For discussion **PWSC(2004-05)5**
on 21 April 2004

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
329EP – Primary school at Sheung Shing Street, Ho Man Tin

Members are invited to recommend to Finance Committee the upgrading of **329EP** to Category A at an estimated cost of $91.8 million in money-of-the-day prices for the construction of a primary school at Sheung Shing Street, Ho Man Tin.

PROBLEM

We need to construct a new primary school for the reprovisioning and whole-day conversion of Chan Sui Ki Primary School in Kowloon City.

PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Education and Manpower (SEM), proposes to upgrade **329EP** to Category A at an estimated cost of $91.8 million in money-of-the-day (MOD) prices for the construction of a primary school at Sheung Shing Street, Ho Man Tin.

PROJECT SCOPE AND NATURE

3. The proposed primary school will have the following facilities –

/(a) …..

(a) 30 classrooms;

(b) six special rooms, including a computer-assisted learning room and a language 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 be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);

(l) a multi-purpose area;

(m) three basketball courts (two at ground level and one at the rooftop of the assembly hall block);

(n) a green corner[1];

(o) a 50-metre running track[2]; and

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

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[1] The 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 green house, a weather station and planting beds.

[2] Owing to the limited site area and the restricted building layout, a 100-metre running track cannot be provided.

The proposed school will meet the planning target of providing two square metres 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. D Arch S plans to start the construction works in November 2004 for completion in July 2006.

JUSTIFICATION

4. It is Government policy to implement whole-day primary schooling for virtually all primary school students by the 2007/08 school year. At present, about 66% primary school students are studying in whole-day primary schools. To facilitate implementation of the policy, SEM plans to construct 46 new schools between the 2004/05 and 2007/08 school years. To date, Finance Committee has approved funding for 16 of these 46 new schools. **329EP** will further help achieve this policy target.

5. Chan Sui Ki Primary School, under the sponsorship of the Director in Hong Kong of St Joseph's College, is a popular 20-classroom bi-sessional school sitting on a site of only about 400 square metres in Kowloon City (while the present day standard provision for a 24-classroom primary school is 4 700 square metres). Under the redevelopment of Ho Man Tin Estate, the school is scheduled for demolition in 2006. In considering the need for reprovisioning the school as well as to convert it into whole-day operation, we need to take into account factors other than district population demand, such as quality of education and parental choice. Although the Kowloon City District, in which **329EP** is also located, will have a projected surplus of primary school places, the School Allocation Committee[3] has recommended the allocation of **329EP** to Chan Sui Ki Primary School. SEM considers that the proposed project to provide new premises for the reprovisioning and whole-day conversion of Chan Sui Ki Primary School is well justified on educational grounds. Indeed, despite its popularity, the school has to progressively reduce its total number of operating classes from 36 in 2002 to 30 ultimately in preparation for moving into the new premises in 2006. Therefore, the reprovisioning of the school will only improve, instead of worsening, the surplus of aided school places in Kowloon City.

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be $91.8 million in MOD prices (see paragraph 7 below), made up as follows –

/(a) …..

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[3] The School Allocation Committee makes recommendations to SEM on the allocation of school premises/sites to suitable school sponsors. The Committee comprises an equal number of official and non-official members familiar with the Hong Kong education system.

		$ million	
(a)	Piling	15.5	
(b)	Building	44.9	
(c)	Building services	12.3	
(d)	Drainage and external works	10.5	
(e)	Furniture and equipment (F&E)[4]	3.7	
(f)	Consultant's fee for contract administration	0.5	
(g)	Contingencies	8.4	
	Sub-total	95.8	(in September 2003 prices)
(h)	Provision for price adjustment	(4.0)	
	Total	91.8	(in MOD prices)

D Arch S proposes to engage a consultant to undertake contract administration of the project. A detailed breakdown of the estimate for the consultant's fee by man-months is at Enclosure 3. The construction floor area (CFA) of **329EP** is 11 126 square metres. The estimated construction unit cost, represented by the building and the building services costs, is $5,141 per square metre of CFA in September 2003 prices. D Arch S considers this comparable to similar school projects built by the Government. A comparison of the reference cost for a 30-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated cost of **329EP** is at Enclosure 4.

