

Legislative Council Panel on Development

13WS – Salt water supply system for Pok Fu Lam area

PURPOSE

This paper briefs Members on the proposal to upgrade **13WS** “Salt water supply system for Pok Fu Lam area” to Category A, at an estimated cost of \$268 million in money-of-the-day (MOD) prices, to provide salt water supply to Pok Fu Lam area.

PROPOSAL

2. The scope of works under **13WS** comprises -
 - (a) construction of Telegraph Bay salt water pumping station (SWPS) with a pumping capacity of 19 900 cubic metres per day (m^3/day) and the associated sea water intake culvert;
 - (b) construction of Wah Fu salt water service reservoir (SWSR) with a storage capacity of 3 000 cubic metres (m^3);
 - (c) construction of Wah Fu SWPS with a pumping capacity of 8 700 m^3/day ;
 - (d) construction of Pok Fu Lam SWSR with a storage capacity of 2 000 m^3 ;
 - (e) laying of about 600 metres (m) of salt water mains of diameters ranging from 400 to 600 millimetres (mm); and
 - (f) associated greening works.

3. We plan to commence the proposed works in December 2008 for completion in December 2011. A site plan showing the proposed works is at **Enclosure 1**.

JUSTIFICATION

4. At present, the Water Supplies Department is providing fresh water for flushing to the Pok Fu Lam area with the exception of Wah Fu Estate, Wah Kwai Estate and Ka Lung Court, to which the Housing Department (HD) is supplying salt water for the purpose. The mean daily demand of fresh water for flushing is about 9 500 m³/day. To relieve the burden on the fresh water supply systems in Pok Fu Lam area and to save fresh water resources, we propose to build a salt water supply system which will cater for the salt water demand at Pok Fu Lam area. The new system will also serve Wah Fu Estate, Wah Kwai Estate and Ka Lung Court as HD's salt water supply system is nearing the end of its service life after being in operation for about 40 years. The salt water mean daily demand of the three estates is about 5 600 m³/day. The new system will meet a total demand of 15 100 m³/day for the whole Pok Fu Lam area.

5. The proposed salt water supply system comprises the Telegraph Bay SWPS, sea water intake culvert, Wah Fu SWSR, Wah Fu SWPS, Pok Fu Lam SWSR and associated water mains.

6. The Telegraph Bay SWPS¹ of the proposed salt water supply system will extract salt water from the sea via the proposed sea water intake culvert for supply to the whole Pok Fu Lam area. Salt water will be pumped by the Telegraph Bay SWPS to the Wah Fu SWSR, which will store salt water for distribution to developments at a level below the Wah Fu SWSR. These developments have a mean daily demand of about 8 500 m³/day.

7. The Wah Fu SWSR will also supply salt water to the Wah Fu SWPS², which will pump salt water to the Pok Fu Lam SWSR for distribution to developments at a level above the Wah Fu SWSR. These developments have a mean daily demand of about 6 600 m³/day.

8. We will implement greening measures as part of the project. Photomontages showing the proposed greening measures on the roofs of the proposed SWSRs are at **Enclosure 2**.

¹ In estimating the pumping capacity of the Telegraph Bay SWPS to meet the total demand of 15 100 m³/day for the whole Pok Fu Lam area, we have allowed 10% for contingency and 20% for surge loading due to fluctuation of salt water flushing at different periods each day.

² In estimating the pumping capacity of the Wah Fu SWPS to meet the total demand of 6 600 m³/day for the developments at a level above the Wah Fu SWSR, we have allowed 10% for contingency and 20% for surge loading due to fluctuation of salt water flushing at different periods each day.

FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the proposed works to be \$268 million in MOD prices made up as follows –

		\$ million
(a)	Salt water pumping stations and associated sea water intake culvert	93.2
	(i) Telegraph Bay SWPS	44.8
	(ii) Wah Fu SWPS	5.9
	(iii) Sea water intake culvert	42.5
(b)	Salt water service reservoirs	33.7
	(i) Wah Fu SWSR	20.3
	(ii) Pok Fu Lam SWSR	13.4
(c)	Electrical and mechanical works	63.0
	(i) Telegraph Bay SWPS	39.4
	(ii) Wah Fu SWPS	19.7
	(iii) Salt water service reservoirs	3.9
(d)	Mainlaying	8.1
(e)	Greening works	0.5
(f)	Environmental mitigation measures	2.2
(g)	Consultants' fees	20.8
	(i) contract administration	1.4
	(ii) site supervision	19.4

(h)	Contingencies	18.7	
	Sub-total	240.2	(in September 2007 prices)
(i)	Provision for price adjustment	27.8	
	Total	268.0	(in MOD prices)

ENVIRONMENTAL IMPLICATIONS

10. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap 499). We conducted a Preliminary Environmental Review (PER) for the project. The PER concluded and the Director of Environmental Protection agreed that the project would not have any long-term environmental impacts. We have included \$2.2 million (in September 2007 prices) in the project estimates for the implementation of measures recommended in the PER to mitigate construction and operational stage impacts. We will incorporate these measures in the works contract.

