For discussion **PWSC(2018-19)7**
on 25 April 2018

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Head 703 – BUILDINGS
Government Office – Intra-government Services
120KA – Building a Government Data Centre Complex
121KA – Joint-user Government Office Building in Cheung Sha Wan — construction

Members are invited to recommend to the Finance Committee the upgrading of **120KA** and **121KA** to Category A at estimated costs of $2,251.7 million and $2,281.0 million in money-of-the-day prices respectively.

PROBLEM

The Government has decided that the site of the Wan Chai Government Offices Compound[1] (WCGOC) will be used for the development of convention and exhibition venues, hotel facilities and Grade A office space. Construction of replacement buildings is necessary to relocate the bureaux and departments (b/ds) out of the WCGOC site to make way for its future development.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Innovation and Technology, proposes to upgrade **120KA** to Category A at an estimated cost of $2,251.7 million in money-of-the-day (MOD) prices for the construction of a government data centre complex.

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[1] Comprising the Revenue Tower, the Immigration Tower and the Wanchai Tower.

3. The Director of Architectural Services, with the support of the Secretary for Financial Services and the Treasury, also proposes to upgrade **121KA** to Category A at an estimated cost of $2,281.0 million in MOD prices for the construction of a joint-user government office building in Cheung Sha Wan (to be named as the Treasury Building).

4. Details of the above two projects are at Enclosures 1 and 2 respectively.

Innovation and Technology Bureau
Financial Services and the Treasury Bureau
April 2018

Building a government data centre complex

PROJECT SCOPE AND NATURE

A government data centre complex (the Complex) will be built on a site in King Lam Street, Cheung Sha Wan, occupying an area of about 1 400 square metres (m^2) with a construction floor area (CFA) of about 13 800 m^2. The 13-storey building will include the following facilities –

(a) data centre specific areas, including –

  (i) data centre halls with around 1 400 racks for accommodating servers and information technology (IT) facilities of bureaux and departments (B/Ds); and
  (ii) ancillary rooms such as media storage room, equipment rooms, command centres, etc.;

(b) resilient critical infrastructure facilities to support high availability data centre services, including –

  (i) resilient power supply system with dual power paths from two power substations;
  (ii) resilient and energy efficient cooling system providing hot/cold aisle solutions[1] for data centres operations;
  (iii) resilient structured cabling infrastructure providing reliable and flexible cable connections and facilitating alternation/re-routing of cabling system; and
  (iv) dual network lead-in distribution paths facilitating resilient external network connections;

(c) security monitoring and access control systems to provide stringent security and protection for the entire Complex; and

(d) office accommodation for supporting daily operations of the Complex.

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[1] Hot/cold aisle solution is a design for air-conditioning circulation in data centre halls. Rows of racks are placed front-to-front and back-to-back to form aisles with hot and cold air separation, in order to increase the cooling efficiency of the air-conditioning system.

2. The infrastructure facilities described in paragraph 1(b) have additional components and distribution paths to prevent disturbance to the system operations in the event of single component failure.

3. The site and location plan, floor plans, a sectional drawing and an artist's impression for the project are at Annexes 1 to 8 to Enclosure 1. Subject to the funding approval of the Finance Committee (FC), we plan to commence the construction works in the third quarter of 2018 for completion in the third quarter of 2021. To meet the works programme, we have invited tender for the proposed works in December 2017. The tender will only be awarded after obtaining FC's funding approval.

JUSTIFICATION

Outdated government data centre design and ageing facilities

4. The Government is expediting the use of IT services to cope with the ever-increasing public demand for reliable and convenient e-Government services. The Government therefore adopts cloud computing[2] to meet the rising computing demand in a fast, flexible, scalable and cost-effective manner. Such IT equipment (especially cloud computing facilities) demands larger electrical power and cooling capacity.

5. More than 50% of the existing government data centres have already been set up and in operation for over 20 years. Their outdated design cannot cope with the stringent demands on electrical power and cooling capacity requirement of new IT equipment. Moreover, the various constraints in the original design and building structure (e.g. insufficient headroom and lack of space) of the existing data centres allow limited in-situ improvement works to be made. The ageing facilities also significantly increase the risks of service interruptions.

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[2] Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

6. By adopting latest technologies, the Complex will be built with resilient and energy efficient power supply and cooling system to meet the increasing demands for power and cooling capacity. It can also enhance the agility, reliability, security, capacity and availability of government data centre services and improve the performance and energy efficiency.

7. With the highly resilient design of the critical infrastructure facilities, the Complex can better mitigate the potential risks of data centre service outage and provide reliable e-Government services to the public.

Synergies in government data centre facilities and services

8. Currently, government data centres are hosted in different locations and usually co-located with the relevant B/Ds in general office buildings. About 80% of the government data centres have reached or almost reached their capacity limits in terms of space, power and cooling efficiency. The Complex can address the long-term needs of B/Ds in hosting IT services. The Complex will –

(a) re-provision existing government data centres which require relocation, including those affected by the relocation of the three government buildings in the Wan Chai Government Offices Compound;

(b) accommodate data centre services for B/Ds which need to switch their IT operations from outsourced data centres to government data centres so as to avoid risks of service interruption and significant increase in service cost arising from contract renewal or change in service providers;

(c) enhance data centre capacity; and

(d) address data centre service demands from new initiatives, such as the smart city projects, the next generation government cloud services, big data analytics platform, etc.

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9. At this stage, we envisage that the Complex would accommodate five existing government data centres[3] as well as the new data centre services of four B/Ds[4]. Through consolidating data centre facilities and operations, the Complex can enhance synergy and flexibility in terms of resources sharing so that the Government will achieve savings in both capital investment and recurrent operation for data centre services.

Ensuring stringent security control and monitoring

10. The Complex, which will be a purpose-built facility operating in government-owned premises and dedicated to the government data centre use, will facilitate security control and monitoring. The Complex has security design features to ensure stringent security control on the data centre building and facilities against physical security threats. Closed circuit television system and access control system will be deployed to enforce security monitoring across the building perimeter, data centre halls, plant rooms and other facilities to provide a secure environment for the provision of data centre services to B/Ds.

More environmentally friendly operation of government data centre services

11. Electricity demand of data centres operation is higher than conventional office buildings. Green data centre management and operation practices are widely adopted worldwide. Existing government data centres are lagging behind their commercial counterparts in terms of energy efficiency since they are not purpose-built, with outdated design and ageing facilities. The Complex will adopt green technologies and management and operation practices that will reduce energy consumption and carbon footprint. The Complex aims to obtain "Gold" rating under the Building Environmental Assessment Method Plus, a green building labelling system promulgated by the Hong Kong Green Building Council.

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[3] Including the data centres of Census and Statistics Department, Leisure and Cultural Services Department, Hong Kong Police Force, Office of the Government Chief Information Officer and The Treasury.

[4] Including Education Bureau, Food and Health Bureau (Electronic Health Record Sharing System), Hong Kong Observatory and Immigration Department.

FINANCIAL IMPLICATIONS

12. We estimate the capital cost of the project to be $2,251.7 million in money-of-the-day (MOD) prices (please see paragraph 14 below), broken down as follows –

		$ million (in MOD prices)
(a)	Site works	4.0
(b)	Geotechnical works	8.0
(c)	Foundation	35.9
(d)	Building[5]	661.7
(e)	Building services[6]	685.2
(f)	Drainage	2.8
(g)	External works	8.7
(h)	Additional energy conservation, green and recycled features	43.4
(i)	Furniture and equipment[7]	66.9
(j)	Data centre infrastructure[8]	459.6
(k)	Utility connection[9]	28.7

/**$ million** …..

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

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

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

8 Data centre infrastructure components include uninterruptible power supply system, structured cabling infrastructure, data centre IT backbone, hot/cold aisle solution, generator sets, security system, water leakage detection system, equipment racks and associated accessories. These are core facilities specific for data centre operation.

9 Utility connection includes standby power connection conducted by the power company to provide an additional power path.

			$ million (in MOD prices)
(l)	Consultants' fees for		33.0
	(i) contract administration	32.4	
	(ii) management of resident site staff (RSS)	0.6	
(m)	Remuneration of RSS		9.1
(n)	Contingencies		204.7
	Total		2,251.7

13. We propose to engage consultants to undertake contract administration and site supervision for the project. A detailed breakdown of the estimated consultants' fees and RSS costs by man-months is at Annex 9 to Enclosure 1. The CFA of this project is about 13 800 m^2. The estimated construction unit cost, represented by the building and building services costs, is $97,601 per m^2 of CFA in MOD prices. We consider this unit cost reasonable.

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

Year	**$ million (MOD)**
2018 – 2019	56.8
2019 – 2020	285.0
2020 – 2021	549.6
2021 – 2022	777.4
2022 – 2023	165.3
2023 – 2024	162.7

/**Year** …..

Year	$ million (MOD)
2024 – 2025	137.8
2025 – 2026	117.1
	2,251.7

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 from 2018 to 2026. 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.

16. We estimate the annual recurrent expenditure arising from this project to be $244.1 million.

PUBLIC CONSULTATION

17. We consulted the Sham Shui Po District Council on the project on 16 January 2018. Members of the District Council supported the project and advised that the Government should pay attention to the potential risks arising from the dangerous goods stores adjacent to the Complex site. In fact, to address the potential risks arising from the adjacent stores, we have already included the necessary mitigation measures in the design of the Complex.

