For discussion **PWSC(2018-19)38**
on 30 January 2019

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
358EP – A 30-classroom primary school at Shui Chuen O, Sha Tin

Members are invited to recommend to the Finance Committee the upgrading of **358EP** to Category A at an estimated cost of $363.2 million in money-of-the-day prices.

PROBLEM

We need to construct a primary school at Shui Chuen O, Sha Tin to meet the projected long-term demand for public sector primary school places of the Sha Tin District.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education, proposes to upgrade **358EP** to Category A at an estimated cost of $363.2 million in money-of-the-day (MOD) prices for the construction of a primary school premises at Shui Chuen O, Sha Tin.

/ PROJECT …..

PROJECT SCOPE AND NATURE

3. The proposed scope of works of the project includes —

(a) 30 classrooms;

(b) six special rooms, comprising a music room, a visual arts room, a general studies room, a multi-purpose room, a computer assisted learning room and a language room;

(c) four small group teaching rooms;

(d) a guidance activity room;

(e) two interview rooms;

(f) a staff room and a staff common room;

(g) a student activity centre;

(h) a conference room;

(i) a library;

(j) an assembly hall;

(k) multi-purpose areas;

(l) two basketball courts;

(m) a running track[1];

(n) a green corner[2]; and

(o) ancillary facilities including an accessible/fireman's lift, facilities for the disabled, a tuck shop-cum-central portioning area, stores and toilets, etc.

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[1] A 60-m running track will be provided to make optimal use of the campus space.

[2] A green corner is a designated area inside the campus to encourage students to develop an interest in horticulture and natural environment. The green corner may include planting beds.

4. The proposed new school premises, with a site area of about 8 770 square metres (m^2), will meet the planning target of providing 2 m^2 of open space per student. The site and location plans, floor plans, sectional drawings, an artist's impression, and a barrier-free access plan for the project are at Enclosures 1 to 5.

5. Subject to the funding approval of the Finance Committee (FC), we plan to commence the construction works in the third quarter of 2019 for completion in the first quarter of 2022.

JUSTIFICATION

6. Under the established mechanism, the Government will reserve sites for public sector school development when preparing town plans and planning large-scale residential developments having regard to the planned population intake and on the basis of the needs for community services in accordance with the guidelines set out in the Hong Kong Planning Standards and Guidelines. The school site in question was reserved in accordance with the above-mentioned mechanism.

7. After taking into account the projected demand for public sector primary school places of the Sha Tin District including those arising from the population intake of the Shui Chuen O Estate, as well as the demand and supply situation and views of the existing schools of the district, we consider that the long-term demand of the district should justify the development of a new 30-classroom aided primary school at the reserved Shui Chuen O site. The planned school premises to be constructed was subsequently allocated through the School Allocation Exercise completed in 2017 to the Tung Wah Group of Hospitals (TWGHs) for operating a new aided primary school. Pending completion of the new premises, the new aided primary school (i.e. the TWGHs Shui Chuen O Primary School) has commenced operation at a vacant school premises at Mei Lam Estate, Sha Tin, with effect from the 2018/19 school year.

FINANCIAL IMPLICATIONS

8. We estimate the capital cost of the project to be $363.2 million in MOD prices, broken down as follows –

			$million (in MOD prices)
(a)	Foundation		21.0
(b)	Geotechnical works		9.7
(c)	Building[3]		169.9
(d)	Building services		66.5
(e)	Drainage		12.1
(f)	External works		26.6
(g)	Additional energy conservation, green and recycled features		3.1
(h)	Consultants' fees for		8.6
	(i) contract administration	8.1	
	(ii) management of resident site staff (RSS)	0.5	
(i)	Remuneration of RSS		12.7
(j)	Contingencies		33.0
	Total:		363.2

9. We propose to engage consultants to undertake contract administration and site supervision of the project. A detailed breakdown of the estimate for consultants' fees and RSS costs by man-months is at Enclosure 6. The construction floor area (CFA) of the project is about 10 998 m^2. The estimated construction unit cost, represented by the building and building services costs, is $21,495 per m^2 of CFA in MOD prices. We consider these comparable to that of similar projects built by the Government.

/10. …..

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

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

Year	$ million (MOD)
2019 – 2020	7.3
2020 – 2021	46.2
2021 – 2022	210.2
2022 – 2023	35.2
2023 – 2024	33.1
2024 – 2025	31.2
	363.2

11. 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 2019 to 2025. We will deliver the construction works through a lump-sum contract because we can clearly define the scope of the works in advance. The contract will provide for price adjustment.

12. The cost of furniture and equipment for the project, estimated to be about $2.3 million, will be borne by the School Sponsoring Body according to the existing policy. We estimate the annual recurrent expenditure arising from this project to be $42.5 million upon full commissioning of the new school premises.

PUBLIC CONSULTATION

13. We consulted the Education and Welfare Committee of the Sha Tin District Council on 8 November 2018. The Committee supported the project and requested the Education Bureau to continue liaising with the relevant departments on the commuting arrangements for students at the proposed school premises.

14. We consulted the Legislative Council Panel on Education on 7 December 2018. While 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 (PWSC), five motions related to school building projects were passed by the Panel. The Administration issued a response to the Panel on the five motions on 22 January 2019.

ENVIRONMENTAL IMPLICATIONS

15. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have completed a Preliminary Environmental Review (PER) following the "Class Assessment Document for Standard Schools" in August 2018. The PER recommended the installation of insulated windows for noise sensitive rooms exposed to traffic noise exceeding the limits set out in the Hong Kong Planning Standards and Guidelines, in addition to the standard provision of air-conditioning for all standard teaching facilities. With such mitigation measures in place, the project will not be exposed to long-term environmental impacts. The estimated cost of the recommended installation of insulated windows is $0.7 million in MOD prices. We have included in the project estimates the cost to implement this mitigation measure.

16. 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 linings or shields and the building of barrier walls for noisy construction activities, frequent cleaning and watering of the site, and the provision of wheel washing facilities.

/17. …..

17. 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[4]. 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.

18. 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.

