For discussion **PWSC(2015-16)35**
(date to be confirmed)

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS
Education – Primary
351EP – Two 24-classroom primary schools at ex-Tanner Road Police Married Quarters site at Pak Fuk Road, North Point, Hong Kong

Members are invited to recommend to Finance Committee the upgrading of **351EP** to Category A at an estimated cost of $660 million in money-of-the-day prices.

PROBLEM

We need to provide premises for two bi-sessional primary schools, namely Pun U Association Wah Yan Primary School (PUWYPS) and North Point Methodist Primary School (NPMPS), for their conversion to whole-day primary schooling.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education, proposes to upgrade **351EP** to Category A at an estimated cost of $660 million in money-of-the-day (MOD) prices for the construction of two 24-classroom primary schools at Pak Fuk Road, North Point, for PUWYPS and NPMPS.

/PROJECT ……

PROJECT SCOPE AND NATURE

3. The project site occupies an area of about 12 300 square metres (m^2)[1] at Pak Fuk Road, North Point. The proposed scope of works under the project includes the construction of two 24-classroom primary schools. Each school will be provided with the following facilities —

(a) 24 classrooms;

(b) seven special rooms including a music room, a visual arts room, a general studies room, a multi-purpose room, two computer assisted learning rooms 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) a basketball court and a covered playground; and

(m) ancillary facilities including a disabled/ fireman's lift, facilities for the disabled, a tuck shop-cum-central portioning area, a physical education store and toilets.

A common area within the project site including an internal road and landscaped areas will also be covered in the scope of works. The common area will be used by PUWYPS, NPMPS as well as Chinese Methodist School, Tanner Hill which is

/located …..

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[1] It includes about 9 000 m^2 for the two schools and about 3 300 m^2 for the common area.

located adjacent to the project site[2].

4. The proposed new school premises will meet the planning target of providing two square metres of open space per student. A site plan, floor plans, sectional plans, artist's impressions and a barrier-free access plan for the project are at Enclosures 1 to 13. Subject to the funding approval of the Finance Committee (FC) within the current legislative session, we plan to commence the works in December 2015 for completion in February 2018 for both schools.

JUSTIFICATION

5. It is the Government's policy to implement whole-day schooling for all primary school students studying at public sector primary schools. PUWYPS, located at Stubbs Road in Wan Chai, and NPMPS, situated at Cheung Hong Street in North Point, currently operate bi-sessional a.m. and p.m. classes at two 12-classroom premises respectively. Constructed over 50 years ago, the site area of the PUWYPS is only 1 880 m^2 and that of NPMPS is only 1 040 m^2. There is insufficient space to accommodate all students after combining the existing bi-sessional a.m. and p.m. classes, hindering conversion of the two schools to whole-day schooling. The Education Bureau proposes to construct new premises for these two public sector primary schools for their conversion to whole-day operation. Opportunity is also taken to improve their facilities so as to provide students with a quality learning environment. Upon completion of the project, PUWYPS and NPMPS will move to the new premises.

6. Both PUWYPS and NPMPS are Government-aided primary schools. After relocating to the new school premises, the school net of PUWYPS will change from School Net No. 12 (Wan Chai District) to School Net No. 14 (Eastern District). The school net of NPMPS will remain unchanged (i.e. School Net No. 14 (Eastern District)). In view of the change of demarcation of district boundary between Wan Chai and Eastern Districts from 1 January 2016 onwards, the existing school net of North Point Government Primary School (Cloud View Road), which is currently School Net No. 14 (Eastern District), will change to No. 12 (Wan Chai District). Therefore, the relocation of PUWYPS to the new school premises in Eastern District will not change the number of primary schools in School Net No. 14.

/FINANCIAL …..

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[2] Chinese Methodist School, Tanner Hill, is an aided primary school located adjacent to the project site. Currently school buses of the school enter and depart the school campus through an access road which would form part of the internal road within the common area in future. Upon completion of **351EP**, vehicles currently picking up/dropping off students of Chinese Methodist School, Tanner Hill, on Pak Fuk Road would do so on the internal road within the common area.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be $660 million in MOD prices (please see paragraph 10 below), broken down as follows –

			$ million	
(a)	Site formation		28.4	
(b)	Geotechnical works		21.6	
(c)	Foundation		23.7	
(d)	Building		264.3	
(e)	Building services		70.3	
(f)	Drainage		13.6	
(g)	External works		48.1	
(h)	Additional energy conservation, green and recycled features		3.7	
(i)	Furniture and equipment (F&E)[3]		5.2	
(j)	Consultants' fees for		13.4	
	(i) contract administration	13.2		
	(ii) management of resident site staff (RSS)	0.2		
(k)	Remuneration of RSS		8.9	
(l)	Contingencies		50.0	
	Sub-total		551.2	(in September 2014 prices)
(m)	Provision for price adjustment		108.8	
	Total		660.0	(in MOD prices)

/8. …..

[3] The estimated cost of F&E is prepared with reference to the standard F&E reference list prepared by the Education Bureau for a new 24-classroom primary school adopting the standard of accommodation. The actual cost will be subject to a survey on the conditions of the existing F&E.

8. 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 resident site staff costs by man-months is at Enclosure 14. The construction floor area (CFA) of **351EP** is about 19 850 m^2.

9. The estimated construction unit cost, represented by the building and building services costs, is $16,856 per m^2 of CFA in September 2014 prices. We consider this comparable to that of similar projects built by the Government. A comparison of the reference cost for a 24-classroom primary school based on an uncomplicated site with no unusual environmental or geotechnical constraints with the estimated costs for the project is at Enclosure 15.

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

Year	$ million (Sept 2014)	Price adjustment factor	$ million (MOD)
2015 – 16	3.0	1.05725	3.2
2016 – 17	135.0	1.12069	151.3
2017 – 18	290.0	1.18793	344.5
2018 – 19	70.0	1.25920	88.1
2019 – 20	30.0	1.33475	40.0
2020 – 21	19.0	1.40483	26.7
2021 – 22	4.2	1.47507	6.2
	551.2		660.0

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 2015 to 2022. 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 adjustments.

/12. …..

12. The cost of F&E for the project, estimated to be $5.2 million, will be borne by the Government according to the existing policy. The annual recurrent expenditure of PUWYPS and NPMPS in 2013-14 was $32.2 million and $29.5 million respectively.

13. To ensure smooth operation of the shared common area, a management committee comprising representatives from the three school users, namely PUWYPS, NPMPS and the existing Chinese Methodist School, Tanner Hill, will be formed for the day-to-day management and maintenance which is estimated to incur an annual recurrent expenditure of about $540,000. We will grant the provision to the aforementioned management committee.

PUBLIC CONSULTATION

14. We consulted the Planning, Works and Housing Committee (PWHC) of the Eastern District Council on 12 February 2015 on this project. Members indicated in-principle support for the project while some members expressed concern about the potential traffic impact arising from the relocation of the two schools. We attended the PWHC meeting again on 16 April 2015 and provided additional information on the traffic measures. Members did not raise further concern.

15. We also consulted the Legislative Council Panel on Education on 11 May 2015. Members supported the project.

16. The parent-teacher associations of the two schools also expressed support for the project in February 2015 in response to a consultation survey conducted during the local consultation process.

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 following the "Class Assessment Document for Standard Schools" in March 2015. The PER concludes that no adverse environmental impact associated with operation of the project is anticipated and no mitigation measure is required during operation of the project.

/18. …..

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

19. 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.

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 non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste 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 in total 28 826 tonnes of construction waste. Of these, we will reuse 3 162 tonnes (11%) of inert construction waste on site and deliver 23 194 tonnes (80%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 2 470 tonnes (9%) 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 $0.9 million for this project (based on a unit charge rate of $27 per tonne for disposal at public fill reception facilities and $125 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation).

