土木工程拓展署
Civil Engineering and
Development Department

Agreement No. CE 32/2019 (CE)

Site Formation and Infrastructure Works for Proposed Public Housing Developments at Ying Fung Lane, Wong Tai Sin Community Centre and Ngau Chi Wan Village, Wong Tai Sin – Feasibility Study

Preliminary Air Ventilation Assessment in the form of Expert Evaluation (AVA-EE) (Wong Tai Sin Community Centre) (Ref: TR14c-08)

June 2022

Reviewed:	Anna Chung	21 June 2022
Approved for Issue:	David Ho	21 June 2022

AECOM ASIA COMPANY LIMITED

TABLE OF CONTENTS

Figures

Expression and Abbreviation

The following words and expressions shall have the meaning hereby assigned to them:-

a) "Site" means the site of Wong Tai Sin Community Centre proposed for housing developments as shown in **60625506/TR14c/FIGURE 1.2**.

b) "Development" means the proposed housing development with associated facilities supporting the proposed housing developments and the local community within the Site, site formation works and essential engineering infrastructure works within / outside the Site necessary for supporting the housing developments.

c) "Government" means the Government of the Hong Kong Special Administrative Region.

d) "Assignment" means the feasibility studies on the site formation and infrastructure works for supporting the housing developments.

e) "Project" means the project for proposed housing developments at the Site.

The following table lists the abbreviated titles of Government bureau, departments, offices, statutory bodies, public organizations, etc. which are used in this Assignment.

Abbreviation	**Full Title**
ACABAS	Advisory Committee on the Appearance of Bridges and Associated Structures
ACE	Advisory Council on the Environment
AFCD	Agriculture, Fisheries and Conservation Department
AMO	Antiquities and Monuments Office of Development Bureau
AOI	Area of Influence
ArchSD	Architectural Services Department
ASRs	Air Sensitive Receivers
AQOs	Air Quality Objectives
B/Ds	Bureaux/departments
BDTM	Base District Traffic Model
CBD	Central Business District
CEDD	Civil Engineering and Development Department
CDA	Comprehensive Development Area
CLP	CLP Power Hong Kong Limited
DC	District Council
DEVB	Development Bureau
DLC	District Land Conference
DLO	District Lands Office

Abbreviation	**Full Title**
DoH	Department of Health
DR	Director's Representative
DSD	Drainage Services Department
EDB	Education Bureau
EFS	Engineering Feasibility Study
EIAO	Environmental Impact Assessment Ordinance
EIAO-TM	Technical Memorandum on Environmental Impact Assessment Process
EKEO	Energizing Kowloon East Office
EMSD	Electrical and Mechanical Services Department
EPD	Environmental Protection Department
ExCo	Executive Council
FC	Finance Committee
FSD	Fire Services Department
GB	Green Belt
GEO	Geotechnical Engineering Office of CEDD
GLA	Government Land Allocation
GMB	Green Minibus
GSH	Green Form Subsidised Home Ownership Scheme
G/IC	Government, Institution or Community
ha	Hectare
HAD	Home Affairs Department
HATS	Harbour Area Treatment Scheme
HD	Housing Department
HKHS	Hong Kong Housing Society
HKPSG	Hong Kong Planning Standard and Guidelines
HyD	Highways Department
KTPTW	Kwun Tong Preliminary Treatment Works
LandsD	Lands Department
LCAs	Landscape Character Areas
LCSD	Leisure and Cultural Services Department
LegCo	Legislative Council
LRs	Landscape Resources
LTHS	Long Term Housing Strategy
NCWV	Ngau Chi Wan Village
NSRs	Noise Sensitive Receivers
O	Open Space
OVTs	Old and Valuable Trees

