

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Education – Primary

299EP – A 24-classroom primary school in Area 55, Tuen Mun

300EP – A 30-classroom primary school in Area 55, Tuen Mun

Members are invited to recommend to Finance Committee the upgrading of **299EP** and **300EP** to Category A at an estimated cost of \$163.5 million and \$219.8 million respectively in money-of-the-day prices for the construction of two primary schools in Area 55, Tuen Mun.

PROBLEM

We need to construct two school premises in Tuen Mun district for converting four existing bi-sessional primary schools into whole-day operation.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education (SED), proposes to upgrade the following projects to Category A –

/(a)

		Estimated cost (in MOD prices)
(a)	299EP A 24-classroom primary school in Area 55, Tuen Mun	\$163.5 million
(b)	300EP A 30-classroom primary school in Area 55, Tuen Mun	\$219.8 million

PROJECT SCOPE AND NATURE

3. The proposed scope comprises demolition of the existing nine domestic structures and 30 non-domestic structures on site and construction of the two proposed primary schools. The two schools will have the following facilities –

		299EP	300EP
(a)	classrooms	24	30
(b)	special rooms, including a computer-assisted learning room and a language room	6	6
(c)	small group teaching rooms	4	4
(d)	guidance activity room	1	1
(e)	interview rooms	2	2
(f)	staff room	1	1
(g)	staff common room	1	1
(h)	student activity centre	1	1
(i)	conference room	1	1
(j)	library	1	1
(k)	assembly hall (which can be used for a wide range of physical activities such as badminton, gymnastics and table-tennis)	1	1

/(l)

(l)	multi-purpose area	1	1
(m)	basketball court at ground level	1	2
(n)	a 45-metre (m) running track ¹	1	1
(o)	green corner ²	1	1
(p)	ancillary accommodation, including a lift and relevant facilities for the handicapped		available available

The proposed schools will meet the planning target of providing two square metres (m²) of open space per student. A site plan for **299EP** and **300EP** is at Enclosure 1 and views of the school premises (artist's impression) are at Enclosure 2A and 2B. The project sites are situated at the So Kwun Wat Archaeological Site and we will conduct rescue excavation works before construction works commence. We plan to start the rescue excavation works of **299EP and 300EP** in November 2008, followed by the construction works in October 2009 for completion in July 2011.

JUSTIFICATION

4. It is Government's policy to implement whole-day primary schooling for all primary school students. In the 2007/08 school year, about 96% of primary school places are in the whole-day mode.

5. Upon completion, **299EP** will provide 24 classrooms for housing the PM sessions of two existing bi-sessional primary schools in Tuen Mun. Likewise, **300EP**, providing 30 classrooms, will house the PM sessions of another two existing bi-sessional primary schools in the district. In other words, upon completion of the two projects, four PM sessions of existing schools will be able to convert to whole-day operation in the two new premises while four AM sessions will also be able to provide whole day schooling in their existing premises. As such, the project will not affect the overall supply of primary school places.

/6.

¹ Making optimal use of the space of the campus, a 45-m running track will be provided.

² 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 greenhouse, a weather station and planting beds.

6. We will only be able to arrive at a realistic assessment by mid-2008 whether additional classrooms would be required in the school net in which these two projects are located to support small class teaching in public sector primary schools with effect from 2009/10 school year. Even if a demand for additional classrooms is established, the extent for expanding the scope of the two projects, which already provide 24 classrooms and 30 classrooms respectively, is also likely to be constrained by the area of the school sites concerned. With the expectation that the two new school premises may contribute to any additional classrooms required through minor conversion works and appropriate arrangements by the schools, the school sponsoring bodies agree that the Government should proceed with **299EP** and **300EP** under their present scope of works and school design without further delay.

FINANCIAL IMPLICATIONS

7. We estimate the capital costs of **299EP** and **300EP** to be \$163.5 million and \$219.8 million respectively in MOD prices (see paragraph 8 below), made up as follows –

		\$ million	
		299EP	300EP
(a)	Utilities / footpath diversion	1.9	2.0
(b)	Rescue excavation	3.0	3.0
(c)	Site works / formation	6.5	27.7
(d)	Piling	18.2	29.6
(e)	Building	66.5	73.5
(f)	Building services	17.3	19.3
(g)	Drainage	3.2	3.4

/(h)

