For discussion **PWSC(2001-02)34**
on 31 May 2001

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Education Subventions
16EA – Redevelopment of the former premises of the Church of Christ in China Chuen Yuen Second Primary School at Sheung Kok Street, Kwai Chung

Members are invited to recommend to Finance Committee the approval of a new commitment of $83.2 million in money-of-the-day prices for the redevelopment of the former premises of the Church of Christ in China Chuen Yuen Second Primary School at Sheung Kok Street, Kwai Chung from a nine-classroom primary school into an 18-classroom primary school.

PROBLEM

The former premises of the Church of Christ in China (CCC) Chuen Yuen Second Primary School (the Second Primary School) does not have adequate classrooms and teaching facilities to enable the school to implement whole-day primary schooling without affecting the student intake.

/PROPOSAL ..…

PROPOSAL

2. The Director of Education (D of E), on the advice of the Director of Architectural Services (D Arch S) and with the support of the Secretary for Education and Manpower, proposes to create a commitment of $83.2 million in money-of-the-day (MOD) prices for redeveloping the former premises of the Second Primary School at Sheung Kok Street, Kwai Chung from a nine-classroom primary school into an 18-classroom primary school.

3. According to the plan of the School Authority, the redeveloped premises at Sheung Kok Street will be occupied by the Second Primary School (which have since 1999 moved to an 18-classroom school in the Lai King Estate and started operating on a whole-day basis) to continue operating as a whole-day school. The school premises at the Lai King Estate thus freed up will be used by the CCC Chuen Yuen First Primary School (the First Primary School) to convert to whole-day operation by late 2002/early 2003.

PROJECT SCOPE AND NATURE

4. The scope of the project includes demolishing the existing nine-classroom school premises for the construction of a new 18-classroom primary school premises. The new school will adopt a non-standard design and will have all the facilities provided for a standard 18-classroom primary school. It will have -

(a) 18 classrooms;

(b) three remedial teaching rooms;

(c) six special rooms including a computer-assisted learning room and a language room;

(d) a library;

(e) a guidance activity room;

(f) an interview room;

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

(h) a conference room;

/(i) .....

(i) an assembly hall (which can also be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);

(j) a multi-purpose area;

(k) a student activity centre;

(l) a basketball court on the roof ;

(m) ancillary accommodation including a lift and relevant facilities for the handicapped; and

(n) a green corner[1].

_____ A site plan is at Enclosure 1.

5. Members may note that the area of the subject site (2 610 square metres) is smaller than that of a standard 18-classroom primary school (3 950 square metres). Notwithstanding this, it is the School Authority's wish to redevelop the new school premises in-situ to enable the Second Primary School to operate on a whole-day basis without affecting student intake.

6. Due to site constraints, the open space provision (1.5 square metres per student) is thus below our current planning target of two square metres per student. Indeed, the School Authority has considered and implemented measures to help improve the open space provision. First, the carpark spaces will be moved to the covered area underneath the school building (carpark spaces are located in the open area under our standard design). Secondly, the rooftop of the school building has been designed to provide extra open space for students.

7. The School Authority plans to start demolition works in June 2001. Construction works for the new school premises will start in September 2001 for completion in December 2002.

/JUSTIFICATION .....

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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.

JUSTIFICATION

8. The Government's interim target is to enable 60% of our primary school pupils to study in whole-day schools in the 2002/03 school year. To achieve this target, 78 new primary schools are required between the 1998/99 and the 2002/03 school years. To date, 37 schools have already been completed, and a further 40 are at various stages of construction. **16EA** is the last of these 78 projects.

9. To facilitate the implementation of whole-day primary schooling, it is Government's policy to convert existing bi-sessional primary schools into whole-day operation within their existing boundary where feasible through construction of extra classrooms, provision of additional facilities or redevelopment.

FINANCIAL IMPLICATIONS

10. The cost of the project is estimated to be $83.2 million in MOD prices (see paragraph 11 below). The estimated cost, which has been examined and endorsed by D Arch S, is made up as follows -

			$ million
(a)	Demolition and site formation		3.6
(b)	Slope protection works		1.0
(c)	Piling		11.7
(d)	Building		37.8
(e)	Building services		10.1
(f)	Drainage and external works		6.0
(g)	Consultants' fees -		3.3
	(i) contract administration	1.8	
	(ii) site supervision	1.0	
	(iii) out-of-pocket expenses	0.5	

/(h) …..

