For information

Legislative Council Panel on Environmental Affairs

PWP Item 70DR - Low-level radioactive waste storage facility

Purpose

This paper briefs Members of the Administration's proposal to submit PWP Item **70DR** "Low-level radioactive waste storage facility" to the Public Works Subcommittee for upgrading to Category A for the design and construction of a low-level radioactive waste (LLRW) storage facility at Siu A Chau and the decommissioning of the existing store at Queen's Road East at an estimated cost of $89.1 million in money-of-the-day (MOD) prices.

Background

2. Currently, 55 cubic metres (m^3) of LLRW are stored in a disused air-raid tunnel at Queen's Road East (QRE). The LLRW, mostly generated in the 1960s and 1970s, have very low level of radioactivity and are properly packaged in accordance with international safety standards. We have been monitoring the radiation levels in the vicinity of the tunnel and found that they are within the normal background levels of Hong Kong. While the LLRW does not pose any danger or health hazards to the neighbourhood, we consider that in the long run, they should be stored at a purpose-built facility as the tunnel was not built for storing LLRW. We proposed in February 2002 to build a LLRW storage facility at Siu A Chau. Members supported the proposal. We then invited tender and have recently completed the tender evaluation process.

Proposal

3. We propose to build a LLRW storage facility at Siu A Chau with an initial storage capacity of about 70 m^3. With minor modifications, the capacity can be expanded to 140 m^3. This would be sufficient to accommodate the existing LLRW and those arising in the next 100 years.

4. The Department of Health (DH) has reconditioned and repackaged the existing LLRW of the QRE tunnel in new stainless steel containers in preparation for its relocation to the Siu A Chau facility. After the relocation, DH will decommission the tunnel store.

5. The scope of the project comprises –

(a) design & construction of the LLRW storage facility –

(i) design;
(ii) civil engineering works, including the construction of a jetty for marine access to the facility;
(iii) building works;
(iv) provision of storage, processing, operation and laboratory equipment; and
(v) building services and utilities;

(b) consultancy services –

(i) independent assessor;
(ii) contract administration / construction supervision

(c) transfer of existing waste to the facility; and

(d) decommissioning of the existing store at QRE.

6. A site plan is at Annex. We plan to commence the proposed works in September 2003 for completion by December 2004.

Financial Implications

7. We estimate that the capital cost of the proposed works is $89.1 million in MOD prices, made up as follows –

		$ million
(a)	Design and construction works	75.5
(i)	design	0.9
(ii)	civil engineering works	12.2
(iii)	building works	32.5
(iv)	storage, processing, operation and laboratory equipment	22.0

	(v) building services & utilities	7.9		
(b)	Consultancy services		4.9	
	(i) independent assessor	3.4		
	(ii) contract administration and construction supervision	1.5		
(c)	Transfer of the existing waste to the new facility		4.9	
(d)	Decommissioning of the QRE store		2.0	
(e)	Contingencies		8.6	
	Sub-total		95.9	(in Sept 2002 prices)
(f)	Provision for price adjustment		(6.8)	
	Total		89.1	(in MOD prices)

8. We estimate that the annual recurrent expenditure arising from the operation of the LLRW storage facility will be $1.5 million over the 10-year operation period under the Design-Build-and-Operate contract.

9. We estimate that the project will create 30 jobs (five professionals, six ancillary staff and 19 labourers) during the construction stage, and 4 jobs (one professional, one technical and two labourers) during the operation stage.

Public Consultation

10. We consulted this Panel on 15 April 1994 on the need for a purpose-built storage facility. Members did not object to the project. The Panel was subsequently briefed on the developments of the project on 13 June 1995, 10 April 1997 and 19 March 2001. Upon the request of Members, we explored the feasibility of using storage facilities in the Mainland to store the LLRW. After we had completed the evaluation, we consulted the Panel again on 25 February 2002 on the merits and drawbacks of building the facility at Siu A Chau and storing the LLRW in a Mainland facility. We proposed to build the storage facility at Siu A Chau and Members supported our proposal.

11. The Wanchai District Council has since 1991 been requesting to decommission the QRE store. We briefed the Council on the developments of the proposed facility in April 1997, May and July 1998, May 2000, January and May 2001 and March and May 2002.

12. We consulted the then Islands District Board on the proposed project on 27 February 1995. Members supported the proposal. The Islands District Council reaffirmed its support for the project on 8 April 2002.

13. We consulted the Radiation Board on 11 April 2002 and secured the Board's support for the proposal.

14. We need to construct a small jetty at Sum Wan, Siu A Chau to provide marine access to the storage facility. As required by the Foreshore and Sea-bed (Reclamations) Ordinance, we gazetted the proposed works in July 1995 and received three objections. Despite our efforts, we were unable to resolve the objections. The Executive Council gave authorisation for the construction works in March 1997.

Environmental Implications

15. The project is a designated project under the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and an environmental permit is required for the construction and operation of the proposed facility.

16. We completed an Environmental Impact and Safety Assessment Study on the proposed facility in 1995. The study concluded that any ecological impact would be localised and that the liquid and gaseous discharges, if any, would meet the established standards and dose limits for the public in terms of radiological impact. The study further recommended that the successful tenderer should seek approval from the Director of Environmental Protection on the detailed operation procedures and the environmental monitoring and audit programmes prior to commissioning of the facility.

17. The Advisory Council on the Environment (ACE) endorsed the study in July 1995 and the study report has been placed on the register established under the EIA Ordinance. We further briefed ACE in February 2002 on Government's plan to construct the proposed facility at Siu A Chau. ACE supported the proposal.

