

## ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

### HEAD 703 – BUILDINGS

#### Education – Secondary

#### 236ES – Secondary school at Po Kong Village Road, Kowloon

Members are invited to recommend to Finance Committee the upgrading of **236ES** to Category A at an estimated cost of \$122.0 million in money-of-the-day prices for the construction of a secondary school at Po Kong Village Road, Kowloon.

### PROBLEM

There are not enough secondary schools to meet the increase in demand for new school places by the school year 2002/03.

### PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Education and Manpower, proposes to upgrade **236ES** to Category A at an estimated cost of \$122.0 million in money-of-the-day (MOD) prices for the construction of a secondary school at Po Kong Village Road, Kowloon.

### PROJECT SCOPE AND NATURE

3. The proposed secondary school is a standard design school building. The site plan for **236ES** is at Enclosure 1 for Members' reference. The new school building will have -

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- (a) 30 classrooms;
- (b) 16 special rooms, including a computer room, a computer-assisted learning room and a language room;
- (c) three remedial teaching rooms;
- (d) a guidance activity/interview room;
- (e) two interview rooms;
- (f) two staff rooms and a staff common room;
- (g) a student activity centre;
- (h) a conference room;
- (i) a library;
- (j) an assembly hall (which, together with the roof of the assembly hall block, can also be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);
- (k) a multi-purpose area;
- (l) two basketball courts (one at ground level and the other at the rooftop of the assembly hall block); and
- (m) ancillary accommodation including a lift and relevant facilities for the handicapped.

In addition, the new school will share with three primary schools under **269EP**<sup>1</sup> at the Po Kong Village Road site the use of a central landscaped recreational area comprising an athletic track and a football field with seating for spectators as well as two other basketball courts. There will also be a car and bus/coach parking area for these four schools to permit vehicle/pedestrian segregation within the school campus.

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<sup>1</sup> **269EP** was approved by Finance Committee in November 1999. It provides for the construction of three primary schools and common facilities to be shared by the primary schools under the project and the proposed secondary school under **236ES**.

4. The proposed project will be able to meet the planning target of providing two square metres of open space per student. D Arch S plans to start the construction works of **269EP** and **236ES** in November 2000 for completion in July 2002.

### JUSTIFICATION

5. The Director of Education (D of E) forecasts that 277 additional secondary school classrooms will be required in the territory by the school year 2002/03 to meet the increase in demand for new places. Pending the upgrading of **235ES** which involves two secondary schools providing a total of 60 classrooms to Category A<sup>2</sup>, **236ES** will further provide a total of 30 classrooms. We plan to meet the projected shortfall in future through further school construction projects.

### FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be \$122.0 million in MOD prices (see paragraph 7 below), made up as follows -

	<b>\$ million</b>	
(a) Site formation	5.2	
(b) Piling	15.7	
(c) Building	58.5	
(d) Building services	13.5	
(e) Drainage and external works	8.8	
(f) Contingencies	11.2	
	112.9	(in December 1999 prices)
Sub-total		

/(g) .....

<sup>2</sup>

At the Public Works Subcommittee meeting on 17 May 2000, Members endorsed the upgrading of **235ES** to Category A at an estimated cost of \$253.7 million in MOD prices for the construction of two secondary schools. Finance Committee will consider the recommendation on 9 June 2000.

	<b>\$ million</b>	
(g) Provision for price adjustment	9.1	
	<hr/>	
Total	122.0	(in MOD prices)
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The construction floor area of **236ES** is 12 238 square metres. The construction unit cost, represented by building and building services costs, is \$5,883 per square metre in December 1999 prices. D Arch S considers this construction unit cost comparable with similar school projects built by the Government. A comparison of the standard cost of a secondary school with the estimated cost for this school is at Enclosure 2.

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

<b>Year</b>	<b>\$ million (Dec 1999)</b>	<b>Price adjustment factor</b>	<b>\$ million (MOD)</b>
2000 – 01	3.0	1.00000	3.0
2001 – 02	54.7	1.04500	57.2
2002 – 03	44.6	1.10770	49.4
2003 – 04	10.6	1.17416	12.4
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	112.9		122.0
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8. We derived the MOD estimates on the basis of Government's latest forecast of trend labour and construction prices for the period 2000 to 2004. We will tender the works under a fixed-price lump-sum contract because we can clearly define the scope of works in advance, leaving little room for uncertainty.

9. The cost of furniture and equipment, estimated to be \$9.1 million, will be borne by the school sponsor as the school will be allocated to meet increase in demand for school places. We estimate the additional annually recurrent expenditure for the school to be \$40.2 million.

## **PUBLIC CONSULTATION**

10. We consulted the Community Building and Social Services Committee and the Traffic and Transport Committee of the Wong Tai Sin District Council (WTSDC) in February and April 2000 respectively. While the former supported the project, the latter requested the Government to construct a pedestrian footbridge across Po Kong Village Road leading from the neighbouring residential area to the school cluster to help absorb additional pedestrian load generated by the additional schools and to separate the vehicular traffic from the pedestrian traffic on Po Kong Village Road.

