

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Environmental Hygiene – Burial grounds, columbaria and crematoria

20NB – Reprovisioning of Fu Shan Public Mortuary at Sha Tin

Members are invited to recommend to the Finance Committee the upgrading of **20NB** to Category A at an estimated cost of \$1,038.0 million in money-of-the-day prices for the reprovisioning of Fu Shan Public Mortuary.

PROBLEM

We need to provide more body storage spaces in public mortuaries to cope with the increasing service demand in Hong Kong and enhance the quality of service to the public.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Food and Health, proposes to upgrade **20NB** to Category A at an estimated cost of \$1,038.0 million in money-of-the-day (MOD) prices for the reprovisioning of Fu Shan Public Mortuary (FSPM).

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of the project comprises –
- (a) nine cold rooms and one deep freezer with a total storage capacity of 830 bodies;
 - (b) eight autopsy suites for routine Coroner's cases, homicide cases and suspicious deaths, etc.;
 - (c) functional facilities including X-ray and Computed Tomography Scan rooms, laboratories, body identification areas, interview rooms, facilities for bereavement services, autopsy viewing rooms and office, etc.; and
 - (d) other ancillary facilities including a covered car park, loading/unloading bay, and general lay-bys along Yau On Street and Lower Shing Mun Road.
4. A site and location plan, floor plans, a sectional drawing, an artist's impression and a barrier-free access plan for the project are at Enclosures 1 to 9. Subject to the funding approval of the Finance Committee (FC), we plan to commence construction in the third quarter of 2018 for completion in the third quarter of 2021. To meet the programme, the Architectural Services Department invited tenders for the proposed works in December 2017, but the contract will only be awarded upon FC's funding approval.

JUSTIFICATION

5. At present, three public mortuaries including FSPM operated by the Department of Health (DH) are specialised forensic pathology facilities for conducting medico-legal investigation of deaths that are reportable to the Coroner in accordance with the Coroners Ordinance (Cap. 504). The core activities of public mortuary include receiving deceased bodies round the clock, conducting necessary Coroner's procedures including interviews with families, external examination of bodies, formal identification of bodies, performance of medico-legal autopsies and associated investigations, and releasing deceased bodies to families afterwards.

Enhance service capacity

6. According to Chapter 3 of the “Hong Kong Planning Standards and Guidelines” concerning community facilities, public mortuaries should be provided at locations which are easily accessible by the general public but separated from residential and commercial developments by topographical features and/or such land uses as public services, public utilities or open space. In addition, the design and build of the public mortuaries must meet the up-to-date standards and protocols to enable smooth workflow and safeguard infection control, occupational safety and health, as well as environmental protection. This objective is to ensure that safe and efficient mortuary service is provided to the public. Furthermore, public mortuaries should also provide storage spaces to cope with emergency need in case of major incidents, such as natural disasters and fire.

7. Currently, the regular body storage capacity¹ of the three public mortuaries i.e. FSPM, Kwai Chung Public Mortuary (KCPM) and Victoria Public Mortuary (VPM), is 216, 220 and 70 respectively. Apart from the above three public mortuaries, Kowloon Public Mortuary (KPM) at Hung Hom is reserved for storage of bodies during emergency situations (see paragraph 9 below). Owing to the increase in population and ageing population, the number of deaths is expected to increase. Based on the population projections of the Census and Statistics Department in 2017, and taking into account the need to provide storage spaces for use during emergencies or times of disaster, public mortuaries in Hong Kong should provide a total of 1 300 body storage spaces in order to cope with the projected demand in 2031.

8. The existing FSPM commenced operation in 1989. To cope with the increasing service demand, the body storage capacity of the existing FSPM was increased from 128 to 216 by building two additional cold rooms from functional mortuary space and facilities in 1998 and 2010 respectively. In addition, mobile body storage trolleys are deployed in the circulation areas inside the cold rooms in the three public mortuaries when necessary to enhance the temporary body storage capacity. Each mobile body storage trolley can store two bodies (on separate decks) at the same time. The number of trolleys that can be deployed in the circulation areas inside the cold rooms of the existing FSPM, KCPM and VPM are 58, 49 and 4 respectively, providing a maximum of 116, 98 and 8 additional body storage spaces. The overall average utilisation rate² of the three public mortuaries has reached 101% in 2017. Details are as follows –

/Public

¹ Refers to the capacity of regular body storage racks inside the cold rooms of the public mortuaries, on which bodies are stored on separate decks.

² Excluding the use of mobile body storage trolleys.

