For discussion **PWSC(2022-23)1**
on 6 April 2022

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDING
Recreation, Culture and Amenities – Mixed amenity
68RG – District open space, sports centre and public vehicle park at Sze Mei Street

Members are invited to recommend to the Finance Committee the upgrading of **68RG** to Category A at an estimated cost of $1,605.0 million in money-of-the-day prices for the construction of a district open space, a sports centre and an underground public vehicle park at Sze Mei Street, San Po Kong.

PROBLEM

We need to carry out the above capital works project to enhance and increase leisure, recreational and sports facilities of the Kai Tak East Sports Centre (KTESC) and the Kai Tak East Playground, and provide underground public car parking spaces with the adoption of smart parking system.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Development, proposes to upgrade **68RG** to Category A at an estimated cost of $1,605.0 million in money-of-the-day (MOD) prices.

/PROJECT …..

PROJECT SCOPE AND NATURE

3. The project site is located at San Po Kong (SPK), covering an area of approximately 10 000 square metres (m^2) bounded by Sze Mei Street, Luk Hop Street, Tsat Po Street, Kai San Road, the Kai Tak East Park and the KTESC. The proposed scope of the project comprises –

(a) a district open space (DOS) providing –

(i) a 7-a-side hard-surfaced soccer pitch cum handball court cum futsal courts, with retractable spectator stands accommodating about 300 people;

(ii) an outdoor basketball court cum tape ball cricket pitch;

(iii) a multi-purpose open area with soft landscaping and sitting-out areas; and

(iv) ancillary facilities including store rooms;

(b) a sports centre accommodating –

(i) a main games arena that can be interchangeable as two basketball courts, two volleyball courts or eight badminton courts, with retractable spectator stands accommodating about 200 people;

(ii) two multi-purpose activity rooms which can be combined into one larger activity room;

(iii) an indoor sports climbing wall;

(iv) a children's play room;

(v) a fitness room;

(vi) two semi-enclosed rooftop basketball courts; and

/(vii) …..

(vii) ancillary facilities including a booking office, a management office, a first aid room, a babycare room, toilets, changing and shower rooms and store rooms, etc.;

(c) an underground public vehicle park (PVP) providing –

(i) about 300 public parking spaces for various types of vehicles including private cars (PCs), light goods vehicles, medium goods vehicles, heavy goods vehicles and coaches, as well as motorcycles;

(ii) an automated parking system (APS) to accommodate some of the public parking spaces for PCs; and

(iii) ancillary facilities including a management office, an APS system control and monitoring room, etc.; and

(d) road improvement and modification works including –

(i) provision of an additional northbound traffic lane at the junction of Luk Hop Street and Tsat Po Street; and

(ii) conversion of existing lay-by into footpath at Sze Mei Street to re-align the existing pedestrian walkway.

4. A site and location plan, floor plans, sectional drawings, an artist's impression and a barrier-free access plan for the project are at **Enclosures 1 to 10** respectively. We plan to commence the proposed works upon obtaining funding approval from the Finance Committee for completion in around four years.

/JUSTIFICATION …..

JUSTIFICATION

5. The Government has planned to develop and revamp the DOS abutting Sze Mei Street, Luk Hop Street and Tsat Po Street in SPK. Improvement to the existing open space facilities within the project site falls within one of the 26 projects in the Five-year Plan for Sports and Recreation Facilities announced in the Policy Address in January 2017, originally planned to be implemented under Public Works Programme (PWP) Item No. **B446RO** – "District open space adjoining SPK public housing development".

6. In the Policy Agenda in October 2017, it was promulgated that the Energizing Kowloon East initiative is extended to SPK, particularly focusing on connectivity, improving the environment, and promoting vibrancy and diversified development. The Energizing Kowloon East Office then studied with relevant departments for better utilisation of Sze Mei Street DOS.

7. In order to enable the public to enjoy the planned DOS as early as possible, the DOS project was split into two phases. The first phase covers the area adjoining Rhythm Garden and King Tai Court, which was implemented by the Housing Department under PWP Item No. **B446RO** and opened to public in August 2021 to become the Kai Tak East Park. The second phase covers a new sports centre with enhanced facilities, improvement of DOS facilities and an underground PVP to be implemented under this project.

8. As advised by the Transport Department, there is a high parking demand in SPK whereas the current public parking provision cannot cope with this demand. The shortfall was aggravated when the two nearby temporary short-term tenancy car parks were closed for the development of the Tung Wah Group of Hospitals Holistic Centre for Youth Development in November 2017, and the need to increase parking provision has become more imminent to address the inadequate parking provision.

9. With a view to increasing the provision of parking spaces, it was promulgated in the Policy Address in 2018 that the Government would follow the principle of "single site, multiple use" to provide public car parking spaces in suitable "Government, Institution or Community" facilities and public open space projects. It was also stated that public car parking spaces would be provided beneath the public open space at Sze Mei Street. The Policy Address Supplement in October 2019 announced that the Government would take forward the Sze Mei

/Street …..

Street project to enhance and increase leisure, recreational and sports facilities, and provide about 300 underground parking spaces with the adoption of smart parking system to complement smart city development. The proposed PVP is to take forward the Government's commitment to provide more parking spaces to cater for the demand in the area. An APS is proposed as a smart city initiative. With the proposed road improvement and modification works as detailed in paragraph 3(d) above, and provision of two vehicular access points for the proposed PVP, no adverse traffic impact on the surrounding road network is expected to be created by the project.

FINANCIAL IMPLICATIONS

10. We estimate the capital cost of the project to be $1,605.0 million in MOD prices, broken down as follows –

		$million (in MOD prices)
(a)	Site works	13.5
(b)	Foundation	26.7
(c)	Basement[1]	279.1
(d)	Building[2]	597.8
(e)	Building services[3]	411.2
(f)	Drainage	17.9
(g)	External works	62.8
(h)	Additional energy conservation, green and recycled features	24.0

/(i) …..

---

[1] Basement works cover construction of basement enclosure, waterproofing and excavation works.

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

[3] Building services works cover electrical installation, ventilation and air-conditioning installation, fire services installation, lift installation and other miscellaneous installations.

			$million (in MOD prices)
(i)	Furniture and equipment (F&E)[4]		10.1
(j)	Consultants' fees for		12.6
	(i) contract administration	12.3	
	(ii) management of resident site staff (RSS)	0.3	
(k)	Remuneration of RSS		3.4
(l)	Contingencies		145.9
	Total		1,605.0

11. We propose to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimates for consultants' fees and RSS costs by man-months is at **Enclosure 11**. The construction floor area (CFA) of this project is about 29 050 m^2. The estimated construction unit cost, represented by the building and building services costs, is $34,733 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)**
2022 – 23	52.8
2023 – 24	108.3
2024 – 25	333.8

/**Year** ….

