

For discussion
on 24 May 2000

PWSC(2000-01)29

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 - CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Education Subventions

- 19EC – Improvement works to existing aided secondary schools based on the recommendations of the Education Commission Report No. 5, phase 4**
- 20EC – Improvement works to existing aided primary schools based on the recommendations of the Education Commission Report No. 5, phase 4**

Members are invited to recommend to Finance Committee to -

- (a) revise the project scope of **19EC** and **20EC**; and
- (b) increase the project estimate of **19EC** from \$166 million by \$376 million to \$542 million, and that of **20EC** from \$235.4 million by \$197.9 million to \$433.3 million in money-of-the-day prices,

for carrying out improvement works at 16 aided secondary schools and 14 aided primary schools under phase 4 of the School Improvement Programme.

/PROBLEM

PROBLEM

The approved project scope and project estimates for **19EC** and **20EC** for phase 4 of the School Improvement Programme (SIP) cover only feasibility studies, detailed design, and contract documentation. We need to revise the project scope and increase the project estimates to enable construction works to be carried out at 30 schools.

PROPOSAL

2. The Director of Architectural Services (D Arch S), with the support of the Secretary of Education and Manpower, proposes to –

- (a) revise the project scope of **19EC** and **20EC** to include construction works; and
- (b) increase the approved project estimates of **19EC** from \$166 million by \$376 million to \$542 million, and that of **20EC** from \$235.4 million by \$197.9 million to \$433.3 million in money-of-the-day (MOD) prices,

to implement construction works at 16 aided secondary schools and 14 aided primary schools listed at Enclosure 1 under, respectively, **19EC** and **20EC**.

PROJECT SCOPE AND NATURE

3. In February 1998, Finance Committee approved commitments of \$166 million and \$235.4 million in MOD prices under **19EC** and **20EC** respectively for site investigations, feasibility studies, detailed design and contract documentation for 71 aided schools included in Phase 4 of the SIP. We now propose to expand the project scope of **19EC** and **20EC** to enable construction works to proceed at 16 aided secondary schools and 14 aided primary schools, including six secondary and six primary schools transferred from phase 2A of the SIP¹.

/4.

¹ Phase 2A comprised 42 schools which originally belonged to Phases 1 and 2 of the SIP but were not taken forward when studies showed that their scope for improvement was limited. These 42 schools have now been subsumed under Phase 4.

4. The objective of the SIP is to bring the facilities of primary and secondary schools up to prevailing standards, where practicable. Starting from phase 4, the scope of improvement works has been expanded so that the standards of existing schools can be upgraded as far as practicable to fall in line with the latest schedule of accommodation for new schools to be completed from the year 2000. Depending on the needs and circumstances (including site availability) of individual schools, we intend to provide the following additional facilities -

(a) Secondary schools -

additional classrooms, a language room, a computer-assisted learning/computer room, a preparation area for computer-assisted learning activities, a staff room, a staff common room, a discipline master's office, a school social worker's office, a deputy principal's office, two interview rooms, a conference room, a student activity centre, a multi-purpose room and a multi-purpose area; and

(b) Primary schools -

additional classrooms, a language room, a computer-assisted learning room, a preparatory area for computer-assisted learning activities, a library, a remedial teaching room, a staff room, a staff common room, a discipline master's office, two interview rooms, a conference room, a student activity centre and a multi-purpose area.

5. The improvement works fall under two categories, i.e. addition/alteration works within existing school buildings, or construction of extensions to existing school buildings (either in the form of an annex or a roof-top extension). The actual scope of works to be provided will depend on the needs and circumstances of each school. The checklist at Enclosure 2 sets out the additional facilities to be made available to each of the 30 schools upon completion of improvement works. We will also provide access for the disabled to these schools, where technically feasible.

6. We plan to start construction works for these schools in October 2000. Works will be staggered over time and it is anticipated that the final completion date will be December 2002.

