

Environmental impact is minimised by the quick installation of a clear-span modular Delta™ bridge for South Lanarkshire Council Bridging Case Study



Ponfeigh Bridge Replacement, South Lanarkshire, Scotland



Customers: I & H Brown Limited, South Lanarkshire Council



Solution: Delta™

The Challenge

The Ponfeigh Bridge near the town of Douglas Water in South Lanarkshire was a Bailey bridge that spanned over an original stone arch structure. The overbridge closed in 2016, as it was deemed too dangerous for both vehicle and pedestrian users. It was finally demolished in 2019 after a defective water main caused further deterioration, rendering it unrepairable. The waters underneath the crossing are renowned for salmon breeding, so it was essential to minimise any potential disruption to the river flow or the surrounding area, which is high in flora species. The topography of the river banks also required the replacement crossing to have a 3% slope between abutments.

South Lanarkshire Council chose a modular steel Delta™ bridge for this project, as it met the loading requirements in a single span, without the need for piers sited in the river bed. It offered a 'cleaner' environmental solution by avoiding obstacles to the water flow and preserving the surrounding land with no requirements for a large crane or an assembly area.

The Solution

The newly installed 36m single-span Delta™ provides a 4.2m roadway and one 1.05m wide internal footwalk. It is supported by two new reinforced-concrete abutments, in line with the footprint of the existing structure and no extra weight restrictions. The roads on both sides were rerouted to offer a better approach to the replacement bridge.

As the bridge could be assembled and launched from the approach road site, the main contractor, I & H Brown Limited, utilised the existing restricted construction space and avoided the need to prepare specific areas for a large crane or the bridge assembly. Within three weeks from the arrival of the components, the Delta™ was assembled and launched uphill, then jacked down onto its bearings. The bridge was launched fully decked, thereby keeping the work across the river to an absolute minimum.

The Results

Opening five weeks ahead of schedule, the modular bridge has re-instated the two-way access to Douglas Waters, as per Lanarkshire County's requirements for all villages. Emergency vehicles now have an alternative route in and out of the area. The project successfully replaced a vital link with the least possible environmental disturbance.



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