

Our Client was looking to restore a historic watercourse that was redirected due to coal mining. To complete the restoration, the client required evidence to discharge a planning condition to ensure there was no increased flood risk from that of the original channel.



The Challenge

The site had formerly been part of opencast coal workings, resulting in the removal of the original watercourse and formation of an engineered channel. Restoration works required the rejuvenation of the original watercourse, however due to the large volume of overburden and spoil historically placed, the original route was no longer viable, so realignment and naturalisation of the channel was required.



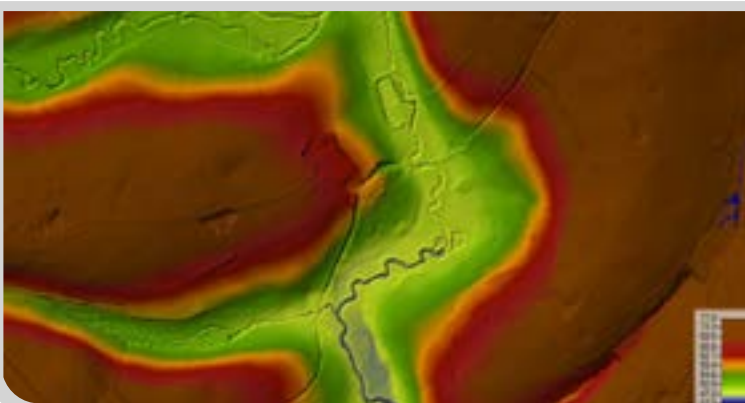
The new channel had to achieve similar gradients and sinuosity to those of the original watercourse, be able to naturalise with rock pools and riffles whilst being of an appropriate shape to convey low flows, but with the capacity to accommodate high magnitude storm events. Due to the formation of the overburden mounding any overtopping, this could lead to severe erosion and flood risk to other areas of the restoration.



The Envireau Way

Envireau Water approached the project in two phases. The first, to conduct an in-depth review of the watercourse catchment to identify the natural landscape; the hydrological character of the original watercourse and risks which the re-installment of the watercourse route may pose.

The second phase was to complete the design of the new channel to best match the characteristics of the original watercourse where possible. A modelling investigation also assessed the proposed route; defined by constraints and undertaken on multiple storm events.



The Result

The design and hydraulic model provided evidence that the new channel would be similar in character to the original watercourse whilst its route would not increase flood risk. This resulted in the planning conditions being discharged.

Need our help?

Can we support you with a similar project? Envireau Water's team has many years of experience undertaking fluvial and pluvial flood modelling. Our ability to develop hydraulic models ranging from simple 1D watercourses to complex 1D-2D catchment models, and to negotiate the right solutions with the relevant regulators, enables us to provide you with support no matter the size or complexity of your site. Contact us today on 01332 871 882 to see how we can help you.