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River Beane Restoration

Woodhall Estate - AMP 7 River Restoration Framework.

Affinity Water Limited engaged Salix River and Wetland Ltd and our framework partner, cbec eco-engineering UK Ltd, to restore sections of the River Beane as part of the AMP 7 River Restoration Framework.

The scheme aimed to improve the ecological value of the watercourses through physical modifications, mitigating changes to the rivers natural flow and pollution from the nearby town, wastewater and rural areas. These measures helped achieve a higher Water Framework Directive status for the River Beane.

Following detailed surveys and in liaison with The Environment Agency and the Woodhall estate, multiple options were agreed upon that would make significant improvements to the health of the river, the surrounding habitat and local public, with no negative ecological impact.

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The creation of a highly connected system that facilitates frequent floodplain inundation allowed the development of a wide: shallow channel geometry, limiting stream power to prevent extensive reworking of bed/bank morphology and increase deposition of organic material (including fine sediments) within the floodplain. Resulting in a channel that is geomorphically appropriate, increasing water storage and reduces the conveyance of water downstream.

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The key design characteristics delivered were:

- Excavation of new channels
- Subtle 'riffle' & 'bar' features to reflect the sediment supply limited system of 'natural' chalk streams.
- Channel Infill - The existing channel, where the flow was diverted into the Phase 3 reach, was completely infilled with spoil generated from the new channel excavations.
- Wetland and Floodplain Scrapes
- Backwater feature creation
- Tree works
- Culvert installation - ditch cross-connection
- Ford crossing build
- Fencing
- A re-meandered planform aiming to reinstate the 'inherited planform' of the channel prior to human intervention.
- Introduction of in-channel large wood structures to recreate the natural occurrence of wood within chalk streams from bank side trees. (In-channel wood is responsible for creating and maintaining riffle, pool, and bar geomorphology, so its inclusion was imperative to the success of the scheme.)
- Pedestrian footbridge installation – Required as a public right of way footpath would intersect the re-meandered section of the channel.

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