For discussion
on 16 October 2002

PWSC(2002-03)59

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 711 – HOUSING
Transport – Footbridges and pedestrian tunnels
130TB – Construction of a footbridge at Ap Lei Chau Bridge Road and improvements to Ap Lei Chau Bridge Road and Ap Lei Chau Drive

Members are invited to recommend to Finance Committee the upgrading of **130TB** to Category A at an estimated cost of $31.7 million in money-of-the-day prices for the construction of a footbridge at Ap Lei Chau Bridge Road and improvements to Ap Lei Chau Bridge Road and Ap Lei Chau Drive.

PROBLEM

The existing vehicular and pedestrian traffic network at the northeastern part of Ap Lei Chau needs to be upgraded to enhance road safety and to cope with the future traffic demand generated from the housing developments in this area.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Housing, Planning and Lands and the Secretary for the Environment, Transport and Works, proposes to upgrade **130TB** to Category A at an estimated cost of $31.7 million in money-of-the-day (MOD) prices for the construction of a footbridge at Ap Lei Chau Bridge Road, improvement of the junction of Ap Lei Chau Drive and Lei Tung Estate Road, and improvement of the junction of Ap Lei Chau Drive and Ap Lei Chau Praya Road.

/PROJECT .....

PROJECT SCOPE AND NATURE

3. The scope of **130TB** comprises –

(a) construction of a 2.5-metre wide covered footbridge across Ap Lei Chau Bridge Road;

(b) construction, reconstruction and modification of retaining walls of 320 metres in length along Ap Lei Chau Bridge Road, Ap Lei Chau Drive and Lei Tung Estate Road;

(c) signalisation of the junction of Ap Lei Chau Drive and Lei Tung Estate Road, addition of a northbound traffic lane at the approaching section of Lei Tung Estate Road for exclusive left turn into Ap Lei Chau Drive, and addition of a westbound traffic lane at the eastern section of Ap Lei Chau Drive;

(d) enlargement of the roundabout with a turning radius of nine metres to 13.8 metres at the junction of Ap Lei Chau Drive and Ap Lei Chau Praya Road; and

(e) ancillary works on footpath enhancement, traffic management, landscape and drainage.

A layout plan is at the Enclosure.

4. We have substantially completed the detailed design, working drawings and tender documents of the proposed works. We plan to start the construction works in February 2003 for completion in December 2004.

JUSTIFICATION

5. We need to upgrade the existing vehicular and pedestrian traffic network at the northeast part of Ap Lei Chau to enhance road safety and to cope with the future traffic demand generated from the housing developments[1] in this area.

/Junction .....

[1] The major developments include a residential development to the north of Ap Lei Chau Drive for completion in end 2004 and another residential development at Ap Lei Chau Praya Road for completion in 2006 with a total planned population of about 7 000.

Junction of Ap Lei Chau Bridge Road and Ap Lei Chau Drive

6. This is a signalised T-junction with an at-grade pedestrian crossing at Ap Lei Chau Bridge Road.

7. At present, jaywalking is prevalent at this junction. In the 24-month period commencing 1 January 2000, there were 18 accidents, resulting in 26 injuries. To enhance road safety, we propose to construct a footbridge across Ap Lei Chau Bridge Road to replace the existing at-grade pedestrian crossing.

Junction of Ap Lei Chau Drive and Lei Tung Estate Road

8. This T-junction is a priority junction with two-lane two-way arrangement on both the approaching section of Lei Tung Estate Road and the eastern section of Ap Lei Chau Drive.

9. According to the latest traffic forecast conducted by the Transport Department, the capacity indices of this junction with and without the proposed signalisation and road widening at morning peak hours are as follows –

Junction of Ap Lei Chau Drive and Lei Tung Estate Road	Type of Capacity Index	Index at morning peak hours			
		2002	2004	2006	2011
without signalisation and road widening	DFC[2]	0.82	0.90	1.00	1.15
with signalisation and without road widening	RC[3]	-22%	-24%	-30%	-34%
with signalisation and road widening	RC	-	29%	17%	12%

/We .....

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2 Design flow to capacity (DFC) ratio is a design parameter which measures the degree of saturation of traffic at a priority junction. A DFC ratio above 1.0 indicates the presence of traffic queues. A DFC ratio of 0.85 is generally used in junction design where situation permits.

3 The performance of a traffic signal junction is indicated by its Reserve Capacity (RC). A positive RC indicates that the junction is operating with spare capacity. A negative RC indicates that the junction is overloaded, thus resulting in traffic queues and longer delay time.

