

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

### **HEAD 703 - BUILDINGS**

#### **Education - Primary**

**258EP - Primary school in area 29, Tuen Mun**

**265EP - Primary school at Hung Hom Bay, Kowloon**

**269EP - Three primary schools at Po Kong Village Road, Kowloon**

Members are invited to recommend to Finance Committee the upgrading of **258EP**, **265EP** and **269EP** to Category A at estimated costs of \$107.7 million, \$110.7 million and \$362.3 million respectively in money-of-the-day prices for the construction of five 30-classroom primary schools, one in Tuen Mun, one in Hung Hom and three at Po Kong Village Road, Kowloon.

### **PROBLEM**

We need to provide additional primary schools for the implementation of the whole-day primary schooling policy.

### **PROPOSAL**

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Education and Manpower, proposes to upgrade the following projects to Category A at an estimated total cost of \$580.7 million in money-of-the-day (MOD) prices -

	<b>Project Estimate \$ million (MOD)</b>
(a) <b>258EP</b> - Primary school in area 29, Tuen Mun	107.7
(b) <b>265EP</b> - Primary school at Hung Hom Bay, Kowloon	110.7
(c) <b>269EP</b> - Three primary schools at Po Kong Village Road, Kowloon	362.3
Total	<hr/> 580.7 <hr/>

### **PROJECT SCOPE AND NATURE**

3. The five proposed primary schools are standard design 30-classroom school buildings as set out in Information Note PWSCI(98-99)12 submitted to Members in September 1998. Each school will have the following facilities. Site plans for **258EP**, **265EP** and **269EP** are attached at Enclosures 1, 2 and 3 respectively for Members' reference.

- (a) 30 classrooms;
- (b) six special rooms, including a computer-assisted learning room and a language room;
- (c) four 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;

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- (j) an assembly hall (which, together with the roof of the 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; and
- (m) ancillary accommodation including a lift and relevant facilities for the handicapped.

D Arch S plans to start the construction works for **269EP** in January 2000 for completion in June 2001, and start the construction works for **258EP** and **265EP** in February 2000 for completion in July 2001.

#### JUSTIFICATION

4. To meet the increase in demand for primary school places and to help achieve the policy target of enabling 60% of pupils in public sector schools to study on a whole-day basis by the commencement of the 2002/03 school year, the Director of Education (D of E) planned to build an additional 73 primary schools for completion between August 1998 and August 2002. To date, 18 of these schools have been completed, 38 schools are at various stages of construction<sup>1</sup>. Another two projects, **270EP** and **271EP** will also be considered by Members at this meeting (see composite paper PWSC(1999-2000)59).

5. Tuen Mun District currently has 35 public sector primary schools providing 837 classrooms. Whilst D of E forecasts that no additional classrooms are required to meet the increase in demand for school places by the 2002/03 school year, **258EP** will enable an existing bi-sessional primary school in the district to convert into whole-day operation.

6. Kowloon City District currently has 31 public sector primary schools providing 525 classrooms. Whilst D of E forecasts that no additional classrooms are required to meet the increase in demand for school places by the 2002/03 school year, **265EP** will enable an existing bi-sessional primary school in the district to convert into whole-day operation.

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<sup>1</sup> Among these 38 schools, 33 were approved by Finance Committee and five are funded by the Housing Authority.

7. Wong Tai Sin District currently has 24 public sector primary schools providing 564 classrooms. Whilst D of E forecasts that no additional classrooms are required to meet the increase in demand for school places by the 2002/03 school year, each of the three primary schools under **269EP** will enable an existing bi-sessional primary school in the district to convert into whole-day operation.

