For discussion **PWSC(2006-07)40**
on 25 October 2006

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
338EP – A 24-classroom primary school at Site 10, West Kowloon Reclamation, Sham Shui Po

Members are invited to recommend to Finance Committee the upgrading of **338EP** to Category A at an estimated cost of $113.9 million in money-of-the-day prices for the construction of a 24-classroom primary school at Site 10, West Kowloon Reclamation, Sham Shui Po.

PROBLEM

We need to construct a new primary school for the whole-day conversion of an existing bi-sessional primary school in Sham Shui Po.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education and Manpower (SEM), proposes to upgrade **338EP** to Category A at an estimated cost of $113.9 million in money-of-the-day (MOD) prices for the construction of a 24-classroom primary school at Site 10, West Kowloon Reclamation, Sham Shui Po.

/PROJECT .....

PROJECT SCOPE AND NATURE

3. The proposed primary school will have the following facilities –

(a) 24 classrooms;

(b) six special rooms, including a computer-assisted learning room and a language room;

(c) four small group teaching rooms;

(d) a guidance activity room;

(e) two interview rooms;

(f) a staff room;

(g) a staff common room;

(h) a student activity centre;

(i) a conference room;

(j) a library;

(k) an assembly hall (which can also be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);

(l) a multi-purpose area;

(m) two basketball courts and a mini-football pitch at ground level;

(n) a 60-metre (m) running track[1];

(o) a green corner[2]; and

/(p) .....

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[1] Making optimal use of the space of the campus, a 60 m running track will be provided.

[2] The green corner is a designated area inside the campus to enable students to develop an interest in horticulture and natural environment. The green corner may include a green-house, a weather station and planting beds.

(p) ancillary accommodation, including a lift and relevant facilities for the handicapped.

The proposed school will meet the planning target of providing two square metres (m^2) of open space per student. A site plan is at Enclosure 1 and views of the school premises (artist's impression) are at Enclosure 2. Subject to approval, we plan to start construction works in February 2007 for completion in November 2008.

JUSTIFICATION

4. It is Government's policy to implement whole-day primary schooling for virtually all primary school students by the 2007/08 school year. In the 2006/07 school year, 90% of primary school places are in whole-day mode.

5. Upon completion, **338EP** will enable an existing bi-sessional primary school operating from a 12-classroom building in the same district to turn into whole-day operation in a new building with 24 classrooms and other facilities. As such, the project will not affect the overall supply of primary school places as well as the supply in the Sham Shui Po District.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be $113.9 million in MOD prices (see paragraph 7 below), made up as follows –

		$ million
(a)	Piling	19.1
(b)	Building	44.5
(c)	Building services	15.2
(d)	Drainage	2.8

/$ million .....

			$ million	
(e)	External works		11.6	
(f)	Furniture and equipment[3]		3.2	
(g)	Consultants' fees for –		4.7	
	(i) Contract administration	1.5		
	(ii) Site supervision	3.2		
(h)	Contingencies		9.8	
	Sub-total		110.9	(in September 2006 prices)
(i)	Provision for price adjustment		3.0	
	Total		113.9	(in MOD prices)

We propose to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees by man-months is at Enclosure 3. The construction floor area (CFA) of **338EP** is 9 580 m^2. The estimated construction unit cost, represented by the building and the building services costs, is $6,232 per m^2 of CFA in September 2006 prices. We consider this comparable to similar school projects built by the Government. A comparison of the reference cost for a 24-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated cost for **338EP** is at Enclosure 4.

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

/**Year** .....

[3] Based on the standard furniture and equipment reference list prepared by the Education and Manpower Bureau for a new 24-classroom primary school adopting the standard schedule of accommodation.

Year	$ million (Sept 2006)	Price adjustment factor	$ million (MOD)
2007 – 08	30.5	1.01250	30.9
2008 – 09	62.0	1.02769	63.7
2009 – 10	13.0	1.04310	13.6
2010 – 11	5.4	1.05875	5.7
	110.9		113.9

8. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2006 to 2010. We intend to award the contract on a lump-sum basis because we can clearly define the scope of the works in advance. The contract will not provide for price adjustment because the contract period will not exceed 21 months.

9. The cost of furniture and equipment, estimated to be $3.2 million, will be borne by the Government. This is in line with the existing policy.

10. We estimate the annual recurrent expenditure for **338EP** to be $20.2 million.

PUBLIC CONSULTATION

11. We consulted the Sham Shui Po District Council on **338EP** on 8 June 2006. Members of the Council supported the project.

12. We also consulted the Legislative Council Panel on Education (the Panel) on 24 October 2005 on our review of the School Building Programme. Members generally supported our recommendation to proceed with school projects, including **338EP**, for converting existing bi-sessional primary schools to whole-day operation. We circulated an information note on this project to the LegCo Panel on Education on 12 October 2006. Members did not raise objection to the proposal.

/ENVIRONMENTAL .....