		\$ million	
		299EP	300EP
(h)	External works	11.4	13.8
(i)	Furniture and equipment ³	3.0	3.1
(j)	Consultant's fees for geotechnical / slope work supervision	-	0.6
(k)	Contingencies	12.4	16.8
Sub-total		143.4	192.8
(l)	Provision for price adjustment	20.1	27.0
Total		163.5	219.8

(in September 2007 prices)

(in MOD prices)

We propose to engage a consultant to undertake site supervision for geotechnical / slope work of **300EP**. Since the site for **299EP** is generally flat, no geotechnical engineer is required for **299EP**. A detailed breakdown of the estimate for consultant's fees by man-months is at Enclosure 3. The construction floor areas (CFAs) of **299EP** and **300EP** are 9 722 m² and 11 263 m² respectively. The estimated construction unit costs of **299EP** and **300EP**, represented by the building and the building services costs, are \$8,620 per m² and \$8,239 per m² of CFA in September 2007 prices respectively. We consider these unit costs comparable to similar school projects built by the Government. Comparison of the reference cost for a 24-classroom primary school and 30-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated costs for **299EP** and **300EP** are at Enclosures 4 and 5 respectively.

/8.

³ The amount is based on the standard furniture and equipment reference list prepared by the Education Bureau for a new 24-classroom primary school and a new 30-classroom primary school adopting the standard schedule of accommodation. The actual amount will be determined on the basis of a survey on the serviceability of the existing furniture and equipment.

8. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2007)		Price adjustment factor	\$ million (MOD)	
	299EP	300EP		299EP	300EP
2008 – 09	4.0	4.4	1.02575	4.1	4.5
2009 – 10	13.1	18.6	1.06293	13.9	19.8
2010 – 11	45.3	60.9	1.10545	50.1	67.3
2011 – 12	47.3	63.6	1.14967	54.4	73.1
2012 – 13	18.8	25.2	1.19566	22.5	30.1
2013 – 14	14.9	20.1	1.24348	18.5	25.0
	<u>143.4</u>	<u>192.8</u>		<u>163.5</u>	<u>219.8</u>

9. We have derived the MOD estimates 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 2008 to 2014. We intend to award each of the two contracts on a lump-sum basis because we can clearly define the scope of the works in advance. The contracts will not provide for price adjustment because each contract period will not exceed 21 months.

10. The costs of furniture and equipment, estimated to be \$3.0 million for **299EP** and \$3.1 million for **300EP**, will be borne by the Government. This is in line with the existing policy.

11. We estimate the annual recurrent expenditures for **299EP** and **300EP** to be \$20.8 million and \$25.2 million respectively.

/PUBLIC

PUBLIC CONSULTATION

12. We consulted the Tuen Mun District Council on **299EP** and **300EP** in May 2007. Members of the Council supported the projects.

13. We consulted the Legislative Council Panel on Education on 24 October 2005 on our review of the School Building Programme. Members supported our recommendation to proceed with school projects for converting existing bi-sessional primary schools to whole-day operation.

ENVIRONMENTAL IMPLICATIONS

14. We engaged a consultant to conduct Preliminary Environmental Reviews (PERs) for **299EP** and **300EP** in December 2007 and April 2008 respectively. The PERs recommended the provision of insulated windows and air-conditioning for rooms exposed to traffic noise exceeding the limits recommended in the Hong Kong Planning Standards and Guidelines. The recommended mitigation measures are as follows –

Mitigation measures	Estimated cost \$ million (in Sept 2007 prices)
299EP	
(a) Insulated windows and air-conditioning for 24 classrooms from 1/F to 6/F at the western façade of the classroom block	2.4
(b) Insulated windows and air-conditioning for four special rooms on 4/F and 5/F and three small group teaching rooms on 3/F and 6/F at the northern façade of the special room block	1.0
300EP	
(a) Insulated windows and air-conditioning for 30 classrooms, two special rooms and four small group teaching rooms from 1/F to 6/F at the north-western façade of the school building	3.6

/(b)

Mitigation measures	Estimated cost \$ million (in Sept 2007 prices)
(b) Insulated windows and air-conditioning for one special room on 1/F at southern façade of the school building	0.2
(c) Insulated windows and air-conditioning for one special room on 4/F at the north-eastern façade of the school building	0.2
(d) A 3m high boundary wall facing So Kwun Wat Road	0.5

We have included the costs of the above mitigation measures as part of the building, building services and external works in the project estimates.