18. We briefed the Legislative Council Panel on Information Technology and Broadcasting (the Panel) on the project proposal on 9 April 2018. Members of the Panel supported the submission of the funding proposal to the Public Works Subcommittee (PWSC) of Finance Committee. Whilst supporting the project, a Panel member suggested that the Government should consider taking a lead in establishing common green data centre standards for Hong Kong. The Office of the Government Chief Information Officer will look into the case for formulating a more comprehensive set of green data centre development guides that suit local circumstances. In doing so, we will consult the industry and other stakeholders and make reference to the practices and experiences of other countries/cities.

/**ENVIRONMENTAL** …..

ENVIRONMENTAL IMPLICATIONS

19. This project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We completed a Preliminary Environmental Review (PER) for the project in March 2018 and the Director of Environmental Protection agreed with the findings that the project would not cause long-term adverse environmental impacts. The project estimate has included a provision for implementing suitable mitigation measures to control short-term environmental impacts.

20. 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.

21. 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 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 facilities[10]. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

22. 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.

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[10] 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.

23. We estimate that the project will generate in total about 17 800 tonnes of construction waste. Of these, we will reuse about 5 680 tonnes (31.9%) of inert construction waste on site and deliver 10 450 tonnes (58.7%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 1 670 tonnes (9.4%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $1.1 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)).

HERITAGE IMPLICATIONS

24. 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

25. The project does not require any land acquisition.

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

26. This project will adopt various forms of energy efficient features and renewable energy technologies as part of the data centre operation, in particular -

(a) water-cooled chiller;

(b) variable speed drive for chiller;

(c) demand control of supply air;

(d) energy management system; and

(e) photovoltaic system.

27. For greening features, we will provide landscaping and vertical greening in the appropriate areas for environmental and amenity benefits.

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28. For recycled features, we will adopt condensate water recycling system.

29. The total estimated additional cost for adoption of the above energy conservation measures, greening features and recycled features is around $43.4 million (including $37.7 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 4.2% energy savings in the annual energy consumption with a payback period of about five years.

BACKGROUND INFORMATION

30. We upgraded **120KA** to Category B in September 2013.

31. We consulted the Panel and the PWSC on the design and site investigation works for the Complex in December 2014 and June 2015 respectively. In June 2015, we upgraded part of **120KA** to **126KA**, as "Building a government data centre complex – pre-construction consultancy services", to Category A at an estimated cost of $52.6 million in MOD price for carrying out such works. The consultancy services commenced in November 2015, and the design and site investigation works of the Complex were completed in 2017.

32. Of the 21 trees within the project boundary, two trees will be preserved and 19 trees will be felled. All trees to be felled are not important trees[11]. We will incorporate planting proposals as part of the project, including the planting of about two trees, 550 shrubs and 700 groundcovers.

33. We estimate that the proposed works will create about 600 jobs (505 for labourers and 95 for professional or technical staff) providing a total employment of 10 600 man-months.

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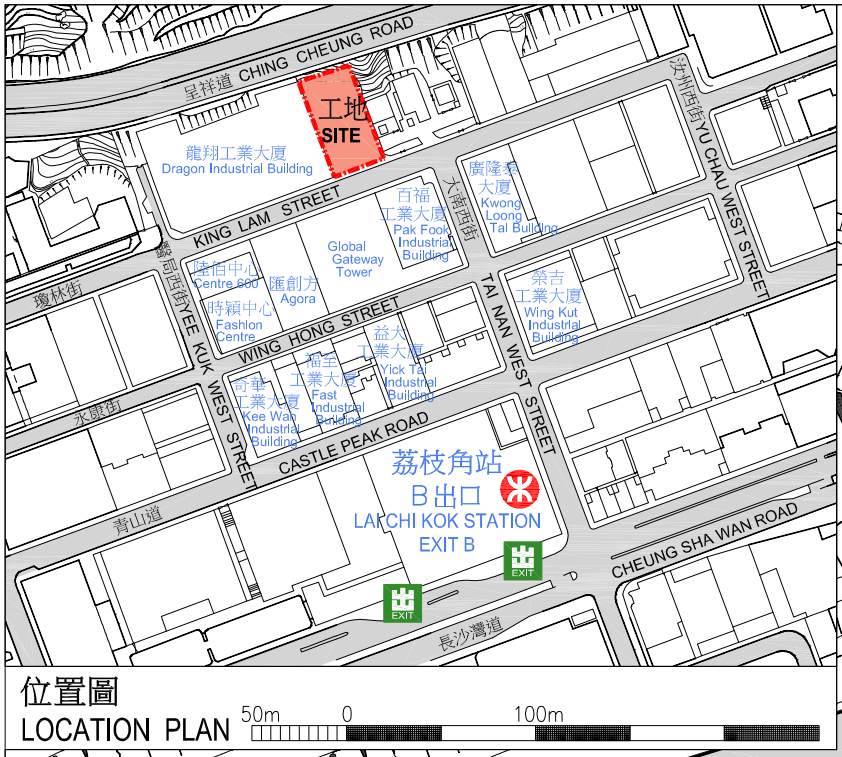
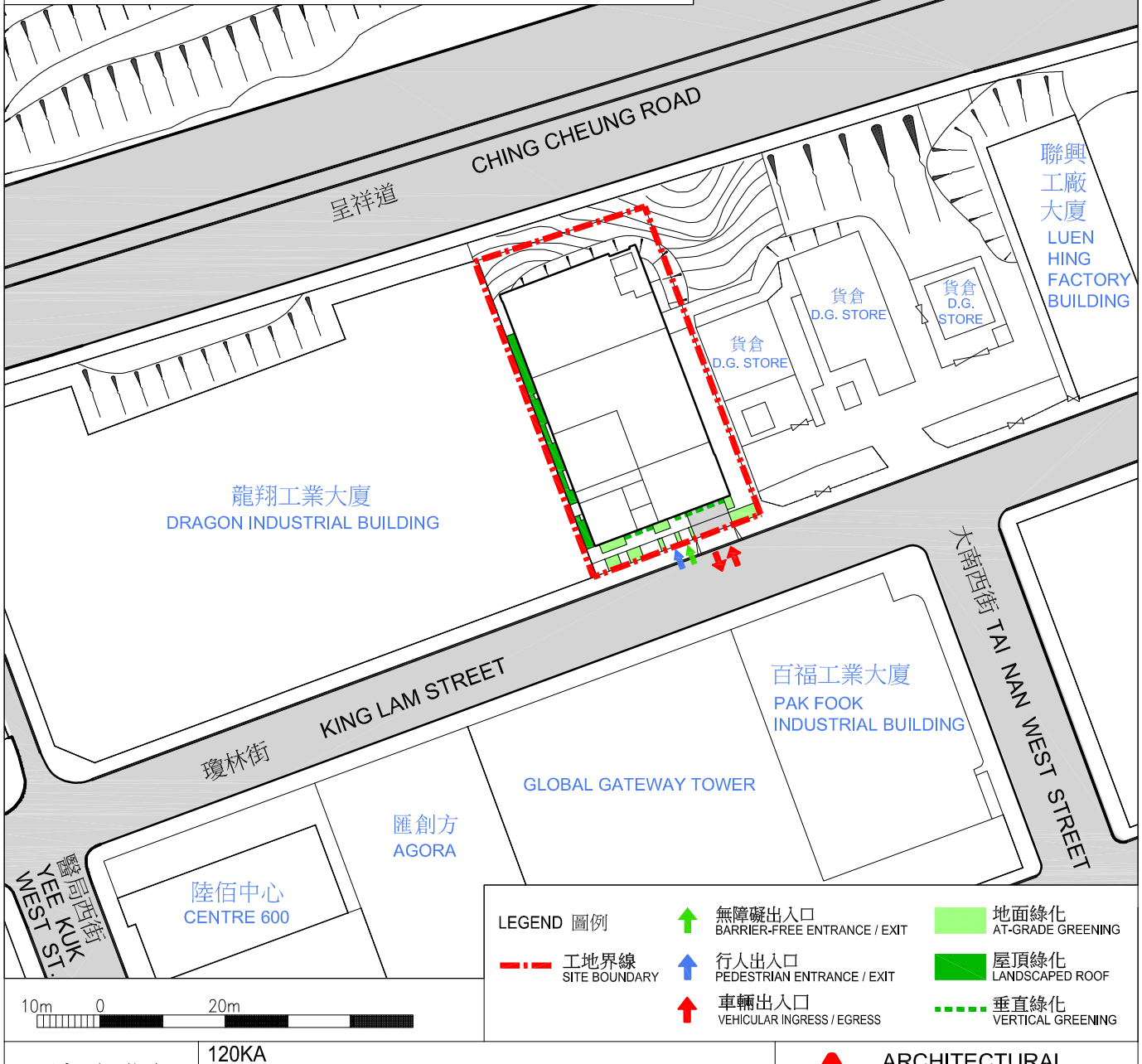
[11] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(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.



