For discussion **PWSC(1999-2000)91**
on 26 January 2000

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 - BUILDINGS
Education - Primary
266EP - Primary school at Kin Tak Street, Yuen Long
278EP - Primary school in Sau Mau Ping Estate, phase 9

Members are invited to recommend to Finance Committee the upgrading of **266EP** and **278EP** to Category A at estimated costs of $116.2 million and $117.6 million respectively in money-of-the-day prices for the construction of two 24-classroom primary schools in Yuen Long and Sau Mau Ping Estate, phase 9.

PROBLEM

There are not enough primary schools to meet the increase in demand for new school places and to implement 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 $233.8 million in money-of-the-day (MOD) prices -

/(a) …..

			Project Estimate $ million (MOD)
(a)	**266EP -**	Primary school at Kin Tak Street, Yuen Long	116.2
(b)	**278EP -**	Primary school in Sau Mau Ping Estate, phase 9	117.6
		Total	233.8

PROJECT SCOPE AND NATURE

3. The two primary schools are standard design 24-classroom school buildings[1]. Site plans for **266EP** and **278EP** are at Enclosures 1 and 2 respectively for Members' reference. Each school will have the following facilities -

(a) 24 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;

/(j) …..

[1] For **278EP**, the total site area is approximately 7 090 square metres. However, the usable site area after deducting the slopes and retaining walls is 5 336m square metres. Therefore, it is only technically feasible to develop a 24-classroom primary school in the site.

(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/three basketball courts (For **266EP**, one at ground level and the other at the rooftop of the assembly hall block. For **278EP**, in addition to the standard provision of two basketball courts, one more basketball court is provided at ground level as site conditions permit); and

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

D Arch S plans to start the construction works for **266EP** in March 2000 for completion in July 2001, and start the construction works for **278EP** in May 2000 for completion in December 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 school year 2002/03, the Director of Education (D of E) has been making plans to build an additional 73 primary schools for completion between August 1998 and August 2002. To date, 19 of these schools have been completed, and 44 schools are at various stages of construction[2].

5. Yuen Long District currently has 46 public sector primary schools providing 776 classrooms including four new schools providing 120 classrooms completed in August 1999. D of E forecasts that an additional 448 classrooms will be required to meet increase in demand for school places by the school year 2002/03. Nine primary school projects providing 270 classrooms have already been upgraded to Category A and planned for completion by the school year 2002/03. **266EP** will further reduce the shortfall in the district by 24 classrooms

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[2] Of these 44 schools, 39 were approved by Finance Committee and five are being funded by the Housing Authority.

to 154 classrooms. The remaining shortfall will be met by other school projects which are being planned.

6. Kwun Tong District currently has 29 public sector primary schools providing 684 classrooms. D of E forecasts that an additional 152 classrooms will be required to meet the increase in demand for school places by the school year 2002/03. To meet this new demand, five primary school projects providing 144 classrooms for completion by the school year 2001/02 have already been upgraded to Category A. **278EP** will enable an existing bi-sessional primary school in the district to convert into whole-day operation.

FINANCIAL IMPLICATIONS

7. We estimate the capital costs of **266EP** and **278EP** would be $116.2 million and $117.6 million respectively in MOD prices (see paragraph 8 below), made up as follows -

		266EP	**278EP**	
		$ million		
(a)	Site formation	-	10.3	
(b)	Piling	25.5	9.3	
(c)	Building	48.9	48.8	
(d)	Building services	14.7	14.9	
(e)	Drainage and external works	7.8	10.1	
(f)	Furniture and equipment	-	4.5	
(g)	Contingencies	9.7	8.3	
	Sub-total	106.6	106.2	(at December 1998 prices)

/(h) …..

(h)	Provision for price adjustments	9.6	11.4	
	Total	116.2	117.6	(in MOD prices)

The construction floor areas of **266EP** and **278EP** are both 9 129 square metres each. The respective construction unit costs are shown in Enclosure 3. D Arch S considers the estimated construction unit costs reasonable. A comparison of the standard cost of a 24-classroom primary school with the estimated costs for the two projects is at Enclosure 3.