11. A Traffic Impact Study was conducted to establish the need for the proposed pedestrian footbridge. The study concluded that the additional pedestrian load could be absorbed by providing an additional at grade crossing across Po Kong Village Road near the main entrance to the school cluster rather than a pedestrian footbridge. The Education Department and the Transport Department will conduct a special briefing session for the Traffic and Transport Committee of the WTSDC on 2 June 2000 on the findings of the Traffic Impact Study. Even if the construction of a pedestrian footbridge were found to be necessary, it is unlikely that the design of the various schools would be affected.

## **ENVIRONMENTAL IMPLICATIONS**

12. We have conducted a Preliminary Environmental Review (PER) for the school. The PER concluded that the school would not be subject to any adverse environmental impacts. During construction, we will control noise, dust and site run-off nuisances 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, as well as frequent cleaning and watering of the site.

13. We estimate that some 850 cubic metres of construction and demolition (C&D) waste will be disposed of at landfills and 400 cubic metres of public fill will be delivered to public filling areas. Ways of reducing the generation of C&D materials were considered at the design and planning stages. We will require the contractor to submit a waste management plan to D Arch S for approval, with appropriate mitigation measures including allocation of an area for waste segregation. We will ensure that the day-to-day operations on site

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comply with the approved plan. We will also require the contractor to reuse as far as possible excavated material as filling materials on site or at other sites in order to minimize the disposal of public fill to public filling areas. To further minimize the generation of C&D materials, we will encourage the contractor to use non-timber formwork, hoarding and other temporary works. We will require the contractor to separate public fill from C&D waste for disposal at appropriate locations and to sort the C&D waste by category on site to facilitate reuse/recycling in order to reduce the generation of such waste. We will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system, and record the disposal, reuse and recycling of C&D materials for monitoring purposes.

## LAND ACQUISITION

14. The project does not require any land acquisition.

## BACKGROUND INFORMATION

15. In November 1999, the Finance Committee approved the upgrading of **269EP** "Three primary schools at Po Kong Village Road, Kowloon" to Category A with an approved project estimate of \$362.3 million in MOD prices. Other than constructing three standard design 30-classroom primary school buildings, the project will also provide a central landscaped recreational area comprising an athletic track and a football field with seating for spectators as well as two other basketball courts to the four schools to be constructed in the Po Kong Village Road School site, including the three primary schools in **269EP** and this secondary school in **236ES**. There will also be a car and bus/coach parking areas to permit vehicle/pedestrian segregation within the school campus. The additional cost for these shared facilities will be absorbed within the project estimate for **269EP**.