[4] The estimated cost is based on an indicative list of F&E required.

Year	$ million (in MOD prices)
2025 – 26	729.6
2026 – 27	144.6
2027 – 28	117.5
2028 – 29	76.9
2029 – 30	41.5
	1,605.0

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 2022 to 2030. We will deliver the construction works through a design-and-build contract. We intend to award the contract on a lump-sum basis as we can clearly define the scope of the works in advance. The contract will provide for price adjustment.

14. We estimate the annual recurrent expenditure arising from this project to be $33.94 million.

PUBLIC CONSULTATION

15. The District Facilities Management Committee of the Wong Tai Sin District Council (WTSDC) was consulted on the project scope on 21 May 2019. Members generally supported the project and requested for its early implementation. On project implementation and detailed design, WTSDC was consulted on 24 December 2021 and no further comments were received. The Wong Tai Sin South West Area Committee was also consulted on 30 December 2021 and the committee members generally supported the project.

/16. …..

16. We consulted the Legislative Council Panel on Development on 22 March 2022. Members of the Panel supported the project and did not raise any objection to the submission of the funding proposal to the Public Works Subcommittee.

ENVIRONMENTAL IMPLICATIONS

17. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We completed the Preliminary Environmental Review (PER) for the project in December 2020. The PER has concluded and the Director of Environmental Protection agreed that the project would not have any long-term environmental impacts.

18. 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 the use of quality powered mechanical equipment and movable noise barrier for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel washing facilities. We have included in the project estimates the cost to implement suitable environmental mitigation measures.

19. At the planning and design stages, we have considered measures to reduce 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 (PFRFs)[5]. 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 generation of construction waste.

/20. …..

---

[5] PFRFs are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste at PFRFs requires a licence issued by the Director of Civil Engineering and Development.

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. 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 the non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert and non-inert construction waste at PFRFs and landfills respectively through a trip-ticket system.

21. We estimate that the project will generate in total about 203 810 tonnes of construction waste. Of these, we will reuse about 670 tonnes (0.3%) of inert construction waste on site and deliver 193 210 tonnes (94.8%) of inert construction waste to PFRFs for subsequent reuse. We will dispose of the remaining 9 930 tonnes (4.9%) of non-inert construction waste at landfills. The total cost for disposal of construction waste at PFRFs and landfill sites is estimated to be $15.7 million for this project (based on a unit charge rate of $71 per tonne for disposal at PFRFs and $200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)).

HERITAGE IMPLICATIONS

22. The 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

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) high efficiency chiller;

(b) heat pump;

/(c) …..

(c) demand control of supply air;

(d) energy reclaim of exhaust air;

(e) photovoltaic system;

(f) solar powered light fittings; and

(g) solar hot water system.

25. For greening features, we will provide landscaping and greening features on various levels and vertical surfaces in the new buildings as appropriate 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 features is around $24.0 million (including around $5.7 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 12% energy savings in the annual energy consumption with a payback period of about eight years.

BACKGROUND INFORMATION

28. We upgraded **68RG** to Category B in September 2018. We engaged consultants to undertake various services and investigation works, including ground investigation, underground services investigation, topographical and tree survey, preliminary environmental review, layout design, landscape design, geotechnical engineering and quantity surveying services at a total cost of about $9.4 million. The services and works provided 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". All the above services and works have been completed except for the quantity surveying services.

/29. …..

29. Of the 31 trees within and adjacent to the project boundary, 16 trees will be retained, seven trees will be removed by felling and eight trees will be replanted within the project site subject to finalisation of design. All trees to be removed are common trees that are not trees of particular interest[6]. We will incorporate planting proposals as part of the project, including the estimated quantities of 14 trees, 22 000 shrubs and 25 000 groundcovers.

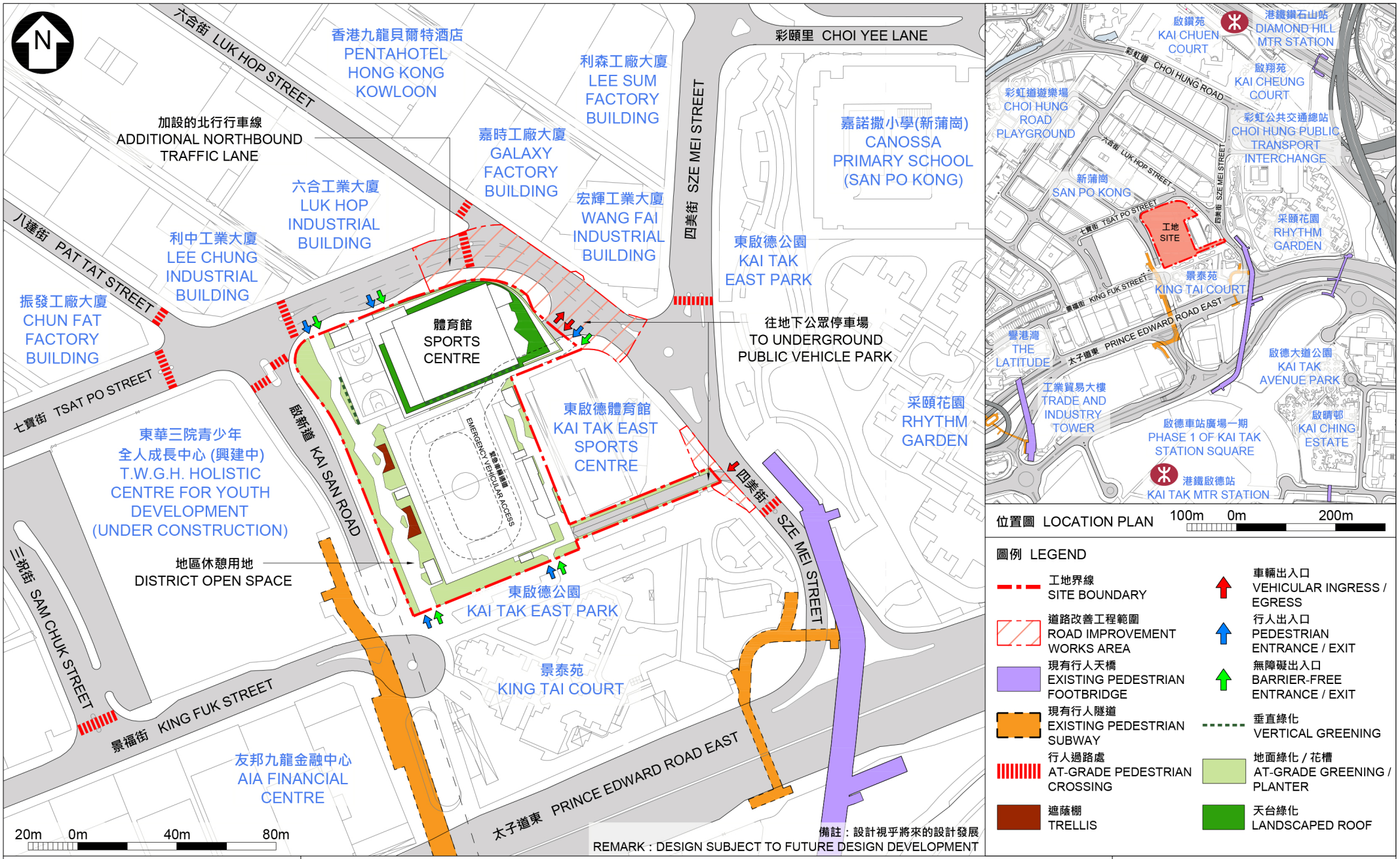
30. We estimate that the proposed works will create about 230 jobs (200 for labourers and 30 for professional or technical staff) providing a total employment of 9 730 man-months.

