

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 703 – BUILDINGS

Education – Others

111ET – A special school for students with mild, moderate and severe intellectual disabilities in Area 108, Tung Chung

Members are invited to recommend to the Finance Committee the upgrading of **111ET** to Category A at an estimated cost of \$334.7 million in money-of-the-day prices for the construction of a new special school with boarding facilities for students with mild, moderate and severe intellectual disabilities.

PROBLEM

We need to construct a new special school with boarding facilities for students with mild, moderate and severe intellectual disabilities (ID) in Area 108, Tung Chung to cater for students with special educational needs in the Islands District.

PROPOSAL

2. The Director of Architectural Services, with the support of the Secretary for Education, proposes to upgrade **111ET** to Category A at an estimated cost of \$334.7 million in money-of-the-day (MOD) prices for the construction of a new special school with boarding facilities for students with mild, moderate and severe ID in Area 108, Tung Chung.

/PROJECT

PROJECT SCOPE AND NATURE

3. The project site occupies an area of around 5 800 square metres (m²) in Area 108, Tung Chung. The scope of works under **111ET** comprises —

School section

- (a) 18 classrooms;
- (b) three small group teaching rooms;
- (c) nine special rooms including a music room, a visual arts room, three multi-purpose rooms, a computer room, a home economics room, a design and technology room and a computer-assisted-learning room/multi-media activity room;
- (d) an optional subject room¹;
- (e) a special room for practical subjects²;
- (f) a physiotherapy room;
- (g) an occupational therapy room;
- (h) five speech therapy rooms;
- (i) three interview rooms;
- (j) a staff room;
- (k) a staff common room;
- (l) a general office;
- (m) a workshop for artisan;

/(n)

¹ Optional subject room is for training on the practical and independent living skills to prepare the senior secondary students for vocational training provided by the Integrated Vocational Training Centre and Shine Skills Centre after they finish secondary education.

² Practical subjects refer to subjects such as life skills training, e.g. preparation of meal setting, independent living training and home decoration.

- (n) a student activity centre;
- (o) a conference room;
- (p) three social worker's rooms;
- (q) a library;
- (r) an assembly hall;
- (s) a basketball court and a covered playground;
- (t) multi-purpose areas; and
- (u) other ancillary facilities, including a tuck shop-cum-central meal portioning area and an accessible/fireman's lift.

Boarding section

- (v) bedrooms to accommodate 60 boarders and study areas;
- (w) a TV/common room;
- (x) a dining/multi-purpose room;
- (y) a kitchen and kitchen store;
- (z) a laundry;
- (aa) a drying area;
- (bb) a warden's office;
- (cc) a houseparents' and programme workers' office;
- (dd) a nurse's duty room / sick bay;
- (ee) two sleep-in rooms for staff on night shift; and
- (ff) other ancillary facilities, including stores, toilets, bathrooms and relevant facilities for the disabled.

4. The proposed new school premises will meet the planning target of providing 2 m² of open space per student. A site plan, layout plans, a sectional plan, an artist's impression and a barrier-free access plan for the project are at Enclosures 1 to 5. Subject to the funding approval by the Finance Committee, we plan to commence construction in the second quarter of 2017 for completion in the third quarter of 2019.

JUSTIFICATION

5. Currently, there is no special school for children with ID in the Islands District. Having regard to the supply and demand of school places for children with ID in the Islands District, the development of Tung Chung and the projection of the overall demand of special school places, there is a need for constructing a new special school with boarding facilities for children with mild, moderate and severe ID in Tung Chung.

6. The new special school aims to provide education and boarding services for children with ID with priority to be given to those residing in the Islands District. The school could provide nearly 200 school places and 60 boarding places. Apart from meeting the demand for school places and boarding places from children with ID residing in the Islands District, the new special school will also help meet the overall demand for boarding places from children with moderate ID from other districts.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the project to be \$334.7 million in MOD prices (please see paragraph 9 below), broken down as follows –

	\$ million
(a) Piling	15.4
(b) Building ³	141.5
(c) Building services	44.0
(d) Drainage	7.9
	/(e)

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

		\$ million	
(e)	External works	25.2	
(f)	Additional energy conservation, green and recycled features	3.9	
(g)	Furniture and equipment (F&E) ⁴	5.4	
(h)	Consultants' fees for	8.9	
	(i) contract administration	8.2	
	(ii) management of resident site staff (RSS)	0.7	
(i)	Remuneration of RSS	10.2	
(j)	Contingencies	26.2	
	Sub-total	288.6	(in September 2016 prices)
(k)	Provision for price adjustment	46.1	
	Total	334.7	(in MOD prices)

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 RSS costs by man-months is at Enclosure 6. The construction floor area (CFA) of **111ET** is about 7 640 m². The estimated construction unit cost, represented by the building and building services costs, is \$24,280 per m² of CFA in September 2016 prices. We consider this construction unit cost comparable to that of similar projects built by the Government.

