Case Study Reference: IEM/2012/004	*these case studies highlight actions we are taking to reduce our carbon footprint within the Environment Agency, including benefits and lessons learnt*

Haymills Reservoir Carbon Reduction Case Study

Background

The **Haymills Reservoir** improvement project (£202K) involved trash screen replacement and construction of two improved working platforms to resolve a closed sluice gate, blockage at the trash screen and to improve access for regular maintenance activities.

Reducing the Carbon Footprint

The outline design involved replacing the appending concrete structure as well as the trash screen. However, after a condition survey and 'cube sample' strength tests of the concrete confirmed the structure to be structurally sound, we were able to leave the existing concrete structure in place. The new trash screen was designed to integrate with the existing structure. The bespoke design is likely to have required slightly more steel compared with standard trash screens, however this was more than compensated by the reuse of the existing concrete structure. Had the concrete structure been replaced it would have resulted in an extra 2.75 tonnes of embodied CO_2 (tCO_2) and increased the total footprint by 18% even taking into consideration a likely reduction in steel for a standard trash screen.

As part of this project, solar panels on a demountable post were also installed to provide power to two new LED emergency lights and an existing telemetry station which provides river water level monitoring and warnings in the event of a flood.

The lessons to take away

Overall the carbon footprint was reduced by 18%. This example demonstrates that carrying out a suitable asset condition survey at design stage can ascertain if any of an existing structure can be retained or reused. Minimising the use of imported materials can be very beneficial in terms of the embodied carbon footprint, even on a small scheme.

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