## FINANCIAL IMPLICATIONS

8. We estimate the capital costs of **258EP**, **265EP** and **269EP** to be \$107.7 million, \$110.7 million and \$362.3 million respectively in MOD prices (see paragraphs 9 and 10 below), made up as follows -

	<b>258EP</b>	<b>265EP</b>	<b>269EP</b>			<b>Total</b>	
			<b>School 1</b>	<b>School 2</b>	<b>School 3</b>	<b>for 269EP</b>	
			<b>\$ million</b>				
(a) Site formation	-	-	6.5	3.6	4.9	15.0	
(b) Road works	-	-	7.1	7.1	7.3	21.5	
(c) Piling	10.0	10.6	11.5	10.2	10.2	31.9	
(d) Building	52.3	52.4	52.0	52.0	52.2	156.2	
(e) Building services	14.9	15.4	12.0	12.0	13.8	37.8	
(f) Drainage and external works	8.4	9.7	9.0	9.0	9.6	27.6	
(g) Furniture and equipment	4.8	4.8	4.8	4.8	4.8	14.4	
(h) Contingencies	8.6	8.8	9.8	9.4	9.8	29.0	
Sub-total	99.0	101.7	112.7	108.1	112.6	333.4	(at December 1998 prices)
(i) Provisions for price adjustment	8.7	9.0	9.8	9.3	9.8	28.9	
Total	107.7	110.7	122.5	117.4	122.4	362.3	(in MOD prices)

The construction floor area for each of the five schools is 10 727 square metres. The respective construction unit costs of these schools are shown in Enclosure 4. D Arch S considers the estimated construction unit costs reasonable. A comparison of the standard cost of a 30-classroom primary school with the estimated costs for these schools is also at Enclosure 4.

9. Subject to approval, we will phase the expenditure for **258EP** and **265EP** as follows -

Year	\$ million (Dec 1998)		Price adjustment factor	\$ million (MOD)	
	258EP	265EP		258EP	265EP
1999 - 2000	0.5	0.5	1.02625	0.5	0.5
2000 - 2001	42.6	45.3	1.06217	45.2	48.1
2001 - 2002	42.8	40.0	1.09934	47.1	44.0
2002 - 2003	13.1	15.9	1.13782	14.9	18.1
	<u>99.0</u>	<u>101.7</u>		<u>107.7</u>	<u>110.7</u>

10. Subject to approval, we will phase the expenditure for **269EP** as follows -

Year	\$ million (Dec 1998)				Price adjustment factor	\$ million (MOD)			
	School 1	School 2	School 3	Total		School 1	School 2	School 3	Total
1999 - 2000	2.0	2.0	2.0	6.0	1.02625	2.1	2.1	2.1	6.3
2000 - 2001	50.3	50.0	50.4	150.7	1.06217	53.4	53.1	53.5	160.0
2001 - 2002	44.3	40.5	44.0	128.8	1.09934	48.7	44.5	48.4	141.6
2002 - 2003	16.1	15.6	16.2	47.9	1.13782	18.3	17.7	18.4	54.4
	<u>112.7</u>	<u>108.1</u>	<u>112.6</u>	<u>333.4</u>		<u>122.5</u>	<u>117.4</u>	<u>122.4</u>	<u>362.3</u>

11. We derived the MOD estimates on the basis of Government's latest forecast of trend labour and construction prices for the period 1999 to 2003. We will tender the works under fixed-price lump-sum contracts because we can clearly define the scope of works in advance, leaving little room for uncertainty.

12. We estimate the additional annually recurrent expenditure for each school to be \$19.5 million.

## PUBLIC CONSULTATION

13. We consulted the Social Services Committee of the Tuen Mun Provisional District Board on **258EP** in September 1998, the Kowloon City Provisional District Board on **265EP** in September 1999, and the Community Building and Social Services Committee of the Wong Tai Sin Provisional District Board on **269EP** in June 1999 respectively. Members supported the projects.

## ENVIRONMENTAL IMPLICATIONS

14. We have conducted Preliminary Environmental Reviews (PERs) for the three projects and will implement the required mitigation measures in accordance with the findings. The PER for **269EP** concluded that Schools 1 and 2 in **269EP** would not be subject to adverse environmental impacts. For all other schools this paper proposing to construct, we will implement the following environmental mitigation measures to keep the road traffic noise impact on the schools within the limits stipulated in the Hong Kong Planning Standards and Guidelines -

<b>Project No.</b>	<b>Mitigation Measures</b>	<b>Estimated Additional Cost \$ million (at Dec 1998 prices)</b>
<b>258EP</b>	(a) construction of a 2-metre high solid boundary wall along the site; and	0.2
	(b) provision of insulated windows and air-conditioning to 30 classrooms and four remedial teaching rooms from the 1/F to the 6/F at the north-western façade of the classroom block.	3.2

/265EP .....