15. During construction, we 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 sites, and the provision of wheel-washing facilities.

16. We have considered measures in the planning and design stages to reduce the generation of construction waste where possible (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects). In addition, we will require the contractor to reuse inert construction waste on site (e.g. use excavated materials for filling within the site) or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to public fill reception facilities⁴. We will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

/17.

⁴ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

17. We will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from the non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

18. We estimate that the projects will generate in total about 27 069 tonnes of construction waste. Of these, we will reuse about 12 495 tonnes (46.2%) of inert construction waste on site and deliver 12 004 tonnes (44.3%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 2 570 tonnes (9.5%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$645,358 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁵ at landfills).

ENERGY CONSERVATION MEASURES

19. Both projects have adopted various forms of energy efficient features, including –

- (a) T5 energy efficient fluorescent tubes with electronic ballast and lighting control by daylight sensor will be adopted in all offices and rooms at the perimeter of the building;
- (b) heat recovery fresh air pre-conditioners in the air-conditioned rooms;
- (c) automatic on/off switching of lighting and ventilation fan inside the lift; and
- (d) light emitting diode (LED) type exit signs.

/20.

⁵ 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/m³), nor the cost to provide new landfills (which is likely to be more expensive), when the existing ones are filled.

20. We will install photovoltaic system to provide renewable energy for environmental benefits.
21. We will provide landscape in the appropriate area on the main roofs and terraces for environmental and amenity benefits.
22. We will install rainwater collection system for landscape irrigation with a view to conserving water.
23. The total estimated additional costs for adoption of the above features are around \$1.9 million for **299EP** and \$2.0 million for **300EP**, which have been included into the cost estimates for the projects. There will be about 9% energy savings each in the annual energy consumption.

LAND ACQUISITION

24. We will resume 11 private agricultural lots of about 966.5 m² (10 404 square feet) and one private building lot with an area of 65.0 m² (700 square feet) for the project. The land acquisition and clearance will affect six households involving 18 persons and nine domestic structures. These families will be offered ex-gratia allowances and, where eligible, accommodation in public housing. There are also 30 non-domestic structures with one operator of business undertaking to be cleared. Ex-gratia allowance, if eligible, will be offered for their clearance. The projects will also require the clearance of crops, fruit trees, flowers, wells, fences and irrigation pipes on both private agricultural land and Government land. Ex-gratia allowances will be paid to displaced cultivators. "Tun Fu" ceremonial fees will also be paid where appropriate. We will charge the cost of land acquisition and clearance estimated at \$11.3 million to **Head 701 - Land Acquisition**. A breakdown of the land resumption and clearance cost is at Enclosure 6. We have reviewed the design of the project to minimise the land acquisition cost.

/HERITAGE

HERITAGE IMPLICATIONS

25. The project will affect one of the sites of archaeological interest identified by the Antiquities and Monuments Office (AMO), namely So Kwun Wat Archaeological Site. Since no other site is available with adequate infrastructure support for school development in Area 55, Tuen Mun at this stage, AMO will conduct a rescue excavation prior to the construction of the two schools at the estimated total cost of \$6.0 million including \$1.5 million for the post excavation works. The Administration will consider all the appropriate conservation and mitigation measures as far as possible and feasible. We plan to start the rescue excavation works in November 2008 for completion in September 2009. Tuen Man District Council has also been consulted about the land resumption and the excavation works in May 2007 and Members of the Council supported the projects.

BACKGROUND INFORMATION

26. We upgraded **299EP** and **300EP** to Category B in November 2002. We engaged consultants to undertake detailed design in December 2003, topographical surveys and PERs in January 2004 and a term contractor to undertake site investigation in June 2004 at a total cost of \$3.1 million. 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 projects were suspended during the review of School Building Programme in January 2005 and re-activated in November 2005. We completed the detailed design, and finalising the tender documentation by in-house resources.

27. The proposed works will involve removal of 101 trees including 38 trees to be felled, 23 trees to be transplanted and 40 trees to be replanted within the project site. All trees to be removed are not important trees⁶. We will

/incorporate

⁶ “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of an important person or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.

incorporate planting proposals as part of the projects, including estimated quantities of 66 trees, 2 000 shrubs, 1 500 groundcovers and 100 m² of grassed area.