/JUSTIFICATION

JUSTIFICATION

7. The SIP was one of the recommendations of the Education Commission Report No. 5 (ECR5) which was endorsed by the Executive Council in February 1993. The SIP involves some 900 existing schools and will be carried out in eight phases. The first phase commenced in mid-1994. Up to now, improvement works have been completed in 300 schools under phases 1 to 3, and work is in progress in a further 80 schools. We have completed feasibility studies for 114 schools in phase 4 (including 31 government and 83 aided schools) as well as 42 schools in phase 2A (formally phases 1 and 2 schools which were deferred because their scope for improvement was limited).

8. The average improvement cost per school has increased from \$11 million in phase 1 to \$18 million in phase 2 and \$28 million in phase 3. We estimate the comparable cost will be \$36 million in phase 4. Part of the reason for the increases over the years is that we have expanded the scope of works to provide for more improvement items. For example, starting from phase 2, access for disabled persons is provided wherever feasible, in compliance with the provisions of the Disability Discrimination Ordinance. Starting from phase 4, the scope of works has been further expanded as indicated in paragraph 4 above. However, we cannot rule out the possibility that some of the increases are related to other factors. In view of this, it is necessary to review the present steps and procedures of implementing the SIP to assess whether there are more cost-effective ways of carrying out the SIP to ensure that public money is properly spent. We commissioned a consultant in early 2000 to undertake the review.

9. Against this background, we consider it prudent to proceed only with schools in phases 2A and 4 which can be upgraded at a relatively low cost in the first instance. In selecting these schools, our basic yardstick is that the estimated cost of improvement works does not exceed one-third of the standard cost for constructing a new school². Nevertheless, a school will be included if early improvement works are necessary to implement such education initiatives as curriculum reform, abolition of floating classes, etc. even if the cost threshold is exceeded. On this basis, 35 aided schools (18 secondary schools and 17 primary

/schools

² Standard costs for the construction of a primary school (30 classrooms) and a secondary school are respectively \$86.9 million and \$102.3 million in December 1999 prices.

schools) and 12 government schools have been selected to proceed with improvement works prior to the conclusion of the consultancy review. Five of the aided schools with a cost below \$15 million each will be funded from block allocation **Subhead 8100QX** at a total cost of \$32.88 million. The scope of works for these schools is set out at Enclosure 3. The subject of this paper concerns funding for the remaining 30 aided schools. Funding approval to carry out improvement works for the 12 government schools will be sought under project **85ET** (see PWSC paper referenced PWSC(2000-01)28).

10. The consultant has just completed the cost-effectiveness review and has given us a verbal report outlining its broad conclusions. The consultant is of the view that SIP can be delivered cost-effectively. Amongst various recommendations, the consultant considers that to allow for more effective cost control, a mechanism for determining the cost threshold of improvement works for individual schools should be established. The consultant has recommended adopting two criteria to help determine the scope of works for SIP. One criterion is the cost of improvement works as a percentage of the cost of building a new school. The consultant considers it reasonable that the cost of improvement works for a school should not exceed about 40% of the construction cost of a new school. The other criterion is the average construction cost per square metre for the additional net floor area to be provided through SIP. According to our preliminary assessment, it would be cost effective to proceed with the SIP for all of the remaining 81 schools in phases 2A and 4 for which improvement works are technically feasible, with over half undergoing full scope of works. Adjustments will be made to the scope of works for the others. We shall shortly finalise the list of schools indicating which will undergo full scope and which will have adjustments, and are aiming to provide details in an information note to this Committee. We will seek funding support from this Committee to enable improvement works to these 81 schools to commence as soon as possible. As for the 28 schools which are technically non-feasible, we will explore other improvement options, including in-situ redevelopment or reprovisioning. If individual schools require urgent and small-scale improvement items, we will redeploy existing resources to carry out the necessary works for schools on a phased basis starting from this summer.