19. We estimate that the project will generate in total about 25 050 tonnes of construction waste. Of these, we will reuse about 6 400 tonnes (25.5%) of inert construction waste on site and deliver 16 780 tonnes (67.0%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 1 870 tonnes (7.5%) 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 $1.6 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 …..

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[4] 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.

HERITAGE IMPLICATIONS

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

LAND ACQUISITION

21. This project does not require any land acquisition.

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

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

(a) heat recovery fresh air pre-conditioners in the air-conditioned space for heat energy reclaimed of exhaust air;

(b) LED general light fittings; and

(c) photovoltaic system.

23. For greening features, there will be landscaping, vertical greening and green roof at appropriate areas for environmental and amenity benefits.

24. The total estimated additional cost for adoption of the above features is around $3.1 million (including $0.7 million for energy efficient features) in MOD prices, which has been included in the cost estimate of this project. The energy efficient features will achieve 6.1% energy savings in the annual energy consumption with a payback period of about ten years.

/ BACKGROUND …..

BACKGROUND INFORMATION

25. We upgraded **358EP** to Category B in September 2015. We engaged consultants to undertake various services at a total cost of about $9.7 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". The consultants and contractor have completed all the above consultancy services and works except the preparation of tender documentation which is in progress.

26. Of the 62 trees within the site boundary, 19 trees will be preserved. The proposed works will involve felling of 43 trees within the site and another two trees at an adjoining slope. All trees to be removed are not important trees[5]. We will incorporate planting proposals as part of the project, including the planting of about 45 trees, 8 800 shrubs, 4 400 groundcovers, and 300 m^2 of grassed area.

27. We estimate that the proposed works will create about 125 jobs (110 for labourers and 15 for professional or technical staff) providing a total employment of 3 450 man-months.

Education Bureau
January 2019

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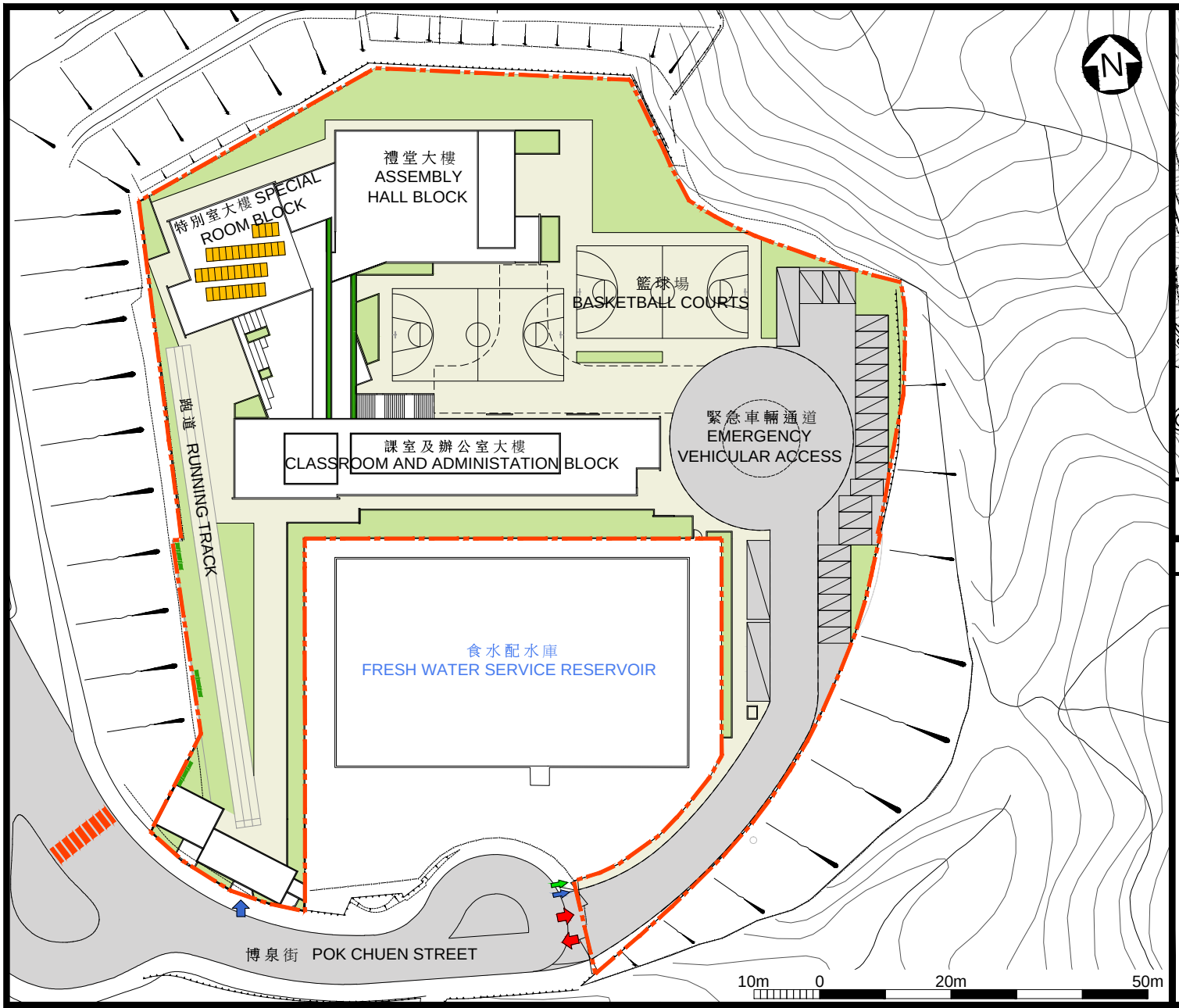
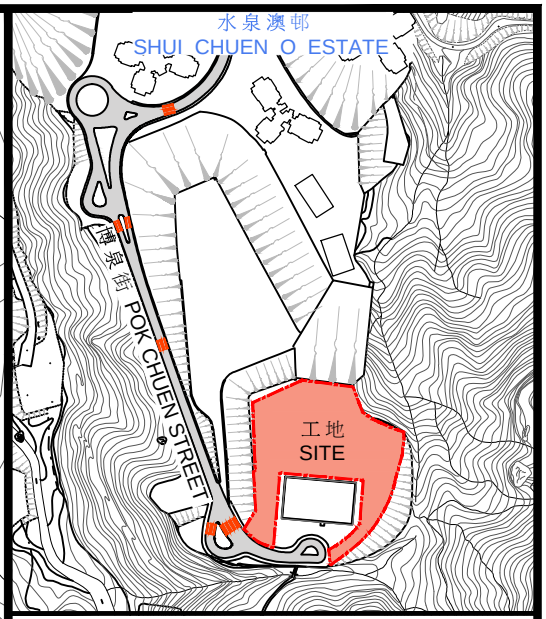
[5] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(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 20m 0 40m 100m

