

**ITEM FOR PUBLIC WORKS SUBCOMMITTEE  
OF FINANCE COMMITTEE**

**HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND  
EQUIPMENT**

**Medical Subventions**

**3MQ – Refurbishment of Hong Kong Buddhist Hospital**

Members are invited to recommend to the Finance Committee the upgrading of **3MQ** to Category A at an estimated cost of \$563.3 million in money-of-the-day prices for the refurbishment of Hong Kong Buddhist Hospital.

**PROBLEM**

The existing service capacity of Hong Kong Buddhist Hospital (HKBH) cannot meet the projected demand for longer-term care and the physical conditions of the hospital have deteriorated with perennial problems.

**PROPOSAL**

2. The Secretary for Food and Health proposes to upgrade **3MQ** to Category A at an estimated cost of \$563.3 million in money-of-the-day (MOD) prices for refurbishing HKBH.

**/PROJECT .....**

**PROJECT SCOPE AND NATURE**

3. The scope of **3MQ** comprises –
- (a) refurbishment of 11 existing inpatient wards and associated facilities and building services installations in Blocks A and B;
  - (b) conversion of 6/F of Blocks A and B into new inpatient wards to accommodate 130 additional beds and refurbishment of Block D for reprovisioning of staff accommodation including call rooms and overnight rooms, etc.;
  - (c) conversion of two floors of Block C for day rehabilitation, geriatric day services and pilot integrative medicine in palliative care;
  - (d) construction of a covered link bridge between Blocks B and C;
  - (e) refurbishment of the departments, offices and ancillary facilities in Block B to meet current standards;
  - (f) installation of fire services sprinkler system for Blocks A, B and D and modification of sprinklers in Block C; and
  - (g) provision of a new lift tower with two additional bed-passenger lifts adjacent to Block B.
4. The site plan showing the location of refurbishment works at HKBH is at Enclosure 1. The floor plans and sectional drawings of the refurbished HKBH are at Enclosures 2 to 7.
5. Subject to funding approval of the Finance Committee (FC), we plan to commence the refurbishment works in mid-2015 for completion in the third quarter of 2019. The refurbishment works will be carried out in phases. HKBH will remain functional at all times and any disruption of services, if unavoidable, will be kept to a minimum.

**/JUSTIFICATION.....**

## JUSTIFICATION

6. HKBH is a community hospital in the Kowloon Central Cluster (KCC) of the Hospital Authority (HA). It provides inpatient services covering medicine, orthopaedic joint replacement, palliative care (hospice) and general convalescence. The hospital currently has 324 beds comprising 30 acute beds and 294 convalescent/rehabilitation beds. It also delivers both general and specialist outpatient services which comprise ear-nose-throat, gynaecology, medicine, palliative care, as well as a day rehabilitation centre. Furthermore, it provides allied health and supporting services including physiotherapy, occupational therapy, diagnostic radiology and pharmacy.

7. Built in 1970, the HKBH has four blocks. Blocks A and B accommodate all clinical facilities including 11 inpatient wards while Blocks C and D are currently used as Chinese Medicine Clinic and staff facilities (including call rooms, overnight rooms and recreation room) and stores.

### **Enhance service capacity in HKBH**

8. In 2013-14, the number of patient days at HKBH was around 83 000, of which around 79% were accounted for by patients residing in Wong Tai Sin and Kowloon City districts. The average occupancy rate of inpatient beds at HKBH in 2013-14 was 83.2%, which was about the same as the overall average occupancy rate of HA. According to the latest population projection by the Planning Department, the population aged 65 or above of the two districts will surge from 141 400 in 2013 to 198 500 in 2023, representing an increase of around 40% while their overall population will increase by about 8% from 811 600 in 2013 to 879 100 in 2023. In the long-run, inpatient convalescent and rehabilitation service at HKBH is expected to be insufficient due to the ageing population which is also characterised by growing prevalence of chronic diseases.

9. To cope with increasing healthcare demand, we propose to strengthen longer-term care and rehabilitation services for elderly patients suffering from chronic diseases by providing 130 additional inpatient beds for convalescence and rehabilitation, i.e. providing a total of 454 beds in HKBH (including 30 acute beds and 424 convalescent/rehabilitation beds) by converting 6/F of Blocks A and B now used for staff facilities into inpatient wards. HA will work out the additional manpower requirement for the expanded services at a later stage.

10. On the other hand, HA is reviewing the overall demand for and supply of healthcare services in Kowloon, as well as developing a clinical services plan for the KCC. The key aspects of the clinical services plan include formulating proposals for the healthcare services to be provided by a new acute general hospital in Kai Tak under planning and mapping out the future service directions of the hospitals in the KCC, with the refurbished HKBH continue to provide convalescent and rehabilitation support in the KCC. During the planning process, the needs of local residents will be considered. The roles and service co-ordination of hospitals in the cluster and nearby areas will also be worked out according to the demand projection.

