



Different Environments, Different Requirements, Different Ideas-Design Concepts of Three Chongqing Bridges

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Summary

Each bridge is unique. The environment is unique, the constraints are unique and the expectations of the stake holders are unique. Consequently, each bridge shall be conceptualized in a unique manner. This article describes the conceptual design of three major bridges in the City of Chongqing-Caiyuanba Bridge, Shibampo Bridge and Jiayue Bridge.

Keywords: Bridge Design, New Concept, Tie Arch, Hybrid Bridge, Extrados Cable Stayed Bridge, Partially cable-supported Girder Bridge

1. Introduction

The city of Chongqing is located in southwest China at the confluence of two major rivers-the Jialing River and the Yangtze River. Chongqing is a beautiful city because it is surrounded by hills and crossed by these two rivers. The Yangtze and Jialing meander between the Zhongling and Tonglou Mountains. This gives Chongqing its unique topography, which is at the origin of many of the city's special traditions.

Since Chongqing became one of China's four municipalities that report directly to the central government, there has been a rapid increase in infrastructure construction. Due to the fact that the Yangtze and Jialing Rivers divide the metropolitan area into many parts, the development of Chongqing requires the construction of many bridges over these two rivers to connect the separate districts. Arguably, Chongqing has the most major bridges of any city in China, and for this reason has earned the reputation of "the Bridge Capital of China".

In recent years, T. Y. Lin International (TYLI) has had a role in designing three of Chongqing's major bridges: Caiyuanba Bridge, Shibampo Bridge and Jiayue Jialing Bridge. The concepts for these three bridges were developed under the direction of Dr. Man-Chung Tang, who served as technical director on these projects[1,2,3]. Based on the local condition and transportation needs, three different structures were selected for the three bridges: steel box tied arch bridge for the Caiyuanba Bridge; the steel-concrete composite