28. We estimate that the proposed works will create the following job opportunities -

	Professional / Technical staff	Labourer	Total	Estimated total man-months
299EP	13	163	176	3 260
300EP	17	218	235	4 360

Education Bureau
May 2008



位置圖 LOCATION PLAN
SCALE 1:10000

INSULATED WINDOWS AND AIR-CONDITIONING FOR 30 CLASSROOMS, 2 SPECIAL ROOMS AND 4 SMALL GROUP TEACHING ROOMS FROM 1/F TO 6/F AT THE NORTH-WESTERN FACADE OF THE SCHOOL BUILDING.
在學校大樓向西北面由1樓至6樓的30間課室, 2間特別室, 4間小組教學室安裝隔音窗和空調。

INSULATED WINDOWS AND AIR-CONDITIONING FOR 1 SPECIAL ROOM AT SOUTHERN FACADE ON 1/F OF THE SCHOOL BUILDING.
在學校大樓南面1樓的1間特別室安裝隔音窗和空調。

INSULATED WINDOWS AND AIR-CONDITIONING FOR 1 SPECIAL ROOM ON 4/F AT THE NORTH-EASTERN FACADE OF THE SCHOOL BUILDING.
在學校大樓東北面4樓1間特別室安裝隔音窗和空調。

INSULATED WINDOWS AND AIR-CONDITIONING FOR 4 SPECIAL ROOMS ON 4/F & 5/F AND 3 SMALL GROUP TEACHING ROOMS ON 3/F & 6/F AT NORTHERN FACADE OF THE SPECIAL ROOM BLOCK
在特別室大樓向北面4樓及5樓的4間特別室及3間位於3樓及6樓的小組教學室安裝隔音窗和空調。

INSULATED WINDOWS AND AIR-CONDITIONING FOR 24 CLASSROOMS FROM 1/F TO 6/F AT THE WESTERN FACADE OF THE CLASSROOM BLOCK.
在課室大樓向西面由1樓至6樓的24間課室安裝隔音窗和空調。



TITLE 299EP & 300EP
A 24-CLASSROOM PRIMARY SCHOOL AND
A 30-CLASSROOM PRIMARY SCHOOL
IN AREA 55, TUEN MUN
屯門第55區
1所設有24間課室的小學及
1所設有30間課室的小學


DRAWN BY 繪圖	M.B. WONG 黃文標	DATE 日期 16/05/08
APPROVED 覆核	J. AU YEUNG 歐陽麗絲	DATE 日期 16/05/08
OFFICE 辦事處	ARCHITECTURAL BRANCH 建築設計處	

DRAWING NO. 編號	SCALE 比例
AB/6348/XA101	1:1000
 ARCHITECTURAL SERVICES DEPARTMENT 建築署	



從南面高處望向校舍構思圖

AERIAL VIEW OF THE TWO SCHOOL PREMISES FROM SOUTHERN DIRECTION
(ARTIST'S IMPRESSION)

TITLE 299EP & 300EP A 24-CLASSROOM PRIMARY SCHOOL AND A 30-CLASSROOM PRIMARY SCHOOL IN AREA 55, TUEN MUN 屯門第55區 1所設有24間課室的小學及 1所設有30間課室的小學	DRAWN BY 繪圖 M.B. WONG 黃文標	DATE 日期 16/05/08	DRAWING NO. 編號 AB/6348/XA102A	SCALE 比例 N.A.
	APPROVED 覆核 J. AU YEUNG 歐陽麗絲	DATE 日期 16/05/08	 ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	OFFICE 辦事處 ARCHITECTURAL BRANCH 建築設計處			



從西北面望向 24 間課室校舍 (299EP) 的構思圖
 VIEW OF THE 24-CLASSROOM SCHOOL PREMISES (299EP) FROM NORTH-WESTERN DIRECTION (ARTIST'S IMPRESSION)



從東北面望向 30 間課室校舍 (300EP) 的構思圖
 VIEW OF THE 30-CLASSROOM SCHOOL PREMISES (300EP) FROM NORTH-EASTERN DIRECTION (ARTIST'S IMPRESSION)

TITLE 299EP & 300EP A 24-CLASSROOM PRIMARY SCHOOL AND A 30-CLASSROOM PRIMARY SCHOOL IN AREA 55, TUEN MUN 屯門第55區 1所設有24間課室的小學及 1所設有30間課室的小學	DRAWN BY 繪圖 M.B. WONG 黃文標	DATE 日期 16/05/08	DRAWING NO. 編號 AB/6348/XA102B	SCALE 比例 N.A.
	APPROVED 覆核 J. AU YEUNG 歐陽麗絲	DATE 日期 16/05/08	 ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	OFFICE 辦事處 ARCHITECTURAL BRANCH 建築設計處			

