

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

### **HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT**

#### **Education Subventions**

#### **8EA – Primary school at Jockey Club Road, Sheung Shui**

Members are invited to recommend to Finance Committee the upgrading of **8EA** to Category A at an estimated cost of \$90.7 million in money-of-the-day prices for the construction of a primary school at Jockey Club Road, Sheung Shui.

#### **PROBLEM**

We need to construct a primary school for the whole-day conversion of an existing bi-sessional school in the North District.

#### **PROPOSAL**

2. The Secretary for Education and Manpower (SEM), on the advice of the Director of Architectural Services (D Arch S), proposes to upgrade **8EA** to Category A at an estimated cost of \$90.7 million in money-of-the-day (MOD) prices for the construction of a primary school at Jockey Club Road, Sheung Shui.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The project scope comprises the construction of a 24-classroom primary school adopting a non-standard design on a site adjacent to the existing bi-sessional school in the North District. It will have the following facilities –

- (a) 24 classrooms;
- (b) six special rooms, including a computer-assisted learning room, a general studies 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<sup>1</sup>;
- (j) a library;
- (k) an assembly hall<sup>1</sup> (which can also be used for recreational activities);
- (l) a multi-purpose area;
- (m) a basketball court (at ground level);

/(n) .....

<sup>1</sup>

The Assembly Hall and Conference Room of **8EA** would be built to the standard for similar facilities in a 30-classroom primary school, for shared use with the neighbouring 24-classroom school (under the same school sponsoring body) which lacks such facilities.

- (n) a running track<sup>2</sup>;
- (o) a green corner<sup>3</sup>; and
- (p) ancillary accommodation, including a medical room, a lift and relevant facilities for the handicapped.

————  
 —————

The proposed school will meet the planning target of providing two square metres (m<sup>2</sup>) 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 construction works of the new school premises in October 2006 for completion in July 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 2005/06 school year, over 80% of primary school places are in whole-day mode. To facilitate implementation of the policy, we have included in our School Building Programme 14 school projects, including **8EA**.

5. The facilities of **8EA** are based on a 24-classroom school design except for the assembly hall and the conference room which will be used by both the existing and new schools upon whole-day primary conversion (see paragraph 3). Upon completion of **8EA**, one session of the existing bi-sessional school (which operates from a 24-classroom building) will move to the new premises for whole-day operation while the remaining session will turn whole-day in-situ. Since the project involves the splitting of an existing bi-sessional school, it will not affect the supply of school places in the North District. For Members' reference, the current projection of supply and demand of public primary school places in the North district indicates a shortfall of 12 classes in the 2010/11 school year.

**/FINANCIAL .....**

---

<sup>2</sup> Making optimal use of the space of the campus, a 40-metre running track will be provided.

<sup>3</sup> A green corner is a designated area inside the campus to enable students to develop an interest in horticulture and the natural environment. The green corner may include a greenhouse, a weather station and planting beds.

**FINANCIAL IMPLICATIONS**

6. The school sponsor estimates the capital cost of the project to be \$90.7 million in MOD prices (see paragraph 7 below). D Arch S has examined and endorsed the cost estimate, made up as follows –

	<b>\$ million</b>	
(a) Site formation	1.2	
(b) Piling	8.7	
(c) Building	43.8	
(d) Building services	12.1	
(e) Drainage	2.4	
(f) External works	6.8	
(g) Furniture and Equipment (F&E) <sup>4</sup>	3.2	
(h) Consultants' fees for –	2.5	
(i) Contract administration	1.2	
(ii) Site supervision	1.0	
(iii) Out-of-pocket expenses	0.3	
(i) Contingencies	8.1	
	<hr/>	
Sub-total	88.8	(in September 2005 prices)
(j) Provision for price adjustment	1.9	
	<hr/>	
Total	90.7	(in MOD prices)
	<hr/>	

/The .....

<sup>4</sup>

Based on an indicative list of F&E items required by the School which was 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 and Manpower Bureau for new 24-classroom primary schools.

