For discussion
on 26 February 2003

PWSC(2002-03)98

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Education Subventions
30EC – Construction works for schools in the final phase of the School Improvement Programme

Members are invited to recommend to Finance Committee –

(a) the upgrading of part of **30EC**, entitled "Construction works for schools in the final phase of the School Improvement Programme (batch 5A)", to Category A at an estimated cost of $276.3 million in money-of-the-day prices for the improvement works to be undertaken by the Architectural Services Department;

(b) the upgrading of another part of **30EC**, entitled "Construction works for schools in the final phase of the School Improvement Programme (batch 5B)", to Category A at an estimated cost of $299.6 million in money-of-the-day prices for the improvement works to be undertaken by individual schools with government subventions; and

(c) the retention of the remainder of **30EC** in Category B.

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PROBLEM

Many of the existing public sector schools in Hong Kong were built to old planning standards which cannot meet the requirements arising from the changes in curriculum and teaching methods in recent years. These schools require additional space and facilities in order to meet the current standards.

PROPOSAL

2. The Secretary for Education and Manpower, on the advice of the Director of Architectural Services (D Arch S), proposes to upgrade part of **30EC** to Category A at an estimated total cost of $575.9 million in money-of-the-day (MOD) prices –

			Project estimate $ million (MOD)
(a)	Batch 5A –	For improvement works to be carried out by the Architectural Services Department (Arch SD mode) for ten aided schools (six secondary, three primary and one special schools)	276.3
(b)	Batch 5B –	For improvement works to be carried out by nine aided schools (six secondary, two primary schools and one special school) with government subventions (self-delivery mode)	299.6
		Total	575.9

PROJECT SCOPE AND NATURE

3. We propose to upgrade facilities of schools in the final phase of the School Improvement Programme (SIP) to the year 2000 school design as far as practicable within a budget ceiling. As a general guide, the budget ceiling[1] for

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[1] The budget ceiling for the SIP purposes for a secondary school with 30 classrooms is $41.9 million while that for a primary school of 30 classrooms is $34.9 million.

each school (inclusive of consultancy fees, furniture and equipment, and other related costs) is set at 42% of the average cost of construction of a new school of the same type and size, based on a consultancy review on the cost effectiveness of the SIP conducted in 2000. The budget ceiling for the schools covered in batches 5A and 5B of the SIP is within the 42% yardstick, except for Ho Koon Nature Education Cum Astronomical Centre[2] and Emmanuel Primary School[3] under batch 5A.

4. The full scope of works for schools[4] in the final phase of the SIP includes the following facilities –

(a) Core items

These are items required by statute or are essential to maintaining quality teaching and learning activities and should be fully covered in all the SIP projects as far as practicable. The core items include additional classrooms to meet various policy objectives, a computer-assisted learning (CAL) room, a language room, staff rooms, library (for primary schools) and, if necessary, a transformer room. A school which cannot include all core items will be classified as a special case for individual consideration.

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2 Ho Koon Nature Education Cum Astronomical Centre, which receives government subventions under the Code of Aid, provides residential ecology and geography courses to senior secondary students for out-of-class learning. The estimated project cost of $18.6 million exceeds the budget ceiling of $6.2 million calculated on the basis of three classrooms by $12.4 million. The scope of the project comprises a classroom, a computer-assisted learning room, a staff room and a multi-purpose room. The proposed works are necessary for meeting the demand for effective teaching and learning on ecology and geography courses of the Centre. Out of the total project cost, $7.5 million is required for slope stabilisation works and sub-structure works due to the special topography of the site.

3 The estimated project cost of $12.4 million for the school exceeds the budget ceiling of $10.5 million by $1.9 million. The scope of the project only includes the core items. The main reason for the total cost exceeding the budget ceiling is that an additional cost of $1.9 million is needed for slope stabilisation works which are necessary due to the special topography of the site.