8. Subject to approval, we will phase the expenditure for **266EP** and **278EP** as follows –

Year	**$ million (Dec 1998)**		**Price adjustment factor**	**$ million (MOD)**	
	266EP	**278EP**		**266EP**	**278EP**
2000 – 2001	54.5	34.4	1.05814	57.7	36.4
2001 – 2002	41.1	55.7	1.11104	45.7	61.9
2002 – 2003	11.0	7.8	1.16660	12.8	9.1
2003 – 2004	-	8.3	1.22493	-	10.2
	106.6	106.2		116.2	117.6

9. 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 fixed-price lump-sum contracts because we can clearly define the scope of works in advance, leaving little room for uncertainty.

10. The cost of furniture and equipment for **266EP**, estimated to be $4.5 million, will be borne by the school sponsor as the school will be allocated to

/meet …..

meet increase in demand for school places. For **278EP**, as the school will enable an existing bi-sessional school to convert into whole-day operation, the cost of furniture and equipment will be borne by the Government. The above arrangement for furniture and equipment cost is in accordance with the established practice. We estimate the additional annually recurrent expenditure for each school to be $16.0 million.

PUBLIC CONSULTATION

11. We consulted the Social Service and Publicity Committee of the Yuen Long Provisional District Board on **266EP** in July 1999, and the Community Building Committee of the Kwun Tong Provisional District Board on **278EP** in September 1999. Members supported the projects.

ENVIRONMENTAL IMPLICATIONS

12. We have conducted Preliminary Environmental Reviews (PERs) and will implement the required mitigation measures in accordance with the findings. We will provide the following environmental mitigation measures to **266EP** and **278EP** to keep the road traffic noise impact on the proposed schools within the limits stipulated in the Hong Kong Planning Standards and Guidelines –

Project No.		Mitigation Measures	Estimated Cost $ million (at Dec. 1998 prices)
266EP	(a)	construction of a 3-metre high solid boundary wall at the eastern side of the site facing Fung Cheung Road; and	0.3
	(b)	provision of insulated windows and air-conditioning to 24 classrooms and four remedial teaching rooms from the 1/F to the 6/F at the western façade of the classroom block, and to three special rooms from the 2/F to the	3.6

		3/F at the southern as well as the northern façade of the special room block.	
278EP	(a)	construction of a 3-metre high retaining wall cum solid boundary wall[3] at the western side of the site facing the estate road adjacent to the housing development and southern side of the site facing Sau Ming Road; and	1.3
	(b)	provision of insulated windows and air-conditioning to 24 classrooms and four remedial teaching rooms from the 1/F to the 6/F at the southern facade of the classroom block as well as to three special rooms on the 2/F and the 3/F at the eastern and western facades of the special room block.	3.7

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

13. We will control noise, dust and site run-off nuisances during the construction to comply with the established standards 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, etc.

14. We estimate about 550 cubic metres of construction and demolition waste for **266EP** and 650 cubic metres for **278EP** will be disposed of at landfills and 150 cubic metres of public fill for **266EP** and 350 cubic metres for **278EP** will be delivered to public filling areas. We have considered in the planning and design stages to reduce the generation of construction and demolition materials as far as possible. We will require our contractor under the contract to submit a waste management plan to D Arch S for approval with appropriate mitigation measures, including the allocation of an area for waste segregation. We will

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[3] There is a level differrence between the school site and Sau Mau Ping Road of around 1.5 metre. The 3-metre high boundary wall therefore also acts as a retaining structure.

ensure that the day-to-day operations on site comply with the waste management plan submitted. We will also require the contractor to reuse the excavated material, on site or on other sites, as filling materials as far as possible to minimise the disposal of public fill to public filling areas. To further minimise the generation of construction and demolition 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 construction and demolition waste for disposal at appropriate locations and to sort the construction and demolition waste by category on site to facilitate re-use/recycling in order to reduce the generation of such waste. We will control the disposal of construction and demolition materials to a designated public filling facility and/or landfill through a trip ticket system, and record the disposal, reuse and recycling of construction and demolition materials for monitoring purposes.

