

**ITEM FOR PUBLIC WORKS  
SUBCOMMITTEE  
OF FINANCE COMMITTEE**

**HEAD 711 - HOUSING**

**Education - Secondary**

**169ES - Secondary school in area 101, Tin Shui Wai, Yuen Long**

Members are invited to recommend to Finance Committee the upgrading of **169ES** to Category A at an estimated cost of \$ 121.3 million in money-of-the-day prices for the construction of a secondary school in area 101, Tin Shui Wai, Yuen Long.

**PROBLEM**

There are not enough secondary schools to meet the increase in demand for new school places and to eliminate floating classes at secondary schools by the school year 2001/02.

**PROPOSAL**

2. The Director of Architectural Services (D Arch S), with the support of the Secretary for Housing and the Secretary for Education and Manpower, proposes to upgrade **169ES** to Category A at an estimated cost of \$121.3 million in money-of-the-day (MOD) prices for the construction of a secondary school in area 101, Tin Shui Wai, Yuen Long.

**/PROJECT .....**

### PROJECT SCOPE AND NATURE

3. The proposed secondary school is a standard design school building. It will have -

- (a) 30 classrooms;
- (b) 16 special rooms, including a computer room, a computer-assisted learning room and a language room;
- (c) three remedial teaching rooms;
- (d) a guidance activity/interview room;
- (e) two interview rooms;
- (f) two staff rooms and a staff common room;
- (g) a student activity centre;
- (h) a conference room;
- (i) a library;
- (j) an assembly hall;
- (k) a multi-purpose area; and
- (l) ancillary accommodation including a lift and relevant facilities for the handicapped.

### JUSTIFICATION

4. The Director of Education (D of E) forecasts that to meet the increase in demand and to eliminate floating classes, 953 additional secondary school classes will be required in the territory by the school year 2001/02. 28 secondary school projects planned for completion by or before the school year 2001/02 have been upgraded to Category A and are under construction. **169ES**

/together .....

together with the 28 schools already upgraded to Category A will provide 842 classes. We plan to meet the projected shortfall in future through further school construction projects.

5. The public housing development at the Tin Shui Wai area 101 will produce about 9 000 flats for a population intake of 30 000 in 2001. In order to meet the demand from the population of the area and to alleviate the territory-wide shortfall, we propose to construct a secondary school in area 101, Tin Shui Wai. Upon completion, the school will provide 30 secondary classes.

### FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be \$121.3 million in MOD prices (see paragraph 7 below), made up as follows -

	\$ million	
(a) Piling	12.9	
(b) Building	62.0	
(c) Building services	16.9	
(d) Drainage and external works	10.3	
(e) Contingencies	10.2	
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Sub-total	112.3	(at December 1998 prices)
(f) Provision for price adjustment	9.0	
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Total	121.3	(in MOD prices)
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The construction floor area of **169ES** is 12 238 square metres. The construction unit cost, represented by building and building services costs, is \$6,447 per square metre at December 1998 prices. D Arch S considers this construction unit cost

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reasonable. A comparison of the standard cost of a secondary school with the project estimate of this school is at the Enclosure.

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

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
1999 - 2000	5.8	1.02625	6.0
2000 - 2001	58.6	1.06217	62.2
2001 - 2002	37.3	1.09934	41.0
2002 - 2003	10.6	1.13782	12.1
	112.3		121.3

8. We derived the MOD estimates on the basis of Government's latest forecast of trend labour and construction prices for the period 1999 to 2003. We will tender the works under fixed-price lump-sum contract because we can clearly define the scope of works in advance, leaving little room for uncertainty.

9. The cost of furniture and equipment, estimated to be \$9.2 million, will be borne by the school sponsor as the school will be allocated for operating as a new aided school. We estimate the additional annually recurrent expenditure for the school to be \$40.2 million.

## **PUBLIC CONSULTATION**

10. We consulted the Social Services and Publicity Committee of the Yuen Long Provisional District Board in March 1999. Members of the Committee supported the project.

**/ENVIRONMENTAL .....**

## ENVIRONMENTAL IMPLICATIONS

11. The consultants engaged by the D Arch S completed the Preliminary Environmental Review (PER) on **169ES** in December 1998. The PER identified that there will be road traffic noise impact generated from the traffic on the main road along the northern side of the school. The Director of Environmental Protection vetted the PER and recommended the following environmental mitigation measures to keep the road traffic noise impact on the proposed school within the limits stipulated in the Hong Kong Planning Standards and Guidelines -

- (a) construction of a 3-metre high solid wall along the northern boundary; and
- (b) provision of insulated windows and air-conditioning to 30 classrooms from 1/F to 5/F and three special rooms on 6/F at the western and northern facades of the classroom block.

We have included \$3.2 million in the project estimates for implementing the above environmental mitigation measures. We will control noise, dust and site run-off nuisances during the construction through the implementation of appropriate mitigation measures in the relevant contracts.

