For discussion **PWSC(2012-13)16**
on 16 May 2012

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Education Subventions
94EB – Redevelopment of Ying Wa Girls' School at Robinson Road, Hong Kong

Members are invited to recommend to Finance Committee the upgrading of **94EB** to Category A at an estimated cost of $432.7 million in money-of-the-day prices for the redevelopment of Ying Wa Girls' School at Robinson Road, Hong Kong.

PROBLEM

We need to improve the teaching and learning environment of Ying Wa Girls' School (the School) of the Hong Kong Council of the Church of Christ in China (the School Sponsor), which is housed in sub-standard premises.

PROPOSAL

2. The Secretary for Education (SED), on the advice of the Director of Architectural Services (D Arch S), proposes to upgrade **94EB** to Category A at an estimated cost of $432.7 million in money-of-the-day (MOD) prices for redevelopment of the School.

/**PROJECT** …..

PROJECT SCOPE AND NATURE

3. The project scope includes demolition of the existing buildings of the School at 76 Robinson Road (Site A) and the buildings currently let to the Hong Kong Institute of Technology (HKIT) by the Government at 2 Breezy Path (Site B), and construction of a 30-classroom secondary school premises on the cleared sites to provide the following facilities –

(a) 30 classrooms;

(b) 26 special rooms, comprising two music rooms, a visual arts room, three computer-assisted learning rooms, a preparation room for computer-assisted learning, two integrated science laboratories, a preparation room for integrated science laboratory, a multi-purpose room, and 15 other equipment-based multi-purpose rooms[1];

(c) a library-cum-language room;

(d) a guidance activity room;

(e) two interview rooms;

(f) three small group teaching rooms;

(g) administration offices including a principal's office, two deputy principal's offices, a discipline master's office, a career master's office, a staff room, a staff common room, a general office, a conference room, a school social worker's office, a medical inspection room, a general store, a pantry, a printing room and a security store;

(h) an assembly hall, a stage, a chair store and a dressing room;

/(i) …..

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[1] The equipment-based multi-purpose rooms are for holding various functions to meet the teaching and learning needs of the School. The proposed 15 rooms include a needlework room, a home management room, a geography room, a biology laboratory, a preparation room for biology laboratory, a physics laboratory, a preparation room for physics laboratory, a chemistry laboratory, a preparation room for chemistry laboratory, a dark room for physics, a dangerous chemical store, a Chinese language room, an English language room and two learning and teaching resources centres.

(i) areas for physical education including covered playgrounds, multi-purpose areas, a student activity centre, a physical education store and two changing rooms;

(j) a green corner[2]; and

(k) ancillary facilities including disabled/fireman's lifts, facilities for the physically disabled, a tuck shop-cum-central food portioning area, a guard booth, a refuse store, caretakers' quarters and toilets.

4. Three new building blocks will be constructed at Sites A and B to accommodate the above facilities[3]. The proposed new school premises will meet the planning target of providing two square metres 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 funding approval of the Finance Committee, the School Sponsor plans to commence works in the fourth quarter of 2012 for completion by end of 2016. During the redevelopment, the School will be temporarily accommodated at the vacant school premises of the ex-Tack Ching Girls' Middle School in Shamshuipo, Kowloon.

/**JUSTIFICATION** …..

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[2] 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 weather station and planting beds.

[3] A new classroom block with an eight-storey northern wing which mainly accommodates classrooms and an 11-storey southern wing which mainly accommodates an assembly hall, multi-purpose areas, a library-cum-language room and some special rooms will be built at Site A. A ten-storey teaching block for accommodating a student activity centre, a guidance activity room, a learning and teaching resource centre, multi-purpose areas, a tuck shop-cum-central food portioning area, caretakers' quarters, and store rooms will be built at Site B.

JUSTIFICATION

5. The School is currently operating 33 classes[4] and will operate 30 classes from the 2012/13 school year onwards. The School campus comprises two main teaching buildings which were built in 1953 and 1967 respectively, a covered playground and a rooftop ball court built under the School Improvement Programme in 2004 (the SIP Structure), and a former kindergarten block built in 1926 (1926 building)[5]. The existing school site area of about 4 921 square metres (m^2) is far below the standard site area of 6 950 m^2 for a 30-classroom secondary school. The sub-standard and dilapidated facilities of the existing campus require frequent repairs and fall short of the current facility and space requirements. With changes in curriculum and pedagogy in recent years, including the implementation of the New Senior Secondary (NSS) Curriculum since the 2009/10 school year, the shortfall in teaching and learning space, as well as the dilapidated facilities of the existing campus, has imposed significant challenges to the School.

