For discussion **PWSC(2009-10)62**
on 15 June 2009

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Universities
The Hong Kong Polytechnic University
28EK - Student hostel, phase 3

Members are invited to recommend to Finance Committee the upgrading of **28EK** to Category A at an estimated cost of $522.1 million in money-of-the-day prices for the construction of student hostel, phase 3 by the Hong Kong Polytechnic University in Homantin.

PROBLEM

The Hong Kong Polytechnic University (PolyU) needs additional hostel places to meet the accommodation need of students.

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 **28EK** to Category A at an estimated cost of $522.1 million in money-of-the-day (MOD) prices for the construction of student hostel, phase 3 by PolyU in Homantin.

/PROJECT …..

PROJECT SCOPE AND NATURE

3. The scope of **28EK** comprises the construction of a 27-storey hostel building including a three-storey podium, providing about 20 500 square metres (m^2) in net operational floor area (NOFA). It will accommodate the following facilities –

(a) a total of 1 650 hostel places and ancillary facilities of some 13 920 m^2 in NOFA, including accommodation for wardens, managers and tutors;

(b) common facilities of some 5 960 m^2 in NOFA, including communal space with pantry, sitting area, dining hall, multi-purpose area, quiet rooms, activity rooms and student activities areas;

(c) supporting facilities of some 620 m^2 in NOFA, including management office, laundry, etc.; and

(d) 16 covered carparking spaces, seven motorcycle parking spaces, one coach parking space and one loading/unloading bay.

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

JUSTIFICATION

5. Under existing policy, UGC-funded institutions are provided with publicly-funded student hostels calculated in accordance with the following criteria[1] : all undergraduate students should be given the opportunity to stay in student hostels for at least one year of their courses; and all research postgraduates, non-local students as well as undergraduate students whose daily travelling time

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[1] The criteria are applicable to all UGC-funded institutions, except for the Lingnan University (which has been provided with hostel places for 50% of its full-time degree student population having regard to its remote location in Tuen Mun and its aspirations to develop itself into a relatively small, fully residential liberal arts institution) and the Hong Kong Institute of Education (which was provided with hostel places for 50% of its full-time degree student population projected at the time of establishment of the Institute having regard to the potential benefits that hostel life would bring to the quality of pre-service teacher education).

exceeds four hours, should be provided with student hostel places. The Government will fund up to 75% of the capital cost of the approved level of publicly-funded student hostel provision, with the remainder to be met by the respective institutions using their own sources of private funding.

6. In addition to the above-mentioned standard hostel provision, the Administration decided in February 2006 to provide an additional 1 840 publicly-funded student hostel places to the UGC-funded sector to support institutions' increasing student exchange activities.

7. As at the 2007/08 academic year, and taking into account the additional hostel places for exchange activities, the approved publicly-funded hostel provision for PolyU is around 5 070 places. Against its current provision of 3 004 publicly-funded hostel places, PolyU has a shortfall of around 2 070 hostel places. To address this shortfall, PolyU plans to construct the proposed student hostel in Homantin.

8. The main campus of PolyU is already congested and further development is severely constrained. Currently, the core academic and teaching facilities of PolyU are concentrated in the main campus while the existing phases 1 and 2 student hostels of PolyU are located off-campus at a nearby location in Hunghom. The site for this project in Homantin is suitable for PolyU's hostel development, as it is close to PolyU's campus and the University's existing student hostel facilities.

9. The proposed hostel will provide 75 single bedrooms, 504 double bedrooms and 189 triple bedrooms with study space in each room, and shared bathrooms and common space. A typical floor will provide accommodation for some 75 students. The podium floors will accommodate common and support facilities such as dining hall, multi-purpose area, activities rooms, quiet rooms for reading and management office. A landscaped garden is planned at the podium roof.

FINANCIAL IMPLICATIONS

10. The total estimated cost of the project is $696.1 million (in MOD prices). The Government will fund up to $522.1 million, i.e. 75% of the construction cost. PolyU will contribute $174.0 million through its private sources of funding for the remaining 25% of the construction cost.

/11. …..

11. SG, UGC, on the advice of D Arch S, recommends capital funding of $522.1 million in MOD prices to be provided by the Government (see paragraph 14 below), made up as follows –

			$ million	
(a)	Site formation and development		28.5	
(b)	Building		349.8	
(c)	Building services		136.5	
(d)	Drainage and external works		15.5	
(e)	Additional energy conservation measures		3.5	
(f)	Consultants' fees		11.8	
	(i) contract administration	11.4		
	(ii) management of resident site staff	0.4		
(g)	Remuneration of resident site staff		8.1	
(h)	Furniture and Equipment		48.0	
(i)	Contingencies		45.1	
	Sub-total		646.8	(in September 2008 prices)
(j)	Provision for price adjustment		49.3	
	Sub-total		696.1	(in MOD prices)
(k)	Less contribution by PolyU		(174.0)	
	Total		522.1	(in MOD prices)

12. PolyU will 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 5.

/13. …..