Public mortuary	Existing regular storage capacity	Utilisation rate² in 2017	Average number of days of each body stored in the mortuary in 2017
Existing FSPM	216	110%	25.5
KCPM	220	98%	26.1
VPM	70	81%	13.6

9. The three operating public mortuaries would usually reach their critical storage limits after long holidays and during winter, whereby KPM will be opened to receive bodies overflowing from these three mortuaries. The regular body storage capacity of KPM is 132 and 24 mobile body storage trolleys can be deployed inside the cold rooms of KPM, providing a maximum of 48 additional body storage spaces. In 2017, KPM opened on 76 days. The average number of days of each body stored in KPM is 16.2.

10. The continuing use of the cold rooms in the existing FSPM over the decades has accelerated deterioration, necessitating temporary suspension of cold rooms for major repair and improvement works. This further poses pressure on the already critical body storage capacity.

11. In view of the above, a vacant site opposite to Po Fook Memorial Hall at Tai Wai and adjacent to the existing FSPM with site area of about 6 600 square metres (m²), was identified for reprovisioning the FSPM. The body storage capacity will increase from currently 216 to 830. The reprovisioned seven-storey public mortuary will provide equipment and facilities which meet infection control, occupational safety and health requirements. It also provides more suitable space and more spacious venue for the bereaved families including waiting halls and identification viewing rooms for different work processes, resting lounges and counselling suite. There will be three indoor ceremony halls so that the bereaved families can conduct memorial ceremony under a more private setting. Construction works of the reprovisioned FSPM will include beautifying the environment and greening so as to better integrate with the surroundings and reduce possible visual impacts. The reprovisioned FSPM will also serve as a training venue for law enforcement officers, especially the Police, in criminal and crime scene investigations.

12. The projected demand of body storage in 2031 (please see paragraph 7 above) will be met by the reprovisioned FSPM, KCPM and the reprovisioned VPM under planning, providing body storage capacity of 830, 220 and 250 respectively. The reprovisioned FSPM, together with KCPM, will cater for the projected caseload of Kowloon and New Territories up to 2031.

Improve architectural design

13. The architectural design of the existing FSPM has served its time and renders it difficult to meet current standards of setting apart distinctly the working area from the public area. The reprovisioning of FSPM is necessary to enhance the quality of public mortuary service that meets the current standards in infection control, occupational safety and health standards of modern public mortuary.

Existing FSPM

14. The existing FSPM will remain functional during the construction period. After the reprovisioned FSPM commences operation around the first quarter of 2022, the existing FSPM will cease operation and will be used for administration, disaster drill and training purposes.

FINANCIAL IMPLICATIONS

15. We estimate the capital cost of the project to be \$1,038.0 million in MOD prices, broken down as follows –

	\$ million (in MOD prices)
(a) Site works	6.5
(b) Geotechnical works	56.5
(c) Piling	45.7

/\$ million

		\$ million (in MOD prices)
(d)	Building ³	468.7
(e)	Building services ⁴	256.2
(f)	Drainage	17.0
(g)	External works	23.8
(h)	Additional energy conservation, green and recycled features	13.3
(i)	Furniture and equipment ⁵	54.4
(j)	Consultants' fees for	1.5
	(i) geotechnical engineering works	0.8
	(ii) building environmental assessment	0.7
(k)	Contingencies	94.4
Total		1,038.0

16. The design and contract administration of the project will be mainly undertaken by in-house resources of the Architectural Services Department. We propose to engage consultants to undertake geotechnical engineering works and building environmental assessment for the project. A detailed breakdown of the estimate for consultants' fees is at Enclosure 10. The construction floor area (CFA) of this project is 18 526 m². The estimated construction unit cost, represented by the building and building services costs, is \$39,129 per m² of CFA in MOD prices. We consider this unit cost comparable to that of similar projects built by the Government.

/17.

³ Building works cover construction of substructure and superstructure of the building.

⁴ Building services works cover electrical installation, ventilation and air-conditioning installation, fire services installation, lift installation and other specialist installations.

⁵ The estimated cost is based on an indicative list of furniture and equipment required.

17. Subject to funding approval, we plan to phase the expenditure as follows –

Year	\$ million (MOD)
2018 – 2019	21.0
2019 – 2020	133.1
2020 – 2021	245.7
2021 – 2022	381.3
2022 – 2023	109.8
2023 – 2024	85.4
2024 – 2025	61.7
	<hr/> 1,038.0 <hr/>

18. 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 2018 to 2025. We will deliver the construction works through a lump-sum contract as the scope of the works can be clearly defined in advance. The contract will provide for price adjustment.

