Gwangyang Bridge – Numerical Simulation of Construction Sequence

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1. Introduction

The Gwangyang Bridge will connect the cities Gwangyang and Yeosu in Korea. It is planned as a suspension bridge with a main span of 1545 m, symmetrical side spans of 358 m and approaches of 165 m and 120 m at each side. The location of the bridge in relation to its environment is highlighted in *Fig. 1*.

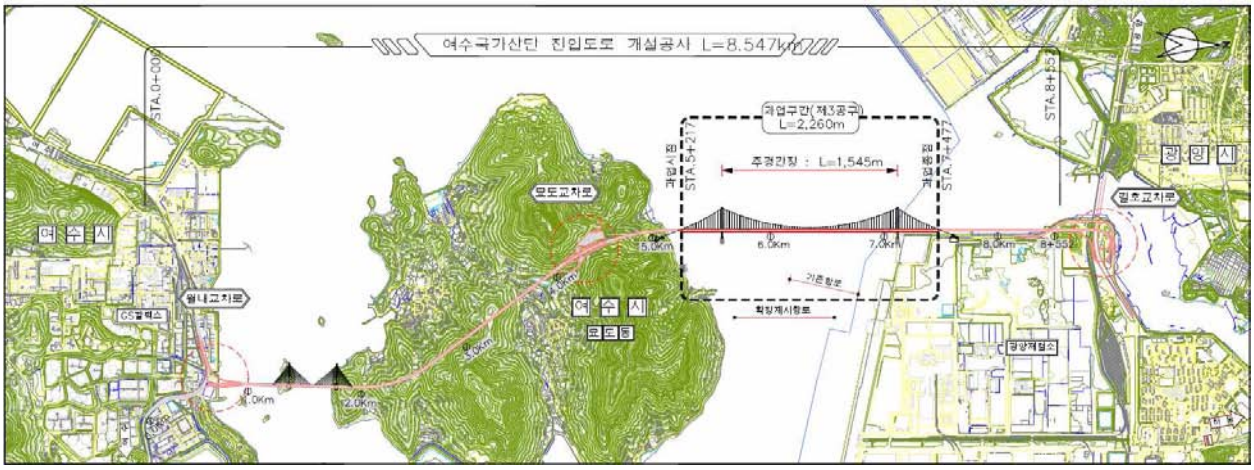

Fig. 1: Gwangyang suspension bridge location in Korea

The construction of the main deck will be done following the so-called “Japanese system”, which means that the adjacent deck segments are connected by hinges before welding. Each segment is connected to the main cables by only one hanger. Using this construction method allows the final shape to have kinks after the welding. The bridge’s plan and side views are represented in *Fig. 2*. The bridge’s cross-section and axial elevation are represented in *Fig. 3*.

Daelim is involved in the Gwangyang suspension bridge project as the contractor, and this bridge will be Korea's longest bridge with a total length of 2,260 m. Daelim has enjoyed a good reputation since 1970 for its successful completion of numerous projects in the Middle East and Southeast Asia. Nowadays Daelim is recognized as a global contractor with cutting-edge technologies and excellent management abilities, boasting with a distinguished record of performance in more than 24 countries.

TDV (now Bentley Systems, Inc) is involved as the software provider of the RM Bridge product which has been mainly used in the construction simulation of this challenging project. Experience has shown that extensive usage of sophisticated IT in hands of senior engineers is the key to success.

https://doi.org/10.2749/222137810796063995
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