Abbreviation	**Full Title**
OZP	Outline Zoning Plan
PFC	Public Fill Committee of the CEDD
PlanD	Planning Department
PlanD/UD&L	Urban Design and Landscape Section of PlanD
PNAP	Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers
PR	Plot Ratio
PRH	Public Rental Housing
PTI	Public Transport Interchange
PTT	Public Transport Terminus
PWSC	Public Works Subcommittee
R(A)	Residential (Group A)
R(B)	Residential (Group B)
RC	Rural Committee
SCL	Shatin to Central Link
SIS	Slope Information System
SMO	Survey and Mapping Office of LandsD
SSF	Subsidised Sale Flats
SWD	Social Welfare Department
TD	Transport Department
TPB	Town Planning Board
TPEDM	The Territorial Population and Employment Data Matrix
TTIA	Traffic and Transport Impact Assessment
VCAB	Vetting Committee on Aesthetic Design of Pumping Station Buildings
VRs	Visual Resources
WPCO	Water Pollution Control Ordinance
WSD	Water Supplies Department
WSRs	Water Sensitive Receivers
WTSCC	Wong Tai Sin Community Centre
WQO	Water Quality Objective
YFL	Ying Fung Lane

1 INTRODUCTION

1.1 Background

1.1.1 The Government is committed to facilitating steady and continued land supply, not only for providing people with a place to live and work, but also for the developments of Hong Kong's commerce, industry, innovation and technology and various emerging sectors. In the short to medium term, the Government will continue to optimize the use of built-up land and its surrounding areas to meet the community's pressing demand for land for housing and other purposes.

1.1.2 Three (3) potential individual sites, namely Ying Fung Lane, Wong Tai Sin Community Centre and Ngau Chi Wan Village, Wong Tai Sin, are identified for housing developments and supporting facilities. The respective locations of these sites are shown in **60625506/TR14c/FIGURE 1.1**. Boundaries of these sites would be subject to review throughout the course of this Assignment and subject to determination from the review findings of this Assignment.

1.1.3 An EFS is required for each of the aforementioned individual sites (i.e. a total of three (3) EFSs are to be conducted under this Assignment) to determine the scope of the Infrastructure Works to make available the formed land for housing and associated developments, to assess the various impacts due to the provision of these infrastructures and housing developments and to recommend the mitigation measures to keep the potential impacts due to the Development within the acceptable level of the current standard/regulation. The EFSs shall take into account the cumulative demand/impact of other adjoining existing, planned, committed and possible developments to establish the recommended Infrastructure Works and the required mitigation measures, based on the notional development layout agreed with relevant Government departments. Under this Assignment, deliverables are to be produced to support the PlanD's re-zoning of the Sites and hence outputs of this Assignment shall also satisfy the re-zoning requirements of the relevant departments, authorities and organizations.

1.1.4 This report focuses on the Site at WTSCC. The proposed development boundary of the Site is shown in **60625506/TR14c/FIGURE 1.2**. The two remaining sites will be presented in separate submissions.

1.2 Purpose of this Report

1.2.1 The Preliminary Air Ventilation Assessment – Expert Evaluation (AVA-EE) (hereafter as "the Report") is prepared to meet the requirement of the Clause 6.17 of the Brief. This Report aims to identify the existing wind environment at the vicinity of the Site and qualitatively analyze the probable wind impact induced by the scheme for the Development. This Report is also prepared according to the 'Technical Guide for Air Ventilation Assessment for Developments in Hong Kong' (Annex A of HPLB and ETWB TC No. 1/06).

