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Technical Report -

Site Visit to LPMit Works in Cha Liu Au

A technical half-day site visit to a natural terrain under LPMit Programme, 2011, Package H LPMit Works (Contract no. GE/2015/03) organized by AGS(HK) was held on 13 Oct 2018. The site was located at Cha Liu Au, a hillside along the Clear Water Bay Road. This site visit aimed at enabling participants to explore the topic of natural terrain hazards and the implementation of the mitigation measures. Around 25 participants attended on that day.



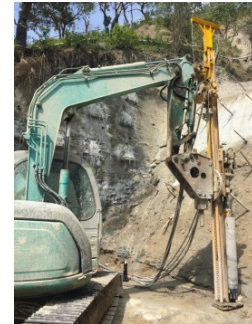
In this construction project, Study Area No. 11NE-A/SA2 was subjected to investigate. The extent of which was about 3 hectares with the highest point of approximately 270m from the ground (Clear Water Bay Road). Since three drainage lines and potentially unstable boulders were presented in this large scale hillside, they might pose a great threat to the densely populated area nearby (Shun Lee Estate) especially under heavy rain. To minimize the risk, several mitigation works were carried out, including construction of three check dams under drainage line to contain the fallen boulders, stabilization of loosened boulders in various spots, and installation of flexible barriers in remaining areas to contain the fallen debris etc. At the beginning of the site works, three drainage lines were diverted as check dams could not be constructed with water passing by.

The construction of check dams generally required excavation works for site formation, construction of tie-back walls and installation of mini-piles in ground to enhance bearing capacity of foundation etc. During the site visit, we spent most of the time to visit the construction works on Check Dam 1 as soil nail installation and foundation works were involved there. Site staff presented several components of soil nails on site, including couplers, grout pipes and centralizers etc. The function for each of them was to connect several steel bars, transfer cement grout into drill holes and fix soil nails into appropriate position respectively. Apart from that, we could have a close-up view on the drilling



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machine, with Odex down-the-hole air hammer system, adopted for installation of mini-piles. The diamond drill bit and casing applied were also displayed on site.



In addition to check dam construction, we also visited the completed boulder stabilization works by walking uphill. A buttress had been built to stabilize the loosened boulder (around 2m high). Prior to construction of buttress and rock dowel, I-beams were installed as a temporary support



for boulder to prevent it from collapsing during construction. Thus, safety issue is always a prime concern on site.

Environmental reservation was also a major issue in this project. Hence, the design and construction method adopted was in principle of retaining as many trees as possible. Along the hillside, it was delighted to find that a lot of tree rings had been constructed by Contractor to protect rare species. This is important to strike a balance between construction and preservation of environment nowadays. To conclude, all of us found this visit very fruitful.