We anticipate that this junction will become saturated following the population intake of the housing developments in this area commencing end 2004. To ensure smooth and efficient traffic, we propose to signalise this junction, provide an additional northbound lane at the approaching section of Lei Tung Estate Road, and an additional westbound lane at the eastern section of Ap Lei Chau Drive.

Junction of Ap Lei Chau Drive and Ap Lei Chau Praya Road

10. This T-junction is a priority junction with a roundabout of a turning radius of nine metres.

11. To tie in with the population intake of the housing developments in this area commencing end 2004, bus services in the locality will increase. We propose to enlarge the existing roundabout to cope with the increasing bus traffic.

FINANCIAL IMPLICATIONS

12. We estimate the cost of the project to be $31.7 million in MOD prices (see paragraph 13 below), made up as follows –

		$ million	
(a)	Footbridge	11.3	
(b)	Retaining walls	9.9	
(c)	Roadworks and drainage works	7.3	
(d)	Landscape works	0.5	
(e)	Contingencies	2.9	
	Sub-total	31.9	(in September 2002 prices)
(f)	Provision for price adjustment	(0.2)	
	Total:	31.7	(in MOD prices)

/13. .....

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

Year	$ million (Sep 2002)	Price Adjustment Factor	$ million (MOD)
2002 – 2003	0.5	1.00000	0.5
2003 – 2004	15.8	0.99250	15.7
2004 – 2005	12.3	0.99250	12.2
2005 – 2006	3.3	0.99250	3.3
	31.9		31.7

14. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period 2002 to 2006. We shall tender the works under a lump-sum contract with re-measurement items. The contract will not include provisions for price fluctuation as the contract period is less than 21 months.

15. We estimate the annual recurrent expenditure arising from the proposed works to be $180,000.

PUBLIC CONSULTATION

16. We consulted the Traffic and Transport Committee (T&TC) of the then Southern Provisional District Board (SPDB) on 14 September 1998 and 16 November 1999, the SPDB on 4 February 1999, and the T&TC of the Southern District Council (SDC) on 9 October 2000. Members supported the proposed works.

17. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 5 February 1999, and the first and second amendments to the proposed works on 29 October 1999 and 7 December 2001 respectively. We received no objection. The then Secretary for Transport authorized **130TB** under the Roads Ordinance on 14 March 2002.

/18. .....

18. We informed the SDC of the progress of the project regularly in its T&TC and Capital Works Committee meetings.

ENVIRONMENTAL IMPLICATIONS

19. The road widening work is a designated project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and an Environmental Permit is required for its construction and operation. The Director of Environmental Protection (DEP) issued the Environmental Permit in April 2002.

20. We completed the EIA and concluded that the project would have no adverse long-term environmental implications. For short-term impacts during construction, we will control noise, dust and site run-off to within the established standards and guidelines through the implementation of appropriate mitigation measures recommended in the EIA report. We have included in the overall project estimate an amount of $400,000 for implementing the environmental mitigation measures including an environmental monitoring and audit programme.

21. We have considered ways to reduce the generation of construction and demolition (C&D) materials during the planning and design stages. We estimate that the project will generate about 9 200 cubic metres (m^3) of C&D materials. Of these, we will reuse/recycle about 500 m^3 (6%) on site, reuse 8 500 m^3 (92%) in public filling areas[4] and dispose of 200 m^3 (2%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be $25,000 for this project (based on a notional unit cost[5] of $125/$m^3$). We will continue to identify during the construction stage other projects which can utilize the C&D materials generated from this project.

22. We will require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to

/avoid .....

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[4] A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a license issued by the Director of Civil Engineering.

[5] 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^3$), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

avoid, reduce, reuse and recycle the C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will require the contractor to designate an area for waste segregation, to separate public fill from C&D waste for disposal and to sort the C&D materials by category on-site to facilitate reuse/recycling. The reused/recycled materials shall include paper, cardboard, timber and metal. We will control the disposal of these materials through a trip-ticket system. We will record the disposal, reuse and recycling of the C&D materials for monitoring purposes.

