

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

### **HEAD 707 – NEW TOWNS AND URBAN AREA DEVELOPMENT Civil Engineering – Land Development 717CL – Tseung Kwan O further development – site formation and infrastructure works at Pak Shing Kok**

Members are invited to recommend to Finance Committee the upgrading of **717CL** to Category A at an estimated cost of \$250.0 million in money-of-the-day prices to carry out site formation and associated infrastructure works at Pak Shing Kok, Tseung Kwan O.

#### **PROBLEM**

We need to carry out site formation works and provide associated infrastructure to serve the planned development at Pak Shing Kok, Tseung Kwan O.

#### **PROPOSAL**

2. The Director of Civil Engineering and Development, with the support of the Secretary for Development, proposes to upgrade **717CL** to Category A at an estimated cost of \$250.0 million in money-of-the-day (MOD) prices to carry out site formation and associated infrastructure works for the planned residential and school development in Pak Shing Kok, Tseung Kwan O.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The scope of **717CL** comprises –
- (a) site formation for three platforms of about 22 hectares (ha) in total;
  - (b) construction of local roads (Roads L781 and L782) of a total length of about 1 400 metre (m), with junction improvement at Wan Po Road and the associated footpaths and planting areas;
  - (c) restoration of about 10 ha of the previous borrow area in Area 108;
  - (d) slope stabilisation works;
  - (e) construction of associated drains, sewers and water mains;
  - (f) construction of a fresh water service reservoir of a storage capacity of 1 600 cubic metre (m<sup>3</sup>), a fresh water pumping station and an approximately 550 m long access road (Road L783) to the service reservoir ;
  - (g) landscaping works; and
  - (h) implementation of environmental mitigation measures and an Environmental Monitoring and Audit (EM&A) programme for the works mentioned in (a) to (g) above.

———— The site plan of the proposed works is at Enclosure 1.

4. We plan to commence the construction works in January 2009 for completion in October 2012.

**/JUSTIFICATION.....**

**JUSTIFICATION**

5. We completed the “Feasibility Study on Further Development of Tseung Kwan O” (TKO Study) in December 2005. The TKO Study recommended developing Pak Shing Kok into a low to medium density residential area for a population of about 5 000 together with school development. The Tseung Kwan O Outline Zoning Plan, incorporating the land use proposals for Pak Shing Kok recommended in the TKO Study, was agreed by the Rural and New Town Planning Committee of the Town Planning Board on 7 March 2008.

6. The TKO Study has recommended site formation works for three platforms and the provision of infrastructure at Pak Shing Kok, including a fresh water service reservoir and a fresh water pumping station because of topographic reason, to serve the planned residential and school development. Our target is to complete the site formation and infrastructure works by 2012 so as to make available Pak Shing Kok for the planned development at the earliest.

7. Pak Shing Kok, including Area 108 in the northern part of it, was previously a borrow area providing filling materials for reclaiming Tseung Kwan O. While site formation works for Area 108 are not required because this area is not where the planned residential and school development will be located, we need to restore this area to improve the landscape and visual quality besides preventing erosion. If the restoration works are not carried out concurrently with the works in paragraph 6 above, there would be substantial nuisance to residents and students to be accommodated to the south of the borrow area when the restoration works are carried out in the future.

**FINANCIAL IMPLICATIONS**

8. We estimate the cost of the project to be \$250.0 million in MOD prices (see paragraph 9 below), made up as follows -

	<b>\$ million</b>
(a) Site formation and earthworks	44.4
(b) Road works	25.7
(c) Restoration works in Area 108	23.3
(d) Slope stabilisation works	10.4

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		<b>\$ million</b>	
(e)	Drainage and sewerage works	25.2	
(f)	Fresh water service reservoir, pumping station and water mains	44.5	
(g)	Landscaping works	5.0	
(h)	Environmental mitigation measures and EM&A Programme	5.7	
	(i) general mitigation measures	2.7	
	(ii) remediation works to contaminated soil	2.0	
	(iii) EM&A Programme	1.0	
(i)	Consultants' fees	16.8	
	(i) construction stage	1.3	
	(ii) resident site staff costs	15.5	
(j)	Contingencies	20.1	
	Sub-total	221.1	(in September 2007 prices)
(k)	Provision for price adjustment	28.9	
	Total	250.0	(in MOD prices)

We will carry out the detailed design of and construction supervision works for the fresh water service reservoir, pumping station and part of the watermains, drains, sewers and roadworks along the service reservoir access road (Road L783) by in-house staff resources of the Water Supplies Department. Owing to insufficient in-house resources, we propose to engage consultants to supervise the rest of the proposed works. A breakdown by man-months of the estimate for consultants' fees is at Enclosure 2.