### **Improve building conditions**

11. Apart from expanding inpatient service capacity at HKBH, a comprehensive refurbishment of the hospital is needed. Over the years, the physical conditions of Blocks A and B of HKBH have deteriorated with perennial problems of spalling concrete, water leakage and electrical malfunctioning. While routine maintenance and ad-hoc repair works have been carried out at HKBH in the past, there has been no major refurbishment or renovation since the commissioning of the hospital. Many of its building services installations are either outdated or inadequate to meet the present day requirements for healthcare services. In particular, fire services installation in the hospital is not in line with current standards. Taking the opportunity of the refurbishment project, the design of inpatient wards and the associated facilities will be geared towards creating a pleasant and comfortable environment for patients and carers, such as adopting a warm colour tone, as well as open space design to enable staff connection with patients and carers.

### **Enhance connectivity**

12. To enhance the operational efficiency of Block C which will be the key area providing day-care services upon refurbishment, we propose to construct a link bridge between Blocks B and C. With the completion of the link bridge, patients of the inpatient wards in Blocks A and B, especially the frail and the disabled, will be able to go to Block C direct through the proposed link bridge to receive allied health services. The link bridge will also facilitate clinical and operational support between the blocks and enhance the work efficiency for staff commuting between the three blocks. Separately, the existing bed-passenger lift in Block A serves only up to 5/F. With the proposed additional inpatient beds located on 6/F, the project will extend bed-passenger lift services to 6/F of Block B.

**/FINANCIAL .....**

## FINANCIAL IMPLICATIONS

13. HA, in consultation with the Director of Architectural Services, estimates the cost of the proposed refurbishment works to be \$573.3 million in MOD prices (please see paragraph 16 below), of which \$563.3 million will be funded by the Government (please see paragraph 15 below), broken down as follows –

	<b>\$ million</b>
(a) Site works and demolition	16.3
(b) Piling/foundation works	7.2
(c) Building works <sup>1</sup>	103.2
(d) Building services works <sup>2</sup>	190.4
(e) Drainage works	3.1
(f) External works	9.1
(g) Link bridge	11.8
(h) Additional energy conservation, green and recycled features	4.8
(i) Furniture and equipment (F&E) <sup>3</sup>	34.0
(j) Consultants' fees for	11.5
(i) contract administration	10.7
(ii) management of resident site staff	0.8
	/(k) .....

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<sup>1</sup> Building works comprise conversion works, repairs to spalling concrete, re-painting of walls, replacement of floor and ceiling tiles of the building, etc.

<sup>2</sup> Building services works comprise electrical installations, ventilation and air-conditioning, fire services installation and lifts, etc.

<sup>3</sup> Based on an indicative list of F&E items at Enclosure 9 and their estimated prices.

		<b>\$ million</b>
(k)	Remuneration of resident site staff	13.8
(l)	Contingencies	34.6
	Sub-total	439.8 (in September 2014 prices)
(m)	Provision for price adjustment	133.5
	Total	573.3 (in MOD prices)

14. Due to insufficient in-house resources, HA will engage consultants to undertake contract administration and construction supervision for the refurbishment works. A detailed breakdown of the estimate for consultants' fees and resident site staff costs by man-months is at Enclosure 8. The construction floor area (CFA) of this project is about 23 000 square metres (m<sup>2</sup>). The estimated unit cost for refurbishment, represented by the building and the building services costs, is \$12,765 per m<sup>2</sup> of CFA in September 2014 prices. We consider this unit cost reasonable as compared with that of similar hospital projects.

15. The Hong Kong Buddhist Association, the parent body of the HKBH, has undertaken to contribute \$10 million in MOD prices towards the capital cost of the project. The Government will fund the remaining commitment of \$563.3 million in MOD prices for this project, calculated as follows –

		<b>\$ million</b>
(a)	Total capital cost	573.3
(b)	Contribution from the Hong Kong Buddhist Association	(10.0)
	Total commitment sought	563.3 (in MOD prices)

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16. Subject to funding approval, HA will phase the expenditure as follows –

Year	\$ million (Sept 2014)		Price adjustment factor	\$ million (MOD)	
	Funded under 3MQ	Total construction cost		Funded under 3MQ	Total construction cost
2015 – 16	0.6	10.0	1.05725	0.6	10.6
2016 – 17	15.0	15.0	1.12069	16.8	16.8
2017 – 18	40.0	40.0	1.18793	47.5	47.5
2018 – 19	110.0	110.0	1.25920	138.5	138.5
2019 – 20	187.0	187.0	1.33475	249.6	249.6
2020 – 21	63.0	63.0	1.40483	88.5	88.5
2021 – 22	14.8	14.8	1.47507	21.8	21.8
	<u>430.4</u>	<u>439.8</u>		<u>563.3</u>	<u>573.3</u>

17. HA has 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 from 2015 to 2022. HA will award the contract on a lump-sum basis because the scope of the works can be clearly defined in advance. The contract will provide for price adjustment.