FINANCIAL IMPLICATIONS

11. We estimate that the total costs for completing site investigations and feasibility studies on 27 secondary and 44 primary schools, and implementing

/improvement

improvement works at 16 secondary schools and 14 primary schools, to be \$542 million and \$433.3 million in MOD prices for secondary and primary schools respectively (see paragraph 12 below), made up as follows -

	19EC (Secondary schools) \$ million	20EC (Primary schools) \$ million
(a) Site investigation	6.9	11.0
(b) Site formation	11.1	14.7
(c) Piling	59.3	39.3
(d) Building	210.5	156.1
(e) Building services	83.9	68.2
(f) Drainage and external works	22.4	17.2
(g) Furniture and equipment	28.4	20.3
(h) Cabling and computer relocation cost	2.0	1.0
(i) Consultants' fees ³	59.0	56.2

/(j)

³ Funds totalling \$114.5 million for **19EC** and \$162 million for **20EC** were approved by the Finance Committee in February 1998 for employing consultants to carry out feasibility studies, detailed design, contract administration and associated project management to enable improvement works to be implemented for schools found feasible. The amount now required for carrying out such works is \$49.9 million for **19EC** and \$49.6 million for **20EC**. This has taken into account the actual costs for employing these consultants, based on tender submissions and the scope of works involved. As explained in paragraph 9, we are proceeding with 30 aided schools. The detailed design and contract documentation works as well as related consultants' fees have therefore been proportionately reduced. As regards the consultants' fees for services to be rendered during the implementation of improvement works, we estimate that \$9.1 million will be required for **19EC** and \$6.6 million for **20EC**. A breakdown by man-months of the estimated consultants' fees required during the construction stage is at Enclosure 4.

	19EC (Secondary schools) \$ million	20EC (Primary schools) \$ million	
(j) Contingencies	24.3	22.4	
Sub-total	507.8	406.4	(in December 1999 prices)
(k) Provision for price adjustment	34.2	26.9	
Total	542.0	433.3	(in MOD prices)

12. Subject to approval, we will phase the expenditure as follows -

Year	\$ million (Dec 1999)		Price adjustment factor	\$ million (MOD)	
	19EC	20EC		19EC	20EC
Actual expenditure up to 31.3.2000	33.5	35.1	-	33.5	35.1
2000 – 01	47.1	41.4	1.00000	47.1	41.4
2001 – 02	220.1	166.4	1.04500	230.0	173.9
2002 – 03	175.9	137.9	1.10770	194.8	152.8
2003 – 04	31.2	25.6	1.17416	36.6	30.1
	<u>507.8</u>	<u>406.4</u>		<u>542.0</u>	<u>433.3</u>

13. We derived the MOD estimates on the basis of Government's latest forecast of trend labour and construction prices for the period from 2000 to 2004. We will tender the contracts on a fixed-price lump-sum basis because we can

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clearly define the scope of works in advance, leaving little room for uncertainty. We consider the project costs of these proposals reasonable as compared with similar projects.

14. We estimate the additional annually recurrent expenditure to be \$12.2 million and \$13.2 million for **19EC** and **20EC** respectively.

PUBLIC CONSULTATION

15. The SIP is one of the recommendations of ECR5 and has been implemented since 1994. The programme has generated considerable public interest in the past year. LegCo Members and the education sector have been urging Government to proceed with improvement works for schools in the remaining phases of the programme. The 30 schools concerned in this paper have been involved in the planning and design stages of the proposed works.

ENVIRONMENTAL IMPLICATIONS

16. The projects will not cause any long-term environmental adverse impact. For those additional rooms in schools that will be subject to adverse noise impact, we will provide window insulation and air conditioning as recommended in the Noise Abatement Programme at an estimated cost of \$6.3 million and \$3.6 million for **19EC** and **20EC** respectively. We have included these requirements in the overall project estimates.

17. During construction, we will control noise, dust and site run-off nuisances through the implementation of pollution control measures recommended by the Director of Environmental Protection for SIP. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, as well as frequent cleaning and watering of the site, etc.