		$ million	
(h)	Furniture and equipment	3.3	
(i)	Contingencies	7.8	
	Sub-total	84.6	(in September 2000 prices)
(j)	Provision for price adjustment	(1.4)	
	Total	83.2	(in MOD prices)

The construction floor area of the new school premises is 7 701 square metres. The construction unit cost, represented by building and building services costs, is $6,220 per square metre in September 2000 prices. D Arch S considers this reasonable and comparable to other similar school projects built by the Government. A comparison of the estimated costs for **16EA** with the reference cost of an 18-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints is at Enclosure 2. A breakdown by man-months of the cost estimate for the consultants' fees is at Enclosure 3.

11. Subject to approval, the School Authority will phase the expenditure as follows -

Year	**$ million (Sept 2000)**	**Price adjustment factor**	**$ million (MOD)**
2001 - 02	12.4	0.98000	12.2
2002 - 03	51.6	0.97976	50.6
2003 - 04	19.2	0.98759	19.0
2004 - 05	1.4	0.99549	1.4
	84.6		83.2

/12. ..…

12. We derived the MOD estimates on the basis of Government's forecast of trend labour and construction prices for the period 2001 to 2005. We will tender the demolition and construction works under two fixed-price lump-sum contracts because the contract periods will be less than 21 months each and we can clearly define the scope of works in advance, leaving little room for uncertainty.

13. We estimate the annually recurrent expenditure for the school to be $14.7 million. As the school will be redeveloped for conversion into whole-day operation, the additional cost of furniture and equipment, estimated to be $3.3 million, will be borne by the Government in accordance with existing policy.

PUBLIC CONSULTATION

14. The School Authority has consulted the parents and teachers of the Second Primary School on the proposed redevelopment project. The proposal has received their support.

15. As the proposed redevelopment project is carried out within the existing school boundary, further public consultation is not necessary.

ENVIRONMENTAL IMPLICATIONS

16. The consultants engaged by the School Authority conducted a Preliminary Environment Review (PER) on the proposed project in March 1999. The PER concluded that the redeveloped school will not be subject to adverse environmental impacts, and the road traffic noise impact will be kept within the limits stipulated in the Hong Kong Planning Standards and Guidelines, provided that insulated windows and air-conditioners are installed in the 18 classrooms from the 2/F to the 4/F at the northern façade of the classroom block, and the five special rooms and three remedial teaching rooms from the 2/F to 4/F at the eastern façade of the special room block. We have included $1.0 million in the project estimate as part of the building and building services cost to implement the above mitigation measure.

/17. .....

17. During construction, the School Authority 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.

18. At the planning and design stages, the School Authority has considered measures to reduce the generation of construction and demolition (C&D) materials. The School Authority has introduced more prefabricated building elements into the design to avoid temporary formwork and construction waste. These include dry-wall partitioning and proprietary fittings and fixtures. Suitable excavated materials will be used for filling within the site to minimize off-site disposal. In addition, the contractor will be required to use metal site hoardings and signboards so that these materials can be recycled or reused in other projects.

19. The School Authority will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce and recycle C&D materials. The School Authority will ensure that the day-to-day operations on site comply with the approved WMP. The School Authority will control the disposal of public fill and C&D waste to designated public filling facilities and landfills respectively through a trip-ticket system. The contractor will be required to separate public fill from C&D waste for disposal at appropriate facilities. The School Authority will record the disposal, reuse and recycling of C&D materials for monitoring purposes. We estimate that the project will generate about 6 500 cubic metres (m^3) of C&D materials. Of these, we will reuse about 1 500 m^3 (23%) on site, 4 000 m^3 (62%) as fill in public filling areas[2], and dispose of about 1 000 m^3 (15%) at landfills.

LAND ACQUISITION

20. The project does not require land acquisition.

/BACKGROUND ..…

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[2] 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.

BACKGROUND INFORMATION

21. The subject site at Sheung Kok Street has been granted to CCC by way of a private treaty grant. A school premises with only nine classrooms[3] was constructed on the site for the Second Primary School (under the sponsorship of CCC) to run a bi-sessional school with nine classes per session until the 1998/99 school year. At the start of the 1999/2000 school year, the Second Primary School moved to a school premises with 18 classrooms in the Lai King Estate to operate on a whole-day basis.

