For discussion **PWSC(2006-07)3**
on 6 April 2006

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
324EP – Primary school at Hiu Kwong Street, Sau Mau Ping, Kwun Tong

Members are invited to recommend to Finance Committee the upgrading of **324EP** to Category A at an estimated cost of $101.4 million in money-of-the-day prices for the construction of a primary school at Hiu Kwong Street, Sau Mau Ping, Kwun Tong.

PROBLEM

We do not have enough primary school premises to implement the whole-day primary schooling policy.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education and Manpower (SEM), proposes to upgrade **324EP** to Category A at an estimated cost of $101.4 million in money-of-the-day (MOD) prices for the construction of a primary school at Hiu Kwong Street, Sau Mau Ping, Kwun Tong.

PROJECT SCOPE AND NATURE

3. The proposed primary school will have the following facilities –

/(a) .....

(a) 30 classrooms;

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

(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) three basketball courts (two at ground level and one at the rooftop of the assembly hall block);

(n) a 60-metre (m) running track[1];

(o) a green corner[2]; 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

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1 Making optimal use of the space of the campus, a 60 m running track will be provided.

2 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.

two square metres (m^2) 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. Subject to the funding approval of the Finance Committee, we plan to start the construction works in October 2006 for completion in July 2008.

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 2005/06 school year, over 80% of primary school places are in whole-day mode. To facilitate implementation of the policy, we have included in our School Building Programme 14 school projects, including **324EP**.

5. Since the project is meant to facilitate an existing bi-sessional primary school to switch to whole-day operation, the school development will not materially affect the overall supply of primary school places. Upon its completion in July 2008, **324EP** will provide 30 primary classes, 24 of which are reprovisioned from an existing bi-sessional primary school in the same district. We have recommended a 30-classroom project to provide a buffer, having regard to our current estimate that there would be a shortfall of 69 classes in Kwun Tong district by the 2010/11 school year (even after taking into account this project).

FINANCIAL IMPLICATIONS

6. We estimate the capital cost of the project to be $101.4 million in MOD prices (see paragraph 7 below), made up as follows –

		$ million
(a)	Slope stabilisation	1.1
(b)	Piling	8.2
(c)	Building	44.3
(d)	Building services	17.2
(e)	Drainage	2.0
(f)	External works	9.1

/(f) .....

			$ million	
(g)	Furniture and equipment[3]		3.4	
(h)	Consultants' fees for –		3.8	
	(i) Contract administration	1.5		
	(ii) Site supervision	2.3		
(i)	Contingencies		8.6	
	Sub-total		97.7	(in September 2005 prices)
(j)	Provision for price adjustment		3.7	
	Total		101.4	(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 **324EP** is 10 828 m^2. The estimated construction unit cost, represented by the building and the building services costs, is $5,680 per m^2 of CFA in September 2005 prices. We consider this comparable to similar school projects built by the Government. A comparison of the reference cost for a 30-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated costs for **324EP** is at Enclosure 4.

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

/Year .....

Year	**$ million (Sept 2005)**	**Price adjustment factor**	**$ million (MOD)**

[3] Based on the standard furniture and equipment reference list prepared by the Education and Manpower Bureau for a new 30-classroom primary school adopting the standard schedule of accommodation.

Year	$ million (Sept 2005)	Price adjustment factor	$ million (MOD)
2006 – 07	8.0	1.01500	8.1
2007 – 08	40.6	1.03023	41.8
2008 – 09	36.0	1.04568	37.6
2009 – 10	10.0	1.06136	10.6
2010 – 11	3.1	1.07728	3.3
	97.7		101.4

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 2006 to 2011. We intend to 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 $3.4 million, will be borne by the Government. This is in line with the existing policy.

10. The annual recurrent expenditure of one session of the existing primary school was $23.4 million in the 2004/05 school year. Upon whole-day conversion at the new premises under **324EP**, the additional annual recurrent expenditure is estimated to be $2.5 million due mainly to the anticipated increase of six operating classes.

PUBLIC CONSULTATION

11. We consulted the Kwun Tong District Council on **324EP** on 7 December 2004. Members of the Council supported the project.