Enclosure 3 to PWSC(2008-09)18

299EP – A 24-classroom primary school in Area 55, Tuen Mun

300EP – A 30-classroom primary school in Area 55, Tuen Mun

Breakdown of the estimate for consultant's fees

Consultant's staff costs		Estimated man-months		Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)	
		299EP	300EP			299EP	300EP
(a) Contract administration	Professional	–	–	–	–	–	–
(b) Site supervision (Note 2)	Technical	–	19.9	14	1.6	–	0.6
Total						–	0.6

* 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 April 2007, MPS point 14 = \$18,840 per month.)
2. The consultant's staff cost for site supervision is based on the estimate prepared by the Director of Architectural Services. We will only know the actual man-months and actual costs after completion of the construction works.

Enclosure 4 to PWSC(2008-09)18

**A comparison of the reference cost of
a 24-classroom primary school project
with the estimated cost of 299EP**

**\$ million
(in Sept 2007 prices)**

	Reference cost*	299EP	
(a) Utilities/footpath diversion	-	1.9	(See note A)
(b) Rescue excavation	-	3.0	(See note B)
(c) Site works/formation	-	6.5	(See note C)
(d) Piling	10.0	18.2	(See note D)
(e) Building	53.7	66.5	(See note E)
(f) Building services	14.3	17.3	(See note F)
(g) Drainage	2.3	3.2	(See note G)
(h) External works	9.2	11.4	(See note H)
(i) Furniture and equipment	-	3.0	(See note I)
(j) Contingencies	9.0	12.4	
	<hr/>	<hr/>	
Sub-total	98.5	143.4	
(k) Construction floor area	9 129 m ²	9 722m ²	
(l) Construction unit cost {[(e) + (f)] ÷ (k)}	\$7,449/m ²	\$8,620/m ²	

/* 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 101 steel H-piles at an average depth of 30m, 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. Cost for drainage and external works is for a standard 24-classroom primary school site area of 4 700 m² built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a “green-field” site).
5. No consultancy services are allowed.
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. We have revised the reference cost in March 2008 in accordance with the finalized price level in September 2007.

/Notes

Notes

- A. There is a need to divert an existing footpath with utilities underneath connecting So Kwun Wat Road to the nearby village. The cost will be shared by both **299EP** and **300EP**.
- B. The site is situated on the So Kwun Wat Archaeological Site and we will conduct recuse excavation works before the start of construction works. The cost will be shared by both **299EP** and **300EP**.
- C. Site formation works include cutting and filling up site level, the construction of retaining walls/toe walls and the installation of steel sheet piling.
- D. Percussion steel H-pile is not recommended due to unsuitable ground conditions such as presence of boulders, and the excessive vibrations and noise that would be generated to nearby residents. The piling system anticipated to be used for this project will be 105 rock-socketed steel H-piles in pre-bored holes at an average depth of 15.5m.
- E. The building cost is higher due to larger construction floor area.
- F. The building services cost is higher due to the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.
- G. The cost of drainage is higher due to the larger site area and the two levels of formation platforms.
- H. The cost of external works is higher due to the larger site area.
- I. The cost of \$3.0 million for furniture and equipment will be borne by the Government, as the school premises is allocated to existing bi-sessional schools for conversion into whole-day operation.

**A comparison of the reference cost of
a 30-classroom primary school project
with the estimated cost of 300EP**

**\$ million
(in Sept 2007 prices)**

	Reference cost*	300EP	
(a) Utilities/footpath diversion	-	2.0	(See note A)
(b) Rescue excavation	-	3.0	(See note B)
(c) Site Works/formation	-	27.7	(See note C)
(d) Piling	11.1	29.6	(See note D)
(e) Building	60.8	73.5	(See note E)
(f) Building services	16.2	19.3	(See note F)
(g) Drainage	2.7	3.4	(See note G)
(h) External works	11.2	13.8	(See note H)
(i) Furniture and equipment	-	3.1	(See note I)
(j) Consultant's fees for geotechnical / slope work supervision	-	0.6	(See note J)
(k) Contingencies	10.3	16.8	
	Total	112.3	192.8
(l) Construction floor area	10 727 m ²	11 263 m ²	
(m) Construction unit cost {[(e) + (f)] ÷ (l)}	\$7,178/m ²	\$8,239/m ²	

/* 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 112 steel H-piles at an average depth of 30m, 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. Cost for drainage and external works is for a standard 30-classroom primary school site area of 6 200 m² built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a “green-field” site).
5. No consultancy services are allowed.
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. We have revised the reference cost in March 2008 in accordance with the finalized price level in September 2007.