位置圖
LOCATION PLAN

50m 0 100m



LEGEND 圖例

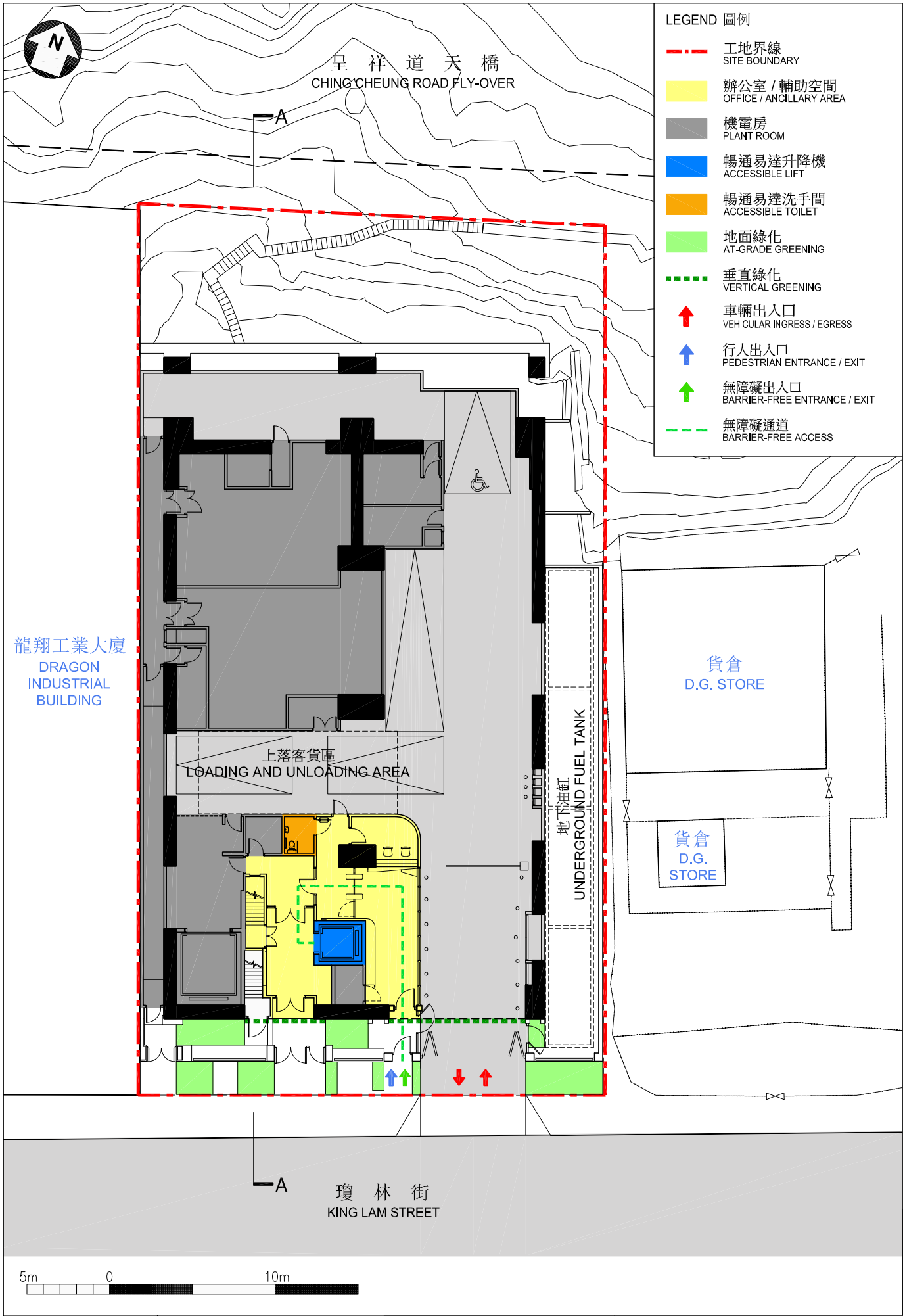
- 工地界線 SITE BOUNDARY
- 無障礙出入口 BARRIER-FREE ENTRANCE / EXIT
- 行人出入口 PEDESTRIAN ENTRANCE / EXIT
- 車輛出入口 VEHICULAR INGRESS / EGRESS
- 地面綠化 AT-GRADE GREENING
- 屋頂綠化 LANDSCAPED ROOF
- 垂直綠化 VERTICAL GREENING

10m 0 20m

工地平面圖
SITE PLAN

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

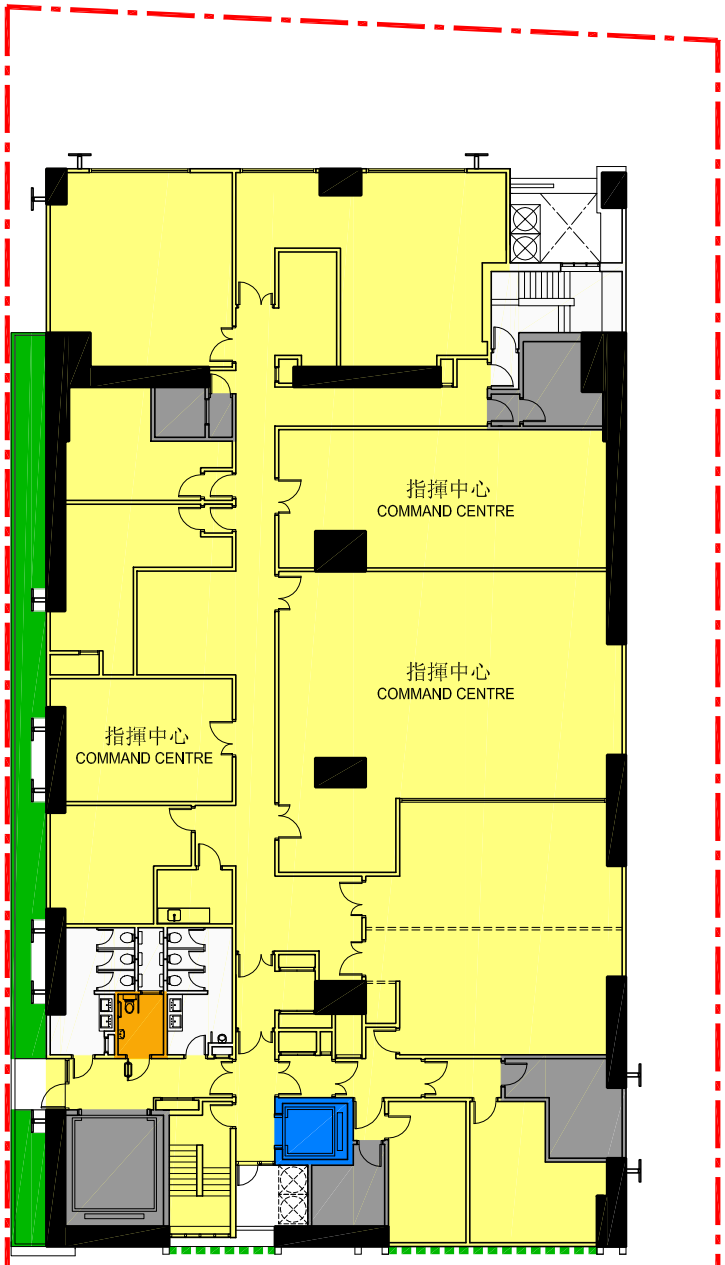
ARCHITECTURAL SERVICES DEPARTMENT 建築署



地下平面圖
G/F PLAN

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

ARCHITECTURAL SERVICES DEPARTMENT 建築署



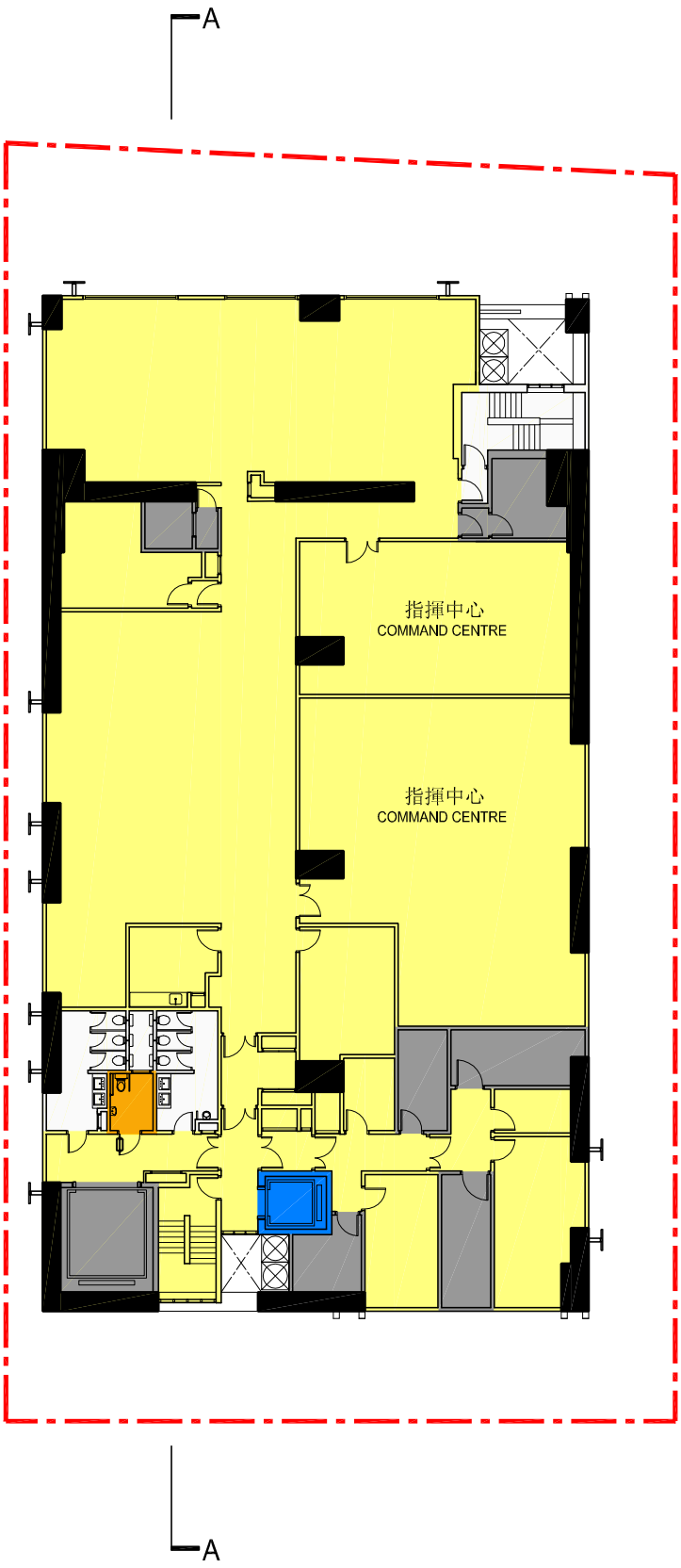
LEGEND 圖例

- 工地界線 SITE BOUNDARY
- 辦公室 / 輔助空間 OFFICE / ANCILLARY AREA
- 機電房 PLANT ROOM
- 暢通易達升降機 ACCESSIBLE LIFT
- 暢通易達洗手間 ACCESSIBLE TOILET
- 屋頂綠化 LANDSCAPED ROOF
- 垂直綠化 VERTICAL GREENING