13. The construction floor area (CFA) of this project is approximately 38 000 m^2. The estimated construction unit cost, represented by the building and the building services costs, is $12,797 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. D Arch S considers the estimated construction unit cost reasonable having regard to the current economic situation and prevailing construction prices, and comparable to those of similar projects such as **5EU** "New academic block and student hostel" of Lingnan University (with an estimated construction cost of $12,328 per m^2 of CFA in September 2008 prices).

14. Subject to approval, PolyU will phase the expenditure as follows –

Year	$ million (Sept 2008)	Price adjustment factor	$ million (MOD)	Contribution by PolyU $ million (MOD)	28EK $ million (MOD)
2009 – 10	15.8	1.03500	16.4	16.4	-
2010 – 11	89.5	1.05570	94.5	94.5	-
2011 – 12	457.4	1.07681	492.5	63.1	429.4
2012 – 13	69.2	1.09835	76.0	-	76.0
2013 – 14	14.9	1.12032	16.7	-	16.7
	646.8		696.1	174.0	522.1

15. 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 2009 to 2014. PolyU will tender the works through lump-sum contracts because it can clearly define the scope of the works in advance. The contracts will provide for price adjustment to reflect market fluctuations in labour and material costs.

16. The project has no impact on tuition fees. In accordance with established practice, PolyU will operate the student hostel on a self-financing basis through charges levied on hostel places. The proposal has no additional recurrent cost implication on the Government.

/**PUBLIC** …..

PUBLIC CONSULTATION

17. The Housing and Infrastructure Committee of Kowloon City District Council (KCDC) was consulted in April 2009. Members of the KCDC generally supported the development but raised concerns about possible noise problems arising from student activities. They also invited PolyU to consider sharing some of the hostel's common facilities for community use and adopt more green features in the project. PolyU has addressed the concerns/comments by undertaking to enclose some of the student communal areas to reduce noise, consider making available some of the common facilities for community use on application, and adopt more green features in the project.

18. PolyU organised several open fora in September and October 2008, and in April 2009 to consult its staff and students on the design of the proposed development. PolyU has also conducted an open exhibition displaying the project proposal since November 2008. The participants gave positive comments and were generally in support of the project. We submitted a paper on the project to the Legislative Council Panel on Education for discussion on 11 May 2009. The Panel in general supported the project and advised PolyU to adopt measures to address the noise nuisance caused to nearby residents.

ENVIRONMENTAL IMPLICATIONS

19. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). PolyU completed a Preliminary Environmental Review (PER) for the project in May 2009 and will implement suitable measures in the building design as proposed in the PER to mitigate traffic noise to comply with the relevant standards and guidelines.

20. During construction, PolyU 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 linings or shields for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities.

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21. PolyU 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 waste where possible. In addition, PolyU 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 minimise the disposal of inert construction waste to public fill reception facilities[2]. PolyU will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimise the generation of construction waste.

22. PolyU will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. PolyU will ensure that the day-to-day operations on site comply with the approved plan. PolyU will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. PolyU 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.

23. PolyU estimates that the project will generate in total about 40 995 tonnes of construction waste. Of these, PolyU will reuse about 10 149 tonnes (24.8%) of inert construction waste on site and deliver 27 196 tonnes (66.3%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, PolyU will dispose of 3 650 tonnes (8.9%) 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 $1.19 million for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[3] at landfills).

/ENERGY …..

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[2] 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.

[3] 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

24. The project will adopt various forms of energy efficient features, including –

(a) water-cooled chillers;

(b) demand control of fresh air supply with carbon dioxide sensors;

(c) automatic demand control for ventilation fans in car park;

(d) heat wheels for heat energy reclaim of exhaust air;

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

(f) light-emitting diode (LED) type exit signs; and

(g) automatic on/off switching of lighting and ventilation fan inside the lifts.

25. For renewable energy technologies, PolyU will adopt solar park lighting in the landscape area.

26. For greening features, PolyU will adopt greening on main roof and sky gardens.

27. For recycled features, PolyU will adopt rainwater and condensate water recycling system for irrigation and air-conditioning make-up purposes respectively.

28. The total estimated additional cost for adoption of the above features is around $3.5 million (including $2.2 million for energy efficient features), which has been included in the cost estimate of the project. The energy efficient features will achieve 6.4% energy savings in the annual energy consumption with a payback period at about 6.3 years.