1.3 Structure of this Report

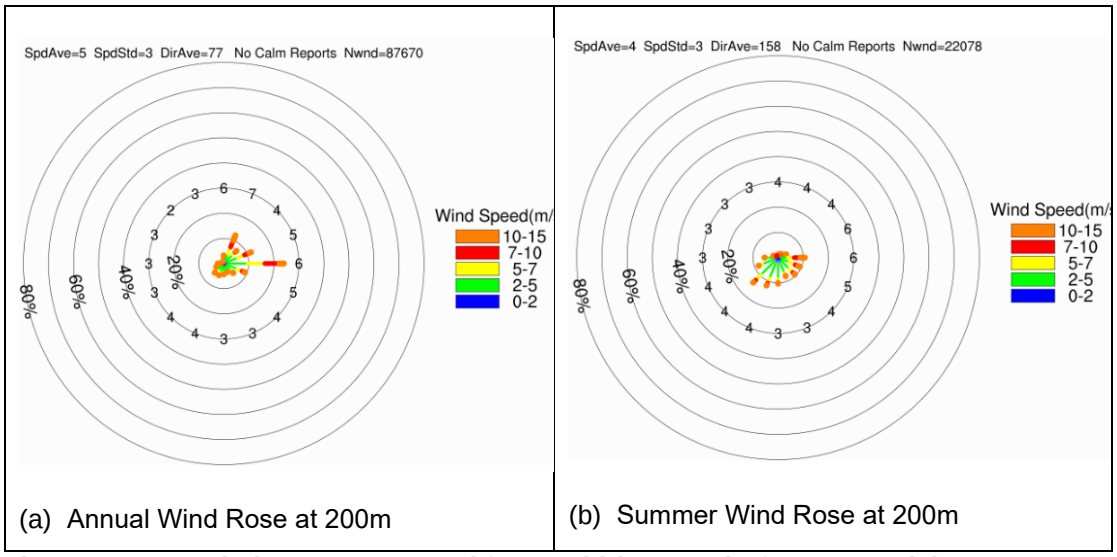
1.3.1 This Report is organized into 7 sections including this introductory section:-

- **Section 2 –** Identification of wind availability at WTSCC Site;
- **Section 3 –** Identification of topography, land uses and urban morphology near the WTSCC Site;
- **Section 4 –** Illustration of the Development Proposal;
- **Section 5 –** Evaluation of the probable wind impacts induced by the Development Proposal;
- **Section 6 –** Recommend merit air ventilation measures to the Development Proposal; and
- **Section 7 –** Summary and Conclusion.

2 WIND AVAILABILITY

2.1 Background

2.1.1 Identification of wind availability at WTSCC as well as the vicinity is important in determining the local wind environment near the Site. A set of wind data simulated via Regional Atmospheric Modelling System (RAMS) model is released by PlanD. The Site falls in Grid (084, 047), the wind roses based on wind data from this grid is presented in **Figure 2.1** below.



