

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Education – Secondary

262ES – A secondary school at development near Choi Wan Road and Jordan Valley, Kwun Tong

Members are invited to recommend to Finance Committee the upgrading of **262ES** to Category A at an estimated cost of \$172.4 million in money-of-the-day prices for the construction of a new secondary school premises at development near Choi Wan Road and Jordan Valley, Kwun Tong to re-provision an existing aided secondary school.

PROBLEM

Some schools are operating from premises which are under-provided by today's standards and should be re-provisioned when the opportunity arises.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education, proposes to upgrade **262ES** to Category A at an estimated cost of \$172.4 million in money-of-the-day (MOD) prices for the construction of a secondary school premises at development near Choi Wan Road and Jordan Valley, Kwun Tong, to re-provision an existing aided secondary school (the School) which is operating in substandard premises in the district.

/PROJECT

PROJECT SCOPE AND NATURE

3. The proposed secondary school will have the following facilities –
- (a) 30 classrooms;
 - (b) 16 special rooms, including a computer-assisted learning room, a language room and a multi-purpose room;
 - (c) three small group teaching rooms;
 - (d) a guidance activity room;
 - (e) two interview rooms;
 - (f) a staff room;
 - (g) a staff common room;
 - (h) a student activity centre;
 - (i) a conference room;
 - (j) a library;
 - (k) an assembly hall (which can also be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);
 - (l) a multi-purpose area;
 - (m) two basketball courts at ground level;
 - (n) a 60-metre (m) running track¹;

/(o)

¹ Making optimal use of the space of the campus, a 60-m running track will be provided.

- (o) a green corner²; and
- (p) ancillary accommodation, including a lift and relevant facilities for the handicapped.

—————
 —————
 The proposed new school premises will meet the planning target of providing two square metres (m²) of open space per student. A site plan is at Enclosure 1 and views of the school premises (artist's impression) are at Enclosure 2. We plan to start the construction works in October 2008 for completion in July 2010.

JUSTIFICATION

4. The existing premises of the School was built in 1967 on a sloped site area of 2 870 m² only, which falls short of the current standard of 6 950 m² for secondary schools. Certain essential facilities for effective teaching and learning, such as multi-purpose room, language room, guidance activity room, Deputy Principal's room, Career Master's Office, Discipline Master's Office, conference room and changing room are lacking. The open space provision also falls short of the latest planning standard. The substandard and dilapidated facilities of the existing campus also require frequent repairs. Due to site constraints which pose difficulties for in-situ redevelopment, reprovisioning is the most cost-effective way to provide quality teaching and learning environment for teachers and students of the School.

5. Upon completion, **262ES** will provide 30 classrooms and other facilities for accommodating the School which is operating 29 classes in the 2007/08 school year in the same district. With the implementation of the New Senior Secondary academic structure from September 2009 onwards, the School will have an ultimate class structure of five classes at each level from Secondary 1 to Secondary 6.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be \$172.4 million in MOD prices (see paragraph 7 below), made up as follows –

/(a)

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 weather station and planting beds.

	\$ million	
(a) Piling/substructure	10.0	
(b) Building	81.3	
(c) Building services	23.5	
(d) Drainage	3.0	
(e) External works	12.5	
(f) Furniture and Equipment (F&E) ³	6.0	
(g) Consultants' fees for –	6.4	
(i) Contract administration	2.0	
(ii) Site supervision	4.4	
(h) Contingencies	13.0	
	<hr/>	
Sub-total	155.7	(in September 2007 prices)
(i) Provision for price adjustment	16.7	
	<hr/>	
Total	172.4	(in MOD prices)
	<hr/>	

We propose to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees by man-months is at Enclosure 3. The construction floor area (CFA) of the new school premises under **262ES** is 13 000 m². The estimated construction unit cost, represented by the building and the building services costs, is \$8,062 per m²

/of

³ Based on the standard furniture and equipment reference list prepared by the Education Bureau for a new 30-classroom secondary 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.

of CFA in September 2007 prices. We consider this comparable to similar school projects built by the Government. A comparison of the reference cost for constructing a 30-classroom secondary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated costs for **262ES** is at Enclosure 4.

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

Year	\$ million (Sept 2007)	Price adjustment factor	\$ million (MOD)
2008 – 09	3.0	1.02575	3.1
2009 – 10	50.9	1.06293	54.1
2010 – 11	60.5	1.10545	66.9
2011 – 12	21.7	1.14967	24.9
2012 – 13	19.6	1.19566	23.4
	155.7		172.4

8. 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 2013. We will award the contract on a lump-sum basis because we can clearly define the scope of the works in advance. The contract will not provide for price adjustment because the contract period will not exceed 21 months.

9. The cost of F&E, estimated to be \$6.0 million, will be borne by the Government. This is in line with the existing policy. The annual recurrent expenditure for **262ES** is estimated to be \$38.2 million.

/PUBLIC

PUBLIC CONSULTATION

10. We consulted the Kwun Tong District Council on **262ES** in January 2008 and Members of the Council supported the project.