9. Subject to approval, we will phase the expenditure as follows –

<b>Year</b>	<b>\$ million (Sept 2007)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2008 – 2009	1.7	1.02575	1.7
2009 – 2010	53.9	1.06293	57.3
2010 – 2011	75.9	1.10545	83.9
2011 – 2012	41.4	1.14967	47.6
2012 – 2013	18.9	1.19566	22.6
2013 – 2014	19.8	1.24348	24.6
2014 – 2015	9.5	1.29322	12.3
	<u>221.1</u>		<u>250.0</u>

10. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices for public sector building and construction output from 2008 to 2015. We will invite tenders for the proposed works under standard remeasurement contracts because the quantities of the site formation, excavation, restoration and slope stabilization works may vary depending on actual ground conditions. The contracts will provide for price adjustments as the contract periods will exceed 21 months.

11. We estimate the annual recurrent expenditure arising from this project to be about \$2.8 million.

**/PUBLIC .....**

## **PUBLIC CONSULTATION**

12. We consulted the Sai Kung District Council on the proposed works under **717CL** on 30 March 2007 and 27 July 2007. Members had no objection to the proposed works.

13. We gazetted the proposed road scheme of **717CL** under the Roads (Works, Use and Compensation) Ordinance (RO) and the proposed sewerage scheme of **717CL** under the RO as applied by the Water Pollution Control (Sewerage) Regulation on 9 November 2007. No objection was received. The Secretary for Transport and Housing authorised the road scheme on 15 February 2008 and the Director of Environmental Protection authorised the sewerage scheme on 22 February 2008.

14. We consulted the Legislative Council Panel on Development on the proposed works by circulation of an information paper on 17 April 2008. Members raised no objection to the proposed works.

## **ENVIRONMENTAL IMPLICATIONS**

15. The proposed works under **717CL** do not constitute a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance. In the context of the TKO Study, in September 2005 we completed an EIA report under Schedule 3 of the EIA Ordinance on the planned development under the TKO Study. The EIA Report concluded that the planned development, including the works for supporting the development now proposed under **717CL**, would be environmentally acceptable with the implementation of the mitigation measures recommended under the TKO Study during construction and operation phases. These measures include the frequent watering of the site, the provision of wheel-washing facilities to reduce emission of fugitive dust, the use of movable noise barriers with particular plant during construction, an EM&A programme as well as other procedures as recommended by the Environmental Protection Department. The Director of Environmental Protection approved the EIA report on 8 December 2005.

16. In 2007, we conducted a Preliminary Environmental Review (PER) to review and ascertain the findings and recommendations in the approved Schedule 3 EIA report for the TKO Study in relation to the proposed works under **717CL**. The PER reconfirmed that, with the appropriate mitigation measures in place during construction and operation stages as recommended in the EIA Report, there would not be any significant environmental impacts. We will incorporate into the works contract mitigation measures recommended in the EIA report to control potential pollution arising from construction works to within established standards and guidelines. We have included \$2.7 million in the project estimate for implementing these measures.

17. We have conducted a contamination assessment in parts of the site formation area with signs of land contamination. We estimate that about 760 m<sup>3</sup> of contaminated soil will require treatment by an appropriate remediation method prior to backfill on site. We have included \$2.0 million in the project estimate for implementing remediation works to the contaminated soil.

18. We have considered the alignment and design level of the proposed works under **717CL** in the planning and design stages to reduce the generation of construction waste where possible. We will reuse about 710 000 tonnes of inert construction waste from the existing surcharge mounds in the Tseung Kwan O Town Centre South reclamation area for the proposed site formation works and restoration works. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable sites as far as possible. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste as well as non-timber formwork to further minimise the generation of construction waste.

19. We will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate 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 and non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert and non-inert construction waste to public fill reception facilities<sup>1</sup> and landfills respectively through a trip-ticket system.

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<sup>1</sup> 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.

20. We estimate that the project will generate about 134 000 tonnes of construction waste<sup>2</sup> in total. Of these, we will reuse about 120 000 tonnes (89.6%) of inert construction waste on site, and will dispose of 14 000 tonnes (10.4%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at landfill sites is estimated to be \$1,750,000 for this project (based on a unit cost of \$125/tonne<sup>3</sup> at landfills).

## HERITAGE IMPLICATIONS

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

## LAND ACQUISITION

22. The project does not require any land acquisition. However, a number of Short Term Tenancies will need to be terminated with demolition of structures and site clearance works involved. The proposed works do not involve any compensation or clearance costs.

