For discussion **PWSC(2008-09)19**
on 2 June 2008

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Education Subventions
88EB – Redevelopment of Concordia Lutheran School at Tai Hang Tung Road, Sham Shui Po

Members are invited to recommend to Finance Committee the upgrading of **88EB** to Category A at an estimated cost of $179.1 million in money-of-the-day prices for in-situ redevelopment of Concordia Lutheran School at Tai Hang Tung Road, Sham Shui Po.

PROBLEM

Concordia Lutheran School (the School) is currently operating at premises which are under-provided by today's standards and should be redeveloped when the opportunity arises.

PROPOSAL

2. The Secretary for Education (SED), on the advice of the Director of Architectural Services (D Arch S), proposes to upgrade **88EB** to Category A at an estimated cost of $179.1 million in money-of-the-day (MOD) prices for in-situ redevelopment of the School.

/PROJECT…..

PROJECT SCOPE AND NATURE

3. The project scope comprises demolition of the Lower Block of the existing school premises, construction of a new block and renovation of two existing interconnected blocks. The new block comprises the following facilities –

(a) 16 classrooms;

(b) 13 special rooms;

(c) two staff rooms;

(d) a staff common room;

(e) a student activity centre;

(f) a conference room;

(g) a library;

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

(i) a multi-purpose area;

(j) a basketball court and a volleyball court[1]; and

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

Renovation works will be carried out for the provision of the following facilities in the two existing interconnected blocks –

(a) 14 classrooms;

(b) three special rooms;

(c) three small group teaching rooms;

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[1] Making the optimum use of spaces of the school, a volleyball court and a basketball court are provided instead of two basketball courts.

(d) a guidance activity room;

(e) two interview rooms; and

(f) School Social Workers' Office.

4. The redeveloped school premises 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 new school premises (artist's impression) are at Enclosure 2. The school sponsor plans to start the demolition works of the existing Lower Block in July 2008 and start the construction works of the new block in late 2008 for completion in August 2010. The renovation works of the existing interconnected blocks will be completed in August 2011.

JUSTIFICATION

5. The School is operating 29 classes in the 2007/08 school year. The existing premises of the School comprises the Lower Block built in 1957 on a steep slope and the interconnecting blocks in 1967. The School falls short of the provision as stipulated in the current schedule of accommodation of a standard secondary school. Certain essential facilities such as small group teaching rooms, medical room, conference room, guidance activity room, interview rooms, student activity centre, staff common room etc. are lacking. Moreover, most of the existing facilities are substandard. For instance, the School library can only accommodate 28 students and the school hall one-third of the student enrolment.

6. The existing school premises is deteriorating and requires frequent repair in recent years. The School was not included under the School Improvement Programme[2] since improvement works in the form of constructing an additional annex or additional floors were not feasible due to site constraints. Redevelopment is considered to be the most cost-effective way to provide a quality teaching and learning environment for teachers and students of the School. During the redevelopment period, 12 classes will be temporarily accommodated in a vacant school premises in Shek Kip Mei, while the remaining 17 classes will stay at the existing premises.

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[2] The School Improvement Programme involves 743 existing schools to provide additional space and upgraded facilities to support teaching and learning.

7. Upon completion, the new school premises will provide 30 classrooms and, compared with the existing premises, new facilities including small group teaching rooms, guidance activity room, interview room, staff common room, student activity centre, conference room, multi-purpose area, and facilities for the handicapped, and other improvements such as an increase in the area of the library from 92 m^2 to 264 m^2 and that of the assembly hall from 300 m^2 to 482 m^2.

8. With the implementation of the New Senior Secondary academic structure from September 2009 onwards, the School will have an ultimate class structure of five classes at each level from Secondary 1 to Secondary 6. The redevelopment of this school will not have any impact on the supply and demand of public sector school places.

FINANCIAL IMPLICATIONS

9. The School sponsor estimates the capital cost of the project to be $179.1 million in MOD prices (see paragraph 11 below). D Arch S has examined and endorsed the cost estimate which is made up as follows –

		$ million
(a)	Demolition	6.6
(b)	Slope stabilisation	1.2
(c)	Piling	14.1
(d)	Building	77.8
(e)	Building services	23.9
(f)	Drainage	3.3
(g)	External works	13.6

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			$ million	
(h)	Furniture and equipment[3]		6.7	
(i)	Consultants' fees for		4.1	
	(i)	Contract administration	1.7	
	(ii)	Site supervision	2.0	
	(iii)	Out-of-pocket expenses	0.4	
(j)	Contingencies		15.1	
		Sub-total	166.4	(in September 2007 prices)
(k)	Provision for price adjustment		12.7	
		Total	179.1	(in MOD prices)

10. The school sponsor proposes 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 the new school premises under **88EB** is about 13 197 m^2. The estimated construction unit cost of the new school premises, represented by the building and building services costs, is $7,706 per m^2 of CFA in September 2007 prices. D Arch S considers this comparable to similar school projects built by the Government. A comparison of the reference cost of a 30-classroom secondary school based on an uncomplicated site with no unusual environment or geotechnical constraints with the estimated cost of the new school premises is at Enclosure 4.