LAND ACQUISITION

23. The project does not require land acquisition.

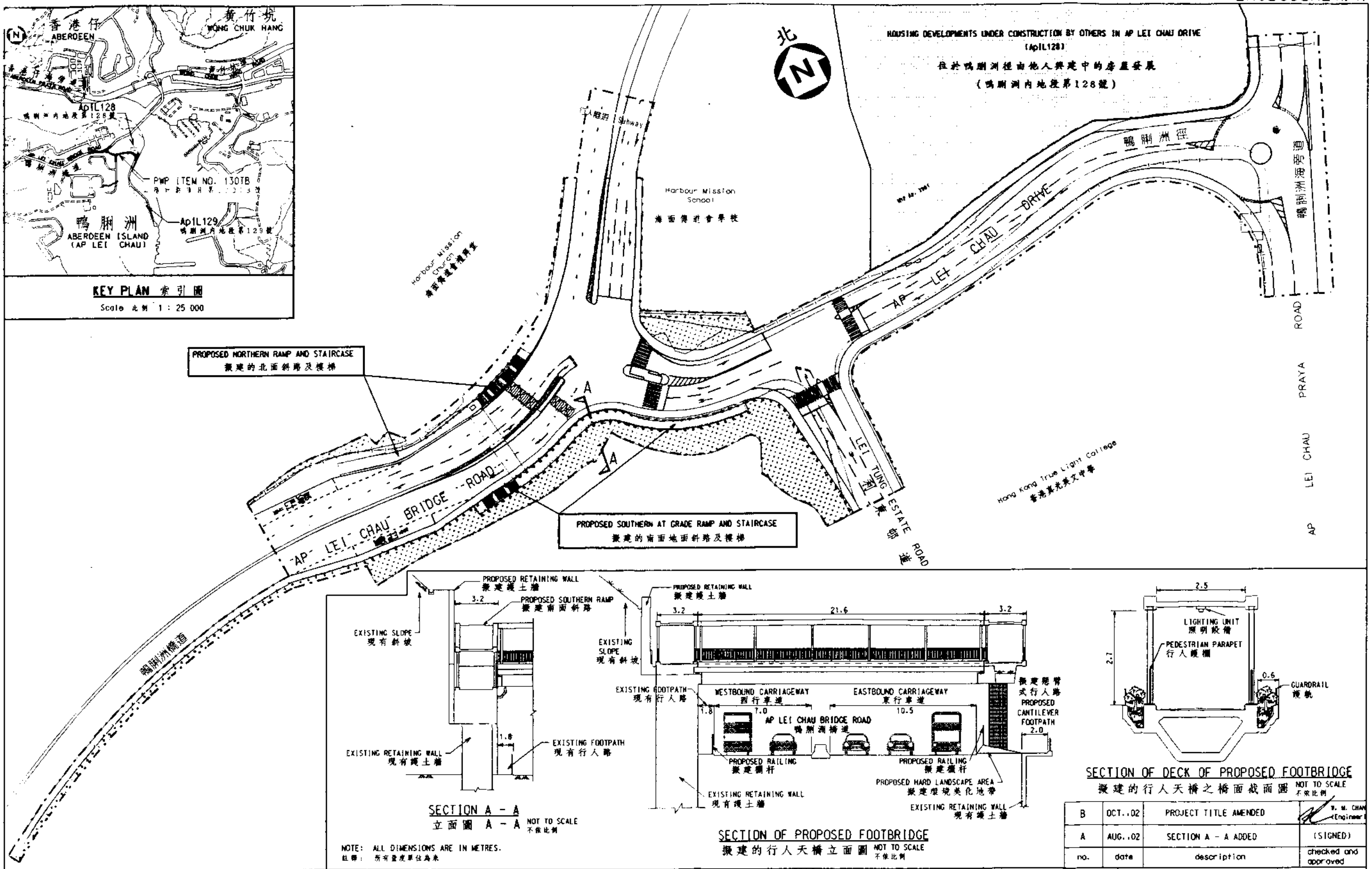
BACKGROUND INFORMATION

24. We upgraded **130TB** to Category B in February 1997.

25. We included an item under **Subhead B100HX** – 'Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme' in October 1997 at an estimated cost of $3.5 million for the EIA study and the site investigation works. The consultants completed the site investigation works and EIA study in December 1998 and January 1999 respectively.

26. We estimate that the proposed works will create some 35 new jobs comprising five professional / technical staff and 30 labourers, totalling 693 man-months.

