

**For discussion
on 27 March 2012**

Legislative Council Panel on Development

**750CL – Study on Long-term Strategy
for Cavern Development**

PURPOSE

This paper seeks Members' support on the proposal to upgrade **750CL** to Category A, at an estimated cost of \$40.4 million in money-of-the-day (MOD) prices, to carry out a study on the long-term strategy for cavern development in Hong Kong (the Study).

PROJECT SCOPE AND NATURE

2. The scope of **750CL**, which we propose to upgrade to Category A, comprises –

- (a) formulation of policy guidelines to facilitate cavern development for both public and private sectors;
- (b) preparation of cavern master plans to reserve strategic areas for cavern development;
- (c) formulation of a long-term strategy to systematically relocate existing government facilities to rock caverns;
- (d) review of technical issues related to cavern development including cavern engineering, fire safety, environmental considerations, etc; and
- (e) public engagement and consultation exercises with relevant stakeholders.

3. Subject to the funding approval of the Finance Committee (FC), we plan to commence the Study in August 2012 for completion in October 2015.

JUSTIFICATION

4. Land is a scarce resource in Hong Kong and there is a pressing need to increase the supply of land to support social and economic development. One possible innovative approach is rock cavern development.

5. The benefits of rock cavern development are manifold and include releasing surface sites through systematic relocation of suitable existing government facilities to rock caverns, reserving underground rock cavern space for future projects and allowing future expansion underground, placing NIMBY (“not-in-my-backyard”) facilities in caverns thereby minimising any adverse impact on the environment and community, and other intangible benefits such as removing incompatible land uses.

6. In March 2010, the Civil Engineering and Development Department (CEDD) commenced the study on "Enhanced Use of Underground Space in Hong Kong". This was to take forward the initiative proposed by the Development Bureau in the 2009-10 Policy Agenda of launching strategic planning and technical studies to promote the enhanced use of rock caverns as part of Hong Kong's pursuit of sustainable development. The study was completed in March 2011.

7. The study concluded that the geology and topographical setting of Hong Kong are very suitable for cavern development. The study recommended some key initiatives for further study. These include formulating policy guidelines to facilitate cavern development for both public and private sectors, developing a long-term relocation strategy in conjunction with cavern development master plans, and undertaking detailed planning and engineering studies to assess the feasibility of relocating to caverns some government facilities of high cost-benefit value to the community.

8. A holistic approach in the planning and execution of the cavern initiative is required for rock cavern development to become a sustainable means of increasing land supply. Furthermore, private sector involvement should be an integral part of the cavern initiative because many private facilities, such as storage, warehousing and data centres, can benefit from a stable and secure setting offered by rock caverns. To this end, we need to carry out the Study to formulate a long-term strategy for cavern development in Hong Kong.

9. In the 2011-12 Policy Address under “Policy on Land Development and Accumulation”, actively exploring the use of rock caverns to re-provision existing government facilities and release such sites for housing and other uses was identified as one of the innovative measures to expand Hong Kong's land resources.

10. Owing to insufficient in-house resources, the Director of Civil Engineering and Development proposes to engage consultants to carry out the Study.

FINANCIAL IMPLICATIONS

11. We estimate the cost of the Study to be \$40.4 million in MOD prices, made up as follows –

	\$ million	
(a) Consultants' fees for	31.9	
(i) formulation of policy guidelines	10.1	
(ii) preparation of cavern master plans	5.0	
(iii) formulation of a long-term strategy to systematically relocate existing government facilities to rock caverns	8.0	
(iv) review of technical issues	5.0	
(v) public engagement and consultation exercises with relevant stakeholders	3.8	
(b) Contingencies	3.1	
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Sub-total	35.0	(in September 2011 prices)
(c) Provision for price adjustment	5.4	
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Total	40.4	(in MOD prices)
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PUBLIC CONSULTATION

12. During the course of the study on “Enhanced Use of Underground Space in Hong Kong”, various professional bodies including the Hong Kong Institution of Engineers (HKIE), Hong Kong Institute of Planners (HKIP), Institute

of Quarrying, Institute of Materials, Minerals and Mining, and Association of Geotechnical and Geoenvironmental Specialists were consulted. They supported the study to explore the use of underground space including rock cavern development. In the HKIE-HKIP Conference on Planning and Development of Underground Space held in Hong Kong in September 2011, local engineers and planners met and shared experiences with overseas counterparts and the planned development of underground space in Hong Kong was strongly supported.

