

# Change structures or the way they are operated to reduce barriers to flow, sediment transport and fish/eel migration

## Project Summary

**Title:** Ashlone Wharf

**Location:** Beverly Brook from Motspur Park to the Thames (GB106039022850) in Barnes, London, England

**Technique:** Modifying structures to improve fish passage

**Cost of technique:** £££

**Overall cost of scheme:** £££

**Benefits:** ££

**Dates:** May 2011 – Dec 2011

## Mitigation Measure(s)

Change structures or the way they are operated to reduce barriers to flow, sediment transport and fish/eel migration

## How it was delivered

Delivered by: Environment Agency

Partners: London Borough of Hammersmith & Fulham



Location of Ashlone Wharf

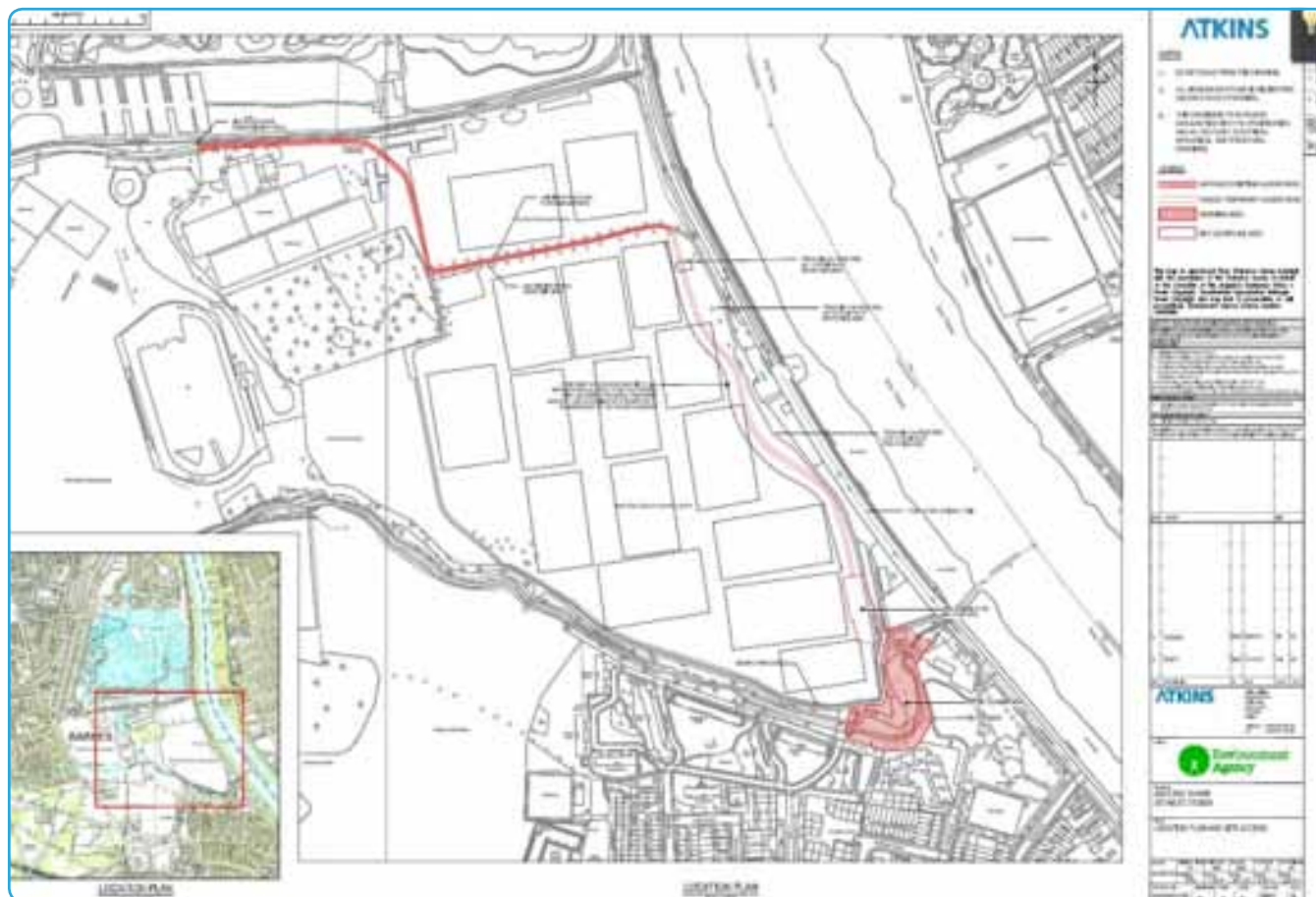
© Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380

## Background and issues

The Beverley Brook is currently failing to achieve Good Ecological Potential (GEP), mainly due to pressures resulting from flood protection and urbanisation. The site at Ashlone Wharf included a complex of flood relief culverts, channels and penstocks estimated to convey approximately 50-80% of the flows in the Beverley Brook. These barriers represented an impoundment that restricted free flows and fish movement through the Beverley Brook and promoted the build-up of silt in the lower reaches of the brook.

The constraints identified at the site and its overall state of disrepair led to the implementation of a strategy for operational and structural changes aimed at mitigating the impact of the barriers and contributing towards the restoration of a naturalised flow and sediment regime in the Beverley Brook.

Given the presence of accumulated silt exceeding the two Port of London Authority dredging acceptance criteria regarding volume of accreted silt and the presence of invasive species like Japanese knotweed and Himalayan balsam, the scheme left the silt as undisturbed as possible.



Site overview at Ashlone Wharf © Atkins copyright and database rights 2013.

Mapping: © Ordnance Survey Crown copyright. All rights reserved. Environment Agency, 100026380

## Step-by-step

Work on the project included changes to the structures currently in place to achieve the goals set out in the previous section. This involved:

- The replacement of two of the existing cast iron flap gates with motorised winch lifting mechanisms and access platforms for safe operation and maintenance.
- Replacement of one of the remaining existing flap valves with a new side hinged self-regulating flap gate to facilitate fish passage.
- The closing in semi-permanent fashion of a fourth, obsolete culvert and installation of three motorised penstocks, with non-rising spindles for the three functioning culvert barrels to focus flows, increase sediment transport and allow more accurate control of water levels.
- Installation of a Larinier fish pass in the sluice channel upstream of the current gate.
- Replacement of the current sluice gate and screen.

- Installation of a new stop log controlled arrangement directing normal flow through the fish pass.
- Planting and stabilisation landscape scheme in order to minimise the chance of silt erosion.



(1) Gate at Ashlone Wharf;



(2) One of the culverts and associated flap gate to be modified  
© Environment Agency copyright and database rights 2013

## Benefits

- Potential for increased flexibility in the operation of the structures at the site.
- Decrease in number and extent of barriers to the natural flow and sediment regimes.
- Significant improvements to fish passage through the site.
- Creation of fish refugia and reed habitat in the lagoon upstream of the structures.



---

## Lessons Learnt

- Improvement of structural operability enables review of operation regimes to minimise the requirement for further improvement works. Whilst replacement of existing structures is not a sustainable measure, the operating regime that follows increases the long term condition of the river and structure.

---

Project contact: Fisheries and Biodiversity team, South Thames Region, Environment Agency