

River Cole, Yardley Brook

Technique: Replacing a concrete drain with a 'natural' river channel

Project location: Shard End, Birmingham
River: Cole
County: West Midlands
Project start date: March 1995 (2 weeks)
Project end date: March 1995
Length: 0.1km
Cost: £5,000
Upstream grid reference: SP 148880



Yardley Brook prior to restoration works

Site background

Yardley Brook rises in south-east Birmingham and emerges from a culvert onto the floodplain of the Cole in a concrete channel. The catchment is highly urbanised, with over 150,000 people living within 2km of the river. Urban run-off thus causes periodic poor water quality and significant litter. The brook is within an area of public open space. Originally, a sewage outfall, the brook no longer needed to be contained in a concrete straight-jacket due to closure of the sewage works upstream c.30 years ago. The brook is located within the Project Kingfisher area; a collaboration between local and statutory authorities and volunteer groups to achieve a substantial increase in the wildlife quality of an 11km section of the Cole and adjacent land in Solihull and Birmingham.

Objectives

To replace a concrete channel with a less constrained river channel.

Design

- The lip of the concrete channel was broken up using an excavator, and the broken concrete was pushed into the barely flowing channel.
- A 100m sinuous channel was excavated alongside the brook. A simple 'V' shaped channel was dug with sloping earth banks as it was decided that the brook could sufficiently shape itself. All spoil was stock-piled between the new and the old channel and, where this became too narrow, on the opposite bank of the old channel. This maintained the flow through the old drain and allowed all work to be carried out in the dry.
- Once completed, flow was diverted through the new course, and the old channel was filled using the spoil from the new. At the upstream end of the 'new' brook the old course was again blocked with rubble then capped with earth. Live willows were laid in during the in-filling process to form a growing plug.
- A drainage pipe that exited at the old outfall structure was given a new stone pitched headwall which is now well hidden by growth and difficult to discern.

Subsequent Performance - RRC's views (2001)

Immediately following the diversion to the new channel a dramatic change in the brook was achieved in terms of landscape, visual amenity and ecology. After completion, winter flows quickly began to shape the kinds of natural channel features one would associate with a small brook. Six years on, Yardley Brook has developed 'natural' channel features in contrast to the concrete channel previously in place. The brook still suffers from periodic poor water quality due to the dense urban population that surrounds the brook. The work was deemed so successful that a further length of the main River Cole was removed from a concrete straight-jacket in 1996-1997.



Natural channel features in the restored section of Yardley Brook



the River Restoration Centre Case Study Series

This site was last visited by RRC staff on 24th May 2001

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