



This steel box girder bridge crosses the Milford Haven estuary in south west Wales. The seven-span structure has a single 6m deep box girder with a 137m drop-in suspended section within the main 213m span.

Flint & Neill first became involved with this structure following the tragic collapse during cantilever erection of the south approach spans in 1970. Together with other steel box girder failures at the time, this precipitated the enquiry into the basis of design and method of erection of steel box girders by the Merrison Committee, of which Dr Flint was a key member. F&N was appointed by the UK government to assist the Committee and take part in the research and development work leading to the development of the Interim Design and Workmanship Rules and subsequent standardised design criteria for such structures.

F&N were also appointed to develop the new criteria specifically for this bridge and to carry out the design for the re-erection of the bridge.

In 1999 F&N were appointed by Pembrokeshire County Council to perform an inspection and structural assessment in accordance with current standards and to advise on a future maintenance strategy for the crossing. This assessment identified several structural deficiencies, but by adopting a bridge-specific approach and reviewing the traffic loading and lane configuration, F&N was able to reduce the amount of strengthening required to a minimum.

The concrete pier tops were reinforced using carbon fibre wrapping and pre-stressing steel in 2000, winning a Structural Heritage Award from the Institution of Civil Engineers. The deck boxes were strengthened in 2002, and the resurfacing works were completed in 2004.

The total value of the strengthening and resurfacing works was approximately £3.8 million.

Client:
Pembrokeshire County Council

Location:
Milford Haven, Wales

Service Dates:
1970-1971, 1996-1999, 2000-2006

Services:
Development of re-erection scheme
Structural assessment and strengthening
Bridge resurfacing