6. The School also lacks certain essential facilities such as small group teaching rooms, multi-purpose rooms, computer-assisted learning rooms and conference room. The redevelopment project will upgrade the facilities of the School to meet the prevailing standards and requirements for effective teaching and learning and implementation of the NSS Curriculum.

7. As mentioned in paragraph 5 above, the existing school site area (i.e. Site A) is far below the standard site area for a standard 30-classroom secondary school. In order to overcome the space shortage of the School and accommodate the required facilities of a 30-classroom secondary school, Site B with an area of 2 850 m^2 would be allocated to the School for redevelopment after the existing tenant, the HKIT, moves out[6]. Also, in order to maximize the usable area of the site, while preserving the 1926 building, the remaining blocks including the SIP Structure will be demolished.

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[4] During the double-cohort year in the 2011/12 school year, the School has a class structure of 5-5-5-5-5-5-3 for Secondary 1 to Secondary 7. From the 2012/13 school year onwards, the class structure will be 5-5-5-5-5-5 for Secondary 1 to Secondary 6 following the New Senior Secondary academic structure.

[5] The 1926 building, which is of very dilapidated condition, is currently used for storage only.

[6] HKIT, under the Land Grant Scheme, has been allocated the ex-premises of Sheng Kung Hui (SKH) St. Thomas' Primary School at Nam Cheong Street, Sham Shui Po for its use. Subject to the completion of the renovation and conversion works at the ex-premises of SKH St. Thomas' Primary School (renovation and conversion works to be funded under separate item under block allocation Subhead **8100QX** "Alterations, additions, repairs and improvements to education subvented buildings"), it is expected that HKIT can move into the premises before October 2013. Details have been set out in the supplementary information note issued to Legislative Council Panel on Education on 27 April 2012.

8. The 1926 building is a proposed Grade 3 historical building which housed the first kindergarten in Hong Kong and hence has a significant historical value to the history of education in Hong Kong. As part of the redevelopment project, the 1926 building will be preserved, revived and blended in with the future school campus design. It will be fully conserved with minimum interference with the proposed Grade 3 historical building. Planned heritage conservation works include restoration and renovation works for the roof tiles, floors and walls and necessary structural strengthening works. Apart from making available space for better utilisation of the limited site area, the demolition of the SIP Structure would also help improve the visibility of the preserved building in light of the congested site environment. The School plans to set up a School Archive at the 1926 building showing the historical records (such as photos and exhibits) in relation to the history of the former kindergarten and its founder, the London Missionary Society, as well as the development of the School after the heritage conservation works are completed.

FINANCIAL IMPLICATIONS

9. The capital grant for **94EB** is calculated having regard to the reference cost of a standard design 30-classroom public sector secondary school. The reference costs are based on an uncomplicated site with no unusual environmental or geotechnical constraints. To cater for site-specific constraints faced by the School, we will also provide the School Sponsor with additional grants for site-specific works. We estimate the capital grant to be $432.7 million in MOD prices[7] (please see paragraph 13 below), broken down as follows -

	$ million
(a) Demolition works	15.4
(b) Site formation	39.1
(c) Piling	43.4
(d) Building	128.7
(e) Building services	41.9

/(f) …..

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[7] The Government's capital grant will not cover the cost of additional piling works which are required to cater for future expansion of the School to be funded by the School Sponsor. Please see paragraph 11 below.

			$ million	
(f)	Drainage		6.7	
(g)	External works		28.1	
(h)	Heritage works		2.7	
(i)	Additional energy conservation measures		2.4	
(j)	Noise mitigation measures		6.5	
(k)	Furniture and equipment[8]		6.8	
(l)	Consultants' fees for		5.3	
	(i) contract administration	4.7		
	(ii) management of resident site staff (RSS)	0.3		
	(iii) out-of-pocket expenses	0.3		
(m)	Remuneration of RSS		3.3	
(n)	Contingencies		31.5	
	Sub-total		361.8	(in September 2011 prices)
(o)	Provision for price adjustment		70.9	
	Total		432.7	(in MOD prices)

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[8] The estimated cost of furniture and equipment is prepared with reference to the standard furniture and equipment reference list prepared by the Education Bureau for a new 30-classroom secondary school adopting the standard schedule of accommodation. The cost of furniture and equipment, estimated to be $6.8 million, will be borne by the Government according to the existing policy.