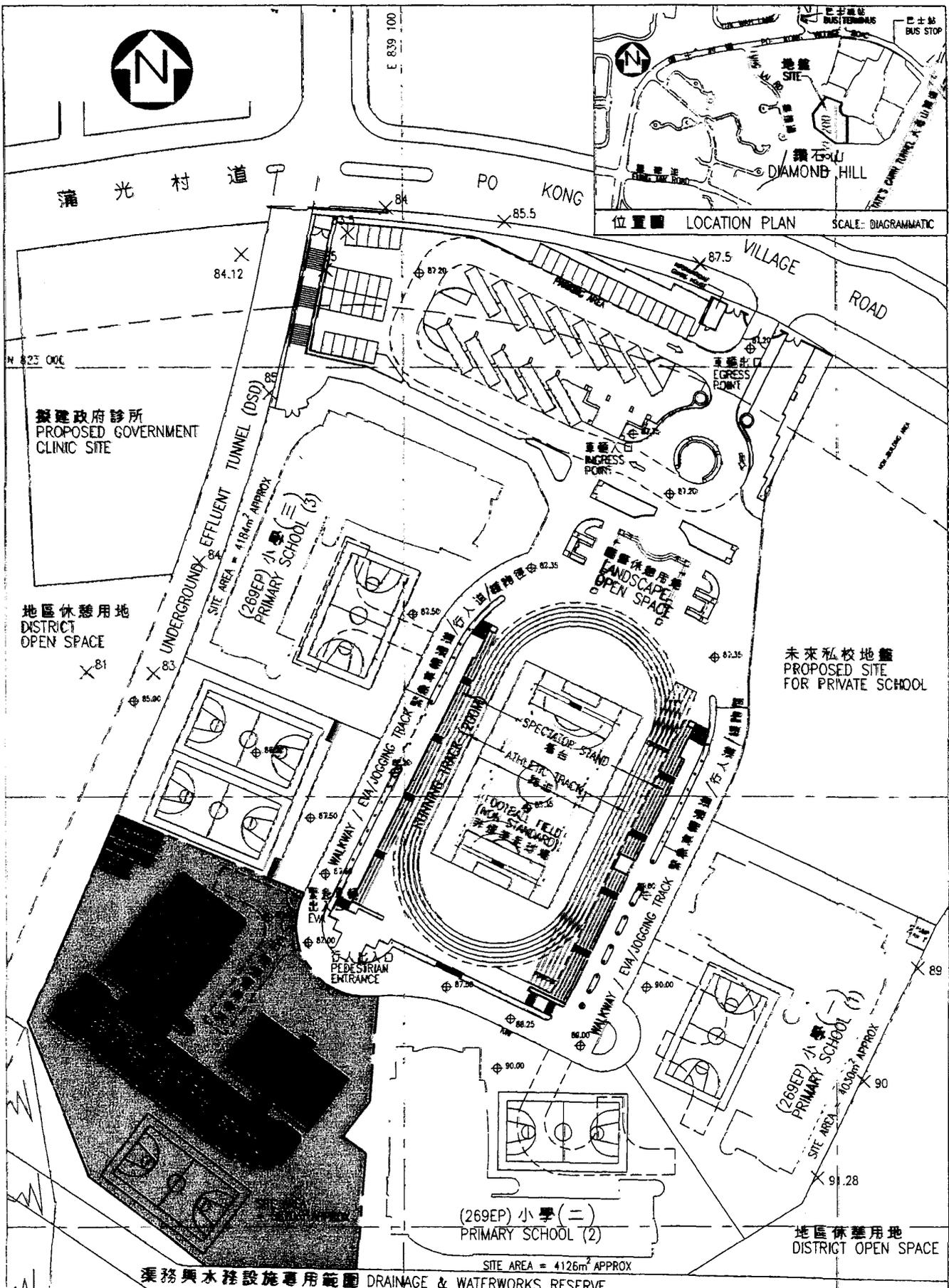
16. We upgraded **236ES** to Category B in September 1999. We engaged consultants to carry out the PER and topographical survey and employed a term contractor to carry out site investigation in July 1999 and August 1999 respectively at a total cost of \$880,000. We charged this amount to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of the Public Works Programme". The consultants and the term contractor have completed the PER, topographical survey and site investigation. D Arch S has completed the detailed design of the project and is preparing the tender documents using in-house staff resources.

17. We estimate that the proposed works will create some 169 jobs comprising two professional staff, seven technical staff and 160 labourers during the construction period.

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Education and Manpower Bureau  
May 2000

(PWSC0282/WIN11)



位置圖 LOCATION PLAN SCALE: DIAGRAMMATIC

title (236ES)  
 九龍蒲光村道一間中學  
 SECONDARY SCHOOL AT  
 PO KONG VILLAGE ROAD,  
 KOWLOON

drawn by K.F. CHIU	date 05.05.2000
approved SUZANNA CHAN	date 05.05.2000
office ARCHITECTURAL BRANCH	

drawing no. AB/5809/XA101	scale 1:1200
 ARCHITECTURAL SERVICES DEPARTMENT	

**A comparison of the standard cost of a secondary school project  
with the estimated cost of 236ES**

		<b>Standard cost*</b>	<b>236ES</b>	
		<b>\$ million (in Dec 1999 prices)</b>		
(a)	Site formation	-	5.2	(See note A)
(b)	Piling	11.0	15.7	(See note B)
(c)	Building	58.5	58.5	
(d)	Building services	13.5	13.5	
(e)	Drainage and external works	10.0	8.8	(See Note C)
(f)	Contingencies	9.3	11.2	
	Total	<u>102.3</u>	<u>112.9</u>	
(g)	Construction floor area	12 238m <sup>2</sup>	12 238m <sup>2</sup>	
(h)	Construction unit cost {[(c)+(d)] ÷(g)}	\$5,883/m <sup>2</sup>	\$5,883/m <sup>2</sup>	

**\* Assumptions for standard 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 138 numbers of steel H-piles at an 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 secondary school site area of 6 950 square metres built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a greenfield site).
5. No consultancy services are required.
6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring body.
7. The standard cost for comparison purpose is subject to review regularly. D Arch S has recently updated the standard cost of a secondary school from \$107.6 million in December 1998 prices to \$102.3 million in December 1999 prices. We will continue to periodically review, and revise if necessary, the standard cost which should be adopted for future projects.

**Notes**

- A. Site formation and retaining structures are necessary to raise the general level to accord with those of the school estate to facilitate drainage, vehicle access, etc.
- B. The piling cost is higher because it is based on the use of 130 numbers of rock-socketed steel H-piles in prebored holes of 35 metres average depth instead of 138 numbers of steel H-piles at average depth of 30 metres for a standard school. Percussive steel H-piles are unsuitable because of the need to drive the piles through a layer of underlying boulders.
- C. The drainage and external works cost is lower because the site area of 5 870 square metres of this school is smaller than standard (6 950 square metres).