



## Eastern Balancing Reservoir Water Quality Improvement Project Heathrow Airport - London, England Heathrow Airport Ltd

### BIG Biodiversity Challenge Award Category: *Habitat Creation – (< 5Ha small scale)*

#### Project overview

A £30m industry-leading project to improve the quality of surface water discharged by the airport. It was important that existing habitats were protected and that new biodiverse habitats were created; that mitigation went beyond standard practice. The ecological content of the project was completed in 2020. Total project covered <5ha.

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

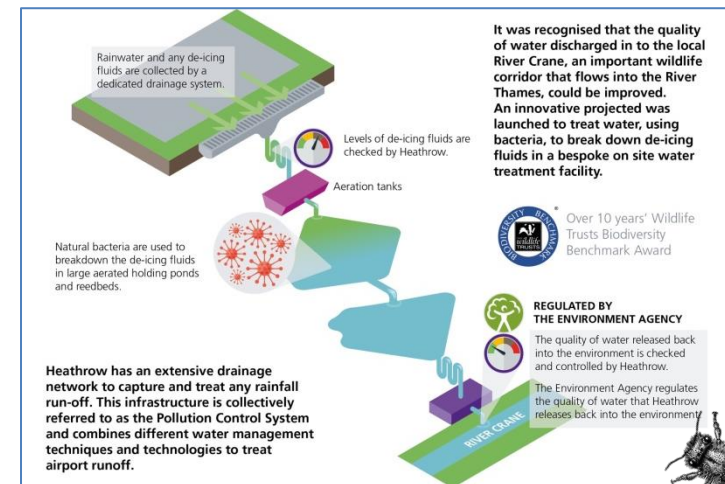
Causeway Nature Reserve (CNR) and Camp 4, combined into the Eastern Balancing Reservoir (EBR), form part of Heathrow's network of Biodiversity Sites. For the management of these sites, Heathrow has received The Wildlife Trusts' Biodiversity Benchmark Award. CNR and Camp 4 are sites both dominated by reservoirs, former gravel pits, and contain a mix of NERC habitats and species for which we hold extensive ecological data. The sites are part of a Site of (Metropolitan) Importance to Nature Conservation and are part of our water surface treatment system that discharges into the River Crane. We have found species here that were new to science and firsts for Britain.

#### What were the reasons behind the project?

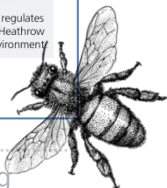
The goals were to improve water quality as well as securing a biodiversity enhancement. Heathrow has an extensive drainage network to capture and treat any rainfall run-off. The Eastern Catchment surface water runs-off into the River Crane via these two sites. During periods of cold weather planes require de-icing, an important safety procedure. De-icing products can act as a food source to naturally occurring bacteria, causing low oxygen levels. Our improvements are intended to take these natural processes into an innovative treatment facility. The project was extensive requiring temporary disruption to the habitats on site to implement the environmental improvements.



Overview of the EBR showing the habitats and species found on the site



Heathrow Surface Water Treatment.





### What were the biodiversity measures taken?

Heathrow's Environment Team in partnership with Ecology & Habitat Management (EHM) recognised that the project would disrupt habitats in CNR and Camp 4. Working together with senior project managers from Heathrow Development, as well as Morgan Sindall (main contractor), our team recognised that there was potential to not only protect biodiversity value but, to enhance it. To ensure the project had a measurable positive impact, a Biodiversity Matrix was developed to show net gain. An extensive Wildlife Impact Assessment (WIA) was conducted to look at the potential impacts on existing habitats and species. The broad aim was to create florally diverse areas of woodland and grassland habitat to replace the lower quality habitats that were lost.

The WIA identified three main stages of the project that required management to achieve net gain and go beyond normal business practice:

- Initial site clearance works
- During construction impacts
- Post develop enhancements/mitigation

The below process was completed as part of a collaborative approach to biodiversity enhancement and was a successful project that resulted in a positive impact.



Overview of the EBR showing newly created habitats and retained habitats. Demonstrates protection of wider site and creation of new habitats that increase natural connectivity. The aim was to create floral diverse grassland and woodland habitats to replace the lower quality habitats that were impacted during the project.

#### Before Site Clearance

- Protected species surveys
- Bat roost surveys of large trees
- Reptile surveys/ translocation
- Ecological Clerk of Works
- Invasive species surveys and control measures
- Reducing clearance required to retain features such as mature trees
- Stockpiling of topsoil for reinstatement

#### During Construction

- Exclusion zones for contractor personnel
- Toolbox Talks for contractors on site highlighting the ecological value and potential impacts - working with Morgan Sindall's environmental team
- Regular monitoring visits to assess contractor compliance

#### Post-development Enhancements

- Created new habitats with high floral and structural diversity, planting:
  - c. 300 trees
  - c. 2,200 native plug plants and translocated wildflowers
  - c. 2,000g of wildflower seed
  - 10 m of coir rolls planted in wetlands
- Creation of a new outfall channel with fish refuge and aquatic planting, including reed beds
- Selected native species, locally sourced were possible.
- Collaboration with local charity Green Corridor and volunteers
- Erecting bird and bat boxes and hibernacula creation
- Long term biodiversity management programme in place and resourced.



### Further information

Our project achieved an improvement in surface water run-off quality from the airport into the local river and contributed greatly to biodiversity enhancement of the site. The way in which we managed the project, with environmental improvement at the forefront, has helped us to show a demonstrable biodiversity net gain. We are also proud that our project involved many different organisations and people in the pursuit of our project's environmental goals.

Heathrow's Environment Team led the project, and net gain wouldn't have been possible without the expertise of ecology & habitat management Ltd, and collaboration in engineering from the Development Team and Morgan Sindall.

Post-development plantings provided the opportunity to engage with Heathrow's local community, gaining the support of volunteers from different business units and local charity Green Corridor.

Biodiversity Net Gain was used for the first time at the airport on this project and is now being implemented more widely at Heathrow Airport. This project did not happen in isolation and demonstrates the wider sustainability agenda we are implementing at Heathrow Airport as a whole. Winning the CIRIA award in this category would reward the many people involved, as well as showing how large co-operative projects of this nature can achieve vital gains for biodiversity in an urban setting. Long term management has been secured for the site with the new habitats coming under the management of the Biodiversity Team. Management will seek to ensure the newly created habitats provide and ecological benefit and natural connectivity across the region.

### Project Team

Heathrow Airport Ltd, Morgan Sindall, Ecology & Habitat Management Ltd, Green Corridor

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

The key motivation of this project was to show how a large-scale infrastructure project can not only protect local biodiversity but, provide a measurable enhancement on a site broadly recognised for its conservation importance. We worked with many different people to deliver our goals. One of the project's key achievements has been the multi-stakeholder engagement it generated, from project managers to young people from the local community; all have contributed to, and benefitted from, the environmental gains of this project.



*Community engagement; Green corridor and Heathrow Staff involved in post development planting*



*Newly created habitats showing the florally diverse habitats prospering next to the new water treatment infrastructure.*