have been constructed to compensate for the loss of ponds during construction. These ponds are planted with a variety of aquatic plants, favourable to breeding great crested newts, and are positioned to connect great crested newt populations.

Six innovative **Bat 'Hop Overs'** are being developed along the scheme where existing bat flight lines have been severed by the new carriageway; consisting of shrubs and mature trees to raise the bats flight as they approach the new road ensuring their safety. To strengthen connectivity, tunnels have been installed at several locations to provide safe crossing points for a range of mammals such as badgers, hedgehogs and foxes.

Bat boxes have been erected to mitigate against several bat roosts which were removed during site clearance, several of which already support roosting bats following monitoring surveys.

The nationally scarce plant Cowbane, was found in a pond scheduled for removal. This was carefully translocated to a specially constructed holding pond. Following the successful holding period, the cowbane has been re-planted in mitigation ponds and is expected to flourish and populate four new locations.



Infra-red image of Badger cubs and mother emerging from artificial sett.

As mitigation for the necessary closing of an existing Badger sett, the project built an artificial sett which has become an unheralded success with badgers using the new sett; remarkable footage shows cubs emerging just one year following its construction. The badger sett project has been highly commended by CIHT awards.

How would you best describe the project?

Mitigation and enhancement

Further information

From the start of the project, through until the end, multiple contractors have been involved in the implementation of the Environmental enhancements.

From initial exercises such as, the installation of almost 14km of amphibian fencing, through to landscaping of the entire scheme, the cooperation and coordination of such activities are pivotal to the lasting success intended.

Future monitoring programs are scheduled for several species, such as great crested newts, bats, badgers, barn owls and other riparian mammals, which will provide long term data with regards to the success of the mitigation and how this can be implemented on future developments.

Habitat improvement, creation and replacement includes 350,000m² of species rich, open and Great Crested Newt friendly grassland, 40,000m² of new Native Woodland and Woodland edge, 60,000m² of new shrub with trees, 10,000m² of shrub and scattered trees and 5,000m² new Hedgerow.

These improvements compliment the local Cheshire East aim to play both a leading and supporting role in contributing to biodiversity conservation and enhancement. The plans outlined above support their aims by providing opportunity for species covered by the local Species Biodiversity Action plans to thrive and develop and will improve the overall biodiversity of the surrounding landscape post-construction.



Reusable amphibian fencing implemented for extensive GCN clearance works

What was your personal motivation for carrying out the enhancement?

From the outset Highways England were determined to ensure this scheme set a benchmark for environmental enhancements. In Capita and Costain they found contractors of similar environmental conscious who are working to better the legacy left by construction activity, which made a perfect team to deliver this high profile scheme.