



Cable stayed bridge with two decks and a single tower

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Summary

The objective of this paper is to describe the cable stayed bridge situated in Real Parque Complex, in the city of São Paulo, Brazil. This structure is important to connect the Jornalista Roberto Marinho Avenue with the Marginal do Rio Pinheiros Avenue, important city thoroughfares.

Keywords: Cable Stayed Bridge, Curved Decks, Single Tower.

The Real Parque Complex, conceived by the São Paulo Municipality City Hall, encloses approximately 1500m of viaducts and two cable stayed bridges of 290m, responsible for the transposition of the Pinheiros river.

Each one of the two bridges is composed of curved deck with a constant radius of curvature of 275.1m (measured in deck axis), divided in two spans, one of 150m over the Pinheiros river and other of 140m over the Nações Unidas Avenue. At the tower, these decks are overlapped (11.4m difference in height).

The tower has 138m and consumed approximately 5600m³ of concrete. Even though this height is greater than that of other cable-stayed bridges with the same span, it is necessary to assure the vertical clearance of 6.0m between the vehicles that are passing through the decks and the cables.

The deck is built in concrete and comprises two inverted girders of 1.5m width, two pedestrian walkways of 0.85m width, two 0.4m guard rails and a 10.5m carriageway. The girders, with a height of 1.4m, support a transversally prestressed slab of 48cm of thick.



Fig. 1 View of the bridge

The need to establish a connection between two important thoroughfares in São Paulo and the complexity of the local interferences permitted this project to produce a structure of great architectural appeal.

In addition of this visual appeal (situated in one of the most valuable municipality regions), the structural complexities inherent in both the management of project and the execution of the construction activities, this structure has all the qualities necessary to become the great architectural monument of the city.