Development Bureau
March 2022

---

[6] "Trees of particular interest" are defined in paragraph 2.6.1 of the Guidelines for Tree Risk Assessment and Management Arrangement promulgated by the Development Bureau. Examples of trees of particular interest are listed as follows :

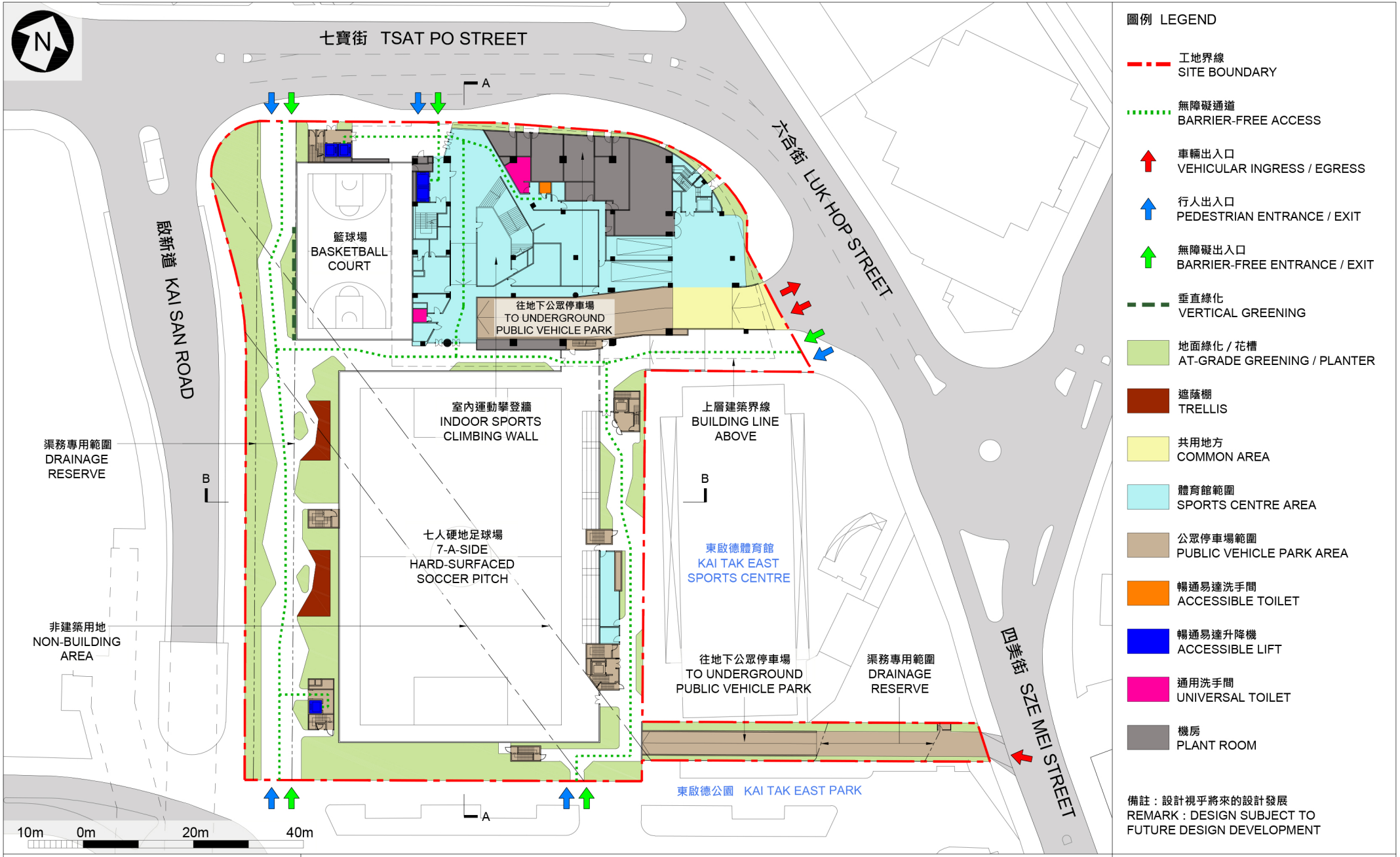
- Old and Valuable Trees (OVTs) and trees that are potentially registerable in the Register of OVTs;
- Trees of 100 years old or above;
- Trees with trunk diameter equal to or exceeding 1.0 metre (measured at 1.3 metres above ground level), or with height/canopy spread equal to or exceeding 25 metres;
- Stonewall trees or trees of outstanding form (taking account of overall tree sizes, shape and any special features);
- Rare tree species listed in "Rare and Precious Plants of Hong Kong" (http://herbarium.gov.hk/PublicationsPreface.aspx?BookNameId=1) published by Agriculture, Fisheries and Conservation Department;
- Endangered plant species protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586);
- Tree species listed in the Forestry Regulations (Cap. 96A) under the Forests and Countryside Ordinance (Cap. 96);
- Well-known Fung Shui trees;
- Landmark trees with evidential records to support the historical or cultural significance of the trees;
- Trees which may arouse widespread public concerns; and
- Trees which may be subject to strong local objections on removal.



