

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

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

#### **Education Subventions**

#### **15EA - Extension to St Mary's Canossian School at 162 Austin Road, Kowloon**

Members are invited to recommend to the Finance Committee the approval of a new commitment of \$71.3 million in money-of-the-day prices for constructing an extension to St Mary's Canossian School at 162 Austin Road, Kowloon.

#### **PROBLEM**

St Mary's Canossian School (the primary school) does not have adequate classrooms and teaching facilities to implement whole-day primary schooling.

#### **PROPOSAL**

2. The Director of Education (D of E), on the advice of Director of Architectural Services (D Arch S) and with the support of the Secretary for Education and Manpower, proposes to create a commitment of \$71.3 million in money-of-the-day (MOD) prices for constructing an extension to the primary school to enable it to convert from a 15-classroom bi-sessional school into a 24-classroom whole-day school.

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**PROJECT SCOPE AND NATURE**

3. The scope of the project includes the construction of a new extension comprising nine classrooms and other facilities at the south-western part of the campus (which is currently an open playground). To construct this new extension, an existing two-storey school administration block within the campus, comprising staff rooms, an administration office, a principal's office and a covered playground, will have to be demolished. These facilities will be temporarily reprovisioned in the existing school building during the construction period. A site plan is at Enclosure 1.

4. The extension will adopt a non-standard design. The primary school, upon completion of the extension works, will have most of the facilities provided for a standard 24-classroom primary school<sup>1</sup>. The extension will have the following facilities -

- (a) nine additional classrooms<sup>2</sup>;
- (b) four remedial teaching rooms;
- (c) six special rooms including a computer-assisted learning room and a language room;
- (d) a library;
- (e) a guidance activity room;
- (f) two interview rooms;
- (g) a staff room and a staff common room;
- (h) a conference room;
- (i) a multi-purpose area (which can also be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);
- (j) a student activity centre;
- (k) a basketball court on the roof;

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<sup>1</sup> An assembly hall excepted.

<sup>2</sup> There are already 15 classrooms in the existing school. With these additional nine classrooms, the school will have a total of 24 classrooms.

- (l) ancillary accommodation including a lift and relevant facilities for the handicapped; and
- (m) a green corner<sup>3</sup> (at the roof of the extension).

5. Upon completion of the extension, students of the primary school will continue to have access to existing sports facilities such as basketball courts in the adjacent campus of St. Mary's Canossian College (the secondary school). The current arrangement for primary and secondary school students to share the use of the existing assembly hall will also remain.

6. The proposed project will meet the planning target of providing two square meters of open space per student. The School Authority plans to demolish the existing school administration block in July 2001. Minor conversion works for temporary reprovisioning of the affected facilities will also commence at the same time. Construction works of the extension will commence in December 2001 for completion by March 2003. The school will then be able to operate as a whole-day primary school starting from the 2003/04 school year.

## JUSTIFICATION

7. The Government's interim target is to enable 60% of our primary school pupils to study in whole-day schools in the 2002/03 school year. To achieve this target, 78 new primary schools are required between the 1998/99 and the 2002/03 school years. To date, 37 schools have already been completed, and a further 40 are at various stages of construction. The one remaining project will be considered by Members at this meeting (see paper referenced PWSC(2001-02)34).

8. The Government is further committed to enabling virtually all primary school pupils to study in whole-day schools by the 2007/08 school year. To this end, D of E plans to construct another 46 new schools between the 2003/04 and the 2007/08 school years. **15EA** will help achieve this policy target. To date, funding has already been approved for one new school for meeting this target.

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<sup>3</sup> 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.

9. To facilitate the implementation of whole-day primary schooling, it is Government's policy to convert existing bi-sessional primary schools into whole-day operation within their existing boundary where feasible through construction of extra classrooms, provision of additional facilities or redevelopment.