/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

22. 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

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) heat recovery fresh air pre-conditioners in the air-conditioned space for heat energy reclaim of exhaust air; and

(b) building integrated photovoltaic system.

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

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

27. The total estimated additional cost for adoption of the above features is around $3.7 million (including $0.4 million for energy efficient features), which has been included in the cost estimate of this project. The energy efficient features will achieve 5.7% energy savings in the annual energy consumption with a payback period of about 5.1 years.

/**BACKGROUND** …..

BACKGROUND INFORMATION

28. We upgraded **351EP** to Category B in September 2010. We engaged a lead consultant in July 2011 to undertake the detailed design and PER, including topographical survey; and a quantity surveying consultant in December 2014 to prepare tender documents. The total cost of the consultancy services and works is about $11.3 million. The services and works by the consultants are 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.

29. There are a total of 61 trees identified within the project boundary. The proposed works will involve the removal of 52 trees including seven trees to be transplanted and 45 trees to be felled. 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 54 compensatory trees and 12 500 shrubs and 16 500 groundcovers.

30. We estimate that the proposed works will create about 360 jobs (320 for labourers and another 40 for professional/technical staff) providing a total employment of 7 000 man-months.

Education Bureau
June 2015

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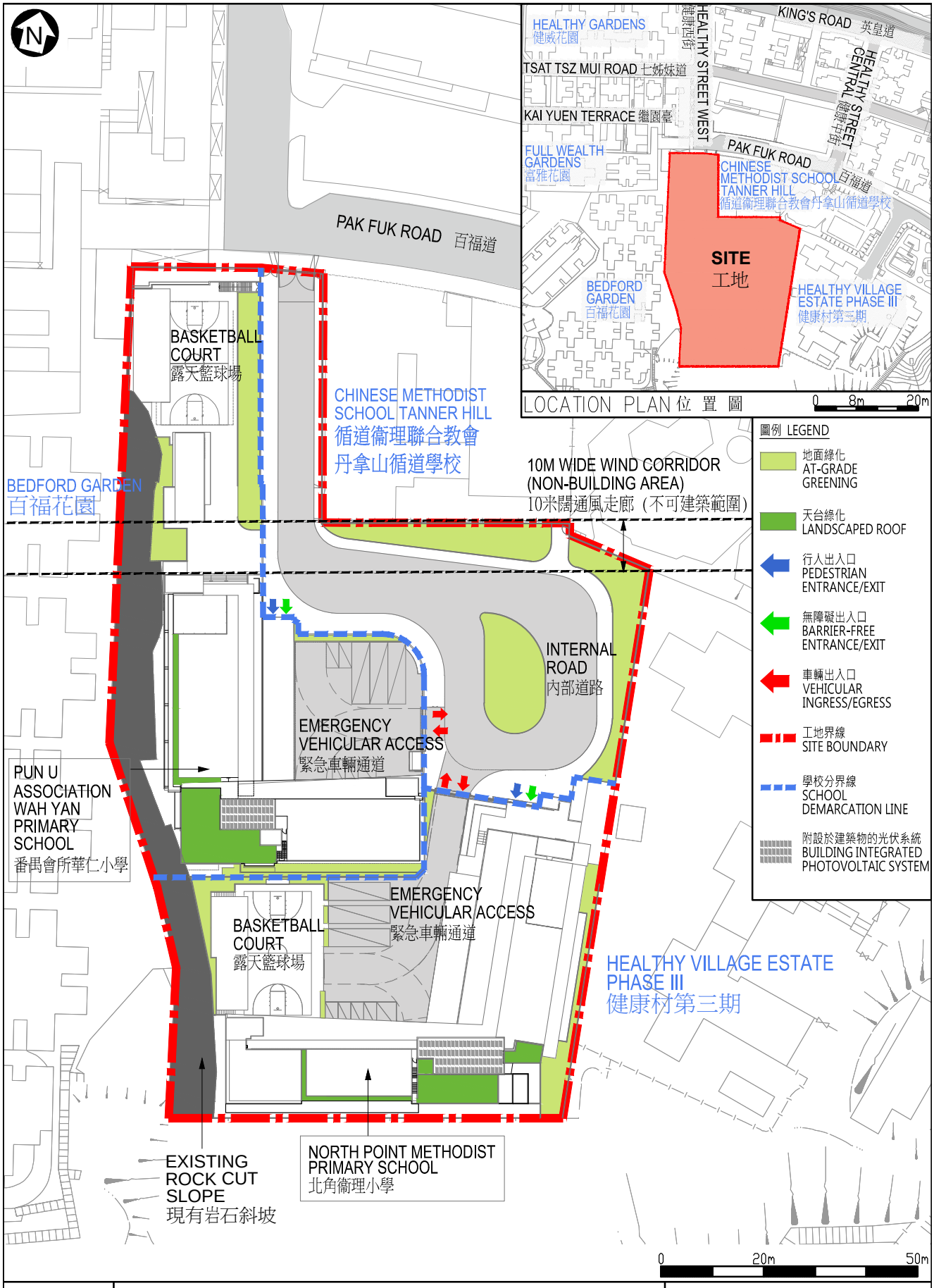
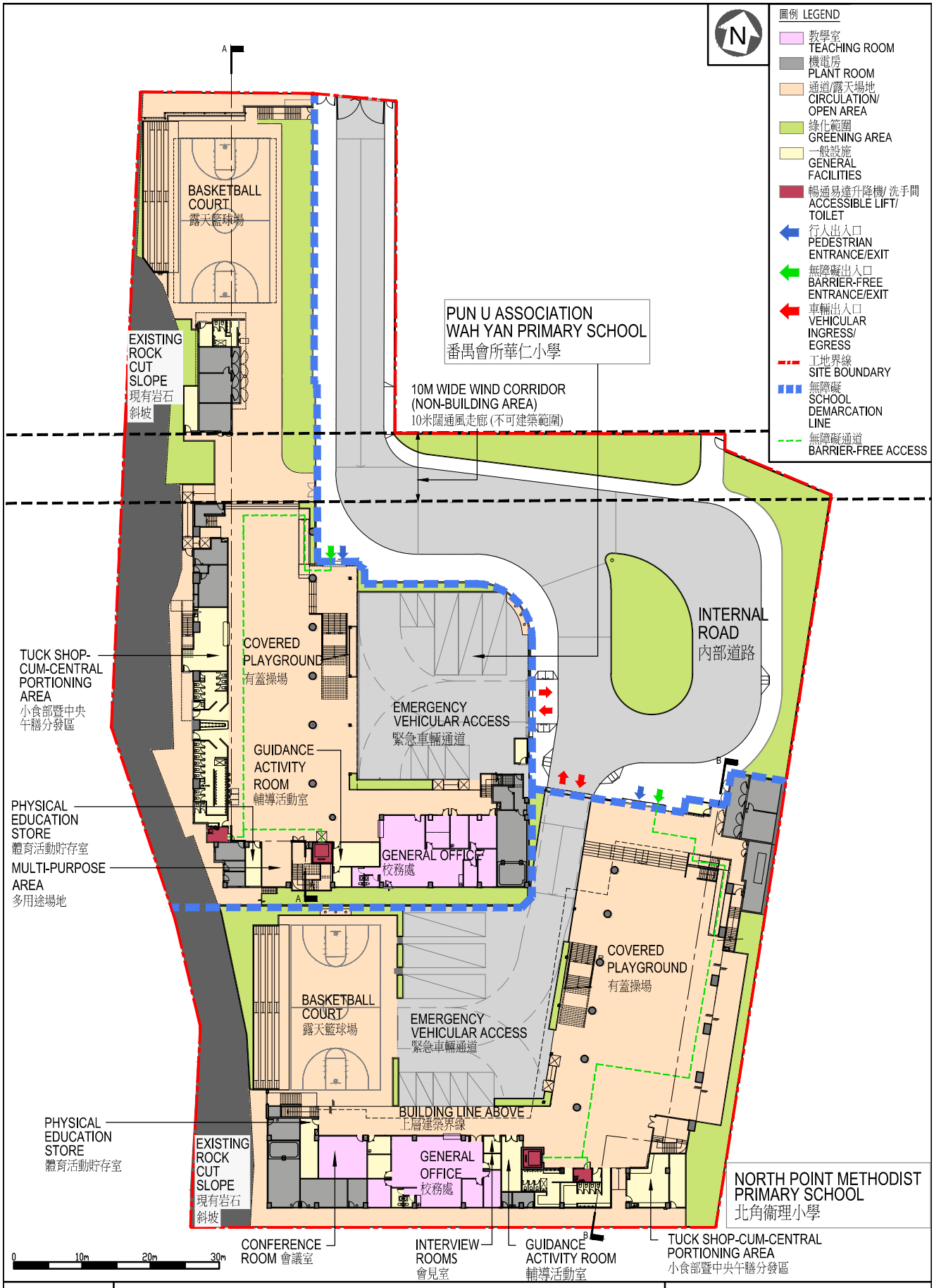
[5] "Important trees" refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

(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.



