

## Hampstead Heath Ponds Project London, UK

Atkins, City of London and BAM Nuttall

**BIG Biodiversity Challenge Award category:** Large Scale Permanent

### Project overview

The Flood and Water Quality Management works at Hampstead Heath is a high-profile and complex project – its purpose to virtually eliminate the risk of dam failure within the two main chains of ponds on Hampstead Heath during extreme rainfall events. There was also a need to protect the natural environment of the Heath and opportunity to implement important biodiversity enhancement and water quality improvements.

The ponds look natural, but most are formed by man-made dams up to 300 years old. City of London (CoL) was advised that they had to take action to minimise the risk to life, property and infrastructure in North London. CoL decided from the start to make the project set a new benchmark for environmentally-led flood management design.

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

The Heath includes a Site of Special Scientific Interest, which was protected during the works. The whole Heath is a Site of Metropolitan Importance for Nature Conservation with a variety of grassland, woodland, lakes and other habitats. However, many of the pond edges lacked marginal wetland habitat.

### Were there any specific reasons that led to this project?

As custodian the City of London (CoL) must comply with the Hampstead Heath Act 1871 ‘... at all times to preserve, as far as may be, the natural aspect and state of the Heath ...’. A simple hard engineering solution was therefore not acceptable and sensitive landscaping was essential.



*Photo Description: Aerial View of the Model Boating Pond with new island and new dam blending into the landscape*

The CoL and Atkins were keen to look beyond what would be essential mitigation and take the opportunity the engineering works provided to introduce additional biodiversity enhancement at many of the ponds.

### What were the biodiversity measures taken?

Pond restoration measures, including the creation of marginal shelves from the re-use of desilted material, has provided additional habitats for birds, amphibians and invertebrates and resulted in approximately 25,000 new aquatic plants of 15 different species. This equates to an additional 2,400 m<sup>2</sup> of aquatic planting, which is an important habitat the Heath does not have in abundance.

Enhancement of the existing pond drainage system, including the incorporation of wetland scrapes, sediment ingress control measures and the deculverting of 30m of the Fleet Stream, will act to provide long-term benefits to pond water quality and improve habitat complexity. The reinstatement of the Fleet, a watercourse of historic importance, means the Heath is the only place in London where the Fleet flows above ground. Over 15 hectares of wild flower meadow have been / are being sown with a seed mix specified by the Heath's ecology team.

Log piles and amphibian and grass snake hibernacula have also been created at various locations, and 20 bat boxes have been put up. Some of the boxes have been installed for over a year and bats and birds are using them. The work has been undertaken with help of volunteers who built the two hibernacula and the brush and log piles.

The Project also managed to:

- Preserve the distinct landscape character, user experience and views of the Heath;
- Reuse almost 30 000m<sup>3</sup> of London Clay on Hampstead Heath for the dam construction rather than concrete or other imported material; and
- Create naturalised open grass spillways as replacement dams as opposed to 'hard structures'.



*Photo Description: New Wetland Creation*

### What were the biodiversity measures taken? Cont'd

The CoL ensures that the long term future of the Heath is secure, and involvement of their staff throughout design means the new habitats can be incorporated into their maintenance programmes.

## How would you best describe the project?

Enhancement - The Hampstead Heath Ponds Project included mitigation to protect wildlife such as nesting birds, trees and bats during the work and to restore areas after engineering works, but the opportunity was taken to incorporate additional enhancement into the design.

## Further information

Habitat enhancement works at Bird Sanctuary Pond have been a success, with the addition of a wetland channel and a reed bed area, to encourage the natural establishment and expansion of pond edge plant communities, that support important populations of birds and amphibians on the Heath. Careful consideration was given to the required ground levels within the habitat design so that hydrological connectivity between the pond and the wetland enhancement areas is maintained, especially during low water periods, when wetland plant survival may be at risk from drying.

Wetland pools, reed beds and filter systems have been incorporated along existing drainage pathways to this and other ponds on the Heath, to capture run-off and provide maintenance “hot spots” for the effective management of silt and long-term protection of the ponds from water quality issues associated with fine sediment ingress. This is all in addition to the intrinsic ecological value of such bioremediation enhancement features.

Since this work took place a Water Rail has been spotted on the Heath a couple of times. While not all the measures envisaged by the ecologists could be incorporated into the final design, the experience of freedom to explore biodiversity enhancement options has helped all the ecologists, landscape architects and other designers to gain insights they are taking to the other projects they work on. The Project approach also involved close engagement with local stakeholders.

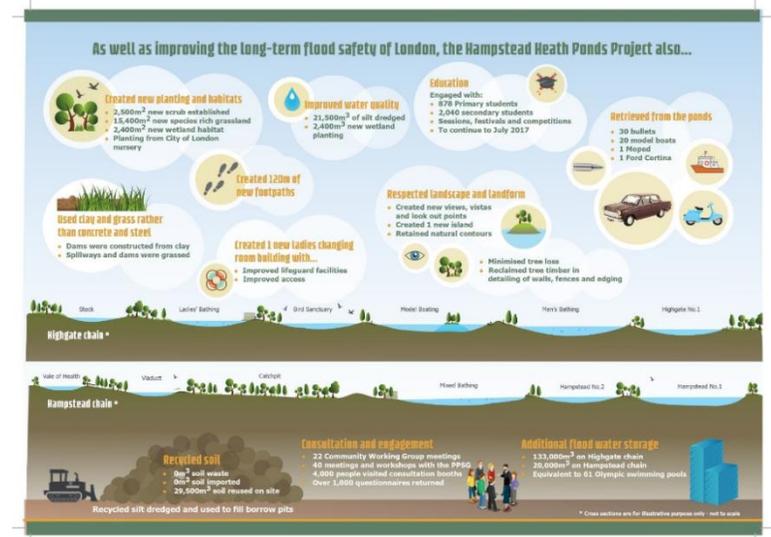


Photo Description: Pictorial summary of project outcomes

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

The ecologists and landscape architects in CoL, Atkins and BAM Nuttall’s collaborative partnership have been inspired by the Heath itself and the opportunity to make a lasting change benefitting the wildlife and human visitors to the Heath. The ecologists were inspired by the BIG challenge to keep seeking opportunities to build in extra benefits.