工地平面圖
SITE PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

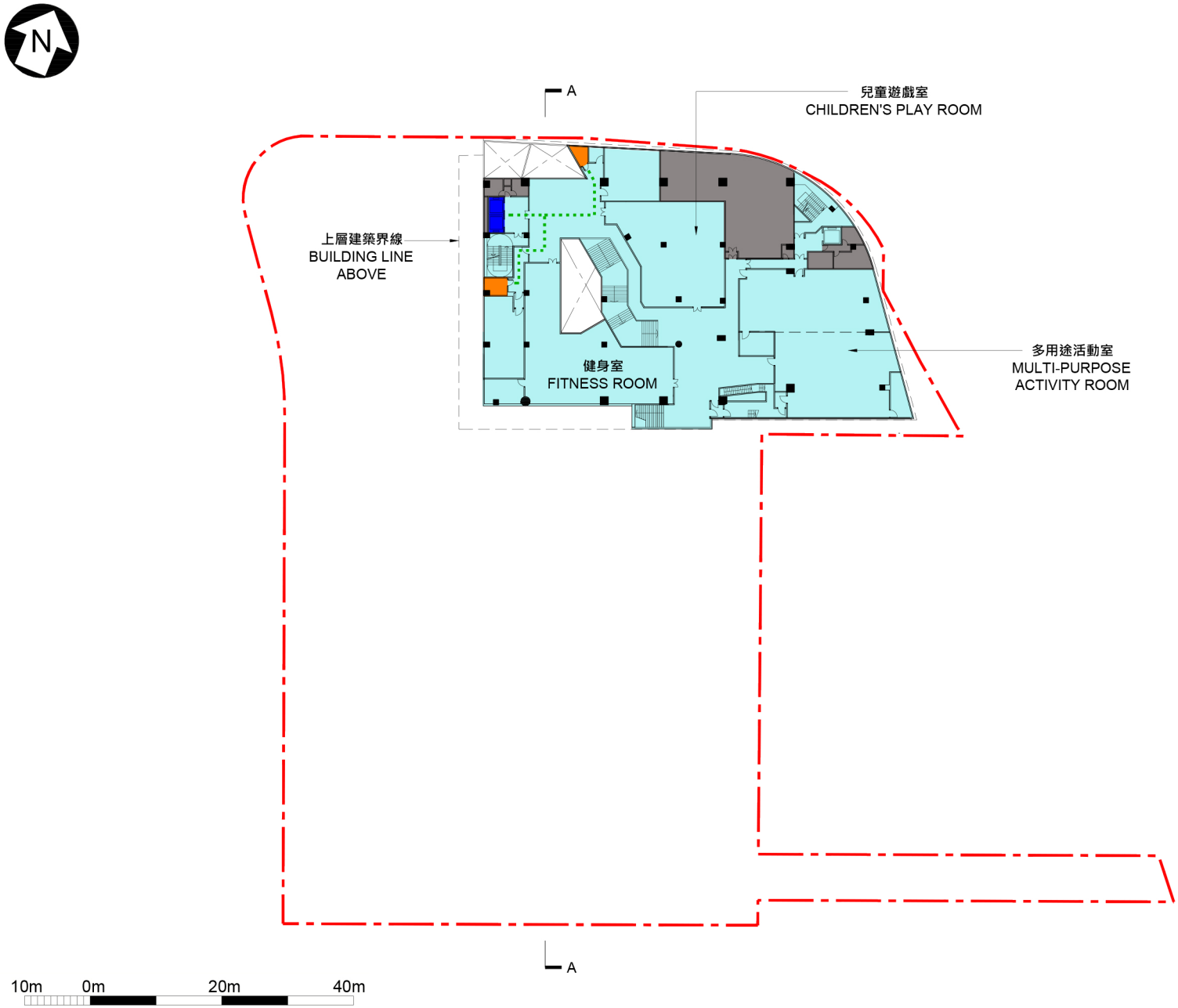
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 車輛出入口 VEHICULAR INGRESS / EGRESS
- 行人出入口 PEDESTRIAN ENTRANCE / EXIT
- 無障礙出入口 BARRIER-FREE ENTRANCE / EXIT
- 垂直綠化 VERTICAL GREENING
- 地面綠化 / 花槽 AT-GRADE GREENING / PLANTER
- 遮蔭棚 TRELLIS
- 共用地方 COMMON AREA
- 體育館範圍 SPORTS CENTRE AREA
- 公眾停車場範圍 PUBLIC VEHICLE PARK AREA
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 通用洗手間 UNIVERSAL TOILET
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

地下平面圖
GROUND FLOOR PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

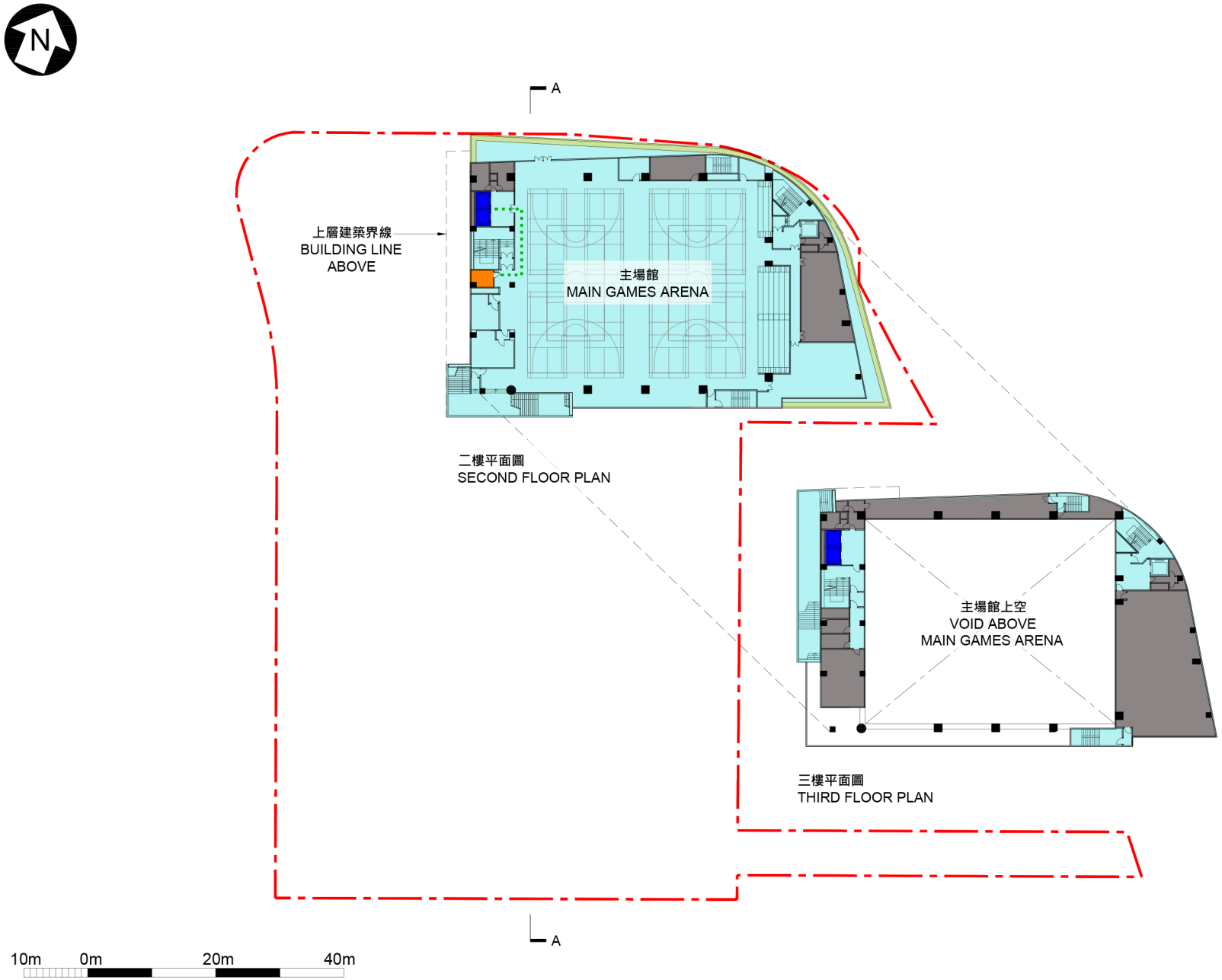
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 體育館範圍 SPORTS CENTRE AREA
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

