

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT

Universities

The Chinese University of Hong Kong

55EF – Student hostels on northern campus (Blocks A3 and A4)

Members are invited to recommend to the Finance Committee the upgrading of **55EF** to Category A at an estimated cost of \$465.5 million in money-of-the-day prices.

PROBLEM

There are insufficient hostel places to meet the accommodation needs of students of the Chinese University of Hong Kong (CUHK).

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 **55EF** to Category A at an estimated cost of \$465.5 million in money-of-the-day (MOD) prices for the construction of two student hostel blocks providing 676 places in CUHK.

/PROJECT

PROJECT SCOPE AND NATURE

3. The project site is located at the northern side of CUHK's campus near Area 39, Pak Shek Kok, Tai Po. The proposed scope of works includes the construction of two multi-storey hostel blocks of some 7 595 square metres (m²) in net operational floor area (NOFA)¹ with the following facilities –

- (a) a total of 676 student hostel places of 5 620 m² in NOFA, including accommodation for wardens, tutors and attendants;
- (b) common facilities of some 1 610 m² in NOFA, including a multi-purpose hall with kitchen, common rooms, pantries, music rooms, TV rooms and a table tennis room; and
- (c) supporting facilities of some 365 m² in NOFA, including a management office, laundries and store rooms.

_____ 4. A site plan is at Enclosure 1. Sectional plans, artist's impressions of
_____ the two hostel blocks and the list of facilities are at Enclosures 2 to 4 respectively. Subject to approval of the Finance Committee (FC) within the current legislative session, CUHK plans to commence construction works in the fourth quarter of 2015 for completion in the second quarter of 2018.

JUSTIFICATION

5. Hostel life is an essential part of higher education. It provides students with an environment conducive to learning, and allows more social interaction which enriches students' personal development and learning experience. Provision of student hostel can also attract non-local students and, in turn, broaden the horizon of local students and foster Hong Kong's international links.

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¹ NOFA is the floor area actually allocated to the users of a building for carrying out the intended activities. Unlike construction floor area which takes into account all areas within the building structure envelope, NOFA does not include areas for toilets, bathrooms and shower rooms, lift lobbies, stair halls, public or shared corridors, stairwells, escalators and lift shafts, pipe or services ducts, barrier-free access facilities, gender mainstreaming facilities, refuse chutes and refuse rooms, balconies, verandas, open decks and flat roofs, parking spaces and loading and unloading areas and mechanical plant rooms etc.

6. Under the existing policy, UGC-funded institutions are provided with publicly-funded student hostels calculated in accordance with the following criteria², subject to availability of land and resources –

- (a) all undergraduate students should be given the opportunity of staying in student hostel for at least one year of their programme; and
- (b) all research postgraduates, non-local students as well as undergraduate students whose daily travelling time 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.

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

8. Taking into account the above mentioned criteria, as at the 2014-15 academic year, CUHK requires some 7 450 publicly-funded hostel places. Against its current provision of some 6 180 publicly-funded hostel places, CUHK has a shortfall of some 1 270 publicly-funded hostel places. We will continue to work with UGC-funded institutions on the planning and implementation of new projects to address shortfall in hostel places faced by institutions.

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² The criteria are applicable to all UGC-funded institutions, except for 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).

9. To address the shortfall, CUHK proposes to construct two new student hostel blocks on the northern side of its campus. The proposed hostel blocks will provide a total of 676 hostel places including 302 student double bedrooms and 72 student single bedrooms, with common facilities on typical floors. Podium floors will accommodate common and support facilities, such as the multi-purpose hall with kitchen, music rooms and a table tennis room.

FINANCIAL IMPLICATIONS

10. The total estimated cost of the project is \$620.7 million in MOD prices. The Government will fund up to \$465.5 million, i.e. 75% of the construction cost. CUHK will contribute \$155.2 million through their private sources of funding for the remaining 25% of the construction cost.

