

For discussion
on 15 December 2008

PWSC(2008-09)52

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Education Subventions

31EA – Redevelopment of St Rose of Lima’s School at Embankment Road and Duke Street, Kowloon

Members are invited to recommend to Finance Committee the upgrading of **31EA** to Category A at an estimated cost of \$241.9 million in money-of-the-day prices for the redevelopment of St. Rose of Lima’s School at Embankment Road and Duke Street, Kowloon.

PROBLEM

St Rose of Lima’s School (the School) is operating in substandard conditions and should be redeveloped when the opportunity arises.

PROPOSAL

2. The Secretary for Education (SED), on the advice of the Director of Architectural Services (D Arch S), proposes to upgrade **31EA** to Category A at an estimated cost of \$241.9 million in money-of-the-day (MOD) prices for in-situ redevelopment of the School.

/PROJECT

PROJECT SCOPE AND NATURE

3. The project scope comprises the demolition of the existing school premises and construction of a new 24-classroom primary school premises with the following facilities –

- (a) 24 classrooms;
- (b) six special rooms, including a computer-assisted learning room, a language room, a music room, a general studies room, a multi-purpose room and a visual arts room;
- (c) four 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) multi-purpose area;
- (m) a basketball court;
- (n) a green corner¹;

/(o)

¹ 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.

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

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The redeveloped 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. The school sponsor plans to start the demolition of the existing school premises in January 2009 and start the construction works of the new premises in August 2009 for completion in August 2011.

JUSTIFICATION

4. The School is a 24-classroom primary school with an enrolment rate of 100% in 2008/09 school year. The existing school premises, built in 1940s, falls short of the provision as stipulated in the current standard schedule of accommodation. Certain essential facilities for effective teaching and learning, such as language room, general studies room, guidance activity room, interview room, multi-purpose area and student activity centre etc. are lacking. In addition, the sizes of classrooms and that of the assembly hall are all below the prevailing standards.

5. The existing school premises are deteriorating and require frequent repairs in recent years. As constrained by the site area and the design of the existing premises, the school could only be marginally upgraded through the School Improvement Programme and still falls short of the provision as stipulated in the current standard schedule of accommodation. As such, redevelopment is considered to be the most effective way to provide a quality teaching and learning environment for teachers and students of the School. During the redevelopment period, students will use the premises of ex-Five Districts Business Welfare Association Yan Kow School in Ping Shek for decanting purposes.

6. Upon completion, the new school premises will provide the same number of classrooms as in the existing school. As such, the redevelopment of this school will not have any impact on the supply and demand of public sector school places in the Kowloon City District, in which **31EA** is located.

/FINANCIAL

FINANCIAL IMPLICATIONS

7. The school sponsor estimates the capital cost of the project to be \$241.9 million in MOD prices (see paragraph 8 below), which D Arch S has examined and endorsed, made up as follows –

	\$ million	
(a) Demolition works	7.0	
(b) Piling	68.1	
(c) Building	85.4	
(d) Building services	20.5	
(e) Drainage	3.5	
(f) External works	8.6	
(g) Additional energy conservation measures	1.4	
(h) Furniture and equipment ²	2.8	
(i) Consultants' fees for –	3.9	
(i) Contract administration	1.8	
(ii) Site supervision	1.8	
(iii) Out-of-pocket expenses	0.3	
(j) Contingencies	19.8	
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Sub-total	221.0	(in September 2008 prices)
(k) Provision for price adjustment	20.9	
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Total	241.9	(in MOD prices)
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² Based on the standard furniture and equipment reference list prepared by the Education Bureau for a new 24-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.

The school sponsor proposes 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 **31EA** is about 9 998 m². The estimated construction unit cost of the new school premises, represented by the building and the building services costs, is \$10,592 per m² of CFA in September 2008 prices. D Arch S considers this comparable to similar school projects built by the Government, except the higher piling costs due to the ground conditions. A comparison of the reference cost of a 24-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated cost for **31EA** is at Enclosure 4.

