

RENFIN Stanley Mills Limited

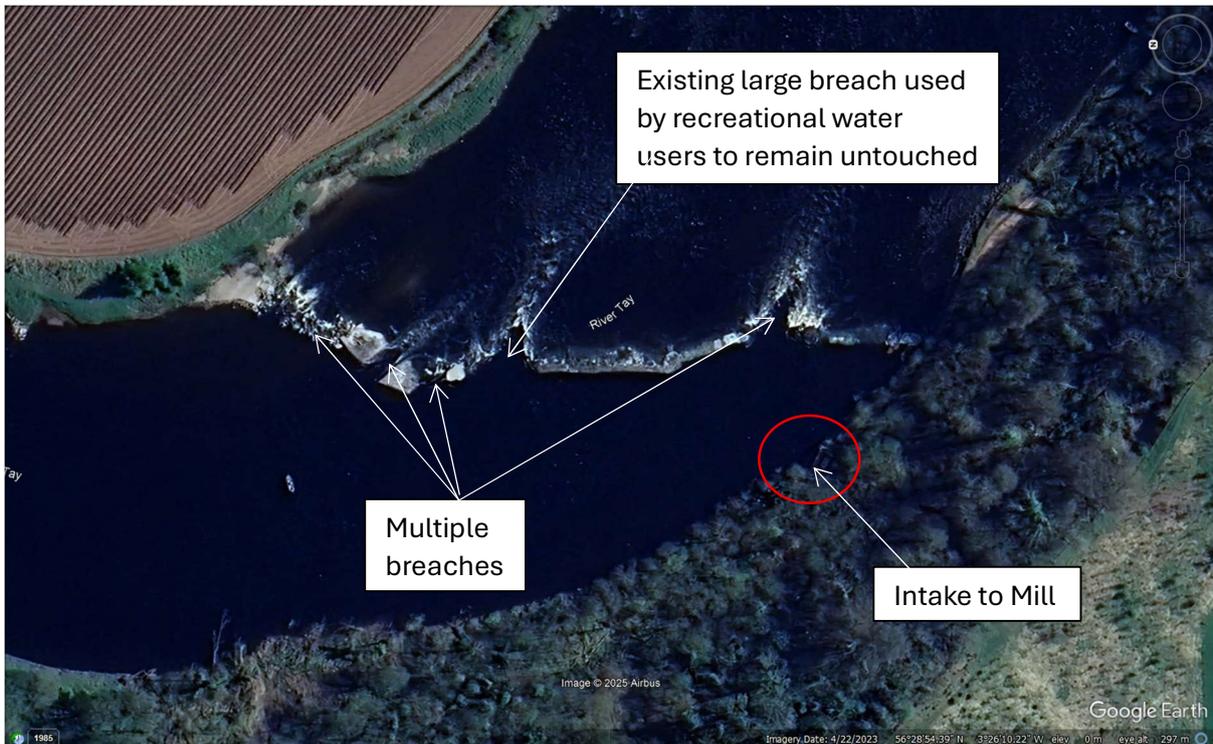
Construction Method Statement

For Repairs to Stanley Mills Weir on the River Tay

Introduction

The weir at Stanley Mill was constructed in the late 18th Century to permit the divergence of water from the River Tay to power the historic Stanley Mill to permit the mill to operate whilst returning the water a short distance downstream. In 1876 a small hydroelectric power station was constructed to provide electrical power to the mill and whilst the mill only ceased commercial operation as recently as 1989 it is now a heritage attraction showcasing Scotland's industrial heritage. The hydro station remains part of that heritage and is commercially operated providing carbon free electricity to the local area via the local distribution network

Over the years though the weir has deteriorated due to flooding and debris impacts resulting in a number of breaches to the weir which are severely impacting the ability of the weir to divert sufficient water to the mill and the hydropower plant.



To maintain the commercial viability of the hydropower plant and its contribution to Scotland's green energy supply it is necessary to reduce the number of breaches in the weir to allow the full consented abstraction flow to be sent to the power plant whilst still maintaining consented flows downstream of the weir.

This document serves to explain the construction process which will achieve this objective.

Site Establishment

The nature of the works is low impact and as such only a minor site establishment will be required to facilitate welfare provision for the small number of construction operatives (3-5) who will be on site and the delivery and storage of materials and rock armour which will be used to infill the breaches.

A site set up will be required on the south (right) bank as the work will involve working out from the right bank towards the left bank so as to avoid the need for any work directly in the river itself. Access will be via existing permitted rights of access.

Work Methodology

The planned works have been designed with due regard to the sensitivity of the environment and the ecology of the river. Consequently only clean, locally sourced stone and rock armour will be used with no requirement for concrete or cementitious materials to be placed into the water at any time.

Prior to any work commencing in the river channel the working area will be surveyed by ecologists and all identified work to [REDACTED] will be completed. Only when this work has been full completed will construction works commence. Notwithstanding this an ecologist will remain on a watching brief throughout the work to ensure that any [REDACTED] found which were not discovered on the original surveys [REDACTED] before they are put at risk.

Work will commence from the right bank with the first breach encountered being infilled using large rock armour, notionally 300-500mm in size and angular in shape. Once this rock has been placed from the river bed up to the current water level the upstream face of this rock armour will be infilled with further rock armour of a finer grade, notionally 100-200mm to infill the voids in the previous layer.

Once this has been completed the upstream face will then be covered with a non-woven geotextile layer which will be weighted and use the water flow to push itself onto the previously placed rock armour and further reduce water passage through the infilled breach. Once the geotextile is in place this will be overlain with further rock armour, again starting with the larger sizes then infilled with the smaller sizes to provide a dimensionally stable slope.

Once this process has been completed and the breach has been filled to comfortably above the (low summer) water level the weir crest level will be completed with semi dry concrete placed within prefilled canvas bags to allow a stable weir crest to be formed. These will be placed by hand and anchored into the underlying rock armour using steel reinforcing bars to reduce the risk of displacement during high flow periods when the weir is completely over topped.

The placement of materials will be by hydraulic excavator (approx. 14t GVW) which will be situated on the crest of the weir and not within the water. The excavator will be fitted with check valves and bio degradable hydraulic oils. All equipment will be visually inspected for oil leaks prior to each shift and any plant found to have oil leakage will be prohibited from site until fully repaired and cleaned.

Existing Breach – mid weir used by recreational users

The planned works seeks to improve the ability of the weir to divert consented water flows to the mill and hydropower plant. It does not seek to seal the weir off completely. To this end the existing large breach towards the centre of the weir will not be infilled as part of this work. It is accepted that this breach permits the passage of recreational water users and migratory fish, both up and downstream and that this is something which should be retained and not obstructed. By reducing the flow through the number of other breaches the applicant is confident that sufficient water will be made available for the hydropower plant to allow it to operate to its consented values whilst minimising its impact on the river as a whole.

Site Clearance

Once all breaches up to the large left bank breach have been infilled and the weir crest levelled off all equipment will vacate the weir via the right bank where it will be collected and removed from site along with all welfare facilities and the river bank will be restored to its original condition.