圖例 LEGEND

- 行人出入口 PEDESTRIAN ENTRANCE / EXIT
- 車輛出入口 VEHICULAR INGRESS / EGRESS
- 無障礙出入口 BARRIER-FREE ENTRANCE / EXIT
- 地面綠化 AT-GRADE GREENING
- 屋頂綠化 LANDSCAPED ROOF
- 通道 / 露天場地 CIRCULATION / OPEN AREA
- 垂直綠化 VERTICAL GREENING
- 工地界線 SITE BOUNDARY
- 太陽能光伏板 PHOTOVOLTAIC PANEL
- 現有行人過路處 EXISTING AT-GRADE PEDESTRIAN CROSSING

工地平面圖
SITE PLAN

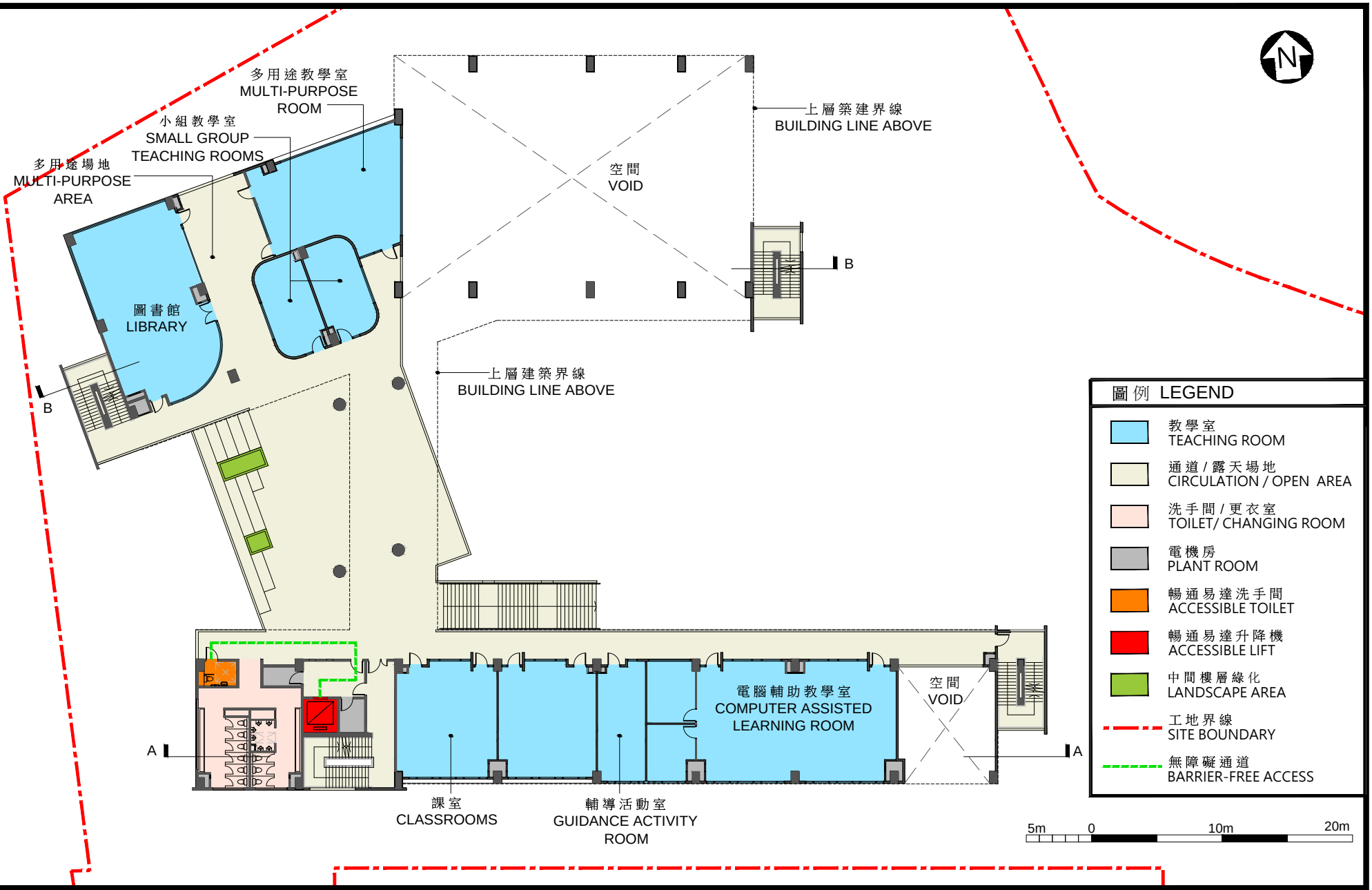
358EP
沙田水泉澳 1 所設有 30 間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