11. SG, UGC, on the advice of D Arch S, recommends a capital funding of \$465.5 million in MOD prices to be provided by the Government (see paragraph 14 below), broken down as follows –

	\$ million
(a) Site formation and development	33.5
(b) Piling	80.4
(c) Building	226.9
(d) Building services	58.8
(e) Drainage, external works, utilities and services	34.8
(f) Additional energy conservation, green and recycled features	8.0
(g) Furniture and equipment (F&E) ³	22.7
(h) Consultants' fees for	11.2
(i) contract administration	10.8
(ii) management of resident site staff (RSS)	0.4

/(i)

³ The estimated cost is based on an indicative list of F&E items required by CUHK.

	\$ million	
(i) Remuneration of RSS	8.0	
(j) Contingencies	48.4	
Sub-total	532.7	(in September 2014 prices)
(k) Provision for price adjustment	88.0	
Sub-total	620.7	(in MOD prices)
(l) Less contribution by CUHK	(155.2)	
Total	465.5	(in MOD prices)

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

13. The construction floor area (CFA) of this project is approximately 14 585 m². The estimated construction unit cost, represented by the building and building services costs, is \$19,589 per m² of CFA in September 2014 prices. D Arch S considers, taking into account site factor⁴, the estimated construction unit cost is reasonable as compared with similar projects for UGC-funded institutions.

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⁴ The project site is in close proximity to the railway line. Additional cost is required for the necessary traffic noise mitigation measures.

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

Year	\$ million (Sept 2014)	Price adjustment factor	\$ million (MOD)	Contribution by CUHK \$ million (MOD)	55EF \$ million (MOD)
2015 – 16	68.1	1.05725	72.0	72.0	–
2016 – 17	143.9	1.12069	161.3	83.2	78.1
2017 – 18	261.7	1.18793	310.9	–	310.9
2018 – 19	30.4	1.25920	38.3	–	38.3
2019 – 20	28.6	1.33475	38.2	–	38.2
	532.7		620.7	155.2	465.5

15. We have derived the MOD estimates on the basis of the 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 2015 to 2020. CUHK will tender the works through a lump-sum contract as it can clearly define the scope of works in advance. The contract will provide for price adjustment.

16. The project has no impact on tuition fees. In accordance with the established practice, CUHK will operate the student hostels through moderate charges levied on hostel places, and the proposal has no additional recurrent cost implication on the Government.

PUBLIC CONSULTATION

17. As the project is located within the CUHK campus and there are no residential developments in its immediate vicinity, it is unlikely that the project will affect residents in the area. CUHK briefed the Sha Tin District Council, the Tai Po District Council, the Tai Po Rural Committee and neighbouring village representatives in February and March 2013. They raised no adverse comment on the proposed development of student hostels.

18. Furthermore, CUHK has briefed and consulted its staff and students on the project on various occasions, including student assemblies, engagement meetings and forum on campus development sharing session. Staff and students indicated support to the project with no adverse comment on the project.

19. We submitted a paper on the project to the Legislative Council Panel on Education on 13 April 2015. Members had no objection to the proposal and supported the project be submitted to the Public Works Subcommittee for examination.

ENVIRONMENTAL IMPLICATIONS

20. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). CUHK completed a Preliminary Environmental Review for the project in early June 2015. The Director of Environmental Protection (DEP) agreed that with proper building orientation, layout design and mitigation measures including acoustic window, the project would not have long-term environmental impact. CUHK has addressed these matters in the design of the project to the satisfaction of DEP.

21. CUHK has included in the project estimates the provisions required to implement suitable mitigation measures to control short-term environmental impacts. During construction, CUHK 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 linings 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, CUHK has considered measures (e.g. adjusting the building layout and foundation system to cope with the topography) to reduce the generation of construction waste where possible. In addition, CUHK 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 facilities⁵. CUHK will encourage the contractor to maximise the use of recycled or

/recyclable

⁵ 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.

recyclable inert construction waste, as well as the use of non-timber formwork to further minimise the generation of construction waste. In addition, CUHK will require the contractor to use metal site hoardings and signboards so that these materials can be recycled or reused in other projects.

