

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

### **HEAD 703 – BUILDINGS**

#### **Education – Primary**

#### **343EP – A 24-classroom primary school at development near Choi Wan Road and Jordan Valley, Kwun Tong**

Members are invited to recommend to Finance Committee the upgrading of **343EP** to Category A at an estimated cost of \$102.5 million in money-of-the-day prices for the construction of a 24-classroom primary school at the development near Choi Wan Road and Jordan Valley, Kwun Tong.

### **PROBLEM**

We need to construct a primary school for the whole-day conversion of an existing bi-sessional school.

### **PROPOSAL**

2. The Director of Architectural Services, with the support of the Secretary for Education and Manpower (SEM), proposes to upgrade **343EP** to Category A at an estimated cost of \$102.5 million in money-of-the-day (MOD) prices for the construction of a 24-classroom primary school at the development near Choi Wan Road and Jordan Valley, Kwun Tong.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The proposed primary school under **343EP** will have the following facilities –

- (a) 24 classrooms;
- (b) six special rooms;
- (c) four small group teaching rooms;
- (d) a guidance activity room;
- (e) two interview rooms;
- (f) a staff room;
- (g) a staff common room;
- (h) a student activity centre;
- (i) a conference room;
- (j) a library;
- (k) an assembly hall (which can be used for a wide range of physical activities such as badminton, gymnastics and table-tennis);
- (l) a multi-purpose area;
- (m) two basketball courts cum a mini-soccer pitch at ground level;
- (n) a 30-metre (m) running track<sup>1</sup>;

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<sup>1</sup> Making optimal use of the space of the campus, a 30-m running track will be provided.

- (o) a green corner<sup>2</sup>; and
- (p) ancillary accommodation, including a lift and relevant facilities for the handicapped.

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 The proposed school will meet the planning target of providing two square metres (m<sup>2</sup>) of open space per student. A site plan is at Enclosure 1 and views of the school premises (artist's impression) are at Enclosure 2. We plan to start the construction works in December 2007 for completion in August 2009.

### JUSTIFICATION

4. It is Government's policy to implement whole-day primary schooling for virtually all primary school students by the 2007/08 school year. In the 2006/07 school year, 90% of primary school places are in whole-day mode.

5. Upon completion, **343EP** will provide 24 classrooms and other facilities for accommodating one session of an existing bi-sessional primary school, and in so doing enable both sessions to switch to whole-day operation. The school currently operates 42 bi-sessional classes from a 24-classroom building.

### FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be \$102.5 million in MOD prices (see paragraph 7 below), made up as follows –

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<sup>2</sup> 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.

|  | <b>\$ million</b> |                               |
|--|-------------------|-------------------------------|
| (a) Foundation                           | 7.5               |                               |
| (b) Building                             | 48.5              |                               |
| (c) Building services                    | 14.7              |                               |
| (d) Drainage                             | 2.8               |                               |
| (e) External works                       | 10.5              |                               |
| (f) Furniture and equipment <sup>3</sup> | 3.2               |                               |
| (g) Consultants' fees for –              | 5.0               |                               |
| (i) Contract administration              | 1.8               |                               |
| (ii) Site supervision                    | 3.2               |                               |
| (h) Contingencies                        | 8.9               |                               |
| Sub-total                                | 101.1             | (in September<br>2006 prices) |
| (i) Provision for price adjustment       | 1.4               |                               |
| Total                                    | 102.5             | (in MOD prices)               |

We propose to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees by man-months is at Enclosure 3. The construction floor area (CFA) of **343EP** is 9 590 m<sup>2</sup>. The estimated construction unit cost, represented by the building and the building services costs, is \$6,590 per m<sup>2</sup> of CFA in September 2006 prices. We consider 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 costs for **343EP** is at Enclosure 4.

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<sup>3</sup> Based on the standard furniture and equipment reference list prepared by the Education and Manpower Bureau for a new 24-classroom primary school adopting the standard schedule of accommodation.

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

| Year      | \$ million<br>(Sept 2006) | Price adjustment<br>factor | \$ million<br>(MOD) |
|-----------|---------------------------|----------------------------|---------------------|
| 2007 – 08 | 2.8                       | 0.99900                    | 2.8                 |
| 2008 – 09 | 36.0                      | 1.00649                    | 36.2                |
| 2009 – 10 | 44.0                      | 1.01656                    | 44.7                |
| 2010 – 11 | 12.0                      | 1.02672                    | 12.3                |
| 2011 – 12 | 6.3                       | 1.03699                    | 6.5                 |
|           | 101.1                     |                            | 102.5               |

8. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2012. We will award the contract on a lump-sum basis because we can clearly define the scope of the works in advance. The contract will not provide for price adjustment because the contract period will not exceed 21 months.