10. The School Sponsor proposes to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimates for consultants' fees and resident site staff costs by man-months is at Enclosure 3. The construction floor area (CFA) of the school premises under **94EB** is 13 581m^2. The estimated construction unit cost, represented by the costs of building works, building services works, heritage works and noise mitigating measures, is $13,239 per m^2 of CFA in September 2011 prices. D Arch S considers this comparable to similar school projects built by the Government. A comparison of the reference cost for constructing a 30-classroom secondary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated costs for **94EB** is at Enclosure 4.

11. The School Sponsor will, on top of Government subvention, bear the costs for additional piling works, which are required to cater for future expansion of the School to be funded by the School Sponsor, under the project. Adding the School Sponsor's top-up contribution of $3.5 million in MOD prices (or $3.3 million in September 2011 prices) to the capital grant of $432.7 million in MOD prices (or $361.8 million in September 2011 prices) results in the total project cost of $436.2 million in MOD prices (or $365.1 million in September 2011 prices). The breakdown of the total project cost estimate is at Enclosure 5.

12. The capital grant to be provided by the Government will be capped at $432.7 million in MOD prices. The School Sponsor will be responsible for all additional funding requirements, whether due to higher-than-expected tender outturn or other variations. The Government will retain all savings arising from lower-than-expected tender outturn.

13. Subject to approval, the School Sponsor will phase the expenditure as follows –

/**Year** …..

Year	**$ million (Sept 2011)**		**Price adjustment factor**	**$ million (MOD)**	
	Capital grant under **94EB**	Total Construction cost		Capital grant under **94EB**	Total Construction cost
2012– 13	7.9	11.2	1.05325	8.3	11.8
2013– 14	87.8	87.8	1.11118	97.6	97.6
2014– 15	83.9	83.9	1.17229	98.4	98.4
2015– 16	148.0	148.0	1.23677	183.0	183.0
2016– 17	24.2	24.2	1.30479	31.6	31.6
2017– 18	10.0	10.0	1.37656	13.8	13.8
	361.8	365.1		432.7	436.2

14. We have derived the MOD estimate on the basis of Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period 2012 to 2018. The School Sponsor will carry out works of the project through two separate lump-sum contracts because the School Sponsor can clearly define the scope of works in advance. The contracts will provide for price adjustment.

15. The cost of furniture and equipment for **94EB**, estimated to be about $6.8 million, will be borne by the Government according to the existing policy. The annual recurrent expenditure of the School was $47.6 million in the 2010/11 school year.

PUBLIC CONSULTATION

16. We consulted the Legislative Council Panel on Education on 24 October 2005 on our review of the School Building Programme. Members noted without objection our plan to proceed with reprovisioning and redevelopment projects to upgrade sub-standard facilities in existing schools. **94EB** is a project to reprovision and redevelop an existing school operating in sub-standard premises.

17. We provided an information paper on **94EB** to the Legislative Council Panel on Education on 20 April 2012 and, at the request of the Panel, supplementary information to Members on 27 April 2012. Members did not raise further questions on the project.

18. At its meeting on 23 February 2012, the Culture, Leisure and Social Affairs Committee of Central and Western District Council (C&W DC) was consulted on **94EB**. The Committee acknowledged the redevelopment need of the School and its contribution to the education service for the community over century. The majority of Committee members who had spoken indicated support for the redevelopment project. During the discussion, some views and suggestions were floated by Members for the School's consideration, including minimizing the number of trees to be felled, preserving the low fence wall in rubble masonry at Robinson Road near Site B, exploring the possibility to allow certain space at Site B for other community use, conducting Environmental Assessment and Traffic Assessment, and adopting appropriate measures to minimize possible nuisance caused during the works period of the school project.

