Optimization of the curved pylon

Atte Mikkonen

WSP, Helsinki Finland

Contact: Atte.Mikkonen@wsp.com

Abstract

Thu Thiem 2 Bridge is a new crossing to be built over the Saigon River in the city center of Ho Chi Minh City in Vietnam. It will be a landmark for a new urban Thu Thiem area and for the whole city. The cable-stayed bridge has a single, well recognizable, backwards curved pylon and asymmetric span arrangement with lengths of 200 and 115 meters (Figure 1).

In the engineering design phase, the structure shall be optimised, including minimization of quantities, whilst ensuring constructability and safety of the works. Normally, the minimization of quantities brings about financial savings, however in a challenging construction the ease of erection may also be the key for economical success.

This paper discusses the design of the complex structural concept of the Thu Thiem 2 Bridge, with particular attention to the design of the pylon. Optimization, in big and complex bridge projects, is a chain of choices based on designers' experiences as well as understanding of the local environment and construction culture. This is not often a measureable task.

Keywords: cable-stayed; bridge; design; curved pylon; long span bridges; Signature bridge.

1 Thu Thiem 2 Bridge

Figure 1. Thu Thiem 2 Bridge. View from north-east.

https://doi.org/10.2749/vancouver.2017.2958
Distributed by structurae