4 Facilities provided to special schools will follow the same principle as those for both secondary and primary schools. As the needs for special schools will vary depending on the nature of their respective services, we have consulted the special schools to agree on the facilities to be provided.

(b) Other items

Schools will be allowed to prioritise, within the budget ceiling for each school, their requirements for other items in the schedule of accommodation for the year 2000 school design, on top of the facilities mentioned in (a) above. These items can include additional classrooms, a preparation room for CAL, a multi-purpose room, small group teaching rooms, a student activity centre, a guidance activity room, interview rooms, a conference room, a staff common room, a deputy principal's office, a school social worker's office, a discipline master's office, and a multi-purpose area.

5. The scope of work for each of the ten schools under batch 5A and nine schools under batch 5B is shown at Enclosures 1 and 2 respectively. We plan to start construction works for batches 5A and 5B schools in mid-2003. Works will be staggered over time for completion by mid-2005 for most schools.

JUSTIFICATION

6. The SIP was one of the recommendations in the Education Commission Report No. 5. It involves some 850 existing schools. The proposed improvement works, when completed, will provide additional space and updated facilities to meet current requirements of teaching, out-of-class and supporting activities for both teachers and students.

7. To provide an alternative means to deliver the SIP and to provide flexibility to schools in the final phase of the SIP, we give schools the option to carry out the pre-contract works and improvement works through their own agents, with government subventions. Schools taking up this option will enter into private contracts with the consultants and contractors through open tenders. Under this option, D Arch S will mainly be responsible for –

(a) vetting the feasibility study report to ensure that the project is able to deliver the SIP requirements within a reasonable project estimate;

(b) vetting the tender report based on which government subventions will be determined (having regard to the budget ceiling explained in paragraph 3 above); and

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(c) conducting final site inspection to ensure delivery of items in the contract which the Government has agreed to fund.

8. Improvement works for 386 schools have already been completed with works in progress for another 118 schools, under phases 1 to 4 of the SIP. On 9 February 2001, Finance Committee gave approval under **28EC** for the engagement of consultants to carry out pre-construction works for the remaining 342 schools in the final phase of the SIP. Since February 2001, 88 schools have been withdrawn from the programme; six schools were considered non-feasible for improvement works; three schools previously considered non-feasible were reinstated in the final phase; and two schools were inserted into the final phase, leaving a total of 253 schools in this phase. Of these, improvement works for 202 schools will be conducted under the Arch SD mode and the works for the remaining 51 schools under the self-delivery mode.

9. On 27 February, 3 April, 26 June and 13 November 2002, this Subcommittee recommended the upgrading of parts of **30EC** to Category A so as to proceed with the first four batches of 179 schools in the final phase of the SIP under the Arch SD mode and 42 schools under the self-delivery mode. To date, improvement works for three schools have already been completed. The feasibility studies of the ten schools under batch 5A and the nine schools under batch 5B have now been completed and improvement works for them are considered technically feasible. Detailed designs are in progress. We are now seeking funding to proceed with the improvement works for these 19 schools.

10. Feasibility studies for the remaining 13 schools, all under the Arch SD mode, are in progress. We expect to complete the majority of the feasibility studies for these cases by mid-2003. We will seek funding for these remaining schools as and when the improvement works are confirmed to be technically feasible. Our target is to complete the majority of improvement works under the SIP by the end of the school year 2004/05.

FINANCIAL IMPLICATIONS

11. We estimate the capital cost of implementing the works, including consultants' fees for the construction stage, to be $276.3 million for batch 5A and $299.6 million for batch 5B in MOD prices (see paragraph 15 below), made up as follows –

/(a) .....