(a) Annual Wind Rose at 200m

(b) Summer Wind Rose at 200m

Figure 2.1 Wind Roses Extracted from Grid (084, 047) of RAMS Model

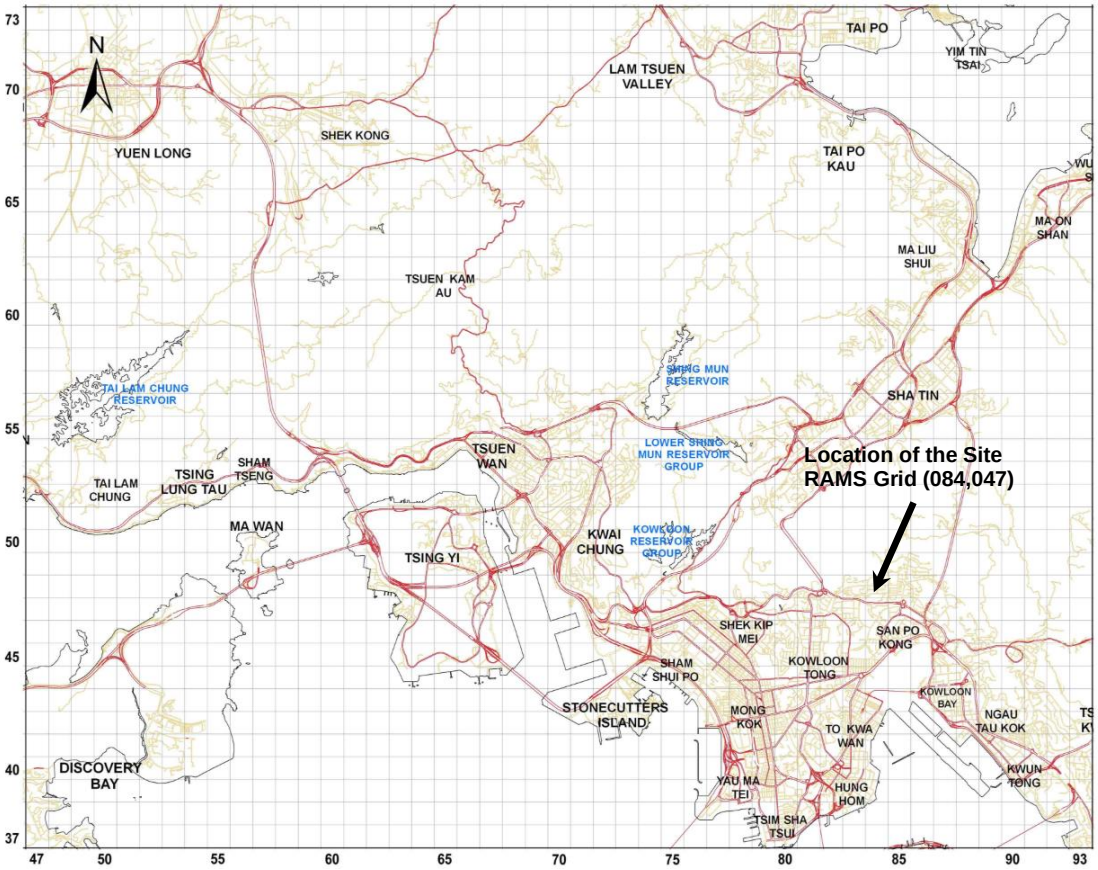
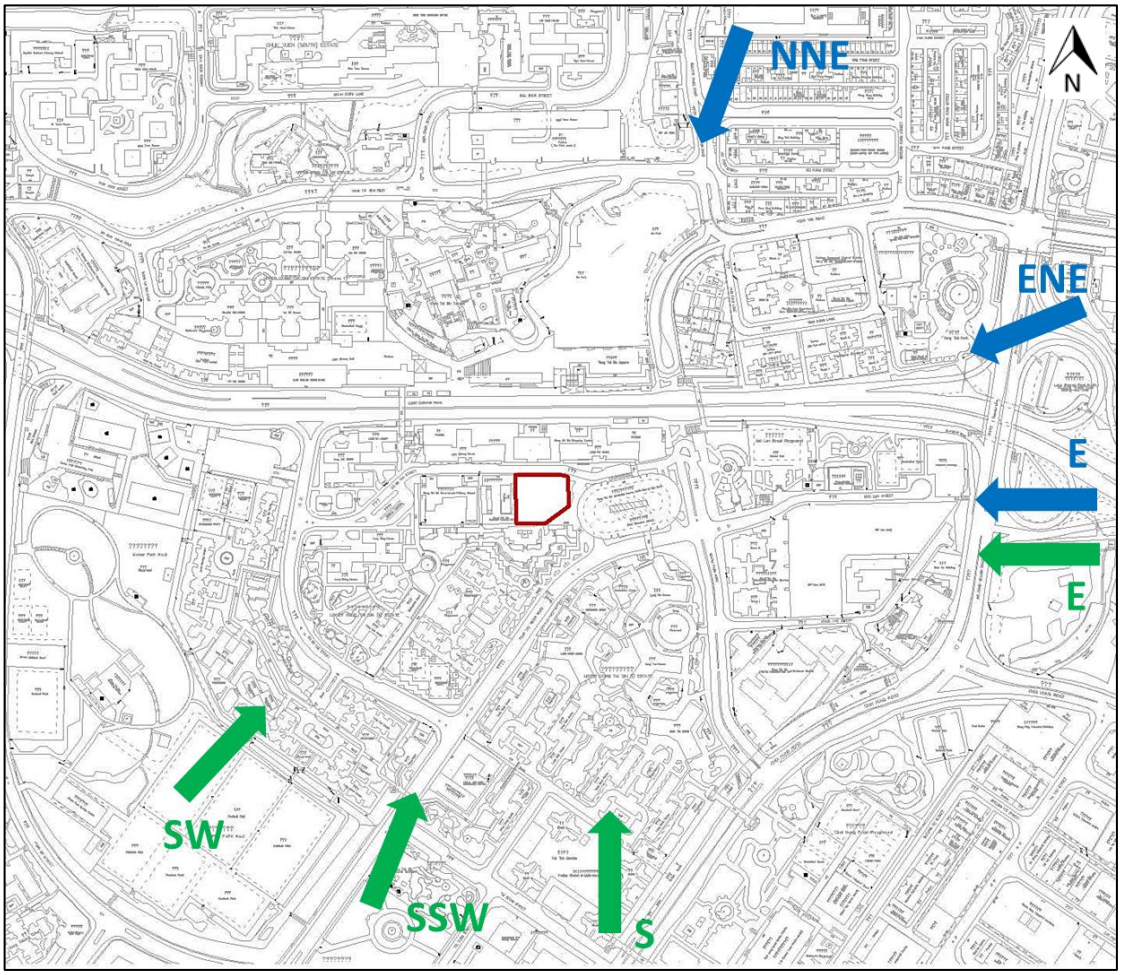