13. Key findings of the study were presented to the Panel on Development of the Legislative Council in May 2011, the Town Planning Board in July 2011, as well as the Land and Development Advisory Committee and its Planning Sub-committee in July and August 2011 respectively. There was also extensive media coverage on the subject. Based on the feedback of government's consultative bodies and public response, members of the public are generally supportive of the initiative of relocating suitable government facilities to rock caverns, particularly NIMBY facilities.

14. A two-stage Public Engagement (PE) exercise on "Enhancing Land Supply Strategy: Reclamation outside Victoria Harbour and Rock Cavern Development" was launched in November 2011 to gauge public views and foster the public's understanding and acceptance in increasing land supply by new and innovative ways including reclamation outside Victoria Harbour and rock cavern development. The Stage 1 PE will be completed on 31 March 2012. Initial feedback regarding the initiative of relocating suitable government facilities to rock caverns so as to release land for alternative use is generally positive, though views in respect of some identified sites were expressed that the capital investment should be weighed against public gains, which shall include intangible benefits such as improvement in environment and releasing sites for housing development and community facilities.

ENVIRONMENTAL IMPLICATIONS

15. Rock cavern development is a designated project under the Environmental Impact Assessment Ordinance (EIAO) and shall follow the statutory requirements under the EIAO before its construction and operation. However, the Study itself is not a designated project, and its scope does not involve conducting the environmental impact assessment under the EIAO. Statutory procedures under the EIAO will be followed in future to confirm the environmental impacts of the cavern developments and mitigation measures required.

16. To integrate environmental consideration into the Study, we will carry out a Strategic Environmental Assessment (SEA) as part of the Study. The SEA would provide environmental information and input into different parts of the

Study, conduct strategic environmental assessment of cavern development options and recommend possible mitigation measures.

17. The Study will not include any works and will not generate any construction waste.

HERITAGE IMPLICATIONS

18. The Study will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic site/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

19. The Study will not require any land acquisition.

BACKGROUND INFORMATION

20. Cavern construction is an established technology. The Government has already carried out the necessary technical preparation work for rock cavern development in Hong Kong. Technical guidelines and standards on planning, investigation, design, construction, maintenance and fire safety provisions for rock cavern development have been published. There are also planning guidelines on rock cavern development in Chapter 12 of the Hong Kong Planning Standards and Guidelines.

21. A number of government facilities in Hong Kong were purpose-built in rock caverns to meet the needs of the community, namely the Island West Refuse Transfer Station, Stanley Sewage Treatment Plant and Kau Shat Wan Explosives Depot. Recently, the University of Hong Kong has constructed rock caverns to re-house the Western Salt-water Service Reservoirs underground in order to release land for the Centennial Campus development. These projects have demonstrated that rock caverns are valuable resources, while providing added environmental, safety and security benefits for many applications.

22. We included **750CL** in Category B in September 2011.

23. The Study will not involve any tree removal or planting proposal.

24. We estimate that the proposed study will create about 14 jobs for professional/technical staff, providing a total employment of 320 man-months.

WAY FORWARD

25. Members are invited to support our proposal for upgrading **750CL** to Category A. Subject to support of this Panel, we will seek the endorsement of the Public Works Subcommittee in April 2012 and approval by the FC in May 2012.

**Development Bureau
Civil Engineering and Development Department
March 2012**