For discussion **PWSC(2003-04)13**
on 7 May 2003

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
296EP – Redevelopment of Meng Tak Primary School at Cheung Man Road, Chai Wan

Members are invited to recommend to Finance Committee the upgrading of **296EP** to Category A at an estimated cost of $89.7 million in money-of-the-day prices for the redevelopment of Meng Tak Primary School at Cheung Man Road, Chai Wan.

PROBLEM

We need to redevelop Meng Tak Primary School to enable the school to convert into whole-day operation.

PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Education and Manpower (SEM), proposes to upgrade **296EP** to Category A at an estimated cost of $89.7 million in money-of-the-day (MOD) prices for the construction of a 24-classroom primary school for the redevelopment of Meng Tak Primary School at Cheung Man Road, Chai Wan.

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PROJECT SCOPE AND NATURE

3. The proposed project is for the redevelopment of Meng Tak Primary School from a 12-classroom bi-sessional school into a 24-classroom school to facilitate its conversion into a whole-day school. The new school building will have the following facilities –

(a) 24 classrooms;

(b) five special rooms, including a computer-assisted learning room and a language room;

(c) three small group teaching rooms;

(d) a guidance activity room;

(e) an interview room;

(f) a staff room and a staff common room;

(g) a library;

(h) 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 basketball, badminton, gymnastics and table-tennis);

(i) a covered playground and multi-purpose area;

(j) two basketball courts (one on ground level under the assembly hall block and the other one at the rooftop of the assembly hall block);

(k) a green corner[1]; and

(l) 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.

The new school building 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 model are at Enclosure 2. D Arch S plans to start the site formation works in August 2003, which will be followed by the construction works in March 2004 for completion in December 2005.

4. The project constitutes part of the proposed comprehensive redevelopment of Meng Tak Primary School. Under **296EP**, the new school building will be constructed on a vacant site adjacent to the existing premises of the school. We further plan to demolish the existing premises of Meng Tak Primary School and construct a separate secondary school building to enable the school sponsor to provide "through-train" education. The comprehensive redevelopment under planning will optimise the utilisation of school site as a number of facilities, including the assembly hall and library, can be shared between the primary and secondary sections of the future "through-train" school. Subject to technical feasibility and availability of financial resources, we will seek funding for the remaining part of the comprehensive development in due course.

JUSTIFICATION

5. To facilitate the implementation of 100% whole-day primary schooling by the 2007/08 school year, it is Government policy to convert existing bi-sessional primary schools into whole-day operation where feasible through the construction of extra classrooms, provision of additional facilities or redevelopment.

6. In line with the above policy, we propose to redevelop the existing Meng Tak Primary School, which has 12 classrooms for operation of 24 bi-sessional classes, into a 24-classroom primary school. This would enable the school to operate on a whole-day basis without affecting its student intake after the redevelopment.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be $89.7 million in MOD prices (see paragraph 8 below), made up as follows –

/(a) …..

		$ million	
(a)	Site formation	6.8	
(b)	Piling	11.9	
(c)	Building	42.6	
(d)	Building services	14.7	
(e)	Drainage and external works	7.8	
(f)	Furniture and equipment (F&E)[2]	3.3	
(g)	Consultants' fees for contract administration	0.8	
(h)	Contingencies	8.5	
	Sub-total	96.4	(in September 2002 prices)
(i)	Provisions for price adjustment	(6.7)	
	Total	89.7	(in MOD prices)

A breakdown of the estimate for consultants' fees by man-months is at Enclosure 3. The construction floor area (CFA) of **296EP** is about 10 100 square metres. The estimated construction unit cost, represented by the building and building services costs, is $5,673 per square metre of CFA in September 2002 prices. D Arch S considers this comparable to similar school projects built by the Government. A comparison of the reference cost for a 24-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated cost of **296EP** is at Enclosure 4.

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

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[2] 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 2002)	Price adjustment factor	$ million (MOD)
2003 – 04	7.0	0.94300	6.6
2004 – 05	37.0	0.93003	34.4
2005 – 06	40.8	0.93003	37.9
2006 – 07	10.0	0.93003	9.3
2007 – 08	1.6	0.93003	1.5
	96.4		89.7

9. We have derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period 2003 to 2008. We will deliver the site formation works and construction works through two separate fixed-price lump-sum contracts because both contract periods will be less than 21 months and we can clearly define the scope of works in advance, leaving little room for uncertainty.

10. The cost of F&E, estimated to be $3.3 million, is less than the standard F&E provision for a new 24-classroom primary school for conversion of existing bi-sessional school into whole-day operation. We have taken into account the serviceability of the F&E of the existing school in estimating the amount required. We will adopt the same practice for all school projects for reprovisioning of existing schools.