18. We estimate that some 5 050 and 4 450 cubic metres of public fill will be delivered to public filling areas and 1 600 and 1 400 cubic metres of construction and demolition (C&D) waste will be disposed of at landfills for **19EC** and **20EC** respectively. Ways of minimizing the generation of C&D materials were considered in the planning and design stages. We will require the contractor to implement necessary measures to minimize the generation of C&D materials and to reuse and recycle C&D materials. We will control the disposal

of C&D materials to designated public filling facilities and/or landfills through a trip ticket system, and record the disposal, reuse and recycling of C&D materials for monitoring purposes.

LAND ACQUISITION

19. The projects do not require any land acquisition.

BACKGROUND INFORMATION

20. We appointed a project management consultant in June 1998 to undertake the associated project management works. We then appointed project design consultants in October 1998 to carry out site investigations, feasibility studies, detailed design and contract documents for the improvement works. The consultants completed the feasibility studies for all the schools in April 1999. Against the background mentioned in paragraphs 8 and 9 above, the consultants were instructed to conduct a further feasibility study for each of the 30 selected schools in November 1999 for completion in January 2000. The consultants started detailed design and contract documentation in February 2000 and April 2000 for completion in August 2000 and June 2001 by phases respectively.

21. We estimate that the proposed works will create some 680 and 540 jobs with a total of 10 400 and 8 175 man months, comprising nine and eight professional staff, 26 and 22 technical staff and 645 and 510 labourers for **19EC** and **20EC** respectively during the construction period.

Education and Manpower Bureau
May 2000

Enclosure 1 to PWSC(2000-01)29

**List of aided schools with completed feasibility studies
for implementation of improvement works
under Phase 4 of the School Improvement Programme**

(A) 16 aided secondary schools (under 19EC)

1. Lingnan Dr. Chung Wing Kwong Memorial Secondary School
2. Pooi Tun Secondary School
3. Wong Shiu Chi Secondary School
4. PLK 1984 College
5. TWGHs Kwok Yat Wai School
6. YCH Tung Chi Ying Memorial Secondary School
7. Christian Alliance College
8. Tsung Tsin College
9. Carmel Secondary School
10. Canossa College
11. PLK Vicwood KT Chong Sixth Form College
12. Valtorta College
13. MFC Chai Wan Prevocational School
14. HK Chinese Women's Club College
15. Caritas St. Paul Prevocational School
16. Yu Chun Keung Memorial College

(B) 14 aided primary schools (under 20EC)

1. Sin To School
2. Cheung Chau Church Kam Kong Primary School
3. Shan Tsui Public School
4. Yuen Kong School
5. St. Rose of Lima Primary School
6. Apleichau St. Peter Catholic Primary School
7. Lee Chi Tat Memorial School
8. Ho Ming Primary School
9. TWGH's Lo Yu Chik Primary School
10. STFA Ho Yat Tung Primary School
11. FDBWA Yan Kow School
12. Building Contractors' Association School
13. St. Joseph's Primary School
14. Precious Blood Primary School (Wah Fu Estate)