一樓平面圖
1/F PLAN

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

ARCHITECTURAL SERVICES DEPARTMENT 建築署



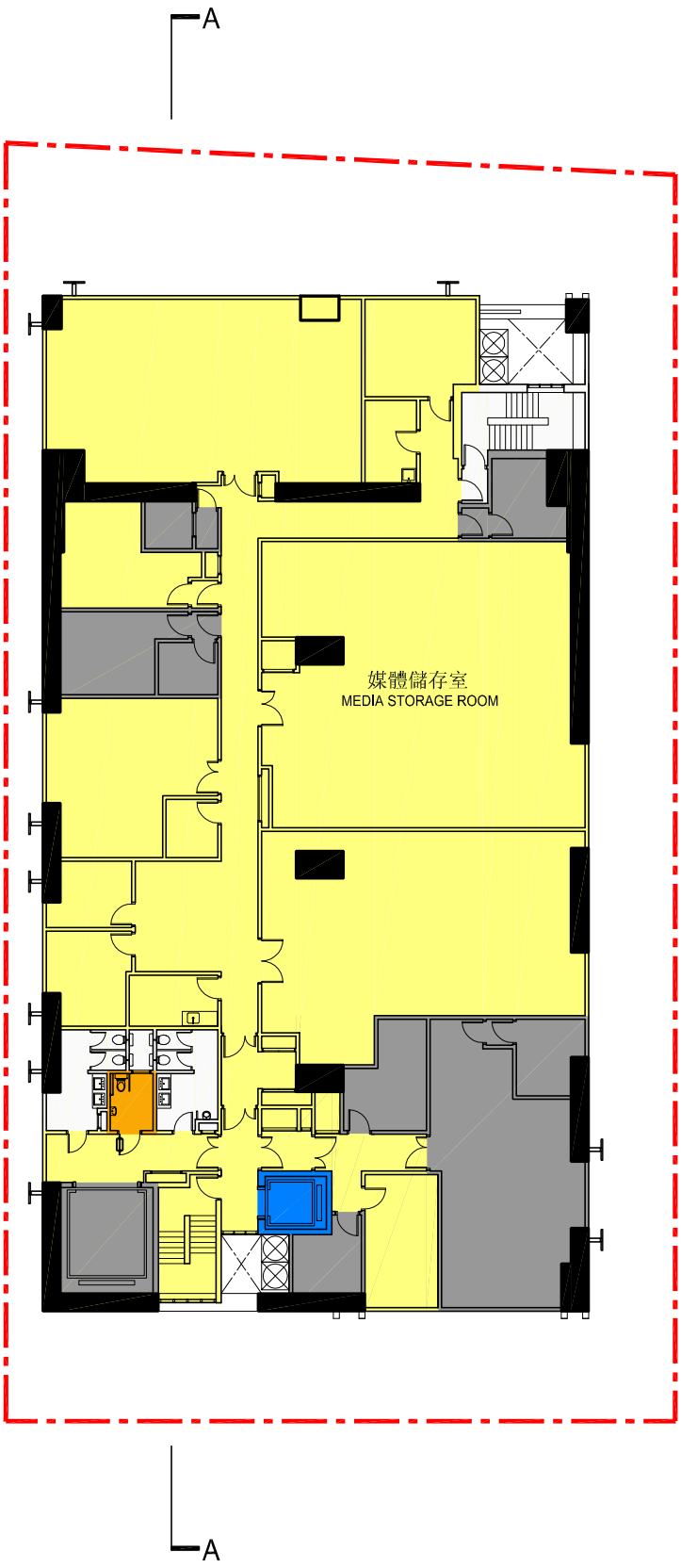
LEGEND 圖例

- 工地界線 SITE BOUNDARY
- 辦公室 / 輔助空間 OFFICE / ANCILLARY AREA
- 機電房 PLANT ROOM
- 暢通易達升降機 ACCESSIBLE LIFT
- 暢通易達洗手間 ACCESSIBLE TOILET

二樓平面圖
2/F PLAN

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

ARCHITECTURAL SERVICES DEPARTMENT 建築署



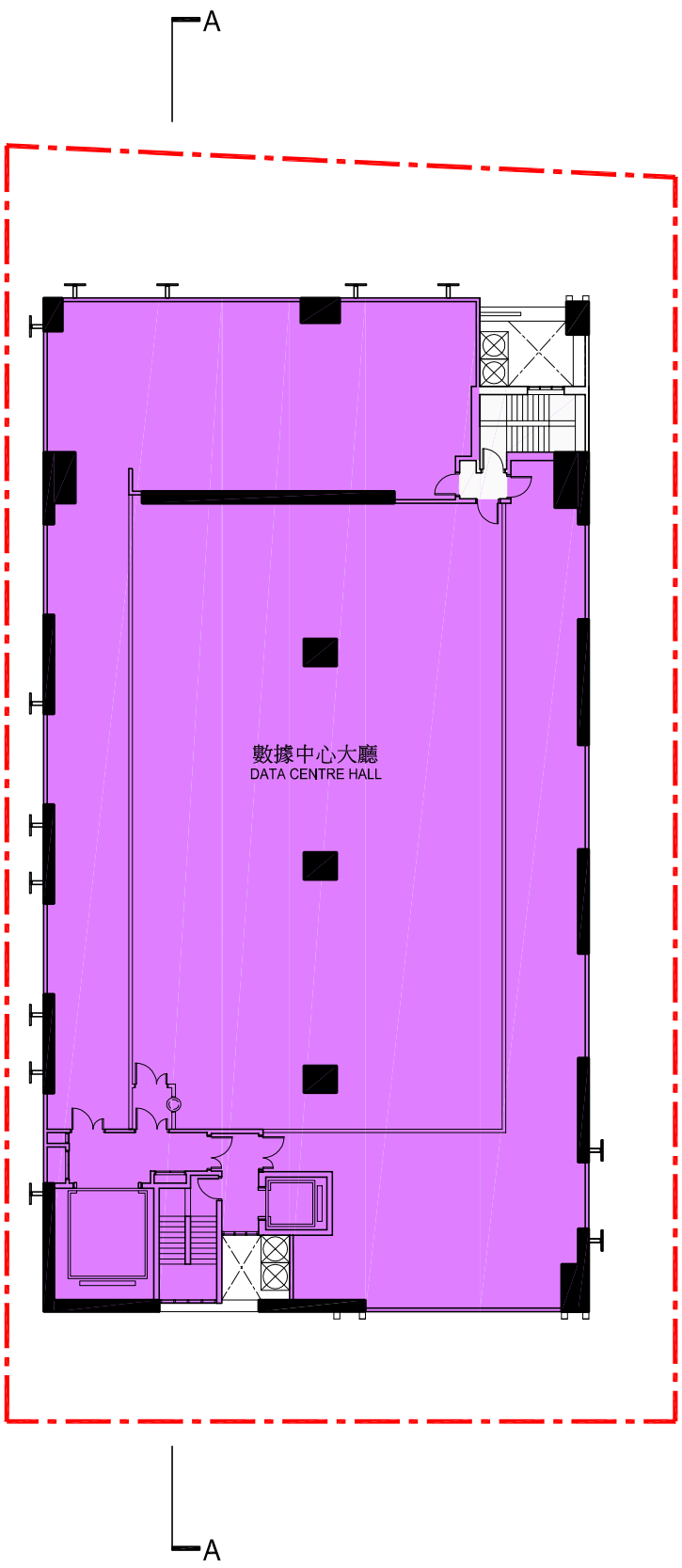
LEGEND 圖例

- 工地界線 SITE BOUNDARY
- 辦公室 / 輔助空間 OFFICE / ANCILLARY AREA
- 機電房 PLANT ROOM
- 暢通易達升降機 ACCESSIBLE LIFT
- 暢通易達洗手間 ACCESSIBLE TOILET