ARCHITECTURAL SERVICES DEPARTMENT 建築署

地下平面圖
GROUND FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

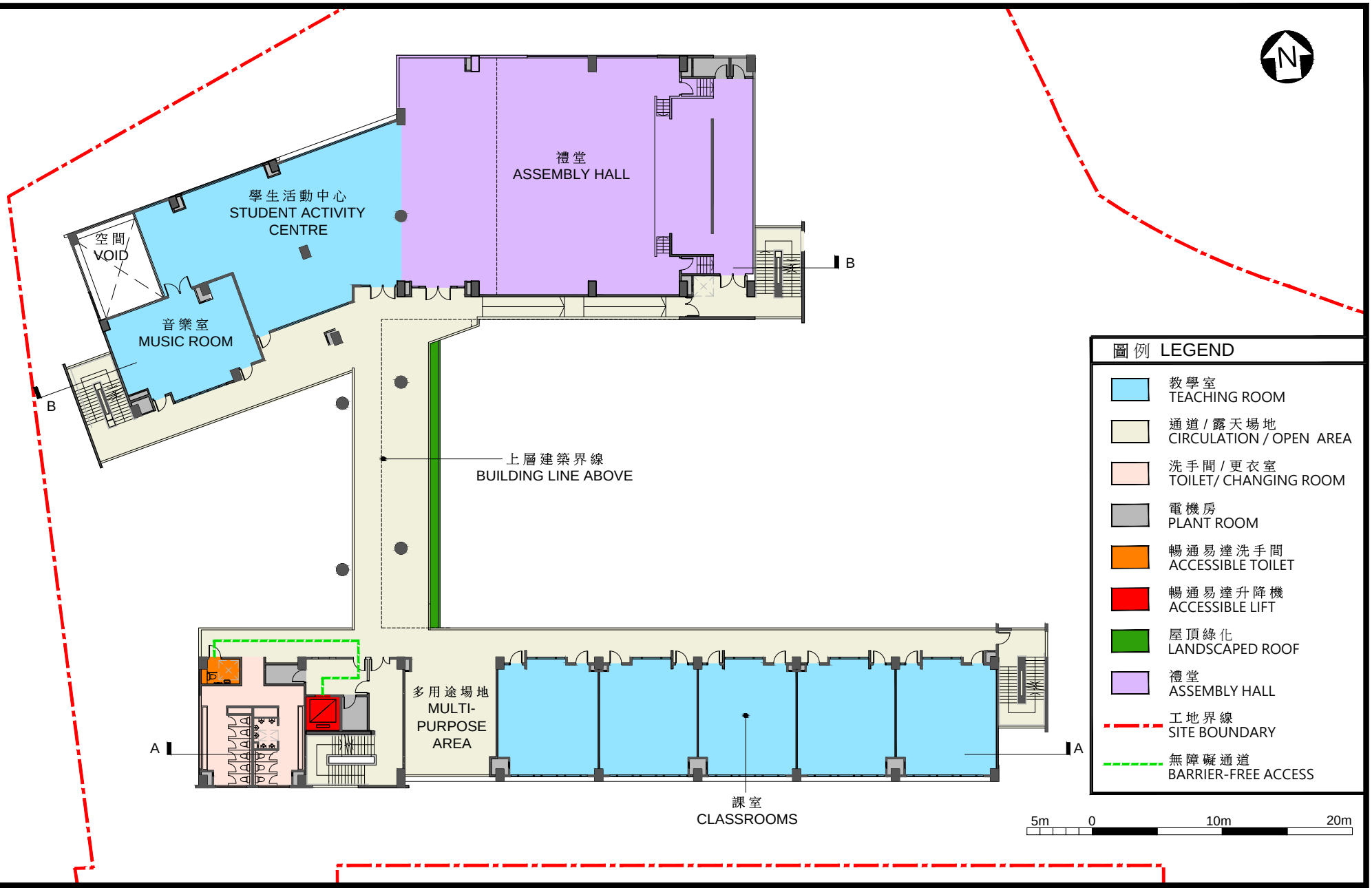
ARCHITECTURAL SERVICES DEPARTMENT 建築署



一樓平面圖
FIRST FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

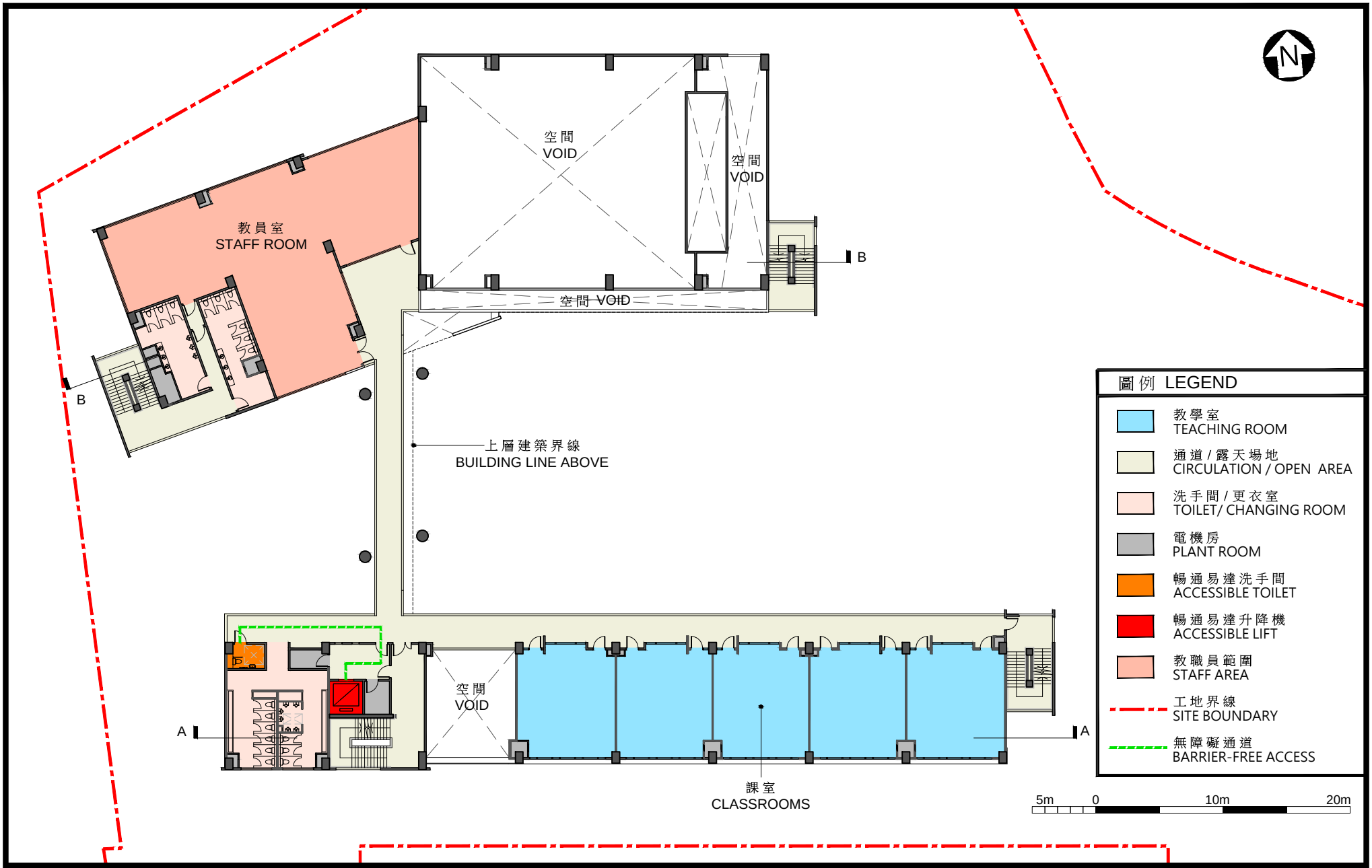
ARCHITECTURAL SERVICES DEPARTMENT 建築署



二樓平面圖
SECOND FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

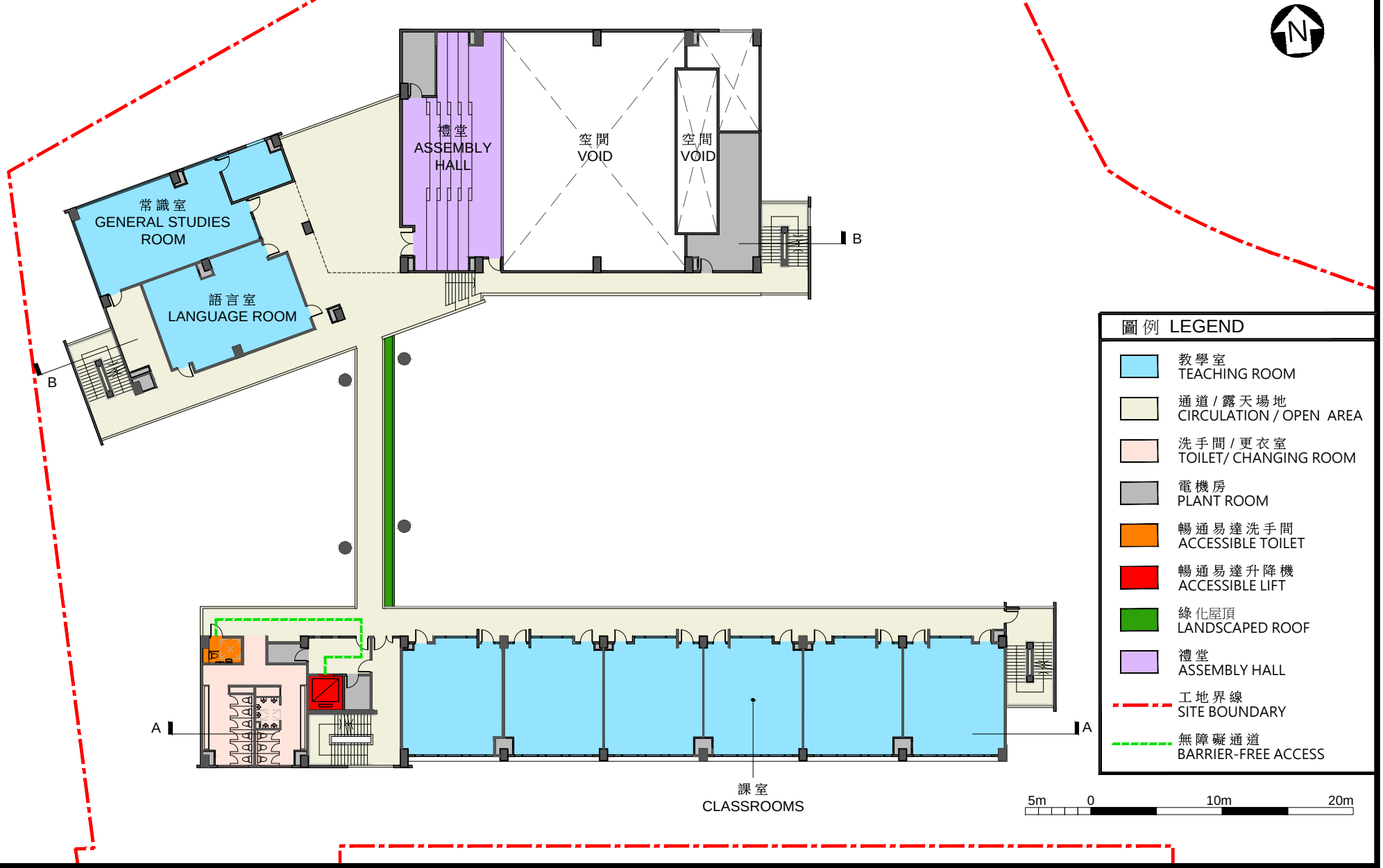
ARCHITECTURAL SERVICES DEPARTMENT 建築署



三樓平面圖
THIRD FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

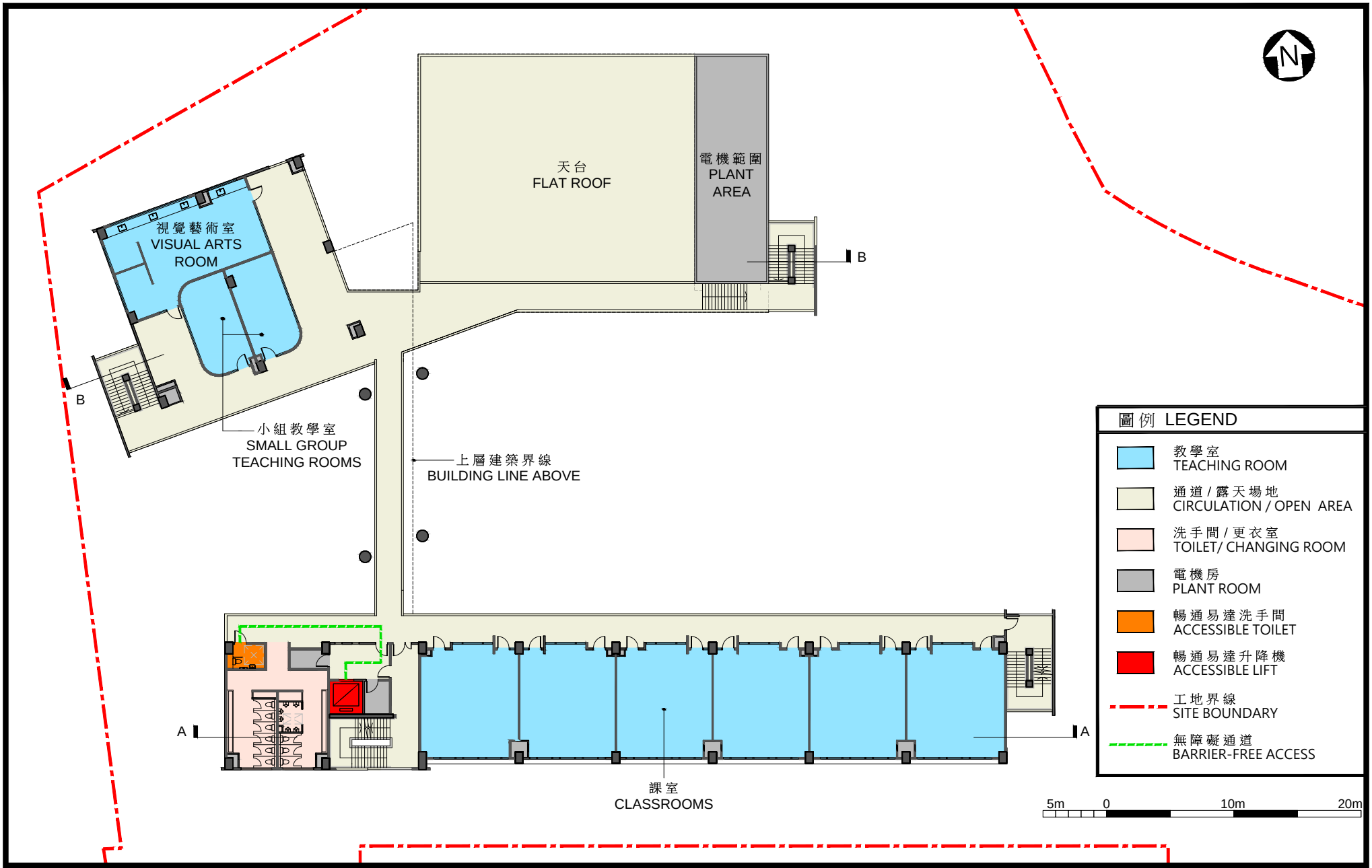