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

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

Year	\$ million (Sept 2016)	Price adjustment factor	\$ million (MOD)
2017 – 18	50.0	1.05750	52.9
2018 – 19	110.0	1.12095	123.3
2019 – 20	70.0	1.18821	83.2
2020 – 21	40.0	1.25950	50.4
2021 – 22	15.0	1.32562	19.9
2022 – 23	3.6	1.39190	5.0
	<hr/> 288.6 <hr/>		<hr/> 334.7 <hr/>

10. 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 2017 to 2023. 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.

11. The cost of F&E for the project, estimated to be \$5.4 million, will be borne by the Government according to the existing policy. We estimate the annual recurrent expenditure arising from this project to be \$63.8 million upon full commissioning of the new special school.

PUBLIC CONSULTATION

12. We consulted the Community Affairs, Culture and Recreation Committee of the Islands District Council on 4 July 2016. We also consulted the Tung Chung Rural Committee on 31 July 2016. Members of both Committees supported the project.

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13. We also consulted the Legislative Council Panel on Education on 12 December 2016. 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

14. The project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We engaged a consultant to conduct the Preliminary Environmental Review (PER) for the project in May 2016. The PER was completed in October 2016 and the Director of Environmental Protection agreed with its finding. The PER concluded that the project will not cause long-term environmental impacts. We have included in the project estimates the cost to implement suitable mitigation measures to control short term environmental impacts.

15. 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.

16. 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, adopting modular design to enable reuse of formwork). 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 facilities⁵. 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.

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⁵ 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.

17. At the construction stage, we will also 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.

18. We estimate that the project will generate in total 31 700 tonnes of construction waste. Of these, we will reuse 8 400 tonnes (26.5%) of inert construction waste on site and deliver 21 500 tonnes (67.8%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 1 800 tonnes (5.7%) 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 \$1.9 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 (Charge for Disposal of Construction Waste) Regulation).

HERITAGE IMPLICATIONS

19. 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

20. The project does not require any land acquisition.

/ENERGY

ENERGY CONSERVATION, GREEN AND RECYCLED FEATURES

21. 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) photovoltaic system.

22. For greening features, there will be vertical greening and landscaping in the appropriate areas on the main roof and terraces for environmental and amenity benefits.

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

24. The total estimated additional cost for adoption of the above features is around \$3.9 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 5.8% savings in the annual energy consumption with a payback period of about 10 years.

BACKGROUND INFORMATION

25. We upgraded **111ET** to Category B in September 2014. We engaged consultants to undertake various services, including site investigation, Building Environmental Assessment certification, layout design, ground investigation, detail design, tender documentation, PER and quantity surveying services at a total cost of 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”.