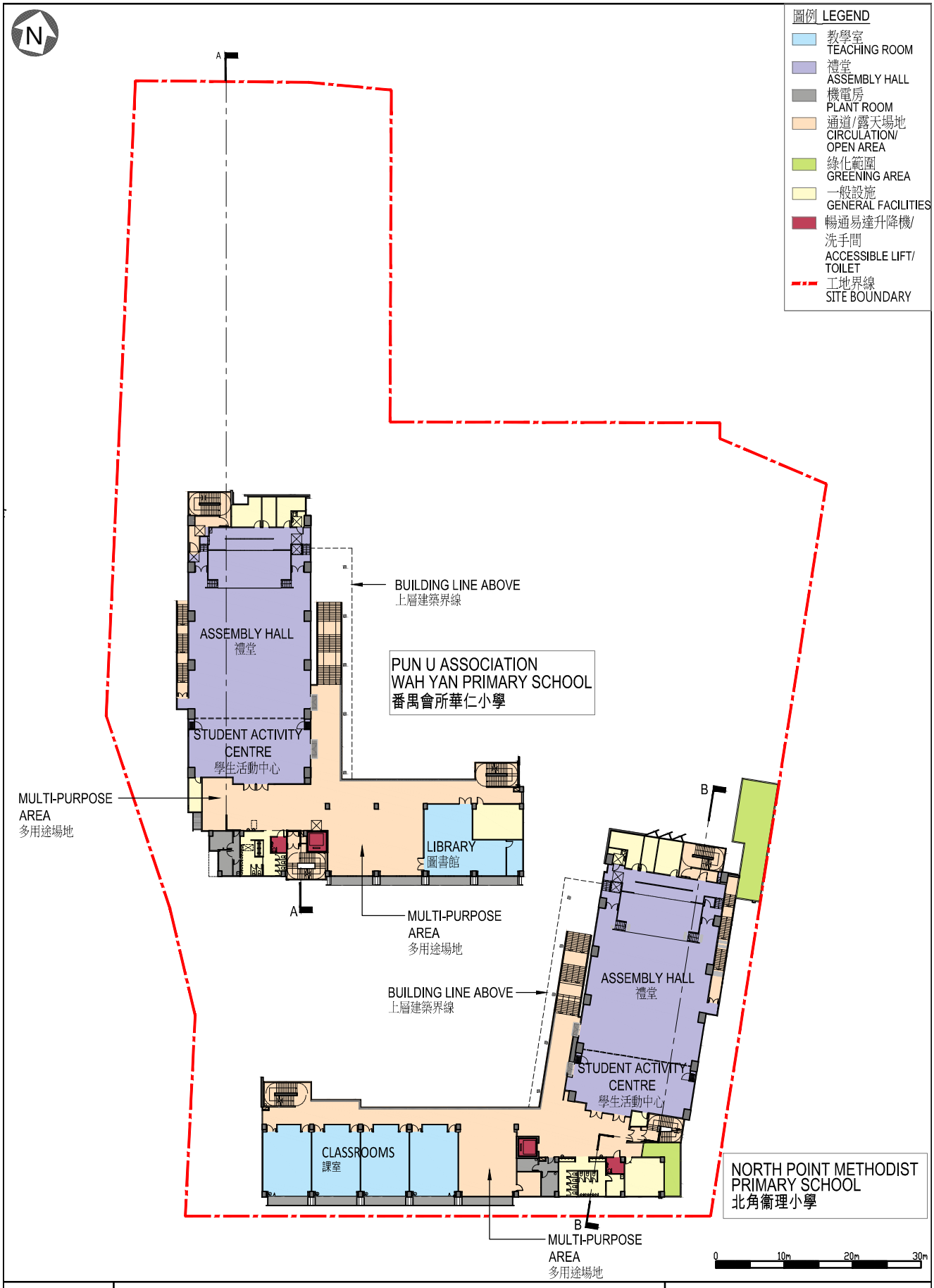
SITE PLAN 工地平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