ARCHITECTURAL SERVICES DEPARTMENT 建築署



四樓平面圖
FORTH FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

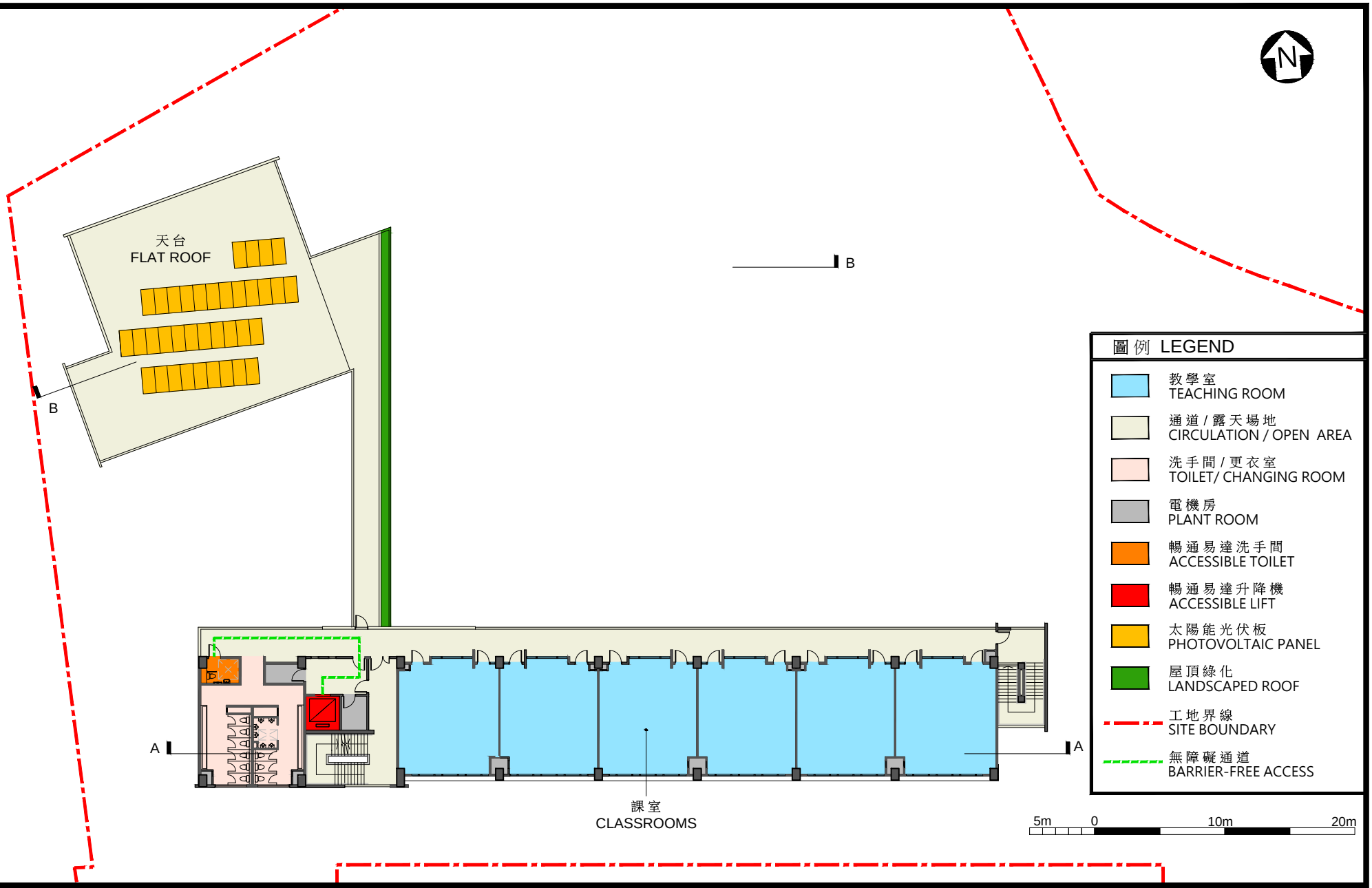
ARCHITECTURAL SERVICES DEPARTMENT 建築署



五樓平面圖
FIFTH FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

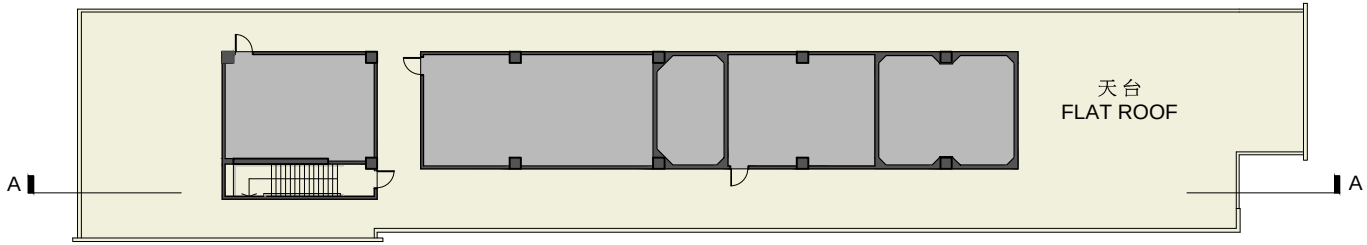
ARCHITECTURAL SERVICES DEPARTMENT 建築署



六樓平面圖
SIXTH FLOOR PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

ARCHITECTURAL SERVICES DEPARTMENT 建築署



圖例 LEGEND

通道 / 露天場地
CIRCULATION / OPEN AREA

電機房
PLANT ROOM

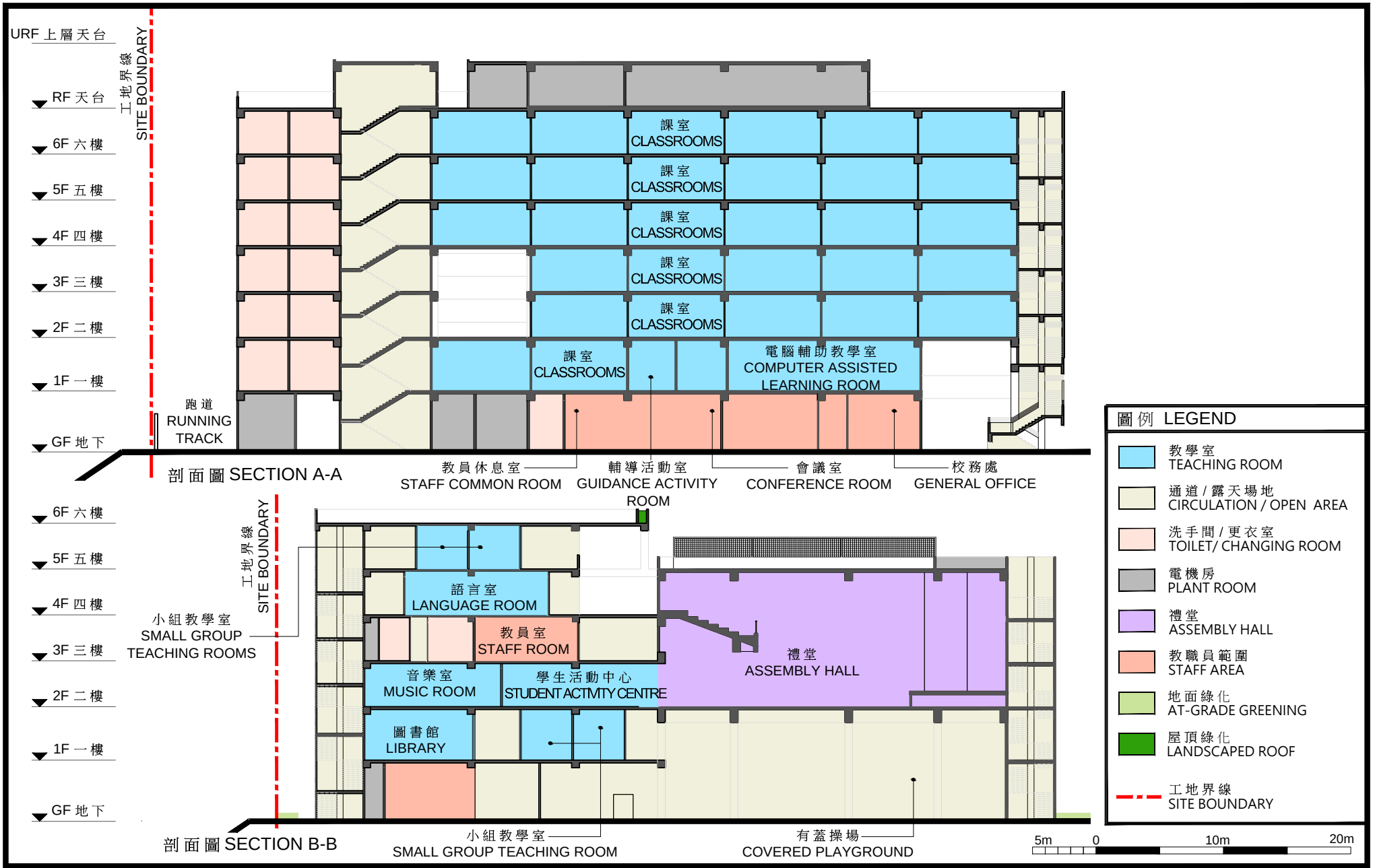
工地界線
SITE BOUNDARY

5m 0 10m 20m

天台平面圖
ROOF PLAN

