Case Study: Hampton Footbridge – Aiming for an A+

Hampton Footbridge is a proposed pedestrian and cycle bridge over a flood prone stretch of the River Avon in Worcestershire. It will provide a more direct route between Hampton and Evesham town centre even during flood events. In addition to supporting the shift to sustainable transport modes in the area, the design team have set themselves an ambitious target of A+ on the proposed carbon rating system for bridges (link). This target was based on Hams Way Footbridge, which was recently completed by the same team (link).

Close collaboration between the architectural and engineering team to optimise the form and minimise carbon, as well as satisfying all the other criteria, has led to a 216 m long crossing with a light gauge weathering steel superstructure that is integral with the substructure and supported on shallow foundations throughout.

Particular focus points in the design included:

- Challenging the brief in relation to the required maintenance vehicle.
- Optimising the vertical geometry to reduce the scale of the abutments.
- Adopting efficient repeated short approach spans over the eastern flood plain.
- Inclining the parapets outwards to remove unused deck space beneath.
- Incorporating lightweight mesh infill parapets.
- Adopting shallow foundations in preference to piling.
- Using the staircase as a prop to provide lateral restraint for pedestrian dynamics.

These aspects were all considered after minimising the bridge length whilst still maintaining the necessary flood immunity and resilience.

With construction expected to start in early 2024, the ongoing collaboration with the Contractor, fabricator and Client will be vital to ensure the lowest possible carbon outcome can be achieved.

**Contributor(s):** COWI, Moxon Architects Alun Griffiths Contractors, Worcestershire County Council

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