<b>265EP</b>	(a) construction of a 3-metre high solid boundary wall along the site; and	0.7
	(b) provision of insulated windows and air-conditioning to 30 classrooms and four remedial teaching rooms from the 1/F to the 6/F at the south-western facade of the classroom block and to three special rooms on the 3/F at the north-western as well as south-eastern facades of the special room block.	3.8
<b>269EP (School 3)</b>	(a) provision of a 3-metre high solid boundary wall at the eastern, western and northern sides of the site facing Po Kong Village Road and Road L3; and	0.6
	(b) provision of insulated windows and air-conditioning to 12 classrooms from the 3/F to the 6/F at the northern facade of the classroom block and to five special rooms on the 2/F and 3/F at the eastern, western and northern facades of the special room block.	2.0

We have included the costs of these mitigation measures in the project estimates.

15. During the construction period, we will control noise, dust and site run-off nuisances to comply with the established standards through the implementation of mitigation measures under the relevant contracts.

## LAND ACQUISITION

16. None of the five schools requires land acquisition.

**/BACKGROUND .....**

**BACKGROUND INFORMATION**

17. We upgraded **258EP** to Category B in September 1998 and **265EP** and **269EP** in September 1999. D Arch S has completed site investigation and detailed design of the projects and is preparing the tender documents using in-house staff resources.

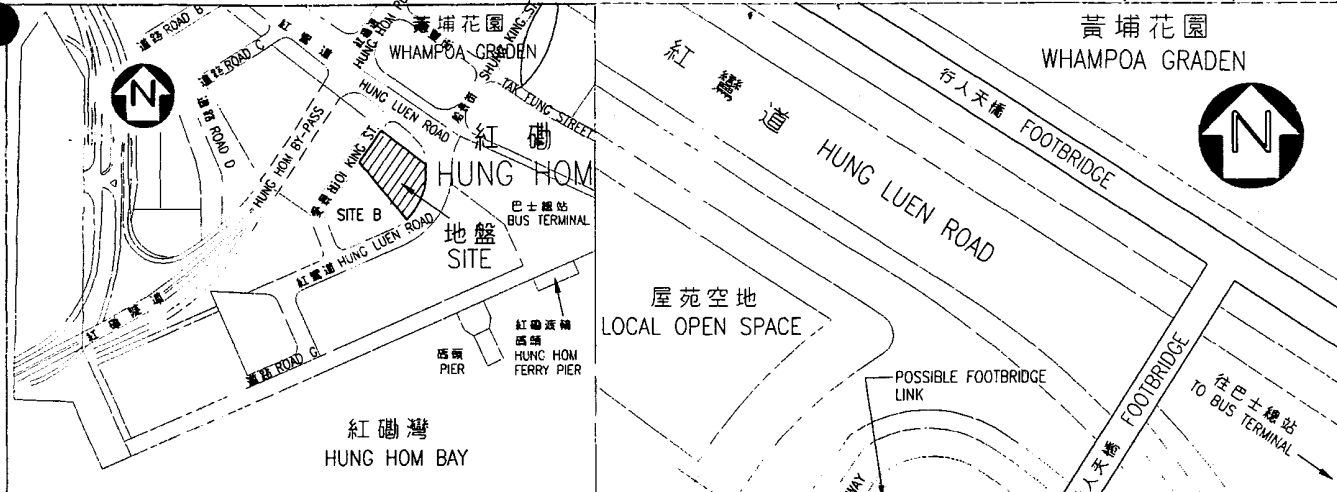
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Education and Manpower Bureau  
October 1999