18. We will implement the environmental mitigation measures

recommended in the study report. The cost for these measures is estimated to be approximately $4 million, which has been included in the project estimate.

19. DH has packaged the existing LLRW in leak-proof stainless steel drums. As recommended by the study report, we will install an air exhaust with filter and a sewerage delay tank in the proposed facility. The contractor will continuously monitor both on-site and off-site radiation levels. DH considers that the facility will not pose health hazards to staff or members of the public.

20. At the planning and design stage, we have considered measures to reduce the generation of construction and demolition (C&D) materials. We estimate that about 7 400m^3 of C&D materials will be generated by the project. Of these, we will reuse about 2 500 m^3 (34%) on site, 4 800 m^3 (65%) as fill in public filling areas and dispose of 100 m^3 (1%) at landfills. The notional cost of accommodating the waste at landfills is estimated to be $12,500 for this project (based on a notional unit cost of $125/$m^3$).

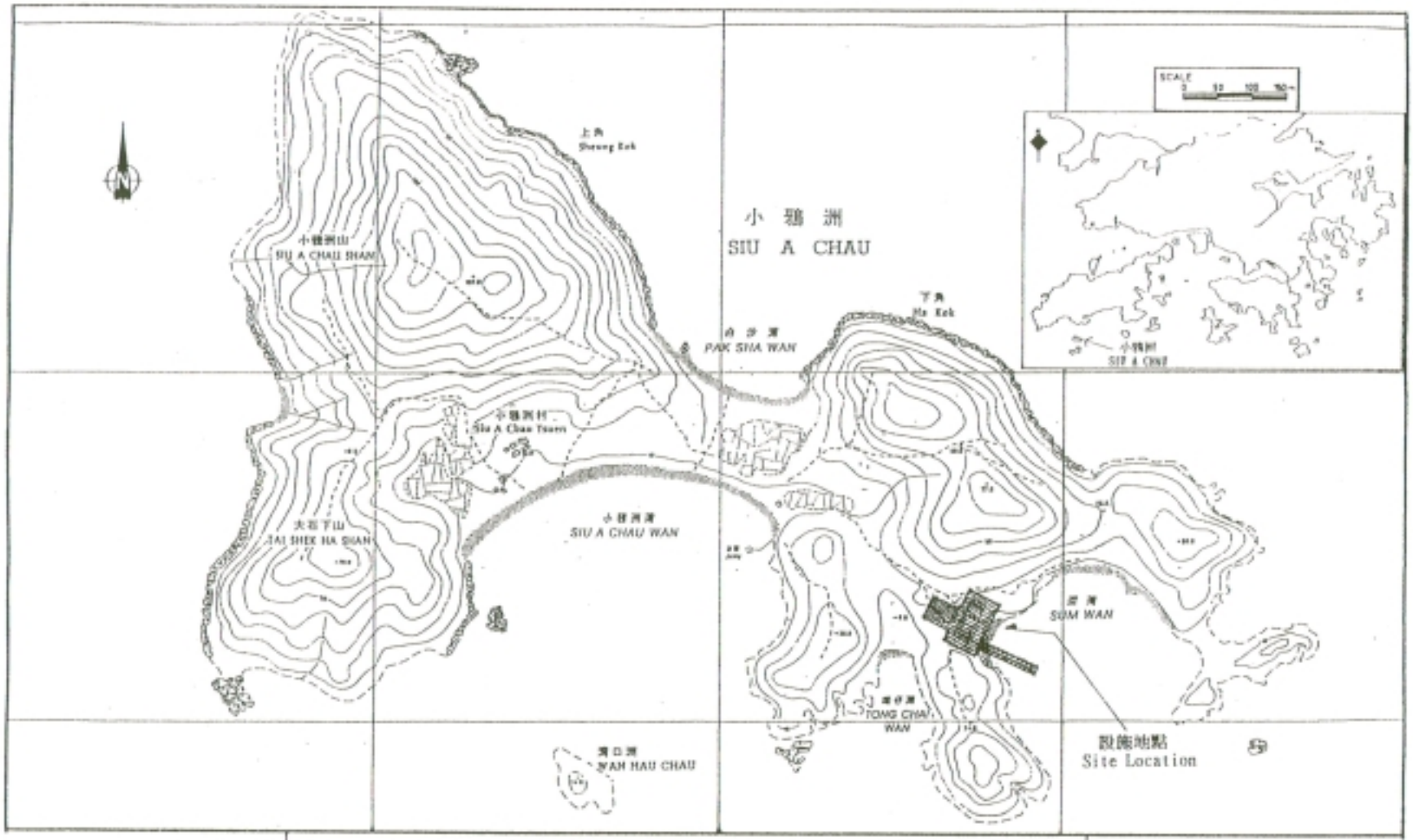
21. We will reuse the excavated materials as fill materials on site to minimise off-site disposal. We will require the contractor to submit a waste management plan (WMP) which will include appropriate measures like avoidance and reduction of C&D materials, as well as waste separation to facilitate reuse and recycling. We will ensure that the day-to-day operations on site comply with the WMP. We will control the disposal of public fill and waste to designated facilities through a trip-ticket system. We will record the disposal, reuse and recycling of C&D materials.

Advice Sought

22. Members are invited to note our proposal of upgrading **70DR** for consideration by the Public Works Subcommittee in June 2003 with a view to seeking funding approval by the Finance Committee in July 2003.

Environment, Transport and Works Bureau
June 2003

Annex



LOCATION
OF
LOW LEVEL RADIOACTIVE WASTE STORAGE FACILITY
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低放射性廢物儲存設施於小鴉洲的地點