## BACKGROUND INFORMATION

23. We upgraded **717CL** to Category B in September 2005.

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<sup>2</sup> The total construction waste generated in the project has included the estimated volume of unsuitable material that will be generated in processing the inert construction waste from the existing surcharge mounds in the Tseung Kwan O Town Centre South reclamation area as referred to in paragraph 18.

<sup>3</sup> 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/m<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are fully utilised.



24. In 2007, we used in-house resources of the Water Supplies Department to carry out the detailed design of and construction supervision works for the fresh water service reservoir, pumping station and part of the watermains, drains, sewers and roadworks along the service reservoir access road (Road L783). We engaged consultants to carry out site investigation and detailed design for the rest of the proposed works in September 2006. We have charged the cost of about \$5.5 million to block allocation **Subhead 7100CX** “New towns and urban area works, studies and investigations for items in Category D of the Public Works Programme”. We have completed the site investigation, detailed design and preparation of tender documents for the proposed works.

25. Of the 1 209 trees within the **717CL** project boundary, 1 112 trees will be preserved. The proposed works will involve the removal of 97 trees including 68 trees to be felled and 29 trees to be transplanted within the project boundary. All the trees to be removed or transplanted are not important trees<sup>4</sup>. We will incorporate planting proposals for an estimate of 308 trees, 9 800 shrubs and 1 200 m<sup>2</sup> of grassed area along the future roads as part of the project. We will use hydroseeding to protect formed slopes and open areas as appropriate. As part of the restoration works for the previous borrow area in Area 108, we will plant 1 300 trees, 11 500 whip trees, 85 200 shrubs and 48 400 m<sup>2</sup> of grassed area.

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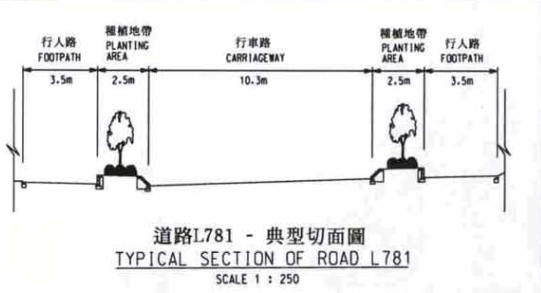
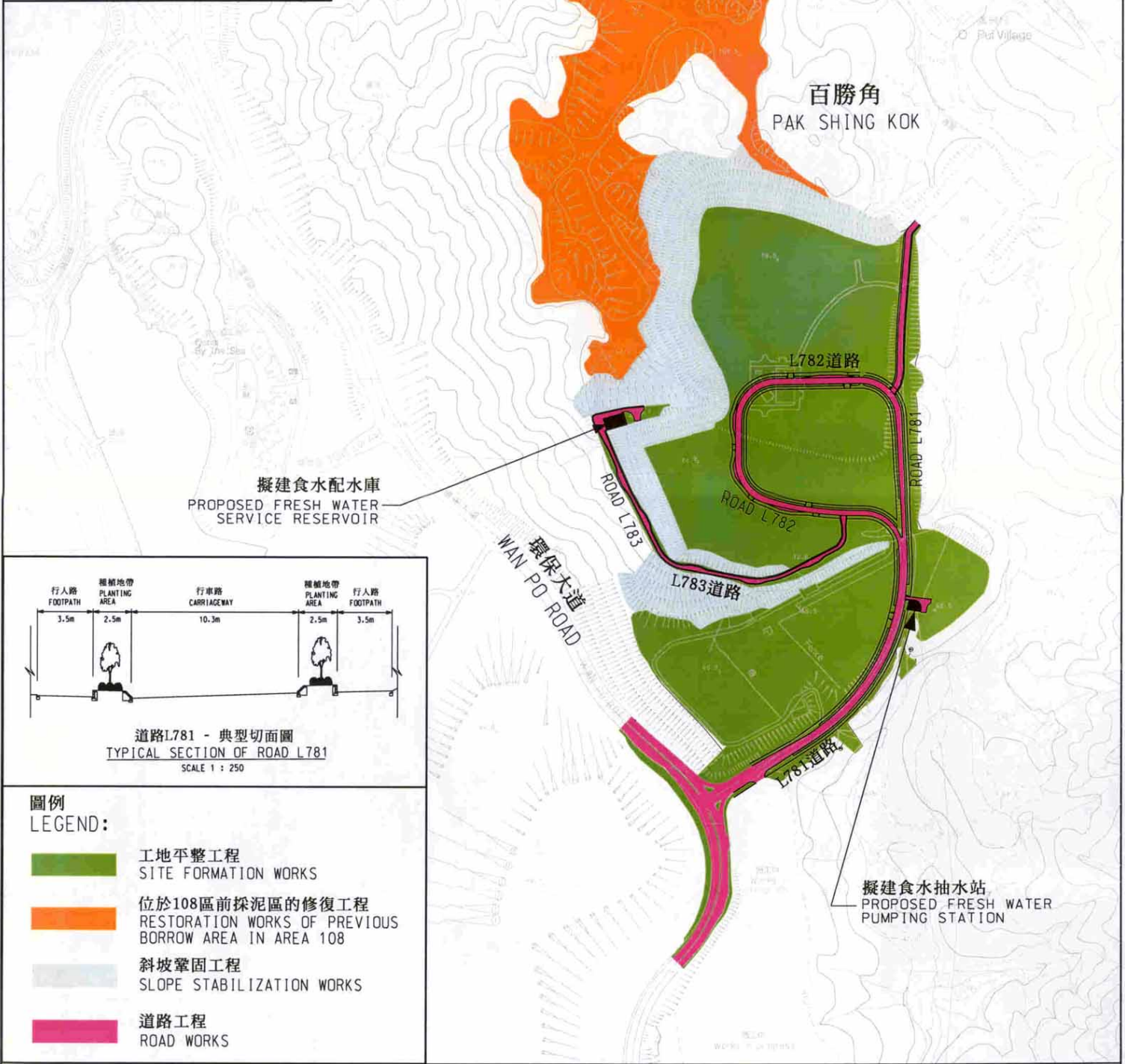
<sup>4</sup> “Important trees” refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria -