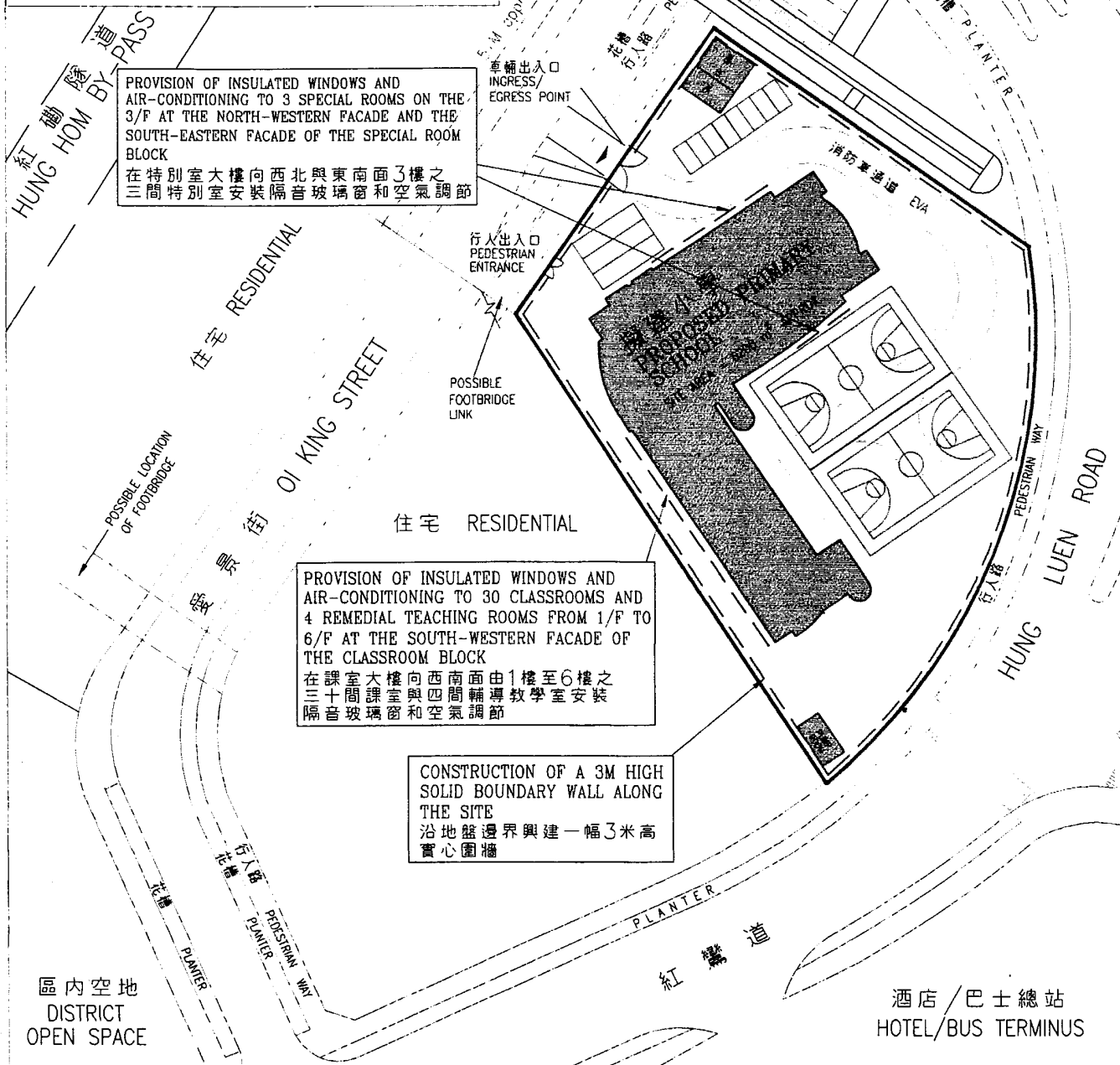
(PWSC0181/WIN7)








位置圖 LOCATION PLAN SCALE: DIAGRAMMATIC



CAD Ref. 6159XD101-1-1:1000

title 265EP 九龍紅磡灣一所小學 PRIMARY SCHOOL AT HUNG HOM BAY, KOWLOON	drawn by TOMMY LEE M.F. WONG (黃文奎)	date 18.8.99	drawing no. AB/6159/XD101 scale 1:1000
	approved NEVIN LAM	date 18.8.99	
	office ARCHITECTURAL BRANCH		 ARCHITECTURAL SERVICES DEPARTMENT



CONSTRUCTION OF A 3M HIGH SOLID BOUNDARY WALL AT THE EASTERN, WESTERN & NORTHERN SIDES OF THE SITE FACING PO KONG VILLAGE ROAD AND ROAD L3  
 在地盤沿東面、西面與北面的蒲崗村道及L3道路方向興建一幅3米高實心圍牆

