For discussion
on 25 June 2003

PWSC(2003-04)36

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 711 - HOUSING
Civil Engineering - Land development
571CL - Site formation at Lung Wah Street

Members are invited to recommend to Finance Committee to increase the approved project estimate for **571CL** from $117.5 million by $17.7 million to $ 135.2 million in money-of-the-day prices.

PROBLEM

The approved project estimate (APE) of **571CL** is not sufficient to cover the cost of works under the project.

PROPOSAL

2. The Director of Civil Engineering (DCE), with the support of the Secretary for Housing, Planning and Lands, proposes to increase the APE of **571CL** from $117.5 million by $17.7 million to $135.2 million in money-of-the-day (MOD) prices.

PROJECT SCOPE AND NATURE

3. The scope of **571CL** comprises –

(a) formation of about 0.6 hectare of building platforms;

/(b) .....

(b) construction of about 340 metres (m) of retaining walls, slope improvement works and debris barriers;

(c) construction of a pedestrian staircase of about 90 m in length;

(d) associated drainage works;

(e) diversion of about 500 m of watermains with diameters ranging from 600 millimetres (mm) to 1000 mm, and

(f) landscaping works including transplanting of 17 trees.

A site plan showing details of the proposed works is at Enclosure 1.

JUSTIFICATION

4. The increase in the APE of $17.7 million is required to cover the additional costs associated with the following –

(a) higher-than-expected tender outturn price;

(b) additional works for retaining walls, slope improvement and debris barriers;

(c) additional drainage works; and

(d) additional watermain works.

Details for the increase are set out in paragraphs 5 – 8 below.

Higher-than-expected tender outturn price

5. In October 2001, we awarded Contract No. CV/2000/11 to the lowest tenderer. However, the actual tender price was higher than the original estimate by $2.8 million (i.e., about 3%). We expected that tenderers would be more aggressive in their tendering because of intense competition in the market. However, the actual tendered rates were more conservative, which might reflect that tenderers were cautious about the difficult site conditions and tight construction programme of the project.

/**Additional** .....

Additional works for retaining walls, slope improvement and debris barriers

6. We have also required the contractor to undertake the following additional works –

(a) The retaining walls are formed by piles bored into the ground. During the design stage, we carried out site investigation to estimate the quantities of rock that needed to be excavated for piling works. However, during construction we found that the actual amount of rock needed to be excavated exceeded the original estimation by about one third. This was mainly due to the profile of rock in areas not covered by site investigation boreholes being higher than the levels assumed in the design stage. This accounted for an increase in cost of $5.8 million.

Separately, we needed to modify the design of jointing steel reinforcement[1] for the bored pile retaining walls. In addition, we needed to increase the provision of quantities of items related to the retaining walls in the Bill of Quantities of the contract documents. This has led to an increase in cost of $9.2 million.

(b) As regards slope improvement works, we needed to remove a large unstable boulder and carry out protection works for two eroded stream courses. These works were not anticipated at the design stage because the site was covered by dense vegetation. The associated cost increase is estimated to be $0.3 million.

(c) The existing profile of the site was in the form of a u-shaped valley and the existing ground was covered with thick vegetation. After site clearance, the sides of the valley were found to be steeper than expected. Some debris barriers located on the slopes were therefore required to be constructed at greater depth and height to suit actual ground conditions and profile. Also, we needed to increase the provision of quantities of items related to the debris barriers in the Bill of Quantities of the contract documents. The associated cost increase is estimated to be $0.9 million.

/**Additional** .....

[1] The conventional method of jointing steel reinforcement is by overlapping of the steel bars. We changed this at the construction stage to the use of couplers (head to head connector) to suit the actual site conditions.

Additional drainage works

7. The main storm water drainage system is in the form of a large diameter pipeline connecting downstream to an existing drain in Smithfield. We found that the level of this existing drain was lower than expected. As a result, additional works were required inside the drainage manholes to make up the level difference. Together with some modifications of the drainage system design to suit site conditions, the cost increase is estimated to be $1.4 million.

