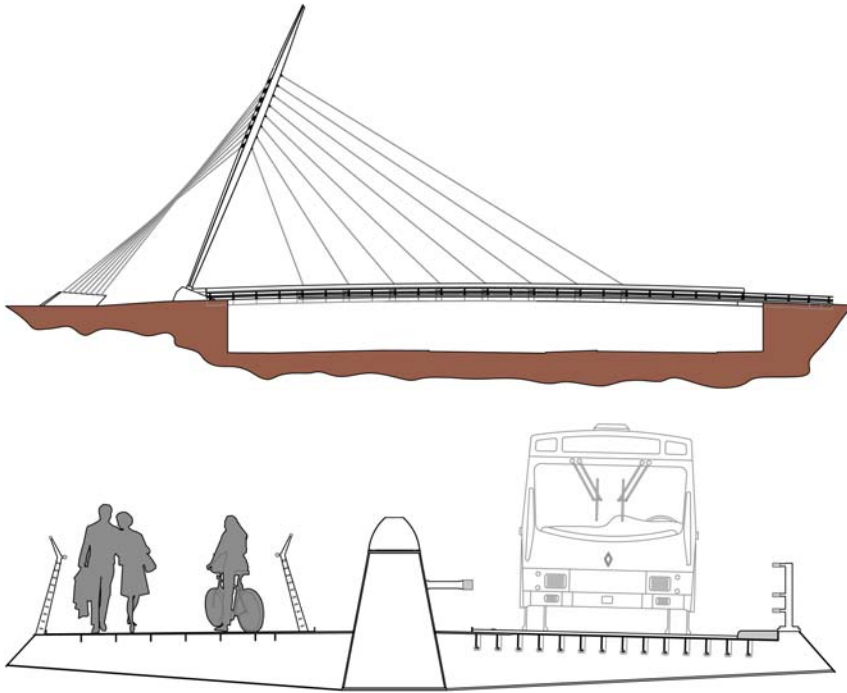


## Fabian Way Bridge, Swansea, UK



Fabian Way Bridge is a heavily skewed cable-stayed bridge carrying a new express bus route over the A483 into Swansea.

The landmark bridge on the main westerly approach into Swansea forms part of the redevelopment of the old dockland area and compliments the nearby Sail bridge, also designed by Flint & Neill Limited.

The tapering steel mast is inclined forward from two splayed sets of twisted backstays giving the bridge a graceful yet striking appearance. The deck consists of a 2m deep central spine beam suspended from eight locked coil stay cables with a vehicle deck on one side with a combined pedestrian and cycle way on the other.

The central spine beam consists of a closed box to provide torsion stiffness but also provides a central dividing barrier between the decks. The heavy skew resulted in a

challenging design that was aided by effective use of 3D analytical modelling to verify the complex interaction between structural elements at the abutments. The inclined mast has an intricate design consisting of five tapering longitudinal plates held apart by transverse diaphragms to form an open, star shaped section. Local and global stability was carefully verified using an incremental large-displacement analysis.

Prefabricated and delivered to site by road in just eleven discrete parts, the bridge was erected rapidly with minimal road closures or disruption to this busy arterial road into Swansea, providing a desirable and cost-effective solution to the City & Council of Swansea.

The original architectural intent was conceived by Studio Bednarski in conjunction with Parsons Brinkerhoff. Flint & Neill was employed by contractor Alun Griffiths Ltd to prepare a value-engineered "all steel" alternative design for the superstructure. The alternative offered improved buildability over the carriageway and resulted in significant cost savings for the mast and stay systems. Steel fabrication was undertaken by Rowecord Engineering Ltd.

The bridge was opened in November 2007.



(c)David Morrell, courtesy Lighting Technology Projects Ltd