19. As a follow-up to the views expressed by C&W DC, the School Sponsor will conduct a detailed tree survey at both Site A and Site B before commencement of works. According to the findings of preliminary assessment, there are no important trees in the areas affected by the construction works. The School Sponsor will retain the existing trees as far as practicable and incorporate planting proposals as part of the project. Regarding the low fence wall in rubble masonry at Robinson Road near Site B, the School Sponsor will salvage the old stones and re-use them for constructing the entrance to Site B. Further, the School has carried out an Environmental Assessment and Traffic Assessment and the relevant cost has been charged under block allocation **Subhead 8100QX** "Alterations, additions, repairs and improvements to education subvented buildings". The relevant measures for mitigating possible nuisance caused during the works period are explained in paragraph 21 below.

/ENVIRONMENTAL …..

ENVIRONMENTAL IMPLICATIONS

20. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The School Sponsor engaged a consultant to conduct a Preliminary Environmental Review (PER) for **94EB** in March 2012. The PER recommended installation of insulated windows and air-conditioning for noise sensitive rooms exposed to traffic noise exceeding the limits recommended in the Hong Kong Planning Standards and Guidelines. With such mitigation measures in place, the project would not have long term adverse environmental impact. The School Sponsor has included the above mitigation measures as part of the building and building services works in the project estimate and will implement these mitigation measures upon completion of the project.

21. During construction, the School Sponsor 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.

22. At the planning and design stages, the School Sponsor has considered measures (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects) in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, the School Sponsor will require the contractor to reuse inert C&D materials (e.g. use of excavated soil for backfilling within the site) 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[9]. The School Sponsor will encourage the contractor to maximize the use of recycled or recyclable inert C&D materials, as well as the use of non-timber formwork to further minimize the generation of C&D materials.

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[9] Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert C&D materials in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

23. The School Sponsor will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation measures to avoid, reduce, reuse and recycle inert C&D materials. The School Sponsor will ensure that the day-to-day operations on site comply with the approved plan. The School Sponsor will require the contractor to separate the inert portion from non-inert C&D materials on site for disposal at appropriate facilities. The disposal of inert C&D materials and non-inert C&D materials to public fill reception facilities and landfills respectively will be controlled through a trip-ticket system.

24. The School Sponsor estimates that the project will generate in total about 16 243 tonnes of C&D materials. Of these, the School Sponsor will reuse about 14 403 tonnes (88.67%) of inert C&D materials by delivering to public fill reception facilities. The School Sponsor will dispose of the remaining about 1 840 tonnes (11.33%) of non-inert C&D materials at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be about $0.6 million for this project (based on a unit cost of $27 per tonne for delivering to public fill reception facilities and $125 per tonne[10] at landfills).

ENERGY CONSERVATION MEASURES

25. This project will adopt various forms of energy efficient features, including –

(a) variable refrigerant volume air-conditioning system;

(b) heat recovery fresh air pre-conditioners in the air-conditioned spaces for heat energy reclaim of exhaust air;

(c) T5 energy efficient fluorescent tubes with electronic ballast and lighting control by occupancy sensors and daylight sensors;

(d) light-emitting diode type exit signs; and

(e) automatic on/off switching of lighting and ventilation fan inside the lift.

/26. …..

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[10] 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 per m^3), nor the cost to provide new landfills (which is likely to be more expensive), when the existing ones are filled.

26. For renewable energy technology, this project will install photovoltaic system for environmental and amenity benefits.

27. For greening features, this project has included landscape areas on the main roofs and the terraces. Planters and potted plants will be provided on these floors of the school building for environmental benefits.

28. The total estimated additional cost for adopting the energy conservation measures is around $2.4 million (including $0.8 million for energy efficient features), which has been included in the cost estimate for this project. The energy efficient features will achieve 7.7% energy savings in the annual energy consumption with a payback period of about 8 years.

HERITAGE IMPLICATIONS

29. The proposed project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interests and Government historic sites identified by the Antiquities and Monuments Office (AMO). The 1926 building is a proposed Grade 3 historical building and appropriate heritage conservation works (as explained in paragraph 8 above) would be carried out by the School Sponsor, in consultation with AMO as necessary.

LAND ACQUISITION

30. The project does not require any land acquisition.

BACKGROUND INFORMATION

31. We upgraded **94EB** to Category B in September 2010. The School Sponsor engaged consultants to carry out detailed design and preparation of tender documents in May 2011, ground investigation in September 2011, and topographical survey in November 2011. The costs for the above services amount to $13.7 million. We have charged this amount to block allocation Subhead **8100QX** "Alterations, additions, repairs and improvements to education subvented buildings." The consultants have completed all services except for ground investigation at Site B and the preparation of tender documents which are being finalized.