GROUND FLOOR PLAN
地下平面圖

351 EP
TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG
香港北角百福道前丹拿道已婚警察宿舍地盤
2所設有24間課室的小學

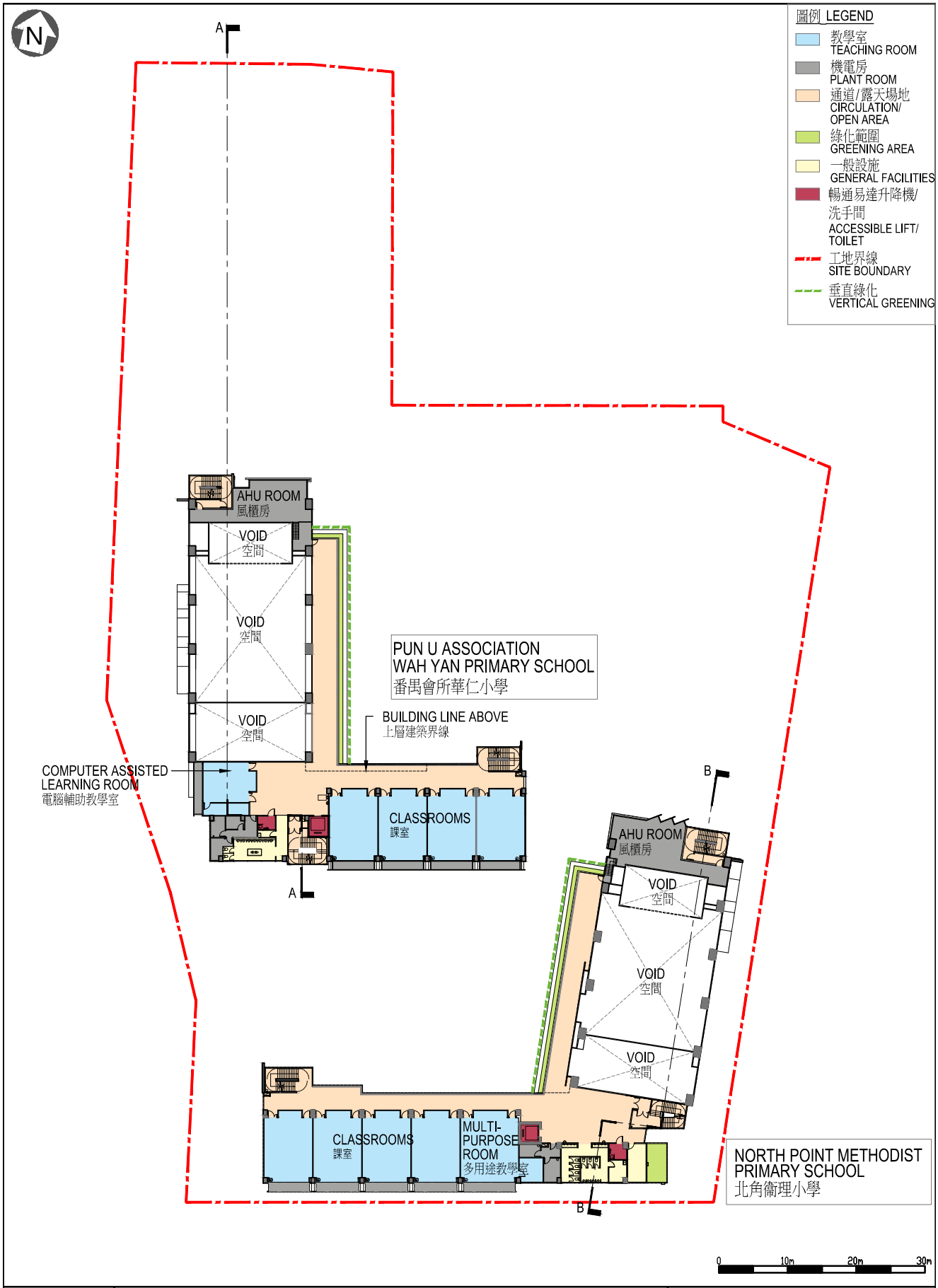
ARCHITECTURAL SERVICES DEPARTMENT 建築署



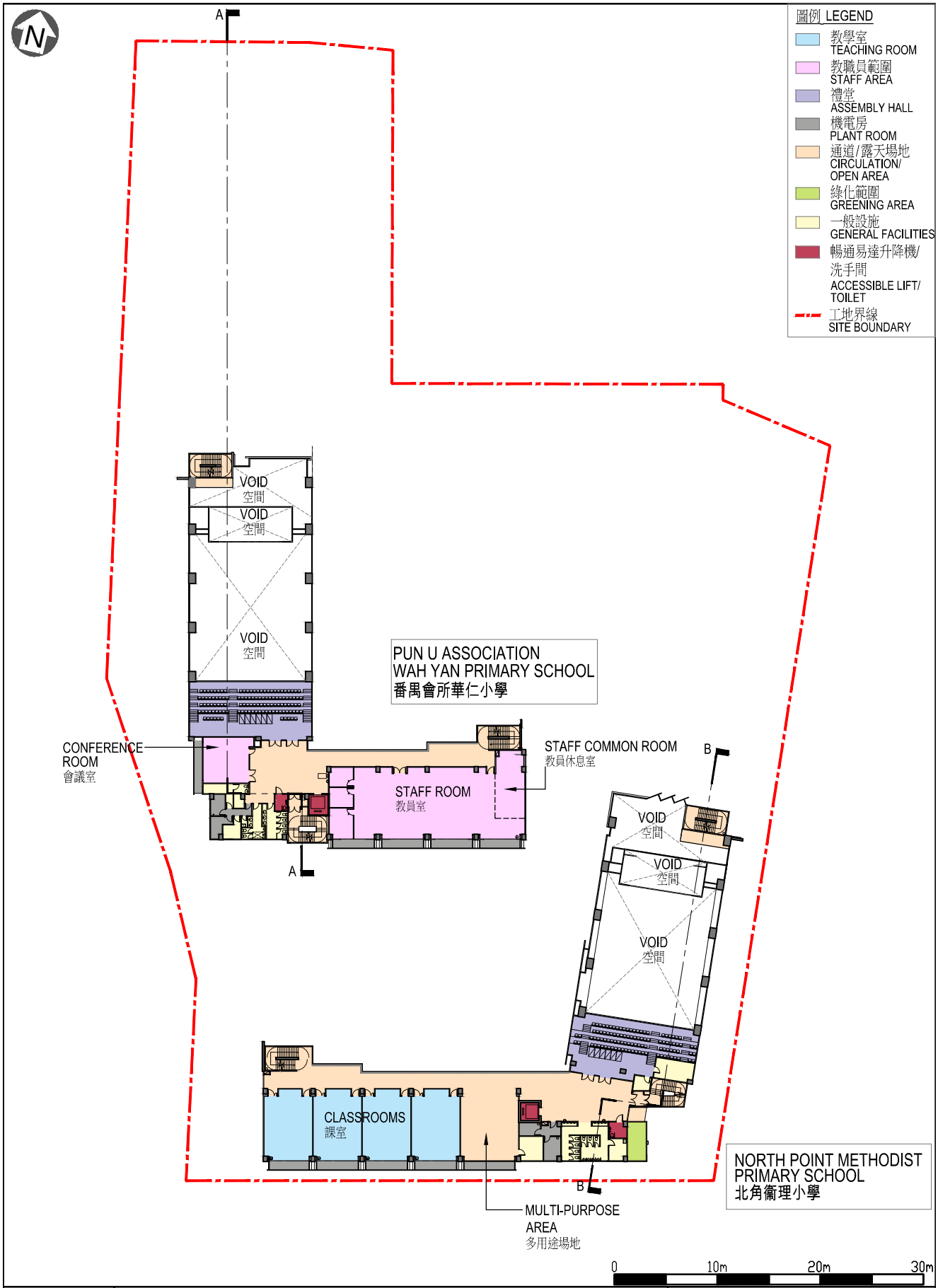
FIRST FLOOR PLAN
一樓平面圖

351 EP
TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG
香港北角百福道前丹拿道已婚警察宿舍地盤