11. We consulted the Legislative Council Panel on Education on 24 October 2005 on our review of the School Building Programme. Members noted our plan to proceed with reprovisioning and redevelopment projects to upgrade substandard facilities in existing schools. **262ES** is a project to reprovision an existing school which is operating in substandard premises.

ENVIRONMENTAL IMPLICATIONS

12. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **262ES** in May 2007. The PER recommended installation 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)
(a) Insulated windows and air-conditioning for five classrooms on the 5/F and 6/F at the northern façade of the classroom block	0.5
(b) Insulated windows and air-conditioning for three small group teaching rooms and seven special rooms on the G/F, 2/F, 3/F, 5/F to 7/F at the northern façade of the special room block	1.5
(c) A 3m high solid fence wall	2.5

With such mitigation measures in place, the project will not be exposed to long term environmental impacts. We have included the cost of the above mitigation measures as part of the building, building services and external works in the project estimate.

/13.

13. 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 contract. 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.

14. 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 (e.g. use of excavated materials for filling within the site) on site or in other suitable construction sites as far as possible, in order to minimize 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.

15. 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 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.

16. We estimate that the project will generate in total about 19 600 tonnes of construction waste. Of these, we will reuse about 11 000 tonnes (56.1%) of inert construction waste on site and deliver 6 800 tonnes (34.7%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 1 800 tonnes (9.2%) of non-inert construction waste

/at

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.

at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be \$408,600 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

17. This project has 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.

18. We will install photovoltaic panels to provide renewable energy for environmental benefits.

19. We will provide landscape in the appropriate area on the main roof and terraces for environmental and amenity benefits.

20. We will install rainwater collection system for landscape irrigation with a view to conserving water.

/21.

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.

21. The total estimated additional cost for adoption of the above features is around \$1.8 million, which has been included in the cost estimate for this project. There will be about 8% energy savings in the annual energy consumption.

HERITAGE IMPLICATIONS

22. This project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interests and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

23. The project does not require any land acquisition.

BACKGROUND INFORMATION

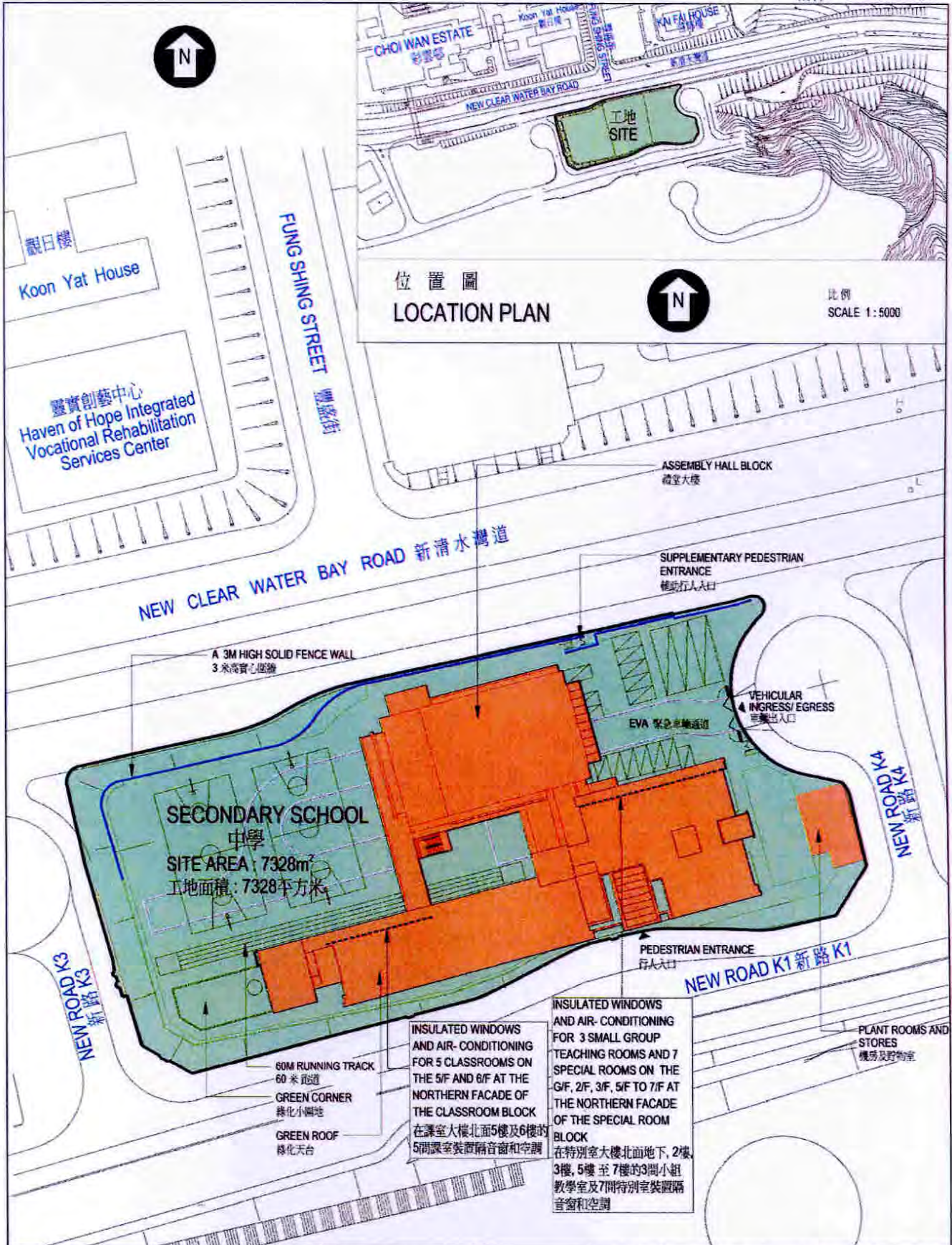
24. We upgraded **262ES** to Category B in September 2006. We engaged an architectural consultant in June 2007 to undertake the detailed design and PER. We engaged a quantity surveying consultant in November 2007 to prepare tender documents. The total cost of the above consultancy services and works is about \$3.7 million. We have 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 architectural consultant has completed the detailed design and PER. The quantity surveying consultant is finalising the tender documents.