School Improvement Programme, Phase 4

Scope of Works for Selected Aided Secondary Schools

School Name 學校名稱	Staff Room	Staff Common Room	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning (CAL) Room	Preparation Room for CAL	Language Room	Additional Classroom	Multi-purpose Room	Conference Room	Deputy Principal's Office	Discipline Master's Office	Social Worker's Office	Multi-purpose Area in m ²
Lingnan Dr Chung Wing Kwong Mem Sec Sch 嶺南鍾榮光博士紀念中學	0	1	1	1	1	1	0	0	0	0	1	0	0	0	0
Pooi Tun Secondary School 香港神託會培敦中學	1	1	1	1	1	1	1	1	0	0	1	1	1	1	0
Wong Shiu Chi Secondary School 王肇枝中學	1	1	1	1	1	1	1	1	1	1	1	1	1	1	60
PLK 1984 College 保良局甲子年中學	1	1	1	1	1	1	1	1	4	0	1	1	1	0	0
TWGHs Kwok Yat Wai College 東華三院郭一葦中學	1	1	1	1	0	1	1	0	6	0	1	1	1	1	0
YCH Tung Chi Ying Memorial Sec Sch 仁濟醫院董之英紀念中學	1	0	1	1	1	1	1	0	3	0	1	1	1	0	0
Christian Alliance College 宣道中學	1	1	1	1	1	1	1	1	1	1	0	1	1	1	0
Tsung Tsin College 崇真書院	1	1	1	1	1	1	1	1	1	1	1	0	1	0	0
Carmel Secondary School 迦密中學	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0
Canossa College *1 嘉諾撒書院	1	0	1	1	1	1	1	1	2	1	1	2	1	1	334
PKL Vicwood KT Chong Sixth Form College 保良局莊啓程預科書院	1	1	1	1	1	1	1	1	0	0	0	0	1	1	0
Valtorta College 恩主教書院	1	0	1	1	0	1	1	1	2	0	0	0	0	0	0
MFC Prevocational Sch (Chai Wan) 馬登基金柴灣明愛職業先修中學	1	1	0	0	0	0	0	0	10	0	0	0	0	0	0

Enclosure 2 to PWSC(2000-01)29

School Name 學校名稱	Staff Room	Staff Common Room	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning (CAL) Room	Preparation Room for CAL	Language Room	Additional Classroom	Multi-purpose Room	Conference Room	Deputy Principal's Office	Discipline Master's Office	Social Worker's Office	Multi-purpose Area in m ²
Hong Kong Chinese Women's Club College 香港中國婦女會中學	1	0	0	0	1	1	1	1	2	0	0	0	0	0	0
Caritas St. Paul Prevocational School *2 明愛聖保祿職業先修中學	1	1	1	1	0	1	1	0	5	0	0	0	0	0	0
Yu Chun Keung Memorial College 余振強紀念中學	0	0	1	0	0	0	0	0	3	0	0	0	0	0	0

Total number of schools = 16

Note : *1 - Pending re-submission to BD on a revised design scheme to provide a new staircase.

*2 - Subject to finalisation of design details.

School Improvement Programme, Phase 4

Scope of works for Selected Aided Primary Schools

School Name 學校名稱	Remedial Teaching Room	Staff Room	Staff Common Room	Library	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning Room (CAL)	Preparation Room for CAL	Language Room	Additional Classroom	Conference Room	Discipline Master's Office	Multi-purpose Area in m ²
Sin To School 善導學校	0	0	0	0	1	0	1	0	0	0	0	1	0	0
Cheung Chau Church Kam Kong Primary School 長洲堂錦江小學	0	0	1	1	1	0	0	0	0	1	3	1	1	0
Shan Tsui Public School 山咀公立學校	2	1	0	1	0	0	1	1	1	0	3	0	1	0
Yuen Kong School 元岡學校	0	1	0	1	0	0	0	1	1	0	3	0	0	0
St Rose of Lima's School 聖羅撒學校	0	1	1	0	1	1	1	0	0	1	5	0	0	0
Apleichau St. Peter's Catholic Primary School 鴨脷洲聖伯多祿天主教小學	0	0	1	1	0	0	0	1	1	1	0	0	0	0
Lee Chi Tat Memorial School 李志達紀念學校	0	1	1	1	1	1	1	1	1	1	0	1	1	439
Ho Ming Primary School (Sponsored by Sik Sik Yuen) 可銘學校(舊色園主辦)	0	1	1	1	1	1	1	1	1	1	0	1	1	622
TWGH Lo Yu Chik Primary School 東華三院羅裕積小學	2	1	1	1	1	1	0	1	1	1	0	1	0	0
STFA Ho Yat Tung Primary School 順德聯誼總會何日東小學	2	1	1	1	1	1	0	1	1	1	0	1	0	0
FDBWA Yan Kow School 五邑甄球學校	0	0	1	0	1	1	1	1	0	1	0	0	0	0
Building Contractors' Association School *1 建造商會學校	2	0	0	1	0	0	1	1	0	0	0	0	0	0