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

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[4] Based on an indicative list of F&E items required by the school compiled on the basis of a survey on the serviceability of the existing F&E.

Year	$ million (Sept 2003)	Price adjustment factor	$ million (MOD)
2004 – 05	4.0	0.97150	3.9
2005 – 06	44.0	0.95450	42.0
2006 – 07	36.0	0.95450	34.4
2007 – 08	9.8	0.96643	9.5
2008 – 09	2.0	0.98455	2.0
	95.8		91.8

8. We have derived the MOD estimate 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 2004 to 2009. We will deliver the works through a fixed-price lump-sum contract because the contract period will be less than 21 months and we can clearly define the scope of works in advance, leaving little room for uncertainty.

9. The cost of F&E, estimated to be $3.7 million, will be borne by the Government as the school premises will enable an existing bi-sessional school to convert into whole-day operation. This is in line with the existing policy.

10. The annual recurrent expenditure of the existing school in the 2002/03 school year was $29.4 million for two sessions. Upon completion of the school premises under **329EP**, it is estimated to be $23.6 million.

PUBLIC CONSULTATION

11. We consulted the Legislative Council Panel on Education on 30 January 2004 on the planning and provision of public sector school places and the various projects to be implemented in the School Building Programme in the next few years. The Panel on Education thoroughly discussed the Administration's policy and noted its plan to proceed with seeking funding approval from the Public Works Subcommittee for projects in the following three categories –

/(a) …..

(a) whole-day primary schools;

(b) reprovisioning and redevelopment projects; and

(c) schools, including direct subsidy scheme and private independent schools, which have already been allocated to sponsoring bodies.

Members supported projects under categories (a) and (b). In respect of proposals under category (c), members asked that full background and justification, including the supply and demand balance of school places on both a territory-wide and district basis, be provided to facilitate consideration on a case-by-case basis.

12. We also consulted the Kowloon City District Council on 5 February 2004. Members of the Council supported the project.

ENVIRONMENTAL IMPLICATIONS

13. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **329EP** in August 2003. The PER 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 2003 prices)**
(a)	Insulated windows and air-conditioning for two small group teaching rooms on the 4/F at the south-western façade of the assembly hall block	0.1
(b)	Insulated windows and air-conditioning for four special rooms and two small group teaching rooms on the 1/F and 3/F to 5/F at the north-western façade of the assembly hall block	0.6

We have included the cost of the above mitigation measures as part of the building services works in the project estimate.

/14. …..

14. 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.

15. At the planning and design stages, we have considered measures to reduce the generation of construction and demolition (C&D) materials. D Arch S has introduced more prefabricated building elements into the school design to reduce temporary formwork and construction waste. These include dry-wall partitioning and proprietary fittings and fixtures. We will use suitable excavated materials for filling within the site to minimise off-site disposal. In addition, we will require the contractor to use metal site hoardings and signboards so that these materials can be recycled or reused in other projects.

16. D Arch S will require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. D Arch S will ensure that the day-to-day operations on site comply with the approved WMP. D Arch S will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system. D Arch S will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes. We estimate that the project will generate about 4 150 cubic metres (m^3) of C&D materials. Of these, we will reuse about 1 000 m^3 (24.1%) on site, 2 500 m^3 (60.2%) as fill in public filling areas[5], and dispose of 650 m^3 (15.7%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be $81,250 for this project (based on a notional unit cost[6] of $125/$m^3$).

