

# Working Trip to Rongshui

9<sup>th</sup> -12<sup>th</sup> January 2017

By Hui Wai Ying Jennifer – BEng (CivE) II

Dr. Ryan Wong and Ms. Anila Ma led 10 engineering students a trip to Rongshui, Guangxi, China from 9 to 12 January 2017. The 10 students include 3 Year III and 6 Year II civil engineering students, as well as a Year I engineering student. The purposes of this trip is, firstly, to complete land surveying of Tengchuen Bridge and its surroundings, and secondly, to conduct site supervision of the construction progress of the Teachers' Accommodation of Daping Primary School. We also had the chance to interact with two students from South China University of Technology who were studying Master and PHD in engineering respectively.

The first day was a long travelling journey from Hong Kong to Rongshui. Spent around half an hour or so on Shenzhen railway followed by two high speed railway rides from north Shenzhen to north Guilin, we managed to arrive Rongshui in the evening by car. The land surveying work all began on the second day. The students were divided into four teams, namely the taping team, levelling team, traversing team and multicopter team. There were two students in the taping team - their tasks were to measure the length and width of the Tengchuen Bridge, distances between some marked points of the other teams, in addition to the depth of the river (or the relief of the riverbed) and the height of the bridge. The levelling team was responsible for accounting the level differences of each span along the bridge decks, while the traversing team took the role of measuring the tilting angle of all bridge piers and the shape of the bridge. Last but not least, two Year III students are in the multicopter team, taking aerial photos and videos of Tengchuen bridge and its surrounding areas.



*Figure 1 Tengchuen Bridge on 10<sup>th</sup> Jan 2017*

Despite the chilly weather, the levelling team and the taping team managed to complete their tasks before dusk that day, while the traversing team had completed a large portion of them. The multicopter team also had a great progress undeterred by the drizzle that whole afternoon. For supper, we were served with warm hospitality. We chatted with the officials of the village to better understand the expectations for the design of the bridge, the urgent need for the bridge and the expected cost for the construction of it.



*Figure 2 Second Floor of the Teachers' Accommodation of Daping Primary School*

Site supervision of the Teachers' Accommodation of Daping Primary School is another highlight of this trip. We went uphill to Daping in the morning on the third day. Due to the freezing weather and the rain, we could just have a glance of mainly the outer part of the structure as no workers were on site. We could see that the second floor was nearly completed. We had gained more background knowledge for the construction of the Teachers' accommodation of Daping Primary School from the introduction by Dr. Wong.

In the afternoon, the traversing team and the multicopter team did final touch-ups for their tasks. At night, we went back to the accommodation we stayed for the first night in Rongshui and had a sharing session on our reflections for the trip during supper at a nearby restaurant. The last day was a return trip from Rongshui back to Hong Kong. A new highway from Rongshui to Sanjiangnan was built, the car ride was hence shortened. Most of us bought food and wine as souvenirs before the high speed railway rides.

After detailed observation and land surveying of the bridge, a feasibility study is to be conducted to formulate possible designs for the bridge. The number of spans to be reconstructed is a total of 4 such that it is a tougher structural design challenge than previously expected 3 spans. Structural analysis of the possible designs of the bridge are also to be carried out.

**Student participants:**

Chan Chau Wong - BEng (CivE) III

Chan Chun Hong – Beng (CivE) III

Tse Hoi Yan – Beng (CivE) III

Cheng Man Kit - BEng (CivE) II

Hui Wai Ying Jennifer - BEng (CivE) II

Leung Chin Hei (Perry) - BEng (CivE) II

Mok Kwan Yin (Myron) - BEng (CivE) II

Tai Ho Ting Louis - BEng (CivE) II

Tse Man Tim Martin - BEng (CivE) II

Chui Ka Kiu Christy– BEng I