一樓平面圖
FIRST FLOOR PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

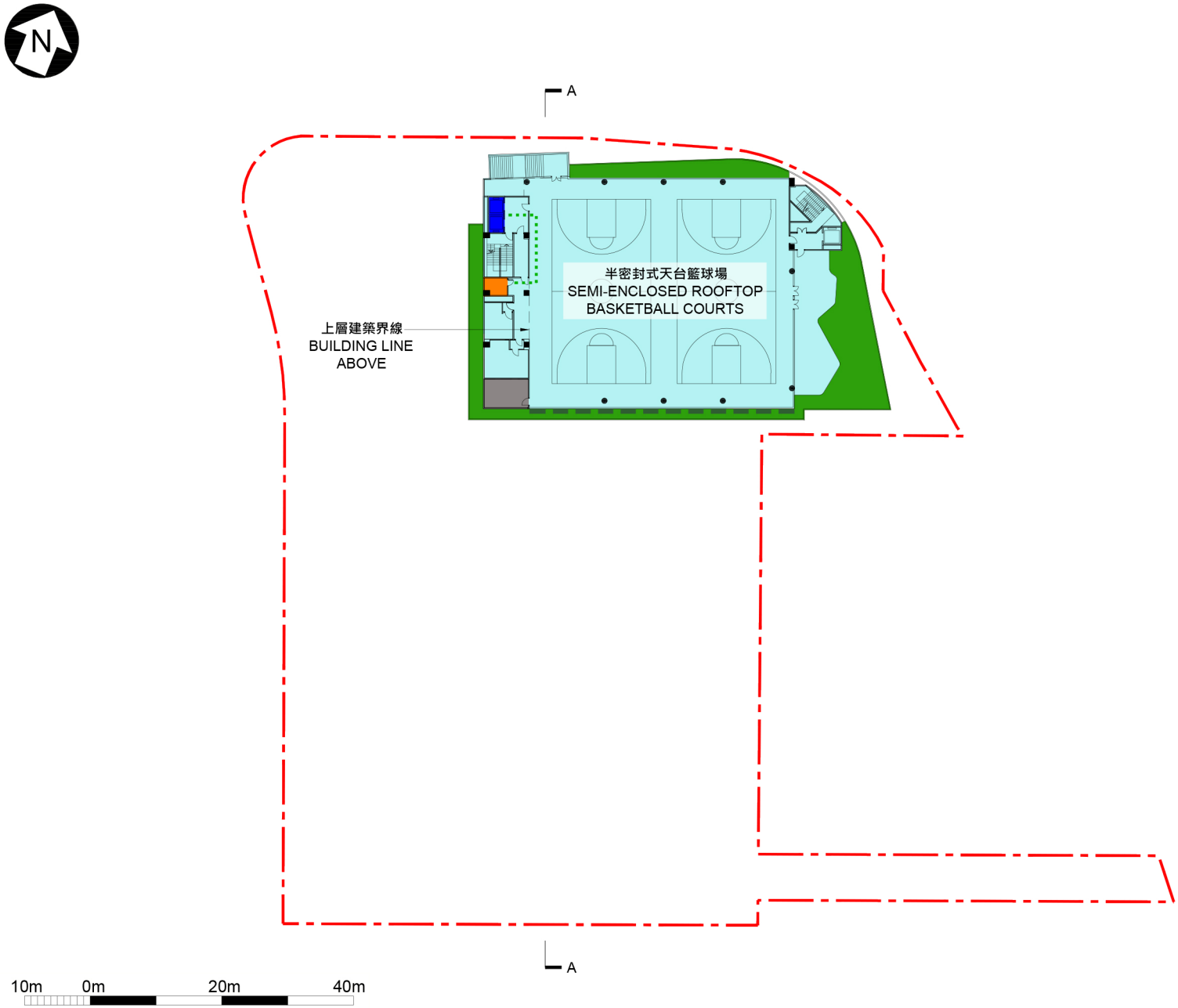
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 體育館範圍 SPORTS CENTRE AREA
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 花槽 PLANTER
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

二樓及三樓平面圖
SECOND FLOOR AND THIRD FLOOR PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