## LAND ACQUISITION

12. The project does not require any land acquisition.

## BACKGROUND INFORMATION

13. We upgraded **169ES** to Category B in May 1997. D Arch S has completed site investigations for the project and is in the process of preparing the detailed working drawings and tender documents using in-house staff resources. We plan to start the construction works in November 1999 for completion in May 2001.

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Housing Bureau  
April 1999

(PWSC0117/WIN4)

## Enclosure to PWSC(1999-2000)8

### A comparison of the standard cost of a secondary school project with the estimated cost of 169ES

		Standard cost*	169ES	
\$ million (at Dec 1998 prices)				
(a)	Piling	11.8	12.9	(See note A)
(b)	Building	61.5	62.0	(See note B)
(c)	Building services	14.5	16.9	(See note C)
(d)	Drainage and external works	10.0	10.3	(See note D)
(e)	Contingencies	9.8	10.2	
	Total	107.6	112.3	
(f)	Construction floor area	12 238m <sup>2</sup>	12 238m <sup>2</sup>	
(g)	Construction unit cost {[(b)+(c)] ÷(f)}	\$6,210/m <sup>2</sup>	\$6,447/m <sup>2</sup>	

#### \* Assumptions for standard 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 138 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 secondary school site area of 6 950 square metres built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a greenfield site).
5. No consultancy services are required.
6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring body of an aided school.
7. The standard cost for comparison purpose is subject to review regularly. We have recently updated the standard cost of a secondary school from \$98.3 million at December 1997 prices to \$107.6 million at December 1998 prices. The updated standard cost estimate also reflects a minor increase in the construction floor area of a standard secondary school from 12 115 square metres to 12 238 square metres. We will continue to periodically review, and revise if necessary, the standard cost which should be adopted for future projects.

### **Notes**

- A. The piling cost is higher because it is based on the provision of 138 numbers of steel H-piles at an average depth of 35 metres instead of 30 metres in a standard school.
- B. The building cost is higher because of the provision of insulated windows as a noise mitigation measure.
- C. The building services cost is higher because of the provision of air-conditioning as a noise mitigation measure.
- D. The cost for drainage and external works is higher because of the construction of a 3-metre high solid wall along the northern boundary of the site as a noise mitigation measure.

輕鐵總站  
LRT TERMINUS

AREA 105

AREA 106

PROVISION OF INSULATED WINDOWS AND AIR-CONDITIONING FOR 30 CLASSROOMS FROM 1/F TO 5/F AND 3 SPECIAL ROOMS ON 6/F AT THE WESTERN AND NORTHERN FACADE OF CLASSROOM BLOCK

在課室大樓向西面與北面,由一樓至五樓之三十間課室及六樓三間特別教學室安裝隔音玻璃窗和空氣調節

CONSTRUCTION OF A 3M HIGH SOLID BOUNDARY WALL ALONG THE NORTHERN BOUNDARY OF THE SCHOOL SITE

在地盤沿北面之邊界興建一幢三米高實心圍牆

ROAD L13

行人出入口  
PEDESTRIAN ENTRANCE

SITE AREA = 6950 m<sup>2</sup>

擬建中學 (169ES)  
PROPOSED SECONDARY SCHOOL  
(30 CLASSROOM)

警署  
POLICE STATION

ROAD L12

LRT RESERVE

AREA 102

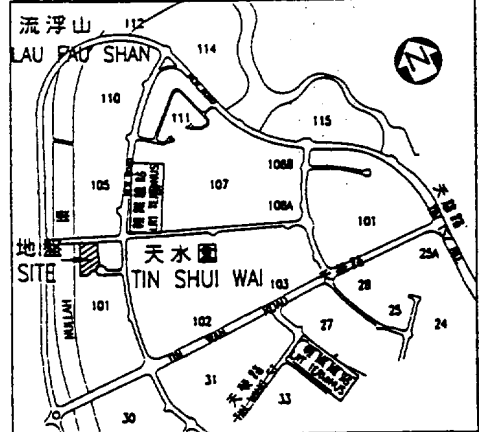
西北區排水明渠拓建工程  
WESTERN DRAINAGE CHANNEL EXTENSION

散步廣場  
PROMENADE

AREA 101

(201EP)  
擬建小學地盤 (三一書室)  
PROPOSED PRIMARY SCHOOL SITE  
(30 CLASSROOM)

SITE AREA = 6200 m<sup>2</sup>



位置圖 LOCATION PLAN SCALE: DIAGRAMMATIC

title 169ES

天水圍第101區  
擬建壹所中學

SECONDARY SCHOOL IN  
AREA 101, TIN SHUI WAI

drawn by ANNA LEUNG  
M.F. WONG

date 15.01.99

approved DANIEL CHAN

date 15.01.99

office ARCHITECTURAL BRANCH

drawing no.  
AB/5637/XB101

scale  
1:1500



ARCHITECTURAL  
SERVICES  
DEPARTMENT