三樓平面圖
3/F PLAN

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

ARCHITECTURAL SERVICES DEPARTMENT 建築署

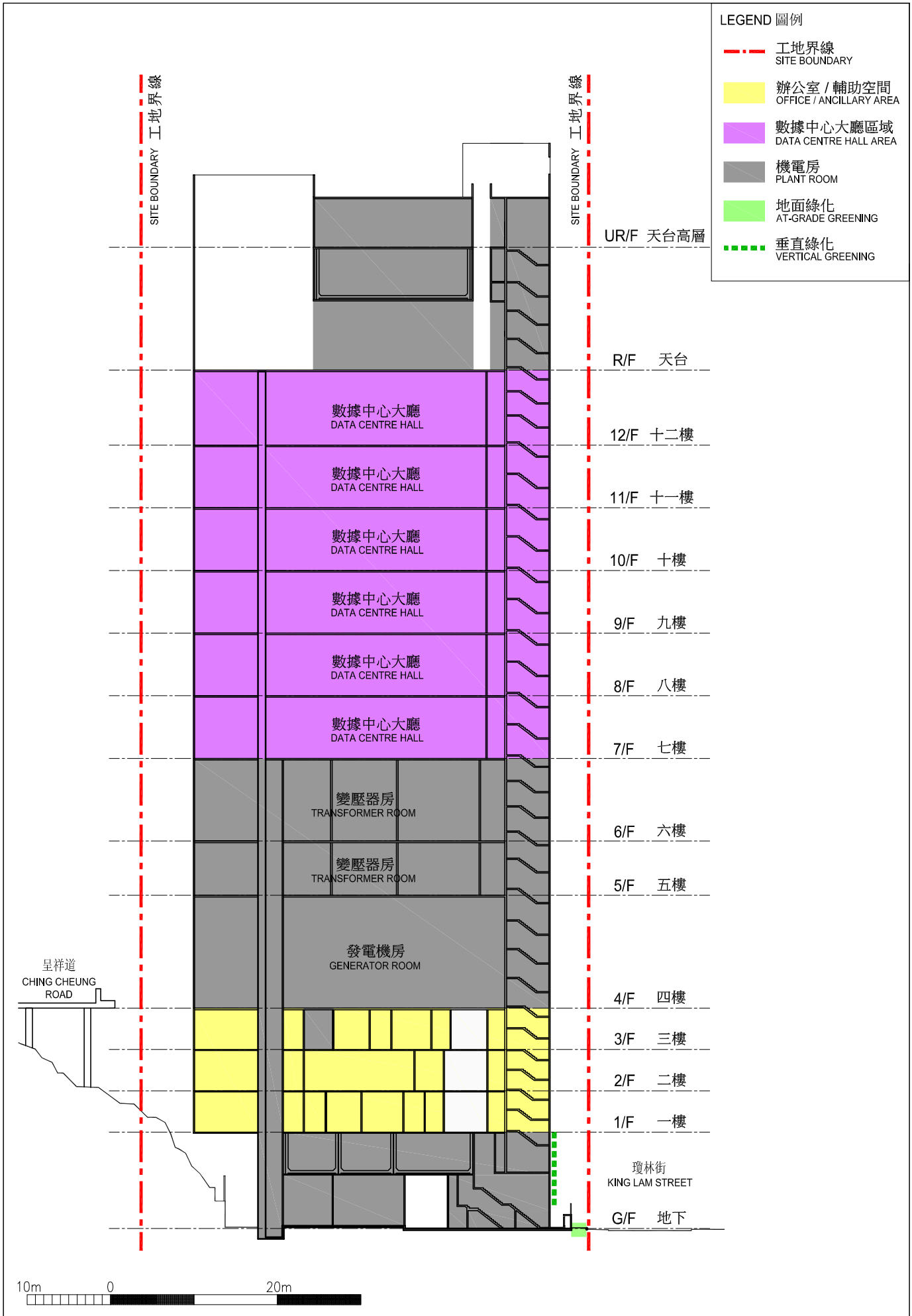


LEGEND 圖例

工地界線
SITE BOUNDARY

數據中心大廳區域
DATA CENTRE HALL AREA

標準層平面圖 TYPICAL FLOOR PLAN (7/F - 12/F)	120KA 興建政府數據中心大樓 BUILDING A GOVERNMENT DATA CENTRE COMPLEX	ARCHITECTURAL SERVICES DEPARTMENT 建築署



A - A 剖面圖
SECTION A - A

120KA
興建政府數據中心大樓
BUILDING A GOVERNMENT DATA CENTRE COMPLEX

ARCHITECTURAL SERVICES DEPARTMENT 建築署

從東南面望向大樓的構思透視圖

PERSPECTIVE VIEW FROM SOUTHEAST DIRECTION (ARTIST'S IMPRESSION)

構思圖 ARTIST'S IMPRESSION	120KA 興建政府數據中心大樓 BUILDING A GOVERNMENT DATA CENTRE COMPLEX	ARCHITECTURAL SERVICES DEPARTMENT 建築署

Annex 9 to Enclosure 1

120KA – Building a government data centre complex

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2017 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	19.8
		Technical	–	–	–	6.6
					Sub-total	26.4 #
(b)	Resident site staff (RSS) costs (Note 3)	Professional	51	38	1.6	6.4
		Technical	33	14	1.6	1.5
					Sub-total	7.9
	Comprising –					
	(i) Consultants' fees for management of RSS			0.5#		
	(ii) Remuneration of RSS			7.4#		
					Total	**34.3**

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants (as at now, MPS salary point 38 = $78,775 per month and MPS salary point 14 = $27,485 per month).

2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for provision of contract administration and site supervision of **120KA**. The assignment will only be executed subject to Finance Committee's funding approval to upgrade **120KA** to Category A.

3. The consultants' staff cost for site supervision is based on the estimate prepared by the Director of Architectural Services. We will only know the actual man-months and actual costs after completion of the construction works.

Remarks

The cost figures in this Annex are shown in constant prices to correlate with the MPS salary point of the same year. The figures marked with # are shown in money-of-the-day prices in paragraph 12 of Enclosure 1.

Construction of the Joint-user Government Office Building in Cheung Sha Wan

PROJECT SCOPE AND NATURE

The proposed joint-user government office building, to be named as the Treasury Building, will be located at the junction of Tung Chau Street and Tonkin Street West, opposite to the West Kowloon Law Courts Building. The project site occupies an area of about 5 121 square metres (m^2). It is easily accessible via various means of public transport and is close to the Mass Transit Railway Nam Cheong and Cheung Sha Wan stations.

2. The proposed 22-storey Treasury Building will provide a net operational floor area (NOFA[1]) of about 26 500 m^2 for accommodating the following key facilities –

(a) offices of six bureaux and departments (b/ds)[2] currently accommodated in the Wan Chai Government Offices Compound (WCGOC), and three departments[3] currently in leased private premises in Wan Chai, Mong Kok, Cheung Sha Wan and Kowloon Bay;

(b) a general out-patient clinic;

(c) a 100-place child care centre[4]; and

/(d) .....

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[1] NOFA is the floor area allocated to the users of a building for carrying out the intended activities. Unlike the construction floor area which takes into account all areas within the building structure envelope, NOFA does not include areas for basic facilities (if any) such as toilets, shower rooms, lift lobbies, stair halls, public or shared corridors, stairwells, escalators and lift shafts, pipes or services ducts, barrier-free access facilities, gender mainstreaming facilities, refuse rooms, flat roofs, car parking spaces, loading and unloading areas and mechanical plant rooms, etc.

[2] Including the Treasury, the Office of the Government Chief Information Officer, the Office of the Communications Authority, the Efficiency Office, the Labour Department and the Torture Claims Appeal Board under the Security Bureau.

[3] Including the Labour Department, the Registration and Electoral Office and Hongkong Post's delivery office.

[4] The construction costs of the bare-shell premises of the child care centre and the day care centre for the elderly will be met by the Lotteries Fund (LF). The future service operators of the welfare facilities will be provided with funding from the LF for internal fitting-out works and procurement of furniture and equipment in accordance with the established mechanism.

(d) a 40-place day care centre for the elderly[4].

3. Staff lactation rooms, baby care rooms, facilities for the disabled, and a public art display area will also be provided in the proposed Treasury Building. The project includes 65 parking spaces to meet the operational needs of b/ds[5].

4. A site and location plan, layout plans, a sectional drawing, an artist's impression and a barrier-free access plan for the project are at Annexes 1 to 8 to Enclosure 2. 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 second quarter of 2022.

JUSTIFICATION

5. It is government policy to accommodate its offices in government-owned properties as far as circumstances permit and reprovision those with no location requirements out of high value areas, including the central business districts (CBD). The Government has decided that the WCGOC site will be used for the development of convention and exhibition venues, hotel facilities and Grade A office space.

6. The relocation of the WCGOC is a mega project involving 28 b/ds and the Judiciary, with a total staff headcount of over 10 000. In view of its complexity, the Government will take forward the relocation exercise in phases and relocate the b/ds and the Judiciary to other government-owned properties, including the nine replacement building projects to be constructed for the relocation exercise[6]. The proposed Treasury Building is one of the nine replacement building projects. It will accommodate b/ds relocated from the WCGOC as well as those currently accommodated in leased private premises, thus providing security of tenure, enhancing operational efficiency and achieving an estimated annual saving in rental expenditure of up to about $28 million.

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[5] The 65 parking spaces comprise 64 underground parking spaces for departments, staff and visitors, and one parking space for ambulance on the ground floor.

[6] Supplementary information on the relocation of the WCGOC was provided to the Public Works Subcommittee on 2 March 2018. See LC Paper No. PWSC133/17-18(01).