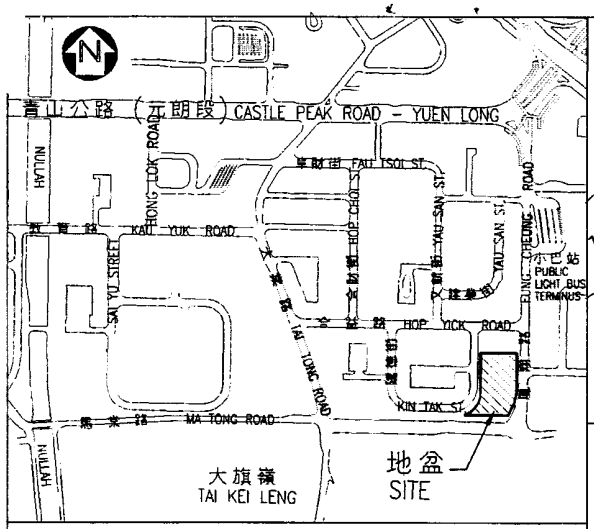
LAND ACQUISITION

15. For **266EP**, the site occupies the existing through-road at Kin Tak Street and hence the relevant part of the street has to be closed permanently. We gazetted the road closure in October 1999. No public objection was received. **278EP** does not require land acquisition.

BACKGROUND INFORMATION

16. We upgraded **266EP** and **278EP** to Category B in September 1999 and November 1999 respectively. D Arch S has completed site investigations and detailed designs for the two projects and is preparing the tender documents using in-house staff resources.

Education and Manpower Bureau
January 2000



位置圖 LOCATION PLAN SCALE : DIAGRAMMATIC

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 3 SPECIAL ROOMS FROM THE 2/F TO THE 3/F AT THE NORTHERN FACADE OF THE SPECIAL ROOM BLOCK.
在特別室大樓向北面由2樓至3樓之三間特別室安裝隔音玻璃窗和空氣調節

合 益 路 HOP YICK ROAD

合 益 中 心
HOP YICK CENTRE

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 24 CLASSROOMS AND 4 REMEDIAL TEACHING ROOMS FROM THE 1/F TO THE 6/F AT THE WESTERN FACADE OF THE CLASSROOM BLOCK.
在課室大樓向西面由1樓至6樓之二十四間課室與四間輔導教學室安裝隔音玻璃窗和空氣調節

CONSTRUCTION OF A 3M HIGH SOLID BOUNDARY WALL AT THE EASTERN SIDE OF THE SITE FACING FUNG CHEUNG ROAD
在地盤沿東面鳳祥路方向興建一幅3米高實心圍牆

行人出入口
PEDESTRIAN ENTRANCE

停 車 場
CARPARK

KIN TAK STREET

車輛出入口
INGRESS/EGRESS POINT

消防車通道 EVA

SITE AREA = 4256m² approx.

鳳 琴 街
FUNG CHEUNG ROAD

鳳翔路 FUNG CHEUNG ROAD

DIVISIONAL FIRE STATION
消 防 局

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 3 SPECIAL ROOMS FROM THE 2/F TO THE 3/F AT THE SOUTHERN FACADE OF THE SPECIAL ROOM BLOCK.
在特別室大樓向南面由2樓至3樓之三間特別室安裝隔音玻璃窗和空氣調節

建 德 街

L4 道 路 ROAD L4

title 266EP 元朗建德街一所二十四間課室小學 A 24-CLASSROOMS PRIMARY SCHOOL AT KIN TAK STREET, YUEN LONG	drawn by TOMMY LEE 李潤華 M.F. WONG 黃文奎	date 28.8.99	drawing no. AB/6146/XC103
	approved DANIEL CHAN	date 28.8.99	scale 1:1000
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT

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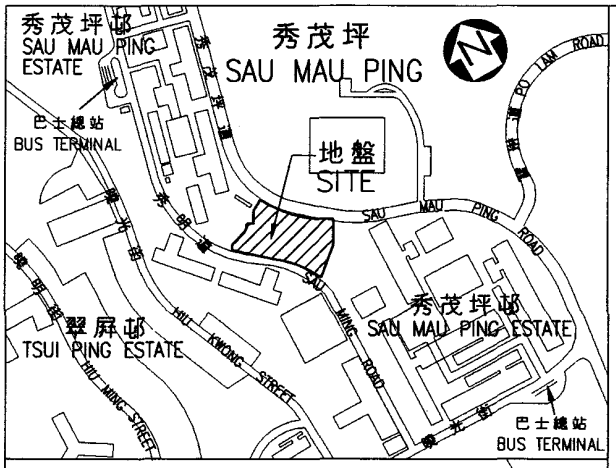
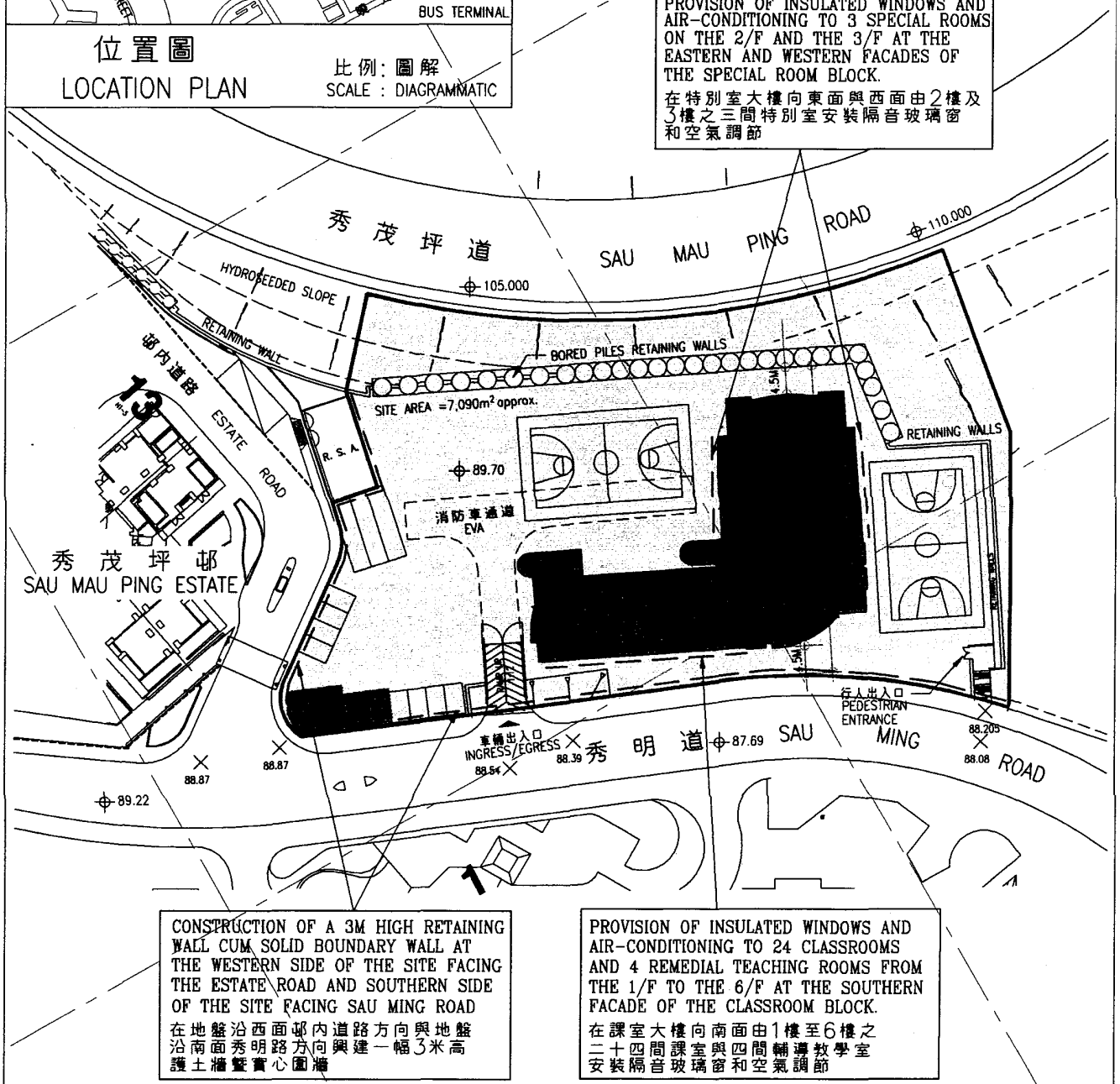