23. At construction stage, CUHK will 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. CUHK will ensure that the day-to-day operations on site will comply with the approved plan and will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. CUHK will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system.

24. CUHK estimates that the project will generate in total 34 300 tonnes of construction waste. Of these, CUHK will reuse 14 000 tonnes (40.8%) of inert construction waste on site and 10 000 tonnes (29.1%) of inert construction waste on other construction sites within campus, and deliver 9 900 tonnes (28.9%) of inert construction waste to public fill reception facilities for subsequent reuse, and 100 tonnes (0.3%) of mixed inert and non-inert construction waste to sorting facilities to separate the inert from the non-inert portion. In addition, CUHK will dispose of the remaining 300 tonnes (0.9%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites, together with the cost for handling mixed inert and non-inert construction waste at sorting facilities, is estimated to be \$0.3 million for this project (based on a unit charge rate of \$27 per tonne for disposal at public fill reception facilities, \$100 per tonne at sorting facilities and \$125 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

25. This project will adopt various forms of energy efficient features and renewable energy technologies, including solar hot water system for pre-heating of incoming cold water; and wind turbine system for reducing electricity demand.

26. For green features, this project will provide green roof, vertical greening and other greening provisions at different levels.

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27. For recycled features, this project will adopt rainwater recycling system, grey water recycling system and kitchen waste management system.

28. The total estimated additional cost for adoption of the above features is around \$8 million (including \$0.6 million for energy efficient features), which has been included in the cost estimate of the project. The energy efficiency features will achieve 5.4% energy savings in the annual energy consumption with a payback period of about 8.6 years.

HERITAGE IMPLICATIONS

29. This project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest 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.

32. We upgraded **55EF** to Category B in October 2011. CUHK engaged consultants in June 2012 to carry out site investigation and to prepare preliminary design, detailed design and tender documents at a total estimated fee of about \$12.9 million. We charged about \$9.7 million (i.e. 75%) of the \$12.9 million to block allocation **Subhead 8100EX** "Alterations, additions, repairs and improvements to the campuses of the UGC-funded institutions". The remaining amount of some \$3.2 million was funded by the private sources of funding of CUHK. Site investigation, preliminary design and detailed design of the project have been completed. The consultants are finalising the tender documents.

33. The project will involve the removal of 22 trees and transplanting of four trees. All trees to be removed are not important trees⁶. CUHK will incorporate a planting proposal, which will include a compensatory planting of 56 trees as part of the project.

34. We estimate that the proposed works will create about 370 jobs (330 for labourers and another 40 for professional/technical staff) providing a total employment of 5 850 man-months.

