



The Qilihe Street Pedestrian Bridge in Nanjing, China

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Abstract

In order to build a complete pedestrian access area in the wetland park, a curved steel structure pedestrian bridge has been built approach to the lake, extending one span of beam from both ends of the second link of the bridge, which is connected with the landscape road in the park. Stairways are set up at the side span to provide an open and diverse viewing experience. Section of partial pentagon girder is provided with half of the glass bridge deck. The piers are consolidated on the inclined web of the box girder on the other side, which provide a stable support for the curved bridge. Assembled high strength screws are used at the pier bottom to anchor the pier to the pile cap to provide sufficient stiffness. The finite element models were established to calculate and analyze the overall structure and local structure of the bridge to prove its applicability.

Keywords: footbridge; design analysis; local optimization.

1 Introduction

Qilihe Street Pedestrian Bridge is one of the two pieces of infrastructure recently built in Nanjing Jiangbei New Area to create a complete pedestrian access area in the Qinglong Green Belt Park. This strip-shaped park is located in the core urban area of Jiangbei, adjacent to Yangtze River in the South and extending to Laoshan in the north, which is separated by multiple urban arterial lines. It is expected to develop into a new urban landscape in the next few years. The three park areas connected by this bridge are positioned as natural ecological landscape areas in the central of the city, bearing

part of the functions of a sponge city, with artificial lakes, wetlands and hillsides. From the top view, the bridge adopts the shape of Yuruyi, a traditional Chinese ornamental symbol of auspiciousness and beauty, which harmoniously integrates with the natural landscape of the park.

Designing a structure to be part of a group of bridges that will be perceived together is, visually, more challenging than designing a bridge in isolation[1]. Another Hengjiang Avenue Pedestrian Bridge which is also a traffic node in this scattered park has been planned as a commanding height in the park for viewing the panorama of the green ecological corridor, locating in a block not far from the south of the bridge. Therefore, this bridge