For discussion **PWSC(2008-09)53**
on 15 December 2008

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Universities
The Hong Kong Baptist University
20EH - Baptist University Road campus development

Members are invited to recommend to Finance Committee the upgrading of **20EH** to Category A at an estimated cost of $945.1 million in the money-of-the-day prices for the construction of the Baptist University Road campus development by the Hong Kong Baptist University within its campus in Kowloon Tong.

PROBLEM

The Hong Kong Baptist University (HKBU) needs additional space and facilities to meet its existing teaching and research needs, and to support the implementation of the normative four-year undergraduate programme under the new academic structure for senior secondary education and higher education (i.e. the "3+3+4").

PROPOSAL

2. The Secretary-General, University Grants Committee (SG, UGC), on the advice of the University Grants Committee (UGC) and the Director of Architectural Services (D Arch S) as UGC's Technical Adviser, and with the support of the Secretary for Education, proposes to upgrade **20EH** to Category A at an estimated cost of $945.1 million in money-of-the-day (MOD) prices for the Baptist University Road (BUR) campus development of HKBU.

/PROJECT …..

PROJECT SCOPE AND NATURE

3. The proposed development involves the demolition of seven existing low-rise blocks[1] at the BUR Campus for the construction of a new 13-storey main building, and a new three-storey Annex block on an existing open carpark, providing a total of 19 715 square metres (m^2) in net operational floor area (NOFA). The new development will provide the following facilities –

(a) Main building

(i) classroom facilities of about 3 670 m^2 in NOFA;

(ii) study space of about 1 140 m^2 in NOFA;

(iii) teaching laboratories of about 4 848 m^2 in NOFA;

(iv) research laboratories of about 1 494 m^2 in NOFA;

(v) office area of about 4 818 m^2 in NOFA for academic, research and administration staff;

(vi) student / staff amenities including staff lounge / canteen, communal area and activities rooms of about 1 438 m^2 in NOFA,

(vii) support space including main server rooms, storage area, etc of about 643 m^2 in NOFA; and

(viii) 50 car parking spaces (including re-provision of 23 existing spaces), 10 motorcycle parking spaces, one loading / unloading space, and reprovision of two existing coach parking spaces.

(b) Annex block

(i) classroom facilities of about 679 m^2 in NOFA;

(ii) teaching laboratories of about 435 m^2 in NOFA;

(iii) sports facilities of about 550 m^2 in NOFA; and

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[1] The seven existing low-rise blocks were constructed for temporary use in the development of the Shaw Campus of HKBU. The occupation permits for these blocks are also temporary. Under the project, all the low-rise blocks will be demolished for better utilisation of the land resources.

(iv) reprovision of the existing open carpark of 36 carparking spaces and five motorcycle parking spaces.

(c) a landscaped main entrance and a covered walkway to connect the Main Building to the rest of the BUR Campus, together with a pedestrian bridge between the Main Building and Annex Block, that connects the BUR Campus with the Shaw Campus.

4. A site plan is at Enclosure 1. A list of the facilities, the sectional plan and view of the buildings (artist's impression) are at Enclosures 2 to 4 respectively. HKBU plans to start construction works in the second quarter of 2009 for completion of the buildings in the third quarter of 2012.

JUSTIFICATION

5. The existing campus of HKBU has been used for decades and some parts can be dated back to the 1960s. With the developments over time, HKBU lacks adequate space to carry out teaching and research activities. According to the results of the Review on Space and Accommodation Requirements of the UGC-funded institutions carried out by the UGC in 2006, HKBU had an estimated space shortfall of more than 7 700m^2 by the 2007/08 academic year.

6. Furthermore, the new academic structure for senior secondary education and higher education (i.e. the "3+3+4") will be implemented starting from the 2009/10 academic year. The first cohort of senior secondary students will undergo a four-year undergraduate programme starting from the 2012/13 academic year. The UGC-funded institutions, including HKBU, would need to expand their campus space and facilities in order to accommodate the additional students under the new four-year undergraduate programme and to provide a suitable teaching and learning environment in support of the new academic structure.