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 **8EA** is about 9 715 m<sup>2</sup>. The estimated construction unit cost of the new school premises, represented by the building and building services costs, is \$5,754 per m<sup>2</sup> of CFA in September 2005 prices. D Arch S considers this comparable to similar school projects built by the Government. A comparison of the reference cost of a 24-classroom primary 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.

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

<b>Year</b>	<b>\$ million (Sept 2005)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2006 – 07	11.1	1.00000	11.1
2007 – 08	38.5	1.01500	39.1
2008 – 09	34.9	1.03023	36.0
2009 –10	4.3	1.04568	4.5
	88.8		90.7

8. 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 2006 to 2010. The school sponsor will deliver the piling works and the superstructure works of the new school premises through two lump-sum contracts because the scope of works can be clearly defined in advance. The contracts will not provide for price adjustment because the contract periods will not exceed 21 months each.

9. The cost of F&E, estimated to be \$3.2 million, will be borne by the Government. This is in line with the existing policy.

/10. ....

10. The annual recurrent expenditure of one session of the existing primary school was \$13.7 million in the 2004/05 school year. Upon whole-day conversion of the school at the new premises, the additional annual recurrent expenditure is estimated to be \$5.0 million.

## **PUBLIC CONSULTATION**

11. We 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 for converting existing bi-sessional primary schools to whole-day operation.

12. We also consulted the North District Council on 19 December 2005. Members of the Committee supported the project.

## **ENVIRONMENTAL IMPLICATIONS**

13. The consultant employed by the school sponsor has completed a Preliminary Environmental Review (PER) in accordance with the “Class Assessment Document for Standard Schools” in February 2006. The PER concluded that the school would not be subject to adverse long-term environmental impacts exceeding the established standards.

14. During construction, the school sponsor will control noise, dust and site run-off nuisances to within established standard 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.

15. At the planning and design stages, the school sponsor has considered measures to reduce the generation of construction and demolition (C&D) materials. The school sponsor has introduced more prefabricated building elements into the school design to reduce temporary formwork and construction waste. These include dry-wall partitioning and proprietary fittings and fixtures. The school sponsor will require its contractor to reuse inert C&D materials (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of C&D materials to public fill reception facilities.

/In .....

In addition, the school sponsor will encourage its contractor to maximise the use of recycled or recyclable C&D materials, such as metal site hoardings and signboards as well as the use of non-timber formwork to further minimise the generation of construction waste.

16. The school sponsor will 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. It will ensure that the day-to-day operations on site comply with the approved WMP. It will control the disposal of public fill and C&D waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system. It will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. It will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

17. The school sponsor estimates that the project will generate about 5 200 tonnes of Construction and Demolition (C&D) materials. Of these, it will reuse about 200 tonnes (3.8%) on site, deliver 3 900 tonnes (75%) to public fill reception facilities<sup>5</sup> for subsequent reuse, and 400 tonnes (7.7%) to sorting facilities<sup>5</sup> in order to retrieve the inert portion for reuse as public fill. In addition, it will dispose of 700 tonnes (13.5%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites, together with the cost for handling the materials at sorting facilities is estimated to be \$232,800 for this project (based on an unit cost of \$27/tonne for disposal at public fill reception facilities, \$100/tonne at sorting facilities and \$125/tonne<sup>6</sup> at landfills).

## LAND ACQUISITION

18. The project does not require land acquisition.

**/ BACKGROUND .....**

---

<sup>5</sup> Sorting facilities and public fill reception facilities are specified in Schedule 3 and Schedule 4 respectively 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.

<sup>6</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 filled.

**BACKGROUND INFORMATION**

19. We upgraded **8EA** to Category B in May 2003. The school sponsor has engaged consultants to undertake the detailed design, tender documentation, topographical survey and site investigation in February 2004, July 2004 and December 2004 respectively. Other than the tender documents, which are being finalised, all the foregoing tasks have been completed. We will charge the estimated cost of \$3.1 million for these services to block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings".

20. A total of 45 trees are surveyed on the works area. Of these, 29 trees will be retained, 14 trees will be transplanted and two trees, which are located in the proposed driveway and not important trees<sup>7</sup>, are to be removed. To compensate for the two trees felled, we will incorporate a planting proposal (Enclosure 5) with an estimated quantity of six heavy standard trees, as part of the project.

