

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Health – Hospitals

81MM – Redevelopment of Kwai Chung Hospital

Members are invited to recommend to the Finance Committee –

- (a) the upgrading of part of **81MM**, entitled “Redevelopment of Kwai Chung Hospital, phase 1”, to Category A at an estimated cost of \$750.8 million in money-of-the-day prices; and
- (b) the retention of the remainder of **81MM** in Category B.

PROBLEM

The existing facilities of Kwai Chung Hospital (KCH) need to be redeveloped in order to meet prevailing standard, enhance service provision as well as achieve cost efficiency.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Food and Health, proposes to upgrade part of **81MM** to Category (Cat) A at an estimated cost of \$750.8 million in money-of-the-day (MOD) prices for the redevelopment of KCH, phase 1.

/PROJECT.....

PROJECT SCOPE AND NATURE

3. The part of **81MM** which we propose to upgrade to Cat A (i.e. phase 1 of redevelopment of KCH) comprises -

- (a) construction of a decantation building at the existing car park area of Princess Margaret Hospital (PMH); and
- (b) renovation works at Blocks L/M and J of KCH, as well as Block N and the Nursing School and Quarters of PMH and associated works for decanting purposes.

4. Site and location plans, layout plans, a sectional plan and artist's impression of the proposed decantation building are at **Enclosures 1 to 9**.

5. Subject to funding approval of the Finance Committee (FC), we plan to commence the construction works in mid-2016 for completion in mid-2018. To meet the programme, the Architectural Services Department and the Hospital Authority (HA) have invited tender in March 2015 and November 2015 for the construction of decantation building (paragraph 3(a)) and the renovation works (paragraph 3(b)) respectively. The contracts will only be awarded upon obtaining FC's funding approval.

6. We will retain the remainder of **81MM** in Cat B, which involves the redevelopment, comprising demolition of all but Block J of KCH and the construction of a new hospital with inpatient wards and rehabilitation facilities for the delivery of a full range of psychiatric services. We will provide 1 000 beds at KCH upon the completion of the redevelopment project and an additional annual capacity of 254 500 psychiatric specialist outpatient clinic attendances at the KCH. Funding for the subsequent phase of works will be sought separately.

JUSTIFICATION

7. At present, HA organises its services for patients with mental illness based on seven geographical hospital clusters for the provision of inpatient, outpatient and community services. KCH is the psychiatric hospital located in the Kowloon West Cluster (KWC) providing psychiatric services mainly for Mongkok, Sham Shui Po, Wong Tai Sin, Kwai Tsing, Tsuen Wan and Lantau Island districts. There were 920 psychiatric beds in KCH, which accounts for about a quarter of the HA's total psychiatric bed capacity. In 2014-15, there were

/around.....

around 4 200 psychiatric inpatient and day inpatient discharges and deaths, and around 216 100 psychiatric specialist outpatient clinical attendances at the KCH, which account for 24% and 27% respectively of that for all HA hospitals.

8. The total population of KWC was 1 941 700 in 2014. According to Planning Department's projection, the same will reach 2 012 900 in 2024. The percentage of elderly population (aged 65 or above) is anticipated to increase from 16% in 2014 to 23% in 2024. The general population growth will increase psychiatric service need in the KWC. Specifically, the increase in elderly population will further increase service demand due to the prevalence of age-related psychiatric disorders such as dementia.

Outdated design and unsatisfactory building conditions

9. The KCH was established in 1981. After over three decades of heavy utilisation, the physical condition of the hospital is dilapidated and requires significant improvement. Besides, when the hospital was established, the principles and models of psychiatric care focussed heavily on institutional custody of the mentally-ill. The hospital was so designed primarily for adult patients.

10. The emphasis of psychiatric services of KCH has now shifted to early detection of the mentally-ill and provision of appropriate treatment and rehabilitation services in the community. The hospital has developed various psychiatric specialty services, including child and adolescent psychiatric services, psychogeriatric services, a substance abuse assessment unit, and a psychiatric unit for learning disabilities. Community-based psychiatric services including outreach services and telephone advisory programmes, consultation liaison psychiatry, as well as child and adolescent mental health support programmes have also become important components of KCH's service. The outdated design and unsatisfactory building conditions are however not conducive to the provision of these modern day's psychiatric services.

Proposed model of psychiatric services at KCH

11. KCH will continue to serve KWC upon redevelopment. Our vision is to provide high quality person-centred care based on effective treatment and recovery of individual patients at KCH. We will put in place an integrated patient-centred service model with a balance of in-patient service, ambulatory care, community outreach services and collaboration with partner organisations at the redeveloped KCH. Such integrated service will facilitate rehabilitation and community integration of patients, and allow early detection on mental illness.

/In-patient.....

In-patient care will remain an important service component upon redevelopment. We nonetheless expect that hospitalisation would be needed only for individuals with severe mental illness who require highly specialised acute inpatient environment and services for recovery and rehabilitation.

12. To achieve the above vision, a hybrid model consisting of the redeveloped KCH and four district-level community mental health centres serving Wong Tai Sin, Sham Shui Po and Mongkok, Kwai Tsing, and Tsuen Wan and Lantau Island is proposed. Under the model, the new KCH will form a hub to provide, support and co-ordinate a full range of psychiatric services in collaboration with allied health professionals and partner organisations. The community mental health centres under the new KCH will provide extensive mental health services at the district level and bring a range of clinics, clinical specialties, allied health professionals and multidisciplinary teams together in a flexible setting to meet the holistic needs of patients.

13. An ambulatory centre will be developed at the new KCH to accommodate clinical specialties and multi-disciplinary teams to provide a wide range of mental health services. It will also replicate the daily life setting with a view to helping patients to integrate into the community. The ambulatory centre will serve as a major link between the hospital and the patients, their families and carers, and the community.

14. Optimising the developmental potential of children and adolescents is another important objective of the new KCH. The redeveloped project will seek to provide a safe and quality environment for young people with mental disorders. The transformed KCH child and adolescent psychiatric services will be supported by age and developmentally appropriate inpatient, outpatient, ambulatory, and community space organised within a dedicated purpose-built facility.

15. To expedite project implementation and to achieve cost effectiveness, we plan to entrust the renovation works mentioned in paragraph 3(b) above to HA. The KCH and PMH will remain functional at all times during the works. We will provide 145 numbers of carparking spaces in the decantation block under this project.

