

Replace flood walls with earth banks

Project Summary

Title: River Brent – Tokyngton Park Project
Location: Wembley, North West London, England
Technique: Removal of concrete banks; creation of new natural banks
Cost of technique: £££££
Overall cost of scheme: ££££££
Benefits: ££££££
Dates: 1999 – 2003

Mitigation Measure(s)

Replace flood walls with earth banks
 Appropriate vegetation control technique
 Improve channel geomorphology to create habitat

How it was delivered

Delivered by: Environment Agency
 Partners: London Borough of Brent; London Waterways Partnership; London Development Agency; European Regional Development Fund; local community.



Background / Issues

A long history of flooding in the River Brent fuelled a programme of flood alleviation between the 1940s and 1970s, which straightened the channel and protected significant sections of its bed and banks with concrete reinforcement in order to maximise channel capacity and flow conveyance.

This channelisation of the River Brent was accompanied by the loss of in-channel features and disconnection of the river from its natural floodplain. In addition to providing poor habitats for wildlife, the amenity value was very low as the River Brent provided little or no recreational value for park users.

As part of a project to improve the diversity and quality of in-channel habitats in the River Brent while providing amenity improvements for Tokyngton Park, a total of 2 km of the river were restored. This included the renaturalisation of the river banks by replacing the concrete flood walls and reinforced banks with earth banks.



Outline of the River Brent Park Project (only Phase 1 sections have been completed so far – Phase 2 is awaiting additional funding)

Step-by-step

The scheme aimed to restore the river and change the hydromorphological regime of the River Brent as it flows through the park, including:

- Removal of concrete banks and creation of a new meandering course of the channel following the same alignment as a historic course of the river. The former alignment was in-filled.
- Maintenance of the same level of flood protection through the use increase connectivity with the floodplain – the park now acts as a temporary flood storage area.
- Stabilisation of the new earth banks by using the crushed concrete removed from the former channel and the use of live willow poles to stake these in. This ensures the banks to not erode heavily and stay in place.
- Where flood risk did not represent a significant risk to nearby properties, banks were left to renaturalise and naturally adjust to the new flow conditions in the channel.



1) Brent park during construction (2003)
2) restored reach (2005)

Benefits

This project offered a significant contribution to biodiversity, ecology and amenity at a local-scale, including:

- The restoration of the original channel planform and natural development of in-channel features such as pools and riffles has improved the quality of local habitats.
- Local diversity of plants and animals has been increased through restoration of the channel and riparian zone.
- The project contributed to creating a more attractive, diverse and attractive open space for the local community while maintaining the previous level of flood protection.

Lessons Learnt

- Inclusion of river restoration projects in wide urban regeneration initiatives can significantly increase benefits to local population.
- Involvement of universities as partners in the project can significantly boost potential for long-term monitoring.

Project contact: Fisheries & Biodiversity, Thames Area, South East Region, Environment Agency