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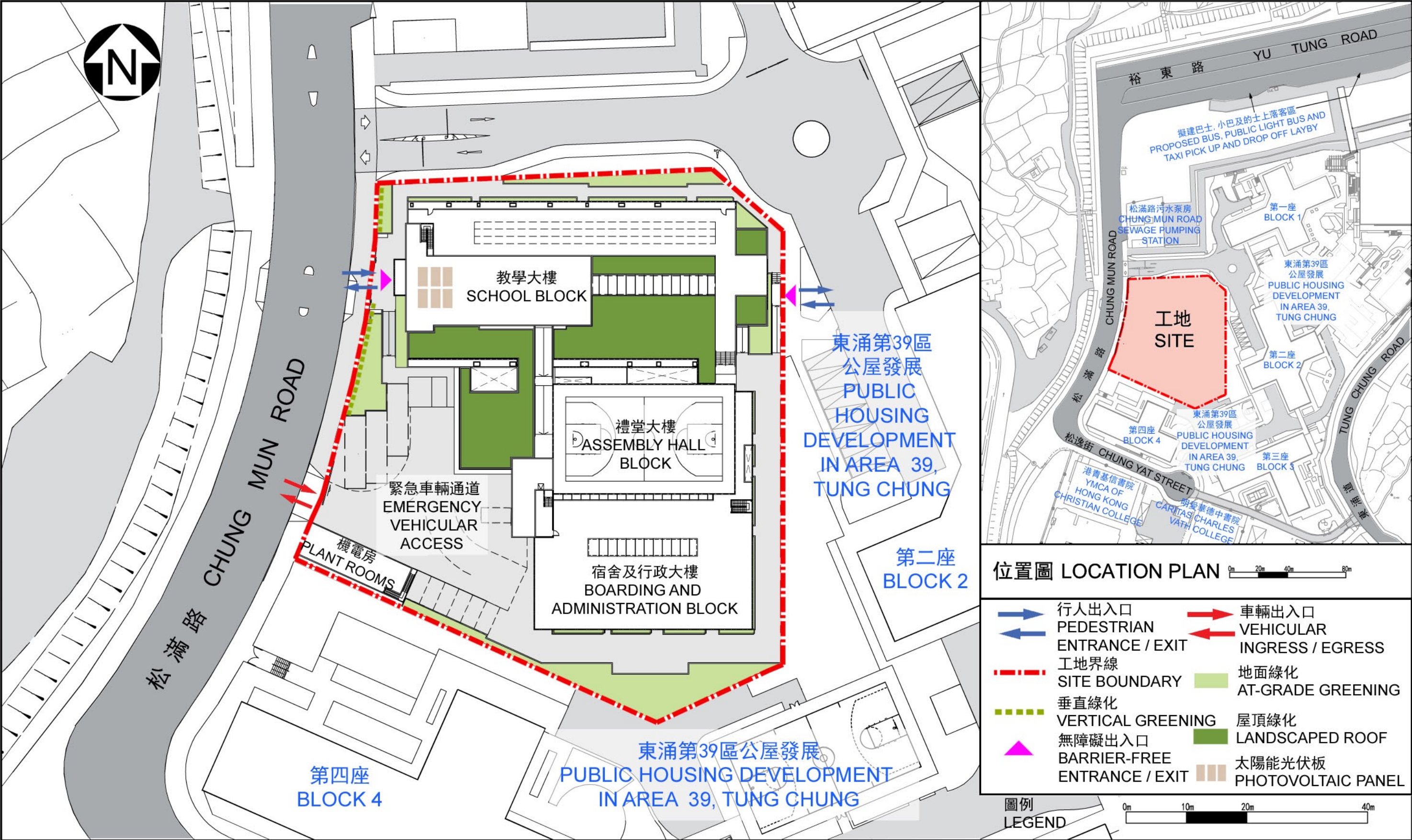
26. The proposed works will involve the removal of all 28 trees within the project boundary. All trees to be removed are not important trees⁶. We will incorporate planting proposals as part of the project, including the planting of about 28 trees, 9 600 shrubs, 11 500 groundcovers and 80 climbers.

27. We estimate that the proposed works will create about 130 jobs (115 for labourers and 15 for professional or technical staff), providing a total employment of 2 800 man-months.

Education Bureau
January 2017

⁶ “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.