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

Year	\$ million (Sept 2008)	Price adjustment factor	\$ million (MOD)
2008 – 09	3.0	1.00000	3.0
2009 – 10	40.3	1.04000	41.9
2010 – 11	74.5	1.08160	80.6
2011 – 12	96.2	1.12486	108.2
2012 – 13	7.0	1.16986	8.2
	221.0		241.9

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 2013. The school sponsor will deliver the demolition, foundation and superstructure works through three separate lump sum contracts because the school sponsor can clearly define the scope of the works in advance. The contracts will provide for price adjustment to reflect market fluctuations in labour and material costs.

10. The cost of furniture and equipment, estimated to be \$2.8 million, will be borne by the Government. This is in line with the existing policy.

11. Redevelopment of the School per se will not give rise to additional recurrent expenditure, as the mode of operation and the number of classes will remain unchanged. The annual recurrent expenditure of the School was \$22.6 million in 2007/08 school year.

PUBLIC CONSULTATION

12. We have circulated an information note on the redevelopment project to Kowloon City District Council on 5 June 2008. Members do not raise any questions nor request for discussion of the project in the Council meeting.

13. We consulted the Legislative Council Panel on Education on 24 October 2005 on our review of the School Building Programme. Members noted our plan on redevelopment and reprovisioning existing schools with sub-standard facilities. **31EA** is a project to redevelop an existing school which is operating in substandard premises.

ENVIRONMENTAL IMPLICATIONS

14. The school sponsor engaged a consultant to conduct a Preliminary Environmental Review (PER) for **31EA** in October 2008. The PER recommended 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 2008 prices)
(a) Insulated windows and air-conditioning for all 24 classrooms	2.5
(b) Insulated windows and air-conditioning for a special room on 1/F at the north-western facade of the assembly hall block; a small group teaching room on 3/F at the eastern facade of assembly hall block; and three special rooms and two small group teaching rooms from 3/F to 7/F at the southern facade of the classroom/special room block	1.0

/With

With such mitigation measures in place, the project would not have long term environmental impact. The school sponsor has included the above mitigation measures as part of the building and building services works in the project estimate in paragraph 7 above.

15. During construction, the school sponsor will control noise, dust and site run-off nuisances 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 site, and the provision of wheel-washing facilities.

16. The school sponsor has 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, the school sponsor 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 facilities³. The school sponsor 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. The school sponsor 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. The school sponsor will ensure that the day-to-day operations on site comply with the approved plan. The school sponsor will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. The school sponsor 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.

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³ 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.

18. The school sponsor estimates that the project will generate in total about 13 290 tonnes of construction waste. Of these, the school sponsor will reuse about 1 430 tonnes (10.8%) of inert construction waste on site and deliver 10 370 tonnes (78.0%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, the school sponsor will dispose of 1 490 tonnes (11.2%) 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 \$466,240 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁴ at landfills).

ENERGY CONSERVATION MEASURES

19. 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 and occupancy sensors will be adopted in all offices and rooms at the perimeter of the building;
- (b) heat recovery fresh air pre-conditioners will be adopted in the air-conditioned rooms;
- (c) automatic on/off switching of lighting and ventilation fan will be adopted inside the lift; and
- (d) Light Emitting Diode (LED) type exit signs.

20. This project will install photovoltaic system to provide renewable energy for environmental benefits.

21. For greening features, appropriate areas on the main roofs and the terraces will be landscaped for environmental and amenity benefits.

22. The total estimated additional cost for adopting the energy efficient and greening features is around \$1.4 million, which has been included in the cost
/estimate

⁴ 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.

estimate for this project. There will be about 7.4% energy savings in the annual energy consumption.

HERITAGE IMPLICATIONS

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

LAND ACQUISITION

24. The project does not require any land acquisition.

BACKGROUND INFORMATION

25. We upgraded **31EA** to Category B in October 2007. The school sponsor engaged consultants to undertake the detailed design and prepare tender documents in December 2007, site investigation in February 2008 and site survey in March 2008. The total cost of the above consultancy services, site investigation works and site survey works is about \$4.9 million. We have charged this amount to block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings". The consultants engaged by the school sponsor have carried out the detailed design and PER and is finalizing the tender documents.