/32. …..

32. The proposed construction of the whole project will involve removal of about 20 trees (11 at Site A and 9 at Site B). All trees to be removed are not important trees[11]. The School Sponsor will incorporate planting proposals as part of the project, including planting of about 42 new trees and 610 m^2 of shrubs and grassland.

33. We estimate that the proposed works will create about 204 jobs (184 for labourers and another 20 for professional/technical staff) providing a total employment of 4 830 man-months.

Education Bureau
May 2012

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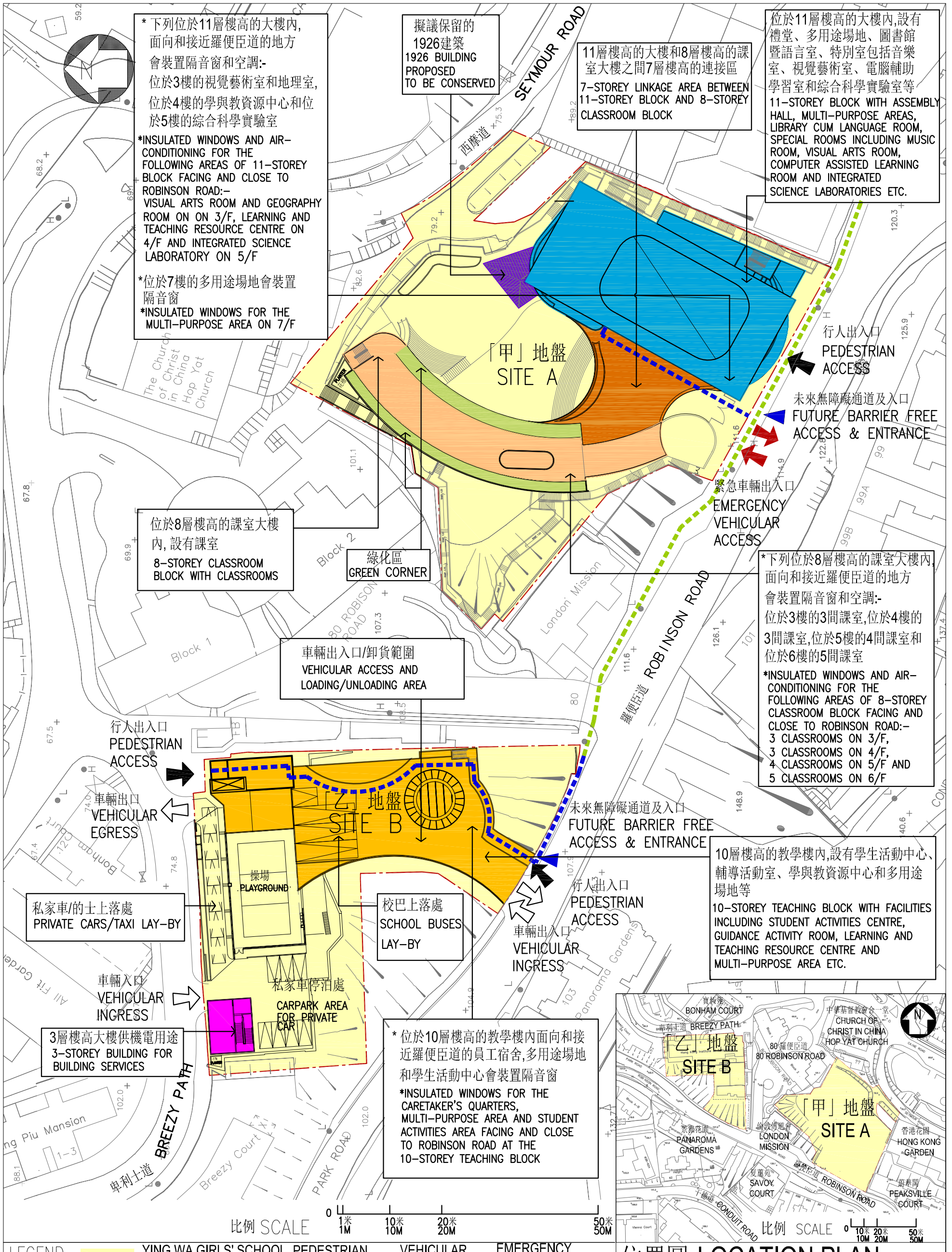
[11] "Important trees" refers to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria -

(a) trees of 100 years old or above;
(b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, trees as landmark of monastery or heritage monument, and trees in memory of an important person or event;
(c) trees of precious or rare species;
(d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
(e) trees with trunk diameter equal or exceeding 1.0 metres (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.