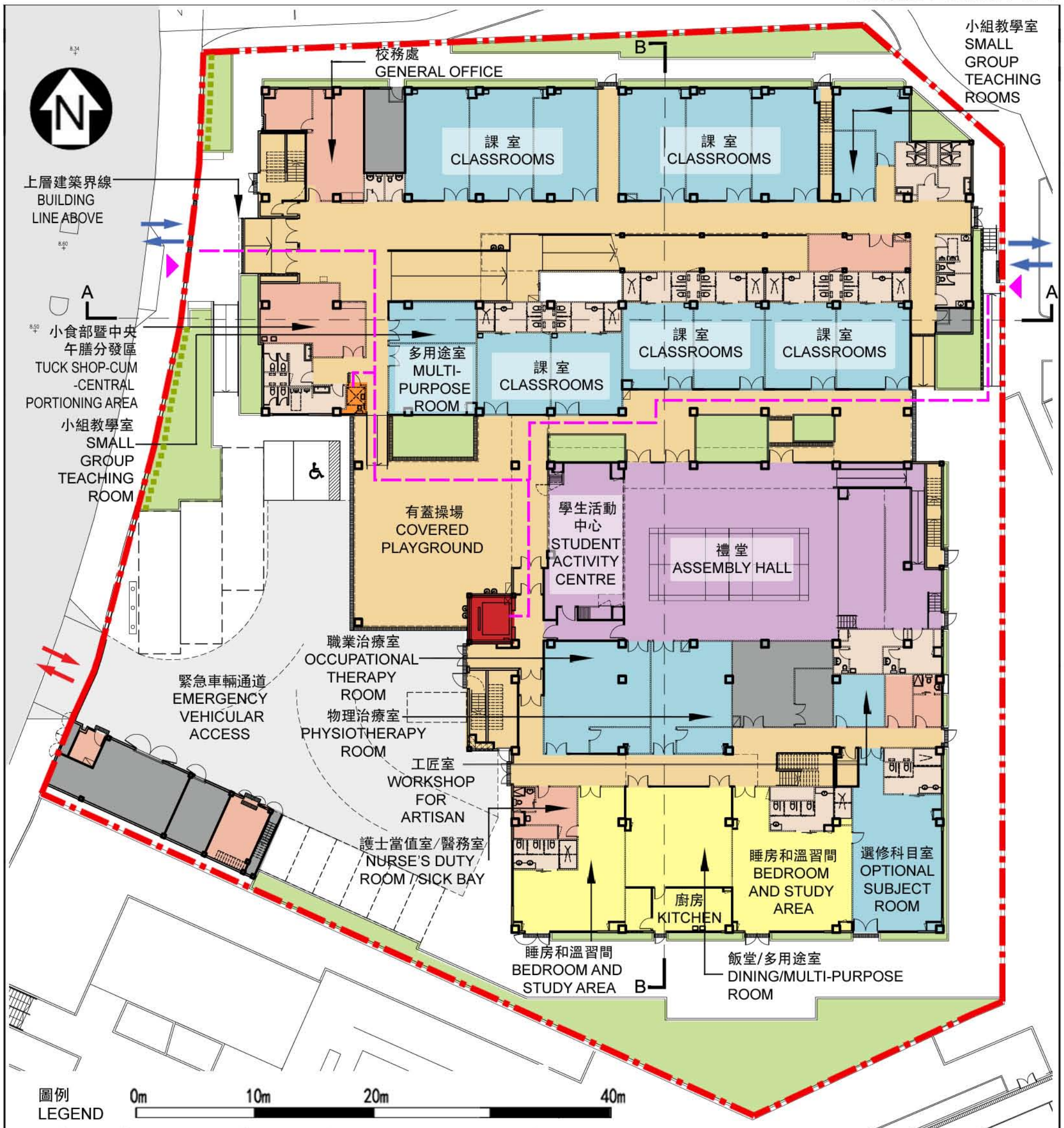


工地平面圖
SITE PLAN

111ET
東涌第108區1所為輕度、中度及嚴重智障兒童而設的特殊學校
A SPECIAL SCHOOL FOR STUDENTS WITH MILD, MODERATE
AND SEVERE INTELLECTUAL DISABILITIES IN AREA 108, TUNG CHUNG