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12. We also consulted the Legislative Council Panel on Education (the Panel) on 24 October 2005 on our review of the School Building Programme. Members generally supported our recommendation to proceed with school projects for converting existing bi-sessional primary schools to whole-day operation.

13. We circulated to the Panel an information paper on this primary school project on 12 December 2005. Members have not raised any comments.

ENVIRONMENTAL IMPLICATIONS

14. We engaged a consultant to conduct a Preliminary Environmental Review (PER) for **324EP** in October 2004. The PER recommended the provision of boundary walls at suitable locations and 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 –

	Mitigation measures	**Estimated cost $ million (in Sept 2005 prices)**
(a)	a 2.5 m high boundary wall along the north-eastern side of the site	0.6
(b)	a 1.2 m high parapet wall along the south-eastern and south-western sides of the site	0.3
(c)	insulated windows and air-conditioning for 30 classrooms, four special rooms and four small group teaching rooms from the 1/F to 5/F at the western façade of the classroom block	4.4

We have included the cost of the above mitigation measures as part of the building services and external works in the project estimate.

15. The school site is located within the 250 m consultation zone of the Ma Yau Tong West Landfill. A review study 'Sau Mau Ping Estate

/Redevelopment .....

Redevelopment – Review of Landfill Gas Hazard Assessment' by Hong Kong Housing Authority concluded that the overall risk from landfill gas would be low. We will implement precautionary measures including adequate provision of mechanical ventilation, use of cut-off trenches and installation of gas detectors at sensitive locations. We will also carry out a gas monitoring programme for both the construction and operation phases of the school. Provided that the recommended mitigation and precautionary measures are properly in place, the health and safety of workers during the construction phase, and the occupants during the operation phase, will be safeguarded.

16. 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 relevant contracts. These include the use of silencers, mufflers, acoustic lining or shields for noisy construction activities, frequent cleaning and watering of the sites, and the provision of wheel-washing facilities.

17. We have considered introducing more prefabricated building elements (e.g. dry-wall partitioning and proprietary fittings and fixtures) into the school design 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 on site or in other suitable construction sites as far as possible (e.g. use suitable excavated materials for filling within the site, use metal site hoardings and signboards so that these materials can be recycled or reused in other projects), in order to minimise the disposal of C&D materials to public fill reception facilities. 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.

18. 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, sorting 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.

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19. We estimate that the project will generate about 8 160 tonnes of C&D materials. Of these, we will reuse about 2 960 tonnes (36.3%) on site and 950 tonnes (11.6%) on other project site(s), deliver 3 800 tonnes (46.6%) to public fill reception facilities[4] for subsequent reuse, and 50 tonnes (0.6%) to sorting facilities[4] in order to retrieve the inert portion for reuse as public fill. In addition, we will dispose of 400 tonnes (4.9%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites, together with the cost for handling the materials at sorting facilities is estimated to be $157,600 for this project (based on an unit cost of $27/tonne for disposal at public fill reception facilities, $100/tonne at sorting facilities and $125/tonne[5] at landfills).

LAND ACQUISITION

20. The project does not require land acquisition.

BACKGROUND INFORMATION

21. We upgraded **324EP** to Category B in October 2003. We engaged an architectural consultant to undertake the topographical survey in July 2004, PER in October 2004 and detailed design in December 2004 as well as a term contractor to carry out site investigation in September 2004, at a total cost of $2.9 million. We engaged a quantity surveying consultant to prepare tender documents in February 2006 at a cost of $400,000. We have charged these amounts 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 and the term contractor have completed the topographical survey, PER, detailed design and site investigation. The quantity surveying consultant is finalising the tender documents.

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4 Sorting facilities and public fill reception facilities are specified in Schedule 3 and Schedule 4 respectively 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.

5 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 $\$90/m^3$), nor the cost to provide new landfills (which is likely to be more expensive) when the existing ones are filled.

22. The proposed construction of a primary school at Hiu Kwong Street, Sau Mau Ping, will involve removal of 11 trees which will all be replanted within the project site. All trees to be removed are not important trees[6]. We will incorporate planting proposals (Enclosure 5) as part of the project, including estimated quantities of 60 trees, 1 000 shrubs, 2 500 annuals and 350 m^2 of grassed area.

