

New permanent structure links Outer Hebridean islands

Bridging Case Study



Bernera Access Bridge, Isle of Lewis, Scotland

Customer: Comhairle Nan Eilean Siar | Solution: Delta™



The Challenge

Uniquely interesting from an engineering perspective, the original Bernera Bridge, linking the islands of Great Bernera and Lewis in Scotland's Western Isles, was built in 1953 and is believed to be the first pre-stressed concrete road bridge in the UK. An investigative survey commissioned by the project and bridge owner, Comhairle nan Eilean Siar (Western Isles Council) in August 2020 highlighted evidence of structural deterioration. The existing bridge provided a vital transport corridor connecting the two islands, so of critical importance was the quick restoration of this vital connection for the benefit of the residents of Bernera.

The Solution

A permanent 99m, single-span Delta™ bridge, with a 3.15m carriageway and 1.05m internal raised walkway, was selected as the most suitable solution for this project. Unique among modular steel bridges, Mabey Bridge's Delta™ bridging system is available in clear spans up to 100 metres, alleviating the need for intermediate piers. Fewer piers enable quicker and easier installation than other construction methods, which is a significant advantage in time-critical projects and avoids disturbance or damage to aquatic habitats and local ecology.

There were several challenges associated with the project. The bridge had to be engineered for the harsh climate, and the remoteness of the site meant that the precision-engineered components had to be delivered to site via local ferry. Additional project complexity was afforded by the challenging topography and the limited availability of a footprint in which to build.

The Results

The new Bernera access bridge opened to traffic in December 2021 and the project received an award at the UK's industry-leading Bridges Awards 2022.

Michael Treacy, CEO of Mabey Bridge, said: "We're delighted to have been selected to take part in this important project to restore a vital crossing to the benefit of the residents of Great Bernera. The Delta™ is unique in that it offers the longest modular steel span available in the market, making it an ideal high-quality solution for a wide range of applications where speed of installation is crucial."



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