ARCHITECTURAL
SERVICES
DEPARTMENT 建築署

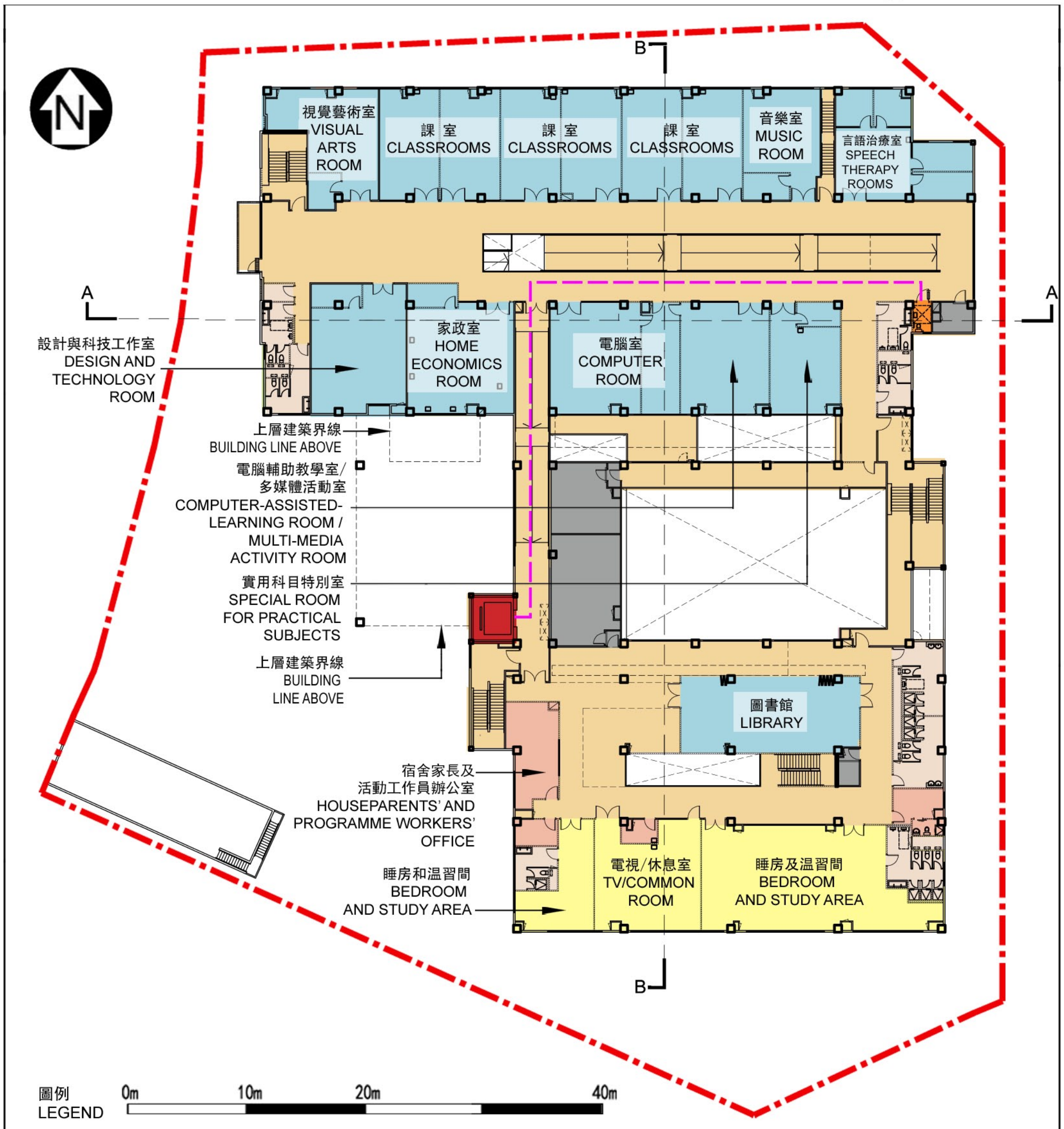


睡房及宿舍輔助設施 BEDROOMS AND BOARDING ANCILLARY FACILITIES	機電房 PLANT ROOM	綠化範圍 LANDSCAPED AREA	通道/露天場地 CIRCULATION/ OPEN AREA	工地界線 SITE BOUNDARY
教職員範圍 STAFF AREA	洗手間/更衣室 TOILET / CHANGING ROOM	暢通易達洗手間 ACCESSIBLE TOILET	車輛出入口 VEHICULAR INGRESS / EGRESS	垂直綠化 VERTICAL GREENING
教學室 TEACHING ROOM	禮堂 ASSEMBLY HALL	暢通易達升降機 ACCESSIBLE LIFT	行人出入口 PEDESTRIAN ENTRANCE / EXIT	無障礙通道 BARRIER-FREE ACCESS
				無障礙出入口 BARRIER-FREE ENTRANCE / EXIT

地面平面圖
GROUND
FLOOR PLAN

111ET
東涌第108區1所為輕度、中度及
嚴重智障兒童而設的特殊學校
A SPECIAL SCHOOL FOR STUDENTS WITH
MILD, MODERATE AND SEVERE INTELLECTUAL
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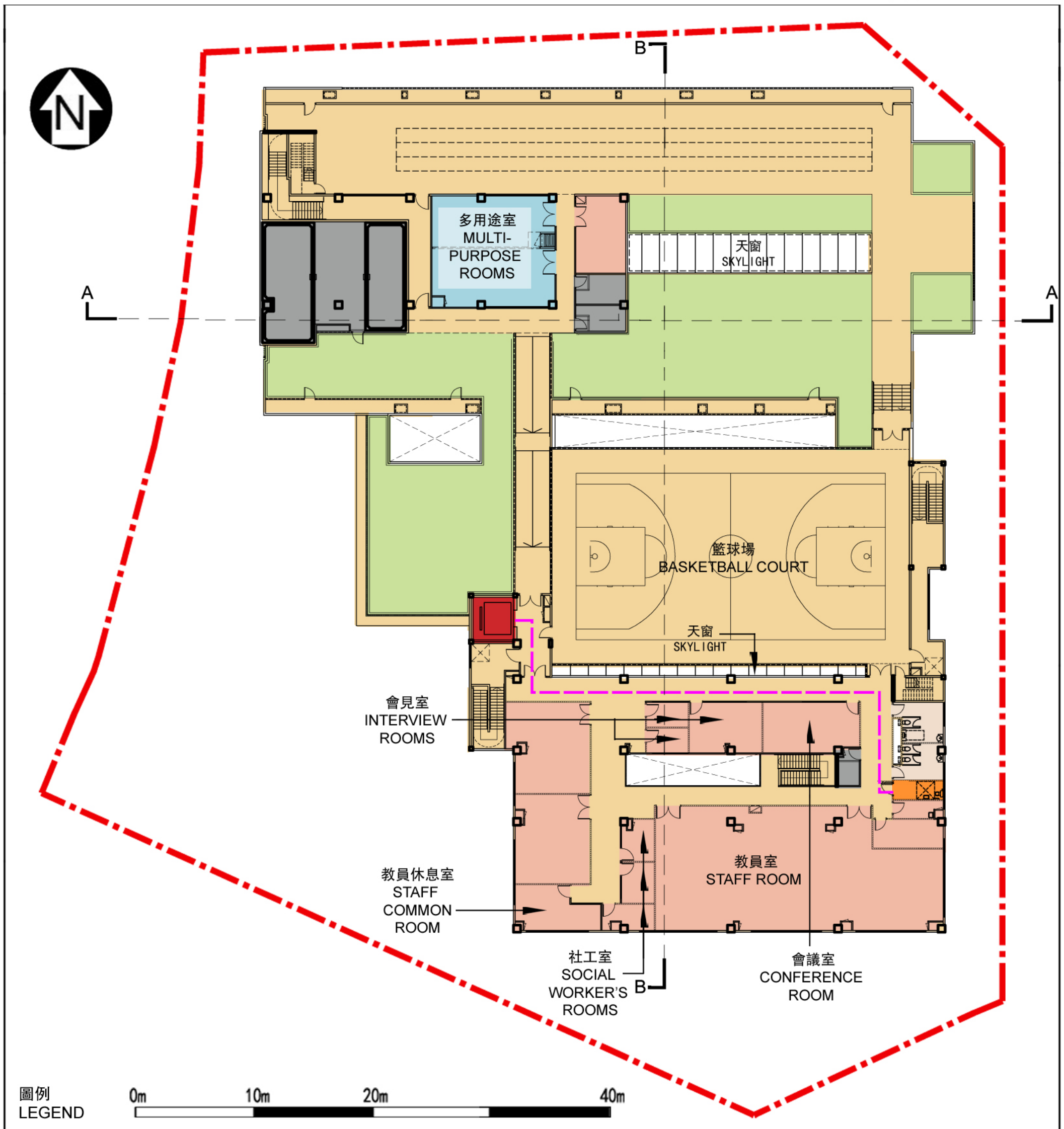