23. We estimate that the proposed works will create about 120 jobs (106 for labourers and another 14 for professional/technical staff) providing a total employment of 1 976 man-months.

Education and Manpower Bureau
April 2006

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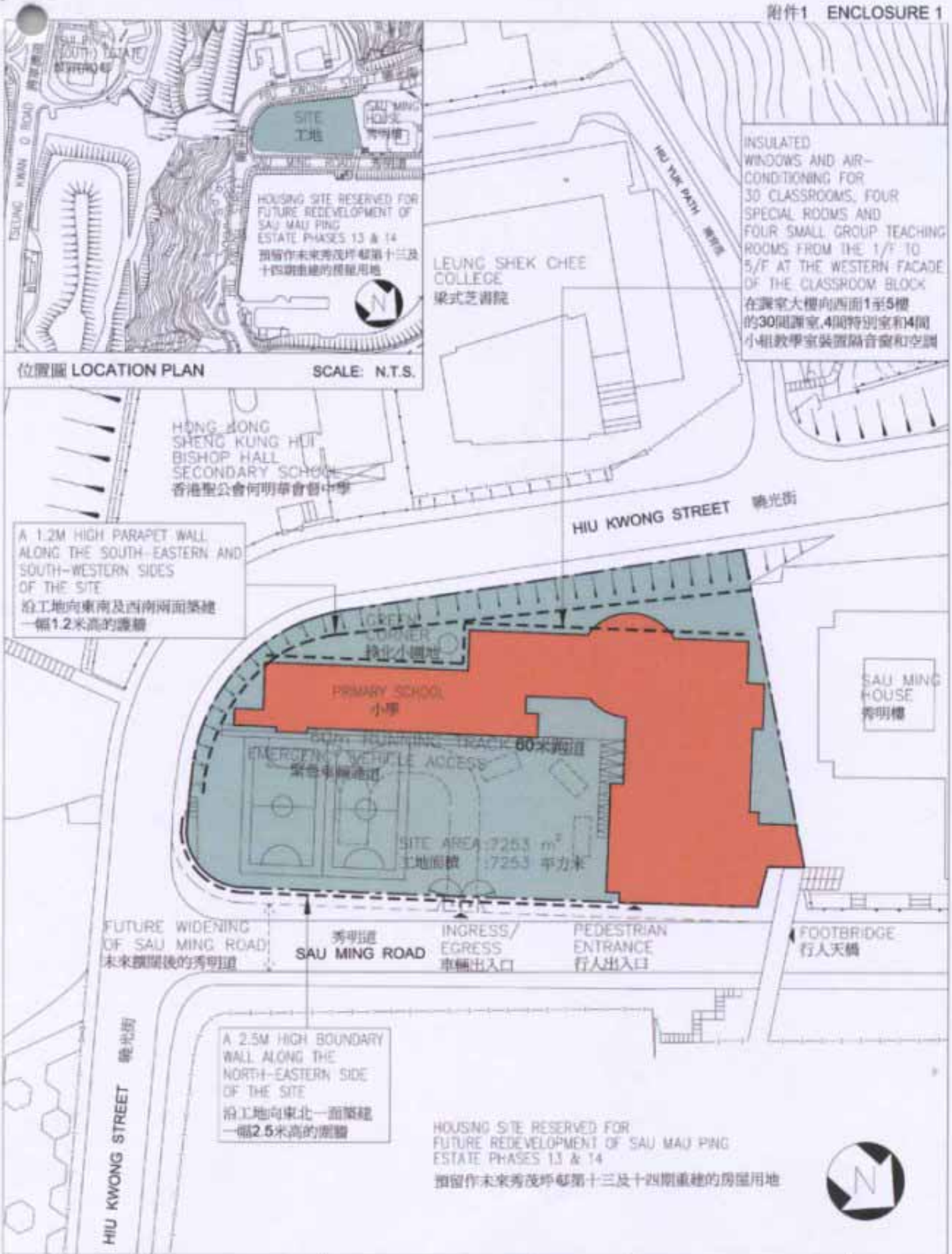
6 Important trees include trees on the Register of Old and Valuable Trees, and any other trees which meet one or more of the following criteria –
(a) trees over 100 years old;
(b) trees of cultural, historical or memorable significance;
(c) trees of precious or rare species;
(d) trees of outstanding form; or
(e) trees with trunk diameter exceeding one metre (measured at one metre above ground level).