19. We estimate the annual recurrent expenditure arising from this project to be \$46.7 million.

PUBLIC CONSULTATION

20. We consulted the Health and Environment Committee of the Sha Tin District Council (STDC) on the proposed project on 10 March 2016. Members of STDC supported the proposed project. STDC members and local residents also raised suggestions on the provision of more car parking spaces in order to improve the traffic conditions in the vicinity. We will adopt enhancement measures (please see paragraph 28 below) to alleviate the impact on the surrounding traffic.

21. We consulted the Legislative Council Panel on Health Services on 21 May 2018. Members expressed general support for the proposed project.

ENVIRONMENTAL IMPLICATIONS

22. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have completed the Preliminary Environmental Review (PER) for the project in August 2015 and the Director of Environmental Protection agreed that the project would not have any long-term environmental impacts.

23. We will incorporate into the works contract the mitigation measures recommended in the PER to control the environmental impacts arising from the construction works to within established standards and guidelines. These measures include frequent watering of the site, use of quiet construction plant and erection of temporary noise barrier. We have included in the project estimate the cost for the implementation and monitoring of the environmental mitigation measures.

24. At the planning and design stages, we have considered measures to reduce the generation of construction waste where possible. 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 construction waste at public fill reception facilities⁶. We 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.

⁶ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

25. At the construction stage, we 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. We will ensure that the day-to-day operations on site comply 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 control the disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

26. We estimate that the project will generate in total about 57 300 tonnes of construction waste. Of these, we will reuse about 10 280 tonnes (17.9%) of inert construction waste on site and deliver 43 080 tonnes (75.2%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 3 940 tonnes (6.9%) of non-inert construction waste at landfills. The total cost for disposal of construction waste at public fill reception facilities and landfill sites is estimated to be \$3.8 million for this project (based on a unit charge rate of \$71 per tonne for disposal at public fill reception facilities and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)).

TRAFFIC IMPLICATIONS

27. We engaged a consultant to carry out a traffic impact assessment (TIA) for the proposed project. The TIA concluded that the proposed development would not induce adverse traffic impact in both construction and operational phases.

28. The reprovisioned FSPM will adopt the following enhancement measures to further alleviate the impact on the surrounding traffic —

- (a) upon commissioning of the reprovisioned FSPM around the first quarter of 2022, there will be —
 - (i) vehicular entrances at Lower Shing Mun Road and Yau On Street mainly for operational vehicles and private vehicles respectively which will separate traffic of operational and private vehicles and smoothen out the traffic flow in the vicinity; and

/(ii)

- (ii) a covered car park within the reprovisioned FSPM providing 50 parking spaces for private vehicles visiting the mortuary as well as similar facilities nearby⁷. At present, the existing FSPM does not provide any parking spaces. Upon commissioning of the reprovisioned FSPM, there will be a total of 85 parking spaces for private vehicles in the vicinity⁸; and
- (b) there will be additional general lay-bys along Yau On Street and Lower Shing Mun Road which will be completed and in use prior to the commissioning of the reprovisioned FSPM (i.e. around the second and third quarters of 2021) in response to the request of the nearby community to further smoothen out the traffic in the vicinity.

29. We believe that with the provision of a covered car park and additional general lay-bys along nearby roads, the impact on the surrounding traffic would be alleviated and that any increase in parking demand brought by the reprovisioned FSPM and those similar facilities in the nearby areas can be addressed. We will continue to communicate with stakeholders with a view to formulating feasible ways to improve the traffic conditions.

HERITAGE IMPLICATIONS

30. 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 ACQUISITION

31. The project does not require any land acquisition.

/ENERGY

⁷ Including funeral parlour (Po Fook Memorial Hall) and crematorium (Fu Shan Crematorium).

⁸ Including the existing private car parking spaces nearby (i.e. 23 private car parking spaces in the Yau On Street Car Park and 12 private car parking spaces in Lower Shing Mun Road) managed by the Transport Department.

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

32. This project will adopt various forms of energy efficient features and renewable energy technologies, in particular –

- (a) water-cooled chiller with variable speed drive;
- (b) demand control of supply air;
- (c) heat energy reclaim of exhaust air;
- (d) heat pump for hot water, space heating and dehumidification;
- (e) building management system;
- (f) solar hot water system; and
- (g) photovoltaic system.

33. For greening features, we will provide green roof and vertical greening as well as planting areas for environmental and amenity benefits.

