

Reflection on Third Study Trip to Wangdong Bridge

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The purpose of the study trip was to discuss the feasibility and methods of construction of the new Wangdong Bridge. During the trip, I had learnt so much about a suspension footbridge. I had gained a better understanding on the components such as anchors, bearings, side anchors, steel cables, etc. I had also learnt about the effect of deadweight of piers and structural components on providing resisting forces against overturning moments as well as sliding. Some methods of increasing the height of piers had also been explained by the professors, which I had never learnt during lectures. The trip also introduced me knowledges about the methods about the construction of bridges in the local area under the environmental limitations. One of the method is to use an excavator to withstand the weight of a part of deck during the fixation and adjustment of the bridge deck. This was how the Tengcun bridge was built. In Hong Kong, a crane would be needed to move the deck to an appropriate position and hold it. This requires a road wide enough for the transportation of the crane to the site, a new road must be built if there isn't a road with sufficient width, the construction cost of the road can be at least \$10,000,000, which might already exceed the construction price of the bridge itself. However, in the area like Wangdong, road that is capable for a transporting a crane cannot be provided, using excavators to withstand the weight of the bridge can save a lot of money. Nonetheless, this approach is considered as extremely dangerous in Hong Kong and would not be allowed. The professors also talked a lot about their experiences in the engineering construction scenes. They had shared with us some knowledge that cannot be learnt in school, such as the process of tightening up the cables in a suspension bridge with reference to both suspension bridge for pedestrians and vehicles. All in all, the trip was fruitful and widened my horizons.