

## Millmarsh Service Reservoir Nr Shepton Mallet, Somerset

Kier Services

*BIG Challenge 2015 submission category: Small scale permanent*

### Project overview

Millmarsh Reservoir is a new 10.8 mega-litre potable water service reservoir constructed on an agricultural site on behalf of Bristol Water.

The reservoir was a cast in-situ reinforced concrete structure with dimensions approximately 40m x 70m x 5m high. Located on a sloping field the reservoir was founded between 1 and 2m below ground level with the excavated material used to form the embankment around the reservoir.

Attached to the reinforced concrete structure was a 16m x 10m valve house. The site works also included the construction of a stone faced communications building, installation of a 30m high communications mast, Truckpave access road and site drainage.

Two large soakaways were constructed; a deep crate type soakaway (540m<sup>2</sup>) to provide discharge capacity for the reservoir and underslab drainage and a larger shallow soakaway (580m<sup>2</sup>) for the site



*Photo: Millmarsh bird box*

drainage. The project value was £2.2m and was delivered on budget in 53 weeks.

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

The land had been previously used for cattle grazing and consisted of improved grassland of poor quality, with hedgerow along two of the four sides of the site.

Several mature trees were within the hedgerow. The site had very poor species diversity.

### Were there any specific conditions that led to you carrying out this work?

Client requirements meant that additional hedgerow and trees were to be planted up completion of the project.

A planting guide was provided. There was also a requirement to grass the site with a standard easy maintenance grass seed.

### What were the biodiversity measures taken?

With a surplus of shuttering wood from the concrete pour from the construction of the reservoir it was decided that some of it could be used on site to benefit local wildlife and help reduce waste on site.

A survey of site was completed to see what additional environmental enhancements could be made to the site using surplus wood.

It was decided that the site could host four bat boxes, six small bird boxes and a barn owl box. Suitable wood was kept to one side and cleaned before being used.

Site staff gave their time to help put the boxes together. Once built, permission from the client, Bristol Water, was sought and the bird and bat boxes were installed.

Additional wood was also saved and bird box kits were donated to Wiltshire Wildlife Trust, so that they could build them during their school visits.

The client was extremely pleased with the inclusion of the bird and bat boxes and also with the donation to Wiltshire Wildlife Trust.

This is now something that the client wishes to include in all of their new projects and where possible on existing sites as well.

#### [How would you best describe the project?](#)

An enhancement.

#### [Further information](#)

Early planning of the ecological enhancements was essential; permission



*Photo: Millmarsh owl box*

had to be sought from the client for changing the scope of works and adding additional features.

It was a good opportunity for site staff to engage with the environmental aspects of the project and many of them volunteered their own time to help complete the enhancement work.

Camera traps have shown that several species of birds have used the nest boxes this season and that bats now frequent the site.

The client, Bristol Water, have a Biodiversity Rating Tool which allows them to give a value to each of their operational sites and helps them monitor levels of environmental improvements.

The tool showed that for this site an increase of 7.2 was

provided, which equates to a significant increase in biodiversity and far exceeds their expectations.

Further monitoring of the site will take place by both the client and Kier to ensure the enhancements are still adding value and are being maintained.

#### [What was your personal motivation for carrying out the enhancement?](#)

The site team was well established and had worked together on many environmentally challenging projects, including in National Parks.

Millmarsh provided few environmental challenges and the team felt that they could produce significant enhancements at very little cost, demonstrating what could be done to both the client and senior management.