34. For recycled features, we will adopt a rainwater harvesting system for irrigation purpose.

35. The total estimated additional cost for adoption of the above energy conservation measures, greening features and recycled features is around \$13.3 million (including \$4.2 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 5.5% energy savings in the annual energy consumption with a payback period of about eight years.

/BACKGROUND

BACKGROUND INFORMATION

36. We upgraded **20NB** to Category B in September 2011. We engaged consultants to undertake various services, including topographical survey in April 2014, TIA and ground investigation in September 2014, at a total cost of about \$5.8 million in MOD prices. The services and works by the consultants were funded under block allocation **Subhead 3100GX** “Project feasibility studies, minor investigations and consultants’ fees for items in Category D of the Public Works Programme”. The topographical survey, TIA and ground investigation have been completed.

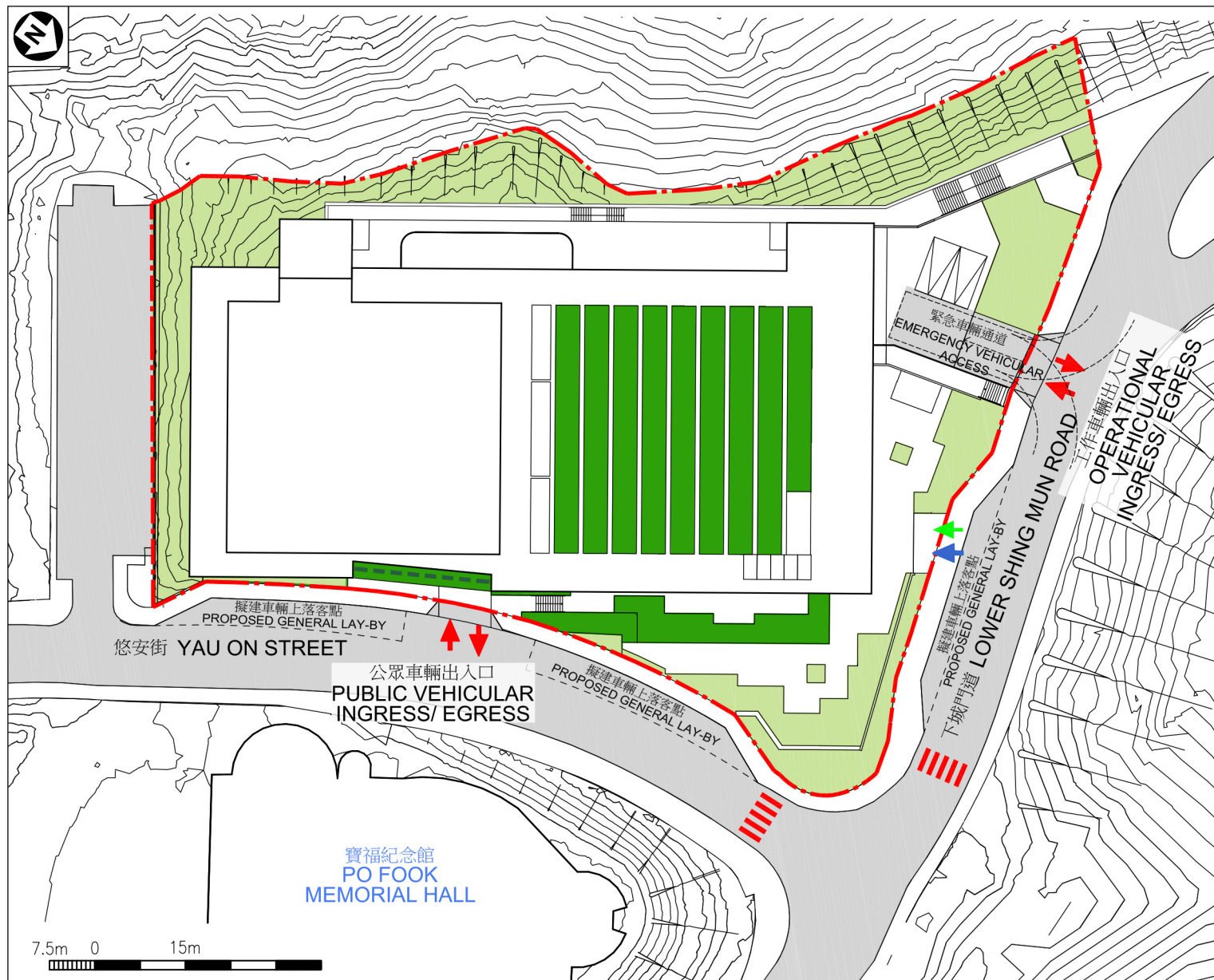
37. Of the 224 trees within and in close proximity to the project boundary, 26 trees will be preserved and 198 trees will be felled. All trees to be felled are not important trees⁹. We will incorporate planting proposals as part of the project, including the planting of about 202 trees, 4 810 shrubs, 86 499 groundcovers and 1 795 climbers.