## FINANCIAL IMPLICATIONS

10. The cost of the project is estimated to be \$71.3 million in MOD prices (see paragraph 11 below). The estimated cost, which has been examined and endorsed by D Arch S, is made up as follows -

	<b>\$ million</b>	
(a) Demolition and temporary re-provisioning	3.8	
(b) Piling	10.8	
(c) Building	30.0	
(d) Building services	9.3	
(e) Drainage and external works	5.4	
(f) Consultants' fees -	3.9	
(i) contract administration	1.9	
(ii) site supervision	1.6	
(iii) out-of-pocket expenses	0.4	
(g) Furniture and equipment	2.8	
(h) Contingencies	6.7	
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Sub-total	72.7	(in September 2000 prices)
(i) Provision for price adjustment	(1.4)	
	<hr/>	
Total	71.3	(in MOD prices)
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The construction floor area of the extension is 6 023 square metres. The construction unit cost, represented by building and building services costs, is \$6,525 per square metre in September 2000 prices. D Arch S considers the estimated construction unit cost reasonable. 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 15EA is at Enclosure 2. A breakdown by man-months of the cost estimate for the consultants' fees is at Enclosure 3.

11. Subject to approval, the School Authority will phase the expenditure as follows -

Year	\$ million (Sept 2000)	Price adjustment factor	\$ million (MOD)
2001 - 02	15.5	0.98000	15.2
2002 - 03	49.3	0.97976	48.3
2003 - 04	7.9	0.98759	7.8
	72.7		71.3

12. We derive the MOD estimates on the basis of Government's forecast of trend labour and construction prices for the period 2001 to 2004. The School Authority will tender the demolition and construction works under two fixed-price lump-sum contracts because the contract periods will be less than 21 months each and we can clearly define the scope of works in advance, leaving little room for uncertainty.

13. We estimate the annually recurrent expenditure for the primary school to be \$19.1 million. As the project is for converting an existing school into whole-day operation, the additional cost of furniture and equipment, estimated to be \$2.8 million, will be borne by the Government in accordance with existing policy.

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## **PUBLIC CONSULTATION**

14. The School Authority has consulted the St Mary's Canossian School Parents-Teachers Association, and briefed the parents and teachers concerned on this project. The proposal has received their support. The School Authority will take all necessary steps to minimize disruption to the students and teachers during the demolition and construction works.

15. Since the proposed extension is carried out within existing school boundary, further public consultation is not necessary.

## **ENVIRONMENTAL IMPLICATIONS**

16. The consultants engaged by the School Authority conducted a Preliminary Environmental Review (PER) on the proposed project in March 1999. The PER concluded that the school would not be subject to any adverse environmental impact.

17. During construction, the School Authority 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.

18. At the planning and design stages, the School Authority has considered measures to reduce the generation of construction and demolition (C&D) materials. The School Authority has introduced more prefabricated building elements into project designs to avoid temporary formwork and construction waste. These include proprietary fittings and fixtures. Suitable excavated materials will be used for filling within the site to minimize off-site disposal. In addition, the contractor will be required to use metal site hoardings and signboards so that these materials can be recycled or reused in other projects.

19. The School Authority will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce and recycle C&D materials. The School Authority will ensure that the day-to-day operations on site comply with the approved WMP. The School Authority will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through

a trip-ticket system. The contractor will be required to separate public fill from C&D waste for disposal at appropriate facilities. The School Authority will record the disposal, reuse and recycling of C&D materials for monitoring purposes. We estimate that the project will generate about 1 250 cubic metres (m<sup>3</sup>) of C&D materials. Of these, we will reuse about 250 m<sup>3</sup> (20%) on site, 815 m<sup>3</sup> (65%) as fill in public filling areas<sup>4</sup>, and dispose of about 185 m<sup>3</sup> (15%) at landfills.

## LAND ACQUISITION

20. The project does not require land acquisition.

## BACKGROUND INFORMATION

21. The subject site was granted to the Mother Superioress of the Daughters of Charity of the Canossian Institute for the operation of a secondary school and a primary school. The primary school occupies the ground and the first floors of a five-storey block built in 1953 with a roof annex added in 1964. It also occupies the whole of a two-storey school administration block completed in 1992. (This block will be demolished for construction of the proposed extension.)