2所設有24間課室的小學

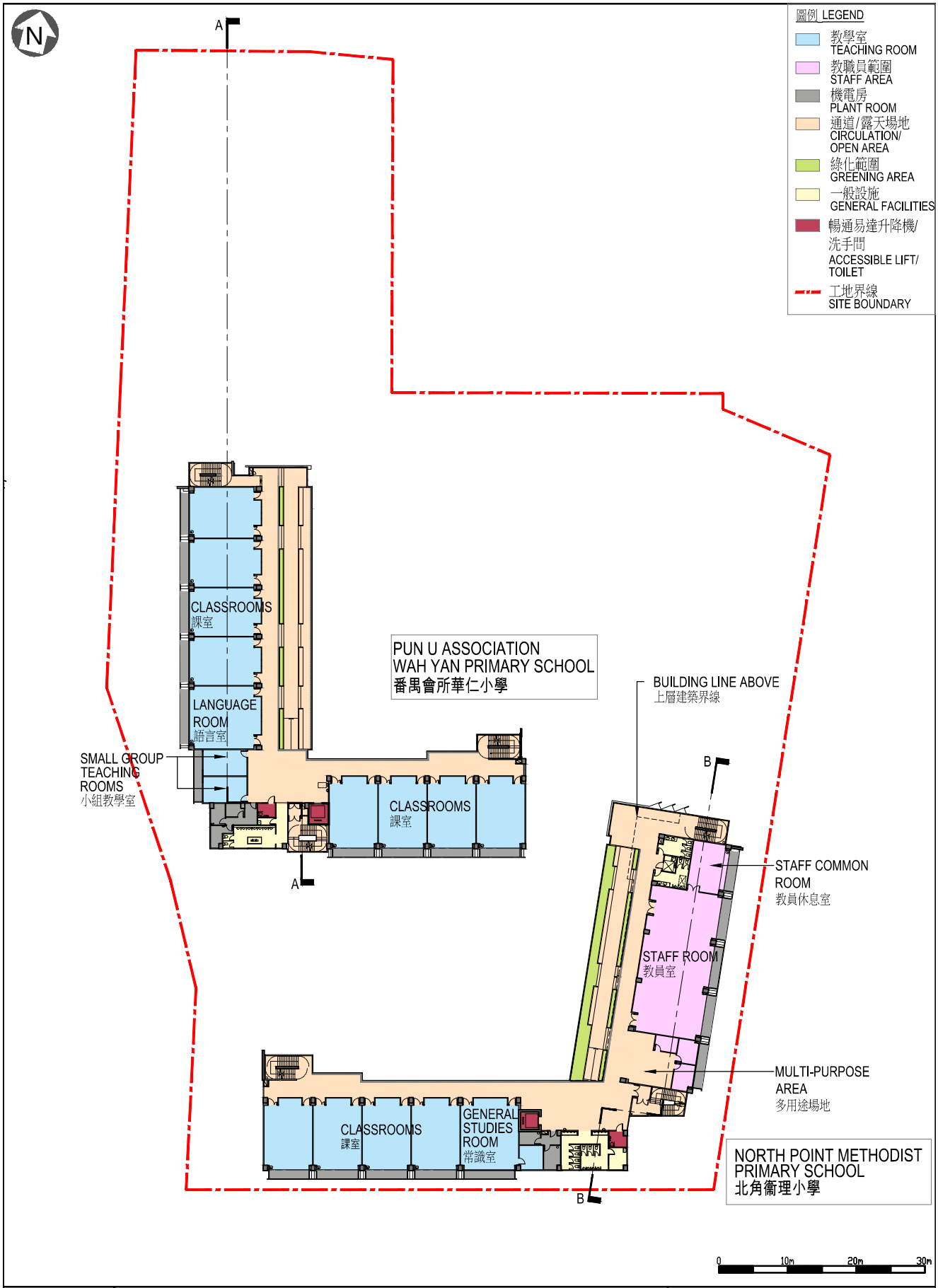
ARCHITECTURAL SERVICES DEPARTMENT 建築署



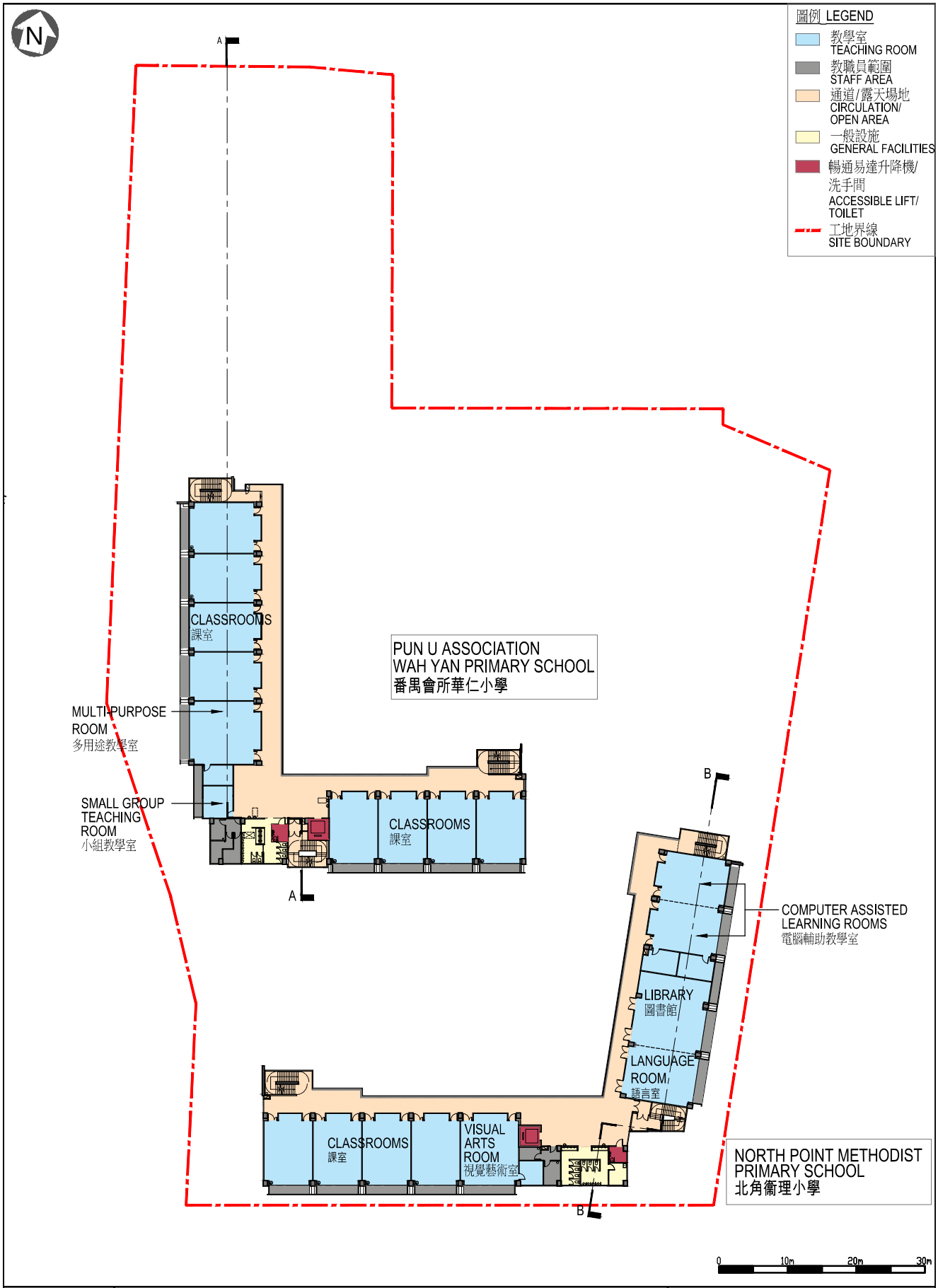
SECOND FLOOR PLAN 二樓平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



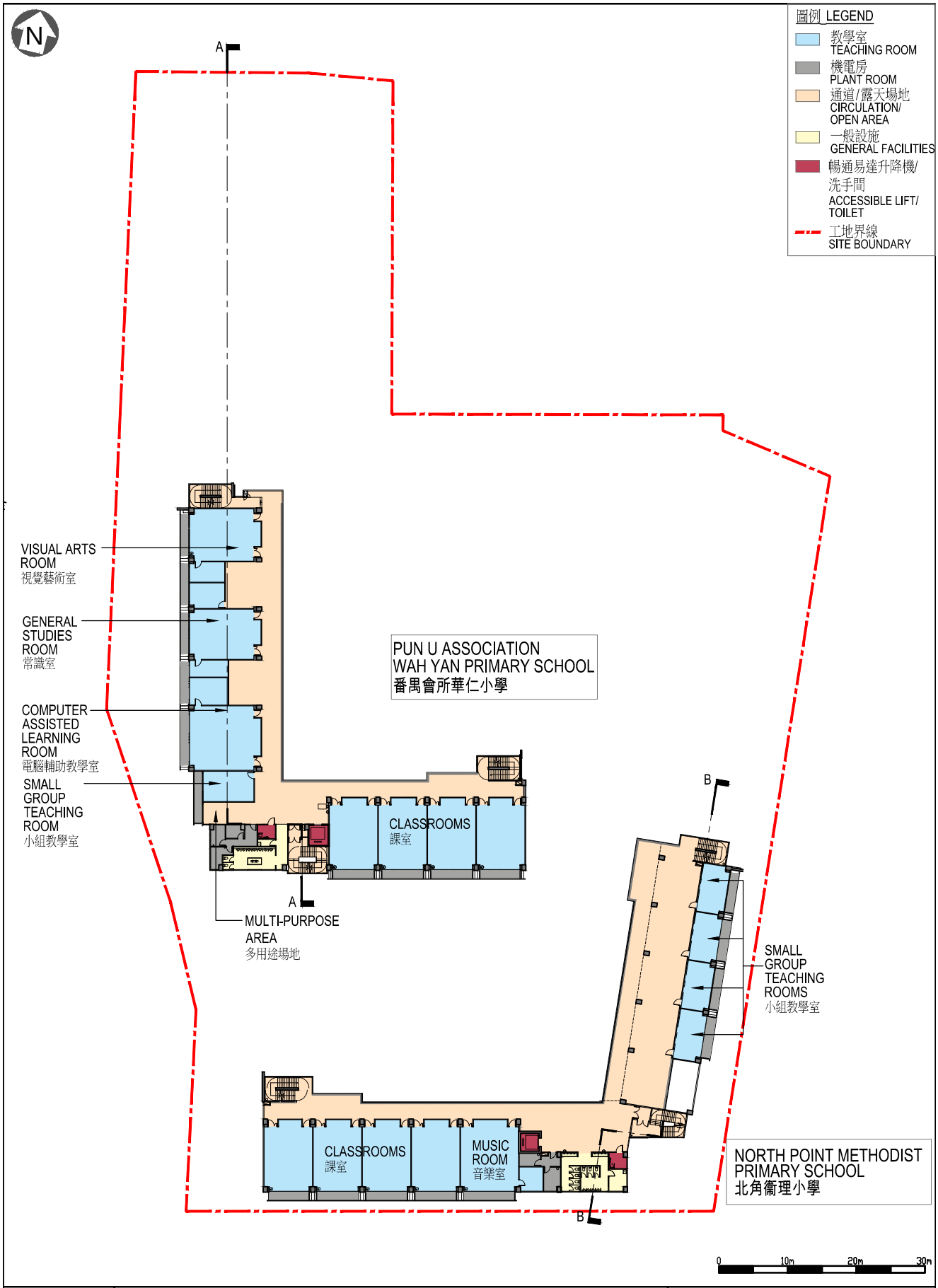
THIRD FLOOR PLAN 三樓平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