38. We estimate that the proposed works will create about 335 jobs (305 for labourers and 30 for professional or technical staff) providing a total employment of 8 400 man-months.

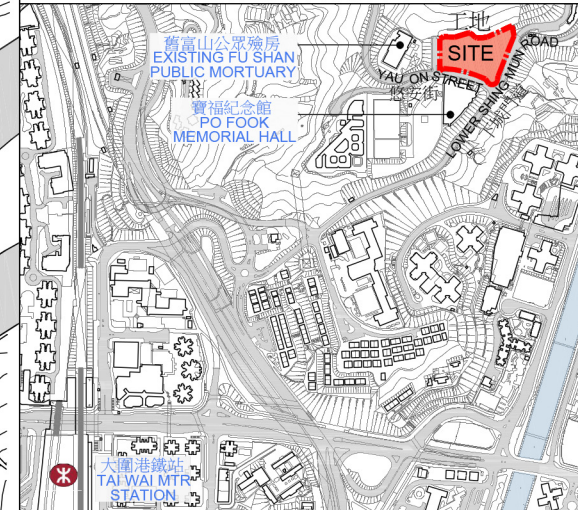
Food and Health Bureau
June 2018

⁹ “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 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 metre (m) (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.



LOCATION PLAN 位置圖



圖例 LEGEND

- 工地界線
SITE BOUNDARY
- ↑ 車輛出入口
VEHICULAR INGRESS/ EGRESS
- ↑ 無障礙出入口
BARRIER FREE ENTRANCE/ EXIT
- ↑ 行人出入口
PEDESTRIAN ENTRANCE/ EXIT
- |||| 現有行人過路處
EXISTING AT-GRADE PEDESTRIAN CROSSING
- 屋頂綠化
LANDSCAPED ROOF
- 地面綠化
AT-GRADE GREENING
- 垂直綠化
VERTICAL GREENING