Additional watermain works

8. With regard to watermain works, there is a need to increase the provision by $1.4 million to cater for design changes required to accommodate lower than expected depths of existing watermains, and for connecting new watermains to the existing supply system.

Overall Review

9. Upon a review of the financial position of the project, we consider it necessary to increase the APE of **571CL** from $117.5 million by $17.7 million to $135.2 million in MOD prices in order to cover the additional cost of works under the project. A breakdown for the proposed increase of $17.7 million is as follows –

	Factors	**Amount in MOD prices ($ million)**	**% of the total increased amount**
Additional costs associated with –		21.8	
(a)	Tendered price higher than estimated	2.8	15.8%
(b)	Additional works and costs for retaining walls, slope improvement works and debris barriers	16.2	91.5%
(c)	Additional drainage works	1.4	7.9%
(d)	Additional watermain works	1.4	7.9%

/Partly .....

	Partly offset by –			
(e)	Drawing down from Contingency		(4.1)	(23.1%)
		Total	17.7	100.0%

A comparison of the cost breakdowns of the APE and the revised project estimate in MOD prices, together with reasons leading to the proposed increase in the APE, is at Enclosure 2.

FINANCIAL IMPLICATIONS

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

Year	$ million (MOD)
Up to 31 March 2003[2]	77.0
2003 – 04	50.4
2004 – 05	7.8
	135.2

11. The proposed increase in the APE will not give rise to additional recurrent expenditure.

PUBLIC CONSULTATION

12. As there is no change in the approved project scope, public consultation is unnecessary.

/ENVIRONMENTAL .....

[2] This is actual expenditure up to 31 March 2003.

ENVIRONMENTAL IMPLICATIONS

13. The proposed increase in APE will not give rise to any environmental implications. There will not be any increase of construction and demolition materials.

LAND ACQUISITION

14. The proposed increase in the approved project estimate does not require any land acquisition.

URGENCY

15. Available funds under **571CL** are only sufficient to meet commitments up to September 2003. If additional funding is not available by then, we will not be able to continue the remaining works and to settle contractual payments upon the issuing of certification of payment by the Consulting Engineer.

