



This scheme won the international design competition for a 700 metre crossing of Holes Bay, part of Poole Harbour in southern England. The stringent competition brief required a full and detailed justification of the design on environmental, technical and economic grounds, as well as a clear aesthetic appeal. The competition judges report stated that they had set out to obtain a design of world class quality, and that they had found it in this proposal. The construction cost estimate of £26 million (at 1997 prices) was independently verified as part of the competition entry.

The wide open landscape called for a design which maximised transparency and delicacy, and allowed the bridge to tiptoe across the bay in sympathy with the sensitive environment. There was no technical need for a particularly long span, nor any economic justification for one, so multiple 142m spans were adopted, using the cable stayed form to achieve lightness. The bridge blends well with the marine context and speaks the language of boats with masts and rigging for the pylons and stays.

Longitudinal stays tie the tops of the steel A-frame pylons together and anchor them back to the abutments, controlling displacements and facilitating erection of the multiple spans. This permits the adoption of the very slender pylon legs and the shallow deck girder width an edge depth of less than a metre. A concrete deck with transverse ribbing gives the curved soffit a coffered appearance, further lightening the appearance.

The design takes into account important considerations of constructability in the shallow, sensitive waters of the bay, and a scheme was proposed which enabled rapid erection by cantilever construction of the deck from all five pylons simultaneously. Steel piles set deep into the marine mud deposits form the foundations, and their method of installation using temporary cofferdams has been conceived to minimise disturbance of the mud and reduce the risk of releasing contaminants into the bay. The design thus enables rapid construction and erection, taking account of the many sensitive environmental and ecological factors.

The scheme has sadly been put on hold indefinitely following a change in UK government road building policy.

Client:
Borough of Poole

Location:
Poole, England

Service Dates:
1997-1999

Services:
Conceptual and Detailed Design

Architect:
Dissing+Weitling Architects
Rambøll
Terence O'Rourke plc

