

MAINTAIN REPAIR REFURBISH BUILD

PROJECT SLUICE GATE AND CHANNEL WORKS



Stonbury was employed by the Environment Agency to complete refurbishments to a sluice gate and associated structures on the River Toe.

The sluice gate was showing signs of ageing and leakage; however, a previous dive report had been unable to confirm the cause of the leakage. Stonbury was employed to investigate and rectify the issue. In addition, Stonbury was contracted to address scouring on the channel upstream and downstream of the sluice, and complete minor refurbishments to the wall, telemetry kiosk and footbridge.

Before work could commence Stonbury enlisted a specialist subcontractor to install portadams upstream and downstream of the sluice and Stonbury's specialist in-house fisheries team completed a fish rescue. Stonbury encountered problems with keeping working areas dewatered due to the deterioration of old timber sheet piles to the land abutment upstream and to ground seepage from an adjacent mill stream. This was managed by the inclusion of additional over pumping equipment, which allowed work to proceed.

A scaffold was erected which was then shrink-wrapped to encapsulate the sluice to safeguard the public, prevent fines entering the watercourse and protect bare metal between coats. All painted surfaces - including the horizontal beam, drive shaft and mechanical guards - were grit blasted clean, with care taken to ensure no damage occurred to the gate mechanisms.

Investigations were then conducted by Stonbury's mechanical engineering team who identified the cause of the leakage as erosion to the matching cill strip at the apron of the gate. A new metallic threshold strip was built up on the base of the sluice to meet the gate and the gate and its surrounding structure were painted, tested, and calibrated.

The team then addressed the scour holes in the channel, both upstream and downstream of the sluice and on edges adjacent to the walls. These were reconstructed to their original profile using Salix rock rolls - stones encased in environmentally friendly netting - to prevent similar scour in the future.

Stonbury undertook additional tasks, including concrete repairs to cracks in the downstream walls, with the installation of a movement joint to prevent further cracking and an aged telemetry kiosk adjacent to the sluice was treated and painted to match the sluice. In addition, water ingress from the adjacent millstream into the exciting culvert was addressed successfully by reseating and jointing a service pipe and installing clay to secure the ground and prevent future issues.

Finally, the team completed renovations to the footbridge to ensure it meets current safety legislation, including repairing the concrete spall to the soffit of the deck and replacing corroded parapet rails. The site team was highly commended by the client for their excellent management of civils, mechanical and environmental aspects of the project.