11. We have considered the alignment of the proposed salt water mains, the layouts and foundation levels of the proposed SWPSs and SWSRs in the planning and design stages to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to public fill reception facilities³. We will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

12. We will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills

³ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

respectively through a trip-ticket system.

13. We estimate that the project will generate in total about 32 600 tonnes of construction waste. Of these, we will reuse about 10 600 tonnes (32.5%) of inert construction waste on site and deliver 21 700 tonnes (66.6%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 300 tonnes (0.9%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$0.6 million for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne at landfills⁴).

14. Of the 177 trees within the project boundary, we will preserve 78 trees. It is estimated that the proposed construction works will involve the removal of 99 trees including 95 trees to be felled and 4 trees to be replanted within the project site. All trees to be removed are considered not to be important trees⁵. We will incorporate planting proposals as part of the project, including estimated quantities of 229 trees and 1 650 square metres of grassed area.

TRAFFIC IMPLICATIONS

15. To minimize possible disruption to traffic during construction, we have completed a traffic impact assessment (TIA) for the proposed works. The TIA has concluded that the proposed works, which are located outside public roads except for a few water mains connections, would not cause any significant traffic impact. For the water mains connections, we will maintain smooth traffic flow through implementing temporary traffic management measures and will display notice boards on site to explain the reasons of temporary traffic arrangements and indicate the expected completion dates of the concerned sections of works. In addition, we will set up telephone hotlines

4 This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

5 “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

for public enquiries or complaints.

HERITAGE IMPLICATIONS

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

PUBLIC CONSULTATION

17. We consulted the District Development and Environment Committee of the Southern District Council on the proposed works on 10 March 2008. The Committee supported the proposed works.

LAND ACQUISITION

18. The proposed works do not require any land acquisition.

JOB CREATION

19. We estimate that the proposed works will create about 187 jobs (151 for labourers and another 36 for professional/technical staff) providing a total employment of 6 000 man-months.

BACKGROUND

20. We included the proposed works under **13WS** “Salt water supply system for Pok Fu Lam area” in Category B in December 2006. Except for the salt water mains mentioned in item (e) of paragraph 2 above, we have completed the network of salt water mains under **19WS**, **24WS** and **30WS** in conjunction with roadworks projects to avoid repeated road opening.