22. During the construction period, students of the primary school will continue to use the existing school building. The whole construction site will be hoarded to provide a two-hour fire-rated protection between the existing school building and the construction site. In addition, there will be separate entrances for the construction site and the existing school building. The above will help ensure the safety of students. To minimize disturbance to students, the School Authority plans to complete the most disruptive works, i.e. the demolition works, during the summer holidays.

23. We upgraded **15EA** to Category B in October 1999. The School Authority engaged consultants to carry out a PER in March 1999, a topographical survey in May 2000, detailed design and tender documentation in February 2001, and employed a contractor to carry out site investigation in January 2001, at a total cost of \$4.3 million. We charged this amount to block allocation **Subhead 8100QX** "Alternations, additions, repairs and improvements to education subvented buildings". The consultants are finalising the detailed working drawings and tender documents.

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<sup>4</sup> 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 licence issued by the Director of Civil Engineering.

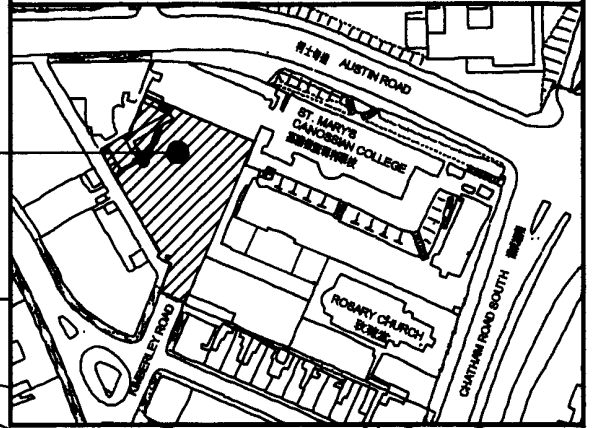
24. We estimate that **15EA** will create about 140 jobs of 1 900 man-month comprising five professional staff, 15 technical staff and 120 labourers during the construction period.

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Education and Manpower Bureau  
May 2001



LOCATION PLAN 位置圖



SITE AREA = 3180 m<sup>2</sup>  
 地盤面積約3180平方米

AUSTIN ROAD  
 柯士甸道

EXISTING TWO STOREY  
 SCHOOL ADMINISTRATION  
 BLOCK TO BE DEMOLISHED  
 拆除現有兩層高學校行政大樓

EXISTING ST. MARY'S  
 CANOSSIAN SCHOOL  
 (WITH 15 CLASSROOMS  
 FOR PRIMARY SCHOOL)  
 現有嘉諾撒聖瑪利學校  
 (現有 15 個小學課室)

GREEN CORNER AT  
 ROOF FLOOR  
 天台綠化小園地

SCHOOL BUS LAYBY

OPEN BASKETBALL COURT  
 AT ROOF FLOOR  
 天台露天籃球場

NEW PRIMARY SCHOOL BUILDING  
 新小學校舍

EMERGENCY  
 VEHICLE ACCESS

CARPARK TO BE PROVIDED  
 ON GROUND FLOOR  
 停車場設於地面

KIMBERLEY ROAD  
 金巴利道

TITLE - 8015EA  
 EXTENSION TO ST. MARY'S CANOSSIAN SCHOOL  
 162 AUSTIN ROAD KOWLOON  
 九龍柯士甸道162號嘉諾撒聖瑪利學校擴建計劃

SCALE 1:300



**Enclosure 2 to PWSC(2001-02)33**

**A comparison of the reference cost of a 24-classroom primary school project  
with the estimated cost for 15EA**

**\$ million (in Sept 2000 prices)**

	<b>Reference cost*</b> (for a standard 24-classroom primary school)	<b>15EA</b> (for an extension to provide nine extra classrooms to an existing 15- classroom school)	
(a) Demolition and temporary reprovisioning	-	3.8	(See A below)
(b) Piling	8.0	10.8	(See B below)
(c) Building	45.5	30.0	(See C below)
(d) Building services	11.0	9.3	(See D below)
(e) Drainage and external works	7.5	5.4	(See E below)
(f) Consultants' fee	-	3.9	(See F below)
(g) Furniture and equipment	-	2.8	(See G below)
(h) Contingencies	7.2	6.7	
	<hr/>	<hr/>	
Total	79.2	72.7	
	<hr/>	<hr/>	
(i) Construction floor area	9 129m <sup>2</sup>	6 023m <sup>2</sup>	
(j) Construction unit cost {[(c)+(d)] ÷ (i)}	\$6,189/m <sup>2</sup>	\$6,525/m <sup>2</sup>	