FINANCIAL IMPLICATIONS

16. We estimate the capital cost of the project to be \$750.8 million in MOD prices, broken down as follows –

/ \$ million.....

	\$ million	
(a) Site works	8.9	
(b) Foundation	6.9	
(c) Building ¹	207.2	
(d) Building services	79.2	
(e) Drainage	3.9	
(f) External works	10.2	
(g) Additional energy conservation and green features	3.7	
(h) Furniture and equipment (F&E) ²	12.0	
(i) Consultants' fees	21.1	
(i) contract administration	18.8	
(ii) risk management	0.9	
(iii) management of resident site staff (RSS)	1.4	
(j) Remuneration of RSS	14.6	
(k) Renovation works to existing buildings and associated works	202.1	
(l) Investigations, services diversion and tree felling for the main works	12.8	
(m) Contingencies	58.2	
	Sub-total	640.8 (in September 2015 prices)
(n) Provision for price adjustment	110.0	
	Total	750.8 (in MOD prices)

/17.....

¹ Building works comprise construction of substructure and superstructure of the building.

² Based on an indicative list of F&E item at Enclosure 11 and its estimated price.

17. We propose to engage consultants to undertake contract administration, risk management and site supervision for the proposed works. A detailed breakdown of the estimate for consultants' fees and resident site staff costs by man-months is at **Enclosure 10**. The construction floor area (CFA) of the decantation building and the existing buildings for renovation is about 9 347 square metres (m²) and 19 000 m² respectively. The estimated construction unit cost, represented by the building and building services costs, is \$30,641 per m² and \$9,860 per m² of CFA for the decantation building and renovation works respectively in September 2015 prices. We consider the unit costs reasonable as compared with that of similar hospital projects.

18. Subject to approval, we will phase the expenditure of the project as follows –

Year	\$ million (Sept 2015)	Price adjustment factor	\$ million (MOD)
2016 – 17	80.0	1.05775	84.6
2017 – 18	230.0	1.12122	257.9
2018 – 19	200.0	1.18849	237.7
2019 – 20	80.0	1.25980	100.8
2020 – 21	30.0	1.33539	40.1
2021 – 22	15.0	1.40549	21.1
2022 – 23	5.8	1.47577	8.6
	640.8		750.8

19. We have derived the MOD estimates on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period 2016 to 2023. The decantation building will be delivered through a design-and-build contract. We intend to award the contract on a lump-sum basis because we can clearly define the scope of the works in advance. The contract will provide for price adjustments. Renovation works to existing buildings and services diversion will be carried out by HA.

20. HA has assessed the requirements for F&E for the project, and estimates the F&E costs to be \$12.0 million. The proposed F&E provision represents 4% of the total construction cost, represented by the building, building services, drainage and external works costs, of the project. Information on the only major F&E item (costing \$1 million or above per item) proposed to be procured for the project is at **Enclosure 11**.

21. The proposed works will not give rise to any additional recurrent expenditure.

PUBLIC CONSULTATION

22. We consulted the Kwai Tsing District Council (K&TDC) on 24 June 2014. Members of K&TDC supported the project and its proposed scope.

23. We consulted the Legislative Council Panel on Health Services on 21 July 2014. Members of the Panel supported the project.

ENVIRONMENTAL IMPLICATIONS

24. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have completed a Preliminary Environmental Review (PER) for the project in 2015. The PER concluded that the project would not cause long-term environmental impact. We have included in the project estimate the cost of the environmental mitigation measures.

25. During construction, we 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, and the building of barrier wall for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities.

26. At the planning and design stages, we have 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.....

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 construction waste at public fill reception facilities³. We will encourage the contractor to maximise the use of recycled and recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

27. At the construction stage, we 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. We will monitor the day-to-day operations on site for compliance with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will monitor the disposal of inert construction waste and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

28. We estimate that the project will generate in total 8 330 tonnes of construction waste. Of these, we will reuse 1 020 tonnes (12%) of inert construction waste on site and deliver about 5 780 tonnes (70%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 1 530 tonnes (18%) 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 \$347,000 for this project (based on an unit charge rate of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne for disposal at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).

HERITAGE IMPLICATIONS

29. This project will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites and buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

/LAND.....

³ 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.

LAND ACQUISITION

30. This project does not require any land acquisition.

ENERGY CONSERVATION AND GREEN FEATURES

31. This project will adopt various forms of energy efficient features, including heat energy reclaim of exhaust air and lift power regeneration.

32. For greening features, we will provide greening at the pedestrian zone, roof and vertical greening at building facade for environmental and amenity benefits.

33. The total estimated additional cost for adoption of the above features is around \$3.7 million (including \$1.3 million for energy efficient features), which has been included in the cost estimate of this project. The features will achieve 5.2% energy savings in the annual energy consumption with a payback period of about 5.8 years.

BACKGROUND INFORMATION

34. We upgraded part of **81MM** (i.e. phase 1 of the redevelopment of KCH) to Cat B in September 2012. We engaged consultants to undertake various services, including traffic impact assessment, utility mapping, preliminary environmental review, topographical and tree survey, asbestos survey, geotechnical assessment and minor site investigations including drainage impact assessment, sewage impact assessment, air ventilation assessment, ground investigation works and preparation of tender document. The total cost of these services is about \$2.5 million. We have charged this amount to block allocation **Subhead 8100MX** "Hospital Authority – improvement works, feasibility studies, investigation and pre-contract consultancy services for building projects" and **8083MM** "One-off grant to the Hospital Authority for minor works projects".