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance, e.g. Fung Shui trees, trees 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 the 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 a trunk diameter equal to or exceeding 1.0 m (measured at 1.3 m above ground level), or with a height/canopy spread equal to or exceeding 25 m.

26. We estimate that the proposed works will create about 190 jobs (155 for labourers and another 35 for professional/technical staff), providing a total employment of 5 000 man-months.

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Development Bureau  
May 2008



- 圖例  
LEGEND:
- 工地平整工程  
SITE FORMATION WORKS
  - 位於108區前採泥區的修復工程  
RESTORATION WORKS OF PREVIOUS BORROW AREA IN AREA 108
  - 斜坡鞏固工程  
SLOPE STABILIZATION WORKS
  - 道路工程  
ROAD WORKS

二〇〇八年至二〇〇九年度工務小組委員會文件 P.W.S.C. SUBMISSION 2008-2009

圖則名稱 drawing title 將軍澳進一步發展 - 百勝角工地平整及基礎設施工程 - 平面圖 TSEUNG KWAN O FURTHER DEVELOPMENT - SITE FORMATION AND INFRASTRUCTURE WORKS AT PAK SHING KOK - LAYOUT PLAN	繪圖 drawn	簽署initial	日期date	項目編號 item no.	辦事處 office 新界東拓展處 NEW TERRITORIES EAST DEVELOPMENT OFFICE
	C S LAU	SIGNED	20.05.08	7717CL	
	核對 checked	簽署initial	日期date	比例 scale	土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
	C W MOK	SIGNED	20.05.08	1 : 5000	
核准 approved	簽署initial	日期date	圖則編號 drawing no.		
W T YEUNG	SIGNED	20.05.08	TK2348		

**Enclosure 2 to PWSC(2008-09)21**

**717CL – Tseung Kwan O further development – site formation and infrastructure works at Pak Shing Kok**

**Breakdown of the estimates for consultants' fees**

<b>Consultants' staff costs</b>		<b>Estimated Man-months</b>	<b>Average MPS* salary point</b>	<b>Multiplier (Note 1)</b>	<b>Estimated fees (\$ million)</b>
(a) Consultants' fees for construction stage <sup>(Note 2)</sup>	Professional	--	--	--	0.8
	Technical	--	--	--	0.5
(b) Resident site staff <sup>(Note 3)</sup>	Professional	80	38	1.6	7.3
	Technical	273	14	1.6	8.2
<b>Total</b>					16.8

\* MPS = Master Pay Scale

**Notes**

1. A multiplier of 1.6 is applied to the average MPS point to estimate the cost of resident site staff supplied by the consultants. (As at 1 April 2007, MPS pt. 38 = \$56,945 per month and MPS pt. 14 = \$18,840 per month.)
2. The consultants' staff cost for the contract administration and preparation of as-built drawings is calculated in accordance with the existing consultancy agreement. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **717CL** to Category A.
3. We will only know the actual man-months and actual costs after completion of the construction works.