Housing, Planning and Lands Bureau
October 2002


KEY PLAN 索引圖
Scale 比例 1 : 25 000
香港仔 ABERDEEN
黃竹坑 WONG CHUK HANG
ApIL128
PWP ITEM NO. 130TB
ApIL129
鴨脷洲 ABERDEEN ISLAND (AP LEI CHAU)
北
HOUSING DEVELOPMENTS UNDER CONSTRUCTION BY OTHERS IN AP LEI CHAU DRIVE (ApIL128)
在於鴨脷洲徑由他人興建中的房屋發展
(鴨脷洲內地段第128號)
Harbour Mission School
海面傳道會學校
Harbour Mission Church
海面傳道會禮拜堂
Subway
AP LEI CHAU DRIVE
鴨脷洲徑
AP LEI CHAU PRAYA ROAD
鴨脷洲海旁道
PROPOSED NORTHERN RAMP AND STAIRCASE
擬建的北面斜路及樓梯
PROPOSED SOUTHERN AT GRADE RAMP AND STAIRCASE
擬建的南面地面斜路及樓梯
AP LEI CHAU BRIDGE ROAD
鴨脷洲橋道
LEI TUNG ESTATE ROAD
利東邨道
Hong Kong True Light College
香港真光英文中學
PROPOSED RETAINING WALL
擬建擋土牆
PROPOSED SOUTHERN RAMP
擬建南面斜路
EXISTING SLOPE
現有斜坡
EXISTING RETAINING WALL
現有擋土牆
EXISTING FOOTPATH
現有行人路
SECTION A - A
立面圖 A - A
NOT TO SCALE
不依比例
3.2
21.6
1.8
WESTBOUND CARRIAGEWAY
西行車道
EASTBOUND CARRIAGEWAY
東行車道
7.0
10.5
2.0
AP LEI CHAU BRIDGE ROAD
鴨脷洲橋道
PROPOSED RAILING
擬建欄杆
擬建懸臂式行人路
PROPOSED CANTILEVER FOOTPATH
PROPOSED HARD LANDSCAPE AREA
擬建硬境美化地帶
SECTION OF PROPOSED FOOTBRIDGE
擬建的行人天橋立面圖
2.5
2.7
0.6
LIGHTING UNIT
照明設備
PEDESTRIAN PARAPET
行人護欄
GUARDRAIL
護軌
SECTION OF DECK OF PROPOSED FOOTBRIDGE
擬建的行人天橋之橋面截面圖
NOTE: ALL DIMENSIONS ARE IN METRES.
註釋：所有量度單位為米

no.	date	description	checked and approved
B	OCT.02	PROJECT TITLE AMENDED	W. M. CHAN (Engineer)
A	AUG.02	SECTION A - A ADDED	(SIGNED)

project title 計劃名稱
PWP ITEM NO.130TB
CONSTRUCTION OF A FOOTBRIDGE AT AP LEI CHAU BRIDGE ROAD AND IMPROVEMENTS TO AP LEI CHAU BRIDGE ROAD AND AP LEI CHAU DRIVE
工務計劃項目第 130TB 號
鴨脷洲橋道行人天橋興建工程及鴨脷洲橋道和鴨脷洲徑改善工程

LEGEND: 圖例
- LIMIT OF WORKS AREA 施工區界限
- ROAD MARKING 道路標記
- TRAFFIC FLOW PATTERN 交通流向
- PEDESTRIAN CROSSING 行人過路處
- EXISTING PEDESTRIAN CROSSING TO BE DELETED 將予取消的現有行人過路處
- EXISTING KERBLINE TO BE REALIGNED 將予重新定線的路邊線
- PROPOSED RETAINING WALL OR EXISTING RETAINING WALL TO BE MODIFIED 擬建的擋土牆或將予修改的現有擋土牆
- PROPOSED FOOTBRIDGE 擬建的行人天橋
- PROPOSED LANDSCAPE AREA / EXISTING LANDSCAPE AREA TO BE RECONSTRUCTED 擬建的綠化地帶或將予重建的現有綠化地帶
- PROPOSED FOOTPATH / CENTRAL RESERVE / REFUGE ISLAND / EXISTING FOOTPATH, CENTRAL RESERVE & REFUGE ISLAND TO BE RECONSTRUCTED 擬建的行人路／路中預留帶／安全島或將予重建的現有行人路／路中預留帶／安全島
- EXISTING CENTRAL RESERVE / REFUGE ISLAND TO BE DELETED 將予取消的現有路中預留帶／安全島
- PROPOSED ROAD WIDENING 擬建的道路擴闊工程

				date
designed	W. M. CHAN (Engineer)	(SIGNED)		JUNE.02
drawn	M.H. LEE (T.O.)	(SIGNED)		JUNE.02
checked	W. M. CHAN (Engineer)	(SIGNED)		JUNE.02
approved		(SIGNED)	SE/C1	JUNE.02

drawing no. 圖號 HHC10101-SP0001B

scale 比例 1 : 1000 OR AS SHOWN

HONG KONG REGIONAL OFFICE

HIGHWAYS DEPARTMENT

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