22. We upgraded **16EA** to Category B in December 1999. The School Authority engaged consultants to carry out a PER in March 1999, a topographical survey in October 2000, site investigation in December 2000, as well as detailed design and tender documentation of the project in March 2001, at a total cost of $4.5 million. We charged this amount to block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings". The consultants engaged by the School Authority have completed the PER, topographical survey, site investigation and detailed design of the project and are finalizing the tender documents.

23. We estimate that **16EA** will create about 140 jobs with a total of 2 260 man-months comprising five professional staff, 15 technical staff and 120 labourers during the construction period.

Education and Manpower Bureau
May 2001

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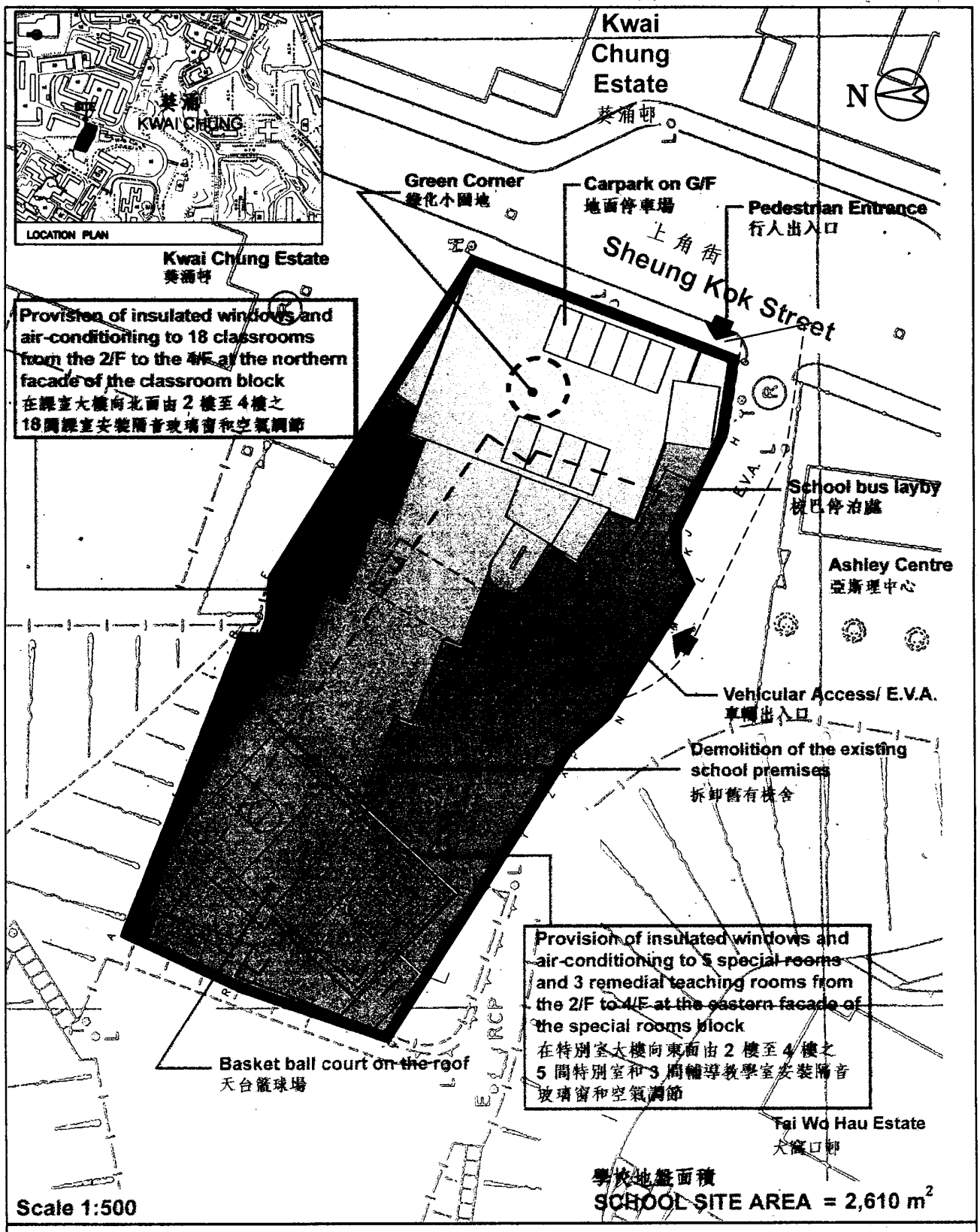
[3] The school premises was built according to outdated planning standards which no longer meet the present-day standards as required by the changes in curriculum and teaching methods.



