

Battle & Langton Primary School **Battle, East Sussex, United Kingdom**

Kier Construction Southern

BIG Biodiversity Challenge Award category: Small Scale Permanent

Project overview

The scope of works is a new build and refurbishment of a primary school. The project value is £3,500,000.00. The total gross area of the project collates to 720.0 m². The project start date was 17/11/2014 with a finish date of 25/11/2015.

Within the main project Kier have renovated a pond within the school grounds.

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

Subsequently from a Habitat Suitability Index (HSI) test conducted, the ponds score was initially 0.5597 prior to the pond development, leaving their suitability score of below average.

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

The project encompassed enhancing the biodiversity of the pond embodying education, especially when reintroducing the plants and aquatic fauna into the pond. Kier believe that this will provide a hands on teaching experience for the students involved. Another specific condition included encouraging a wider diversity of aquatic fauna including great crested newts which are listed in the UK Biodiversity Action Plan.



The school children involved interacting with the wildlife with the ecologist.

What were the biodiversity measures taken?

Pond creation and enhancement of existing ponds is most definitely replicable, providing there is adequate space, resource and time in which to invest, to encourage net biodiversity gain. Pond bathymetry was altered to provide a series of shallow ledges on its periphery and thus encourage amphibians to easily access and egress the habitat during the breeding season. The existing pond had a limited range of micro-habitat and offered little opportunity for movements from and to the surrounding terrestrial habitat, these issues have been addressed through the enhancement of the pond. This can be demonstrated by changing the depth in some areas of the pond as well as creating several log piles and moss mounds which provides additional hibernacula.

Additional perimeter fencing will also allow wildlife to have improved protection, offer shade and ensure access to this area is controlled. The long term management of the pond will involve students undertaking pond dipping and annual macrophyte clearance. Due to moderate diversity of wildlife found within the pond; it is has now become more ecologically valuable, as the habitat **provides more opportunity for species. Moreover, the pond and it's surrounding area has benefitted both wellbeing of employees and students by encouraging an enrichment activity in a natural environment.**

How would you best describe the project?

An enhancement.



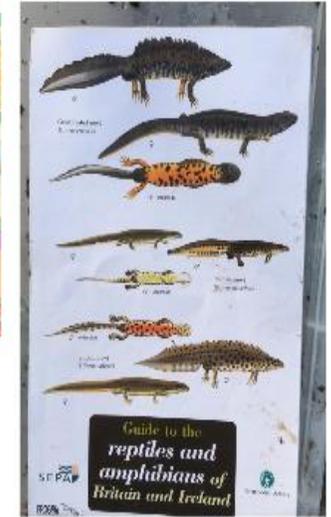
The pond during the works being drained .

Further information

Water was pumped out of the pond to allow removal of the liner. An ecologist was invited to site to undertake a watching brief during the works. A special filter basket was employed to go over the pump rose to avoid unintentional abstraction any of aquatic wildlife in the pond. Once the water level of the pond started to fall, several species of wildlife became visible. All the creatures found were transferred into a plastic container filled with pond water until a temporary tank was organised with the school. Whilst the water was being pumped out, all aquatic plants were collected and weeds separated from the plants.

Once the old liner had been removed, the edges of the pond were re-profiled to provide a shallower ledge in order to encompass a wider range of species to thrive. All creatures that had been caught were transferred into a designated tank supplied by the school. In total there were 120 palmate newts, two great crested newts, dragon fly larvae, water beetles and twelve toads. All except the toads were placed in **the tank. The ecologist felt it best to take the toad's home where he would try and** coax them back into hibernation by cooling them down so not to disrupt their normal routine. In the tank, the great crested newts were separated from the palmate newts as it is not uncommon for great crested newts to eat smaller newts; this was achieved by a simple sheet of Perspex. An information sheet was left on top of the tank for students and staff to easily identify what was in the tank. The final stage was to install the new perimeter fencing. around the pond so as to create a larger terrestrial area and now incorporates a nearby tree.

Best practise would dictate that another nearby pond would encourage migration; thus genetically diversifying the population of newts as well as providing further opportunities for them. The post renovation HSI score increased to 0.6251 leaving the suitability to average, this would be further increased by introducing a series of ponds to the area.



The temporary container holding the wildlife and the species ID kit for the students

What was your personal motivation for carrying out the enhancement?

Kier are continually striving to adopt innovative and creative solutions to facilitate improvement in solving on site ecological challenges, we believe this is fundamental in reducing potential environmental impact and associated costs.

At Kier it is strongly believed that enhancing biodiversity is an essential practise when aspiring to accomplish sustainable construction.