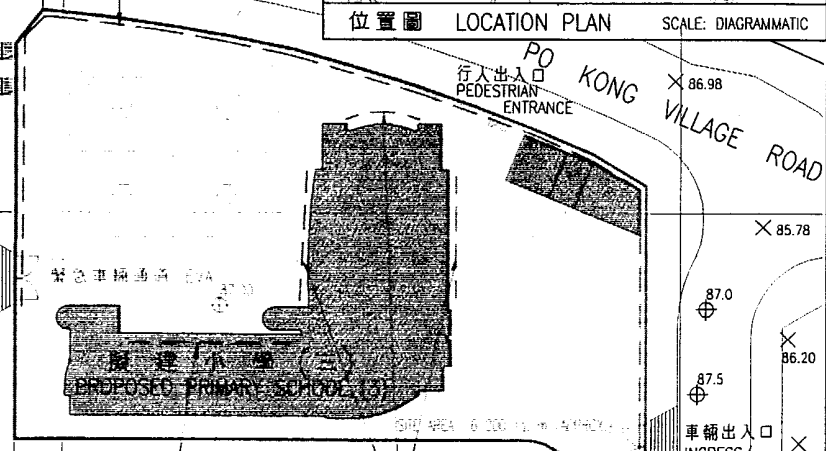


位置圖 LOCATION PLAN SCALE: DIAGRAMMATIC

蒲崗村道

慈雲山道  
TSZ WAN SHAN ROAD

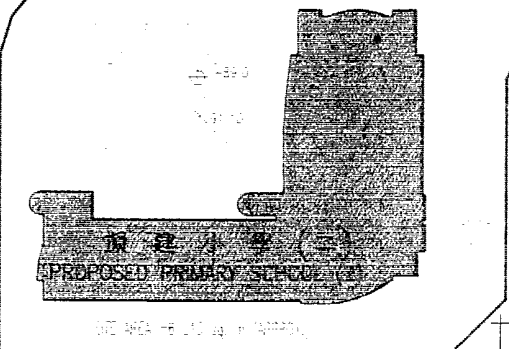
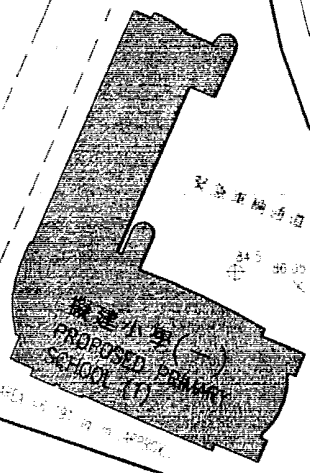
渠務署地底排水隧道 UNDERGROUND EFFLUENT TUNNEL (P&S)  
 渠務署地底排水隧道 UNDERGROUND EFFLUENT TUNNEL (P&S)  
 渠務署地底排水隧道 UNDERGROUND EFFLUENT TUNNEL (P&S)



PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 12 CLASSROOMS FROM THE 3/F TO THE 6/F AT THE NORTHERN FACADE OF THE CLASSROOM BLOCK  
 在課室大樓向北面由3樓至6樓之十二間課室安裝隔音玻璃窗和空氣調節


PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 5 SPECIAL ROOMS ON THE 2/F AND 3/F AT THE EASTERN, WESTERN AND NORTHERN FACADES OF THE SPECIAL BLOCK  
 在特別室大樓向東面、西面與北面2樓及3樓的五間特別室安裝隔音玻璃窗和空氣調節

未來中學地盤  
FUTURE SECONDARY SCHOOL SITE  
 SITE AREA = 6 826 sq. m (APPROX.)



