



Cable-Stayed Bridges in Shanghai where Chinese Recent Major Bridges Launched

Biao MA

Senior Engineer
Shanghai Municipal
Engineering Design
General Institute
Shanghai, China
mabiao139@139.com



Biao Ma, born 1961, received his civil engineering bachelor degree from Tongji Univ.

Yuanpei LIN

Senior Engineer
Shanghai Municipal
Engineering Design
General Institute
Shanghai, China
tzbridge@163.com



Yuanpei Lin, born 1936, received his civil engineering bachelor degree from Shanghai City Construction Institute

Abstract

Cable-stayed bridges are one of the most popular solutions for long span crossings. The design and construction techniques for this type of bridge have undergone significant development and improvement over the past several decades. Shanghai is one of the first cities in China to build modern long span cable-stayed bridges. The construction of the Nanpu Bridge in 1988 is regarded as the beginning of modern long span cable-stayed bridge construction in China. Shanghai's cable-stayed bridges are described in this paper, with special attention devoted to experience gained during construction, structural characteristics, technological developments, and innovative techniques.

Keywords: Shanghai, cable-stayed bridge, development, innovative techniques

1. Introduction

After the Chinese government initiated its “opening policy” thirty years ago, Shanghai's economy has developed rapidly. Bridge construction in the city has kept pace with a series of impressive achievements. Among these, Shanghai's cable-stayed bridges have attracted particular attention. Shanghai is one of the first cities in China to build modern long span cable-stayed bridges. The first cable-stayed bridge, the Maogang Bridge, was completed in 1982. The construction of the Nanpu Bridge in 1988 is regarded as the beginning of modern long span cable-stayed bridge construction in China. The Yangpu Bridge, with main span of 602 m and completed in 1993, briefly held the record for the longest cable-stayed bridge in the world. Since then, design and construction technology for cable-stayed bridges have been continuously developed and improved in China. Shanghai's Yangtze River Bridge and Minpu Bridge, two long span cable-stayed bridges that incorporate particularly innovative techniques, will be completed in 2 years. The development and innovative techniques applied in these cable-stayed bridges are introduced in this paper.

2. Maogang Cable-stayed Bridge

The Maogang Cable-stayed Bridge, with a total length of 391.8 m, is located in Maogang, Songjiang County, Shanghai. It is a double tower double cable plane prestressed concrete