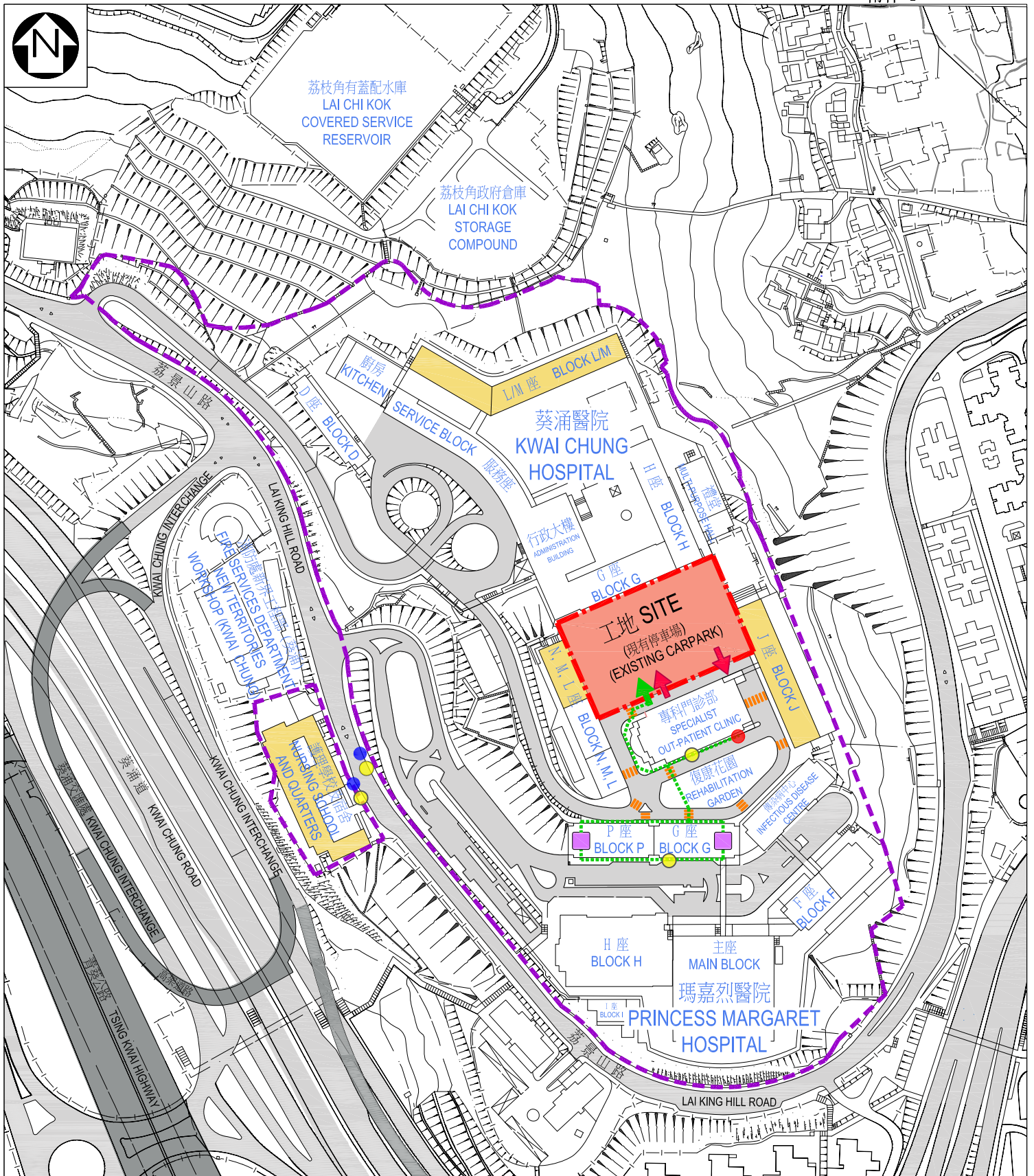
35. Of the 12 trees within the proposed decantation building site boundary, three trees will be preserved. The proposed works will involve removal of nine trees including seven trees to be felled and two trees to be transplanted within KCH compound subject to final design. All trees to be felled are not important trees⁴. Compensatory planting of seven trees and around 12 000 shrubs and groundcovers will be included as part of the project.

36. We estimate that the proposed works will create about 450 jobs (400 for labourers and 50 for professional or technical staff) providing a total employment of 7 500 man-months.

Food and Health Bureau
March 2016

⁴ An “important tree” refers to a tree in the Register of Old and Valuable Trees, or any tree 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 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 curtail like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (m) (measured at 1.3 m above ground level), or with height or canopy spread equal or exceeding 25 m.