/Notes

Notes

- A. There is a need to divert an existing footpath with utilities underneath connecting So Kwun Wat Road to the nearby village. The cost will be shared by both **299EP** and **300EP**.
- B. The site is situated on So Kwun Wat Archaeological Site and we will conduct rescue excavation works before the start of construction works. The cost will be shared by both **299EP** and **300EP**.
- C. Site formation works include geotechnical works such as slope cutting and slope stabilization works, construction of retaining walls and soldier pile walls.
- D. Percussion steel H-pile is not recommended due to unsuitable ground conditions such as presence of boulders, and the excessive vibrations and noise that would be generated to nearby residents. The piling system anticipated to be used for this project will be 140 rock-socketted steel H-piles in pre-bored holes at an average length of 19m.
- E. The building cost is higher due to the larger construction floor area.
- F. The building services cost is higher because of the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.
- G. The cost of drainage works is higher due to the significant level difference between the two levels of formation platforms.
- H. The cost of external works is higher due to the complicated geotechnical conditions with slope planting and hydroseeding.
- I. The cost of \$3.1 million for furniture and equipment will be borne by the Government as the school premises is allocated to existing bi-sessional schools for conversion into whole-day operation.
- J. Consultant's fee is required for geotechnical and slope work supervision.

Enclosure 6 to PWSC(2008-09)18

299EP – A 24-classroom primary school in Area 55, Tuen Mun

300EP – A 30-classroom primary school in Area 55, Tuen Mun

Breakdown of land resumption and clearance costs

	\$ million
Estimated land resumption cost	7.99
(a) <u>Agricultural Land Ex-gratia Compensation</u>	
The 11 lots affected by the project are within Compensation Zone “A” ^(note 1 and 2) . The total area involved is 966.5 m ² (10 404 square feet (s.f.))	
10 404 s.f. @ \$547.20/s.f. ^(note 1 and 2)	5.69
(b) <u>Building Land Ex-gratia Compensation</u>	
The one lot affected by the project is within Compensation Zone “A”. The total area involved is 65.04 m ² (700 s.f.)	
700 s.f. @ \$1,080/s.f. ^(note 1 and 2)	0.76
Plus professional valuation of building	1.54
	/Estimated

1. All the land to be resumed in the projects **299EP** and **300EP** is agricultural land and building land within Compensation Zone “A”. For agricultural land, the ex-gratia compensation for this zone is 120% of the Basic Rate for agricultural land. For building land, the total land compensation is the ex-gratia compensation for this zone at 120% of the Basic Rate for building land plus professional valuation of the building. The latest Basic Rates for agricultural land and building land are \$ 456 per square foot and \$900 per square foot respectively with effect from 1 April 2008 according to G.N.1995 dated 10 March 2008. Hence the ex-gratia compensation rate used for estimating the resumption cost of the 11 agricultural lots and one building lot affected by the project **299EP** and **300EP** are \$547.2 per square foot (i.e. 120% of \$456 per square foot) and \$1080 per square foot (i.e. 120% of \$900 per square foot) respectively. Both agricultural and building land concerned will be reverted to the Government in July 2008.
2. There are four ex-gratia compensation zones, namely Zones A, B, C and D, for land resumption in the New Territories as approved by ExCo in 1985 and 1996. The boundaries of these zones are shown on the Zonal Plan for Calculation of Compensation Rates.

	\$ million	
Estimated clearance cost	2.29	
(a) Compensation for crops and fruit trees	0.31	
(b) Ex-gratia compensation for miscellaneous permanent improvements items to farms	0.12	
(c) “Tun Fu” ceremonial fees	0.02	
(d) Ex-gratia allowance for domestic removal allowance (six households)	0.04	
(e) Ex-gratia allowance in lieu of rehousing to permitted occupiers (six households)	1.30	
(f) Ex-gratia allowance for business undertakings	0.50	
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Contingency on land resumption and clearance cost	1.03	
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Total Costs	11.31	Say \$11.3 million
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