

Garnett Wharfe
Otley, West Yorkshire, England
David Wilson Homes and Brooks Ecological

BIG Biodiversity Challenge Award category: Medium Scale Permanent

Project overview

Garnett Wharfe is a redevelopment scheme comprising 210 new homes with a contract value of £34 million in Otley, West Yorkshire. The site was formerly a paper mill and the development has involved the recycling of c95% of materials found on site, the retention of an old mill building that's being transformed into an Italian restaurant, the development of a riverside visitors' centre, the creation of a flood alleviation channel and the installation of two Archimedes Screws to produce renewable energy to offset the site's operational emissions.

As well as the above, substantial ecological mitigation and enhancement works have been carried out. These include the creation of a bat chamber, integral bat bricks built into the fabric of the buildings, an otter holt, an ecological park and two fish passes to allow safe passage past the Archimedes Screws and pre-existing weir.

The green spaces on the site cover approximately 4ha.

What were the biodiversity conditions on site, prior to the enhancement?

A suite of pre-development ecology surveys revealed a brownfield site with low ecological value, but with protected species such as otters and bats using the river habitat adjacent to the development site.

Were there any specific reasons that led to this project?

The project was designed to sustainably deliver much-needed houses in the Otley area, coupled with the regeneration of a disused industrial site in harmony with the local environment.



Garnett Wharfe sales arena

The protected species mitigation works were delivered under Natural England licences and to discharge planning conditions. Other enhancements were delivered to enhance and compliment the stunning setting on the River Wharfe.

What were the biodiversity measures taken?

Detailed ecological and hydrological surveys were undertaken prior to project commencement.

Biodiversity measures included the creation of a bat chamber, for Daubenton's bats, using an original mill race entrance so that they could easily find their new home. Crevices were formed within the chamber to give bats a safe place to roost. The chamber will have a live video feed to the visitors' centre. Integral bat roost bricks have also been installed on site to provide roosting opportunities for other bat species (e.g. Pipistrelles).

An otter holt was discovered on the bank of the river along with some evidence of otter presence in the area, but no evidence of recent use of the holt. Nevertheless, a permanent wall was erected providing a 20m buffer between the holt and construction work to safeguard it for future occupation by otters.

Two Archimedes Screws have been installed in the river, to provide renewable electricity which will offset the electricity used in the new homes and community buildings, thus contributing to reducing the extent of climate change, the biggest global threat to biodiversity. Alongside the screws is a new fish pass to allow migrating salmon and other fish to safely bypass the screws and the weir and move freely along the river.

A flood alleviation scheme has been implemented to ensure that the site is safe from a 1 in 100 (+30%) year flood event. The scheme comprises the creation of a swale, planted with wild flowers and aquatic plants to provide new habitat and enhance the ecological value of the site, and a balancing pond to manage run-off water.



Archimedes Screw being manoeuvred into position

What were the biodiversity measures taken?

A management plan is in place to ensure that all of these features and the site's public open spaces will be managed in perpetuity.

In combination these measures should deliver a biodiversity net gain.

How would you best describe the project?

Mitigation and enhancement

Further information

The development is due to complete in 2018 and the ecology park is presently being planted up to enable time for the habitats to develop and mature. The site is very unusual and has presented a unique set of challenges and opportunities, which have resulted in the creation of a new community unlike any other. The long-term sustainability of the site is ensured due to the flood alleviation plan and the installation of the Archimedes Screws. This, coupled with the wildlife mitigation and enhancement measures makes Garnett Wharfe a really special place.

There is a long term management plan in place and monitoring surveys for bats are scheduled as part of the Natural England licence. Existing and new community members in Otley will benefit from the new facilities and from being able to get closer to nature via the Visitors' Centre and riverside walkway.

On a recent site visit red kites were seen overhead, kingfishers were spotted over the river, salmon were seen leaping at the weir and house martin nests were observed under the eaves of new buildings. Nature is taking advantage of the site in its new form!

What was your personal motivation for carrying out the enhancement?

The Garnett Wharfe site is a unique site with a lot of history, which deserves to be given a great deal of care and attention to ensure that the development is sustainable, wildlife-friendly and in keeping with the character of the local area.



A salmon leaping at Otley Weir