7. The proposed Treasury Building will also provide space for some front-line services to meet local service needs. These include –

(a) Labour Department recruitment centres for the catering and retail industries serving as a platform for employers in the two industries to recruit suitable job seekers, and for employees to receive employment information more efficiently;

(b) a general out-patient clinic to be operated by the Hospital Authority to provide primary care services to meet the needs of target groups in the area, including the elderly, low income groups and chronically ill patients. The services will include medical consultation for patients with episodic illnesses and chronic diseases, and multi-disciplinary services to control disease progression;

(c) a 100-place child care centre to meet the demand for child care services in the Sham Shui Po district, especially for children aged below three; and

(d) a 40-place day care centre for the elderly with a moderate or severe level of impairment.

8. The proposed Treasury Building will facilitate the relocation of the b/ds at the WCGOC. The relocation exercise will release valuable land in Wan Chai for convention, exhibition and commercial uses, adding new impetus to the economic development of Hong Kong. The relocation of government offices to non-CBD may also promote office decentralisation, resulting in better utilisation of land resources and more balanced distribution of employment and economic activities territory-wide.

/FINANCIAL .....

FINANCIAL IMPLICATIONS

9. We estimate the capital cost of the project to be $2,281.0 million in money-of-the-day (MOD) prices, broken down as follows –

			$ million (in MOD prices)
(a)	Site works		5.9
(b)	Piling[7]		116.7
(c)	Basement		47.7
(d)	Building[8]		1,046.8
(e)	Building services[9]		632.5
(f)	Drainage		8.8
(g)	External works		39.9
(h)	Additional energy conservation, green and recycled features		30.4
(i)	Furniture and equipment[10]		56.5
(j)	Consultants' fees for		33.1
	(i) contract administration	29.9	
	(ii) management of resident site staff (RSS)	3.2	
(k)	Remuneration of RSS		55.4
(l)	Contingencies		207.3
	Total		2,281.0

/10. .....

[7] Piling works cover construction of piles and all related tests and monitoring.

[8] Building works cover construction of substructure and superstructure of the building.

[9] Building services works cover electrical installation, ventilation and air-conditioning installation, fire services installation, lifts and escalators installation and other specialist installations.

[10] The estimated cost is based on an indicative list of furniture and equipment required.

10. About $41.6 million (in MOD prices) of the apportioned construction cost for the child care centre and day care centre for the elderly has been included in the total capital cost of $2,281.0 million. The $41.6 million construction cost would first be funded by the Capital Works Reserve Fund under **121KA** and then be reimbursed from the Lotteries Fund (LF) after project completion. Funding approval from the LF will be sought separately under the established mechanism.

11. We propose to engage consultants to undertake contract administration and site supervision for the project. A detailed breakdown of the estimate for consultants' fees and RSS costs by man-months is at Annex 9 to Enclosure 2. The construction floor area (CFA) of this project is about 51 600 m^2. The estimated construction unit cost, represented by the building and building services costs, is $32,545 per m^2 of CFA in MOD prices. We consider this unit cost comparable to that of similar projects built by the Government.

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

Year	$ million (in MOD prices)
2018 – 2019	150.3
2019 – 2020	163.0
2020 – 2021	296.0
2021 – 2022	473.6
2022 – 2023	619.9
2023– 2024	244.1
2024– 2025	202.9
2025– 2026	131.2
	2,281.0

/13. .....

13. 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 2026. 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.

14. We estimate the annual recurrent expenditure arising from this project to be $48.3 million.

PUBLIC CONSULTATION

15. We consulted the Sham Shui Po District Council (SSPDC) and local stakeholders (including the Mutual Aid Committees of Fu Cheong Estate and Wing Cheong Estate, and the schools in the vicinity) on the proposed Treasury Building. At its meeting on 24 June 2014, members of the SSPDC unanimously supported the construction of the proposed Treasury Building. SSPDC and local stakeholders particularly welcomed the provision of the general out-patient clinic and recruitment centres, which would directly benefit the local community.

16. We consulted the Legislative Council Panel on Financial Affairs (FA Panel) on the project on 5 March 2018. Members supported the project and the submission of its funding application to the Public Works Subcommittee (PWSC).

ENVIRONMENTAL IMPLICATIONS

17. This project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We completed a Preliminary Environmental Review for the project in April 2017 and the Director of Environmental Protection agreed with the findings that the project would not cause long-term adverse environmental impacts. The project estimate has included a provision for implementing suitable mitigation measures to control short-term environmental impacts.

18. 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 barrier walls for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel-washing facilities.

/19. …..

19. At the planning and design stages, we have considered measures to reduce the generation of construction waste where possible (e.g. using recyclable and reusable metal site hoardings and signboards). 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 facilities[11]. We will also 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.

20. 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, and ensure that the day-to-day operations 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 also control the disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively through a trip-ticket system.

21. We estimate that the project will generate about 49 890 tonnes of construction waste in total. Of these, we will reuse about 7 520 tonnes (15.1%) of inert construction waste on-site and deliver 36 170 tonnes (72.5%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 6 200 tonnes (12.4%) of non-inert construction waste at landfills. The total cost for disposal of construction waste at public fill reception facilities and landfill sites for this project is estimated to be $3.81 million (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)).

HERITAGE IMPLICATIONS

22. This project will not affect any declared monument, proposed monument, graded historic site/building, site of archaeological interest or Government historic site identified by the Antiquities and Monuments Office.

/LAND .....

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[11] 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.

LAND ACQUISITION

23. The project does not require any land acquisition.

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

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

(a) variable speed drive for chiller;

(b) demand control of supply air;

(c) heat energy reclaim of exhaust air; and

(d) photovoltaic system.

25. For greening features, we will provide vertical greening on facades of the building, as well as other landscape features in appropriate areas for environmental and amenity benefits.

26. For recycled features, we will adopt a rainwater harvesting system for landscape irrigation with a view to conserving water.

27. The total estimated additional cost for adoption of the above energy conservation measures, greening features and recycled features is around $30.4 million (including $15.3 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 11.7% energy savings in the annual energy consumption with a payback period of about 8.3 years.

BACKGROUND INFORMATION

28. We upgraded **121KA** to Category B in December 2013.

29. We consulted the FA Panel and the PWSC on the pre-construction consultancy services and site investigation works of the project in November 2014 and June 2015 respectively. On 13 November 2015, the FC approved the upgrading of part of **121KA** to Category A as **128KA** "Joint-user Government

/Office .....

Office Building in Cheung Sha Wan – pre-construction consultancy services and site investigation works" at an estimated cost of $103.2 million in MOD prices for carrying out such works. The consultancy services commenced in March 2016 and the design of the project was completed in June 2017.

30. In response to the comments raised by PWSC Members in June 2015, we have revised the project scope to incorporate additional facilities, namely a child care centre and a day care centre for the elderly, and to increase the provision of car parking spaces by 44%, from 45 to 65 spaces.

31. Of the 54 trees within the project boundary, one tree will be preserved. The proposed works will involve the removal of 53 trees, including 45 trees to be felled and 8 trees to be transplanted outside the project site. All trees to be removed are not important trees[12]. We will incorporate planting proposals as part of the project, including the planting of about 45 trees, 8 550 shrubs, 4 350 groundcovers and 50 m^2 of grassed area.

32. We estimate that the proposed works will create about 750 jobs (680 for labourers and 70 for professional/technical staff) providing a total employment of 29 700 man-months.