**\* Assumption for reference cost**

1. The estimation is based on the assumption that the school site is uncomplicated and without abnormal environmental restrictions. No allowance is reserved for specific environmental restrictions such as the provision of insulated windows, air-conditioning and solid 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 the handing-over of the project site for school construction.
3. Piling cost is based on the use of 101 numbers of steel H-piles at average depth of 30 metres, on the assumption 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 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. 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. D Arch S will review, and revise if necessary, the reference cost which should be adopted for future projects.

**Cost comparison between the reference cost and the estimate for 15EA**

The overall cost of **15EA** is lower than the reference cost because the construction floor area is smaller than that for a standard 24-classroom primary school.

**Estimate for 15EA**

- A. We need to demolish the existing two-storey school administration block and level off the site. We will also make minor alterations to the existing school building to re-provision facilities affected by the demolition on a temporary basis.

- B. The piling cost is higher because it is based on the use of 144 numbers of 235 mm diameter mini-piles at an average depth of 17 metres. A mini-pile system, albeit more expensive, will reduce noise disturbance to students and vibration effects to adjacent pre-war historical buildings.
- C. The building cost is lower because the construction floor area of the primary school (6 023 square metres) is smaller than that of a standard 24-classroom primary school (9 129 square metres). The per square metre building cost of **15EA** (\$4,981) is comparable to that of a standard 24-classroom primary school (\$4,984).
- D. The building services cost is lower because the construction floor area of the primary school (6 023 square metres) is smaller than that of a standard 24-classroom primary school (9 129 square metres). Due to the enclosed corridor design of the extension block, a fire sprinkler system at an additional cost of \$2.1 million will have to be provided to meet the fire safety requirements. This has accounted for a higher per square metre building services cost of **15EA** (\$1,544) compared to that of a standard 24-classroom primary school (\$1,205).
- E. The drainage and external works cost is lower because the site area of the school (3 180 square metres) is smaller than that of a standard 24-classroom primary school (4 700 square metres).
- F. The total consultancy fees are estimated to be \$8.2 million. Those incurred before tendering are \$4.3 million and those after tendering are \$3.9 million. Following the existing practice, the pre-tendering consultancy fees are funded under the block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings".
- G. The additional cost of furniture and equipment, estimated to be \$2.8 million, will be borne by the Government as the project will enable an existing bi-sessional school to convert into whole-day operation.

**Enclosure 3 to PWSC(2001-02)33**

**15EA - Extension to St Mary's Canossian School at 162 Austin Road, Kowloon**

**Breakdown of estimate for consultants' fees**

		<b>Estimated man- months</b>	<b>Average MPS* salary point</b>	<b>Multiplier Factor</b>	<b>Estimated Fee (\$ million)</b>
<b>(a) Consultants' staff costs</b>					
(i) Contract administration	Professional	9.5	38	2.4	1.3
	Technical	13.0	14	2.4	0.6
(ii) Site supervision	Technical	49.5	14	1.7	1.6
					<hr/> Sub-total
					<hr/> 3.5
<b>(b) Out-of-pocket expenses</b>					
Lithography and other direct expenses					0.4
					<hr/> Sub-total
					<hr/> 0.4
					<hr/> Total
					<hr/> 3.9

\* MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. A multiplier factor of 1.7 is applied in the case of site staff supplied by the consultants. (At 1.4.2000, MPS point 38 = \$57,525 per month and MPS point 14 = \$19,055 per month.)
2. 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.
3. The figures given above are estimates prepared by the Director of Architectural Services. We will only know the actual fees when we have selected the consultant through the usual competitive bidding system.