ENVIRONMENTAL IMPLICATIONS

13. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **338EP** in December 2004. The PER recommended the installation of insulated windows and air-conditioning for rooms exposed to traffic noise exceeding the limits recommended in the Hong Kong Planning Standards and Guidelines. The recommended mitigation measures are as follows –

	Mitigation measures	Estimated cost $ million (in Sept 2006 prices)
(a)	insulated windows and air-conditioning for 24 classrooms on the G/F to 4/F of the southern façade of the classroom block	2.4
(b)	insulated windows and air-conditioning for one special room on the 3/F at the southern façade of the assembly hall block	0.2
(c)	insulated windows and air-conditioning for one special room on the 4/F at the eastern façade of the assembly hall block	0.2

With such mitigation measures in place, the project would not have long term environmental impacts. We have included the cost of the above mitigation measures as part of the building services in the project estimate.

14. During construction, we will control noise, dust and site run-off nuisances to within established standards and guidelines through the implementation of mitigation measures in the relevant contracts. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities.

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15. We have considered introducing more prefabricated building elements (e.g. dry-wall partitioning and proprietary fittings and fixtures) into the school design in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractor to reuse inert C&D materials on site or in other suitable construction sites as far as possible (e.g. use suitable excavated materials for filling within the site, use metal site hoardings and signboards so that these materials can be recycled or reused in other projects), in order to minimize the disposal of C&D materials to public fill reception facilities[4]. We will encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.

16. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will also control the disposal of public fill, C&D materials and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will also record the disposal, reuse and recycling of C&D materials for monitoring purposes.

17. We estimate that the project will generate about 11 300 tonnes of C&D materials. Of these, we will reuse about 6 240 tonnes (55.2%) on site and deliver 4 160 tonnes (36.8%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 900 tonnes (8.0%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be $224,820 for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[5] at landfills).

/LAND .....

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

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.

LAND ACQUISITION

18. The project does not require land acquisition.

BACKGROUND INFORMATION

19. We upgraded **338EP** to Category B in March 2004. We engaged an architectural consultant in December 2004 to undertake the detailed design, PER and topographical survey and appointed a term contractor in January 2005 to carry out site investigation, at a total cost of $2.2 million. We engaged a quantity surveying consultant to prepare tender documents in May 2006 at a cost of $320,000. We have charged these amounts to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of the Public Works Programme". The architectural consultant and the term contractor have completed the detailed design, topographical survey, PER, and site investigation. The quantity surveying consultant is finalising the tender documents.

20. The proposed construction of a 24-classroom primary school at Site 10, West Kowloon Reclamation, Sham Shui Po will involve the felling of two trees. All trees to be removed are not important trees[6]. We will incorporate planting proposals as part of the project, including estimated quantities of 130 trees and 1 900 shrubs.

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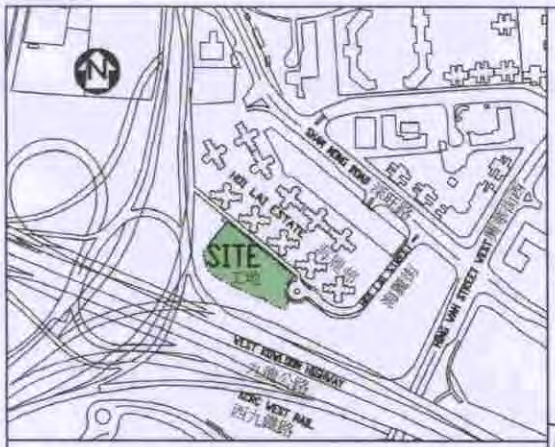
[6] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(a) trees over 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 important persons 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 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25m.

21. We estimate that the proposed works will create about 130 jobs (114 for labourers and another 16 for professional/technical staff) providing a total employment of 2050 man-months.

Education and Manpower Bureau
October 2006



位置圖 LOCATION PLAN SCALE 1:10000

INSULATED WINDOWS AND AIR-CONDITIONING FOR 24 CLASSROOMS FROM G/F TO 4/F AT THE SOUTHERN FACADE OF THE CLASSROOM BLOCK
在課室大樓向南面地面至4樓的24間課室裝置隔音窗和空調

INSULATED WINDOWS AND AIR-CONDITIONING FOR 1 SPECIAL ROOM ON THE 4/F AT THE EASTERN FACADE OF THE ASSEMBLY HALL BLOCK
在禮堂大樓向東面4樓的1間特別室裝置隔音窗和空調

INSULATED WINDOWS AND AIR-CONDITIONING FOR 1 SPECIAL ROOM ON THE 3/F AT THE SOUTHERN FACADE OF THE ASSEMBLY HALL BLOCK
在禮堂大樓向南面3樓的1間特別室裝置隔音窗和空調