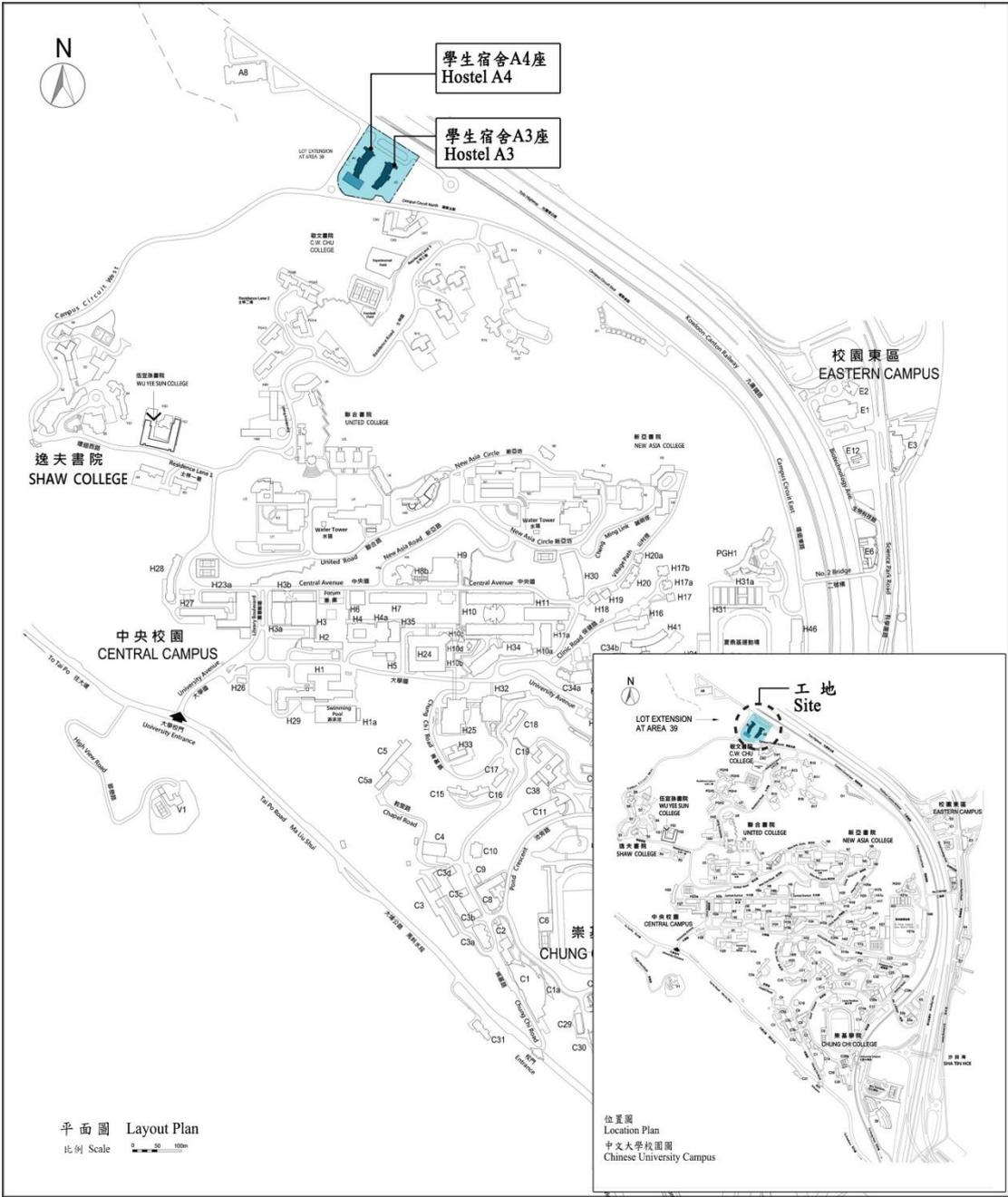
Education Bureau
June 2015

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 metres (m) (measured at 1.3 m above ground level) or with height/canopy spread equal or exceeding 25 m.