18. HA has assessed the requirements for F&E for this project, and estimates the F&E costs to be \$34 million. The proposed F&E provision represents 11.1% of the total construction cost of the project<sup>4</sup>. An indicative list of major F&E items (costing \$1 million or above per item) to be procured for the project is at Enclosure 9.

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<sup>4</sup> Represented by building, building services, drainage and external works costs.

19. We estimate the additional annual recurrent expenditure arising from this project to be \$188.6 million.

## **PUBLIC CONSULTATION**

20. We consulted the Community Building & Social Services Committee (CB&SSC) of the Wong Tai Sin District Council on the proposed project on 11 March 2014. Members of the CB&SSC supported the proposed project.

21. We consulted the Legislative Council Panel on Health Services on 19 May 2014. Members of the Panel supported the project. They also requested that further information on the project be provided in this paper, including bed types to be provided and service capacity of the refurbished HKBH; how the design of the refurbished HKBH could create a pleasant and comfortable environment for patients; manpower arrangement for the refurbished HKBH, and service co-ordination among the redeveloped or refurbished hospitals and newly developed hospitals in the KCC. The information is provided in paragraphs 8 to 11 above.

## **ENVIRONMENTAL IMPLICATIONS**

22. This is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). It belongs to one of the categories listed in Environment, Transport and Works Bureau Technical Circular (Works) No. 13/2003 that have very little potential for giving rise to adverse environmental impacts. We undertake to implement the standard pollution control measures during construction, as promulgated by the Director of Environmental Protection.

23. The proposed refurbishment works will only generate very little construction waste. HA will require the consultant to fully consider measures to minimise the generation of construction waste and to reuse/recycle construction waste as much as possible in the implementation of the refurbishment project.

24. At the planning and design stages, HA has considered measures to reduce the generation of construction waste where possible (e.g. using metal site hoardings and signboards so that these materials can be recycled or reused in other projects). In addition, we will require the contractor to reuse inert construction waste (e.g. use of excavated materials for filling within the site) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of

/inert .....



inert construction waste at public fill reception facilities<sup>5</sup>. HA will encourage the contractor to maximise the use of recycled/recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

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

26. HA estimates that the project will generate in total about 4 500 tonnes of construction waste. Of these, HA will reuse about 843 tonnes (19%) of inert construction waste on site and deliver 2 982 tonnes (66%) of inert construction waste to public fill reception facilities for subsequent reuse. HA will dispose of the remaining 675 tonnes (15%) 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 \$164,889 for this project (based on a unit charge rate of \$27 per tonne for disposal at public fill reception 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**

27. This project will adopt various forms of energy efficient features, in particular –

- (a) automatic demand control of chilled water circulation system;
- (b) demand control of fresh air supply with carbon dioxide sensors; and
- (c) automatic demand control of supply air.

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<sup>5</sup> 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.

28. The total estimated additional cost for adoption of the above features is around \$4.8 million, which has been included in the cost estimate of this project. The energy efficient features will achieve 7.7% energy savings in the annual energy consumption with a payback period of about 5.3 years.

### 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 interest and Government historic sites identified by the Antiquities and Monuments Office.

### LAND ACQUISITION

30. This project does not require any land acquisition.

### BACKGROUND INFORMATION

31. We upgraded **3MQ** to Category B in September 2012.

32. HA engaged consultants to carry out ground investigation works as well as topographical, tree, utility and asbestos surveys. HA also appointed an architectural consultant and a quantity surveying consultant to prepare tender document. The total cost of the above-mentioned services is about \$14.0 million. HA has charged this amount to **Subhead 8083MM** "One-off grant to the Hospital Authority for minor works projects". The above consultancy services have been completed.