TITLE 324EP PRIMARY SCHOOL AT HIU KWONG STREET, SAU MAU PING, KWUN TONG 觀塘秀茂坪曉光街的1所小學	DRAWN BY 繪圖 AMAN MA	DATE 日期 22-03-05	DRAWING NO. 圖號 AB/6736/XA101	SCALE 比例 1:1000
	APPROVED 獲核 JOEL CHAN	DATE 日期 22-03-05	ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	OFFICE 辦事處 ARCHITECTURAL BRANCH 建築設計處			

從東面望向校舍的構思圖

VIEW OF THE SCHOOL PREMISES FROM EASTERN DIRECTION (ARTIST'S IMPRESSION)

從北面鳥瞰校舍的構思圖

BIRD'S EYE VIEW OF THE SCHOOL PREMISES FROM NORTHERN DIRECTION (ARTIST'S IMPRESSION)

TITLE 32MEP PRIMARY SCHOOL AT HIU KWONG STREET, SAU MAU PING, KWUN TONG 觀塘秀茂坪曉光街的1所小學	DRAWN BY 繪圖 AMAN MA	DATE 日期 22-03-06	DRAWING NO 圖號 AB/6736/XA102	SCALE 比例 N.T.S.
	APPROVED 核准 JOEL CHAN	DATE 日期 22-03-06	ARCHITECTURAL SERVICES DEPARTMENT 建築署	
	OFFICE 辦事處 ARCHITECTURAL BRANCH 建築設計處			

324EP – Primary school at Hiu Kwong Street, Sau Mau Ping, Kwun Tong

Breakdown of the estimate for consultants' fees

Consultants' staff costs			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Contract administration (Note 2)	Professional	–	–	–	1.1
		Technical	–	–	–	0.4
(b)	Site supervision (Note 3)	Professional	15.0	38	1.6	1.3
		Technical	34.7	14	1.6	1.0
					Total	3.8

* 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 2005, 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 **324EP**. The assignment will only be executed subject to Finance Committee's approval to upgrade **324EP** 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 30-classroom primary school project with the estimated cost of 324EP

		$ million (in Sept 2005 prices)		
		Reference cost*	**324EP**	
(a)	Slope stabilisation	–	1.1	(See note A)
(b)	Piling	8.2	8.2	
(c)	Building	44.1	44.3	(See note B)
(d)	Building services	12.6	17.2	(See note C)
(e)	Drainage	2.0	2.0	
(f)	External works	8.2	9.1	(See note D)
(g)	Furniture and equipment	–	3.4	(See note E)
(h)	Consultants' fees	–	3.8	(See note F)
(i)	Contingencies	7.5	8.6	
	Total	82.6	97.7	
(j)	Construction floor area	10 727 m^2	10 828 m^2	
(k)	Construction unit cost {[(c) + (d)] ÷ (j)}	\$5,286/m^2	\$5,680/m^2	

*** 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 impacts on the school.

/2. .....

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 112 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 30-classroom primary school site area of 6 200 m^2 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. Slope stabilisation is required for the slopes along the southern and western boundaries of the site in order to meet the current standards.

B. The building cost is higher because of larger construction floor area.

C. The building services cost is higher because of larger construction floor area and the provision of air-conditioning as a noise mitigation measure.