7. HKBU plans to carry out the BUR campus development project to provide space and facilities of some 19 715 m^2 in NOFA to support the implementation of "3+3+4" academic structure, and to meet existing space shortfall. The project will provide classroom facilities, teaching laboratories, sports facilities, office space, student and staff amenities, support facilities as well as car-parking spaces. The development will cater for the teaching of common and faculty based subjects, more practical training facilities for applied research and development, and foster all-round development of the student community. It is also necessary to provide suitable grade-separated pedestrian connections between the BUR Campus and other two campuses of the University.

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FINANCIAL IMPLICATIONS

8. SG, UGC, on the advice of D Arch S, recommends approval of the project at a cost of $945.1 million in MOD prices (see paragraph 11 below), made up as follows –

			$ million	
(a)	Demolition		19.7	
(b)	Site formation and development		39.5	
(c)	Building		447.1	
(d)	Building services		162.8	
(e)	Drainage and external works[2]		39.1	
(f)	Additional energy conservation measures		8.1	
(g)	Consultants' fees for –		19.0	
	(i) tender assessment	1.0		
	(ii) contract administration	7.3		
	(iii) site supervision	10.3		
	(iv) out-of-pocket expenses	0.4		
(h)	Furniture and equipment[3]		62.9	
(i)	Contingencies		47.9	
		Sub-total	846.1	(in September 2008 prices)
(j)	Provision for price adjustment		99.0	
		Total	945.1	(in MOD prices)

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[2] Including the building cost for the footbridge and the necessary ancillary facilities.

[3] Based on a list of furniture and equipment submitted by HKBU.

9. HKBU will engage consultants to undertake tender assessment, contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees by man-months is at Enclosure 5.

10. The construction floor area (CFA) of this project is 36 174 m^2. The estimated construction unit cost comprising the building and building services costs is $16,860 per m^2 of CFA, in September 2008 prices. A detailed account of the CFA vis-à-vis the construction unit cost is at Enclosure 6. The estimated construction unit cost is about 16% lower than that of another similar project for UGC-funded institutions, i.e. **19EH** "School of Communication-cum-School of Creative / Visual Arts Building" of HKBU (with an estimated construction unit cost of $20,128 per m^2 of CFA in September 2008 prices). D Arch S considers the estimated construction unit cost reasonable, having regard to the current economic situation and the prevailing construction prices.

11. Subject to approval, HKBU will phase the expenditure as follow –

Year	$ million (September 2008)	Price adjustment factor	$ million (MOD)
2009 – 10	100.0	1.04000	104.0
2010 – 11	172.8	1.08160	186.9
2011 – 12	391.0	1.12486	439.8
2012 – 13	157.8	1.16986	184.6
2013 – 14	24.5	1.21665	29.8
	846.1		945.1

12. 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 2008 to 2014. HKBU will tender the works through lump-sum contracts because it can clearly define the scope of works in advance. The contracts will provide for price adjustment to reflect market fluctuations in labour and material costs.

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13. The project has no impact on tuition fees. The additional recurrent costs associated with the project will be absorbed by HKBU. The proposal has no additional recurrent implications on the Government.

PUBLIC CONSULTATION

14. The project is located within HKBU Campus. HKBU consulted the Housing and Infrastructure Committee of the Kowloon City District Council on the project on 26 June 2008. The Committee supported the development unanimously. We submitted a paper on this project to the Legislative Council Panel on Education (the Panel) for discussion on 10 November 2008. Members did not raise objection to the proposal but expressed concerns about the proposed pedestrian bridge to be built. Members also requested for supplementary information on the "3+3+4" projects. This was provided by the Administration on 5 December 2008.

15. As regards the proposed pedestrian bridge, HKBU believes it is important to cater for what is expected to be high and frequent volume of pedestrian traffic commuting between the three existing campuses: Ho Sin Hang Campus at Waterloo Road, Shaw Campus at Renfrew Road, and BUR Campus at Baptist University Road. The proposed footbridge between the BUR Campus and the Shaw Campus will provide grade-separated access. However, HKBU has also taken note of concerns of Members of the Panel on the project cost estimate. It has proposed to reduce the project estimate by $42.2 million, from $987.3 million (as set out in the paper presented to the Panel) to $945.1 million (in MOD prices).