工地平面圖
SITE PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN



A

圖例

LEGEND

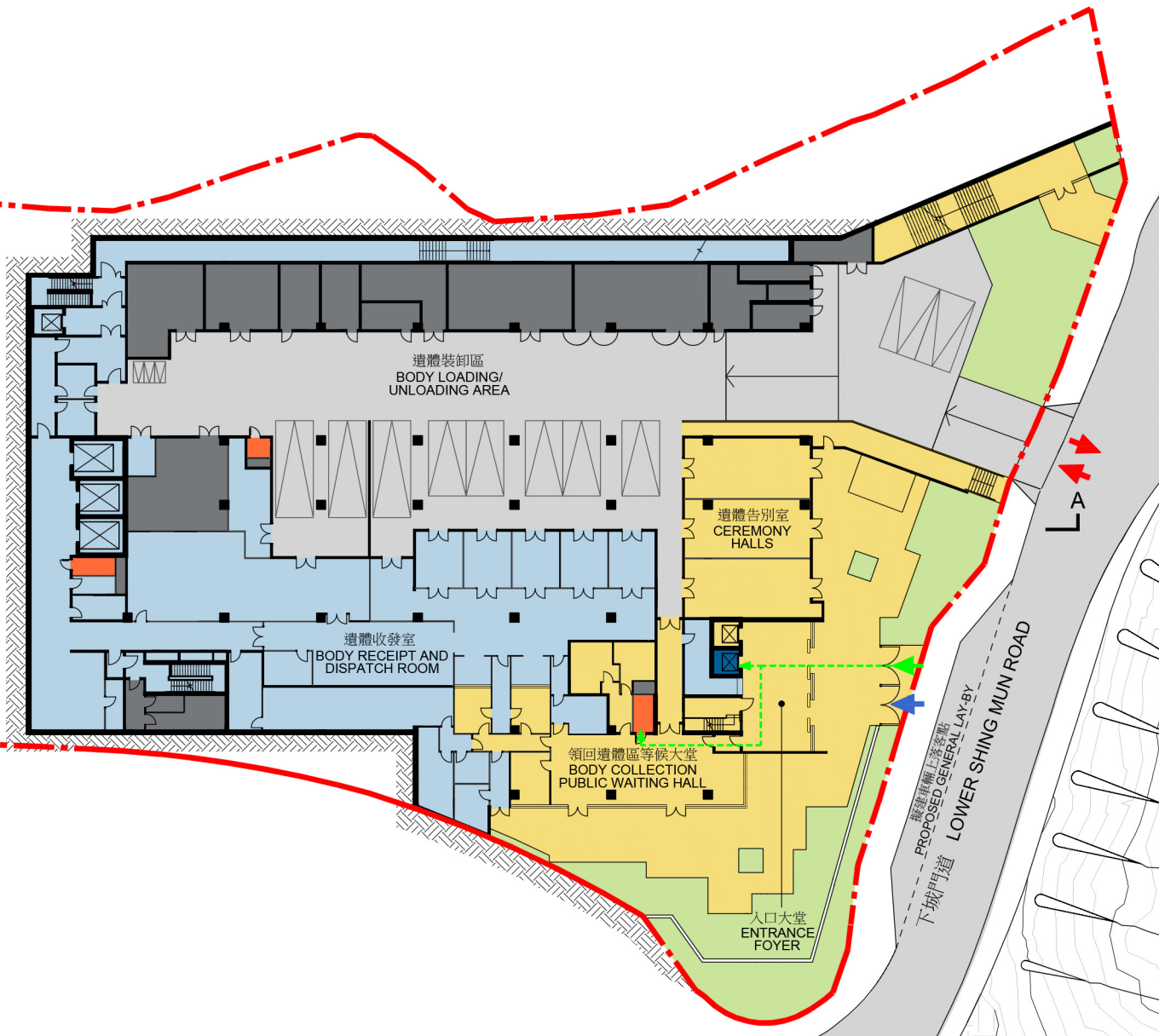
- 工地界線
SITE BOUNDARY
- ↑ 車輛出入口
VEHICULAR INGRESS/ EGRESS
- ↑ 無障礙出入口
BARRIER FREE ENTRANCE/ EXIT
- ↑ 行人出入口
PEDESTRIAN ENTRANCE/ EXIT
- 無障礙通道
BARRIER FREE ACCESS
- 公眾範圍
PUBLIC AREA
- 職員範圍
STAFF AREA
- 機電房
PLANT ROOM
- 地面綠化
AT-GRADE GREENING
- 暢通易達升降機
ACCESSIBLE LIFT
- 暢通易達洗手間
ACCESSIBLE TOILET

6m 0 12m

地下平面圖
G/F FLOOR PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN

ARCHITECTURAL SERVICES DEPARTMENT 建築署





圖例	LEGEND
- - -	工地界線 SITE BOUNDARY
	公眾範圍 PUBLIC AREA
	職員範圍 STAFF AREA
	機電房 PLANT ROOM
	地面綠化 AT-GRADE GREENING
	屋頂綠化 LANDSCAPED ROOF
	暢通易達升降機 ACCESSIBLE LIFT
	暢通易達洗手間 ACCESSIBLE TOILET

一樓平面圖
1/F FLOOR PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN

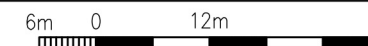


二樓平面圖
2/F FLOOR PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN



圖例	LEGEND
- - -	工地界線 SITE BOUNDARY
	公眾範圍 PUBLIC AREA
	職員範圍 STAFF AREA
	機電房 PLANT ROOM
	屋頂綠化 LANDSCAPED ROOF
	暢通易達升降機 ACCESSIBLE LIFT
	暢通易達洗手間 ACCESSIBLE TOILET
- - -	垂直綠化 VERTICAL GREENING