9. The cost of furniture and equipment, estimated to be \$3.2 million, will be borne by the Government. This is in line with the existing policy.

10. We estimate the annual recurrent expenditure for **343EP** to be \$20.2 million.

## **PUBLIC CONSULTATION**

11. We consulted the Kwun Tong District Council on **343EP** on 17 April 2007. Members of the Council supported the project.

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12. We consulted the Legislative Council Panel on Education (the Panel) on 24 October 2005 on our review of the School Building Programme. Members supported our recommendation to proceed with school projects, including **343EP**, for converting existing bi-sessional primary schools to whole-day operation. We circulated an information paper on this primary school project to the Panel on 9 May 2007. Members did not raise any objection to the proposal.

## ENVIRONMENTAL IMPLICATIONS

13. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **343EP** in November 2006. The PER recommended installation of insulated windows and air-conditioning for rooms exposed to traffic noise exceeding the limits recommended in the Hong Kong Planning Standards and Guidelines. The recommended mitigation measures are as follows –

| <b>Mitigation measures</b>   | <b>Estimated cost<br/>\$ million<br/>(in Sept 2006<br/>prices)</b> |
|--|--|
| (a) insulated windows and air-conditioning for seven classrooms from the 2/F to 4/F at the north-western façade of the classroom block                         | 0.7  |
| (b) insulated windows and air-conditioning for four special rooms and six classrooms from the 1/F to 4/F at the south-western façade of the special room block | 1.4  |

With such mitigation measures in place, the project would not have long term environmental impacts. We have included the cost of the above mitigation measures as part of the building services cost 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 contract. 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.

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15. We have considered in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractor to reuse inert C&D materials (e.g. using excavated materials for filling) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities<sup>4</sup>. We will encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.

16. We will also 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. We will ensure that the day-to-day operations on site comply with the approved WMP. We will also control the disposal of public fill, C&D materials and C&D waste to public fill reception facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will also record the disposal, reuse and recycling of C&D materials for monitoring purposes.

17. We estimate that the project will generate about 13 450 tonnes of C&D materials. Of these, we will reuse about 7 600 tonnes (56.5%) on site and deliver 5 000 tonnes (37.2%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 850 tonnes (6.3%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$241,250 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne<sup>5</sup> at landfills).

## LAND ACQUISITION

18. The project does not require any land acquisition.

**/BACKGROUND .....**

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<sup>4</sup> Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

<sup>5</sup> 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<sup>3</sup>), nor the cost to provide new landfills (which is likely to be more expensive), when the existing ones are filled.

**BACKGROUND INFORMATION**

19. We upgraded **343EP** to Category B in February 2006. We engaged an architectural consultant in November 2006 to undertake the detailed design, PER and topographic survey. We engaged a quantity surveying consultant in March 2007 to prepare tender documents. The total cost of the above consultancy services and works is about \$2.3 million. We charged this amount to block allocation **Subhead 3100GX** "Project feasibility studies, minor investigations and consultants' fees for items in Category D of the Public Works Programme". The architectural consultant has completed the detailed design, PER and topographical survey. The quantity surveying consultant is finalising the tender documents.

20. The proposed works will not involve any removal of trees. We will incorporate planting proposals as part of the project, including estimated quantities of 130 trees, 3 000 shrubs and 50 m<sup>2</sup> of grassed area.

21. We estimate that the proposed works will create about 98 jobs (86 for labourers and another 12 for professional/technical staff) providing a total employment of 1 857 man-months.