Enclosure 2 to PWSC(2000-01)29

School Name 學校名稱	Remedial Teaching Room	Staff Room	Staff Common Room	Library	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning Room (CAL)	Preparation Room for CAL	Language Room	Additional Classroom	Conference Room	Discipline Master's Office	Multi-purpose Area in m ²
St. Joseph's Primary School 聖若瑟小學	2	1	0	0	1	1	0	1	1	0	0	0	0	0
Precious Blood Primary School (Wah Fu Estate)*2 華富邨寶血小學	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Total number of Schools = 14

Note : *1 - Pending further geotechnical studies to be completed by August 2000.

*2 - Finalisation of scope of works to await further investigation into geotechnical issues.

School Improvement Programme, Phase 4

Scope of Works for Selected Aided Secondary Schools (Conversion works only)

School Name 學校名稱	Staff Room	Staff Common Room	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning (CAL) Room	Preparation Room for CAL	Language Room	Additional Classroom	Multi-purpose Room	Conference Room	Deputy Principal's Office	Discipline Master's Office	Social Worker's Office	Multi-purpose Area in m ²
TWGHs Lee Ching Dea Memorial College 東華三院李潤田紀念中學	0	1	1	0	0	0	0	0	0	0	0	1	0	0	206
Sing Yin Secondary School 聖言中學	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0

Total number of schools = 2

School Improvement Programme, Phase 4

Scope of works for Selected Aided Primary Schools (Conversion works only)

School Name 學校名稱	Remedial Teaching Room	Staff Room	Staff Common Room	Library	Interview Room 1	Interview Room 2	Student Activity Centre	Computer Assisted Learning Room (CAL)	Preparation Room for CAL	Language Room	Additional Classroom	Conference Room	Discipline Master's Office	Multi-purpose Area in m ²
SKH Chu Yan Primary School 聖公會主恩小學	2	1	1	0	1	1	1	1	0	0	0	0	0	0
Castle Peak Catholic Primary School 青山天主教小學	0	0	1	1	1	0	1	0	0	0	0	1	0	0
Wong Tai Sin Catholic Primary School 黃大仙天主教小學	0	0	1	1	0	0	1	1	0	0	0	0	0	75

Total number of Schools = 3

- 19EC – Improvement works to existing aided secondary schools based on the recommendations of the Education Commission Report No. 5 – phase 4**
- 20EC – Improvement works to existing aided primary schools base on the recommendations of the Education Commission Report No. 5 – phase 4**

DETAILS OF CONSULTANTS’ FEES

A breakdown of the estimates of consultants’ fees for service to be rendered during the construction stage is shown below –

Category of works/items	Average MPS* salary point	Multiplier factor	19EC		20EC	
			Estimated man months	Estimated fees (\$million)	Estimated man months	Estimated fees (\$million)
(I) Contract administration						
(a) Architectural discipline	Professional Technical	2.4 2.4	14.6 19.8	2.2 1.0	11.3 13.9	1.7 0.7
(b) Building services discipline	Professional Technical	2.4 2.4	6.0 9.9	0.9 0.5	4.6 5.9	0.7 0.3
(c) Structural engineering discipline	Professional Technical	2.4 2.4	6.6 9.9	1.0 0.5	5.3 7.9	0.8 0.4
(d) Quantity surveying discipline	Professional Technical	2.4 2.4	13.9 17.8	2.1 0.9	9.3 11.9	1.4 0.6
			Total	9.1		6.6

* 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. (At 1.4.1999, MPS pt. 40 = \$62,780 p.m. and MPS pt. 16 = \$21,010 p.m.).
2. The consultants’ fees for the work during the construction stage formed an optional part of the lump sum price quoted by the consultants selected to carry out the feasibility study, project design and tender documentation mentioned in paragraph 20 of the paper. Subject to Members’ approval to amend the project scope and increase the project estimates under **19EC** and **20EC**, the Director of Architectural Services will direct the necessary works to be carried out.