11. Subject to approval, the school sponsor will phase the expenditure as follows –

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[3] Based on an indicative list of F&E items required by the School. The indicative list is compiled on the basis of a survey on serviceability of the existing F&E of the School and the standard F&E reference list prepared by the Education Bureau for new 30-classroom secondary schools.

Year	$ million (Sept 2007)	Price adjustment factor	$ million (MOD)
2008 – 09	17.2	1.02575	17.6
2009 – 10	87.8	1.06293	93.3
2010 – 11	54.3	1.10545	60.0
2011 – 12	7.1	1.14967	8.2
	166.4		179.1

12. We have derived the MOD estimate 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 2008 to 2012. The school sponsor will deliver the demolition and piling works for the existing Lower Block through one lump-sum contract, the construction works of the new block through a second lump-sum contract and the renovation works of the existing premises through a third lump-sum contract. The contracts will not provide for price adjustment because each contract period will not exceed 21 months.

13. The cost of furniture and equipment, estimated to be $6.7 million, will be borne by the Government. This is in line with the existing policy. Redevelopment of the School per se will not give rise to additional recurrent expenditure, as the mode of operation and the number of classes will remain unchanged. The annual recurrent expenditure of the School was $36.4 million in the 2006/07 school year.

PUBLIC CONSULTATION

14. We consulted the Sham Shui Po District Council on **88EB** in February 2008. Members of the District Council supported the in-situ redevelopment of the School.

15. We consulted the Legislative Council Panel on Education on 24 October 2005 on our review of the School Building Programme. Members noted our plan to proceed with six projects for reprovisioning and redevelopment purposes, including **88EB**.

/ENVIRONMENTAL .....

ENVIRONMENTAL IMPLICATIONS

16. The school sponsor engaged a consultant to conduct a Preliminary Environmental Review (PER) for **88EB** in August 2007. The PER recommended the provision of insulated windows and air-conditioning for rooms which may be exposed to traffic noise above 65dB(A), i.e. exceeding the limits recommended in the Hong Kong Planning Standards and Guidelines. We will provide insulated windows and air-conditioning for eight classrooms and 11 special rooms from 2/F to 7/F at the new block façade along Tai Hang Tung Road at an estimated cost of $2.8 million (in September 2007 prices). The school sponsor has included the cost of these mitigation measures as part of the building services works in the project estimate in paragraph 9 above.

17. During construction, the school sponsor 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 sites, and the provision of wheel-washing facilities.

18. The school sponsor has considered measures in the planning and design stages to reduce the generation of construction waste where possible (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects). In addition, the school sponsor will require its contractor to reuse inert construction waste (e.g. use of excavated materials for filling within the site) on site or in other construction sites as far as possible to minimize the disposal of inert construction waste to public fill reception facilities[4]. The school sponsor will encourage its contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formworks to further minimize the generation of construction waste.

19. The school sponsor will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation measures to avoid, reduce, reuse and recycle inert construction waste. It will ensure that the day-to-day operations on site

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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 inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

comply with the approved plan. It will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. It will also control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

20. The school sponsor estimates that the project will generate in total about 13 850 tonnes of construction waste. Of these, it will reuse about 2 840 tonnes (20.5%) of inert construction waste on site and deliver 9 440 tonnes (68.2%) of inert construction waste to public fill reception facilities for subsequent re-use. In addition, it will dispose of 1 570 tonnes (11.3%) 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 $451,130 for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[5] at landfills).

ENERGY CONSERVATION MEASURES

21. This project has adopted various forms of energy efficient features including –

(a) T5 energy efficient fluorescent tubes with electronic ballasts and lighting control with daylight sensors and occupancy sensors;

(b) heat recovery fresh air pre-conditioners will be adopted in air-conditioned rooms;

(c) automatic on/off switching of lighting and ventilating fan will be adopted inside the lift car; and

(d) light emitting diode (LED) type exit signs.

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[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.

22. No renewable energy features will be provided in this project due to limited space on the rooftop.

23. For greening features, the podium roof and main roof will be landscaped for environmental and amenity benefits.

24. The total estimated additional cost for adopting the energy efficient measures and greening features is around $1.1 million, which has been included in the cost estimate for the project. There will be about 8% energy savings in the annual energy consumption.