33. The proposed refurbishment works will not involve any tree removal or planting proposals.

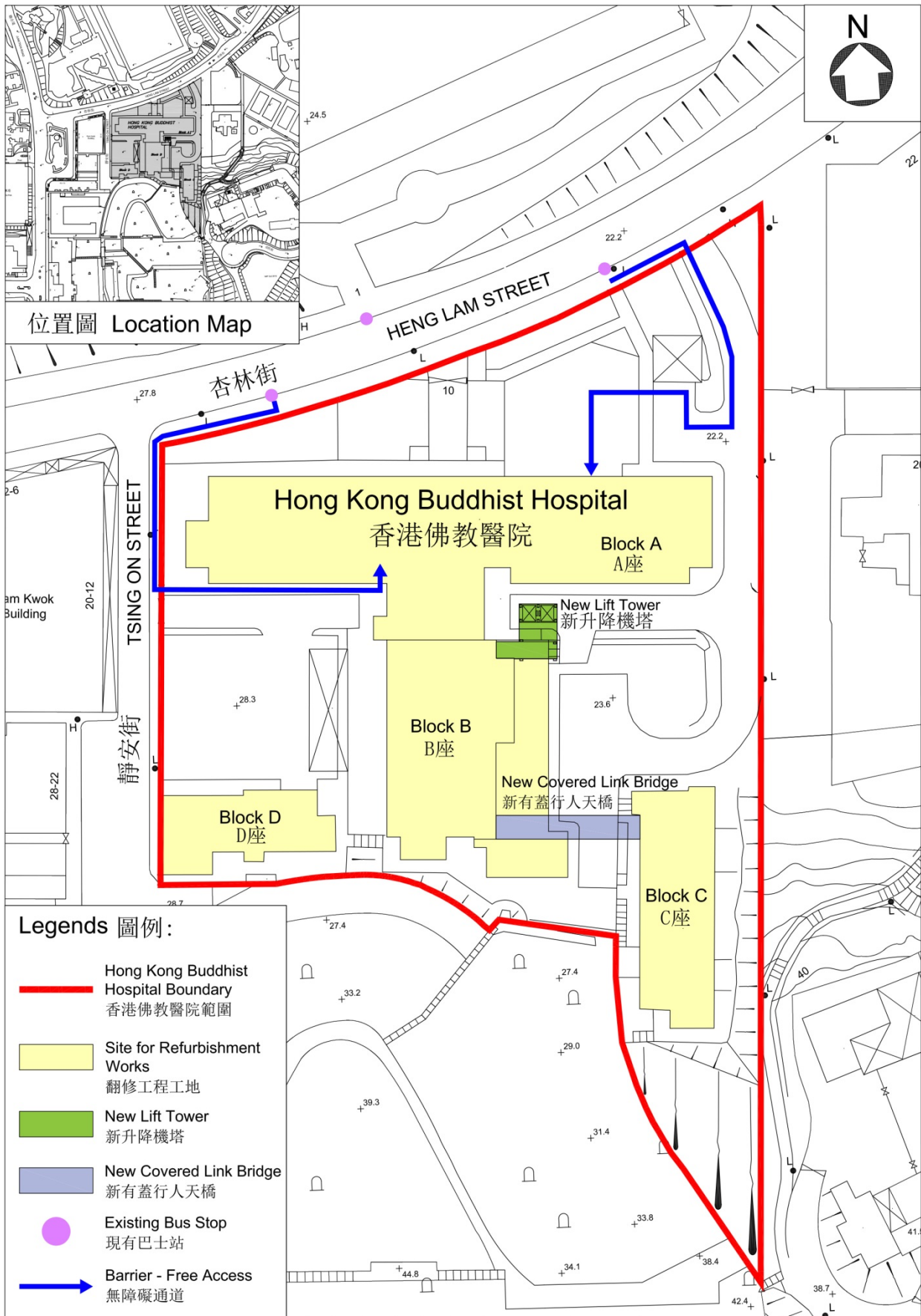
34. We estimate that the proposed refurbishment works will create about 132 jobs (117 for labourers and another 15 for professional/technical staff) providing a total employment of 5 600 man-months.

/35. ....

35. This paper supersedes PWSC(2014-15)25 which was not discussed by the PWSC during the 2013-14 legislative session. Following the expiry of the tender validity period, the original tender for the proposed refurbishment works lapsed in August 2014. Re-tendering of the project has been carried out. The programme, phasing of expenditure and estimated cost of the project have been updated.