圖例 LEGEND

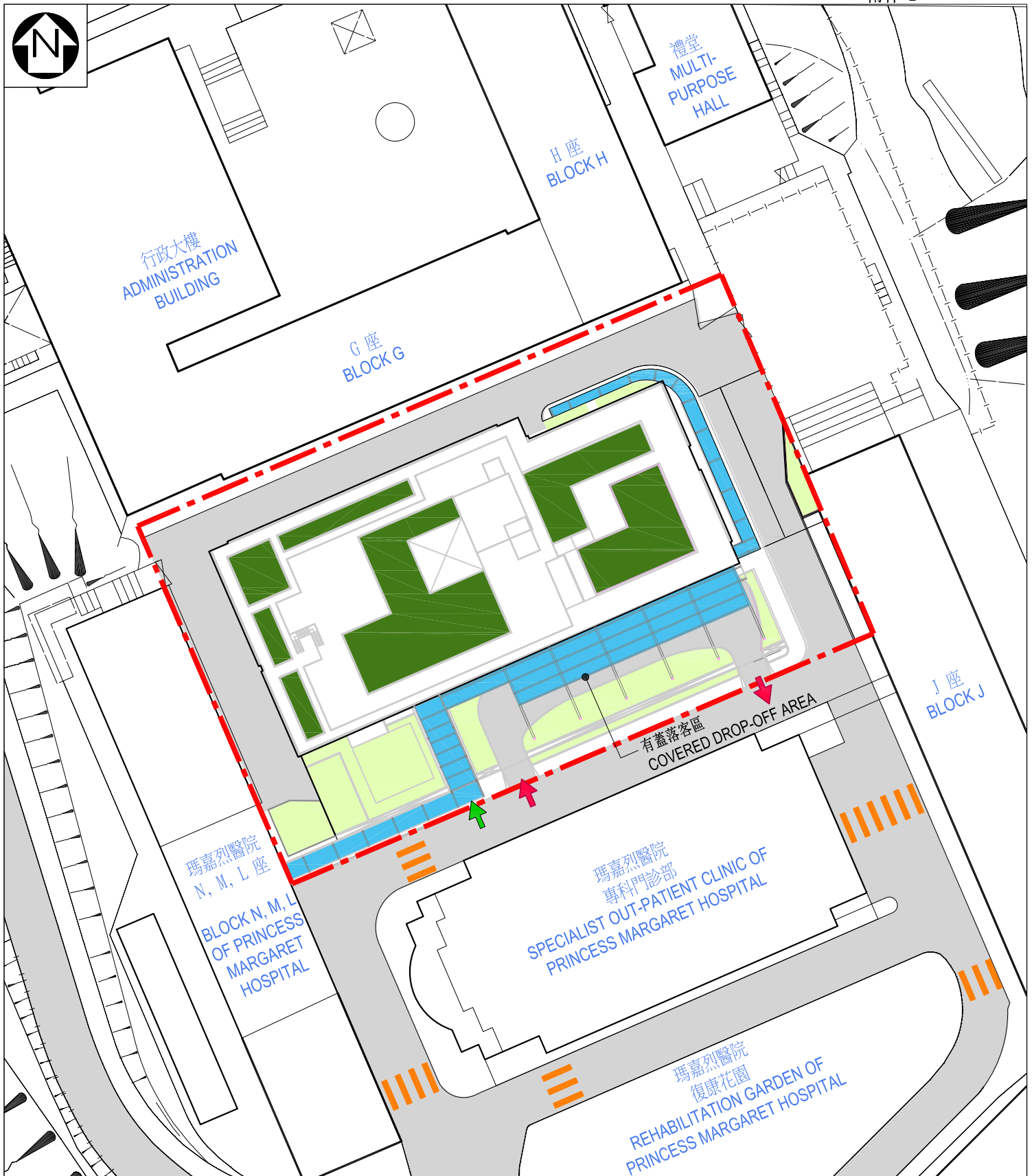
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|--|--|--|--|--|---------------------------------|--|--|
| | 調遷大樓工地範圍
SITE BOUNDARY FOR DECONTAMINATION BUILDING | | 無障礙通道
BARRIER-FREE ACCESS | | 現有巴士站
EXISTING BUS STOP | | 車輛出入口
VEHICULAR INGRESS / EGRESS |
| | 醫院範圍
HOSPITAL BOUNDARY | | 路面行人過路處
AT-GRADE PEDESTRIAN CROSSING | | 現有巴士站
EXISTING MINI-BUS STOP | | 無障礙出入口
BARRIER-FREE ENTRANCE / EXIT |
| | | | 翻新工程位置
LOCATIONS FOR RENOVATION WORKS | | 現有的士站
EXISTING TAXI STAND | | 暢通易達升降機
ACCESSIBLE LIFT |

30M 0 60M

位置圖
LOCATION PLAN

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL





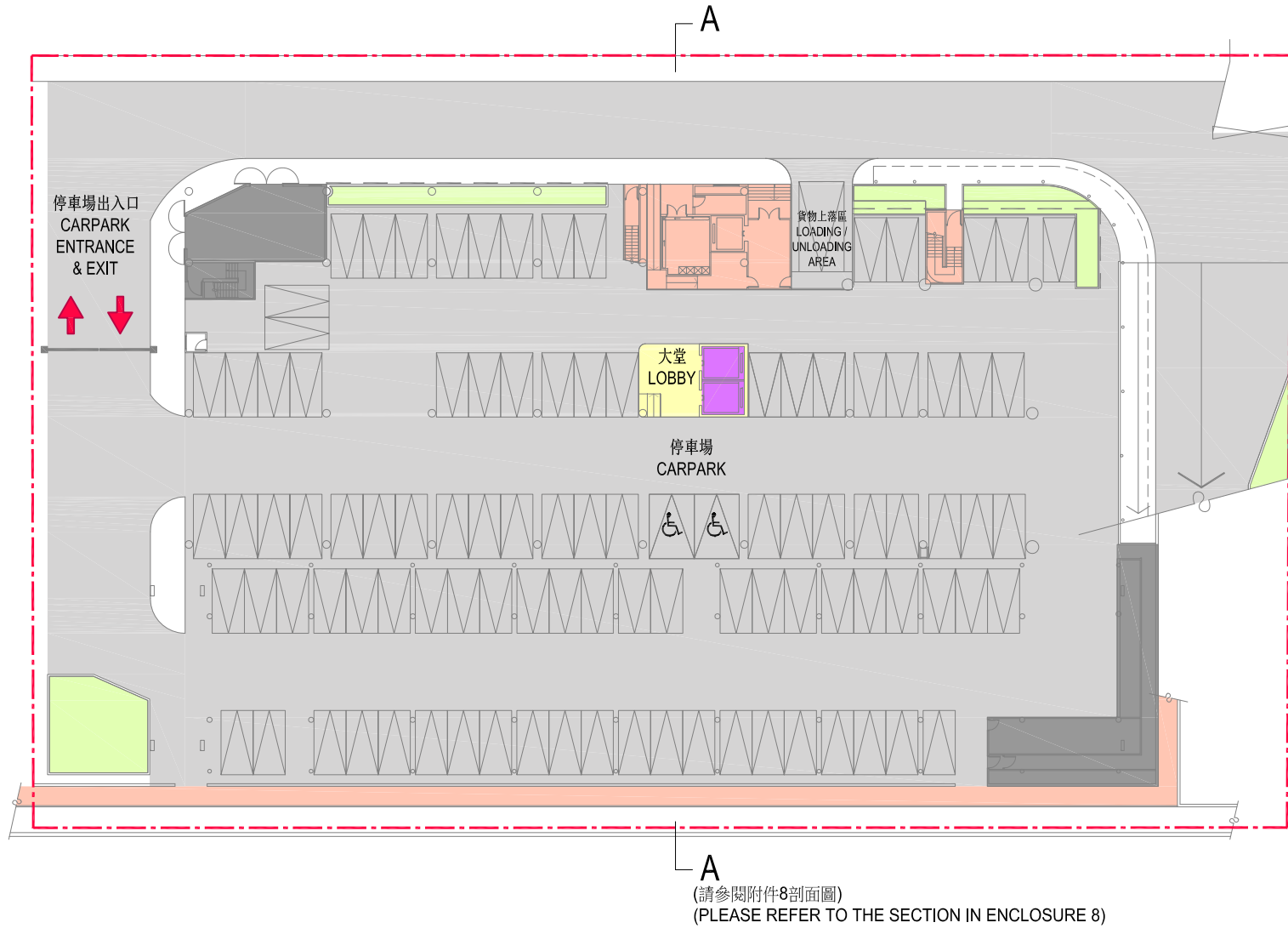
圖例 LEGEND

- | | | | |
|--|---------------------------|--|---------------------------|
| 調遷大樓工地範圍
SITE BOUNDARY FOR DECANTATION BUILDING | 天台綠化
LANDSCAPED ROOF | 車輛出入口
VEHICULAR INGRESS / EGRESS | 有蓋行人通道
COVERED WALKWAY |
| 路面行人過路處
AT-GRADE PEDESTRIAN CROSSING | 地面綠化
AT-GRADE GREENING | 無障礙出入口
BARRIER-FREE ENTRANCE / EXIT | |