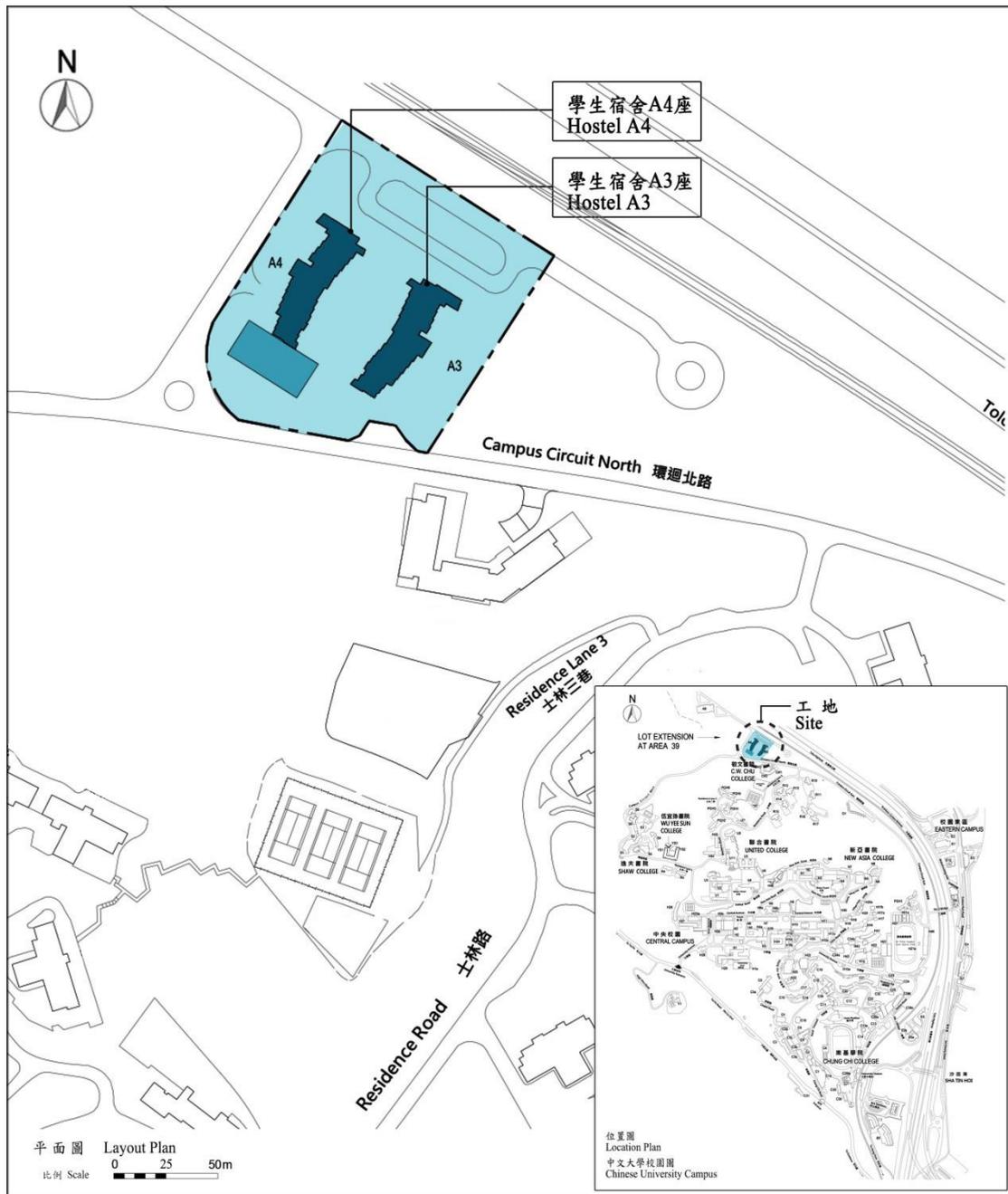
The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)
香港中文大學 - 校園北陲學生宿舍(A3及A4座)