Project :
16EA
Redevelopment of Former Premises of CCC Chuen Yuen Second Primary School at Sheung Kok Street, Kwai Chung.
葵涌上角街中華基督教會全完第二小學舊校舍重建計劃

A comparison of the reference cost of an 18-classroom primary school project with the estimated cost for 16EA

$ million (in Sept 2000 prices)

		Reference cost*	16EA	
(a)	Demolition and site formation	-	3.6	(See A below)
(b)	Slope protection works	-	1.0	(See B below)
(c)	Piling	7.5	11.7	(See C below)
(d)	Building	41.5	37.8	(See D below)
(e)	Building services	10.0	10.1	(See E below)
(f)	Drainage and external works	6.5	6.0	(See F below)
(g)	Consultants' fee	-	3.3	(See G below)
(h)	Furniture and equipment	-	3.3	(See H below)
(i)	Contingencies	6.6	7.8	
	Total	72.1	84.6	
(j)	Construction floor area	8 476m^2	7 701m^2	
(k)	Construction unit cost {[(d)+(e)] ÷(j)}	\$6,076/m^2	\$6,220/m^2	

/**Assumptions** .....

*** Assumptions for reference cost**

1. The estimation is based on the assumption that the school site is uncomplicated and without abnormal environmental restrictions. No allowance is reserved for specific environmental restrictions such as the provision of insulated windows, air-conditioning and solid 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 the handing-over of the project site for school construction.

3. Piling cost is based on the use of 97 numbers of steel H-piles at an average depth of 30 metres, on the assumption 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 18-classroom primary school site area of 3 950 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.

Estimate for 16EA

A. Cost is required to demolish the existing school premises. Site formation works are also required to level off the site to create a platform for the new school premises.

B. Slope protection works are required to ensure that the slopes adjacent to the school site will meet the current safety standards. The works include cutting back the slope to a safe angle and installation of soil nails with shotcrete cover on the slope.

/C. ....

C. The piling cost is higher because they are based on the use of 100 numbers of rock socketed H-piles in pre-bored holes instead of 97 numbers of steel H-piles. Since the bedrock level is shallow (10 to 15 metres below ground level), the use of steel H-piles (which generate the capacity to carry the building load by friction) will not be suitable. The use of rock socketed H-piles in pre-bored holes, which is a more expensive method than using ordinary steel H-piles, is considered more appropriate in this case.

D. In spite of the provision of insulated windows as a noise mitigation measure, the building cost is still lower because the site area and the construction floor area of the new school premises (2 610 square metres and 7 701 square metres respectively) is smaller than those of a standard 18-classroom primary school (3 950 square metres and 8 476 square metres respectively).

E. The building services cost is higher because of the provision of air-conditioning as a noise mitigation measure.

F. The drainage and external works cost for the school is lower because the site area of the school (2 610 square metres) is smaller than that for a standard 18-classroom primary school (3 950 square metres).

G. The total consultancy fees are estimated to be $7.8 million. Those incurred before tendering are estimated to be $4.5 million and those after tendering $3.3 million. Following the existing practice, the pre-tendering consultancy fees are funded under block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings".

H. The additional cost of furniture and equipment, estimated to be $3.3 million, will be borne by Government as the school will be used to convert an existing bi-sessional school to whole-day operation.

16EA – Redevelopment of the former premises of the Church of Christ in China Chuen Yuen Second Primary School at Sheung Kok Street, Kwai Chung

Breakdown of estimate for consultants' fees

			Estimated man-months	Average MPS* salary point	Multiplier Factor	Estimated Fee ($ million)
(a) Consultants' staff costs						
(i)	Contract administration	Professional	9.5	38	2.4	1.3
		Technical	11.5	14	2.4	0.5
(ii)	Site supervision	Technical	31.5	14	1.7	1.0
					Sub-total	2.8
(b) Out-of-pocket expenses						
	Lithography and other direct expenses					0.5
					Sub-total	0.5
					Total	3.3

*MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. A multiplier factor of 1.7 is applied in the case of site staff supplied by the consultants. (At 1.4.2000, MPS point 38 = $57,525 per month and MPS point 14 = $19,055 per month.)

2. 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.

3. The figures given above are estimates prepared by the Director of Architectural Services. We will only know the actual fees when we have selected the consultant through the usual competitive bidding system.