ENVIRONMENTAL IMPLICATIONS

16. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). The project will not cause long-term environmental impact. HKBU has included in the project estimates the cost to implement suitable mitigation measures to control short term environmental impacts.

17. During construction, HKBU will control noise, dust and site run-off nuisances to within established standards and guidelines through the implementation of mitigation measures in the relevant 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. When the buildings are in use, the road traffic noise impact on noise sensitive rooms will be mitigated by suitable mitigation measures, e.g. installation of well-gasketted windows and air conditioning.

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18. HKBU has considered measures (e.g. the optimization of the foundation layout by suitable piling design and the use of metal hoarding frameworks so that these materials can be recycled and reused in other projects) in the planning and design stages to reduce the generation of construction waste where possible. In addition, HKBU will require the contractor to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of inert construction waste to public fill reception facilities[4]. HKBU will encourage the contractor to maximize the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimize the generation of construction waste.

19. HKBU will also require the contractor to submit for approval a plan setting out waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. The University will ensure that the day-to-day operations on site comply with the approved plan. HKBU will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. HKBU will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

20. HKBU estimates that the project will generate in total about 43 500 tonnes of construction waste. Of these, HKBU will reuse about 750 tonnes (1.7%) of inert construction waste on site and 9 000 tonnes (20.7%) of inert construction waste on other construction sites, and deliver 28 950 tonnes (66.6%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, HKBU will dispose of 4 800 tonnes (11.0%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $1,381,650 for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[5] at landfills).

/**ENERGY** …..

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[4] Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of inert construction waste 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.

ENERGY CONSERVATION MEASURES

21. The project has adopted various forms of energy efficient features, including –

(a) water-cooled chillers (fresh-water cooling tower);

(b) heat recovery fresh air pre-conditioners;

(c) light-emitting diode (LED) type exit signs;

(d) occupancy and daylight sensors for lighting control; and

(e) automatic lighting and ventilation control for lifts

22. For renewable energy technologies, this project has adopted solar lightings and solar hot water system.

23. For greening features, this project has adopted greening on the open spaces from the ground floor to second floors, as well as the communal courtyards and podium roof garden on the upper floors to provide landscaped areas at different levels.

24. For recycled features, this project has adopted rainwater collection system for irrigation and cooling tower bleed-off water for flushing.

25. The total estimated additional cost for adoption of the above features is around $8.1 million. These various provisions should reduce the energy requirements of the buildings by about 10.9%.

HERITAGE IMPLICATIONS

26. The 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.

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LAND ACQUISITION

27. The project does not require any land acquisition.

BACKGROUND INFORMATION

28. Under existing procedures, UGC-funded institutions submit capital works proposals to the UGC annually. The UGC examines all these proposals carefully, with professional advice provided by D Arch S who acts as UGC's technical adviser, and refers those supported proposals to the Government for consideration for bidding of funds under the established mechanism. Having examined HKBU's proposal, SG, UGC has, in consultation with D Arch S, adjusted the project estimate proposed by HKBU to arrive at the project estimate set out in paragraph 8 above.

29. The BUR campus development was originally planned for implementation under two separate projects, namely, the BUR campus development phase 1 (**20EH**) and phase 2 (**21EH**). We upgraded **20EH** and **21EH** to Category B in June 2007 and November 2007 respectively. HKBU engaged consultants in January 2008 to carry out topographical survey, site investigation, preliminary design, detailed design and to prepare tender documents at a total estimated cost of $7.6 million and $8.6 million for **20EH and 21EH** respectively. The consultancies were charged to the block allocation **Subhead 8100EX** "Alterations, additions, repairs and improvements to the campuses of UGC-funded institutions". The consultants have completed the topographical survey, site investigation, preliminary design and detailed design of the project. As it was decided after the detailed design that the two projects should be jointly developed for better planning and efficiency, they were then combined into one project in October 2008. HKBU is finalising the tender documents for the project.