21. We estimate that the proposed works will create about 120 jobs (108 for labourers and another 12 for professional/technical staff) providing a total employment of 1 500 man-months.

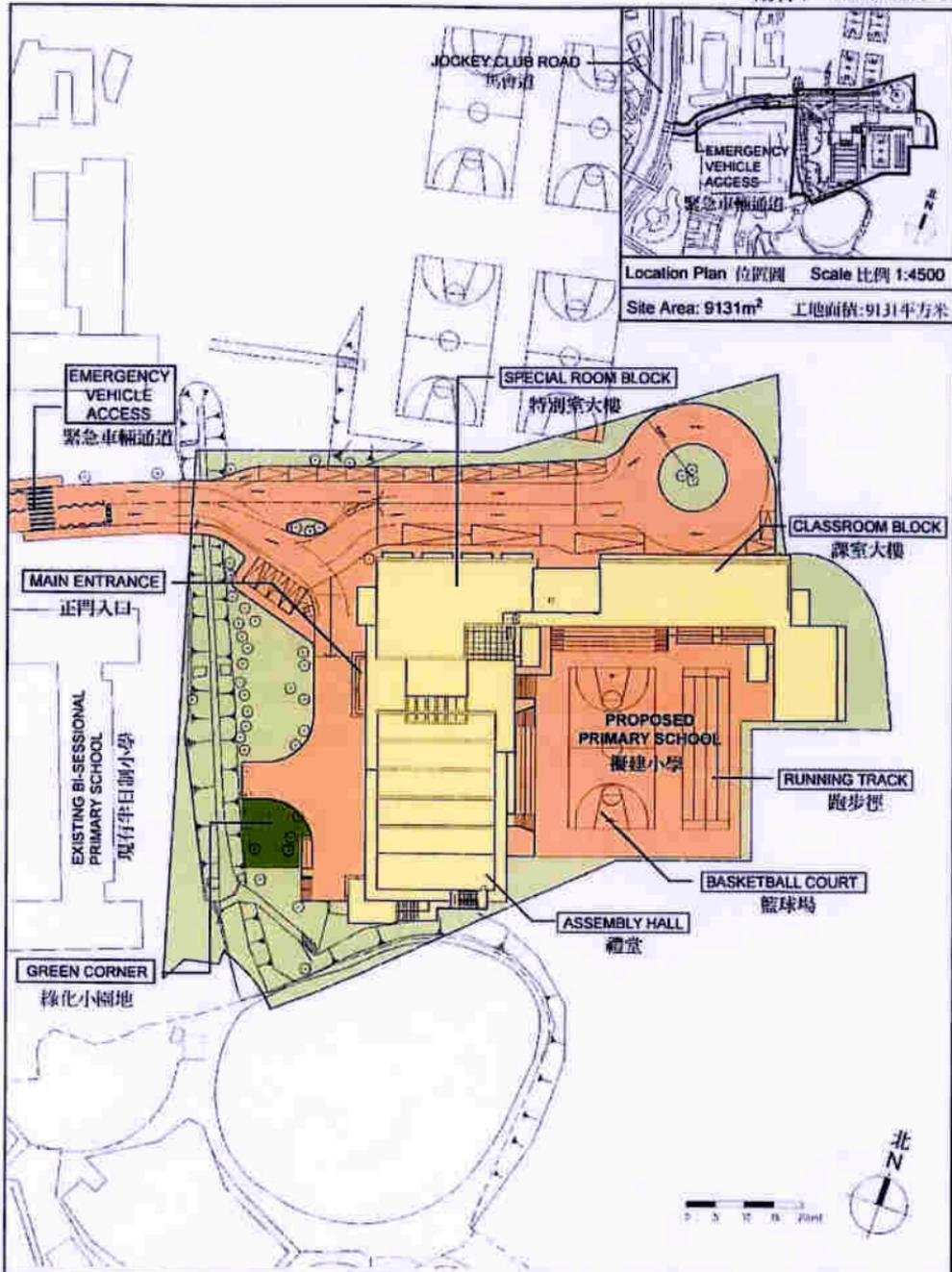
-----

Education and Manpower Bureau  
April 2006

---

<sup>7</sup> Important trees include trees on Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria –

- (a) trees over 100 years old;
- (b) trees of cultural, historical or memorable significance;
- (c) trees of precious or rare species;
- (d) trees of outstanding form; or
- (e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).



