River Landscapes
Soft Engineering

The Big Picture

river valleys and processes   *river landforms*

River Landscapes

river management*   *case study*
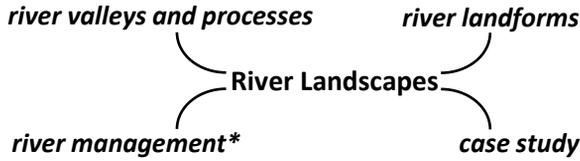
Soft Engineering

Soft engineering river management involves adapting to a river and learning to live with it. The strategy involves working with nature. It is cheaper, but often less effective than hard engineering strategies.

Key Terms

Afforestation – The establishment of trees in an area with no previous cover.

Flood warnings and preparation – An alert system to the risk of flooding.

Floodplain zoning – Land in a river valley is used in a way to minimise flooding.

River Restoration – Returning an engineered river to its natural state.

Soft Engineering – Adapting to a river and learning to live with it.

Flood Warnings and Prep

Benefits
- Cheap and dependent on communications
- If warned in advance people can protect valuables
- Ensures safety without the cost of hard engineering.

Costs
- Only effective if people listen and take action
- Not everyone has access to digital communications
- Floods continue to occur

Floodplain Zoning

Benefits
- Impermeable surfaces are not increased
- Low-cost, as it only involves administration
- Traditional water meadows protected
- Creates a welcome green space

Costs
- Limited impact as most floodplains are developed
- House prices inflated due to lack of housing stock
- Other greenfield sites affected

Planting Trees

Benefits
- Interception reduces surface run-off
- Increases carbon storage
- Creates new habitats and increases biodiversity
- Relatively inexpensive

Costs
- Loss of potential grazing land
- Changes the appearance of the countryside
- Can increase soil acidity

River Restoration

Benefits
- Creates new wetland habitats and increases biodiversity
- Increased water storage in areas affected by flooding
- Reduces the risk of flooding downstream

Costs
- Possible loss of agricultural land
- Can be very expensive