26. The proposed works will involve removal of nine trees, including two trees to be felled and seven trees to be replanted within the project site. All trees to be removed are not important trees⁵. The school sponsor will incorporate

/planting

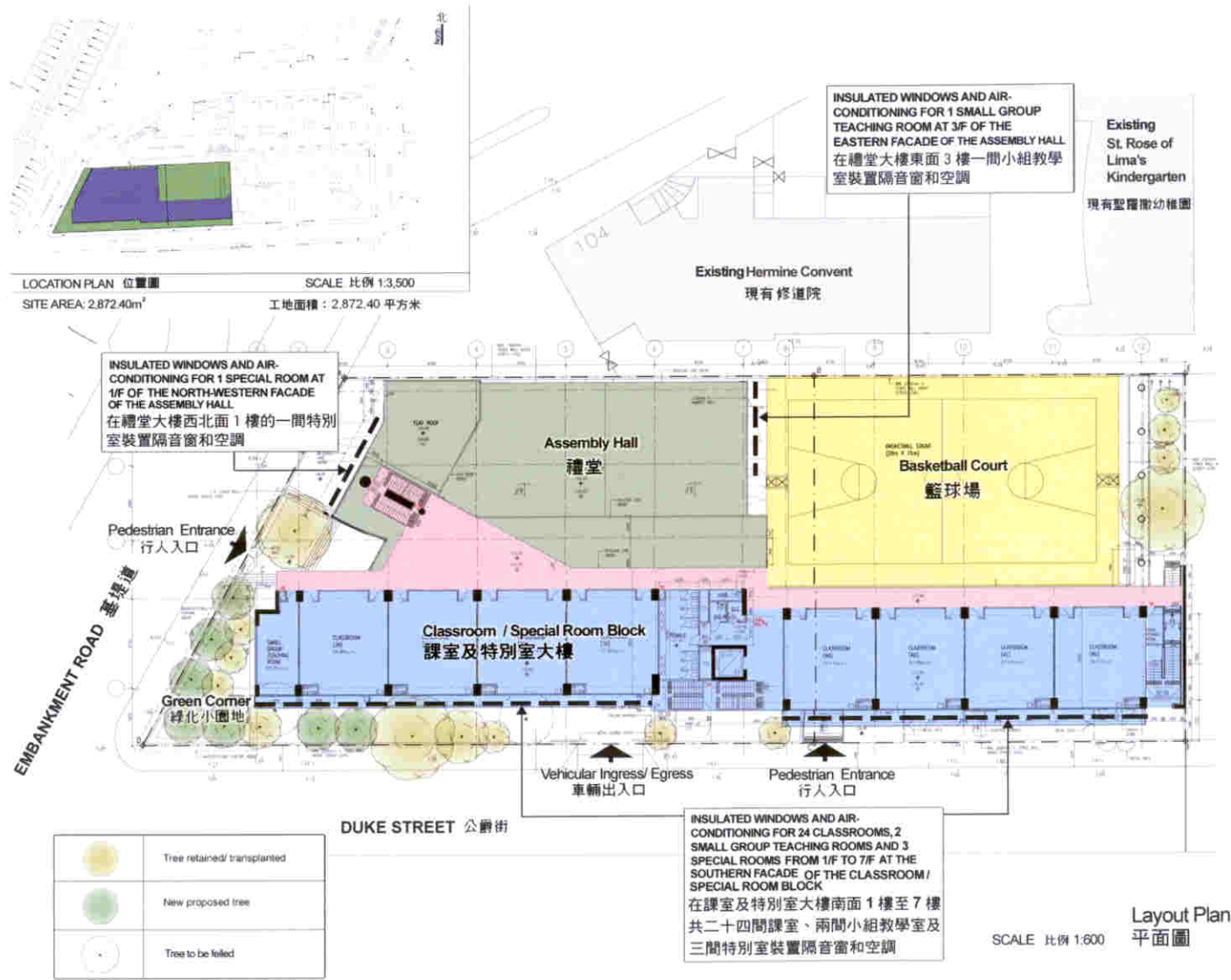
⁵ "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria -

- (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.

planting proposals as part of the project, including replanting seven of nine of the existing trees and planting of seven new trees.