三樓平面圖
3/F FLOOR PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN



圖例

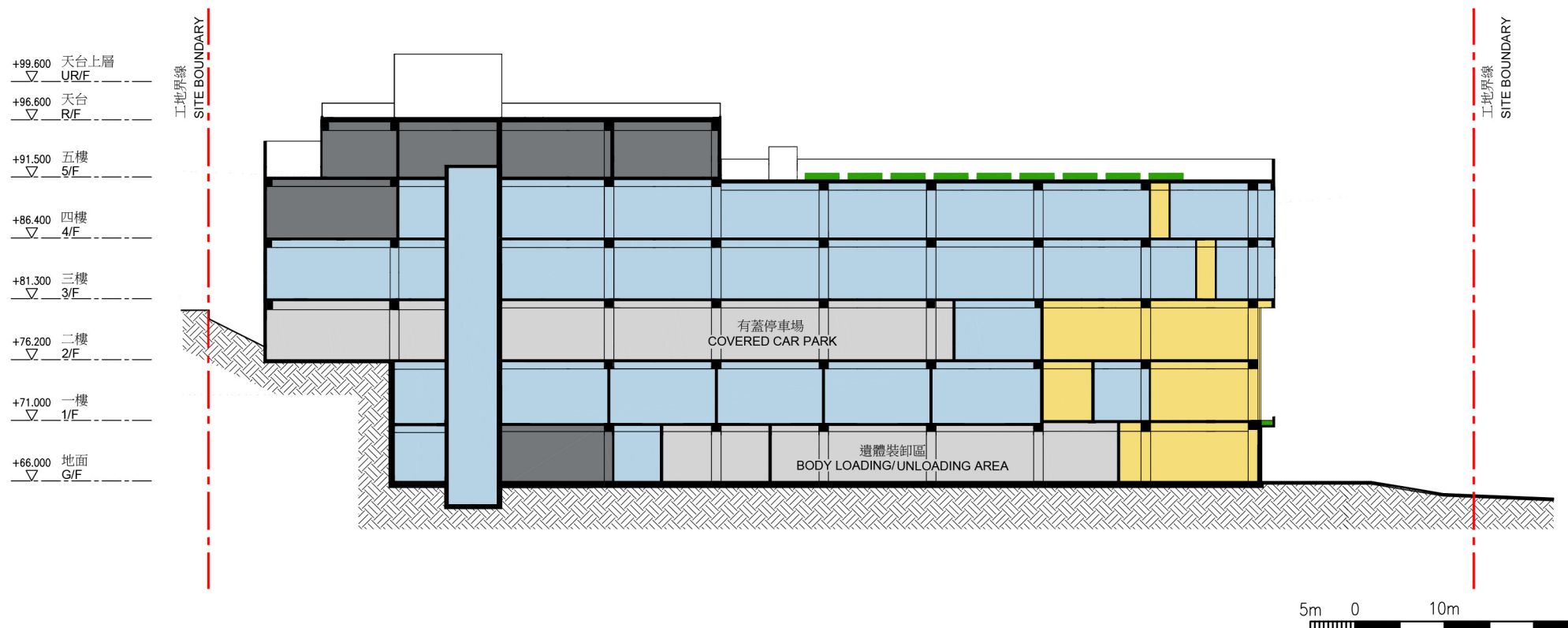
LEGEND

- · - · - 工地界線
SITE BOUNDARY
- 公眾範圍
PUBLIC AREA
- 職員範圍
STAFF AREA
- 機電房
PLANT ROOM
- 暢通易達升降機
ACCESSIBLE LIFT
- 暢通易達洗手間
ACCESSIBLE TOILET
- - - 垂直綠化
VERTICAL GREENING



四樓平面圖
4/F FLOOR PLAN

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN



圖例 LEGEND

---	工地界線 SITE BOUNDARY		公眾範圍 PUBLIC AREA		職員範圍 STAFF AREA
	機電房 PLANT ROOM		屋頂綠化 LANDSCAPED ROOF		