Site plan 工地平面圖



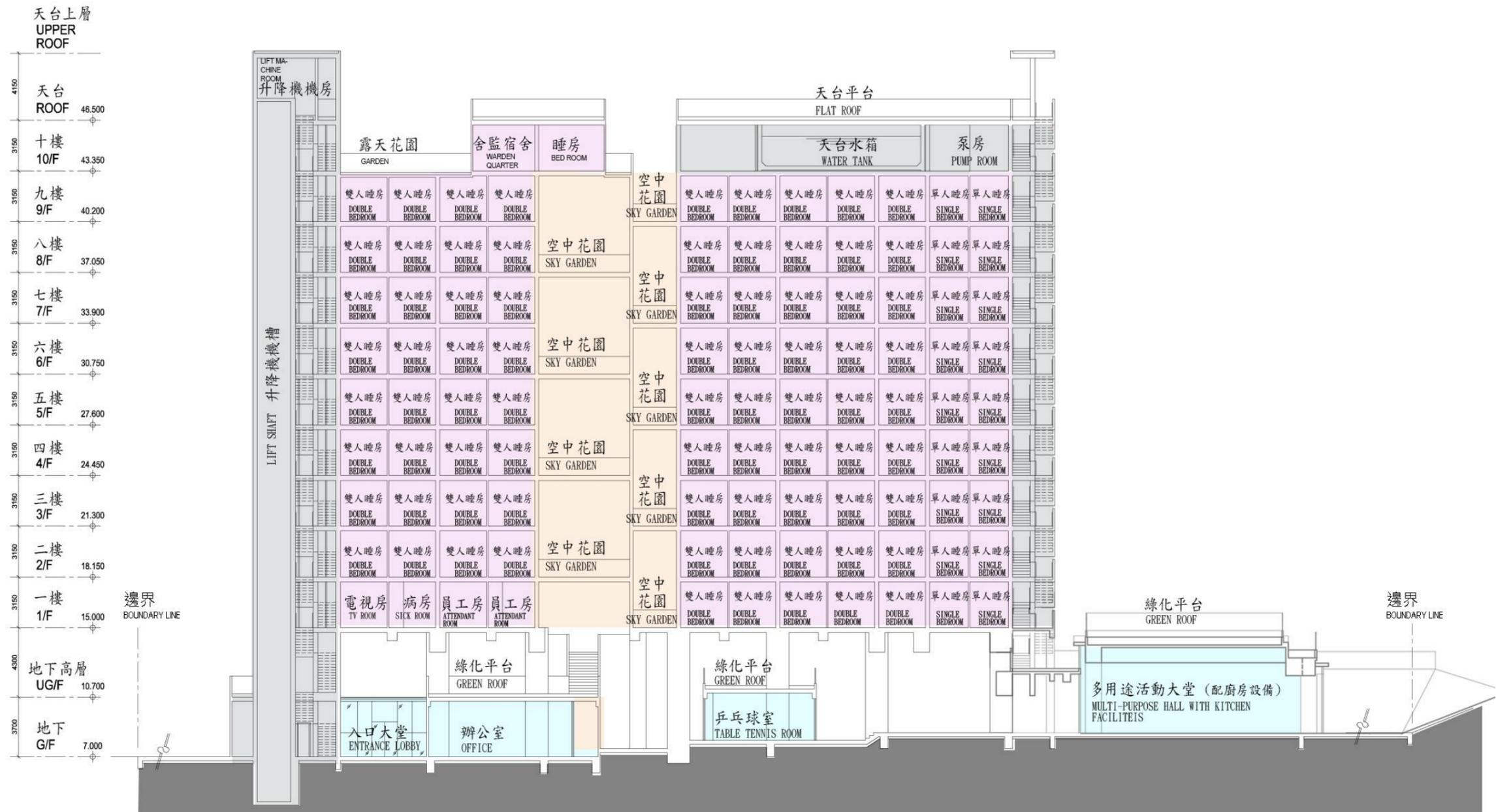
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Site plan 工地平面圖



The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)
香港中文大學 - 校園北陲學生宿舍(A3及A4座)

Sectional Plan 截面圖
Student Hostel A4 學生宿舍A4



The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)
香港中文大學 - 校園北陲學生宿舍(A3及A4座)

Sectional Plan 截面圖
Student Hostels A3 and A4 學生宿舍A3及A4



The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)
香港中文大學 - 校園北陲學生宿舍(A3及A4座)



從東北面望向學生宿舍的構思圖

View of student hostels from northeast (artist's impression)



從南面望向學生宿舍的構思圖

View of student hostels from south (artist's impression)

**The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)
香港中文大學 - 校園北陲學生宿舍(A3及A4座)**

Greening Provisions 綠化設施



Greenery Area 綠化地方

The project will provide 2 050 m² greenery area in approximate 20% of site area.