LEGEND
圖例說明

YING WA GIRLS' SCHOOL 英華女學校

SITE AREA 地盤範圍

PEDESTRIAN ACCESS 行人出入口

VEHICULAR INGRESS/ EGRESS 車輛出/入口

EMERGENCY VEHICULAR ACCESS 緊急車輛出入口

EXISTING BARRIER FREE ACCESS 現有無障礙通道

FUTURE BARRIER FREE ACCESS AND ENTRANCE 未來無障礙通道及入口

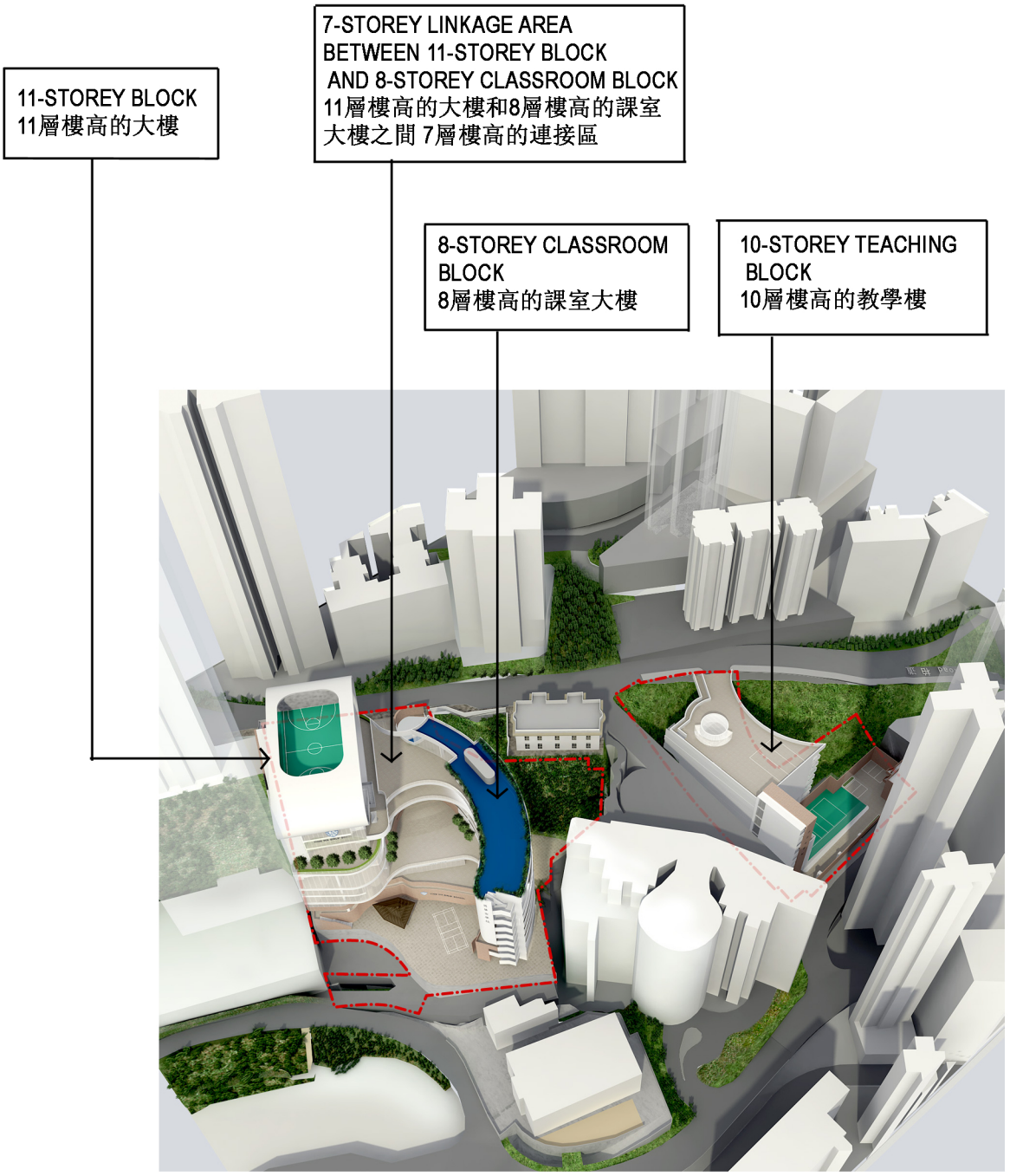
平面圖 SITE PLAN

位置圖 LOCATION PLAN

SITE AREA (SITE A): APPROX. 4,921 sq.m
地盤面積(「甲」地盤) : 約 4,921平方米

SITE AREA (SITE B): APPROX. 2,850 sq.m
地盤面積(「乙」地盤) : 約 2,850 平方米

94EB- REDEVELOPMENT OF YING WA GIRLS' SCHOOL AT ROBINSON ROAD, HONG KONG
94EB- 香港羅便臣道英華女學校重建計劃



從北面鳥瞰重建項目「甲」地盤及「乙」地盤的構思圖

AERIAL VIEW OF SITE A & SITE B REDEVELOPMENT FROM NORTH (ARTIST'S IMPRESSION)

94EB- REDEVELOPMENT OF YING WA GIRLS' SCHOOL AT ROBINSON ROAD, HONG KONG

94EB- 香港羅便臣道英華女學校重建計劃

於羅便臣道從西面望向重建項目「甲」地盤的構思圖

VIEW OF SITE A REDEVELOPMENT FROM WEST AT ROBINSON ROAD (ARTIST'S IMPRESSION)

於卑利士道從東面望向重建項目「乙」地盤的構思圖

VIEW OF SITE B REDEVELOPMENT FROM EAST AT BREEZY PATH (ARTIST'S IMPRESSION)

94EB- REDEVELOPMENT OF YING WA GIRLS' SCHOOL AT ROBINSON ROAD, HONG KONG

94EB- 香港羅便臣道英華女學校重建計劃

94EB – Redevelopment of Ying Wa Girls' School at Robinson Road, Hong Kong

Breakdown of estimates for consultants' fees and resident site staff costs (in September 2011 prices)

			Estimated man-months	Average MPS* Salary Point	Multiplier (Note 3)	Estimated Fees ($ million)
(a)	Consultants' fees for contract administration (Note 1)	Professional	-	-	-	4.7
					Sub-total	4.7
(b)	Resident site staff (RSS) costs	Technical	106	14	1.6	3.6
	Comprising –					
	(i) Consultants' fees for management of RSS (Note 2)					0.3
	(ii) Remuneration of RSS					3.3
					Sub-total	3.6
(c)	Out-of-pocket expenses (Note 4)	-	-	-	-	0.3
					Sub-total	0.3
					Total	**8.6**