A-A 剖面圖
SECTION A-A

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN



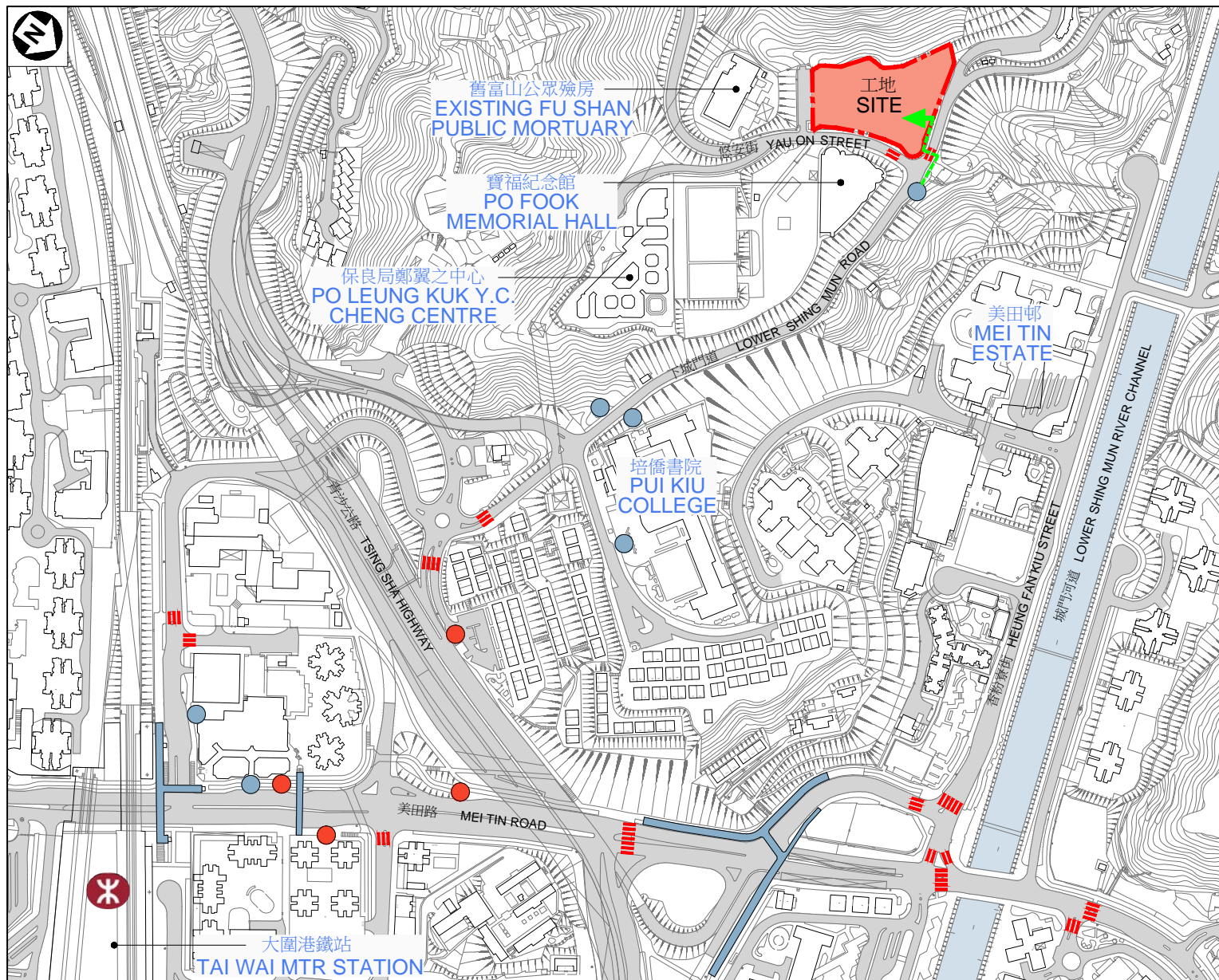
從北面望向公眾殮房的構思圖

PERSPECTIVE VIEW FROM NORTHERN DIRECTION (ARTIST'S IMPRESSION)

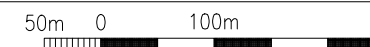
構思圖
ARTIST'S IMPRESSION

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN

 ARCHITECTURAL
SERVICES
DEPARTMENT 建築署



圖例	LEGEND
---	工地界線 SITE BOUNDARY
▲	無障礙出入口 BARRIER FREE ENTRANCE/ EXIT
●	現有巴士站 EXISTING BUS STOP
●	現有小巴站 EXISTING MINIBUS STOP
 	現有行人過路處 EXISTING AT-GRADE PEDESTRIAN CROSSING
■	現有有蓋行人天橋 EXISTING COVERED FOOTBRIDGE
---	無障礙通道 BARRIER FREE ACCESS
⊕	現有港鐵站 EXISTING MTR STATION



無障礙通道平面圖
PLAN OF
BARRIER-FREE ACCESS

20NB
重置沙田富山公眾殮房
REPROVISIONING OF FU SHAN PUBLIC MORTUARY AT SHA TIN

Enclosure 10 to PWSC(2018-19)27

20NB – Reprovisioning of Fu Shan Public Mortuary at Sha Tin

Breakdown of the estimates for consultants' fees (in September 2017 prices)

		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
Consultants' fees for					
(a) geotechnical engineering works	Professional	4	38	2.0	0.6#
	Technical	—	—	—	—
(b) building environmental assessment ^(Note 2)	Professional	—	—	—	0.6#
	Technical	—	—	—	—
Total					1.2#

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 applied to the average MPS salary point to estimate the consultants' fees for geotechnical engineering works (as at now, MPS salary point 38 = \$78,775 per month).
2. The consultants' staff cost for building environmental assessment is calculated in accordance with the existing consultancy agreement for **20NB**. The assignment will only be executed subject to Finance Committee's funding approval to upgrade **20NB** to Category A.

Remarks

The cost figures in this Enclosure are shown in constant prices to correlate with the MPS salary point of the same year. The figure marked with # is shown in money-of-the-day prices in paragraph 15 of the main paper.