工地平面圖
SITE PLAN

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL



圖例 LEGEND

調遷大樓工地範圍
SITE BOUNDARY FOR
DECANTATION BUILDING

車輛出入口
VEHICULAR
INGRESS / EGRESS

公眾區域
PUBLIC
AREA

員工區域
STAFF
AREA

綠化範圍
LANDSCAPED
AREA

機電房
PLANT
ROOM

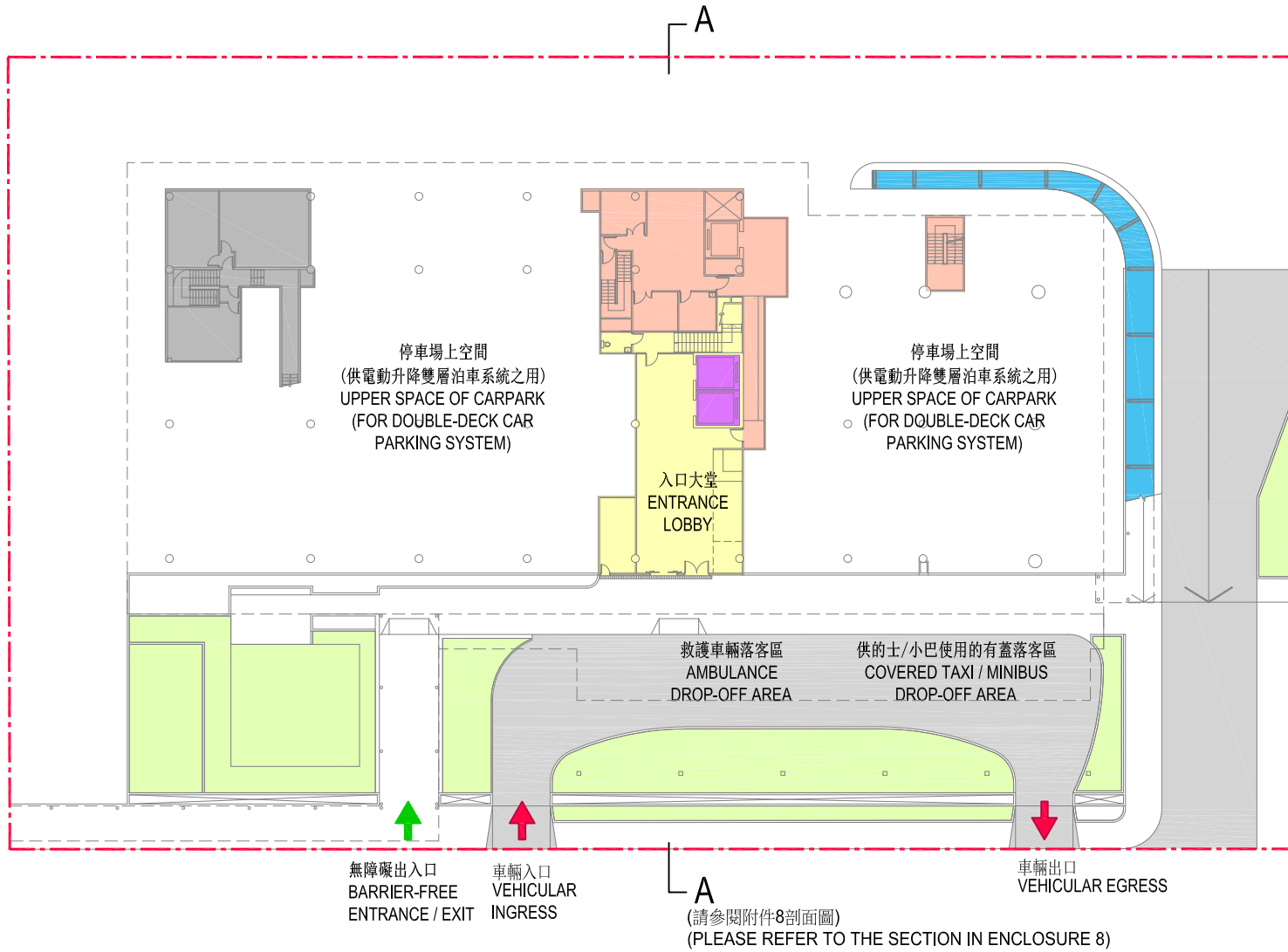
暢通易達升降機
ACCESSIBLE
LIFT

暢通易達停車位
ACCESSIBLE
PARKING

調遷大樓地面平面圖
FLOOR PLAN -
DECANTATION BUILDING LEVEL 0

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL

 ARCHITECTURAL
SERVICES
DEPARTMENT 建築署



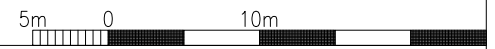
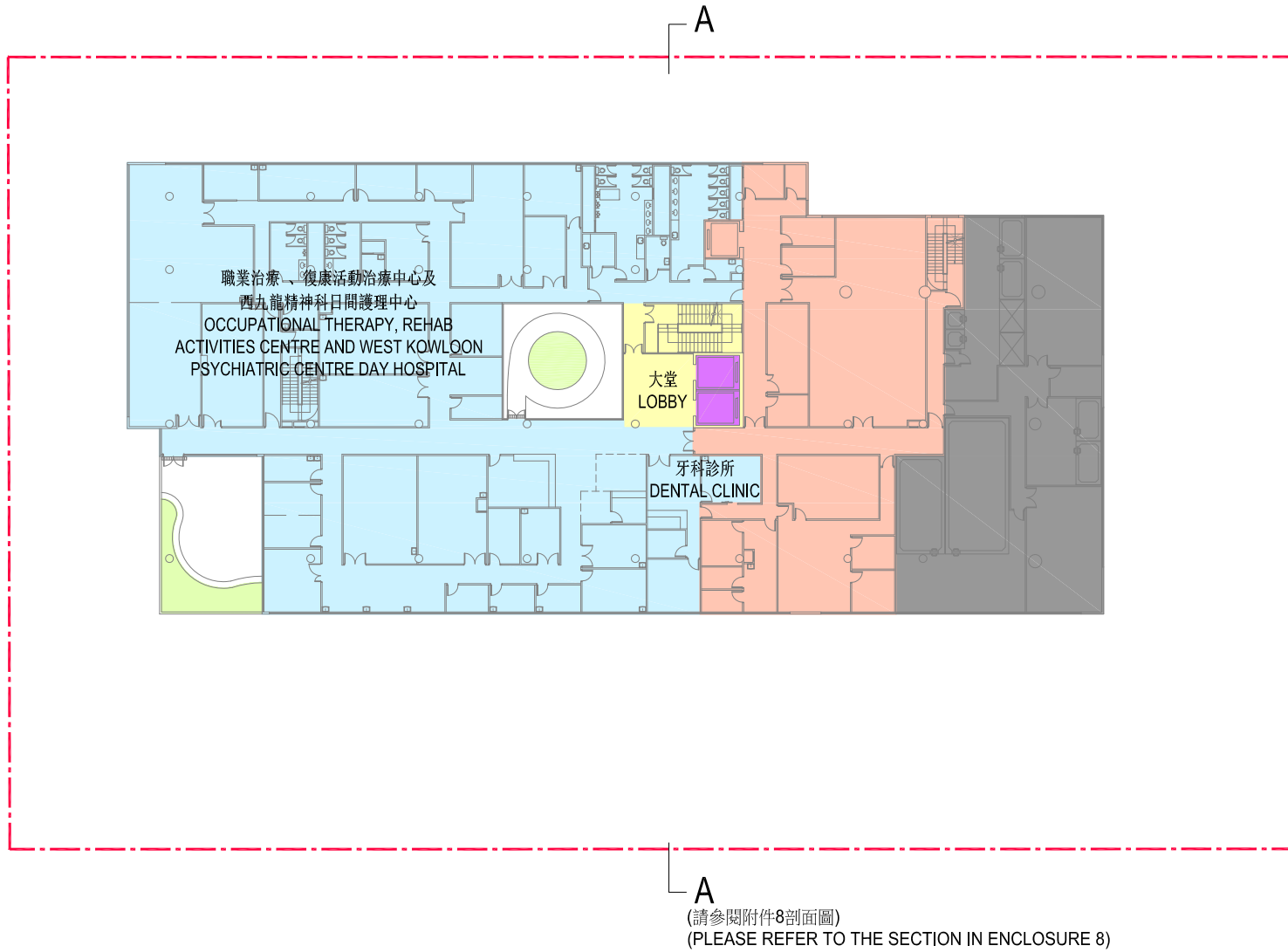
圖例 LEGEND

- | | | | | | | | | |
|---|---|--|------------------------|-----------------------|----------------------------|----------------------|-------------------------------|------------------------------|
| 調遷大樓工地範圍
SITE BOUNDARY FOR
DECANTATION BUILDING | 無障礙出入口
BARRIER-FREE
ENTRANCE / EXIT | 車輛出入口
VEHICULAR
INGRESS / EGRESS | 公眾區域
PUBLIC
AREA | 員工區域
STAFF
AREA | 綠化範圍
LANDSCAPED
AREA | 機電房
PLANT
ROOM | 暢通易達升降機
ACCESSIBLE
LIFT | 有蓋行人通道
COVERED
WALKWAY |
|---|---|--|------------------------|-----------------------|----------------------------|----------------------|-------------------------------|------------------------------|