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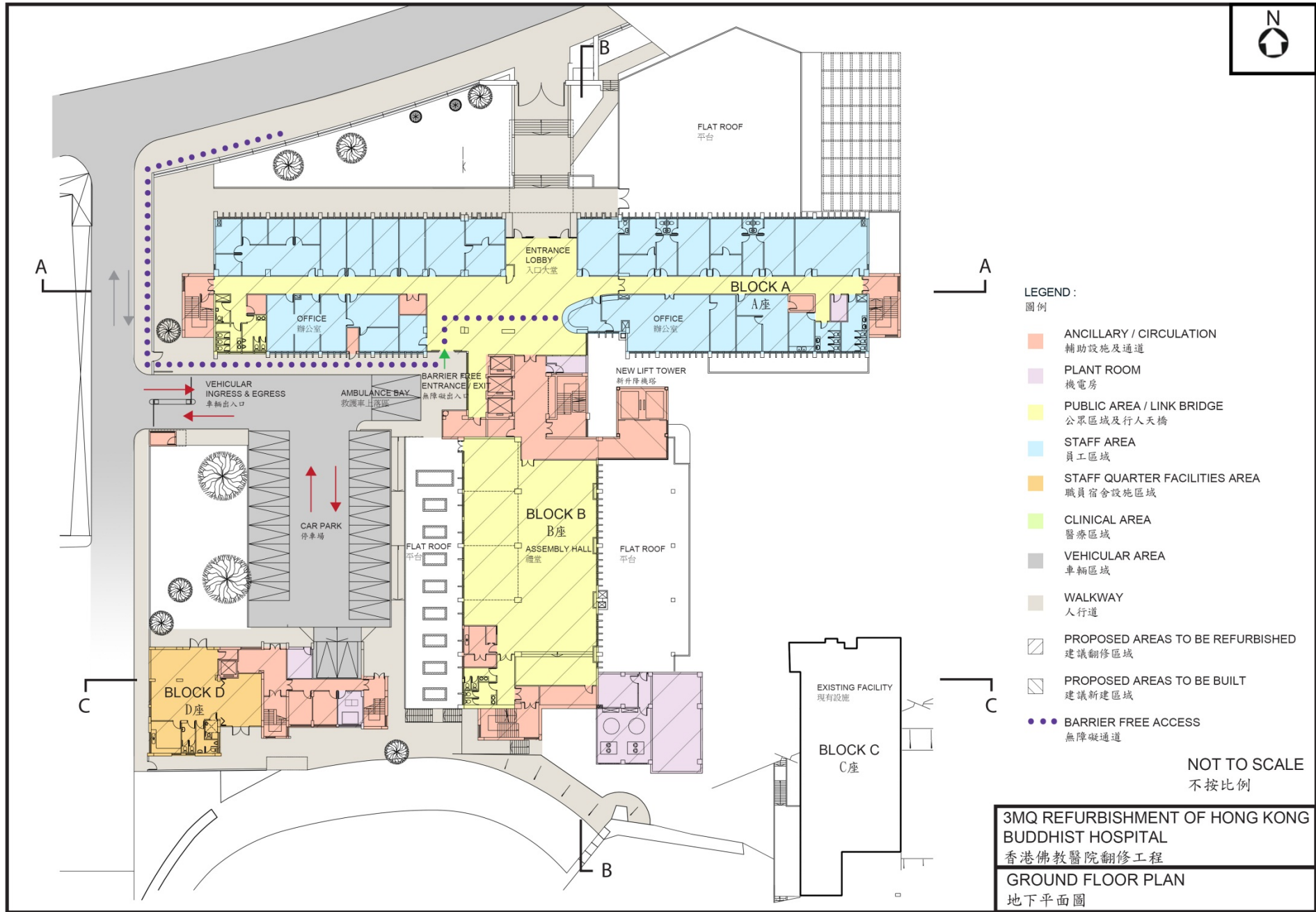
Food and Health Bureau  
March 2015



8003MQ – Refurbishment of Hong Kong Buddhist Hospital 香港佛教醫院翻修工程

Site Location Plan (Not to Scale)