HERITAGE IMPLICATIONS

25. This 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.

LAND ACQUISITION

26. The project does not require land acquisition.

BACKGROUND INFORMATION

27. We upgraded **88EB** to Category B in December 2004. The school sponsor engaged consultants to undertake the detailed design and prepare tender documents in February 2007, topographical survey in April 2007 and site investigation in October 2007. We have charged the estimated cost of $3.8 million for these services to block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings". The consultants engaged by the school sponsor have carried out the detailed design, topographical survey and site investigation and is finalizing the tender documents.

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28. Of the 126 trees within the project boundary, 117 trees will be preserved and nine trees will be felled. All trees to be removed are not important trees[6]. We will incorporate planting proposals as part of the project, including an estimated quantity of 20 trees.

29. We estimate that the proposed works will create about 160 jobs (144 for labourers and another 16 for professional/technical staff) providing a total employment of 3 000 man-months.

Education Bureau
May 2008

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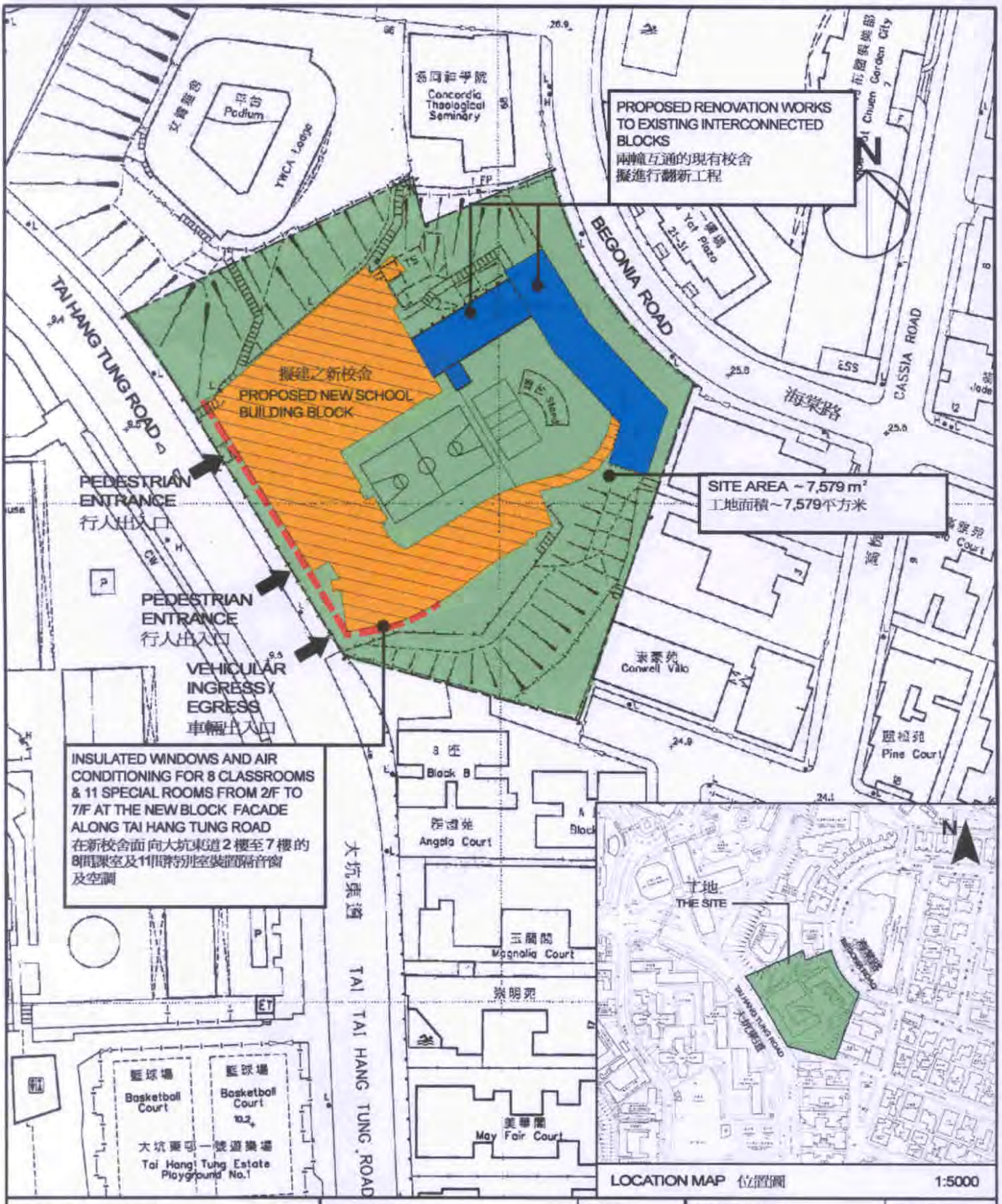
[6] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

