



Babingley brook is a tidal flood defence in Norfolk consisting of three 600kg steel non return valves and three penstocks. The non-return valves severely impede fish passage, due to the eel and elver regulations and to assist in the passage of other species of fish the environment agency required a solution to aid fish migration.

The Environment Agency liaised with ACE and it was decided the best solution both to allow passage and economically was to retro fit ACE fish friendly flap valves to two of the non-return valves at different levels.

The fish friendly flapvalves are bottom opening with a float system to shut the flap as the tide rises this allows a much larger opportunity for fish to pass. At Babingley brook two fish friendly flapvalves were mounted at different heights this enabled the flapvalve higher up to allow fish passage when the bottom flapvalve is shut increasing fish passage opportunity even further.

When the tide reaches its peak the whole system will be sealed and still perform as a solid flood defence.

To install the flapvalves the steel doors were removed by crane to a safe working location. The area on each door where the fish friendly flapvalves were to be mounted was cleaned and marked ready for cutting.

Oxyacetylene cutting equipment was used to cut the 400mm diameter holes required for the opening of the fish friendly flapvalves and a magnetic drill cut the mounting holes. All burrs and sharp edges were then removed to make sure any fish that would pass would not be damaged.

A protective coating was applied to the exposed steel to protect it from corrosion. Once the coating set the fish friendly flapvalves were mounted with a bead of MS polymer to seal space between the flapvalve and the stainless steel door. Care was taken to use plastic spacers between the stainless steel fastenings and the steel door to prevent galvanic corrosion. The doors were ready for lifted back into place and re attached to their hinges, as the tide rose they immediately displayed the benefits for fish as the bottom hung door slowly closed.