ShiZiYang Bridge – General Scheme Design Options for Mega Suspension Bridge

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Abstract

The ShiZiYang suspension bridge in the Guangdong province in China will when constructed have a world record main span of 2180 m and carry an impressive 2 x 8 lanes of traffic on the double-deck truss girder. A bridge of this previously unmatched proportion requires innovative design concepts to develop a feasible and constructable bridge. The ShiZiYang Crossing owner organization invited three well-known bridge design companies in the initial design process to develop different options for overall configuration of girder, tower, anchorage, and cable system. Each of the different concepts have their own merits and regardless which one is chosen it will be on the limit to what has previously been achieved. While focusing on minimizing the deck weight, many other items must be taken into consideration such as aerodynamic stability, operation and maintenance, construction, cost, and aesthetic value. Comprehensive comparison of various options was thus carried out to select promising options that can serve as the basis for work of the next phase.

Keywords: ShiZiYang; general scheme design; suspension bridge; truss girder; double deck

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