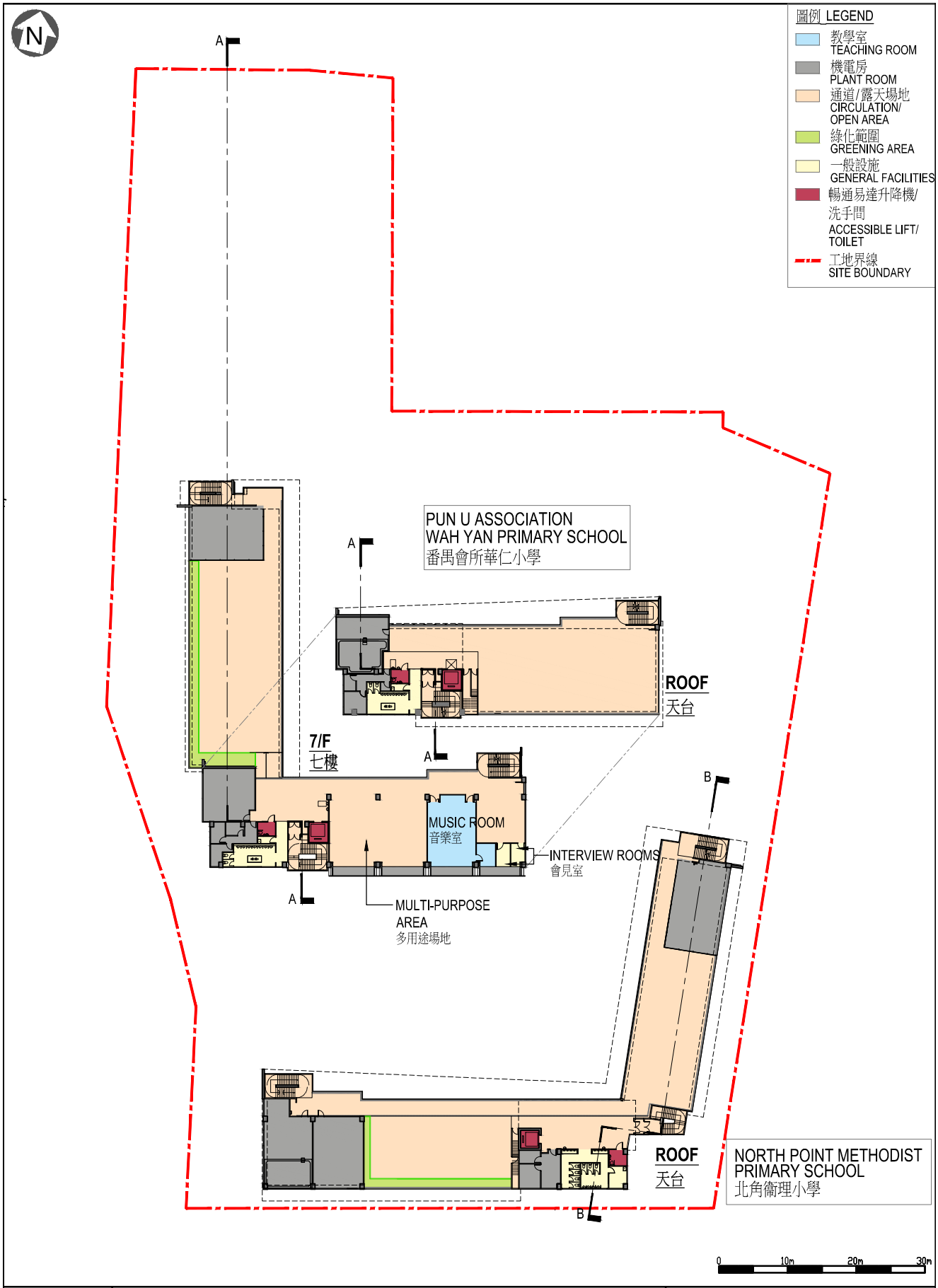
FOURTH FLOOR PLAN 四樓平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



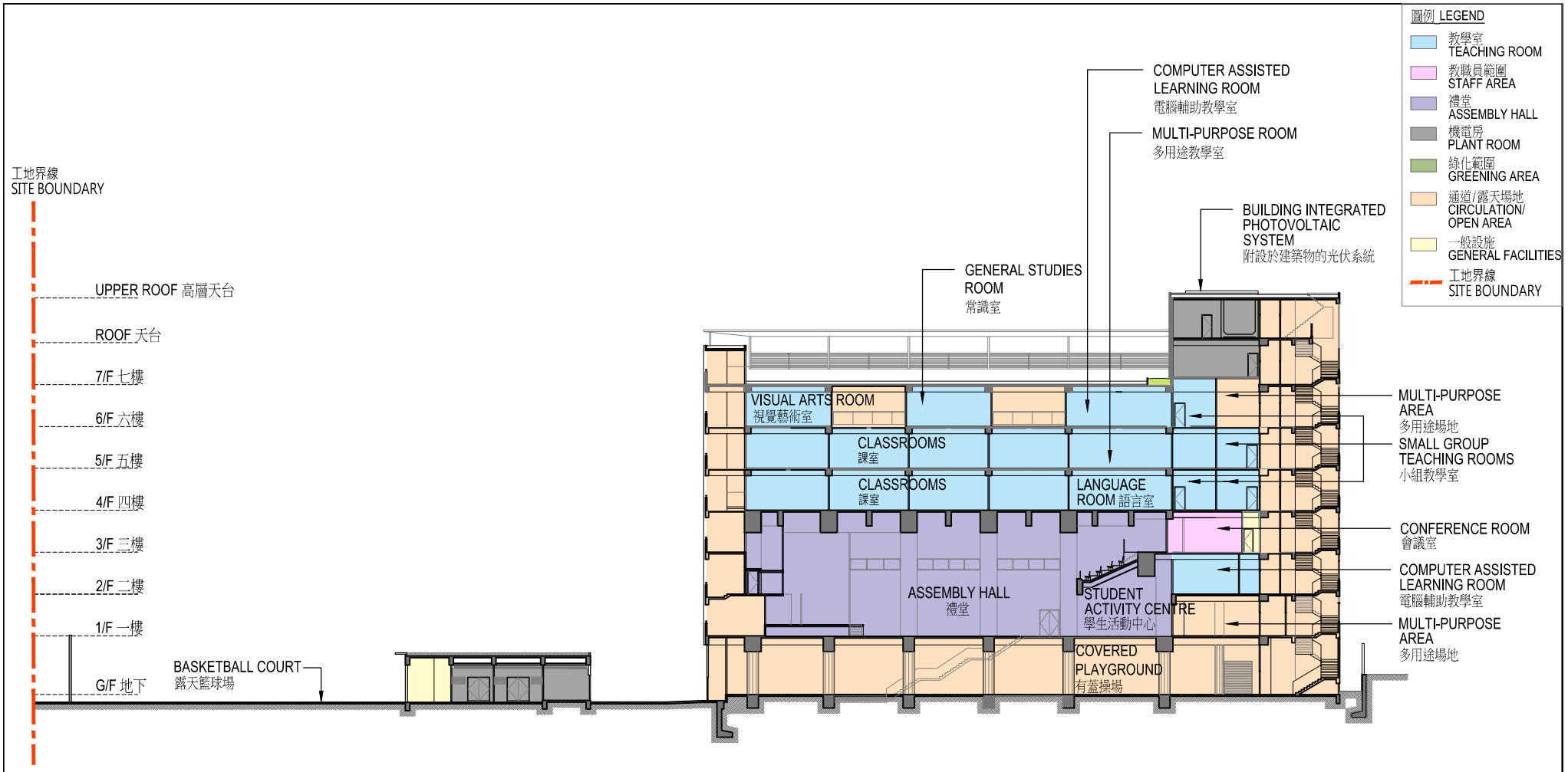
FIFTH FLOOR PLAN 五樓平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