一樓平面圖
FIRST
FLOOR PLAN

111ET
東涌第108區1所為輕度, 中度及
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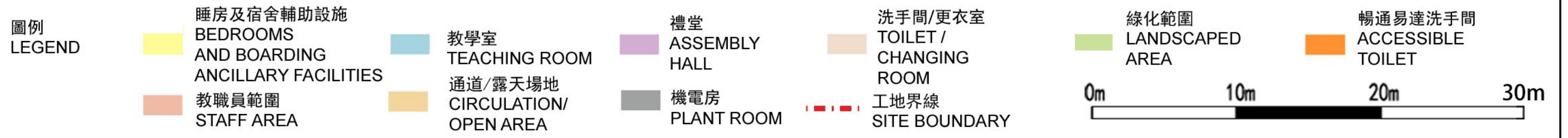
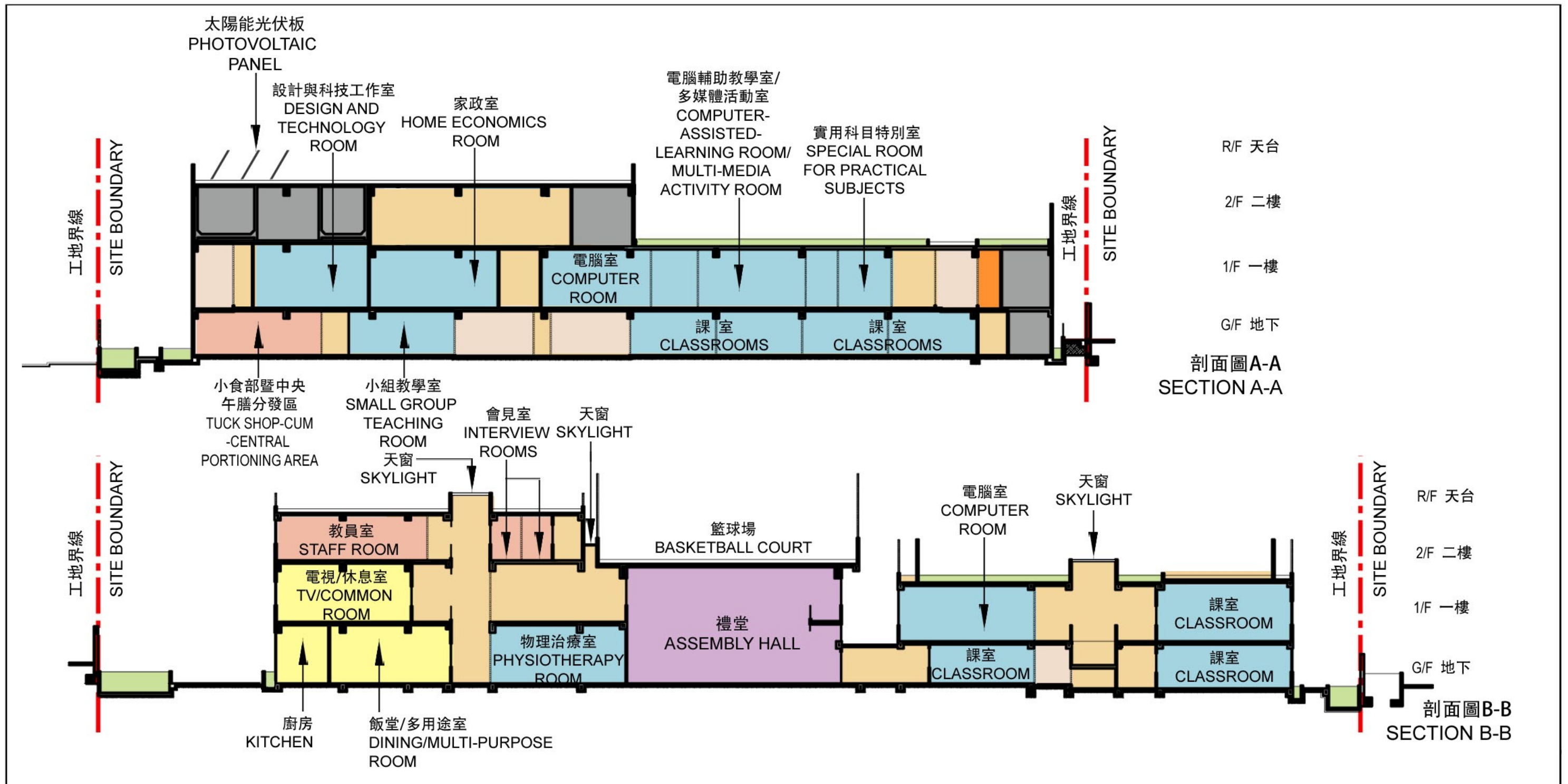
圖例
LEGEND