	$ million		
	Batch 5A	**Batch 5B**	
(a) Site formation	9.7	4.2	
(b) Sub-structure	37.2	35.5	
(c) Building	109.4	151.6	
(d) Building services	57.7	54.0	
(e) Drainage and external works	16.3	8.8	
(f) Furniture and equipment[5]	10.9	16.2	
(g) Cabling and computer relocation	1.9	1.7	
(h) Consultants' fees for –	22.0	15.5	
(i) Contract administration	4.7	7.5	
(ii) Project management	2.9	–	
(iii) Site supervision staff cost	14.4	7.3	
(iv) Out-of-pocket expenses	–	0.7	
(i) Contingencies	13.3	14.4	
Sub-total	278.4	301.9	(in September 2002 prices)
(j) Provision for price adjustment	(2.1)	(2.3)	
Total	276.3	299.6	(in MOD prices)

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[5] Based on the standard furniture and equipment to be provided for the additional rooms.

12. The figures given for batch 5B are based on the estimates prepared by the schools concerned, which have been vetted by D Arch S. He considers the estimated project costs of batches 5A and 5B reasonable as compared with similar projects implemented under the previous phases of the SIP.

13. D Arch S proposes to engage consultants to carry out contract administration, project management and site supervision for the schools under batch 5A. The consultants' fees for the works during the construction stage form an optional part of the lump-sum prices quoted by the consultants selected to carry out the pre-construction works mentioned in paragraph 8 of the paper. Subject to approval for **30EC** to be part upgraded to Category A for batch 5A, D Arch S will direct the necessary works to be carried out.

14. For the works under batch 5B for schools under the self-delivery mode, the consultants' fees for the construction stage form an optional part of the lump-sum prices quoted by the consultants selected to carry out the pre-construction works mentioned in paragraph 8 of the paper. The consultants shall not proceed to perform any services pertaining to the construction stage without the written authority of the schools. Subject to approval for **30EC** to be part upgraded to Category A for batch 5B, the schools under the self-delivery mode will direct the necessary works to be carried out. Out-of-pocket expenses are the actual costs incurred. The consultants are not entitled to any additional payment for the overheads or profit in respect of these items.

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

Year	$ million (Sept 2002)		Price adjustment factor	$ million (MOD)	
	Batch 5A	**Batch 5B**		**Batch 5A**	**Batch 5B**
2003 – 04	16.2	94.0	0.99250	16.1	93.3
2004 – 05	66.8	170.5	0.99250	66.3	169.2
2005 – 06	108.0	21.6	0.99250	107.2	21.4
2006 – 07	63.0	11.0	0.99250	62.5	10.9
2007 – 08	24.4	4.8	0.99250	24.2	4.8
	278.4	301.9		276.3	299.6

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16. We derived the MOD estimates on the basis of the Government's latest forecast of trend labour and construction prices for the period from 2003 to 2008. D Arch S will deliver the works with contract period of 21 months or less through fixed-price lump-sum contracts because we can clearly define the scope of works in advance, leaving little room for uncertainty. For works with a contract period of over 21 months, the contract will be subject to price fluctuation in line with current government practice. This practice for works contract period over 21 months does not apply to schools under the self-delivery mode since they will undertake their own contractual arrangements. Subject to approval for **30EC** to be part upgraded to Category A for batch 5B, the schools will deliver the works through a fixed-price lump-sum contract because they can clearly define the scope of works in advance, leaving little room for uncertainty.

17. We estimate the additional annual recurrent expenditure for batches 5A and 5B to be $4.1 million and $3.7 million respectively. These include staff costs of additional janitors, and costs of maintenance and electricity of additional lifts and rooms.

PUBLIC CONSULTATION

18. At a motion debate in May 2000, Legislative Council Members urged the Government to complete improvement works for all schools remaining in the SIP as soon as possible. At a workshop held by the then Education Department in August 2000, most of the major school sponsoring organisations welcomed the implementation of the final phase of the SIP and supported the proposal to give schools an option to appoint their own consultants and contractors to carry out the improvement works with government subventions.

ENVIRONMENTAL IMPLICATIONS

19. Improvement works for the schools in batches 5A and 5B will not cause any long-term adverse environmental impact. For those additional rooms in schools subject to adverse noise impact, window insulation and air-conditioning will be provided as recommended in the Noise Abatement Measure in school programme at an estimated cost of $2.4 million and $6.4 million for batches 5A and 5B respectively. We have included these amounts as part of the building services in the project estimates.