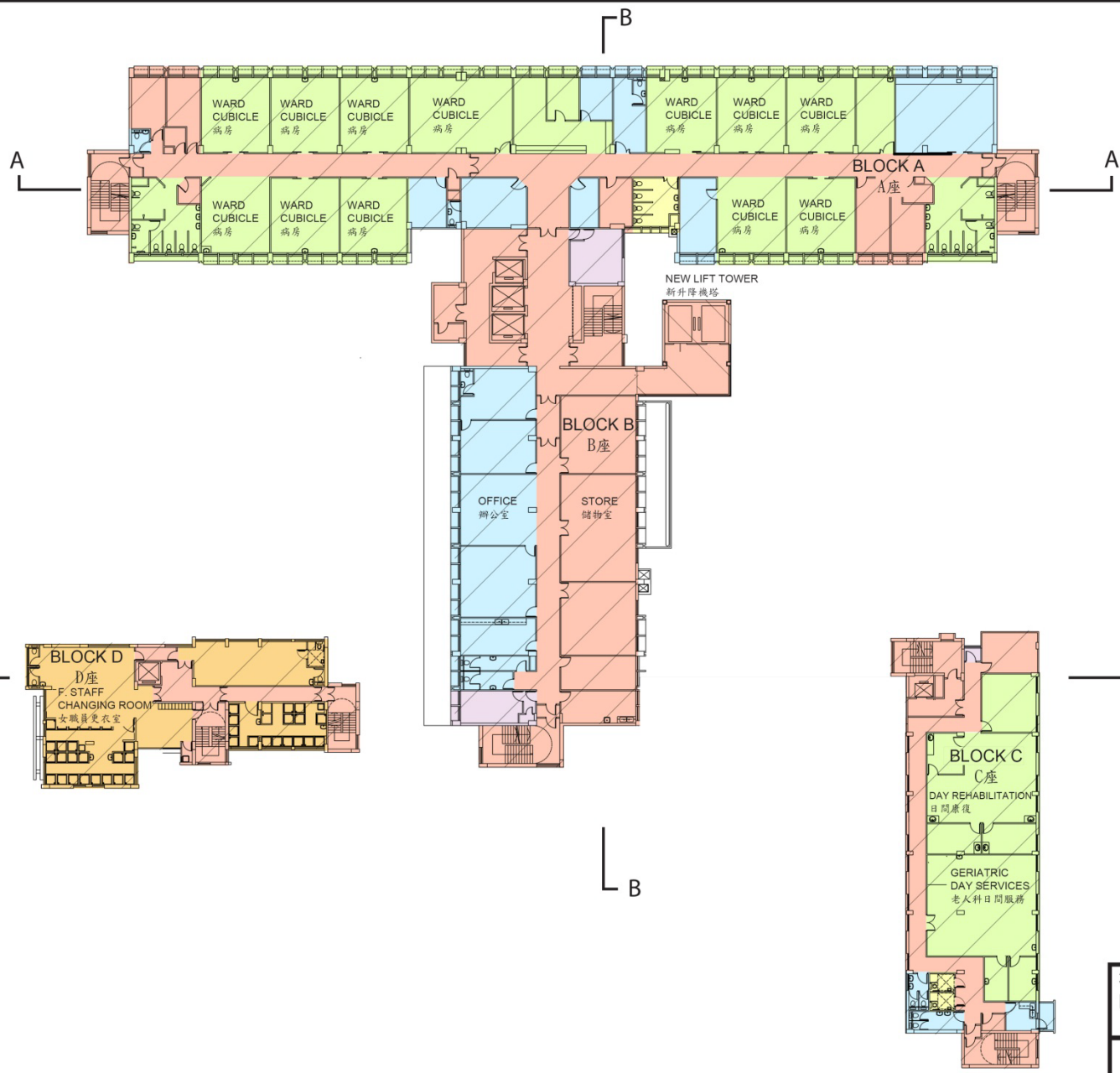
工地平面圖 (不按比例)



- LEGEND:  
圖例
- ANCILLARY / CIRCULATION  
輔助設施及通道
  - PLANT ROOM  
機電房
  - PUBLIC AREA / LINK BRIDGE  
公眾區域及行人天橋
  - STAFF AREA  
員工區域
  - STAFF QUARTER FACILITIES AREA  
職員宿舍設施區域
  - CLINICAL AREA  
醫療區域
  - VEHICULAR AREA  
車輛區域
  - WALKWAY  
人行道
  - PROPOSED AREAS TO BE REFURBISHED  
建議翻修區域
  - PROPOSED AREAS TO BE BUILT  
建議新建區域
  - BARRIER FREE ACCESS  
無障礙通道

NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
GROUND FLOOR PLAN  
地下平面圖



- LEGEND:  
圖例
- ANCILLARY / CIRCULATION  
輔助設施及通道
  - PLANT ROOM  
機電房
  - PUBLIC AREA / LINK BRIDGE  
公眾區域及行人天橋
  - STAFF AREA  
員工區域
  - STAFF QUARTER FACILITIES AREA  
職員宿舍設施區域
  - CLINICAL AREA  
醫療區域
  - PROPOSED AREAS TO BE REFURBISHED  
建議翻修區域
  - PROPOSED AREAS TO BE BUILT  
建議新建區域

NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
2nd FLOOR PLAN  
二樓平面圖





LEGEND :  
圖例

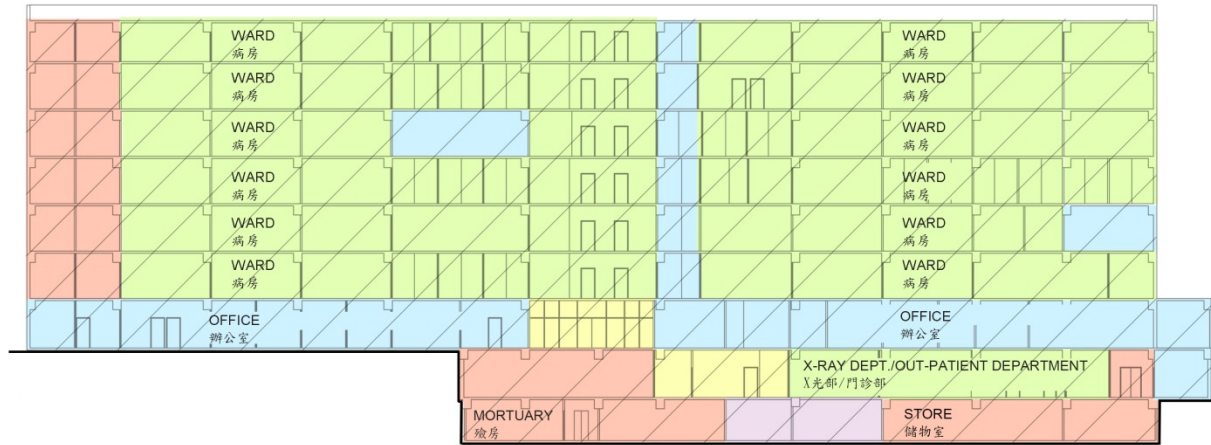
- ANCILLARY / CIRCULATION  
輔助設施及通道
- PLANT ROOM  
機電房
- PUBLIC AREA / LINK BRIDGE  
公眾區域及行人天橋
- STAFF AREA  
員工區域
- STAFF QUARTER FACILITIES AREA  
職員宿舍設施區域
- CLINICAL AREA  
醫療區域
- PROPOSED AREAS TO BE REFURBISHED  
建議翻修區域
- PROPOSED AREAS TO BE BUILT  
建議新建區域

NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
6th FLOOR PLAN  
六樓平面圖



R/F  
屋頂  
6/F  
六樓  
5/F  
五樓  
4/F  
四樓  
3/F  
三樓  
2/F  
二樓  
1/F  
一樓  
G/F  
地下  
LG/F  
地下底層  
B/F  
地下層



LEGEND :  
圖例

- ANCILLARY / CIRCULATION  
輔助設施及通道
- PLANT ROOM  
機電房
- PUBLIC AREA / LINK BRIDGE  
公眾區域及行人天橋
- STAFF AREA  
員工區域
- CLINICAL AREA  
醫療區域
- PROPOSED AREAS TO BE REFURBISHED  
建議翻修區域

BLOCK A  
A座

SECTION A-A  
剖面圖 A-A

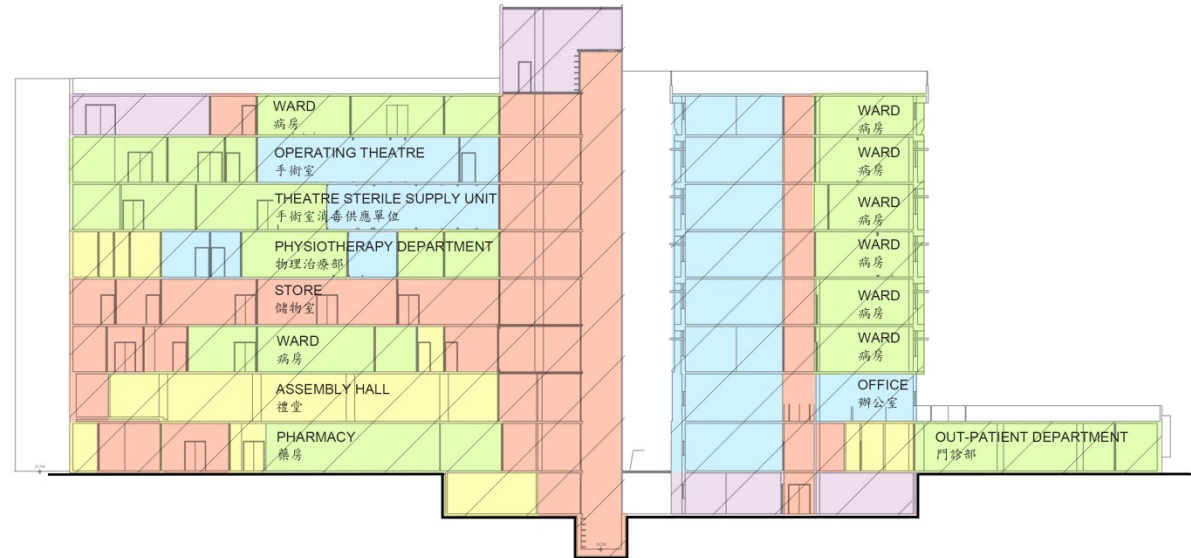
NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
SECTION A-A  
剖面圖 A-A





R/F  
屋頂  
6/F  
六樓  
5/F  
五樓  
4/F  
四樓  
3/F  
三樓  
2/F  
二樓  
1/F  
一樓  
G/F  
地下  
LG/F  
地下底層  
B/F  
地下層