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Education and Manpower Bureau  
June 2007







VIEW OF SCHOOL PREMISES FROM SOUTH-EASTERN DIRECTION (ARTIST'S IMPRESSION)  
從東南面望向校舍的構思圖



VIEW OF SCHOOL PREMISES FROM NORTH-EASTERN DIRECTION (ARTIST'S IMPRESSION)  
從東北面望向校舍的構思圖

|  |                                      |                    |   |              |
|--|--------------------------------------|--------------------|---|--------------|
| TITLE 343 EP<br>觀塘彩雲道及佐敦谷毗鄰發展計劃一<br>1 所設有 24 間課室的小學<br>A 24-CLASSROOM PRIMARY SCHOOL AT DEVELOPMENT<br>NEAR CHOI WAN ROAD AND JORDAN VALLEY, KWUN TONG | DRAWN BY<br>A. Leong 梁日新             | DATE<br>21.05.2007 | DRAWING NO.<br>ABJ/6957/GP101   | SCALE<br>NTS |
|  | APPROVED<br>G. Li 李慧慈                | DATE<br>21.05.2007 |  ARCHITECTURAL SERVICES DEPARTMENT 建築署 |              |
|  | OFFICE<br>ARCHITECTURAL BRANCH 建築設計部 |                    |   |              |

**343EP – A 24-classroom primary school at development near  
Choi Wan Road and Jordan Valley, Kwun Tong**

**Breakdown of the estimate for consultants' fees**

| Consultants' staff costs |                                     | Estimated man-months | Average MPS* salary point | Multiplier<br>(Note 1) | Estimated fee<br>(\$ million) |
|--------------------------|-------------------------------------|----------------------|---------------------------|------------------------|-------------------------------|
| (a)                      | Contract administration<br>(Note 2) |                      |                           |                        |                               |
|                          | Professional                        | –                    | –                         | –                      | 1.2                           |
|                          | Technical                           | –                    | –                         | –                      | 0.6                           |
| (b)                      | Site supervision<br>(Note 3)        |                      |                           |                        |                               |
|                          | Professional                        | 20.7                 | 38                        | 1.6                    | 1.8                           |
|                          | Technical                           | 48.6                 | 14                        | 1.6                    | 1.4                           |
|                          |                                     |                      |                           | Total                  | <u>5.0</u>                    |

\* MPS = Master Pay Scale

**Notes**

1. A multiplier of 1.6 is applied to the average MPS point to estimate the cost of resident site staff supplied by the consultants. (As at 1 January 2007, MPS point 38 = \$54,255 per month and MPS point 14 = \$18,010 per month.)
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **343EP**. The assignment will only be executed subject to Finance Committee's approval to upgrade **343EP** to Category A.
3. The consultants' staff cost for site supervision is based on the estimate prepared by the Director of Architectural Services. We will only know the actual man-months and actual costs after completion of the construction works.

**A comparison of the reference cost of  
a 24-classroom primary school project  
with the estimated cost of 343EP**

**\$ million (in Sept 2006 prices)**

|     |   | <b>Reference cost*</b> | <b>343EP</b>           |              |
|-----|---|------------------------|------------------------|--------------|
| (a) | Foundation                                    | 8.1                    | 7.5                    | (See note A) |
| (b) | Building                                      | 42.6                   | 48.5                   | (See note B) |
| (c) | Building services                             | 11.4                   | 14.7                   | (See note C) |
| (d) | Drainage                                      | 1.8                    | 2.8                    | (See note D) |
| (e) | External works                                | 7.4                    | 10.5                   | (See note E) |
| (f) | Furniture and equipment                       | –                      | 3.2                    | (See note F) |
| (g) | Consultants' fees                             | –                      | 5.0                    | (See note G) |
| (h) | Contingencies                                 | 7.2                    | 8.9                    |              |
|     | <b>Total</b>                                  | <u>78.5</u>            | <u>101.1</u>           |              |
| (i) | Construction floor area                       | 9 129 m <sup>2</sup>   | 9 590 m <sup>2</sup>   |              |
| (j) | Construction unit cost<br>{[(b) + (c)] ÷ (i)} | \$5,915/m <sup>2</sup> | \$6,590/m <sup>2</sup> |              |

**\* 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 impact 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 m, 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 standard 24-classroom primary school site area of 4 700 m<sup>2</sup> 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. We will review, and revise if necessary, the reference cost which should be adopted for future projects.

**Notes**

- A. The foundation cost is lower because footing/raft foundation is adopted instead of piling.
- B. The building cost is higher because of the larger construction floor area.
- C. The building services cost is higher because of the larger construction floor area and the provision of air-conditioning as a noise mitigation measure.
- D. The cost of drainage works is higher because of the larger site area and high bedrock level.
- E. The cost of external works is higher because of the larger site area and high bedrock level.

/F. ....

- F. The cost of furniture and equipment, estimated to be \$3.2 million, will be borne by the Government as the school premises is allocated to an existing bi-sessional school for conversion into whole-day operation.
  
- G. Consultants' fees are required for contract administration and site supervision.