25. The proposed works will not involve any removal of trees. We will incorporate planting proposals as part of the project, including estimated quantities of 130 trees, 1 500 shrubs and 500 m² of grassed area.

/26.

26. We estimate that the proposed works will create about 160 jobs (140 for labourers and another 20 for professional/technical staff) providing a total employment of 2 860 man-months.

Education Bureau
May 2008



TITLE 262ES A SECONDARY SCHOOL AT DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY, KWUN TONG 觀塘彩雲道及佐敦谷毗鄰 發展計劃的1所中學	drawn by 繪圖 畢浩濤 LEO PAT	date 日期 31.03.08	drawing no. 圖號 AB/7055/NM-01	scale 比例 1:900
	approved by 批核 鄧文傑 JOSEPH M.K. TANG	date 日期 31.03.08	 ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	office 辦事處 ARCHITECTURAL BRANCH 建築設計處			



從西面望向校舍的構思圖
 VIEW OF THE SCHOOL PREMISES FROM WESTERN DIRECTION
 (ARTIST'S IMPRESSION)



從東南面望向校舍的構思圖
 VIEW OF THE SCHOOL PREMISES FROM SOUTH-EASTERN DIRECTION
 (ARTIST'S IMPRESSION)

TITLE 262ES A SECONDARY SCHOOL AT DEVELOPMENT NEAR CHOI WAN ROAD AND JORDAN VALLEY, KWUN TONG 觀塘彩雲道及佐敦谷毗鄰 發展計劃的1所中學	drawn by 繪圖 畢浩璋 LEO PAT	date 日期 31.03.08	drawing no. 圖號 AB/7055/NM-02	scale 比例 N.T.S.
	approved by 批核 鄧文傑 JOSEPH M.K. TANG	date 日期 31.03.08	 ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	office 辦事處 ARCHITECTURAL BRANCH 建築設計處			

262ES – A secondary school at development near Choi Wan Road and Jordan Valley, Kwun Tong

Breakdown of the estimate for consultants' fees

Consultants' staff costs		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Contract administration (Note 2)	Professional	–	–	–	1.5
	Technical	–	–	–	0.5
(b) Site supervision (Note 3)	Professional	12.1	38	1.6	1.1
	Technical	109.5	14	1.6	3.3
				Total	<u>6.4</u>

* 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 January 2008, MPS point 38 = \$56,945 per month and MPS point 14 = \$18,840 per month.)
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **262ES**. The assignment will only be executed subject to Finance Committee's approval to upgrade **262ES** to Category A.
3. The consultants' 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)16

**A comparison of the reference cost of
a 30-classroom secondary school project
with the estimated cost of 262ES**

\$ million (in Sept 2007 prices)

		Reference cost*	262ES	
(a)	Piling/substructure	13.3	10.0	(See note A)
(b)	Building	68.5	81.3	(See note B)
(c)	Building services	20.2	23.5	(See note C)
(d)	Drainage	3.0	3.0	
(e)	External works	12.4	12.5	
(f)	Furniture and equipment	–	6.0	(See note D)
(g)	Consultants' fees	–	6.4	(See note E)
(h)	Contingencies	11.7	13.0	
Total		<u>129.1</u>	<u>155.7</u>	
(i)	Construction floor area	12 238 m ²	13 000 m ²	
(j)	Construction unit cost {[(b) + (c)] ÷ (i)}	\$7,248/m ²	\$8,062/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 138 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 secondary school site area of 6 950 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 required.
6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring bodies of new schools for meeting new demand of school places.
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. The piling/substructure cost is lower because part of the building is supported by footing.
- B. The building cost is higher because of larger construction floor area.
- C. The cost of the building services works is higher because of the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.
- D. The cost of furniture and equipment, estimated to be \$6.0 million, will be borne by the Government in line with existing policy for reprovisioning of existing schools.
- E. Consultants' fees are required for contract administration and site supervision of the building works.