

DYES LANE BUND WITH HIBERNACULA
DYES LANE - STEVENAGE
KIER

BIG Biodiversity Challenge Award Category: Small scale

Project overview

The project involved the creation of an earth bund between a local single lane highway and the A1(M) verge to prevent the occurrence of fly-tipping. It was proposed to amend the bund to contain hibernacula for reptiles and amphibians, and sowing wildflower seed for pollinators, for additional biodiversity benefits.

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

Conditions on site prior to construction were poor, the area was in a neglected state containing nettle, bramble, and illegally dumped rubbish. The site had a history of fly-tipping and repeated calls to the fire brigade to extinguish fires of the fly-tipped material. The desk study had not highlighted the presence of any protected species at this location. The wasteland habitat was considered to have potential for reptile presence, which would need to be taken into consideration during construction. Making enhancements for the benefit of wildlife at this site was going to be particularly beneficial for biodiversity in this area.



Top soil layer covering and insulating the heart of the bund.



Rubble core of bund laid down by digger

Photo credits: Olivia Maes

What were the reasons behind this project ?

No planning or client conditions required the biodiversity enhancement work to be undertaken. The initiative to add the hibernacula to the bund came from the Kier ecologist and their drive to create a space which would benefit protected species. The opportunity to leave the site with net positive gains was identified in the early stages of the project and in partnership with our sub-contractors and support staff. The hibernacula were incorporated into the design, agreed by Highways England, and Carnell agreed to include recycled materials free of charge to support environment objectives.

What were the biodiversity measures taken?

A bund was commissioned to prevent fly-tipping. The original design was then improved on to make a difference for biodiversity. The centre of the bund was made up of large size rubble, which would provide a lot of small hiding spaces, to be hibernacula for herptiles. This core of the bund was made accessible with drainage pipes, which protruded to the edge of the bund. Then the bund was covered with a layer of top soil, hiding the rubble core, and insulating it. In this way the temperature within the bund should stay quite stable, as is it is quite wide and tall. Access points were located every few meters throughout the bund, mainly on the side facing the A1 (M) to avoid disturbance from Dyes Lane.

A few large shrubs and small trees had to be removed to make space for the bund. These were stacked on-site to make habitat for hedgehogs and herptiles. The rest was chipped on-site to reduce the carbon footprint.

The top soil of the bund was seeded with a wild flower mix that was specifically chosen to benefit pollinators.

This intervention can easily be replicated elsewhere and requires an annual cut and collect only.



Access to centre of bund / hibernacula by drainage pipes, inserted every few metres. Compacting of the top soil and bund structure completion.



One of the entrances to the bund hibernacula.

Photo credits: Olivia Maes

Further information

First any remaining fly-tipped materials were removed. Some of this was providing potential refugia for animals, so it was done carefully under ecological supervision. A rubble base for the whole 90 m length of the bund was then laid, about 1.5 m wide and 0.5 m high. Drainage pipes were inserted into the middle of the rubble, sticking out to the sides of the bund. The base was then covered with top soil, making the bund about 2 m wide at the base, tapering to about 0.25 m at the top, leaving only the entrance of the pipes visible. Seeding with wild flowers was done at a later stage. Before this localised herbicide treatments were applied to non-desirable species present and the ground was prepared by hand raking, as machine access is not suitable on bund slopes. The seed mix was applied in accordance with the suppliers' recommendations. The ground was then watered and raked over again.

The legacy of this project is that there will now be a bank with wild flowers producing an attractive show of flowering in summer, instead of piles of burned out rubbish along the road side. It has been successful in stopping the fly-tipping, but has gone beyond that and created new habitats for herptiles and nectar sources for pollinators. Had there been more time to organise it, we could have involved the children from the local estate in the project; this would be an opportunity for any similar future projects.

Project Team

- Highways England – client
- Carnell delivery team
- Ian Davies, Paul Bowman, Avinash Sandhu, Daniel Palmer – Kier delivery team
- Olivia Maes, Ian Fuller – Kier environment team

What was the motivation for carrying out the enhancement?

Kier is keen to support its employees to find innovative ways to help the environment. As an ecologist, I wanted to do more than the required minimum, but make a real difference. It occurred to me that the bund could contain hibernacula for herptiles. Furthermore, this would require only small changes to the original design. Here was a chance to improve the habitat for biodiversity at this site using a bit of creativity. The project team immediately got on-board with the idea. Both they and the delivery teams went above and beyond the minimum requirements to deliver this improvement.



Wild set flowers on the bund.



Strimming of self-set vegetation. Bund after raking and seeding with wildflower seed.



Photo credits: Daniel Palmer