調遷大樓一樓平面圖
FLOOR PLAN -
DECANTATION BUILDING LEVEL 1

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL



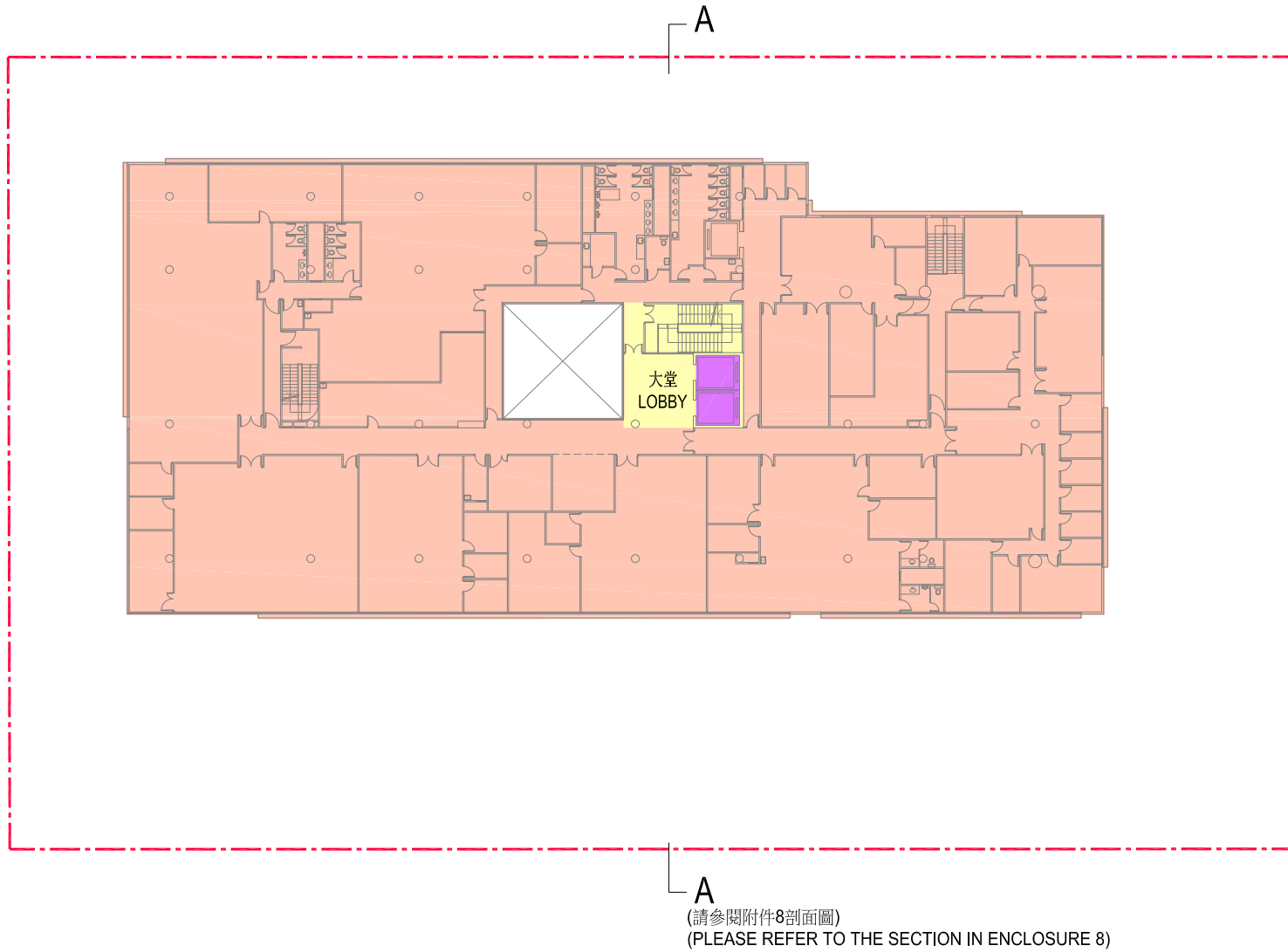


圖例 LEGEND	
SITE BOUNDARY FOR DECANTATION BUILDING	公眾區域 PUBLIC AREA
醫療區域 CLINICAL AREA	員工區域 STAFF AREA
綠化範圍 LANDSCAPED AREA	機電房 PLANT ROOM
暢通易達升降機 ACCESSIBLE LIFT	

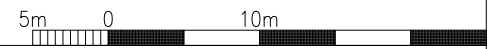
調遷大樓二樓平面圖
FLOOR PLAN -
DECANTATION BUILDING LEVEL 2

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL





A
 (請參閱附件8剖面圖)
 (PLEASE REFER TO THE SECTION IN ENCLOSURE 8)

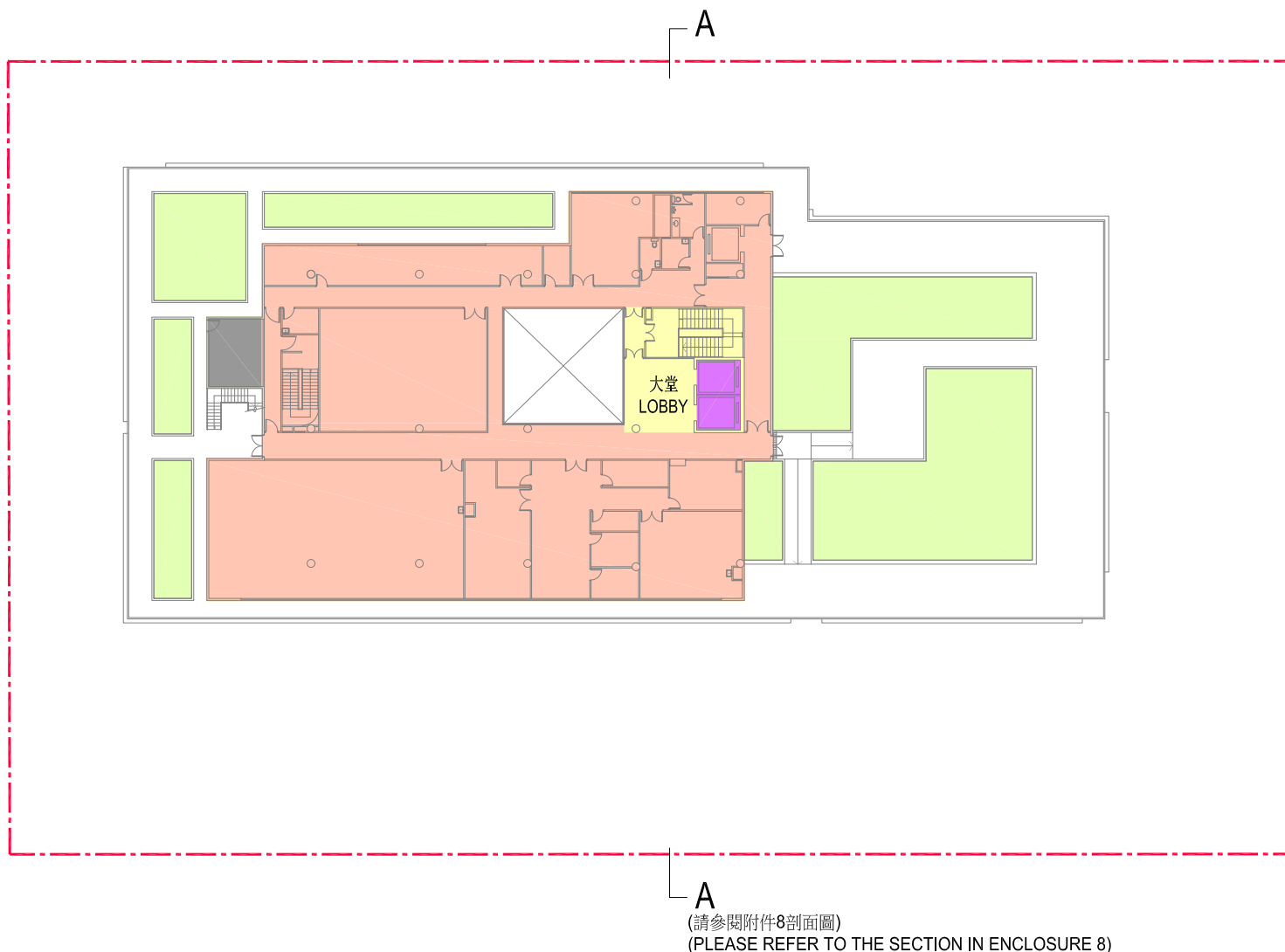


圖例	LEGEND				
	調遷大樓工地範圍 SITE BOUNDARY FOR DECANTATION BUILDING		公眾區域 PUBLIC AREA		員工區域 STAFF AREA
			暢通易達升降機 ACCESSIBLE LIFT		