/HERITAGE …..

HERITAGE IMPLICATIONS

29. This 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.

LAND ACQUISITION

30. The project does not require any land acquisition.

BACKGROUND INFORMATION

31. 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 of bidding of funds under the established mechanism. Having examined PolyU's proposal, SG, UGC has, in consultation with D Arch S, adjusted the project estimate proposed by PolyU to arrive at the project estimate set out in paragraph 11 above.

32. We upgraded **28EK** to Category B in March 2008. PolyU engaged consultants in July 2008 to carry out topographical survey, site investigation, preliminary design, detailed design and to prepare tender documents at a total estimated cost of $13.8 million. We have charged $10.4 million to block allocation **Subhead 8100EX** "Alterations, additions, repairs and improvements to the campuses of the UGC-funded institutions". The remaining amount of $3.4 million was funded by PolyU's private sources of funding. The consultants have completed topographical survey, site investigation and preliminary design. PolyU is finalising the tender documents for the project.

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33. The project will involve the removal of 16 trees and transplanting of one tree. The trees to be removed are not important trees[4]. PolyU will incorporate planting proposals as part of the project, including an estimated quantity of 58 trees.

34. PolyU estimates that the project will create about 300 jobs (270 for labourers and another 30 for professional/technical staff) providing a total employment of 8 950 man-months.

Education Bureau
June 2009

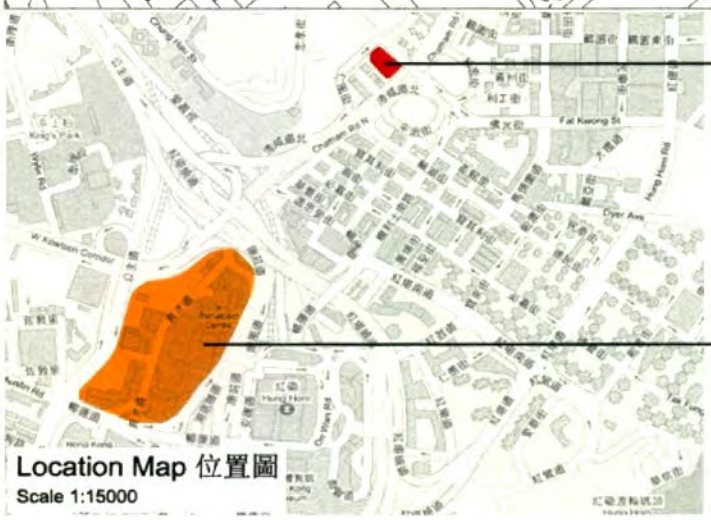
[4] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(a) trees of 100 years old or above;
(b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, 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 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