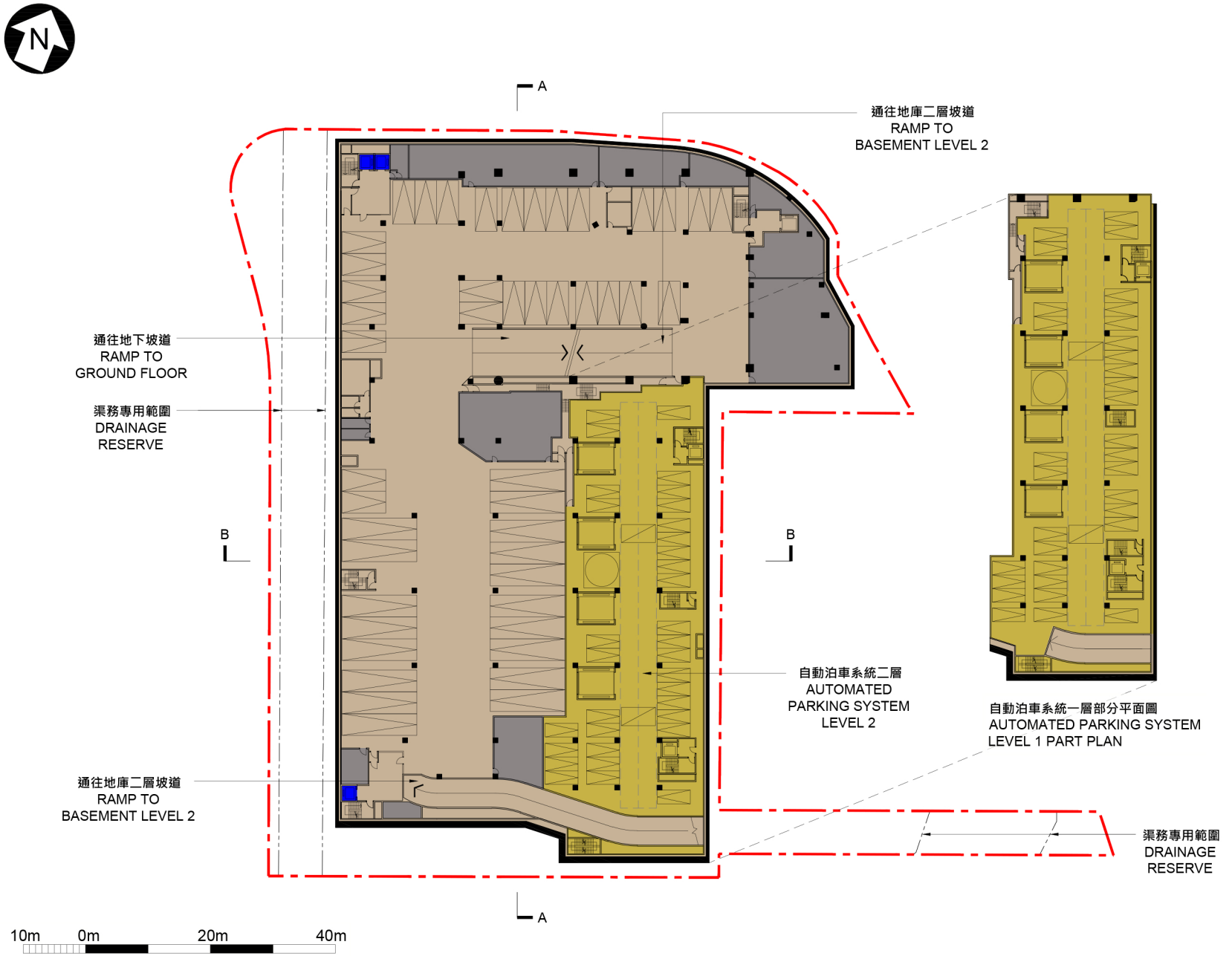
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 體育館範圍 SPORTS CENTRE AREA
- 暢通易達洗手間 ACCESSIBLE TOILET
- 暢通易達升降機 ACCESSIBLE LIFT
- 垂直綠化 VERTICAL GREENING
- 天台綠化 LANDSCAPED ROOF
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

天台平面圖
ROOF PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

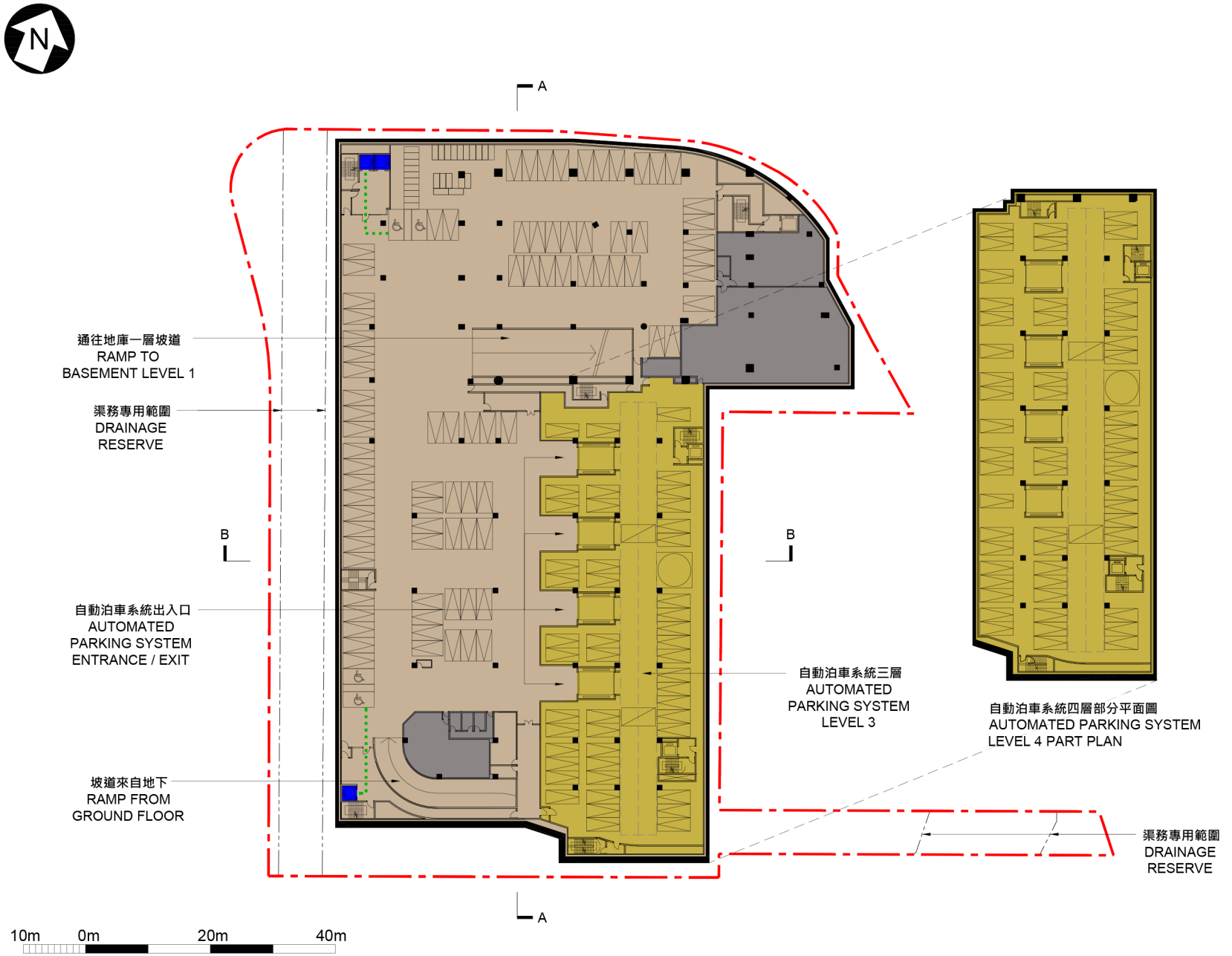
- 工地界線 SITE BOUNDARY
- 公眾停車場範圍 PUBLIC VEHICLE PARK AREA
- 公眾停車場範圍 (自動泊車系統範圍) PUBLIC VEHICLE PARK AREA (AUTOMATED PARKING SYSTEM AREA)
- 暢通易達升降機 ACCESSIBLE LIFT
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