SIXTH FLOOR PLAN 六樓平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



SEVENTH FLOOR PLAN & ROOF PLAN 七樓平面圖及天台平面圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署

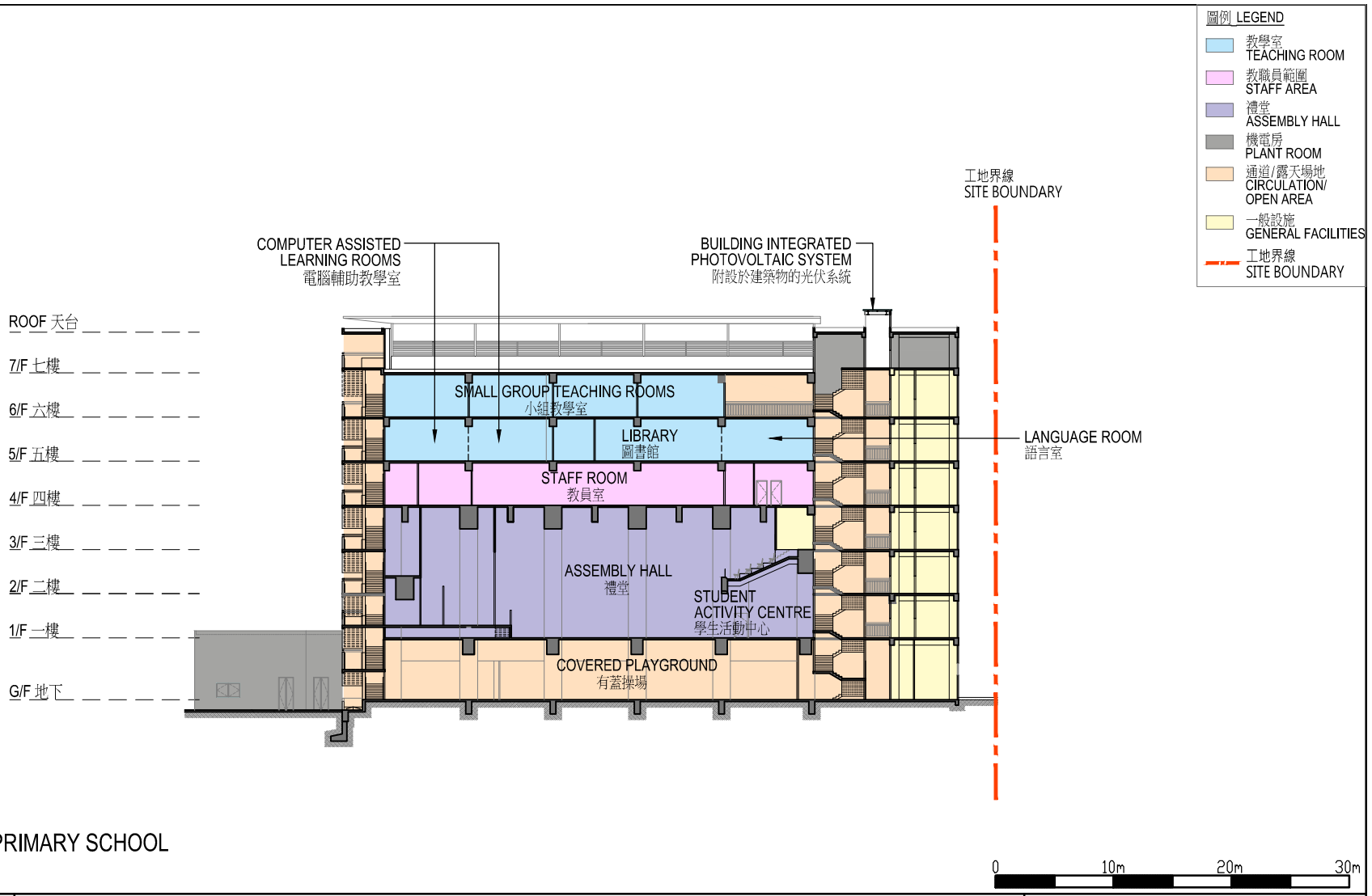


PUN U ASSOCIATION WAH YAN PRIMARY SCHOOL
番禺會所華仁小學

SECTION A-A
剖面圖 A-A

351 EP
TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD
POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD,
NORTH POINT, HONG KONG
香港北角百福道前丹拿道已婚警察宿舍地盤
2所設有24間課室的小學