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30. The project will involve removal of 24 common trees, including one tree to be felled and 23 trees to be transplanted within the campus. All trees to be removed are not important trees[6]. HKBU will incorporate planting proposals as part of the project, including estimated quantities of seven additional trees, vertical green panels and shrub planting.

31. HKBU estimates that the project will create about 390 jobs (350 for labourers and another 40 for professional/technical staff) providing a total employment of 14 700 man-months.

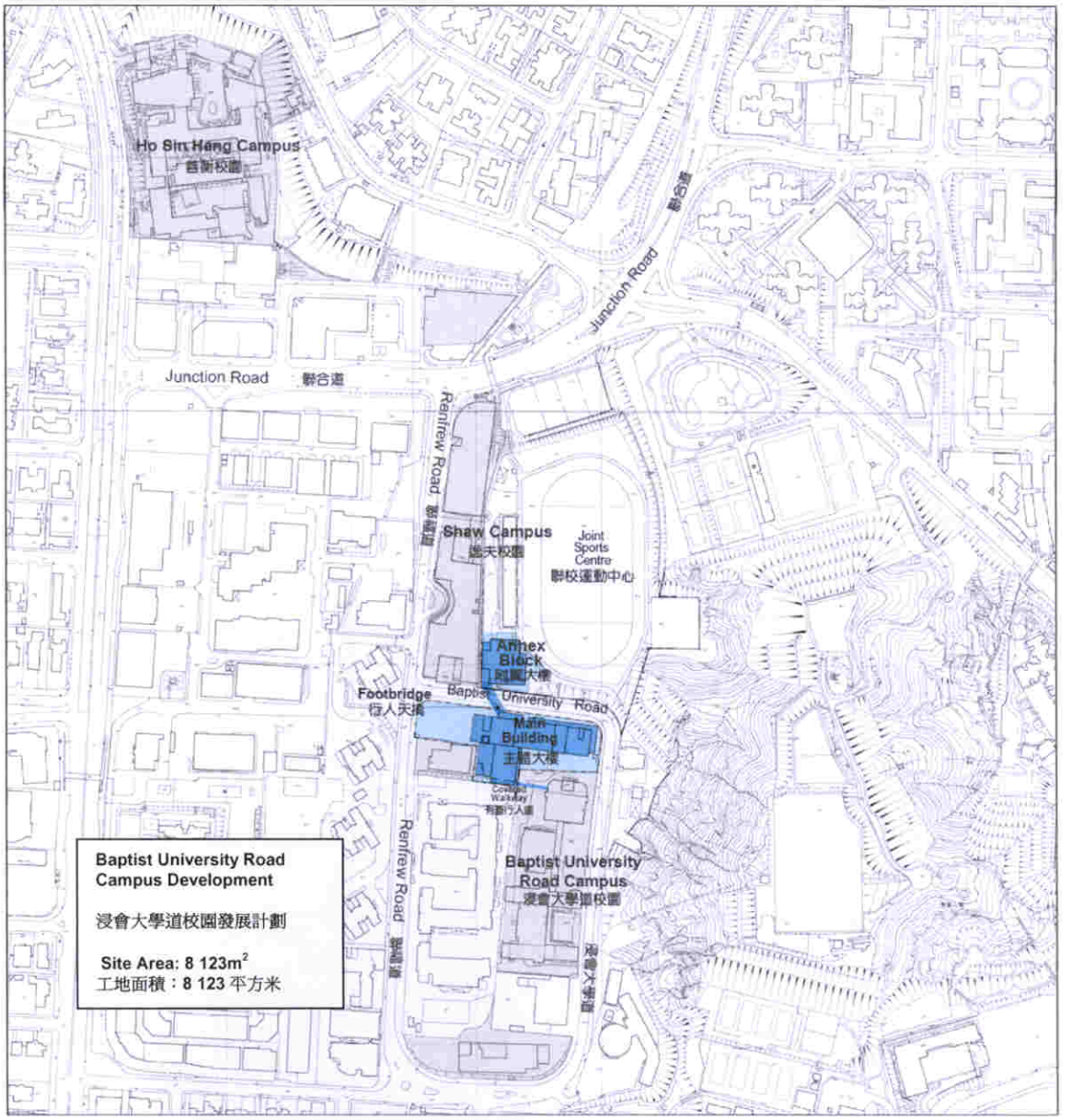
Education Bureau
December 2008

[6] "Important trees" refer 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, tree as landmark of monastery of 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 m (measured at 1.3 m above ground level) or with height / canopy spread equal or exceeding 25 m.