8EA - PRIMARY SCHOOL AT JOCKEY CLUB ROAD, SHEUNG SHUI  
 上水馬會道的一所小學



VIEW OF THE SCHOOL PREMISES FROM SOUTHEAST DIRECTION (ARTIST'S IMPRESSION)  
從東南面望向校舍的構思圖



VIEW OF THE SCHOOL PREMISES FROM EAST DIRECTION (ARTIST'S IMPRESSION)  
從東面望向校舍的構思圖

8EA - PRIMARY SCHOOL AT JOCKEY CLUB ROAD, SHEUNG SHUI  
上水馬會道的一所小學

**8EA – Primary school at Jockey Club Road, Sheung Shui**

**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 <sup>(Note 2)</sup>	Professional	–	–	–	1.2
(ii)	Site supervision <sup>(Note 3)</sup>	Technical	35	14	1.6	1.0
					Sub-total	2.2
(b)	Out-of-pocket expenses <sup>(Note 4)</sup>					
	Lithography and other direct expenses					0.3
					Sub-total	0.3
					Total	2.5

\* 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 2005, 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 **8EA**. The assignment will only be executed subject to Finance Committee's approval to upgrade **8EA** to Category A.
3. The consultant's staff cost for site supervision is based on the estimate prepared by the school sponsor. 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(2006-07)6**

**A comparison of the reference cost of  
a 24-classroom primary school project  
with the estimated cost of the new school premises under 8EA**

				<b>\$ million</b>
				<b>(in September 2005 prices)</b>
		<b>Reference cost*</b>	<b>8EA</b>	
(a)	Site formation	–	1.2	(See note A)
(b)	Piling	7.5	8.7	(See note B)
(c)	Building	41.0	43.8	(See note C)
(d)	Building services	11.4	12.1	(See note D)
(e)	Drainage	1.7	2.4	(See note E)
(f)	External works	6.8	6.8	
(g)	Furniture and Equipment (F&E)	–	3.2	(See note F)
(h)	Consultants' fees	–	2.5	(See note G)
(i)	Contingencies	6.8	8.1	
	Total	<u>75.2</u>	<u>88.8</u>	
(j)	Construction floor area	9 129 m <sup>2</sup>	9 715 m <sup>2</sup>	
(k)	Construction unit cost {[(c) + (d)] ÷ (j)}	\$5,740/m <sup>2</sup>	\$5,754/m <sup>2</sup>	

/Assumptions .....

