



In 2001 there was a competition to design a dramatic new bridge to grace the skyline of the Finnish capital. This 140m span cable stayed bridge with a forward inclined steel mast was selected through an international design competition by an expert panel of judges. Flint & Neill led the winning design team, which included architect Studio Bednarski and local engineering consultants Innostructura Oy.

The bridge carries a dual carriageway, incorporating trams in both directions, plus a footway and cycle track on each side. It crosses part of the inner harbour in an area of new residential and commercial development. The unique form of the structure, with the back stay arrangement in a sculptural twisted fan shape, evolved from complex site constraints and concentrates foundation construction on one side where access and ground conditions are good. The forward-inclined mast and splayed twisted back stays respond to the topography and the road layout on the south side, and create a strong sculptural feature visible from some distance away.

The deck girder comprises two steel torsion boxes connected together at intervals by steel box crossbeams to which the stays are attached along the centreline. Because of the need to accommodate the tram rails within the roadway and to reduce noise, a thin concrete deck slab is provided on top of the steel deck plate. Steel cantilevers, bolted to the edges of the main boxes, support lightweight non-slip aluminium decking for the cycle tracks and footways.

The mast is the major visible feature of the bridge and has been shaped to suit functional and aesthetic factors as well as to ease fabrication and erection. The mast is formed from three triangular legs, which are joined together at the ends to create a hexagonal form, and which open up to create a longitudinal inner void, which is bridged at intervals by stabilising plates and the stay anchors. This shape derives directly from the overall geometry, with the pre-fabricated, locked coil stays attached in the spaces between the legs.

The concrete abutments integrate the bridge into the surrounding quayside landscape, with the south abutment shaped to form a flowing transition from the bridge deck to the mast base.

The cost was estimated to be £8 million.

**Location:**  
Helsinki, Finland

**Design Date:**  
2001

**Services:**  
Design of a multipurpose, mid-span bridge to be a landmark for the Finnish Capital

