



Challenges in Design and Construction of WONJU 404 SKYBRIDGE in Korea

Sang-Hun Shin, Gi-Jung Koo, Jung-Soo Ryu, Jeong-Kyoon An

CABLEBRIDGE Co., Ltd., Seoul, Republic of Korea

Contact: james@cablebridge.com

Abstract

Installed in Ganhyun Park, Wonju-si, South Korea, the 404 Skybridge is the longest pedestrian bridge in Korea, planned as a three-dimensional cable suspension bridge with a main span length of 380m. The location of the installation lies about 100m above from the ground level, on a slope of the mountain which presents very difficult construction condition.

The three-dimensional cable suspension bridge is a challenge to construct but capable to achieve slender girders to have strong horizontal rigidity, without using separate wind resisting cables. By implementing the 3D angle of the cables much larger than the general three-dimensional suspension bridge, the horizontal rigidity of the girders enhanced, and flutter wind speed increased.

At the start of the 404 Skybridge, Skywalk was constructed to provide scenery of the Ganhyun Park.

Keywords: 404 Skybridge; three-dimensional suspension bridge; pedestrian suspension bridge; Skywalk; observatory.

1 Introduction

The 404 Skybridge is a pedestrian suspension bridge installed in Ganhyun Park in Wonju, Gangwon-do, South Korea. Planned to have twice longer span than the previously installed Sogeumsan Suspension Bridge ($L=200\text{m}$) in Ganhyun Park, the bridge was installed to fulfil the hiking course maintenance plan and tourism promotion of the park. As of 2022, the 404 Skybridge is the longest pedestrian suspension bridge in Korea. The construction of the bridge was completed in April 2022, drawing many tourists since its opening. The observatory structure Skywalk, located at the entrance of the bridge is also a surprise to visitors by its rare design and size in Korea.

2 Bridge Plan

The installation location of the 404 Skybridge was 100m above the ground level and the distance from the start to the end of the bridge was more than 400m. To create some uniqueness in the Ganhyun park, a distinctive and iconic characteristic compared to the pre-existing Sogeumsan Suspension Bridge was required. In addition, since the location where the pylon and cable anchorage were restricted at the start and end of the bridge, a bridge plan which overcomes those geographical limitations were necessary. Therefore, a long-span suspension bridge plan which neglects the installation of the high pylons in the valley was selected to satisfy the client's demand and geographical conditions.