- | | | | |
|-----------------------------------|-----------------------------------|------------------------------|------------------------------|
| 教職員範圍
STAFF AREA | 機電房
PLANT ROOM | | |
| 教學室
TEACHING ROOM | 洗手間/更衣室
TOILET / CHANGING ROOM | 暢通易達洗手間
ACCESSIBLE TOILET | 工地界線
SITE BOUNDARY |
| 通道/露天場地
CIRCULATION/ OPEN AREA | 綠化範圍
LANDSCAPED AREA | 暢通易達升降機
ACCESSIBLE LIFT | 無障礙通道
BARRIER-FREE ACCESS |

二樓平面圖
SECOND FLOOR PLAN

111ET
東涌第108區1所為輕度, 中度及嚴重智障兒童而設的特殊學校
A SPECIAL SCHOOL FOR STUDENTS WITH MILD, MODERATE AND SEVERE INTELLECTUAL DISABILITIES IN AREA 108, TUNG CHUNG

ARCHITECTURAL SERVICES
DEPARTMENT 建築署



剖面圖
SECTION

111ET
東涌第108區1所為輕度、中度及嚴重智障兒童而設的特殊學校
A SPECIAL SCHOOL FOR STUDENTS WITH MILD, MODERATE AND SEVERE INTELLECTUAL DISABILITIES IN AREA 108, TUNG CHUNG