位置圖
LOCATION PLAN

比例：圖解
SCALE : DIAGRAMMATIC

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 3 SPECIAL ROOMS ON THE 2/F AND THE 3/F AT THE EASTERN AND WESTERN FACADES OF THE SPECIAL ROOM BLOCK.
在特別室大樓向東面與西面由2樓及3樓之三間特別室安裝隔音玻璃窗和空氣調節



CONSTRUCTION OF A 3M HIGH RETAINING WALL CUM SOLID BOUNDARY WALL AT THE WESTERN SIDE OF THE SITE FACING THE ESTATE ROAD AND SOUTHERN SIDE OF THE SITE FACING SAU MING ROAD
在地盤沿西面邨內道路方向與地盤沿南面秀明路方向興建一幅3米高護土牆暨實心圍牆

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING TO 24 CLASSROOMS AND 4 REMEDIAL TEACHING ROOMS FROM THE 1/F TO THE 6/F AT THE SOUTHERN FACADE OF THE CLASSROOM BLOCK.
在課室大樓向南面由1樓至6樓之二十四間課室與四間輔導教學室安裝隔音玻璃窗和空氣調節

title (278EP) 秀茂坪邨第九期 一所小學 PRIMARY SCHOOL IN SAU MAU PING ESTATE, PHASE 9	drawn by TOMMY LEE M.F. WONG (黃文奎)	date 20.9.99	drawing no. AB/6226/XB104	scale 1:1000
	approved PHILIP KEE	date 20.9.99	ARCHITECTURAL SERVICES DEPARTMENT	
	office ARCHITECTURAL BRANCH			

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Enclosure 3 to PWSC(1999-2000)91

A comparison of the standard cost of a 24-classroom primary school project with the estimated costs of the proposed school projects

		Standard cost*	266EP	278EP	
(a)	Site formation	-	-	10.3	(See note A)
(b)	Piling	8.6	25.5	9.3	(See note B)
(c)	Building	48.5	48.9	48.8	(See note C)
(d)	Building services	11.5	14.7	14.9	(See note D)
(e)	Drainage and external works	7.5	7.8	10.1	(See note E)
(f)	Furniture and equipment			4.5	(See note F)
(g)	Contingencies	7.6	9.7	8.3	
	Total	83.7	106.6	106.2	
(h)	Construction floor area	9 129m^2	9 129m^2	9 129m^2	
(i)	Construction unit cost {[(c)+(d)]÷(h)}	\$6,572/m^2	\$6,967/m^2	\$6,978/m^2	

*** 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 101 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 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 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 **278EP,** the site formation cost is necessary for levelling of the steeply sloping site to match with the levels of existing roads and other adjacent developments. As the proposed school site is situated within a housing development, the Housing Department has recently completed the site formation and will hand over the site to Architectural Services Department. Under Housing Authority's cost apportionment methodology, however, the site formation cost will be shared by the school on the basis of its apportionment to the whole housing development.

B. Piling costs for the proposed schools are adjusted to suit individual site conditions and are based on the use of the following -

	266EP	**278EP**
Type	2.5 m diameter bored piles	rock-socketed steel H-piles
Number	22	99
Depth (metres)	50	16

(i) For **266EP**, the rockhead is of moderately decomposed marble and cavities in this designated areas are formed at shallow depths from the rockhead. Large diameter deep bored piles are considered to be the most appropriate and economical piling system.

(ii) For **278EP**, the rock level on the site is close to the surface and hence piles cannot be driven into rock. Sockets for the H-piles have to be bored prior to the pile installation.

C. The building costs for **266EP** and **278EP** are higher because of the provision of insulated windows as a noise mitigation measure.

D. The building services costs for **266EP** and **278EP** are higher because of the provision of air-conditioning as a noise mitigation measure.

E. (i) For **266EP**, the drainage and external works cost is higher because of the construction of a 3-metre high solid boundary wall as a noise mitigation measure.

(ii) For **278EP**, the drainage and external works cost is higher because the site area (7 090 square metre) is larger than that of the standard school. Moreover, we need to construct a 3-metre high retaining wall cum solid boundary wall at the western side of the site facing the estate road adjacent to the housing development and southern side of the site facing Sau Ming Road as a noise mitigation measure.

F. For **278EP,** the cost of furniture and equipment, estimated to be $4.5 million, will be borne by Government as the school will be allocated to existing bi-sessional school for conversion to whole-day operation.