The Hong Kong Baptist University
20EH – Baptist University Road campus development
香港浸會大學
20EH –浸會大學道校園發展計劃

Site Plan
工地平面圖



Enclosure 2 to PWSC(2008-09)53

The Hong Kong Baptist University
20EH – Baptist University Road campus development

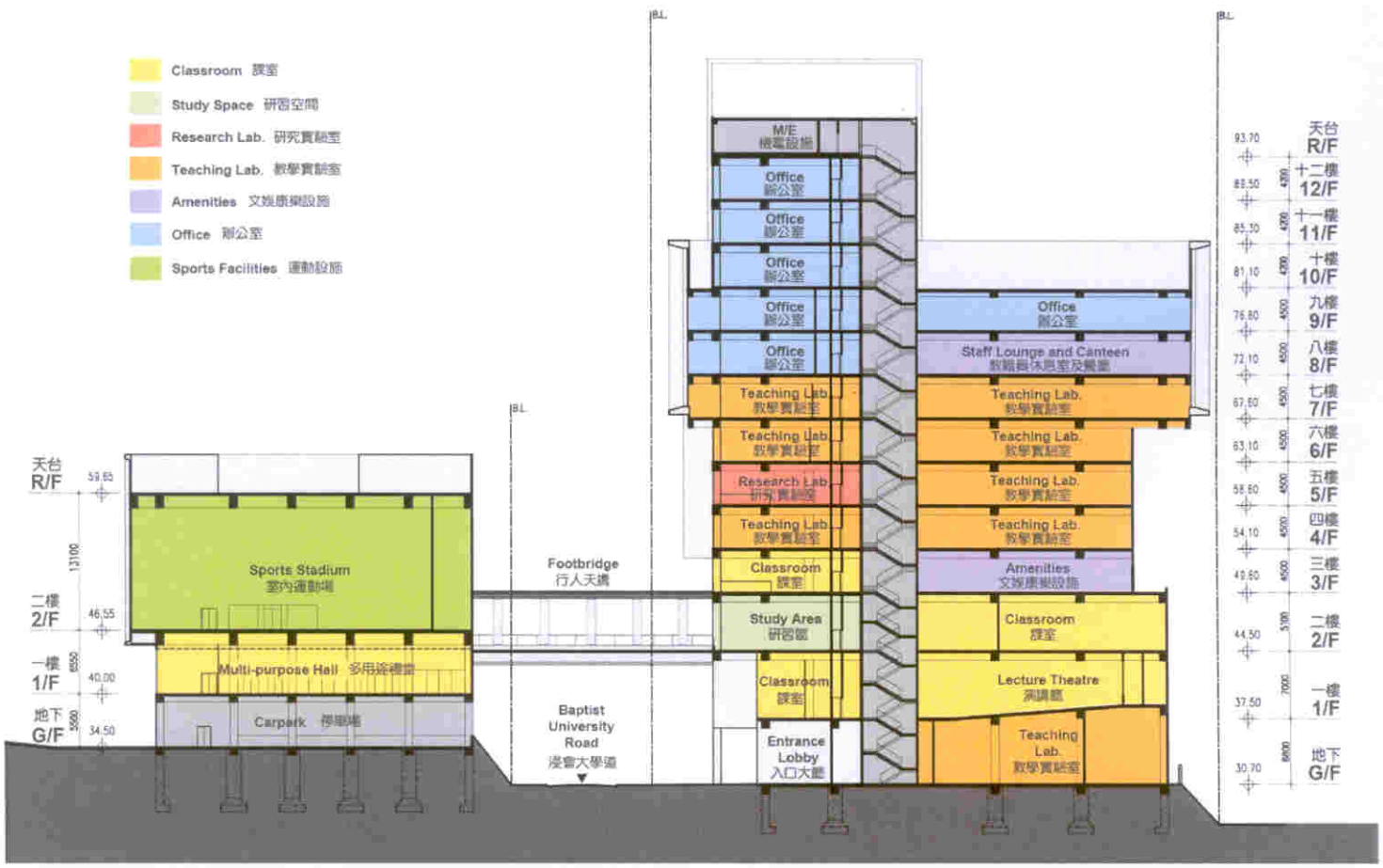
List of facilities

	Facilities	Estimated floor area in net operational floor area (NOFA) (m^2)
(a)	Classroom facilities	4 349
(b)	Study space	1 140
(c)	Teaching laboratories	5 283
(d)	Research laboratories	1 494
(e)	Offices	4 818
(f)	Student / staff amenities	1 438
(g)	Support space	643
(h)	Indoor sports facilities	550
	Total	19 715

附件 3 Enclosure 3 to PWSC(2008-09)53

The Hong Kong Baptist University
Baptist University Road campus development
香港浸會大學
浸會大學道校園發展計劃

Sectional Plan 截面圖



Annex Block
附翼大樓

Main Building
主體大樓

The Hong Kong Baptist University
Baptist University Road campus development
香港浸會大學
浸會大學道校園發展計劃

View of the annex block and main building from the Joint Sports Centre (artist's impression)
從聯校運動中心望向附翼大樓及主體大樓外觀構思圖

The Hong Kong Baptist University
Baptist University Road campus development
香港浸會大學
浸會大學道校園發展計劃

View of the main building from Renfrew Road (artist's impression)
從聯福道望向主體大樓外觀構思圖

Enclosure 5 to PWSC(2008-09)53

The Hong Kong Baptist University
20EH – Baptist University Road campus development

Breakdown of the estimate for consultants' fees(Note 1)

		Estimated man-months	Average MPS* salary point	Multiplier (Note 2)	Estimated fee ($ million) (Sept 2008)
(a) Consultants' staff costs (Note 3)					
(i) Tender assessment	Professional	–	–	–	0.5
	Technical	–	–	–	0.5
(ii) Contract administration	Professional	–	–	–	3.7
	Technical	–	–	–	3.6
(b) Site supervision (Note 4)	Professional	29.0	38	1.6	2.8