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20. During construction, D Arch S and schools under the self-delivery mode 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.

21. At the planning and design stages, D Arch S has 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 designs to reduce 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 sites to minimise off-site disposal. In addition, D Arch S will require the contractors to use metal site hoardings and signboards so that these materials can be recycled or reused in other projects. Schools under batch 5B will require their contractors to adopt similar measures.

22. D Arch S will require the contractors to submit waste management plans (WMPs) for approval. The WMPs 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 sites comply with the approved WMPs. He 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 contractors to separate public fill from C&D waste for disposal at appropriate facilities. D Arch S will record the disposal, reuse and recycling of C&D materials for monitoring purposes. Schools under batch 5B will require their contractors to adopt similar measures on waste management. We estimate the volume of C&D materials to be generated by batches 5A and 5B to be as follows –

Batch no.	**Total C&D materials generated**	**C&D materials reused/recycled at site**		**C&D materials to public filling areas[6]**		**C&D materials to landfills**	
	m^3	m^3	%	m^3	%	m^3	%
Batch 5A	4 518	904	20	2 937	65	677	15
Batch 5B	3 859	772	20	2 508	65	579	15

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

The notional cost of accommodating C&D waste at landfill sites is estimated to be $84,625 for batch 5A and $72,375 for batch 5B (based on a notional unit cost[7] of $125/m^3).

LAND ACQUISITION

23. The proposed works do not require land acquisition.

BACKGROUND INFORMATION

24. A consultancy review on the cost-effectiveness of the SIP was completed in 2000. The review concluded that the SIP could be delivered cost-effectively. It recommended two guidelines for determining whether a school should be included in the SIP. Firstly, the cost of improvement works should not normally be more than 42% of the average construction cost of a new school of the same type and size. Secondly, the average construction cost per square metre for the additional net floor area (NFA) to be provided through the SIP should not be higher than a "trend line" as illustrated below –

Additional NFA provided	Cost per m^2 (at 2000 price level)
1 400 m^2	$30,000
1 000 m^2	$42,000
600 m^2	$52,000

If the SIP project estimate exceeds the 42% threshold or if the average cost per NFA is way above the "trend line", it will be necessary to bring down the project cost by adjusting the scope of works. In exceptional circumstances, we may exceed the threshold to take account of such considerations as land issues, age and condition of buildings, and educational factors.

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7 This estimate has taken into account the cost for developing, operating and restoring the landfill 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 is 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.

25. We estimate that the proposed works will create the following job opportunities during the construction period –

Batch no.	Professional/ technical staff	Labourers	Total no. of jobs	Total man-months
Batch 5A	35	285	320	6 450
Batch 5B	45	400	445	7 200

Education and Manpower Bureau
February 2003

30EC – Construction works for schools in the final phase of the School Improvement Programme (batch 5A)

(a) Improvement works to be provided to six aided secondary schools

	School names	Core items				Other items												Other Y2K facilities (no. of rooms)
		Classroom	Computer-assisted learning (CAL) room	Language room	Staff room	Additional classroom	Preparation room for CAL	Multi-purpose room	Small group teaching room	Student activity centre	Guidance activity room	Interview room	Conference room	Staff common room	Deputy principal's office	School social worker's office	Discipline master's office	Multi-purpose area	
1	Baptist Wing Lung Secondary School	0	1	1	1	4	1	1	0	1	1	2	1	1	2	1	1	1	0
2	Ho Koon Nature Education Cum Astronomical Centre	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
3	Ho Yu College (Sponsored by Sik Sik Yuen)	5	1	1	1	0	1	1	0	1	1	2	1	1	2	0	1	3	0
4	King Ling College	0	1	1	1	4	1	1	1	0	1	2	1	1	2	1	1	1	2
5	Lok Sin Tong Leung Chik Wai Memorial School	0	1	0	1	3	1	1	2	1	1	0	1	1	2	0	0	1	0
6	Po Leung Kuk 1983 Board of Directors' College	0	1	1	1	0	1	0	0	1	0	2	1	1	2	0	1	1	0

