1 INTRODUCTION

1.1 Background

1.1.1 Land is a scarce resource in Hong Kong and there is a pressing need to optimize the supply of land for various uses by sustainable and innovative approaches to support social and economic development. One practicable approach is rock caverns development.

1.1.2 Caverns construction is an established technology that has seen continual improvement in its application. Many cavern schemes for various uses have successfully adopted around the world with notable examples in Canada, China, Finland, Japan, Korea, Norway, Singapore, Sweden and the USA.

1.1.3 The benefits of rock caverns development are manifold. Systematic relocation of suitable existing government facilities to caverns could release surface sites for other developments. Also, placing NIMBY ("not-in-my-backyard") facilities in caverns could improve the environment and remove incompatible land uses. In fact, there have been successful local examples of accommodating facilities in rock caverns, including the Stanley Sewage Treatment Works completed in 1995, as well as Island West Refuse Transfer Station and Kau Shat Wan Explosives Depot both completed in 1997. Also, in 2009, the University of Hong Kong reprovisioned the Western salt-water service reservoirs in rock caverns to release the site for its Centennial Campus development. These projects have demonstrated that rock caverns are valuable resources, while providing added environmental, safety and security benefits for many applications.

1.1.4 The existing Sha Tin Sewage Treatment Works (STSTW) is located at the mouth of the Shing Mun River, bounded by the River to its East, the Sha Tin Hoi water body to its North, Tolo Highway to its West and the Sha Tin Racecourse to its South. With design sewage treatment capacity of 340,000 m^3 per day, the STSTW is the largest secondary sewage treatment works in Hong Kong and is serving the population of Sha Tin and Ma On Shan areas. Relocating the STSTW to caverns can release about 28 hectares of the existing site for a balance development. In addition to release valuable land resource for the society, this proposal will help remove incompatible land uses with the surrounding, benefit the community and improve the environment of Sha Tin and Ma On Shan. The relocation site has been proposed at Nui Po Shan of A Kung Kok.

1.1.5 To take forward the caverns initiative, the Drainage Services Department (DSD) conducted a detailed feasibility study on the relocation of the STSTW to caverns (the feasibility study), and the feasibility study was completed in end 2013. The results confirmed that relocating the STSTW is technically feasible and financially viable. Two-staged Public Engagement (PE) exercises were conducted to collect public opinions on the relocation project.

1.1.6 After the feasibility study, DSD has commissioned AECOM Asia Company Ltd. under Agreement No. CE 30/2014 (DS) to commence the investigation and design works for the relocation project in September 2014. The project involves several professional engineering disciplines, and we will look into the possibility of introducing relevant advanced technologies and make reference to overseas experience with a view to optimizing the benefits of the project.

1.2 Purpose and Structure of the Report

1.2.1 A two-stage public engagement exercise was completed in the Feasibility Study phase. Between November 2012 and March 2013, Stage 1 PE was carried out to solicit support of the Project by providing the public with the information of the local and overseas examples of sewage treatment works in caverns. Also, the interim findings and recommendations about the preliminary technical assessments on odour, traffic and blasting issues were presented to the public.

1.2.2 From July 2013 to October 2013, Stage 2 PE was organized to build consensus amongst various stakeholders and fostering their support and understanding of the Project. Meanwhile, public's concerns received in Stage 1 PE were addressed and the results and recommendations of the preliminary technical assessments on their concerns such as odour, traffic and blasting vibration issues were further consulted. To conclude, the two-stage PE exercise was conducted successfully to seek views and concerns of the public and the stakeholders to improve the Project. Moreover, a general consensus supporting the relocation project was achieved.

1.2.3 Stage 3 PE was conducted from December 2015 to March 2016. The outcomes of the impact assessment, latest schematic layout including location of portals supporting facilities and new ventilation shaft etc., location of temporary explosive magazine, traffic impact mitigation measures, and an in-depth introduction of the drill-and-blast operation including previous examples, sequence of works, safety precautionary and control measures were presented to the public. Comments and concerns from the public and other relevant stakeholders were collected and solicited during various activities in the Stage 3 PE. Views collected in Stage 3 PE were consolidated and incorporated in the project as appropriate.

1.2.4 Following the previous PE activities, Stage 4 PE was carried out from April 2017 to November 2018 to further gain the support from the members of the Sha Tin District Council (STDC) and the local community that may potentially be affected during the construction phase of the Project.

1.2.5 In Stage 4 PE, various activities such as, reporting sessions to Traffic and Transport Committee (T&TC) and Health and Environment Committee (HEC) of the STDC, and several project briefing sessions were held. Community Liaison Group were set up and the first meeting were conducted. Details of the construction phase of the Project, including the temporary traffic arrangement, proposed environmental mitigation measures, safety measures of blasting and temporary magazine site, and construction programme, were discussed in the activities.

1.2.6 Majority of the public, especially those in Sha Tin District, and the relevant stakeholders were engaged in Stage 4 PE. Their concerns and opinions were identified and mostly addressed through the prompt responses. The comments and opinions collected would serve as a basis of formulating the PE activities during construction stage and designing more neighbourhood friendly design in the upcoming contracts.

1.2.7 This Report presents the information and findings of the Stage 4 PE. Details of PE channels and activities during the Stage 4 PE are summarized in Section 2 of the Report. Comments and opinions received from the public and stakeholders during various PE activities are collated, summarized and responded in Section 3 of the Report. Conclusion of Stage 4 PE is provided in Section 4.