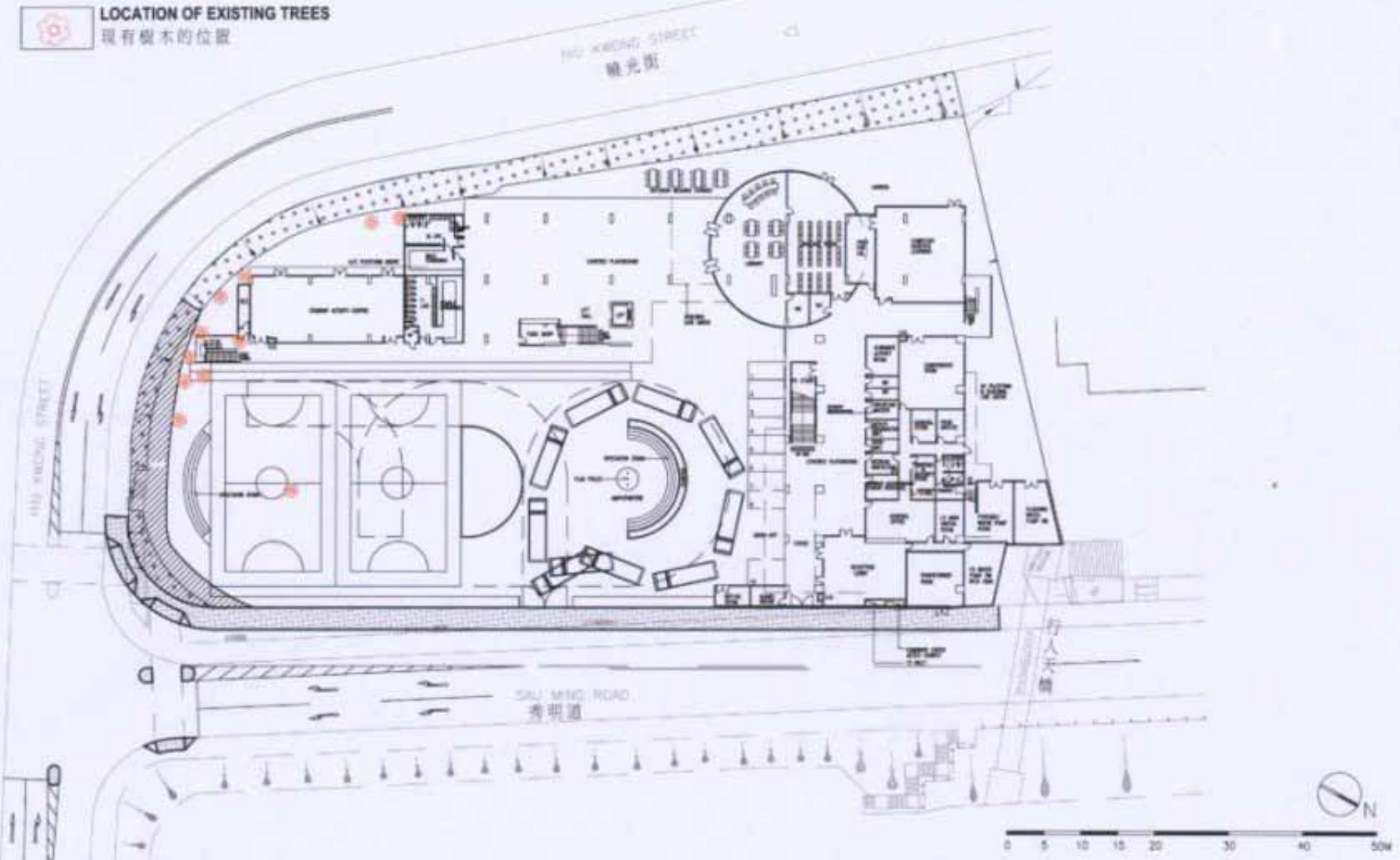
D. The cost of external works is higher because of the construction of two walls as a noise mitigation measure.

E. The cost of furniture and equipment, estimated to be $3.4 million, will be borne by the Government as the school premises will be allocated to an existing bi-sessional school for conversion into whole-day operation.

F. Consultants' fees are required for contract administration and site supervision.

LOCATION PLAN OF EXISTING TREES (11 NUMBERS)
現有樹木的位置圖(11棵)