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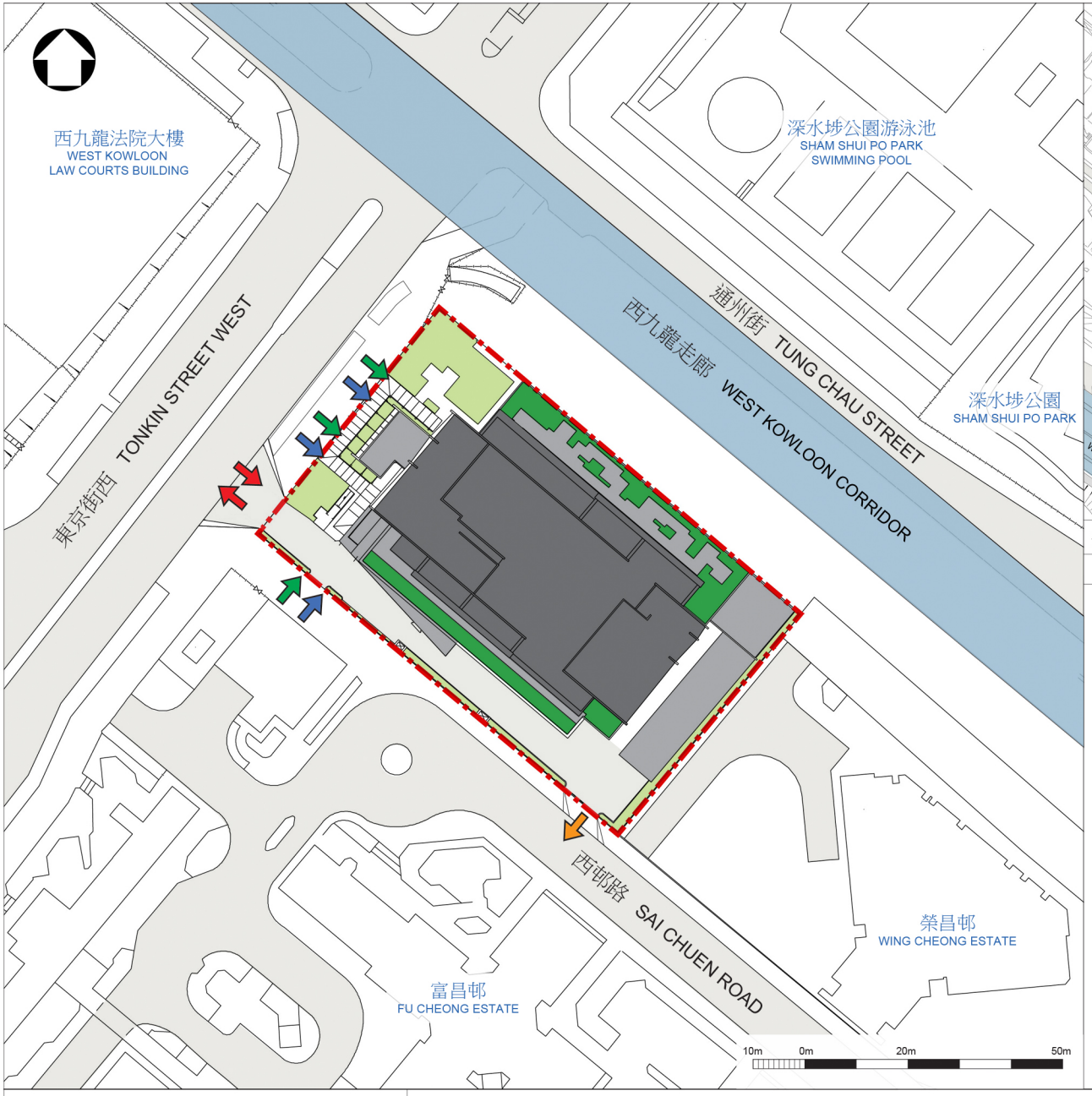
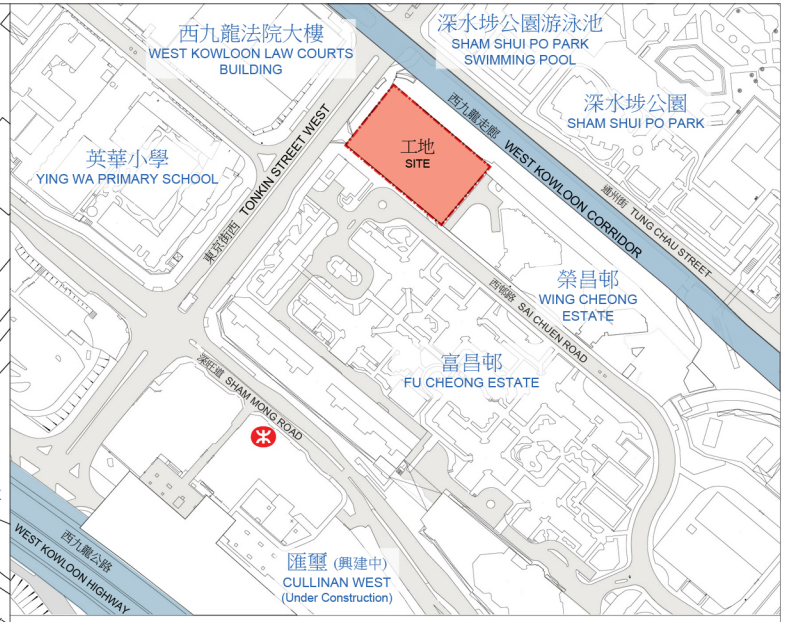
[12] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(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.





位置圖 LOCATION PLAN

10m 0m 20m 50m

圖例 LEGEND

- 工地界線 SITE BOUNDARY
- 行人出入口 PEDESTRIAN ENTRANCE/EXIT
- 無障礙出入口 BARRIER-FREE ENTRANCE/EXIT
- 車輛出入口 VEHICULAR ENTRANCE/EXIT
- 緊急車輛出口 EMERGENCY VEHICULAR EXIT
- 港鐵南昌站 MTR NAM CHEONG STATION
- 現有行車天橋 EXISTING VEHICULAR FLYOVER
- 地面綠化 AT GRADE GREENING
- 屋頂綠化 LANDSCAPED ROOF
- 平台 PODIUM
- 大樓 TOWER

工地平面圖
SITE PLAN

121KA

長沙灣政府聯用辦公大樓 - 建造工程

JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署

地下平面圖
GROUND FLOOR PLAN

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署

圖例 LEGEND

- 工地界線 SITE BOUNDARY
- 幼兒中心 CHILD CARE CENTRE
- 普通科門診診所 GENERAL OUT-PATIENT CLINIC
- 共用地方 COMMON AREA
- 辦公室 OFFICE AREA
- 機電房 PLANT ROOM
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 綠化範圍 LANDSCAPED AREA
- 無障礙通道 BARRIER-FREE ACCESS
- 垂直綠化 VERTICAL GREENING

5m 0m 10m 25m

一樓平面圖
FIRST FLOOR PLAN

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署

圖例 LEGEND

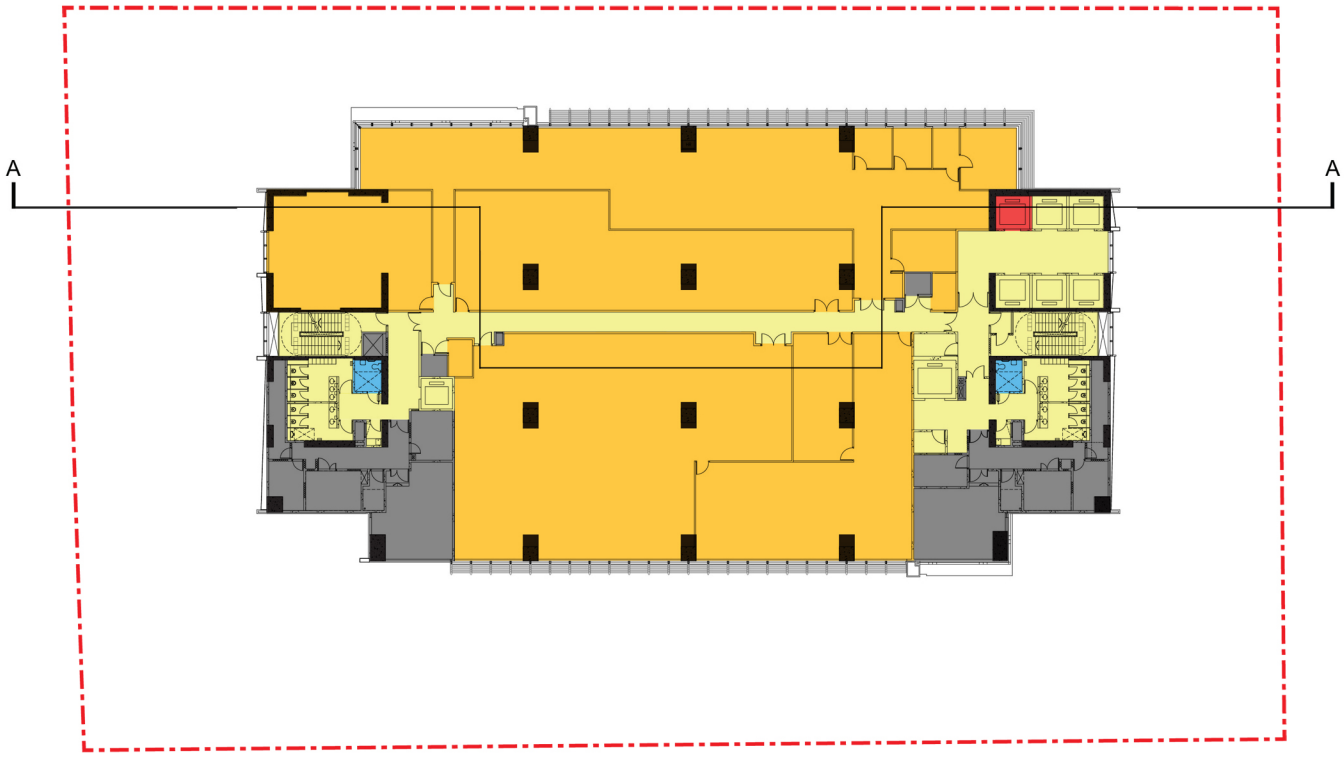
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 共用地方 COMMON AREA
- 辦公室 OFFICE AREA
- 機電房 PLANT ROOM
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 綠化範圍 LANDSCAPED AREA
- 垂直綠化 VERTICAL GREENING

