

## Technical Visit to Tai Shue Wan Site Formation Works

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AGS(HK) organized a technical site visit to Tai Shue Wan Site Formation Works on 25 August 2018. This site visit, which was organized by Gammon Construction Limited, included the new Water Park Development at Ocean Park (**Figure 1**) and Fullerton Hotel next to it. The Site is located at Tai Shue Wan, to the south-western side of Brick Hill facing the Aberdeen Channel (**Figure 2**).



**Figure 1: Proposed Water Park**



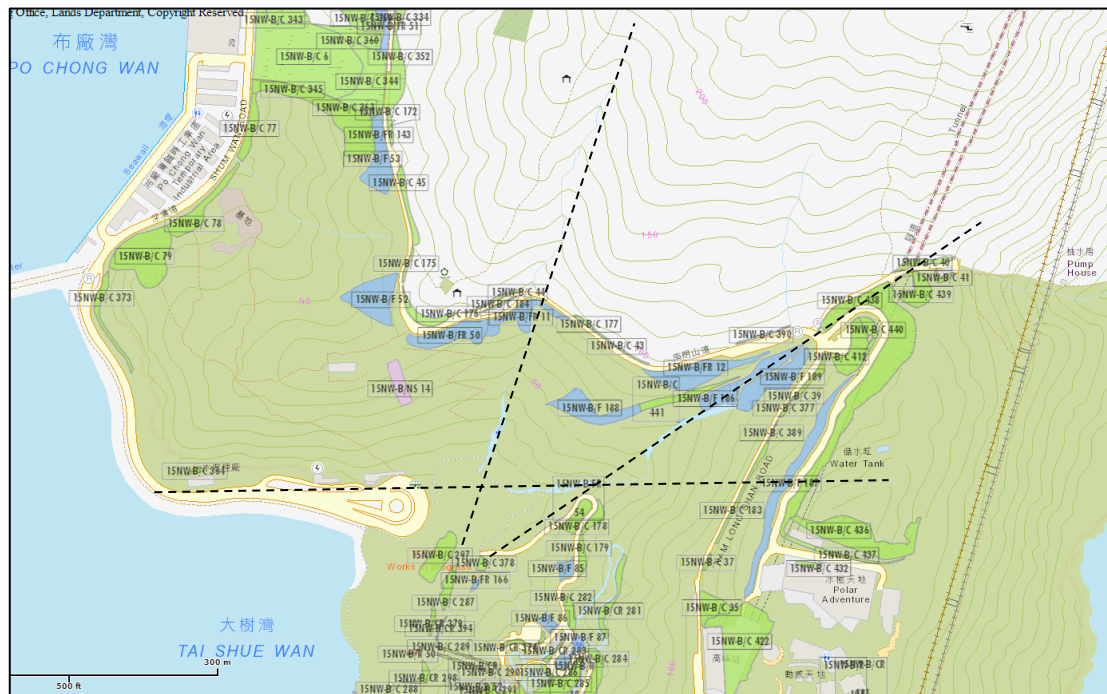
**Figure 2: The Site**

The Project Manager, Terry, of Gammon provided us a brief introduction on the site work before site visit. There are many geotechnical engineering works need to perform in this Site Formation. They include rock splitting, shotcrete spraying, wire meshing, rock doweling and rock slope formation. However, early stage of site formation has been prepared by another contractor during Phase I site formation work.

The solid geology of the Site is belong to Ap Lei Chau Formation which is formed during Early Cretaceous and is primarily fine ash vitric tuff with eutaxite. The fine ash vitric tuff showed a prominent and uniform eutaxitic fabric with abundant fiamme of flattened and stretched pumice fragments. According to the GEO TGN4, eutaxitic is a descriptive term for foliation within pyroclastic rocks resulting in a streaked or banded appearance, and is due to pumice or other material being stretched out whilst still in a

hot viscous state, and subsequently preserved by welding. It believed that the stratification dipping out of the slope such as indicated by eutaxitic foliation in some fine ash tuffs may adversely affect slope stability. Also, from the past experience, the strength of Ap Lei Chau tuff is very high which can be more than 3000kPa and caused difficulties in drilling work of Site Investigation stage. From the above desk study in geology, it have already indicated some challenge in engineering work.

There are few photo-lineaments were identified at the area (**Figure 3**). Two northeast-trending photolineaments have been mapped which coincide with two small valleys and some outcrops around the area was sheared. One trending in E-W direction was mapped along the coast and the slope angle of the hill was steep.



**Figure 3: Approximate locations of photo-lineaments at the Site**

During the site formation work, some geological / geotechnical problems were encountered:

1. Sheared zones and slickensided features were mapped during excavation. The rock was highly fractured and weathered along the sheared zone.
2. New fractures, known as tension cracks were developed in a short time after rock slope excavation near the entrance of the site office due to stress relief.
3. Wedge failures were identified in some high cliffs of hotel site.
4. Access preparation for the site formation work at the hotel was difficult because of the steep rock slope.

In overall, the Tai Shue Wan Site Formation is full of challenge and is a good site to apply and learn geology / geotechnical engineering knowledge.