

**Tilbury 2**  
**Tilbury Essex**  
**GRAHAM**

**BIG Biodiversity Challenge Award Category: *Habitat Creation >5ha***  
**Project overview**

Tilbury2 is considered by the Planning Act (2008) to be a “Nationally Significant Infrastructure Project” with biodiversity enhancement and wildlife mitigation incorporated throughout. Translocation of water voles, reptiles, badgers, and brownfield substrates of importance to protection of scarce plants, lichens and invertebrates were carefully considered to ensure improved habitat creation and conservation.

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

Prior to works at Tilbury2 there were a range of different habitats supporting species such as water-voles, reptiles, badgers, rare insects, and invertebrates located across the site in unsecure and unsafe locations. Thus, making sure that there was not a loss of biodiversity was a significant strategic policy objective in the agreed planning permission which the Secretary of State for Transport took under regulation 63 of the Conservation of Habitats and Species Regulations (2017). To ensure that innovative mitigation and conservation measures were in place the client paired up with ecology consultancy Bioscan.

**What were the reasons behind this project ?**

Mitigation and offsetting of biodiversity loss was at the forefront of this project as demonstrated through the range of strategies undertaken including:

- Translocation of habitats
- Flood defence measures
- Noise and vibration barriers
- Sampling of sediments to maintain water quality



*2.5km of replacement ditches for translocated water voles*



A new ‘brownfield’ nature reserve has been created

Regular environmental audits were undertaken to monitor and measure the impact of the construction project. Placing importance on biodiversity and achieving environmental gains are a key performance indicator of Graham Construction as behaving with integrity and to a high moral standard are needed to fulfil corporate social responsibility standards acting positively towards the eco-system.

### What were the biodiversity measures taken?

This innovative project of a vast scale shows real commitment to habitat creation of high ecological value with biodiversity strategies considered carefully.

- Prior to site development on the site water-voles were scattered across shallow dry ditches. The Tilbury2 project created a dedicated alternative home for the voles: a triple ring of around 2.5km. The water-voles released in this new site are thriving having grown considerably in numbers, wetland wildlife have also been attracted to this new habitat!

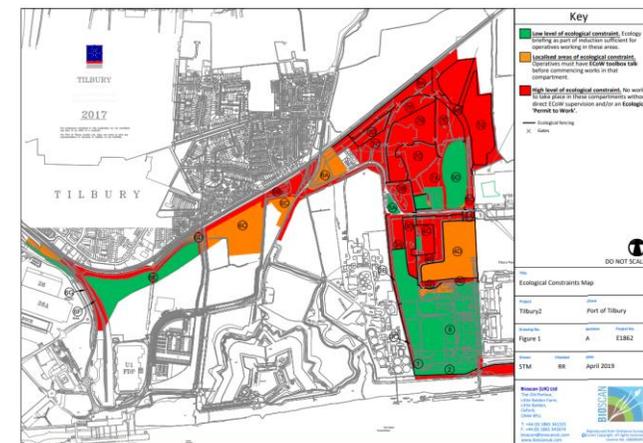
- Reptiles such as adder, grass snake, common lizard and slow worm have also been moved to a new home away from the site. This has been successful as their new home is a more secure location full of wild, tall and tussocky grassland ideal for hibernation and refuge sites for reptiles.

- Badgers who had dug underground burrows within the former power station could not be safely kept where they were and so studies were undertaken to find out how many badger clans there were and how to move them to a larger new multi-layered chambered badger set.

- Dry habitats with unusual plants, lichens and insects had colonised over waste ‘fly-ash’ from the former power station. These materials were collected and transported to the Mucking landfill site, where a new ‘brownfield’ nature reserve was created. This purpose-built area of brownfield habitat supports a community of insects and other invertebrates of ‘national interest’ and high ecological value.



Video Evidence of badgers emerging from artificial sett



Ecological Constraints Plan devised by Bioscan and implement by GRAHAM

### Further information

Unfortunately, an incident whereby a female adder was killed occurred. On the back of this we invited our appointed ecologists BioScan on site to provide tailored training for all operatives on site. The training involved bringing in an adder to engage everyone. A new ecology plan based on a traffic light system was devised to aid understanding of no-go areas – a simple process that meant site clearance and ecology work could proceed at the same time.

It is important to acknowledge the loss of a protected species is a significant detrimental impact, however as a company we were able to learn from our mistake and Tilbury 2 finished up a very successful project for biodiversity.

The projects have already used surveys and biodiversity calculators carried out by one of the foremost invertebrate surveyors in Britain in conjunction with ecology experts Bioscan have found a rapid increase in biodiversity post installation at the Mucking site since enhancements were made which is an excellent result of the translocation of the habitats. The habitat site in 2019 was recognised as of national importance for insects and other invertebrates as it continues to flourish with rare species. The site will be monitored again by ecologists in five years when habitats become established.

### Project Team

- Port of Tilbury London
- Bioscan

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

With the increase in urbanisation and industrialisation which the construction industry contributes to it is important to ensure that measures are taken to lessen impact on the environment by supporting and restoring any impact the project may have. This motivated the development of Tibury2 to become an opportunity to showcase biodiversity net gain and be an example of best practice. As stated by Dominic Woodfield managing Director of Bioscan the environmental management consultancy involved in the project 'seeing the project achieve fruition and the success shown by the invertebrate monitoring is the reward for commitment to corporate responsibility'



*Adder on display during training*



*BioScan delivering bespoke training and explaining permit to work system*