



# Improving channel morphology

Rivers cannot always be given the freedom to fully restore their natural forms and processes. This is often the case in urban areas where infrastructure and properties need to be protected, and the river needs to be **constrained and fixed in place**. Although the river corridor cannot be adjusted, some natural forms and processes can be restored within the constrained channel. In some older case studies, rivers were overly constrained and fixed in place. Contemporary projects tend to allow the river more freedom.

Where the river can have more freedom, smaller interventions can often achieve the same results as re-meandering by **working with natural processes**. These interventions allow and encourage the river to restore itself by removing the constraints which were preventing it from doing so.

This approach is cheaper than re-meandering and makes the river more adaptable to future changes, although it does require the river to have enough energy, and a natural supply of sediment from upstream.

The degree to which a river can be free to adjust, or needs to be constrained, is heavily dependent on site and catchment characteristics. To reflect this, the case studies below are placed on a spectrum of five categories depending on the degree to which they allow the river freedom to adjust. The case studies are also grouped based on the main modification being addressed, to help navigate between case studies (over-wide channels and over-deep channels).

## Over-wide channels



## Over-deep channels