這項工程計劃會提供2 050平方米的綠化地方，佔工地面積約20%。

Green Roof 綠化天台

Green roof will be provided to the roof of two student hostel blocks and multi-purpose hall to enhance the greenery and amenity space for students and to improve the thermal insulation performance for energy saving.

兩幢學生宿舍和多用途大堂的天台會進行綠化，為學生增加綠化及休憩空間，以及改善隔熱效能，以節省能源。

Sky Garden and Vertical Greening 空中花園及垂直綠化

Sky garden with vertical greening at alternate levels will enhance natural lighting and ventilation and provide greenery space to students.

隔層設置進行垂直綠化的空中花園，以增加天然光線、改善通風，以及為學生增加綠化空間。

Enclosure 4 to PWSC(2015-16)39

**The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)**

List of facilities

	<u>Total</u>	<u>Block A3</u>	<u>Block A4</u>
	No. of unit / estimated floor area in net operational floor area (NOFA) (m ²)	No. of unit / estimated floor area in NOFA (m ²)	No. of unit / estimated floor area in NOFA (m ²)
(A) Living accommodation			
1. Student single bedroom	56 / 448	28 / 224	28 / 224
2. Student double bedroom	302 / 4 530	151 / 2265	151 / 2265
3. Student single bedroom with barrier-free access facilities	16 / 142	8 / 71	8 / 71
4. Warden quarters	2 / 280	1 / 140	1 / 140
5. Tutor room	12 / 190	6 / 95	6 / 95
6. Attendant dormitory	2 / 30	1 / 15	1 / 15
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Sub-total	390 / 5 620	195 / 2 810	195 / 2 810
(B) Common facilities			
1. Common room and pantry	20 / 540	10 / 270	10 / 270
2. Music/karaoke/TV room	5 / 110	4 / 90	1 / 20
3. Study/reading room	3 / 82	1 / 32	2 / 50
4. Committee room	2 / 50	1 / 25	1 / 25
5. Activities room (dancing, table tennis, snooker)	4 / 250	2 / 105	2 / 145
6. Multi-purpose hall with kitchen	1 / 545	—	1 / 545
7. Computer room	1 / 35	—	1 / 35
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Sub-total	36 / 1 612	18 / 522	18 / 1 090
(C) Support			
1. Store	22 / 90	11 / 45	11 / 45
2. Laundry / ironing / drying	2 / 70	1 / 35	1 / 35
3. Attendant's room	2 / 30	1 / 15	1 / 15
4. Sick room	2 / 30	1 / 15	1 / 15
5. Staff rest room	2 / 30	1 / 15	1 / 15
6. Management office	1 / 113	—	1 / 113
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Sub-total	31 / 363	15 / 125	16 / 238
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Total	457 / 7 595	228 / 3 457	229 / 4 138

The Chinese University of Hong Kong
55EF – Student hostels on northern campus (Blocks A3 and A4)

**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2014 prices)**

			Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fees (\$ million)
(a)	Consultant's fees for contract	Professional	–	–	–	10.8
	administration (Note 2)	Technical	–	–	–	–
					Sub-total	10.8
(b)	Resident site staff (RSS) costs (Note 3)	Professional	–	–	–	–
		Technical	215	14	1.6	8.4
					Sub-total	8.4
Comprising –						
(i)	Consultant's fees for management of RSS					0.4
(ii)	Remuneration of RSS					8.0
					Total	19.2

* MPS = Master Pay Scale

Notes

1. 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 salary point 14 = \$24,380 per month).
2. The consultants' fees are calculated in accordance with the existing consultancy agreements for the design and construction of **55EF**. The construction phase of the assignment will only be executed subject to FC's approval to upgrade **55EF** to Category A.
3. The actual man-months and fees will only be known after completion of the construction works.