11. We estimate that the additional annual recurrent expenditure of the project to be $1.1 million.

PUBLIC CONSULTATION

12. We consulted the Eastern District Council on 14 March 2002. Members of the Council supported the project.

ENVIRONMENTAL IMPLICATIONS

13. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **296EP** in December 2001. The PER concluded that the school would not be subject to adverse environmental impacts provided that we implement the following environmental mitigation measures to keep the road traffic noise impact within the limits recommended in the Hong Kong Planning Standards and Guidelines –

	Mitigation measures	Estimated cost $ million (in Sept 2002 prices)
(a)	Provision of insulated windows and air-conditioning to 24 classrooms, three small group teaching rooms and three special rooms from the 1/F to the 7/F at the northeastern and northwestern façades of the classroom block	3.2
(b)	Construction of a three-metre high boundary wall along the eastern and northern sides of the site	0.4

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

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 site, 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.

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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 6 600 cubic metres (m^3) of C&D materials. Of these, we will reuse about 1 200 m^3 (18.2%) on site, 4 900 m^3 (74.2%) as fill in public filling areas[3], and dispose of 500 m^3 (7.6%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be $62,500 for this project (based on a notional unit cost[4] of $125/$m^3$).

LAND ACQUISITION

17. The project does not require land acquisition.

BACKGROUND INFORMATION

18. We upgraded **296EP** to Category B in August 2001. We employed a term contractor to carry out site investigation in December 1999; and engaged consultants to carry out a topographical survey in August 1999 and a PER in December 2001 at a total cost of $850,000. We also engaged consultants to undertake architectural drafting services and tender documentation of the project at a cost of $1.7 million. We charged these amounts 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, topographical survey, PER and architectural drafting services. D Arch S has completed the detailed design of the project with in-house staff resources. The consultants are finalising the tender documentation.

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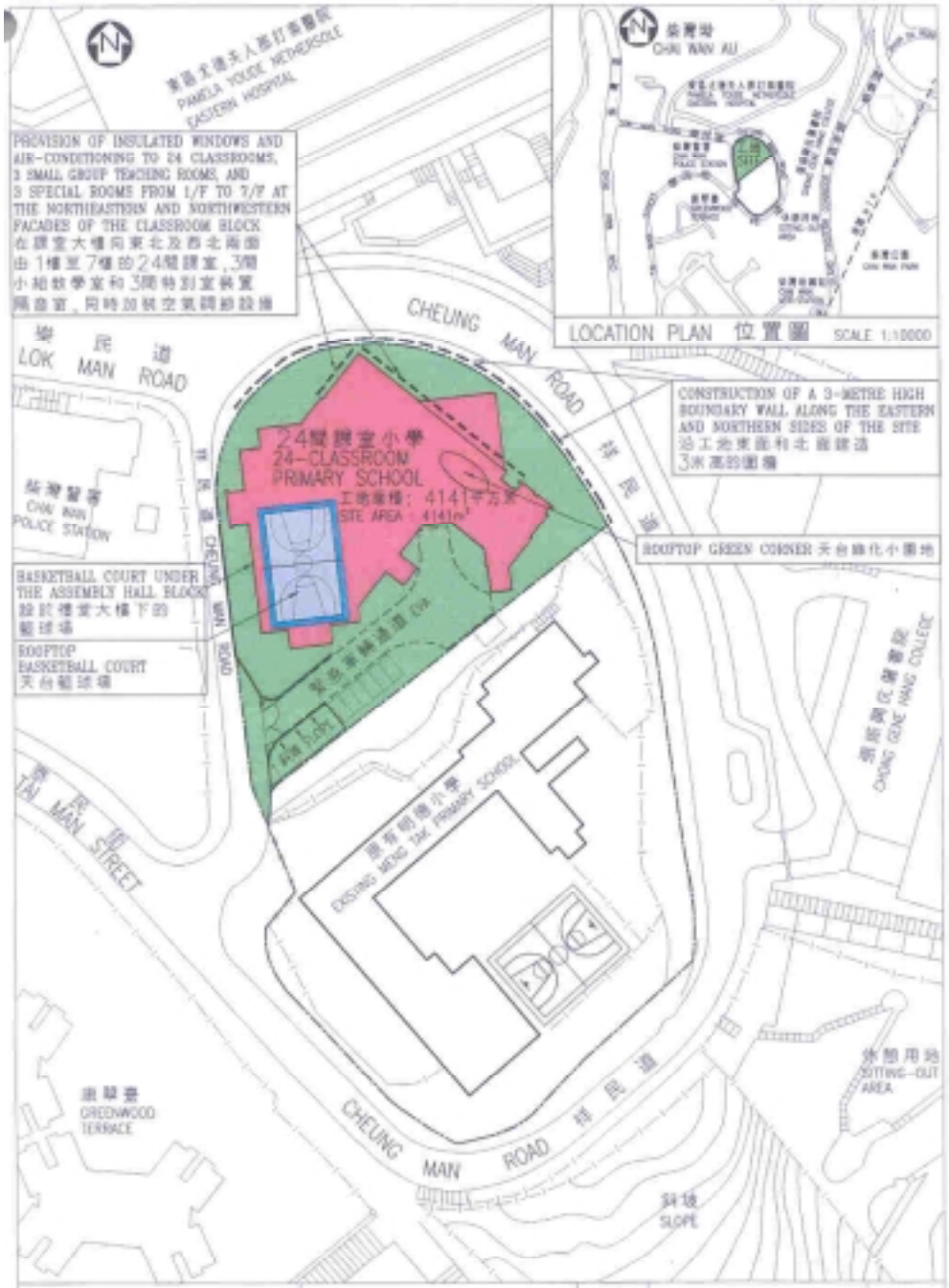
[3] A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