香港理工大學
28EK – 學生宿舍第3期

Site Plan 工地平面圖



THE HONG KONG POLYTECHNIC UNIVERSITY,
STUDENT HOSTEL PHASE 3

香港理工大學學生宿舍第三期

THE HONG KONG POLYTECHNIC UNIVERSITY,
CAMPUS

香港理工大學校園

附件2 Enclosure 2 to PWSC(2009-10)62

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

香港理工大學
28EK – 學生宿舍第3期

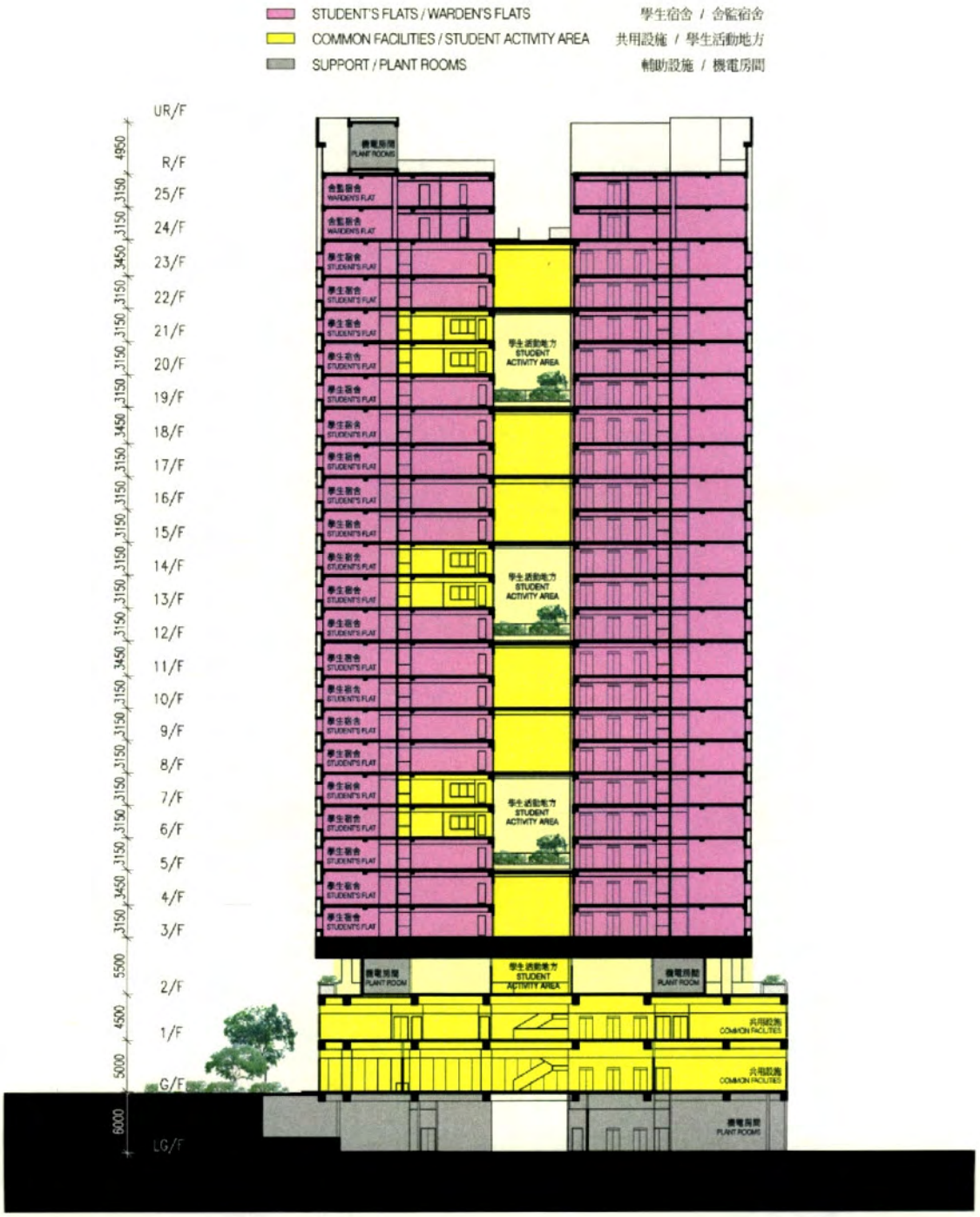
View of the Building (Artist's Impression) 外觀構思圖

附件3 Enclosure 3 to PWSC(2009-10)62

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

香港理工大學
28EK – 學生宿舍第3期

Sectional Plan 截面圖



Enclosure 4 to PWSC(2009-10)62

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

List of facilities

	No. of unit	Estimated floor area in net operational floor area NOFA (m^2)
(A) Living accommodation		
1. Double bedroom	504	7 560
2. Single bedroom	75	610
3. Triple bedroom	189	4 250
4. Warden's quarter	6	790
5. Manager/senior tutor's quarter	6	420
6. Tutor's room	30	290
	Sub-total	13 920
(B) Common space		
1. Communal space with pantry	-	1 890
2. Sitting area	-	120
3. Dining hall with kitchen	1	930
4. Multi-purpose area	-	500
5. Quiet room	2	100
6. Activity room	9	480
7. Student activities area	-	1 940
	Sub-total	5 960
(C) Support		
1. Management office	1	300
2. Warden's office	6	70
3. Laundry	3	60
4. Refuse room and store	6	190
	Sub-total	620
	Total	20 500

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2008 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	11.4
					Sub-total	11.4
(b)	Resident site staff costs (Note 3)	Professional	10.4	38	1.6	1.0
		Technical	236.3	14	1.6	7.5
					Sub-total	8.5
	Comprising -					
	(i) Consultant's fees for management of resident site staff				0.4	
	(ii) Remuneration of resident site staff				8.1	
					Total	19.9

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

2. The consultants' fees for contract administration are calculated in accordance with the existing consultancy agreements. The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **28EK** to Category A.

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3. PolyU will know the actual man-months and actual costs for resident site staff only after completion of the construction works.

Enclosure 6 to PWSC(2009-10)62

The Hong Kong Polytechnic University
28EK – Student hostel, phase 3

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

(a)	Breakdown of CFA	**Estimated floor area (m^2)**
	Net operational floor area (NOFA)	20 500
	Circulation areas and toilets	15 100
	Mechanical and electrical plant rooms	2 400
	CFA	38 000
(b)	NOFA / CFA ratio	54.0%
(c)	Estimated construction unit cost (represented by the building and building services costs)	$12,797 per m^2 of CFA (in September 2008 prices)