

North West Cambridge Development – Site Wide Infrastructure, New Tunnel Construction

Madingley Road, Cambridge

Skanska

BIG Challenge 2015 submission category: Large scale permanent

Project overview

The North West Cambridge Development is a large, mixed-use development on the outskirts of Cambridge city being constructed for the University of Cambridge to maintain its reputation as a world leader.

The vision is to create a new district and extension to the city, centred around a mixed academic and urban community. Located two miles to the north west of the city on a 150 hectare site, development works have been split into several phases.

The first phase of the development will see the delivery of housing and community facilities. Skanska is Principal Contractor for the Site Wide Infrastructure aspect of Phase 1 which has an estimated cost of £281million.

This involves construction of roads and transport routes, foul and surface water drainage, sports facilities as well as public, green space and landscaping.



Photo: Connection between tunnel and fencing

Also working on the site are seven other principal contractors responsible for the building lots.

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

The site initially comprised of intensively managed farmland 125ha (arable and grazing pastures) with the remaining occupied by University buildings or existing infrastructure.

Pre-commencement surveys identified newts and other amphibians within ponds adjacent to the site as well as terrestrial habitat within the site and in areas of boundary land.

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

The maintenance and improvement of biodiversity was a requirement of the developments planning conditions.

These included the following conditions: Identification of habitats and species worthy of management and enhancement.

Details of measures to protect and mitigate adverse impacts on protected species. Summary of works and protection measures.

Long term maintenance, management and monitoring.

What were the biodiversity measures taken?

A bespoke newt tunnel was created underneath a new road built within the site.

This connected up an existing pond used by great crested newts with terrestrial habitat on the opposite side of the new road.

Additionally permanent concrete newt fencing was installed along the road edge to guide newts down into the tunnel and prevent them from crossing over the road and being killed.

Providing a safe corridor to link up terrestrial habitat with suitable breeding grounds will mitigate the impact of construction works and ensure the newt population will not be adversely affected by the development.

The newt tunnel was a one-off design and purpose built especially for the site. It incorporates a culvert to provide drainage capability together with concrete ledges on either side to provide a safe passage through the culvert for newts.

The wing walls on both sides were then tied into



Photo: Newt tunnel

concrete newt fencing that stretched along the road edge to direct newts into the tunnel rather than crossing over the road itself.

Combined with these mitigation measures the areas on either side of the road have been designed to provide sustainable drainage for surface water run-off.

This incorporates a series of swales and ponds which will be combined with landscaping works that will double up to provide not just drainage but also suitable habitat for newts thus enabling the population to grow.

How would you best describe the project?

Mitigation.

Further information

The pre-cast concrete tunnel was manufactured off-site and then dropped into place on a concrete blinding with the road construction built up on top.

The pre-cast concrete newt fencing was then slotted together once the rest of the road and footway construction was complete.

Once the tunnel is in operation monitoring will be undertaken to ascertain the impact of mitigation measures.

Pit-fall traps will be set up on the opposite side of the tunnel to gather information on newts using the tunnel.

Pre-works commencement surveys have provided the markings of each newt within ponds adjacent to the

site and these records will be compared with any newts captured to identify how many newts have passed through the tunnel.

These mitigation measures are just a small part of the whole project and are being implemented together with many other biodiversity improvement measures to ensure that the site provides a suitable habitat for a host of wildlife and biodiversity.

What was your personal motivation for carrying out the enhancement?

Skanska aims to be the greenest contractor and biodiversity improvements are a major factor within this ambition.

Ensuring all our construction works have the minimum impact possible on wildlife is vitally important and being involved with such a unique and bespoke approach to this is a great opportunity.



Photo: Newt fencing with swale construction