



Stonbury delivered a long-lasting hybrid green engineering solution to re-shape and stabilise a section of riverbank after the existing sandstone retaining wall had eroded.

Instead of replacing the stone retaining wall, which would have required a more extended programme with a higher carbon footprint and intensive ongoing maintenance, Stonbury offered its client a more sustainable, long-lasting and self-sustaining Flex MSE vegetated retaining wall build.

The team was provided a short window of three weeks to deliver the programme while a permit was in place for another contractor to repair an outfall for the same client. During this time Stonbury liaised closely with the other contractor to organise movements and deliveries through a challenging earth ramp access route that had to be modified for Stonbury's machinery.

Further enabling works included clearing litter and excess vegetation and placing filter mats and screens to catch any disturbed debris and prevent it from entering the downstream watercourse. A 9-tonne tractor excavator with bucket and fork attachments was used to reshape the riverbank and site pallet deliveries.

The riverbed was dug out along the section and shaped per the specification design. Old sandstone aggregate was re-used to reduce water and removal costs. Five courses of bags interlocked with gripper rods were put into place to build the wall. The bottom layers were filled with gravel to provide strength and the two top layers contained soil and pre-mixed grass seed, which will eventually grow to look like a natural embankment and help bind the soil-filled bags.

The void between the bag wall and the embankment was filled with a Type 1 stone material and compacted. A geo mesh was placed over the bags between each course to knit them to the stone material and bank for extra reinforcement.

The durable, permanent system has provided immediate stability to the embankment and utilises nature's own resources to provide resilience to future erosion. The vegetation will provide a robust root network to stabilise the bank and a natural aesthetic to visually improve the surroundings and increase biodiversity.