5m 0m 10m 25m

二樓平面圖
SECOND FLOOR PLAN

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

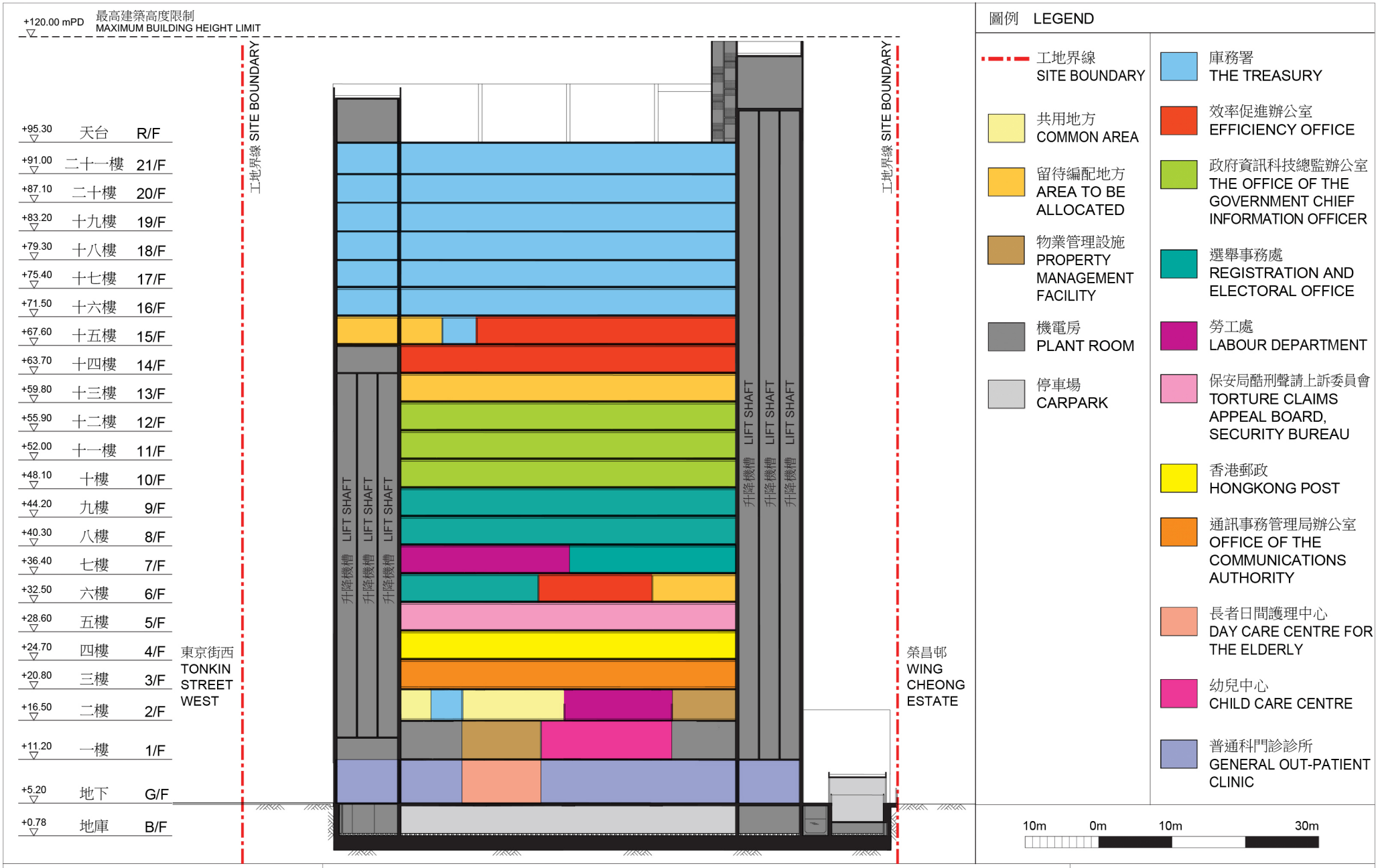
- 工地界線 SITE BOUNDARY
- 共用地方 COMMON AREA
- 辦公室 OFFICE AREA
- 機電房 PLANT ROOM
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT

10m 0m 10m 20m

標準層平面圖
TYPICAL FLOOR PLAN

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署



A-A剖面圖
SECTION A-A

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署

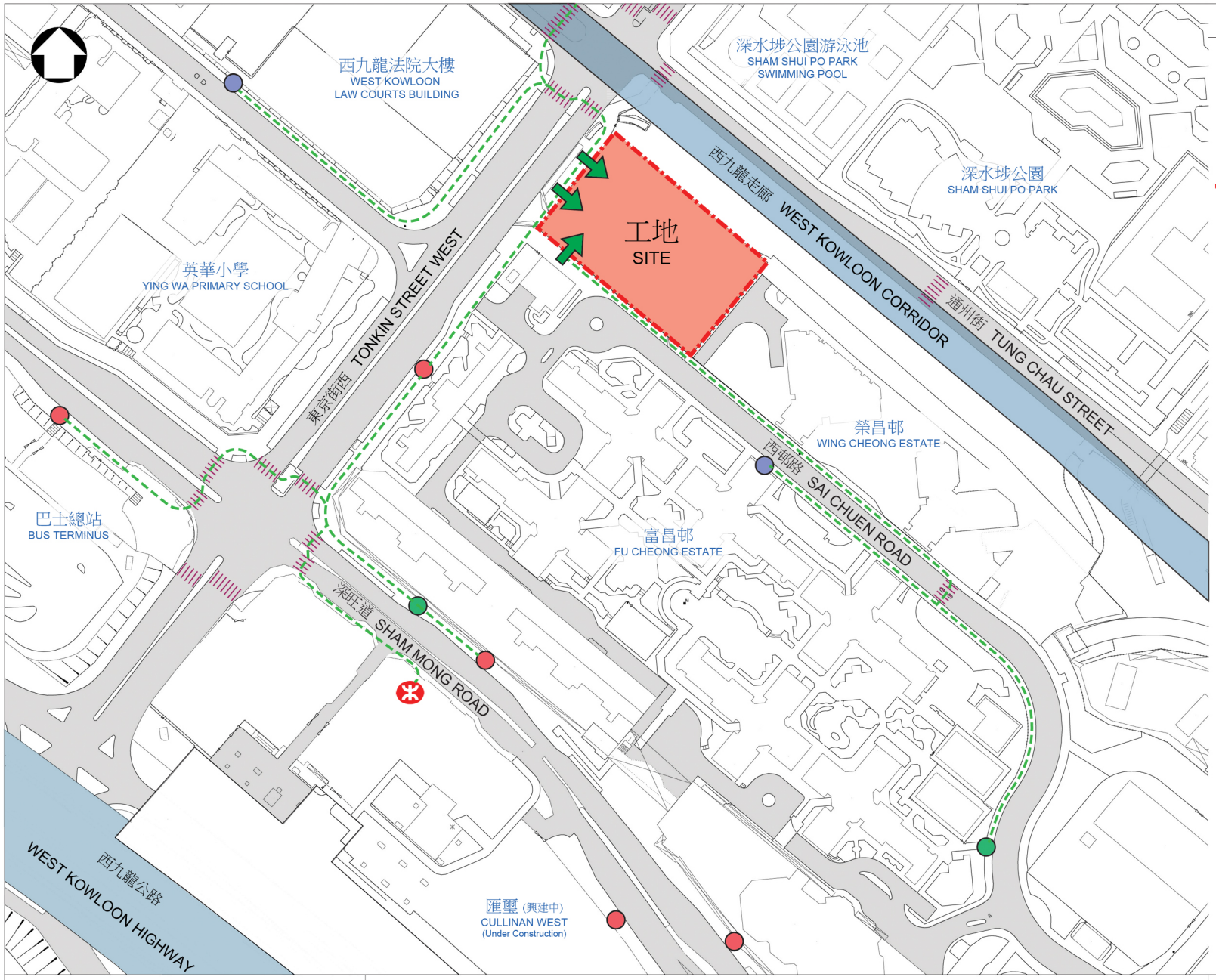
從西南面望向大樓的構思透視圖

PERSPECTIVE VIEW FROM SOUTHWESTERN DIRECTION (ARTIST'S IMPRESSION)

構思圖
ARTIST'S IMPRESSION

121KA
長沙灣政府聯用辦公大樓 - 建造工程
JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

- 無障礙出入口 BARRIER-FREE ENTRANCE/EXIT
- 無障礙通道 BARRIER-FREE ACCESS
- 工地界線 SITE BOUNDARY
- 現有行人過路處 EXISTING AT GRADE PEDESTRIAN CROSSING
- 現有巴士站 EXISTING BUS STOP
- 現有小巴站 EXISTING MINI BUS STOP
- 現有的士上落客區 EXISTING TAXI PICK UP / DROP OFF AREA
- 現有行車天橋 EXISTING VEHICULAR FLYOVER
- 港鐵南昌站 MTR NAM CHEONG STATION

10m 0m 20m 50m

無障礙通道平面圖
PLAN OF BARRIER-FREE ACCESS

121KA

長沙灣政府聯用辦公大樓 - 建造工程

JOINT-USER GOVERNMENT OFFICE BUILDING IN CHEUNG SHA WAN - CONSTRUCTION

ARCHITECTURAL SERVICES DEPARTMENT 建築署

121KA – Joint-user Government Office Building in Cheung Sha Wan — construction

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2017 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	11.8
		Technical	–	–	–	11.8
					Sub-total	23.6 #
(b)	Resident site staff (RSS) costs (Note 3)	Professional	138	38	1.6	17.4
		Technical	672	14	1.6	29.6
					Sub-total	47.0
	Comprising -					
	(i) Consultants' fees for management of RSS		2.8 #			
	(ii) Remuneration of RSS		44.2 #			
					Total	**70.6**

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants. (as at now, MPS salary point 38 = $78,775 per month and MPS salary point 14 = $27,485 per month).

2. The consultants' staff cost for contract administration is calculated in accordance with the existing consultancy agreement for provision of contract administration and site supervision of **121KA**. The assignment will only be executed subject to Finance Committee's funding approval to upgrade **121KA** to Category A.

3. The consultants' staff cost for site supervision is based on the estimate prepared by the Director of Architectural Services. We will only know the actual man-months and actual costs after completion of the construction works.

Remarks

The cost figures in this Annex are shown in constant prices to correlate with the MPS salary point of the same year. The figures marked with # are shown in money-of-the-day prices in paragraph 9 of this Enclosure.