渠道與水務專用範圍 PEDESTRIAN DRAINAGE & WATERWORKS RESERVE

CAD Ref. 6142XA102 -- 1:1000

title 269EP 九龍蒲崗村道的三所小學 THREE PRIMARY SCHOOLS AT PO KONG VILLAGE ROAD, KOWLOON	drawn by W.M. YIU M.F. WONG (黃文奎)	date 10.9.99	drawing no. AB/5697,5698 & 6142/XA102	scale 1:1200
	approved SUZANNA CHAN	date 10.9.99	 ARCHITECTURAL SERVICES DEPARTMENT	
	office ARCHITECTURAL BRANCH			

## Enclosure 4 to PWSC(1999-2000)58

### A comparison of the standard cost of a 30-classroom primary school project with the estimated costs of the proposed school projects

	Standard cost*	258EP	265EP	269EP School 1	269EP School 2	269EP School 3	
(\$ million at December 1998 prices)							
(a) Site formation	-	-	-	6.5	3.6	4.9	(See note A)
(b) Road works	-	-	-	7.1	7.1	7.3	(See note B)
(c) Piling	9.5	10.0	10.6	11.5	10.2	10.2	(See note C)
(d) Building	52.0	52.3	52.4	52.0	52.0	52.2	(See note D)
(e) Building services	12.0	14.9	15.4	12.0	12.0	13.8	(See note E)
(f) Drainage and external works	9.0	8.4	9.7	9.0	9.0	9.6	(See note F)
(g) Furniture and equipment	-	4.8	4.8	4.8	4.8	4.8	(See note G)
(h) Contingencies	8.3	8.6	8.8	9.8	9.4	9.8	
Total	<u>90.8</u>	<u>99.0</u>	<u>101.7</u>	<u>112.7</u>	<u>108.1</u>	<u>112.6</u>	
(i) Construction floor area	10 727m <sup>2</sup>	10 727m <sup>2</sup>	10 727m <sup>2</sup>	10 727m <sup>2</sup>	10 727m <sup>2</sup>	10 727m <sup>2</sup>	
(j) Construction unit cost {[(d)+(e)]÷(i)}	\$5,966/m <sup>2</sup>	\$6,265/m <sup>2</sup>	\$6,320/m <sup>2</sup>	\$5,966/m <sup>2</sup>	\$5,966/m <sup>2</sup>	\$6,153/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 handing-over of the project site for school construction.

3. Piling cost is based on the use of 112 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 standard 30-classroom primary school built on an average level site of 6 200 square metres 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. We will review, and revise if necessary, the standard cost which should be adopted for future projects.

### Notes

- A. For **269EP**, the costs for site formation are required as the sites are sloping. We need to form platforms for the individual schools and to construct retaining walls for all three schools.
- B. For **269EP**, the costs for road works are required for the construction of a public access road to serve the schools to match the schools' completion programme.
- C. Piling costs for the schools are adjusted to suit individual site conditions and are based on the following –

	<b>258EP</b>	<b>265EP</b>	<b>269EP</b>
Type	Bored pile of 2.5m diameter	Steel H-pile	Steel H-pile
Number	23	125	116
Depth (metres)	24	30	31

- (i) For **258EP**, percussive H-piles are not suitable as the rock-head of the site is relatively high and the nature of the alluvium soil provides inadequate friction resulting in possible 'rebound' from the rockhead. The use of large diameter bored piles is considered the most economic alternative.
  - (ii) For **265EP**, additional piles are required to account for the negative skin friction on the reclaimed site.
  - (iii) For **269EP**, additional piles of a slightly deeper depth are required for each school because of the extensive 'fill' on the formed site. Furthermore, 40 numbers out of 116 numbers of piles for School 1 require pre-boring to a depth of 25 metres as the site is in close proximity to an underground effluent tunnel.
- D. The building costs for **258EP**, **265EP** and School 3 under **269EP** are higher because of the provision of insulated windows as a noise mitigation measure.
- E. The building services costs for **258EP**, **265EP** and School 3 under **269EP** are higher because of the provision of air-conditioning as a noise mitigation measure.
- F. (i) For **258EP**, despite the need to build a 2-meter high solid boundary wall as a noise mitigation measure, the cost for drainage and external works is lower because the site area of 5 667 square metres is smaller than standard (6 200 square metres).
- (ii) For **265EP**, the drainage and external works cost is higher because of the construction of a 3-metre high solid boundary wall along the site as a noise mitigation measure.
- (iii) For School 3 under **269EP**, the cost for drainage and external works is higher because of the construction of a 3-metre high solid boundary wall at the eastern, western and northern sides of the site facing Po Kong Village Road and Road L3 as a noise mitigation measure.
- G. For each of the five schools, \$4.8 million is required for the cost of furniture and equipment as the schools will be allocated to existing bi-sessional schools for conversion into whole-day operation.