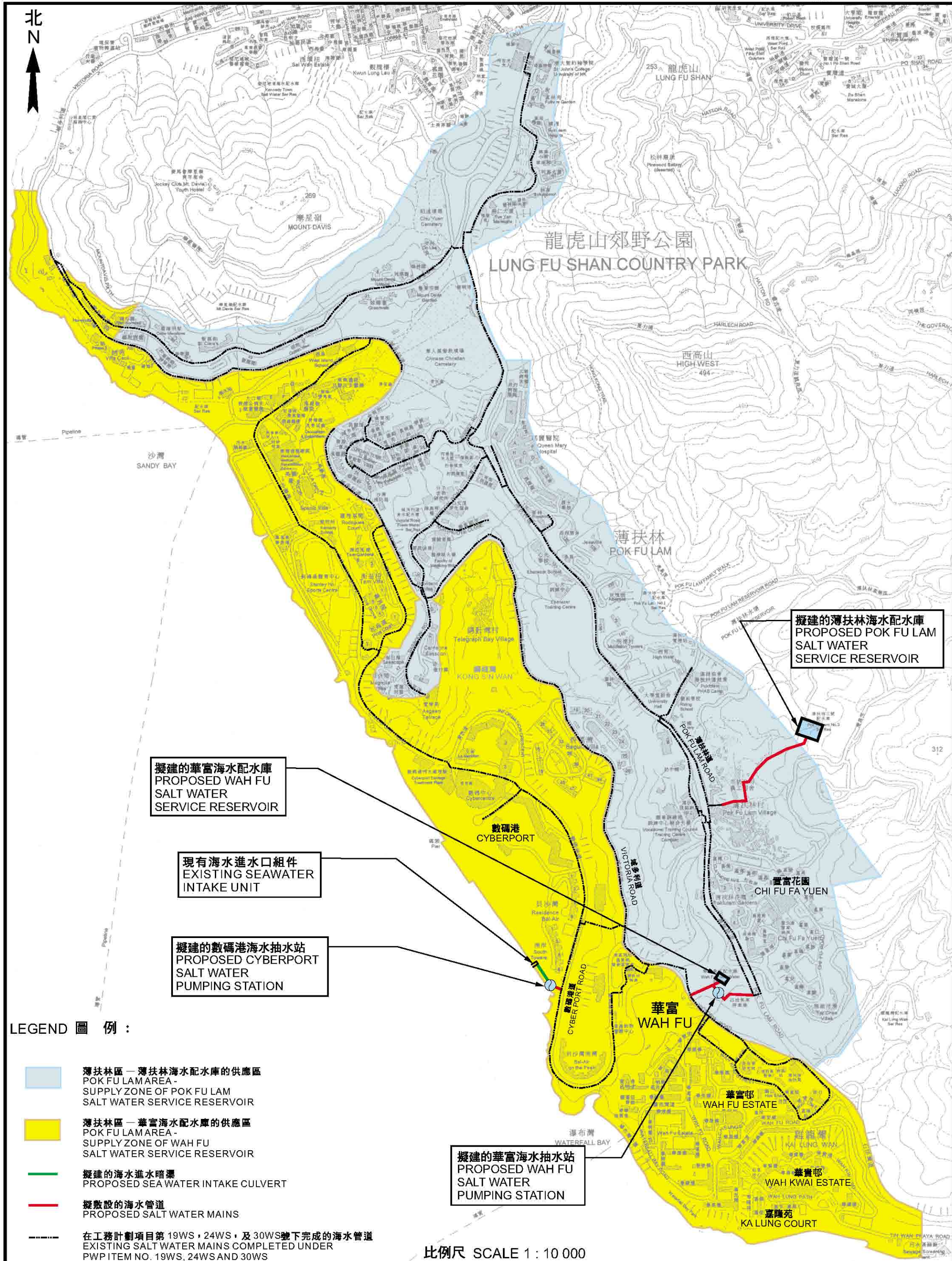
21. In July 2007, we engaged consultants to undertake detailed design of the proposed works under **13WS** at an estimated cost of \$2.6 million. We have charged the amount to block allocation **Subhead 9100WX** “Waterworks, studies and investigations

for items in Category D of the Public Works Programme”. We have substantially completed the design of the proposed works mentioned in paragraph 2 above.

WAY FORWARD

22. Members are invited to support the proposed upgrading of **13WS** to Category A for consideration by the Public Works Sub-committee in June 2008 and for funding approval by the Finance Committee in July 2008.

Development Bureau
May 2008



LEGEND 圖 例：

- 薄扶林區－薄扶林海淡水庫的供應區
POK FU LAM AREA - SUPPLY ZONE OF POK FU LAM SALT WATER SERVICE RESERVOIR
- 薄扶林區－華富海淡水庫的供應區
POK FU LAM AREA - SUPPLY ZONE OF WAH FU SALT WATER SERVICE RESERVOIR
- 擬建的海水進水暗渠
PROPOSED SEA WATER INTAKE CULVERT
- 擬敷設的海水管道
PROPOSED SALT WATER MAINS
- 在工務計劃項目第 19WS、24WS、及 30WS 號下完成的海水管道
EXISTING SALT WATER MAINS COMPLETED UNDER PWP ITEM NO. 19WS, 24WS AND 30WS