* MPS = Master Pay Scale

Notes

1. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for the design and construction of **94EB**. The construction phase of the assignment will only be executed subject to the Finance Committee's funding approval to upgrade **94EB** to Category A.

2. 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.

3. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of resident site staff supplied by the consultants. (As at now, MPS point 14 = $21,175 per month.)

4. Examples of out-of-pocket expenses include the purchase of documents, drawings, maps, photographs and records, printing, lithography, presentational materials, etc. The consultants are not entitled to any additional payment for overheads or profit in respect of these items.

A comparison of the reference cost of a 30-classroom secondary school project with the estimated cost of 94EB

$ million (in Sept 2011 prices)

		Reference cost*	**94EB**	
(a)	Demolition works	–	15.4	(See note A)
(b)	Site formation	–	39.1	(See note B)
(c)	Piling	23.5	43.4	(See note C)
(d)	Building	118.0	128.7	(See note D)
(e)	Building services	32.1	41.9	(See note E)
(f)	Drainage	6.0	6.7	(See note F)
(g)	External works	21.2	28.1	(See note G)
(h)	Heritage works	–	2.7	(See note D)
(i)	Additional energy conservation measures	–	2.4	(See note H)
(j)	Noise mitigation measures	–	6.5	(See note E)
(k)	Furniture and equipment	–	6.8	(See note I)
(l)	Consultants' fees	–	5.3	(See note J)
(m)	Remuneration of resident site staff			
(n)	Contingencies	20.1	32.5	
Total		220.9	361.8	(See note K)
(o)	Construction floor area	12 850 m^2	13 581 m^2	
(p)	Construction unit cost {[(d) + (e) + (h) + (j)] ÷ (o)}	$11,681/$m^2$	$13,239/$m^2$	

/* **Assumptions** .....