地庫一層平面圖
BASEMENT LEVEL 1 PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

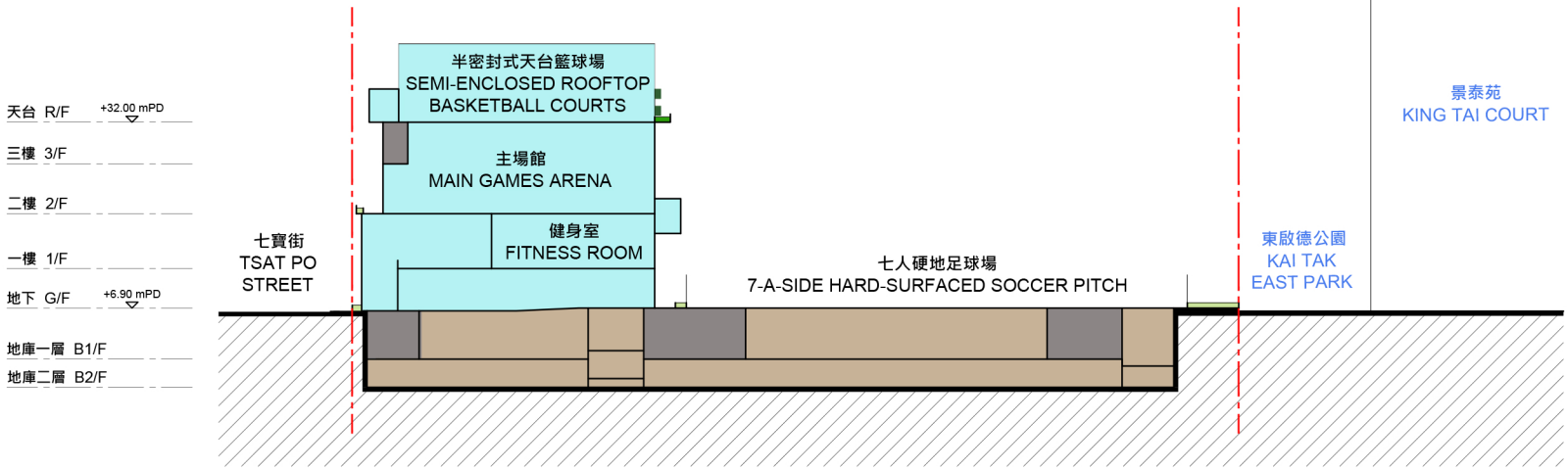
- 工地界線 SITE BOUNDARY
- 無障礙通道 BARRIER-FREE ACCESS
- 公眾停車場範圍 PUBLIC VEHICLE PARK AREA
- 公眾停車場範圍 (自動泊車系統範圍) PUBLIC VEHICLE PARK AREA (AUTOMATED PARKING SYSTEM AREA)
- 暢通易達升降機 ACCESSIBLE LIFT
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

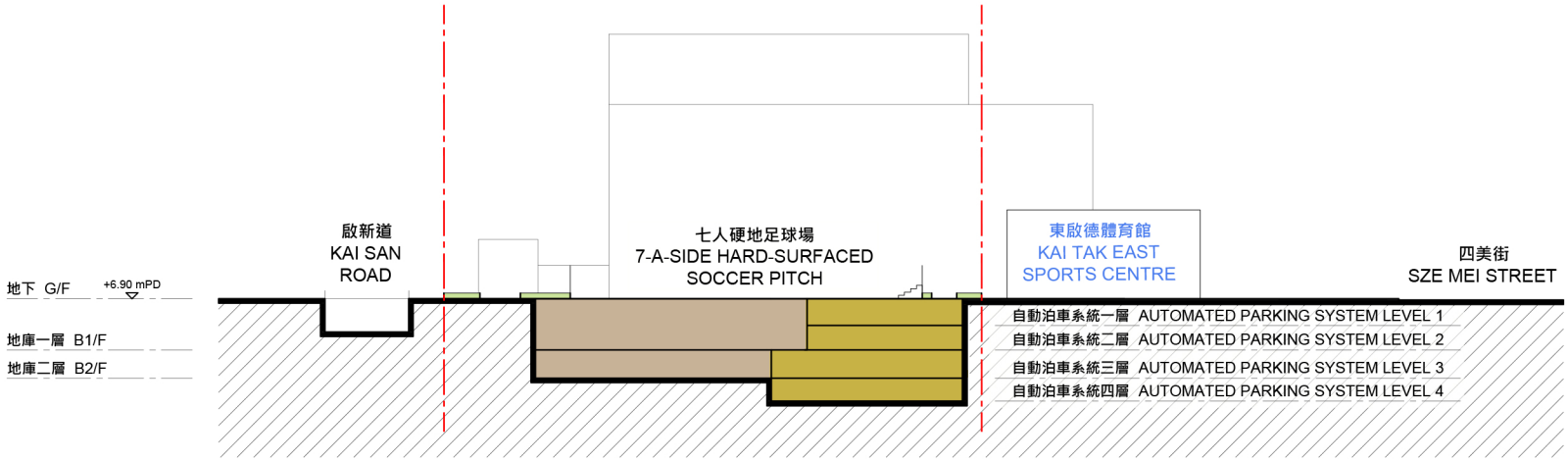
地庫二層平面圖
BASEMENT LEVEL 2 PLAN

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署



剖面圖 A-A
SECTION A-A



剖面圖 B-B
SECTION B-B

10m 0m 20m 40m

圖例 LEGEND

- 工地界線 SITE BOUNDARY
- 垂直綠化 VERTICAL GREENING
- 地面綠化 / 花槽 AT-GRADE GREENING / PLANTER
- 天台綠化 LANDSCAPED ROOF
- 體育館範圍 SPORTS CENTRE AREA
- 公眾停車場範圍 PUBLIC VEHICLE PARK AREA
- 公眾停車場範圍 (自動泊車系統範圍) PUBLIC VEHICLE PARK AREA (AUTOMATED PARKING SYSTEM AREA)
- 機房 PLANT ROOM

