



## Rande Bridge widening

Vigo, Spain / 2015 - 2017

Structural type  
Characteristics  
Owner  
Client  
Scope

cable stayed bridge  
spans: 147+400+147 m, widening of the deck, with complete substitution of the existing cables  
Ministerio de Obras Públicas  
Dragados  
detailed design



Rande Bridge is a cable-stayed bridge with a 400-meters main span, which crosses Vigo Ria in Pontevedra (Spain) since 1981. The bridge was designed by Italian engineer De Miranda. The existing 694m-long cable-stayed bridge is divided into three spans with lengths: 147m-400m-147m. The existing deck is 23,5m wide.

The original bridge opened to traffic in 1981 and it considerably reduced the travel time between both sides of the Vigo Ria as well as increasing the security of the trip. Before the Widening, the peak traffic during summer season reached almost 70.000 vehicles every day which has motivated its widening, increasing its capacity from two to three lanes in each direction.

The Widening Project is a milestone in the history of Civil Engineering for being the first cable-stayed bridge in the world to undergo an increase of its traffic capacity by adding two new lanes. The widening is carried out adding to new decks, one at each side of the existing one, formed by a steel box, which varies in depth from 2,3m, where it is closest to the existing deck, to 0,76m at the exterior of the deck.

Each new lateral deck has a width of 7,1m while the space available for vehicle circulation is 5m wide. The hinged connection of the new lateral decks to the existing deck is achieved by a series of triangular Warren truss beams every 10,5m in the longitudinal direction.

The new decks are also supported by a new family of cables, one for each deck. The cables are anchored, at one end, inside the main box of the lateral decks. At the other end, the cables are anchored to a new steel structure situated on top of the existing concrete pylon and connected to it.

FHECOR as part of the Construction Engineering team, along with PONDIO, has developed the construction engineering and temporary works design to the CJV composed of Dragados and Grupo Puentes for the construction of the Widening of the Rande Bridge.



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