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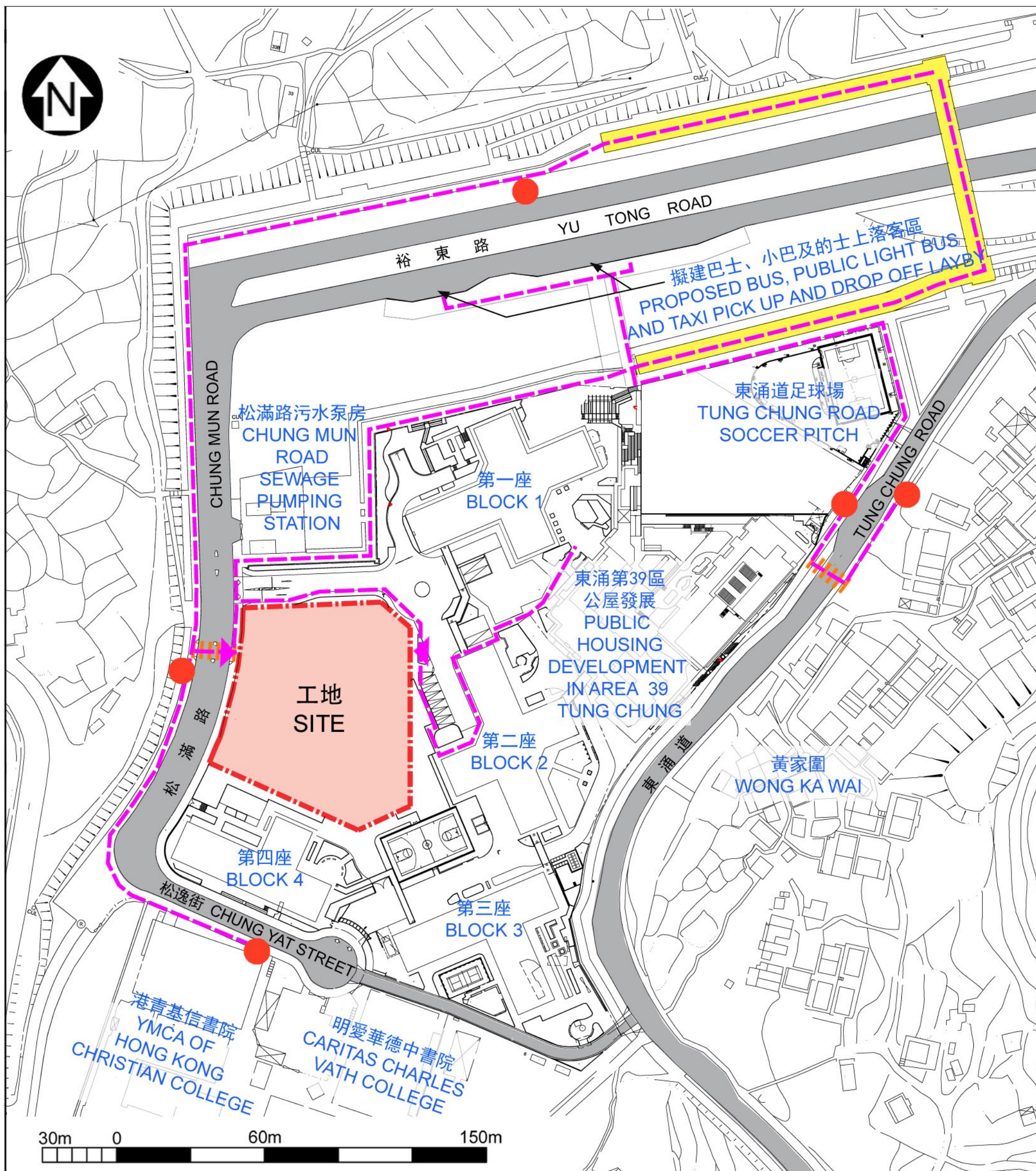
從西北面望向學校的構思鳥瞰圖
AERIAL VIEW FROM NORTH WESTERN DIRECTION (ARTIST'S IMPRESSION)

構思圖
ARTIST'S
IMPRESSION

111ET
東涌第108區1所為輕度、中度及嚴重智障兒童而設的特殊學校
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圖例
LEGEND

- | | | |
|--|---------------------------------------|------------------------------|
| ● 現有巴士站
EXISTING BUS STOP | 有蓋行人天橋
COVERED FOOTBRIDGE | 無障礙通道
BARRIER-FREE ACCESS |
| ▲ 無障礙出入口
BARRIER-FREE ENTRANCE / EXIT | 行人過路處
AT-GRADE PEDESTRIAN CROSSING | --- 工地界線
SITE BOUNDARY |

無障礙通道
平面圖
PLAN OF
BARRIER-FREE
ACCESS

111ET
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111ET – A special school for students with mild, moderate and severe intellectual disabilities in Area 108, Tung Chung

**Breakdown of the estimates for consultants' fees and resident site staff costs
(in September 2016 prices)**

		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants' fees for contract administration (Note 2)	Professional	—	—	—	6.7
	Technical	—	—	—	1.5
				Sub-total	8.2
(b) Resident site staff (RSS) costs (Note 3)	Professional	14	38	1.6	1.7
	Technical	215	14	1.6	9.2
				Sub-total	10.9
Comprising -					
(i) Consultants' fees for management of RSS				0.7	
(ii) Remuneration of RSS				10.2	
				Total	19.1

* 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 = \$77,320 per month and MPS salary point 14 = \$26,700 per month.)
2. The consultants' fees for contract administration are calculated in accordance with the existing consultancy agreement for the design and construction of **111ET**. The assignment will only be executed subject to Finance Committee's funding approval to upgrade **111ET** to Category A.
3. The actual man-months and actual costs will only be known after completion of the construction works.