*** Assumptions for reference cost of a 30-classroom secondary school project**

1. It is assumed 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 and air-conditioning to mitigate noise impacts on the school.

2. It is assumed that 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. It is assumed that there will be a mixed use of 145 steel H-piles at an average depth of 30 m, assuming that percussive piling is permissible. The costs for pile caps, strap beams and testing are included. No allowance is reserved for the effect of negative skin friction due to fill on reclaimed land.

4. It is assumed that for a 30-classroom school, the school site will be about 6 950 m^2 in size, and will be an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a "green-field" site).

5. It is assumed that no consultancy services are required because the project would be managed by ArchSD using in-house resources.

6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring bodies of new schools.

7. The reference cost is only provided for comparison purposes and is subject to review regularly. Director of Architectural Services will review, and revise if necessary, the reference cost which should be adopted for future projects.

Notes

A. Additional cost is required for demolition of the existing school premises.

B. Additional cost is required for site formation works of the new school premises, which would be constructed on a sloped site.

C. The piling cost is expected to be higher for **94EB** because of the difficult topography profile, the use of pre-bored socketted steel H-pile due to shallow rock head level and steep bedrock profile.

D. The building cost is expected to be higher because **94EB** will have a larger construction floor area as compared to a standard 30-classroom secondary school project. There is also a need to carry out preservation works for a former kindergarten block built in 1926 (1926 building).

E. The building services cost is expected to be higher because **94EB** will have a larger construction floor area as compared to a standard 30-classroom secondary school project. In addition, there is the need to install additional automatic sprinkler system, an emergency generator and additional lifts in response to Fire Services Department's requirements in light of actual site condition. There is also a need to install additional air-conditioning to satisfy the noise abatement requirement under the Preliminary Environmental Review approved by the Director of Environmental Protection.

F. Drainage cost is expected to be slightly higher because the total area of Sites A and B for **94EB** (7 771m^2) is larger than a standard site for a 30-classroom secondary school (6 950 m^2).

G. The cost of external works is expected to be higher because the total area of Sites A and B for **94EB** (7 771m^2) is larger than a standard site for a 30-classroom secondary school (6 950 m^2). Also there will be tree felling and transplant works.

H. The additional cost is required for the provision of additional energy conservation measures for energy savings in the annual energy consumption with a payback period of about 8 years.

I. The cost of furniture and equipment, which is estimated to be $6.8 million, will be borne by the Government. This is in line with the existing policy on redevelopment and reprovisioning school projects.

J. Additional cost is required for meeting the cost of contract administration and site supervision consultancy services, and reimbursing the consultants for their out-of-pocket expenses.

K. If the contribution of $3.3 million (in September 2011 prices) from the School Sponsor is included, the total construction cost will become $365.1 million. However, the construction unit cost will remain unchanged as the School Sponsor's contribution will be used for additional piling works only.

Enclosure 5 to PWSC(2012-13)16

94EB – Redevelopment of Ying Wa Girls' School at Robinson Road, Hong Kong

Breakdown of total project cost estimate

		$ million	
(a)	Demolition works	15.4	
(b)	Site formation	39.1	
(c)	Piling	46.7	(including $3.3 million school contribution for additional piling)
(d)	Building	128.7	
(e)	Building services	41.9	
(f)	Drainage	6.7	
(g)	External works	28.1	
(h)	Heritage works	2.7	
(i)	Additional energy conservation measures	2.4	
(j)	Noise mitigation measures	6.5	
(k)	Furniture and equipment	6.8	
(l)	Consultants' fees for	5.3	
	(i) contract administration	4.7	
	(ii) management of resident site staff (RSS)	0.3	
	(iii) out-of-pocket expenses	0.3	
(m)	Remuneration of RSS	3.3	
(n)	Contingencies	31.5	
	Sub-total	365.1	(in September 2011 prices)
(o)	Provision for price adjustment	71.1	(including $0.2 million extra provision for additional piling)
	Total	436.2	(in MOD prices)