**BLOCK B**  
B座

**BLOCK A**  
A座

SECTION B-B  
剖面圖 B-B

LEGEND :  
圖例

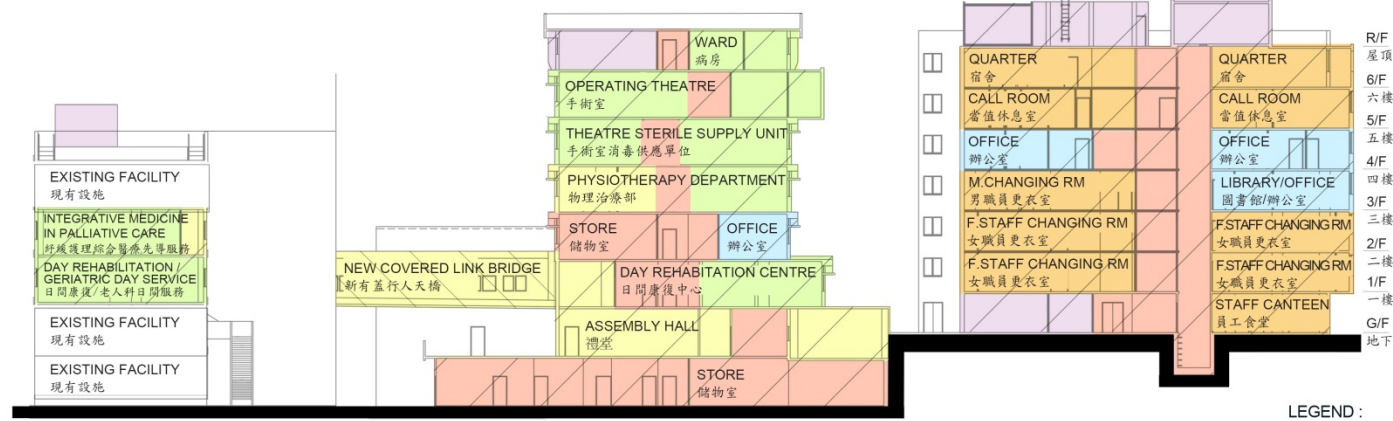
- ANCILLARY / CIRCULATION  
輔助設施及通道
- PLANT ROOM  
機電房
- PUBLIC AREA / LINK BRIDGE  
公眾區域及行人天橋
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- CLINICAL AREA  
醫療區域
- PROPOSED AREAS TO BE REFURBISHED  
建議翻修區域

NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
SECTION B-B  
剖面圖 B-B



R/F 屋頂  
3/F 三樓  
2/F 二樓  
1/F 一樓  
G/F 地下  
LG/F 地下底層



BLOCK C  
C座

BLOCK B  
B座

BLOCK D  
D座

SECTION C-C  
剖面圖 C-C

R/F 屋頂  
6/F 六樓  
5/F 五樓  
4/F 四樓  
3/F 三樓  
2/F 二樓  
1/F 一樓  
G/F 地下

- LEGEND:  
圖例
- ANCILLARY / CIRCULATION  
輔助設施及通道
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職員宿舍設施區域
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建議翻修區域
  - PROPOSED AREAS TO BE BUILT  
建議新建區域

NOT TO SCALE  
不按比例

3MQ REFURBISHMENT OF HONG KONG  
BUDDHIST HOSPITAL  
香港佛教醫院翻修工程  
SECTION C-C  
剖面圖 C-C

3MQ – Refurbishment of Hong Kong Buddhist Hospital

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

		Estimated man- months	Average MPS <sup>*</sup> salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants' fees for contract administration	Professional	62	38	2.0	8.9
	Technical	36	14	2.0	1.8
				Sub-total	10.7
(b) Resident site staff costs (Note 2)	Technical	374	14	1.6	14.6
				Sub-total	14.6
Comprising –					
(i) Consultants' fees for management of resident site staff				0.8	
(ii) Remuneration of resident site staff				13.8	
				<b>Total</b>	<b>25.3</b>

\* MPS = Master Pay Scale

**Notes**

1. A multiplier of 2.0 is applied to the average MPS salary point to estimate the full staff cost including the consultants' overheads and profit for staff employed in the consultants' offices. 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 38 = \$71,385 per month and MPS salary point 14 = \$24,380 per month.)
2. The actual man-months and actual fees will only be known after completion of the refurbishment works.

**3MQ – Refurbishment of Hong Kong Buddhist Hospital**

**Indicative list of furniture and equipment items  
with unit cost of \$1 million or above**

<b>Item description</b>	<b>Quantity</b>	<b>Unit cost (\$ million)</b>	<b>Total cost (\$ million)</b>
Anaesthetic Information System/ Anaesthetic Workstation/ Anaesthetic Machine	1	3.200	3.200
Arthroscopic System	1	1.000	1.000
Automatic Endoscopic Re-processor	1	1.000	1.000
Cart Washer	1	2.350	2.350
Low Temperature Steriliser	1	1.500	1.500
Ultrasound Unit	1	1.500	1.500
X-ray Image Intensifier	1	1.200	1.200
Private Automatic Branch Exchange (PABX) System	1	1.500	1.500
Out-patient Department Queuing System	1	2.000	2.000
Access Card System	1	1.560	1.560