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

ARCHITECTURAL SERVICES DEPARTMENT 建築署



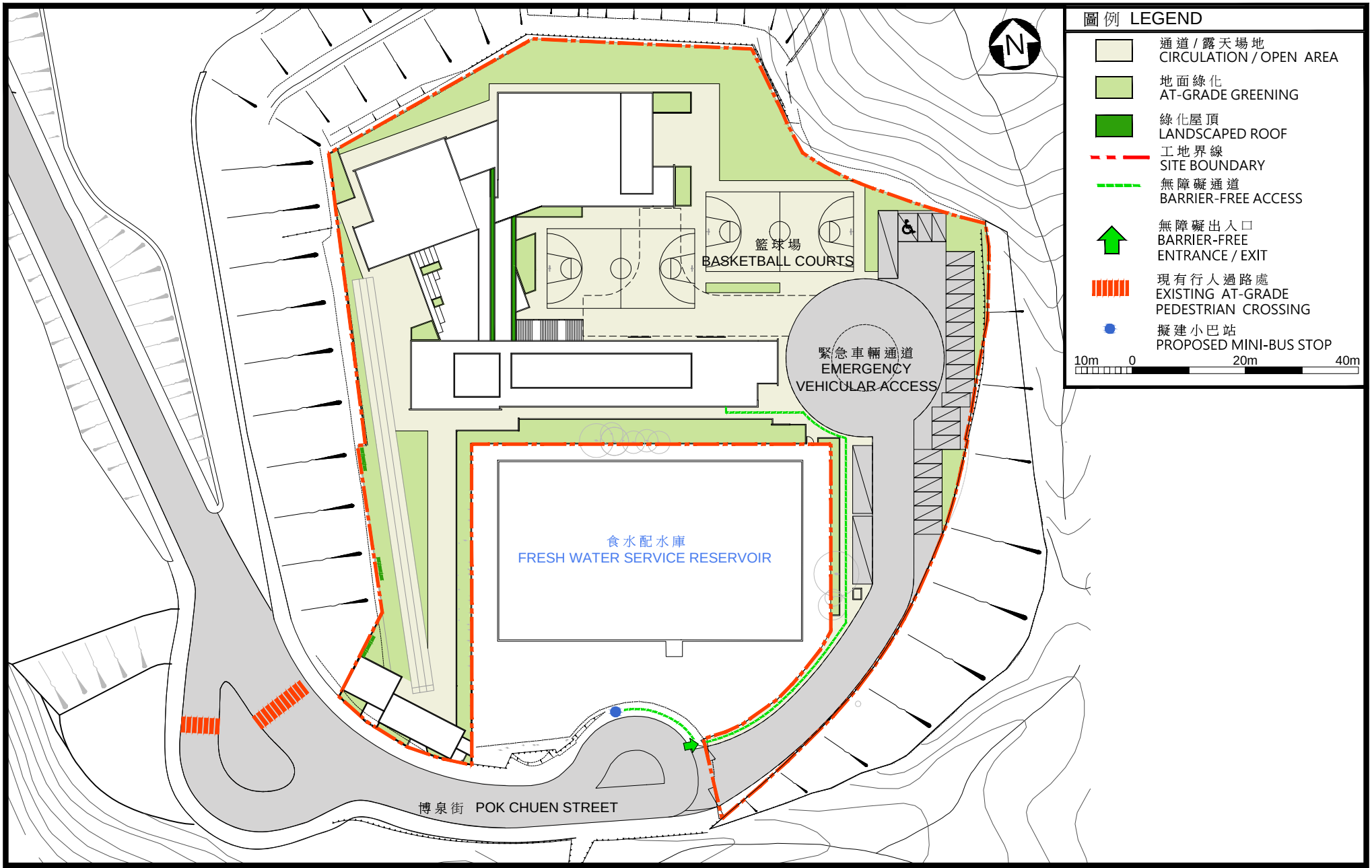
剖面圖
SECTIONS

358EP
沙田水泉澳 1 所設有 30 間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

ARCHITECTURAL SERVICES DEPARTMENT 建築署

從東北面望向小學的構思透視圖
PERSPECTIVE VIEW OF THE PRIMARY SCHOOL FROM NORTHEAST DIRECTION

構思圖 ARTIST'S IMPRESSION	358EP 沙田水泉澳1所設有30間課室的小學 A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN	ARCHITECTURAL SERVICES DEPARTMENT 建築署



無障礙通道平面圖
PLAN OF
BARRIER-FREE ACCESS

358EP
沙田水泉澳1所設有30間課室的小學
A 30-CLASSROOM PRIMARY SCHOOL AT SHUI CHUEN O, SHA TIN

ARCHITECTURAL
SERVICES
DEPARTMENT 建築署

358EP – A 30-classroom primary school at Shui Chuen O, Sha Tin

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2018 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	4.7
		Technical	–	–	–	2.3
					Sub-total	7.0#
(b)	Resident site staff (RSS) costs (Note 3)	Professional	20	38	1.6	2.6
		Technical	190	14	1.6	8.7
					Sub-total	11.3
	Comprising -					
	(i) Consultants' fees for management of RSS				0.4#	
	(ii) Remuneration of RSS				10.9#	
					Total	**18.3**

* MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS salary point to estimate the cost of RSS supplied by the consultants (as at now, MPS salary point 38 = $81,975 per month and MPS salary point 14 = $28,725).
2. The consultants' fees for contract administration are calculated in accordance with the existing consultancy agreement for the design and construction of **358EP**. The assignment will only be executed subject to FC's funding approval to upgrade the project to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.

Remarks

The figures in this Enclosure are shown in constant prices correlate with the MPS salary point of the same year. The figures marked with # are shown in MOD prices in paragraph 8 of the main paper.