**\* Assumptions for reference cost**

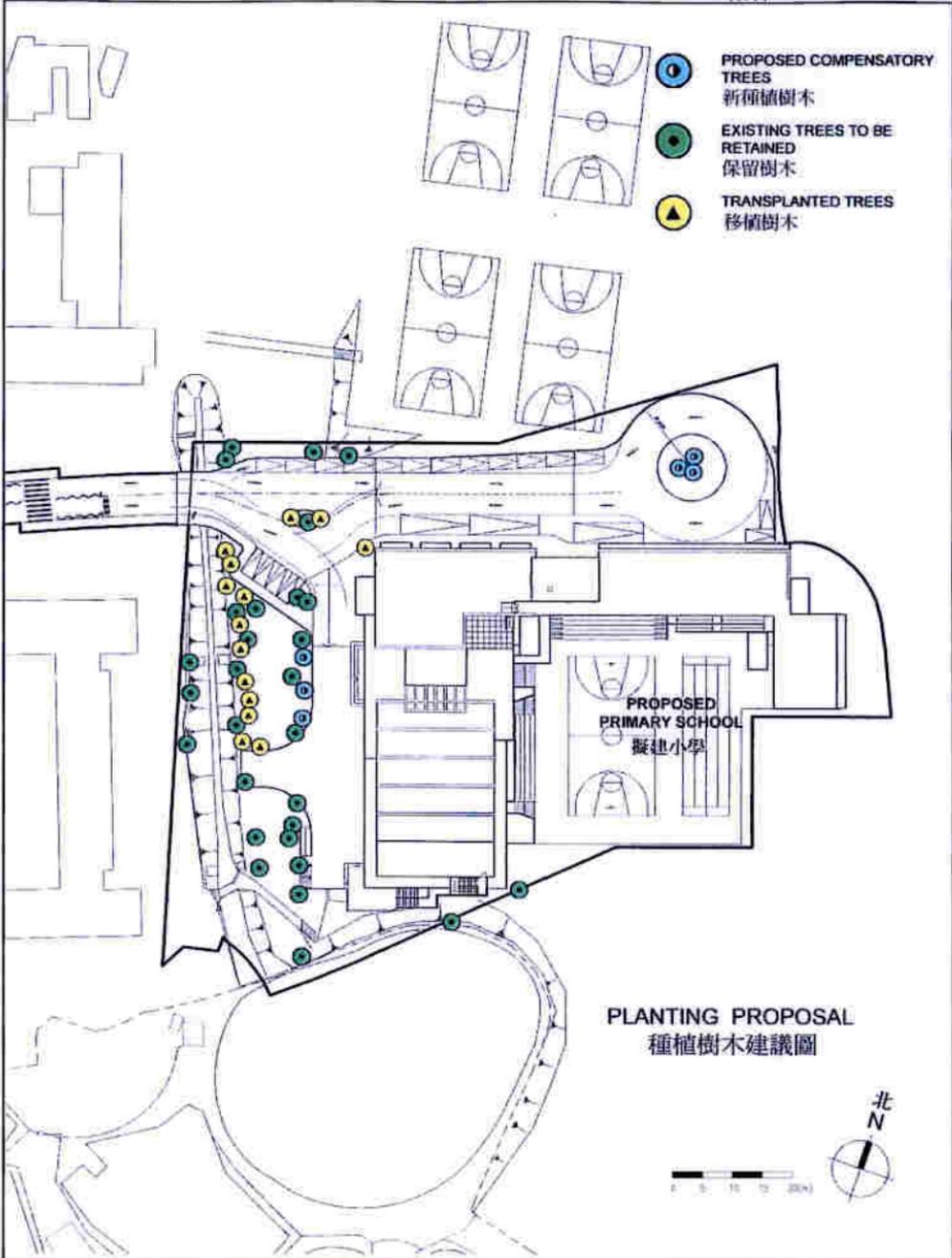
1. The estimation is based on the assumption that the school site is uncomplicated and without unusual environmental restrictions. No allowance is reserved for specific environmental restrictions such as the provision of insulated windows, air-conditioning and boundary walls to mitigate noise impacts 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 144 steel H-piles at an average depth of 20 metres, 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 24-classroom primary school site area of 4 700 square metres 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. The Director of Architectural Services will review, and revise if necessary, the reference cost which should be adopted for future projects.

**Notes**

- A. Site formation works is required to form the platform level for the construction of the new school premises.
- B. The piling cost is higher because of the larger construction floor area of the new school premises.