備註：設計視乎將來的設計發展
REMARK : DESIGN SUBJECT TO FUTURE DESIGN DEVELOPMENT

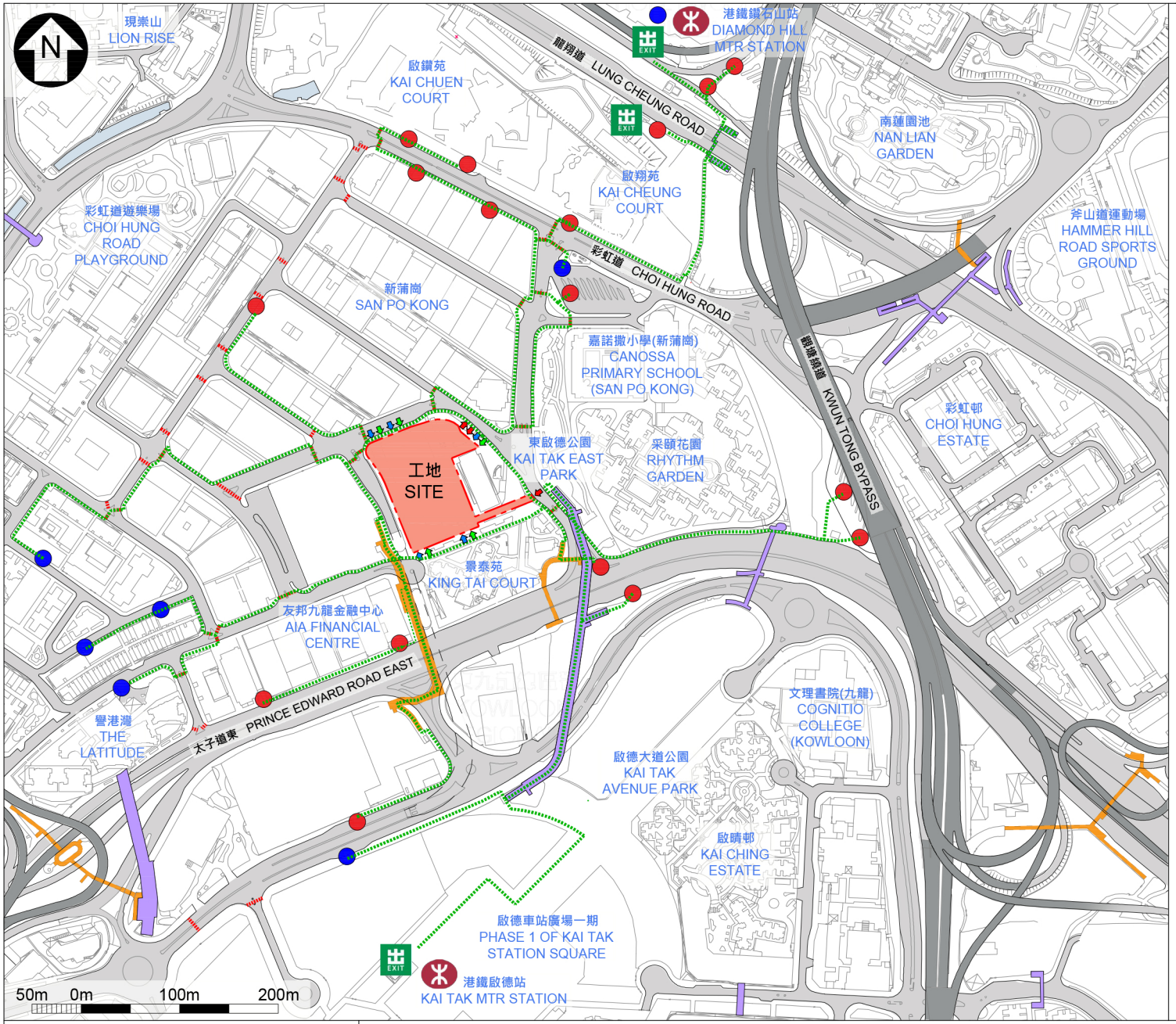
剖面圖
SECTIONS

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署

從南面望向體育館的構思透視圖
PERSPECTIVE VIEW OF SPORTS CENTRE FROM SOUTH DIRECTION (ARTIST'S IMPRESSION)

構思圖 ARTIST'S IMPRESSION	68RG 四美街地區休憩用地、體育館及公眾停車場 DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET	ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

- 工地界線 SITE BOUNDARY
- 行人過路處 AT-GRADE PEDESTRIAN CROSSING
- 車輛出入口 VEHICULAR INGRESS / EGRESS
- 行人出入口 PEDESTRIAN ENTRANCE / EXIT
- 無障礙出入口 BARRIER-FREE ENTRANCE / EXIT
- 無障礙通道 BARRIER-FREE ACCESS
- 現有行人天橋 EXISTING PEDESTRIAN FOOTBRIDGE
- 現有行人隧道 EXISTING PEDESTRIAN SUBWAY
- 現有巴士站 EXISTING BUS STOP
- 現有小巴站 EXISTING MINIBUS STOP
- 現有港鐵站出入口 EXISTING MTR STATION ENTRANCE / EXIT

無障礙通道平面圖
PLAN OF BARRIER-FREE ACCESS

68RG
四美街地區休憩用地、體育館及公眾停車場
DISTRICT OPEN SPACE, SPORTS CENTRE AND PUBLIC VEHICLE PARK AT SZE MEI STREET

ARCHITECTURAL SERVICES DEPARTMENT 建築署

68RG – District open space, sports centre and public vehicle park at Sze Mei Street

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2021 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	5.7
		Technical	–	–	–	4.7
					Sub-total	10.4 #
(b)	Resident site staff (RSS) costs (Note 3)	Professional	–	–	–	–
		Technical	66	14	1.6	3.2
					Sub-total	3.2
	Comprising –					
	(i) Consultants' fees for management of RSS				0.3 #	
	(ii) Remuneration of RSS				2.9 #	
					Total	13.6

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the staff cost of RSS supplied by the consultants (as at now, MPS salary point 14 = $30,235 per month).
2. The consultant's fees for contract administration are calculated in accordance with the existing consultancy agreement for the provision of contract administration and site supervision of **68RG**. The assignment will only be executed subject to the Finance Committee's funding approval to upgrade **68RG** to Category A.
3. The consultants' fee and 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 Enclosure are shown in constant prices to correlate with the MPS salary point of the same year. The cost figures marked with # are shown in money-of-the-day prices in paragraph 10 of the main paper.