

Use green engineering techniques instead of hard bank protection

Project Summary

Title: City Mill River, Olympic Park

Location: Stratford, East London, England

Technique: replacing hard banks with soft revetment

Cost of technique: ££££

Overall cost of scheme: ££££

Benefits: £££

Dates: 2009 - 2011

Mitigation Measure(s)

Use green engineering techniques instead of hard bank protection

Restore aquatic habitats in modified watercourses

Replace flood walls with earth banks

How it was delivered

Delivered by: Olympic Delivery Authority

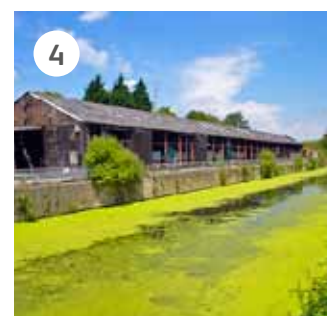
Partners: Environment Agency; Canals and River Trust



Background / Issues

The reach of City Mill River running through the Olympic Park had banks comprised of concrete wall revetments, and was bounded by industrial land. Prior to restoration, the reach had low ecological value, poor aesthetic condition and was failing to reach required water quality standards.

It was decided to restore the river as part of the developments at the Olympic Park due to its proximity to the site and the significant investment in the area. Improvement works downstream of City Mill River meant that catchment benefits could be realised, rather than localised improvements, and the Environment Agency had the opportunity to work with local stakeholders and developers that were enthused to be associated with the Olympic project works. The aim of the scheme was to create a better landscape setting for park venues with improved habitat, water quality and flood risk management. This involved the removal of the walls and development of natural banks with sensitive planting.



General neglect of the waterways in East London, leading to poor water quality, poor flood defences, low value ecology, poor public access to waterways

Step-by-step

A structural survey of all river walls within the reach was undertaken to determine the integrity of structures for future “fit for purpose”. A variety of different works were then undertaken depending on the condition / situation of each stretch:

- Where hard protection was required and the assets were in a reasonable condition, they were repaired.
- Where hard protection was required but the assets were failing, they were demolished and rebuilt.
- In locations where a green engineering solution was deemed to provide sufficient protection, the concrete structures were removed and replaced with a soft revetment that delivered environmental improvements.
- Sheet piling was set further into the channel (to narrow it and increase flow diversity) and earth placed behind to enable planting and re-profiling.

Contaminated land was an issue, but was dealt with on a site wide basis using a global remediation strategy, enabled by delivery partner contractors, prior to construction.



Original river bank



River frontage under construction



Complete revetment

Benefits

- Restoration of natural river bank where hard defences were not required or were failing along the reach.
- Improved water's edge and bankside habitat creation at these locations.
- Improved public access to watercourse.

Lessons Learnt

- Early engagement with developer via a partnership approach to take advantage of enthusiastic stakeholder engagement and to agree scope of works yields project efficiency savings further down the line.
- Sediment washing of contaminated land is an effective method for dealing with constructions and restorations in heavily industrial areas.

Project contact: London Environment Team, Environment Agency