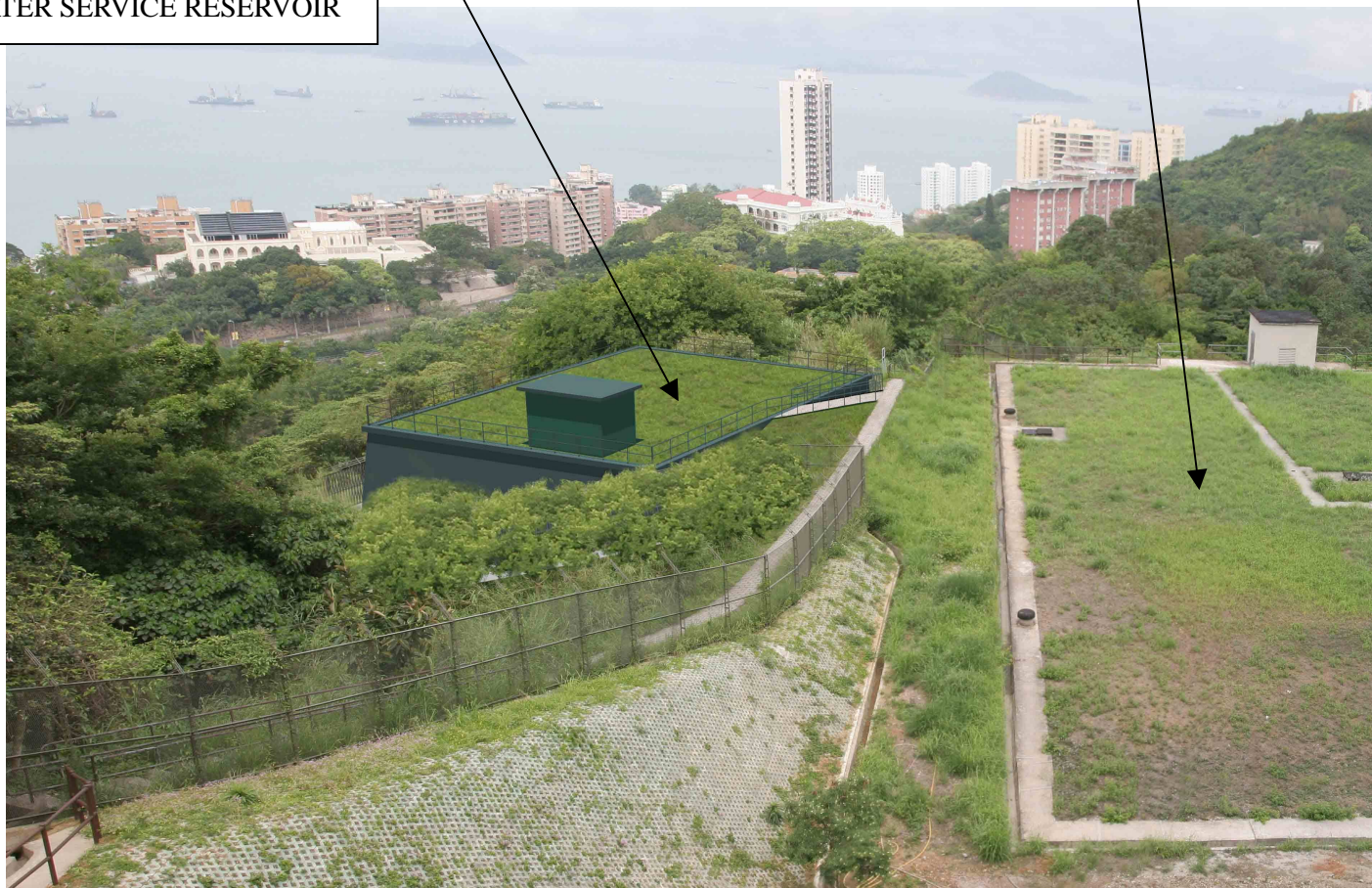
核准 APPROVED
總工程師/顧問工程師 CE/CM
23 / 4 / 2008

工務計劃項目第 13WS 號－
薄扶林區海水供應系統
PWP ITEM NO. 13WS－
SALT WATER SUPPLY SYSTEM FOR POK FU LAM AREA

水務署 WATER SUPPLIES DEPT.
草圖編號 SK 62008 / 017
SKETCH NO.

擬建薄扶林海水配水庫上蓋的擬議綠化措施
PROPOSED GREENING MEASURES ON
THE ROOF OF THE PROPOSED POK FU
LAM SALT WATER SERVICE RESERVOIR

現有的薄扶林三號食水配水庫
EXISTING POK FU LAM NO. 3 FRESH
WATER SERVICE RESERVOIR



擬建的薄扶林海水配水庫
PROPOSED POK FU LAM SALT WATER SERVICE RESERVOIR

工務計劃項目第 13WS 號 – 薄扶林區海水供應系統
PWP ITEM NO. 13WS – SALT WATER SUPPLY SYSTEM FOR POK FU LAM AREA



水務署
WATER SUPPLIES DEPT.

草圖編號
SKETCH NO.

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