(b) Improvement works to be provided to three aided primary schools

	School names	Core items					Other items												Other Y2K facilities (no. of rooms)
		Classroom	Computer-assisted learning (CAL) room	Language room	Staff room	Library	Additional classroom	Preparation room for CAL	Multi-purpose room	Small group teaching room	Student activity centre	Guidance activity room	Interview room	Conference room	Staff common room	Deputy headmaster's office	Student guidance officer's room	Discipline master's office	Multi-purpose area	
1	Emmanuel Primary School	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	Islamic Dharwood Pau Memorial Primary School	0	1	1	1	1	0	0	1	4	1	0	2	1	1	0	1	0	1	0
3	San Wui Commercial Society School	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0

(c) Improvement works to be provided to one aided special school

School name	Core item	Other items in the standard schedule of accommodation						
	Library	Staff room	Staff common room	Multi-purpose room	Social worker's office	Music room	Medical inspection room	Workshop for artisan
Hong Chi Pinehill No. 2 School	1	1	1	1	1	1	1	1

Note: The scope of works for special schools varies with the school types to meet the specific needs of the students.

30EC – Construction works for schools in the final phase of the School Improvement Programme (batch 5B)

(a) Improvement works to be provided to six aided secondary schools

	School names	Core items				Other items													Other Y2K facilities (no. of rooms)
		Classroom	Computer-assisted learning (CAL) room	Language room	Staff room	Additional classroom	Preparation room for CAL	Multi-purpose room	Small group teaching room	Student activity centre	Guidance activity room	Interview room	Conference room	Staff common room	Deputy principal's office	School social worker's office	Discipline master's office	Multi-purpose area	
1	Concordia Lutheran School – North Point	0	1	1	1	3	1	0	3	1	1	2	1	1	2	0	1	1	1
2	Kau Yan College	0	1	1	1	2	1	1	0	1	0	2	1	0	2	1	1	1	0
3	Po Leung Kuk Wu Chung College	0	1	1	1	0	1	1	1	1	1	2	1	1	1	1	1	3	0
4	Shun Tak Fraternal Association Tam Pak Yu College	0	1	1	1	0	1	1	2	1	1	2	1	0	2	1	1	0	2
5	St. Paul's College	0	1	1	1	0	1	0	3	1	1	2	0	0	2	0	0	1	1
6	The Pentecostal Holiness Church Wing Kwong College	0	1	1	1	0	1	1	1	1	0	2	1	1	2	1	1	1	1

(b) Improvement works to be provided to two aided primary schools

	School names	Core items					Other items													Other Y2K facilities (no. of rooms)
		Classroom	Computer-assisted learning (CAL) room	Language room	Staff room	Library	Additional classroom	Preparation room for CAL	Multi-purpose room	Small group teaching room	Student activity centre	Guidance activity room	Interview room	Conference room	Staff common room	Deputy headmaster's office	Student guidance officer's room	Discipline master's office	Multi-purpose area	
1	Shun Tak Fraternal Association Leung Kit Wah Primary School	0	1	1	1	1	0	1	1	4	1	1	2	1	1	1	0	0	1	1
2	St. Matthew's Lutheran School	0	1	1	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0

(c) Improvement works to be provided to one aided special school

School name	Core item	Other items in standard schedule of accommodation								
	Computer-assisted learning room	Multi-purpose room	Small group teaching room	Preparation room for computer subject	Student activity centre	Staff common room	Conference room	Deputy principal's office	Discipline master's office	Printing room	Multi-purpose area
Lutheran School for the Deaf	1	1	2	1	1	1	1	2	1	1	1

Note: The scope of works for special schools varies with the school types to meet the specific needs of the students.