[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 $90/$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.

19. We estimate that the project will create some 120 jobs comprising ten professional/technical staff and 110 labourers, totalling 1 970 man-months.

Education and Manpower Bureau
April 2003

附件 1 ENCLOSURE 1



title 296EP 柴灣祥民道明德小學重建計劃 REDEVELOPMENT OF MENG TAK PRIMARY SCHOOL AT CHEUNG MAN ROAD, CHAI WAN	drawn by LOUISA YUEN	date 4/03	drawing no. AB/6247/XM201
	approved A. RICHARDSON	date 4/03	scale 1 :1000
	office ARCHITECTURAL BRANCH		ARCHITECTURAL SERVICES DEPARTMENT

從東南面拍攝的學校模型圖

VIEW OF SCHOOL MODEL FROM SOUTH-EAST

從西南面拍攝的學校模型圖

VIEW OF SCHOOL MODEL FROM SOUTH-WEST

title 296EP 孟德仔民源明道小學重建計劃 REDEVELOPMENT OF MENG TAK PRIMARY SCHOOL AT CHEUNG MAN ROAD, CHAI WAN	drawn by LOUISA YUEN	date 4/03	drawing no. AB/6247/XM202	scale N.T.S.
	approved A. RICHARDSON	date 4/03	ARCHITECTURAL SERVICES DEPARTMENT	
	office ARCHITECTURAL BRANCH			

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296EP – Redevelopment of Meng Tak Primary School at Cheung Man Road, Chai Wan

Breakdown of estimate for consultants' fees

Consultants' staff cost			**Estimated fee ($million)**
Contract administration (Note)	Professional		0.3
	Technical		0.5
		Total	0.8

Note

The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement to undertake the tender documentation of **296EP**. The assignment will only be executed subject to Finance Committee's approval to upgrade **296EP** to Category A.

A comparison of the reference cost of a 24-classroom primary school project with the estimated cost of 296EP

		$ million (in Sept 2002 prices) Reference cost*	296EP	
(a)	Site formation	–	6.8	(See note A)
(b)	Piling	7.0	11.9	(See note B)
(c)	Building	38.5	42.6	(See note C)
(d)	Building services	10.3	14.7	(See note D)
(e)	Drainage and external works	7.8	7.8	
(f)	Furniture and equipment	–	3.3	(See note E)
(g)	Consultants' fees for contract administration	–	0.8	(See note F)
(h)	Contingencies	6.3	8.5	
	Total	69.9	96.4	
(i)	Construction floor area	9 129 m^2	10 100 m^2	
(j)	Construction unit cost {[(c) + (d)] ÷ (i)}	\$5,346/m^2	\$5,673/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 101 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 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 "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 carrying out site formation to provide level platforms and vehicular access on this sloping site.

B. Piling cost is higher because it is based on 155 rock-socketed H-piles at an average depth of 13 metres instead of 101 steel H-piles at an average depth of 30 metres. Non-percussive (rock-socketed) piles are used as the site is adjacent to the Pamela Youde Nethersole Eastern Hospital which is noise-sensitive. Ground conditions and larger school footprint require the greater number of piles.

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

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

E. The cost of furniture and equipment, estimated to be $3.3 million, will be borne by the Government as the school premises has been allocated to an existing bi-sessional school for conversion into whole-day operation.

F. Consultants' fees are required for contract administration.