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



TITLE - 88EB REDEVELOPMENT OF CONCORDIA LUTHERAN SCHOOL AT TAI HANG TUNG ROAD, SHAM SHUI PO 深水埗大坑東道 路德會協同中學重建計劃	DRAWN BY U.W.	DATE 5.5.2008	DRAWING NO. Enclosure 1	SCALE 1:1000
	APPROVED BY T.C.W.	DATE 5.5.2008		
	OFFICE MLA Architects (HK) Ltd			

從南面望向校舍的構思圖

VIEW OF THE SCHOOL PREMISES FROM SOUTHERN DIRECTION (ARTIST'S IMPRESSION)

從西面望向校舍的構思圖

VIEW OF THE SCHOOL PREMISES FROM WESTERN DIRECTION (ARTIST'S IMPRESSION)

TITLE - 88EB REDEVELOPMENT OF CONCORDIA LUTHERAN SCHOOL AT TAI HANG TUNG ROAD, SHAM SHUI PO 深水埗大坑東道 路德會協同中學重建計劃	DRAWN BY U.W.	DATE 5 . 5 . 2008	DRAWING NO. Enclosure 2	SCALE N/A
	APPROVED BY T.C.W.	DATE 5 . 5 . 2008		
	OFFICE MLA Architects (HK) Ltd			

88EB – Redevelopment of Concordia Lutheran School at Tai Hang Tung Road, Sham Shui Po

Breakdown of the estimate for consultants' fees

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' staff costs					
	(i) Contract administration (Note 2)	Professional Technical	-	-	-	1.7
	(ii) Site supervision (Note 3)	Technical	66	14	1.6	2.0
					Sub-total	3.7
(b)	Out-of-pocket expenses (Note 4)					0.4
					Total	4.1

* 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 point 14 = $18,840 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 **88EB**. The assignment will only be executed subject to Finance Committee's approval to upgrade **88EB** to Category A.

3. We will only know the actual man-months and actual costs for site supervision after completion of the works.

4. Out-of-pocket expenses are the actual costs incurred. The consultants are not entitled to any additional payment for overheads or profit in respect of these items.

Enclosure 4 to PWSC(2008-09)19

A comparison of the reference cost of a 30-classroom secondary school project with the estimated cost of 88EB

		$ million (in September 2007 prices) Reference Cost *	**88EB**	
(a)	Demolition	-	6.6	(See note A)
(b)	Slope stabilisation	-	1.2	(See note B)
(c)	Piling	13.3	14.1	(See note C)
(d)	Building	68.5	77.8	(See note D)
(e)	Building services	20.2	23.9	(See note E)
(f)	Drainage	3.0	3.3	(See note F)
(g)	External works	12.4	13.6	(See note F)
(h)	Furniture and equipment (F & E)	-	6.7	(See note G)
(i)	Consultants' fees	-	4.1	(See note H)
(j)	Contingencies	11.7	15.1	
	Total	129.1	166.4	
(k)	Construction floor area	12 238 m^2	13 197 m^2	
(l)	Construction unit cost {[(d)+(e)]/(k)}	\$7,248/m^2	\$7,706/m^2	

/* Assumptions .....

*** 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. Piling cost is based on the use of 138 steel H-piles at an average depth of 30m, 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. Costs for drainage and external works are for a standard 30-classroom secondary school site area of 6 950m^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. F&E costs are excluded as they are usually borne by the sponsoring bodies of the new schools.

7. The reference cost for comparison purpose is subject to review regularly. D Arch S revised the reference cost in March 2008 in accordance with the finalized price level in September 2007.

Notes

A. Additional cost is required for demolition of the existing Lower Block.

B. Slope stabilisation works are needed for the existing slopes within the site.

C. The piling cost is higher because of the use of 81 socketted H-piles at an average depth of 24m for the new school premises. Socketted H-piles system instead of driven H-pile is used because percussion type foundation may cause damage to nearby existing school buildings as well as slopes on site.

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

E. The building services cost is higher because of larger construction floor area, addition of electrical generator to comply with Fire Services requirements and the provision of insulated windows and air-conditioning as noise mitigation measures.

F. The drainage and external works is higher because of larger site area.

G. The cost of F&E, estimated to be $6.7 million, will be borne by the Government. This is in line with the existing policy.

H. Consultant's fees are required for contract administration, site supervision and out-of-pocket expenses.