27. We estimate that the proposed works will create about 130 jobs (115 for labourers and another 15 for professional/technical staff) providing a total employment of 3 300 man-months.

Education Bureau
December 2008



31EA Redevelopment of St Rose of Lima's School at Embankment Road and Duke Street, Kowloon
九龍基堤道及公爵街聖羅撒學校重建計劃



**VIEW OF THE SCHOOL PREMISES FROM NORTH-WESTERN DIRECTION
(ARTIST'S IMPRESSION)**
從西北面望向校舍的構思圖



**VIEW OF THE SCHOOL PREMISES FROM SOUTH-WESTERN DIRECTION
(ARTIST'S IMPRESSION)**
從西南面望向校舍的構思圖

**31EA Redevelopment of St Rose of Lima's School at Embankment Road and
Duke Street, Kowloon**
九龍基堤道及公爵街聖羅撒學校重建計劃

31EA – Redevelopment of St Rose of Lima’s School at Embankment Road and Duke Street, Kowloon

Breakdown of the estimate for consultants’ fees

		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants’ staff costs					
(i) Contract administration (Note 2)	Professional Technical	–	–	–	1.8
(ii) Site supervision (Note 3)	Technical	57.5	14	1.6	1.8
				Sub-total	3.6
(b) Out-of-pocket expenses ^(Note 4)					
				Total	3.9

* 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 2008, MPS point 14 = \$19,835 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 **31EA**. The assignment will only be executed subject to Finance Committee’s approval to upgrade **31EA** to Category A.
3. We will only know the actual man-months and actual costs for site supervision after completion of the construction works.

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4. Out-of-pocket expenses are the actual costs incurred. The consultants are not entitled to any additional payment for overheads or profit in respect of these items.

**A comparison of the reference cost of
a 24-classroom primary school project
with the estimated cost of 31EA**

\$ million (in Sept 2008 prices)

	Reference cost*	31EA	
(a) Demolition works	–	7.0	(See note A)
(b) Piling	15.2	68.1	(See note B)
(c) Building	80.0	85.4	(See note C)
(d) Building services	18.8	20.5	(See note D)
(e) Drainage	3.5	3.5	(See note E)
(f) External works	12.5	8.6	(See note F)
(g) Additional energy conservation measures	–	1.4	(See note G)
(h) Furniture and equipment	–	2.8	(See note H)
(i) Consultants' fees	–	3.9	(See note I)
(j) Contingencies	13.0	19.8	
	Total	143.0	
	143.0	221.0	
(k) Construction floor area	9 129 m ²	9 998 m ²	
(l) Construction unit cost {[(c) + (d)] ÷ (k)}	\$10,823/m ²	\$10,592/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 mixed use of 101 steel H-piles at an average depth of 30 m, 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 required.
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. D Arch S will review, and revise if necessary, the reference cost which should be adopted for future projects.

Notes

- A. Additional cost is required for demolition of the existing school premises.
- B. The piling cost is higher because the project will require the use of 135 rock socketted steel H piles in pre-bored holes at an average depth of 53 m due to soil condition and other considerations. Boulders of thickness measuring one to two metres are found at different depths in the soil stratum, posing difficulty in piling when percussive piles are used. In addition, there are a kindergarten and the 16-storey residential building with basement in the close proximity of the school. The vibrations and noise produced by percussion piling may cause structural impact and nuisance to adjacent properties.
- C. The building cost is higher because of larger construction floor area.
- D. The building services cost is higher because of larger construction floor area and the provision of air-conditioning as noise mitigation measures.
- E. Drainage cost is considered comparable to similar school projects built by the Government.
- F. The cost of external works is lower because of smaller site area.
- G. The additional cost is required for the provision of energy conservation measures.
- H. The cost of furniture and equipment, estimated to be \$2.8 million, will be borne by the Government. This is in line with the current policy.
- I. Consultants' fees are required for contract administration, site supervision and out-of-pocket expenses.