BACKGROUND INFORMATION

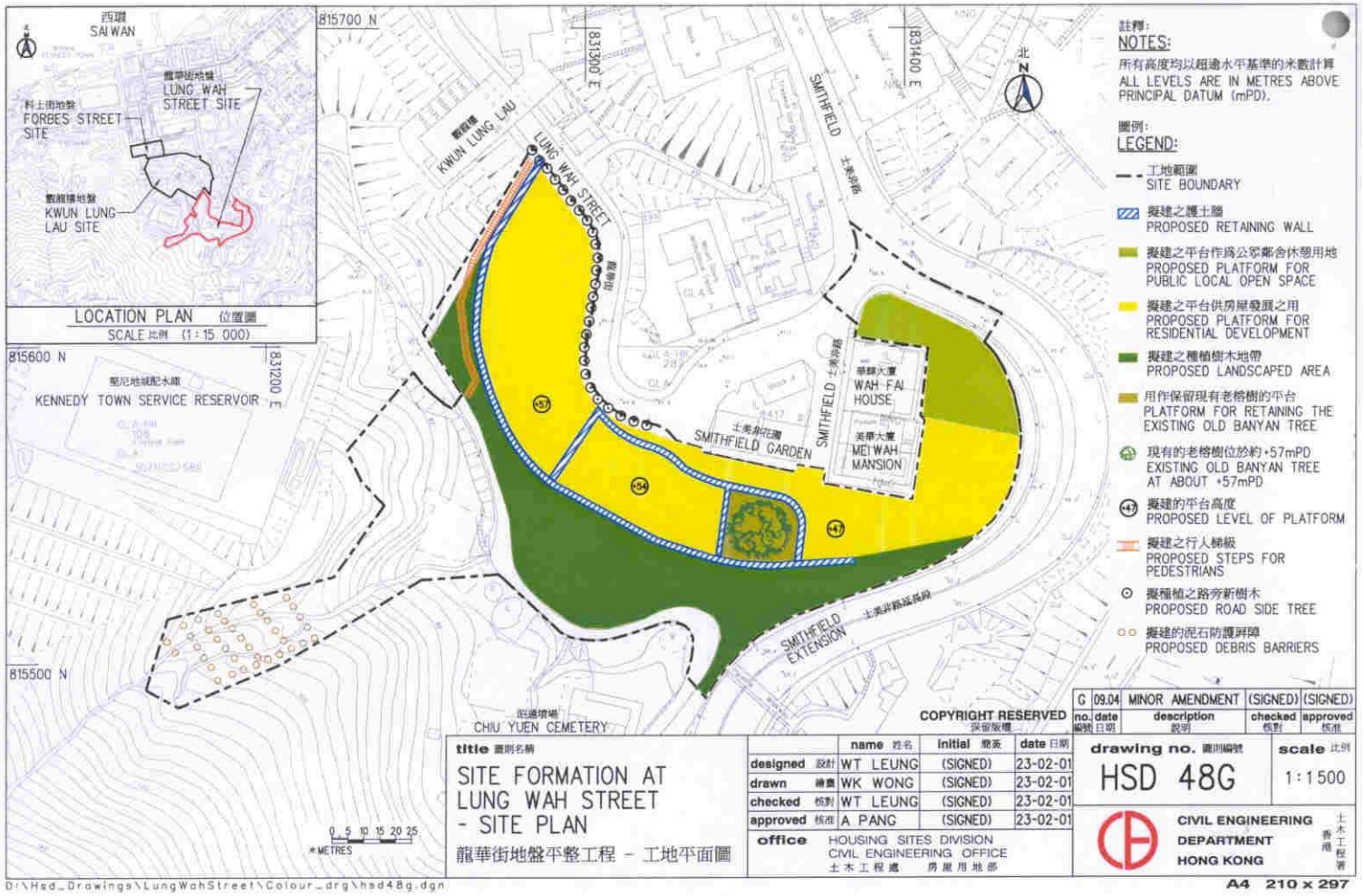
16. In May 2001, Finance Committee approved the upgrading of **571CL** "Site Formation at Lung Wah Street" to Category A at an estimated cost of $117.5 million in MOD prices.

17. The works under Contract No. CV/2000/11 started in October 2001 and are expected to be completed in November 2003.

18. The proposed increase in APE will not create any new jobs. However, the increase will enable completion of the project, allowing about 130 posts (30 professional/technical staff, and 100 labourers) to be retained up to completion of the works in November 2003.

Housing, Planning and Lands Bureau
June 2003

ENCLOSURE 1 附件 一



註釋:
NOTES:
所有高度均以超過水平基準的米數計算
ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM (mPD).

圖例:
LEGEND:

- 工地範圍 SITE BOUNDARY
- 擬建之護土牆 PROPOSED RETAINING WALL
- 擬建之平台作爲公眾鄰舍休憩用地 PROPOSED PLATFORM FOR PUBLIC LOCAL OPEN SPACE
- 擬建之平台供房屋發展之用 PROPOSED PLATFORM FOR RESIDENTIAL DEVELOPMENT
- 擬建之種植樹木地帶 PROPOSED LANDSCAPED AREA
- 用作保留現有老榕樹的平台 PLATFORM FOR RETAINING THE EXISTING OLD BANYAN TREE
- 現有的老榕樹位於約+57mPD EXISTING OLD BANYAN TREE AT ABOUT +57mPD
- +47 擬建的平台高度 PROPOSED LEVEL OF PLATFORM
- 擬建之行人梯級 PROPOSED STEPS FOR PEDESTRIANS
- 擬種植之路旁新樹木 PROPOSED ROAD SIDE TREE
- 擬建的泥石防護屏障 PROPOSED DEBRIS BARRIERS

