

Innovative Construction Technique of Two Bridges in Hong Kong

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Abstract

The multi-storey Yuen Long Town development in Hong Kong is separated by a live Light Rail Track. To connect the two sides of the development, a footbridge and vehicular bridge has been constructed using a novel construction technique. The footbridge is a 45m long fully enclosed steel warren truss bridge located at a lower level and the vehicular bridge is a 50m long steel concrete composite bridge located at the top of the podium.

The erection of each bridge took 3 days. Both bridges were in turn assembled on top of the adjoining podium of the development. They were then connected to a turntable constructed at the edge of the podium and temporarily made into a cantilever cable stay bridge. In an overnight rail possession, the bridges were rotated 120 degrees over the railway. Temporary cables were then removed, and each bridge were lowered by strand jacks to the final level over the next two rail possessions.

Keywords: innovative construction bridge construction; live railway.

1 Introduction

1.1 Location

Yuen Long Town development is a residential development comprising of 6 residential towers, two club house podium and a shopping mall on top of the existing West Rail Yuen Long Station (Northern Site) and an adjacent plot of land (Southern Site).

A live Light Rail Track (LRT) separates the two portions of the site. To provide connection between them, a footbridge (FB1) and a vehicular bridge (VB) have been constructed at different levels (Figure 1).

FB1 is a fully enclosed steel warren truss bridge located at a lower level and VB is a steel concrete composite bridge located at the top of the podium.



Figure 1 Map of YLTL510