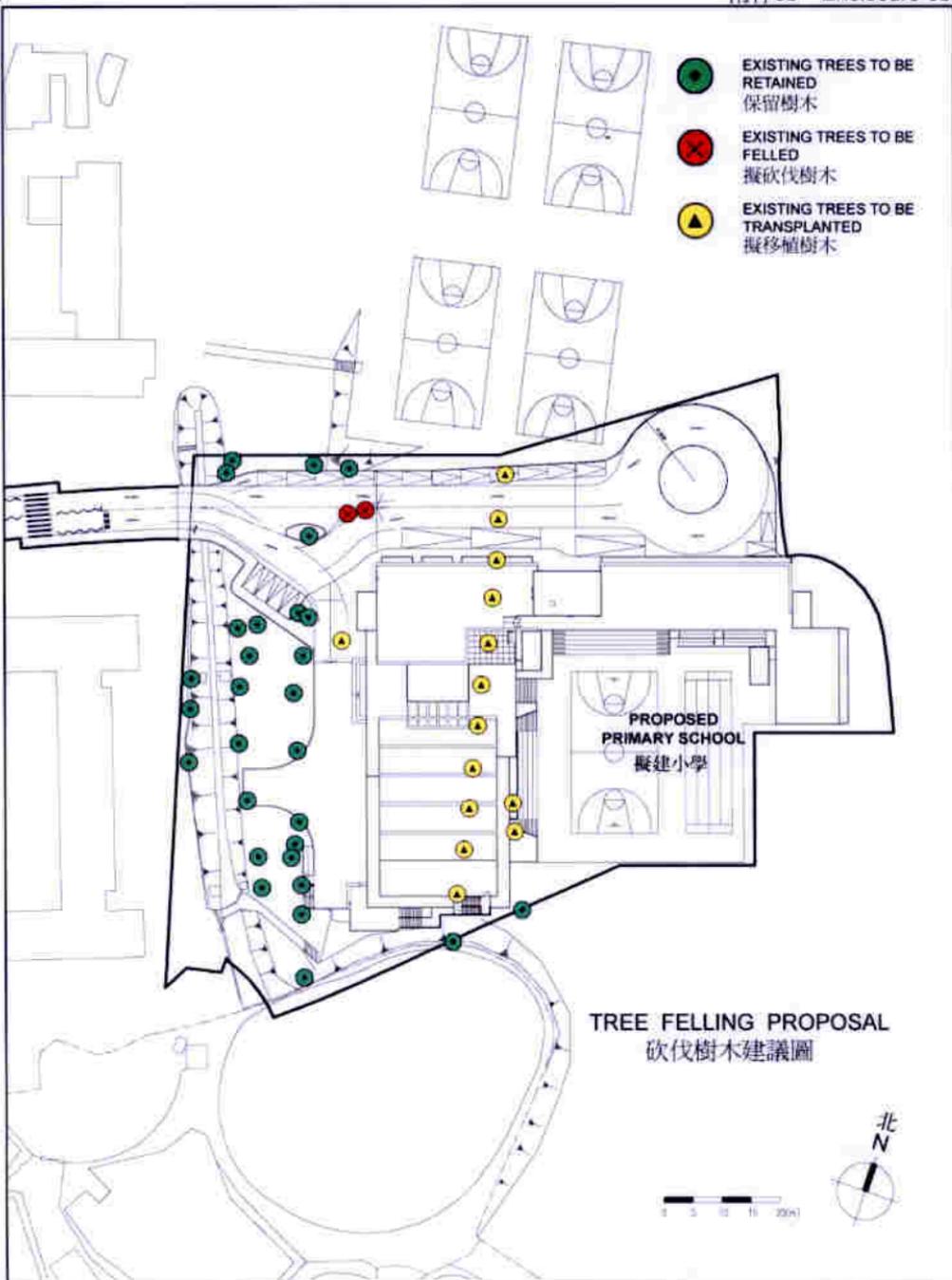
/C. ....

- C. The building cost is higher because of the larger construction floor area of the new school premises.
- D. The building services cost is higher because of the larger construction floor area of the new school premises.
- E. The drainage works cost is higher because soil waste and storm water system and sump pump will be provided. Also, the school building is far from the government manhole and more connection works are required.
- F. The cost of F&E, estimated to be \$3.2 million, will be borne by the Government. This is in line with the current policy.
- G. Consultants' fees are required for contract administration, site supervision and out-of-pocket expenses.



8EA - PRIMARY SCHOOL AT JOCKEY CLUB ROAD, SHEUNG SHUI

上水馬會道的一所小學



TREE FELLING PROPOSAL  
砍伐樹木建議圖

8EA - PRIMARY SCHOOL AT JOCKEY CLUB ROAD, SHEUNG SHUI

上水馬會道的一所小學