no. 編號	date 日期	description 說明	checked 核對	approved 核准
G	09.04	MINOR AMENDMENT	(SIGNED)	(SIGNED)

title 圖則名稱
SITE FORMATION AT LUNG WAH STREET - SITE PLAN
龍華街地盤平整工程 - 工地平面圖

	name 姓名	initial 簽妥	date 日期
designed 設計	WT LEUNG	(SIGNED)	23-02-01
drawn 繪畫	WK WONG	(SIGNED)	23-02-01
checked 核對	WT LEUNG	(SIGNED)	23-02-01
approved 核准	A PANG	(SIGNED)	23-02-01

office HOUSING SITES DIVISION
CIVIL ENGINEERING OFFICE
土木工程處 房屋用地部

drawing no. 圖則編號 HSD 48G

scale 比例 1:1500

CIVIL ENGINEERING DEPARTMENT HONG KONG 土木工程署 香港

D:\Hsd_Drawings\LungWahStreet\Colour_drg\hsd48g.dgn

A4 210 x 297

571CL – Site Formation at Lung Wah Street

A comparison of the APE and the revised project estimate in MOD prices is as follows –

	Approved* Estimate (i)	Revised Estimate (ii)	Change (ii) - (i)
		$ million (in MOD prices)	
(a) Site formation works	4.5	5.3	+0.8
(b) Retaining walls, slope improvement works and debris barriers	83.7	100.8	+17.1
(c) Pedestrian staircase	0.2	0.2	-
(d) Associated drainage works	2.4	4.0	+1.6
(e) Watermain diversion works	6.5	7.9	+1.4
(f) Landscape works	1.1	2.0	+0.9
(g) Environmental mitigation measures	0.5	0.5	-
(h) Consultants' fees	10.5	10.5	-
(i) for construction stage	1.4	1.4	-
(ii) site staff cost	9.1	9.1	-
(i) Contingencies	8.1	4.0	(4.1)
Total	117.5	135.2	17.7

* Preliminaries and inflation allowance is spreaded over on different categories of works and contingencies.

2. **As regards 1(a) (Site formation works),** the increase of $0.8 million was due to actual tendered price higher than that estimated (see para. 5 of the paper).

3. **As regards 1(b) (Retaining walls, slope improvement works and debris barriers),** the increase of $17.1 million comprises –

(a) an increase of $0.9 million due to actual tendered price higher than estimated (see para. 5 of the paper);

(b) an increase of $5.8 million due to increased quantity of rock to be excavated for the retaining walls (see para. 6(a) of the paper);

(c) an increase of $9.2 million due to adjustment of the quantity, and amendment of jointing details of steel reinforcement in the retaining walls (see para. 6(a) of the paper);

(d) an increase of $0.3 million due to additional work for removal of an unstable boulder and protection works to existing water courses (see para. 6(b) of the paper); and

(e) an increase of $0.9 million due to increased length of debris barriers to suit actual ground conditions and profile and adjustment of quantity (see para. 6(c) of the paper).

4. **As regards 1(d) (Associated drainage works),** the increase of $1.6 million comprises –

(a) an increase of $0.2 million due to actual tendered price higher than estimated (see para. 5 of the paper); and

(b) an increase of $1.4 million due to modification to design to suit site conditions (see para. 7 of the paper).

5. **As regards 1(e) (Watermain diversion works),** the increase of $1.4 million comprises –

(a) an increase of $0.7 million due to modification to watermain design to suit site conditions (see para. 8 of the paper); and

(b) an increase of $0.7 million for the connection works (see para. 8 of the paper).

6. **As regards 1(f) (Landscape works),** the increase of $0.9 million was due to actual tendered price higher than estimated (see para. 5 of the paper).

7. **As regards 1(i)** (**Contingencies),** we have retained $4.0 million as contingency associated with the remaining works and for possible claims from the Contractor.