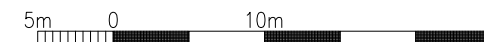
調遷大樓三樓平面圖
 FLOOR PLAN -
 DECANTATION BUILDING LEVEL 3

81MM
 葵涌醫院重建工程
 REDEVELOPMENT OF KWAI CHUNG HOSPITAL





A
 (請參閱附件8剖面圖)
 (PLEASE REFER TO THE SECTION IN ENCLOSURE 8)



圖例 LEGEND

-
- 調遷大樓工地範圍
SITE BOUNDARY FOR
DECANTATION BUILDING
- 公眾區域
PUBLIC AREA
- 員工區域
STAFF AREA
- 綠化範圍
LANDSCAPED AREA
- 機電房
PLANT ROOM
- 暢通易達升降機
ACCESSIBLE LIFT

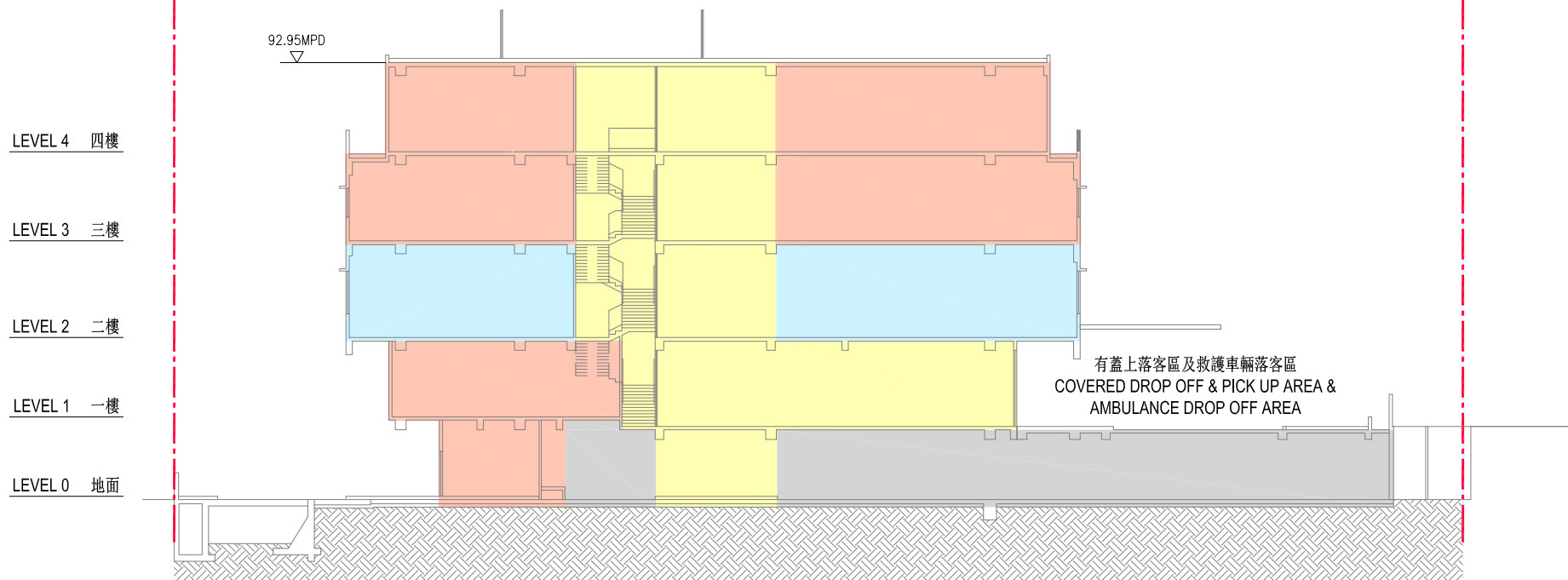
調遷大樓四樓平面圖
 FLOOR PLAN -
 DECANTATION BUILDING LEVEL 4

81MM
 葵涌醫院重建工程
 REDEVELOPMENT OF KWAI CHUNG HOSPITAL



調遷大樓工地範圍
SITE BOUNDARY FOR
DECANTATION BUILDING

調遷大樓工地範圍
SITE BOUNDARY FOR
DECANTATION BUILDING



圖例 LEGEND

- - - 調遷大樓工地範圍
SITE BOUNDARY FOR DECANTATION BUILDING
- 公眾區域
PUBLIC AREA
- 醫療區域
CLINICAL AREA
- 員工區域
STAFF AREA
- 停車場
CARPARK

調遷大樓剖面圖 A-A
DECANTATION BUILDING
SECTION A-A

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL





從南面望向調遷大樓的構思透視圖
PERSPECTIVE VIEW FROM SOUTHERN
DIRECTION (ARTIST'S IMPRESSION)

81MM
葵涌醫院重建工程
REDEVELOPMENT OF KWAI CHUNG HOSPITAL



ARCHITECTURAL
SERVICES
DEPARTMENT 建築署

81MM – Redevelopment of Kwai Chung Hospital

Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2015 prices)

		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants' fee for					
(i) contract administration (Note 2)	Professional	–	–	–	9.4
	Technical	–	–	–	9.4
				Sub-total	18.8
(ii) risk management	Professional	3	38	1.6	0.4
	Technical	12	14	1.6	0.5
				Sub-total	0.9
(b) RSS costs (Note 3)	Professional	14	38	1.6	1.7
	Technical	350	14	1.6	14.3
				Sub-total	16.0
Comprising –					
(i) Consultants' fees for management of RSS				1.4	
(ii) Remuneration of RSS				14.6	
				Total	35.7

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants. (as at now, MPS salary point 38 = \$74,210 per month and MPS salary point 14 = \$25,505 per month).
2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for provision of quantity surveying services. The assignment will only be executed subject to FC's approval to upgrade the project to Cat A.
3. The actual man-months and actual costs will only be known after completion of the construction works.

81MM – Redevelopment of Kwai Chung Hospital

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

Item description	Quantity	Unit cost (\$ million)	Total cost (\$ million)
Double-deck Car Parking System ¹	1	7.9	7.9

¹ The double-deck car parking system comprises a total of 54 double-deck car parking units, providing a total of 108 car parking spaces.