	Technical	236.0	14	1.6	7.5
(c) Out of pocket expenses (Note 5) Lithography and other direct expenses		–	–	–	0.4
				Total	19.0

* MPS = Master Pay Scale

Notes

1. Having examined the consultants' fees estimated by HKBU, the D Arch S considers the figures acceptable.

2. 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 April 2008, MPS point 38 = $60,535 per month and MPS point 14 = $19,835 per month.)

3. The consultants' staff costs for tender assessment and contract administration are calculated in accordance with the existing consultancy agreements obtained through competitive tendering for the design and construction of **20EH.** The assignment will only be executed subject to Finance Committee's approval to upgrade the combined **20EH** to Category A.

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4. HKBU will only know the actual man-months and actual costs for site supervision after completion of the construction works.

5. Out-of-pocket expenses are the actual costs incurred. The consultants are not entitled to any additional payment for the overheads or profit in respect of these items.

Enclosure 6 to PWSC(2008-09)53

The Hong Kong Baptist University
20EH – Baptist University Road campus development

Breakdown of the construction floor area (CFA) vis-à-vis the construction unit cost

(a)	Breakdown of CFA	**Estimated floor area (m^2)**
		Total
	Net operational floor area (NOFA)	19 715
	Circulation areas and toilets	11 573
	Mechanical and electrical plants	3 083
	Parking area	1 803
	CFA	36 174
(b)	NOFA / CFA ratio	54.5%
(c)	Estimated construction unit cost (represented by the building and building services costs)	$16,860 per m^2 of CFA (in September 2008 prices)