ARCHITECTURAL SERVICES DEPARTMENT 建築署

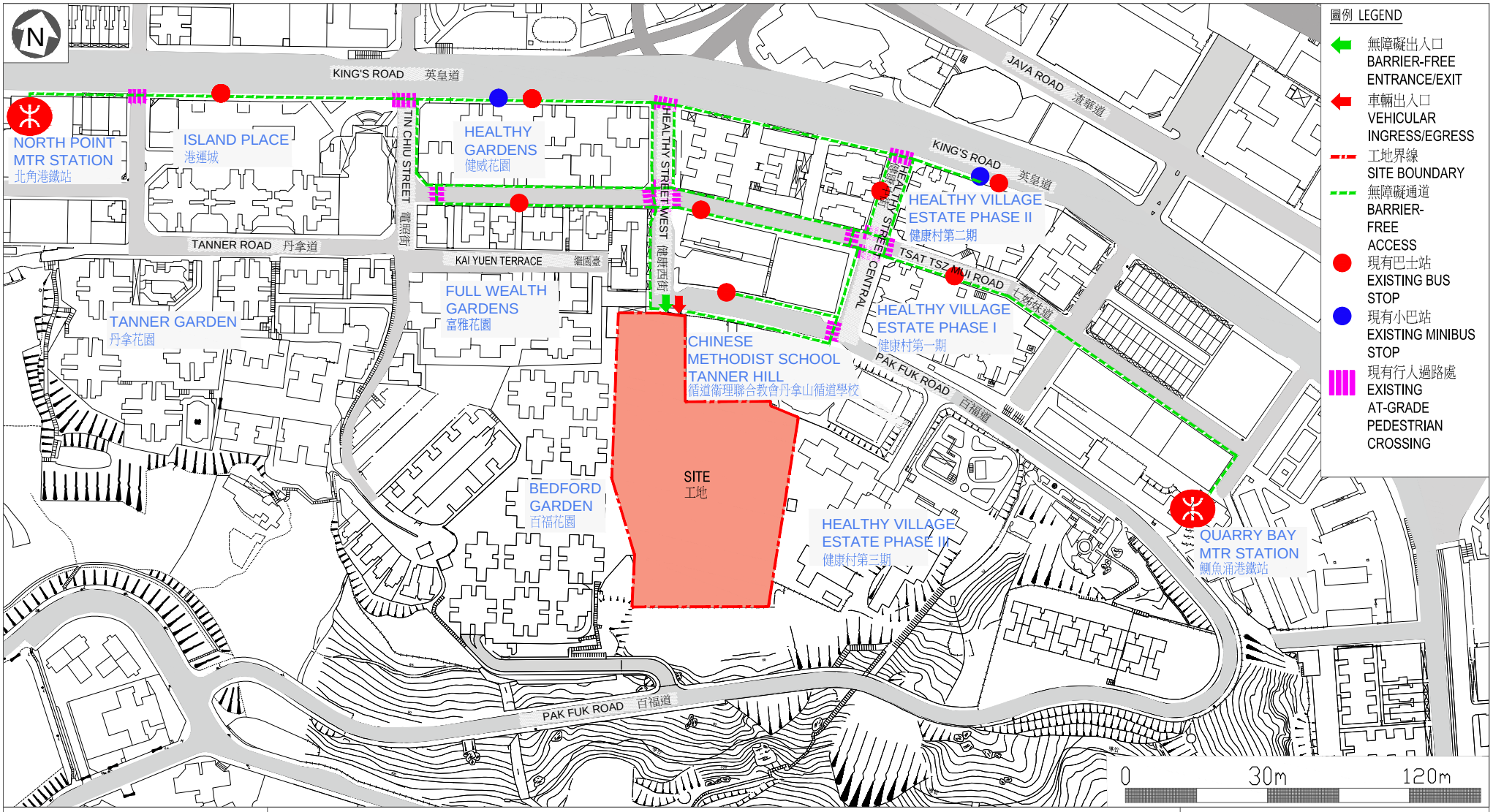


NORTH POINT METHODIST PRIMARY SCHOOL
北角衞理小學

SECTION B-B 剖面圖 B-B	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署

AERIAL VIEW FROM NORTHERN DIRECTION
從北面望向學校的鳥瞰圖

ARTIST'S IMPRESSION 構思圖	351 EP TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD, NORTH POINT, HONG KONG 香港北角百福道前丹拿道已婚警察宿舍地盤 2所設有24間課室的小學	ARCHITECTURAL SERVICES DEPARTMENT 建築署



PLAN OF BARRIER-FREE ACCESS
無障礙通道平面圖

351 EP
TWO 24-CLASSROOM PRIMARY SCHOOLS AT EX-TANNER ROAD
POLICE MARRIED QUARTERS SITE AT PAK FUK ROAD,
NORTH POINT, HONG KONG
香港北角百福道前丹拿道已婚警察宿舍地盤
2所設有24間課室的小學

ARCHITECTURAL SERVICES DEPARTMENT 建築署

351EP – Two 24-classroom primary schools at ex-Tanner Road Police Married Quarters site at Pak Fuk Road, North Point, Hong Kong

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2014 prices)

			Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)
(a)	Consultants' fees for contract administration (Note 2)	Professional	–	–	–	8.6
		Technical	–	–	–	4.6
					Sub-total	13.2
(b)	Resident site staff (RSS) costs (Note 3)	Professional	16	38	1.6	1.8
		Technical	186	14	1.6	7.3
					Sub-total	9.1
	Comprising –					
	(i) Consultants' fees for management of RSS				0.2	
	(ii) Remuneration of RSS				8.9	
					Total	**22.3**

* 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 = $71,385 per month and MPS salary point 14 = $24,380 per month).

2. The consultants' fees for contract administration are calculated in accordance with the existing consultancy agreement for the design and construction of **351EP**. The assignment will only be executed subject to FC's funding approval to upgrade **351EP** to Category A.

3. The actual man-months and actual costs will only be known after completion of the construction works.

Enclosure 15 to PWSC(2015-16)35

A comparison of the reference cost of a 24-classroom primary school project with the estimated cost of 351EP

$ million (in Sept 2014 prices)

			351EP		
		Reference cost*	**Total cost for 2 schools**	**Average cost for 1 school**	
(a)	Site formation	–	28.4	14.2	(See note A)
(b)	Geotechnical works	–	21.6	10.8	(See note B)
(c)	Foundation	21.0	23.7	11.8	(See note C)
(d)	Building	117.5	264.3	132.2	(See note D)
(e)	Building services	33.8	70.3	35.2	(See note E)
(f)	Drainage	5.6	13.6	6.8	(See note F)
(g)	External works	17.9	48.1	24.0	(See note G)
(h)	Additional energy conservation, green and recycled features	–	3.7	1.8	(See note H)
(i)	Furniture and equipment (F&E)	–	5.2	2.6	(See note I)
(j)	Consultants' fees and remuneration of resident site staff	–	22.3	11.2	(See note J)
(k)	Contingencies	19.6	50.0	25.0	
	Total	215.4	551.2	275.6	
(l)	Construction floor area	9 580 m^2	19 850 m^2		
(m)	Construction unit cost {[(d) + (e)] ÷ (l)}	$15,793/$m^2$	$16,856/$m^2$		

*** Assumptions for reference cost**

1. The estimation is based on the assumption that the school site is uncomplicated and without unusual environmental restrictions. No allowance is reserved for specific environmental restrictions such as the provision of insulated windows, air-conditioning and boundary walls to mitigate noise impacts on the school.

2. No site formation works/geotechnical works are required as they are normally carried out by other government departments under a separate engineering vote before handing over the project site for school construction.

3. Piling cost is based on the 105 no. steel H-piles at an average depth of 30 m, assuming that percussive piling is permissible. It also includes costs for pile caps, strap beams and testing. No allowance is reserved for the effect of negative skin friction due to fill on reclaimed land.

4. Cost for drainage and external works is for a standard 24-classroom primary school site area 4 700 m^2 built on an average level site without complicated geotechnical conditions, utility diversions, etc. (i.e. a "greenfield" site).

5. No consultancy services are required.

6. Furniture and equipment costs are excluded as they are usually borne by the sponsoring bodies of new schools.

7. The reference cost for comparison purpose is subject to review regularly. We will review, and revise if necessary, the reference cost which should be adopted for future projects.

/**Notes** .....

Notes

A. Additional cost is required for site formation for the new school premises.

B. Additional cost is required for geotechnical works for maintenance of the slope adjacent to Bedford Garden, excavation and lateral support (ELS) works for drainage and footings close to toe of rock slope, and upgrading the existing retaining wall adjacent to Healthy Village with temporary ELS works and a new permanent retaining wall.

C. The foundation cost is lower because the use of pad footing, which is more economical than conventional piling, is proposed for this project, given the high bedrock level on site. It is estimated that this project will require about 80 nos. of pad footing to suit site conditions.

D. The building cost is higher because of site constraints (close proximity to an adjacent existing primary school and residential estates, and sharing common vehicular access road with that adjacent school during construction).

E. The building services cost is higher because of additional sprinkler systems to fulfill the requirement of Fire Services Department.

F. The cost of drainage is higher because of larger site area, additional drainage works in common access road and re-construction of existing manhole next to the existing school.

G. The cost of external works is higher because of larger site area, construction of common access road and modification of fence walls and planters to the existing school.

H. The cost is required for the provision of energy conservation, green and recycled features. The energy efficient features will achieve energy saving in the annual consumption with a payback period of about five years.

I. The cost of F&E, estimated to be $5.2 million, will be borne by the Government. This is in line with the existing policy on redevelopment and reprovisioning of schools.

J. The consultants' fees and remuneration of resident site staff are required for this project.