HOI LAI ESTATE
海麗邨

PEDESTRIAN ENTRANCE
行人入口

RUNNING TRACK
跑道

GREEN CORNER
綠化地帶

EVA
緊急車輛通道

PRIMARY SCHOOL
小學

SITE AREA
7630 sq.m.
工地面積
7630 平方米

PEDESTRIAN ENTRANCE
行人入口

VEHICULAR INGRESS/EGRESS POINT
車輛出入口

HOI LAI STREET
海麗街

SKH ST. ANDREW'S PRIMARY SCHOOL
聖公會聖安德烈小學

KCRC WEST RAIL
西九鐵路

WEST KOWLOON HIGHWAY
西九龍公路

title 338 EP 深水埗西九龍填海區第10號地盤1所設有24間課室的小學 A 24-CLASSROOM PRIMARY SCHOOL AT SITE 10, WEST KOWLOON RECLAMATION, SHAM SHUI PO	drawn by R. CHUM	date 9.2006	drawing no. AB/6804/GP001	scale 1 : 1000
	approved D.FEDORUK	date 9.2006		
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT 建築署	

VIEW OF THE SCHOOL PREMISES FROM EASTERN DIRECTION
從東面望向校舍的構思圖

VIEW OF THE SCHOOL PREMISES FROM WESTERN DIRECTION
從西面望向校舍的構思圖

title 338 EP 深水埗西九龍填海區第 10 號地盤 1 所設有 24 間課室的小學 A 24-CLASSROOM PRIMARY SCHOOL AT SITE 10, WEST KOWLOON RECLAMATION, SHAM SHUI PO	drawn by R. CHUM	date SEPT.2006	drawing no. AB/6804/GP002	scale N.T.S.
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338EP – A 24-classroom primary school at Site 10, West Kowloon Reclamation, Sham Shui Po

Breakdown of the estimate for consultants' fees

Consultants' staff costs			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Contract administration (Note 2)	Professional	–	–	–	1.1
		Technical	–	–	–	0.4
(b)	Site supervision (Note 3)	Professional	20.7	38	1.6	1.8
		Technical	48.6	14	1.6	1.4
					Total	4.7

* 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 January 2006, MPS point 38 = $54,255 per month and MPS point 14 = $18,010 per month.)

2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **338EP**. The assignment will only be executed subject to Finance Committee's approval to upgrade **338EP** to Category A.

3. The consultants' staff cost for site supervision is based on the estimate prepared by the Director of Architectural Services. We will only know the actual man-months and actual costs after completion of the construction works.

A comparison of the reference cost of a 24-classroom primary school project with the estimated cost of 338EP

$ million (in Sept 2006 prices)

		Reference cost*	**338EP**	
(a)	Piling	8.1	19.1	(See note A)
(b)	Building	42.6	44.5	(See note B)
(c)	Building services	11.4	15.2	(See note C)
(d)	Drainage	1.8	2.8	(See note D)
(e)	External works	7.4	11.6	(See note E)
(f)	Furniture and equipment	–	3.2	(See note F)
(g)	Consultants' fees	–	4.7	(See note G)
(h)	Contingencies	7.2	9.8	
	Total	78.5	110.9	
(i)	Construction floor area	9 129 m^2	9 580 m^2	
(j)	Construction unit cost {[(b) + (c)] ÷ (i)}	\$5,915/m^2	\$6,232/m^2	

*** Assumptions for reference cost**

1. The estimation is based on the assumption that the school site is uncomplicated and without unusual environmental restrictions. No allowance is reserved for specific environmental restrictions such as the provision of insulated windows, air-conditioning and boundary walls to mitigate noise impacts on the school.

2. No site formation works/geotechnical works are required as they are normally carried out by other government departments under a separate engineering vote before handing over the project site for school construction.

/3. .....

3. Piling cost is based on the use of 101 steel H-piles at an average depth of 30 m, assuming that percussive piling is permissible. It also includes costs for pile caps, strap beams and testing. No allowance is reserved for the effect of negative skin friction due to fill on reclaimed land.

4. Cost for drainage and external works is for a standard 24-classroom primary school site area of 4 700 m^2 built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a "green-field" site).

5. No consultancy services are required.

6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring bodies of new schools.

7. The reference cost for comparison purpose is subject to review regularly. We will review, and revise if necessary, the reference cost which should be adopted for future projects.

Notes

A. The piling cost is higher because its estimate is based on a different piling system of 17 large diameter bore piles at an average depth of 55 metres to suit the actual site condition. Besides, monitoring work will be required during piling work to ensure that vibrations and settlements, if any, are within acceptable limits inside the KCRC protection zone.

B. The building cost is higher because of the larger construction floor area.

C. The building services cost is higher because of the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.

D. The cost of drainage works is higher because of the larger site area.

E. The cost of external works is higher because of the larger site area.

F. The cost of furniture and equipment, estimated to be $3.2 million, will be borne by the Government as the school premises will be allocated to an existing bi-sessional school for conversion into whole-day operation.

G. Consultants' fees are required for contract administration and site supervision.