Enclosure 5a
附件5a



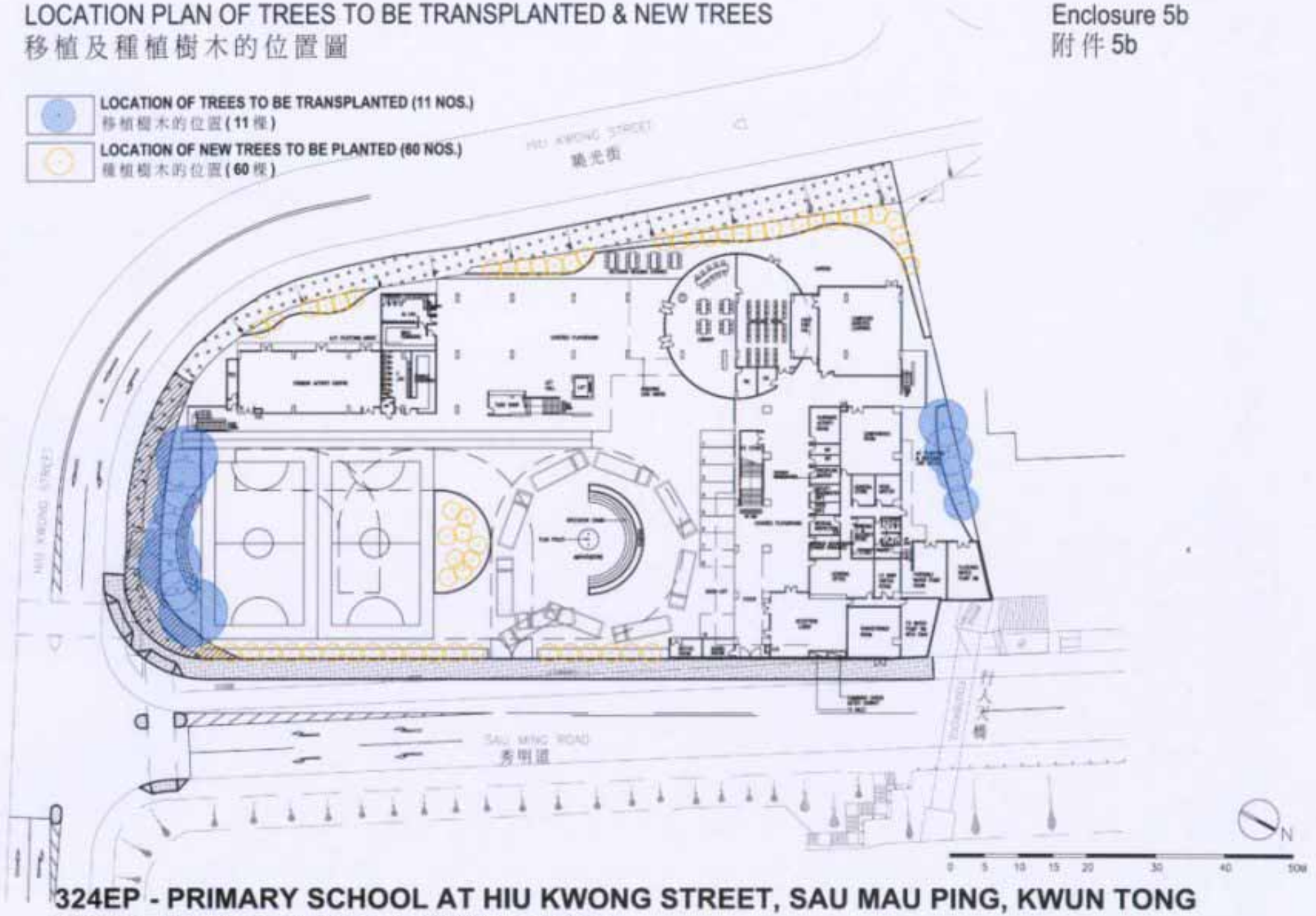
324EP - PRIMARY SCHOOL AT HIU KWONG STREET, SAU MAU PING, KWUN TONG
324EP - 觀塘秀茂坪曉光街的**1**所小學

LOCATION PLAN OF TREES TO BE TRANSPLANTED & NEW TREES
移植及種植樹木的位置圖

Enclosure 5b
附件 5b

LOCATION OF TREES TO BE TRANSPLANTED (11 NOS.)
移植樹木的位置 (11 棵)

LOCATION OF NEW TREES TO BE PLANTED (60 NOS.)
種植樹木的位置 (60 棵)



324EP - PRIMARY SCHOOL AT HIU KWONG STREET, SAU MAU PING, KWUN TONG
324EP - 觀塘秀茂坪曉光街的 1 所小學