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[5] A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

[6] 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 $90/$m^3$), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

LAND ACQUISITION

17. The project does not require land acquisition.

BACKGOUND INFORMATION

18. We upgraded **329EP** to Category B in May 2003. We engaged a term contractor to carry out site investigation in October 2003; and consultants to carry out the PER in August 2003, detailed design in October 2003 and tender documentation in March 2004 at a total cost of $1.6 million. We charged this to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of the Public Works Programme". The term contractor and the consultants have completed the site investigation, PER and detailed design of the project. The consultants are finalising the tender documents.

19. The proposed construction of the primary school will involve removal of one tree to be replanted within the project site. This is not an important tree[7]. We will incorporate planting proposals as part of the project, including estimated quantities of 138 trees, 1 730 shrubs and 1 400 annuals.

20. We estimate that the proposed works will create about 110 jobs (100 for labourers and another ten for professional/technical staff) providing a total employment of 1 850 man-months.

Education and Manpower Bureau
April 2004

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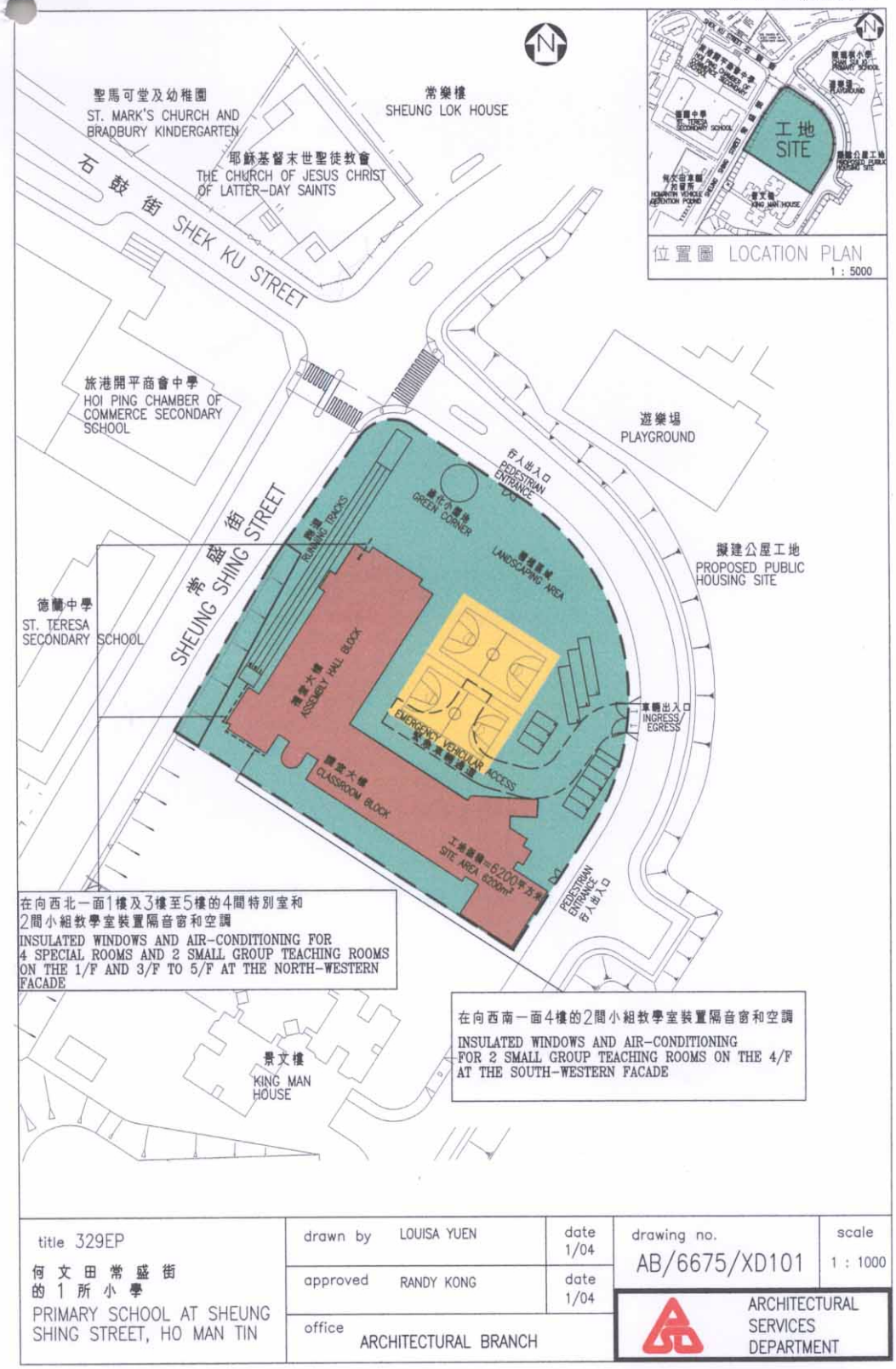
[7] Important trees include trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria –
(a) trees over 100 years old;
(b) trees of cultural, historical or memorable significance;
(c) trees of precious or rare species;
(d) trees of outstanding form; or
(e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).

附 件 1 ENCLOSURE 1



title 329EP 何文田常盛街的1所小學 PRIMARY SCHOOL AT SHEUNG SHING STREET, HO MAN TIN	drawn by LOUISA YUEN	date 1/04	drawing no. AB/6675/XD101	scale 1 : 1000
	approved RANDY KONG	date 1/04		
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT	

從 東 北 面 望 向 校 舍 的 構 思 圖

VIEW OF THE SCHOOL PREMISES FROM NORTH-EASTERN DIRECTION (ARTIST'S IMPRESSION)

從 西 南 面 望 向 校 舍 的 構 思 圖

VIEW OF THE SCHOOL PREMISES FROM SOUTH-WESTERN DIRECTION (ARTIST'S IMPRESSION)

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Enclosure 3 to PWSC(2004-05)5

329EP – Primary school at Sheung Shing Street, Ho Man Tin

Breakdown of the estimate for the consultant's fee

Consultant's staff costs			**Estimated fee ($ million)**
Contract administration (Note)	Professional		0.3
	Technical		0.2
		Total	0.5

Note

The consultant's staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **329EP**. The assignment will only be executed subject to Finance Committee's approval to upgrade **329EP** to Category A.

A comparison of the reference cost of a 30-classroom primary school project with the estimated cost of 329EP

		$ million (in Sept 2003 prices)		
		Reference cost*	**329EP**	
(a)	Piling	8.0	15.5	(See note A)
(b)	Building	43.3	44.9	(See note B)
(c)	Building services	11.5	12.3	(See note C)
(d)	Drainage and external works	10.0	10.5	(See note D)
(e)	Furniture and equipment (F&E)	–	3.7	(See note E)
(f)	Consultant's fee	–	0.5	(See note F)
(g)	Contingencies	7.2	8.4	
	Total	80.0	95.8	
(h)	Construction floor area	10 727 m^2	11 126 m^2	
(i)	Construction unit cost {[(b) + (c)] ÷ (h)}	\$5,109/m^2	\$5,141/m^2	

* **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 30 metres, 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 square metres 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. F&E 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. The piling cost is higher because ground conditions require the use of 140 rock-socketed steel H-piles in pre-bored holes at an average depth of 22 metres. The use of rock-socketed steel H-piles instead of percussive H-piles is due to environmental considerations to avoid nuisance to the surrounding schools and housing blocks as well as to avoid detrimental effect to the existing slopes and retaining walls. The increase in the number of piles is due to the larger construction floor area and to avoid lateral loads imposed on the existing slopes and retaining walls.

B. The building cost is higher because of the larger construction floor area.

C. The building services cost is higher because of the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.

D. The drainage and external works cost is higher as a result of significant underground obstructions revealed close to the ground level.

E. The cost of F&E, estimated to be $3.7 million, will be borne by the Government as the school premises will be allocated to an existing bi-sessional school for conversion into whole-day operation.

F. Consultant's fee is required for contract administration.