Figure 2.2 Illustration of Location for Wind Data Extraction

Table 2.1 Annual / Summer Wind Frequency Occurrence

Annual Winds	Occurrence frequency	Summer Winds	Occurrence frequency
N	3.3%	N	1.2%
NNE	12.4%	NNE	1.7%
NE	7.2%	NE	2.0%
ENE	11.8%	ENE	3.6%
E	24.1%	E	10.8%
ESE	9.3%	ESE	9.5%
SE	5.4%	SE	9.4%
SSE	3.7%	SSE	7.9%
S	4.3%	S	10.3%
SSW	5.1%	SSW	12.0%
SW	5.2%	SW	14.0%
WSW	3.3%	WSW	8.4%
W	2.4%	W	5.4%
WNW	1.0%	WNW	2.1%
NW	0.6%	NW	1.0%
NNW	0.9%	NNW	0.9%

2.1.2 Based on the wind data from RAMS model, the annual prevailing wind near the Site are mainly coming from NNE, E and ENE directions, while in summer, the local wind environment would be determined by S, SSW, SW and E winds. The prevailing wind directions are illustrated in **Figure 2.3** below.



Annual prevailing wind directions
Summer prevailing wind directions
WTSCC Project Site Boundary

Figure 2.3 Illustration of Prevailing Wind at WTSCC Site

3 SITE ENVIRONMENT

3.1 Local Topography

3.1.1 The WTSCC Site falls in the northeast region of Kowloon. The WTSCC Site sits roughly at the mid-way between the low-land of Kai Tak – San Po Kong to its southeast and the high-rise hill of Lion Rock to the northwest.

3.1.2 The WTSCC Site is on a land with altitude rising from south to the north. While the terrain elevation for the WTSCC Site is around +13 mPD, the terrain height in their vicinity ranged from around +6 mPD to the south and to +85 mPD to the north. The terrain to the far northeast to northwest of the WTSCC Site continuously rise to the mountain ridges of Lion Rock. Hence, it can be expected that the wind flow from the north-northeasterly direction would be weakened and moderated by the terrain feature before reaching the Site. Wind from easterly, southerly and southwesterly directions are not likely to be blocked by terrain features.

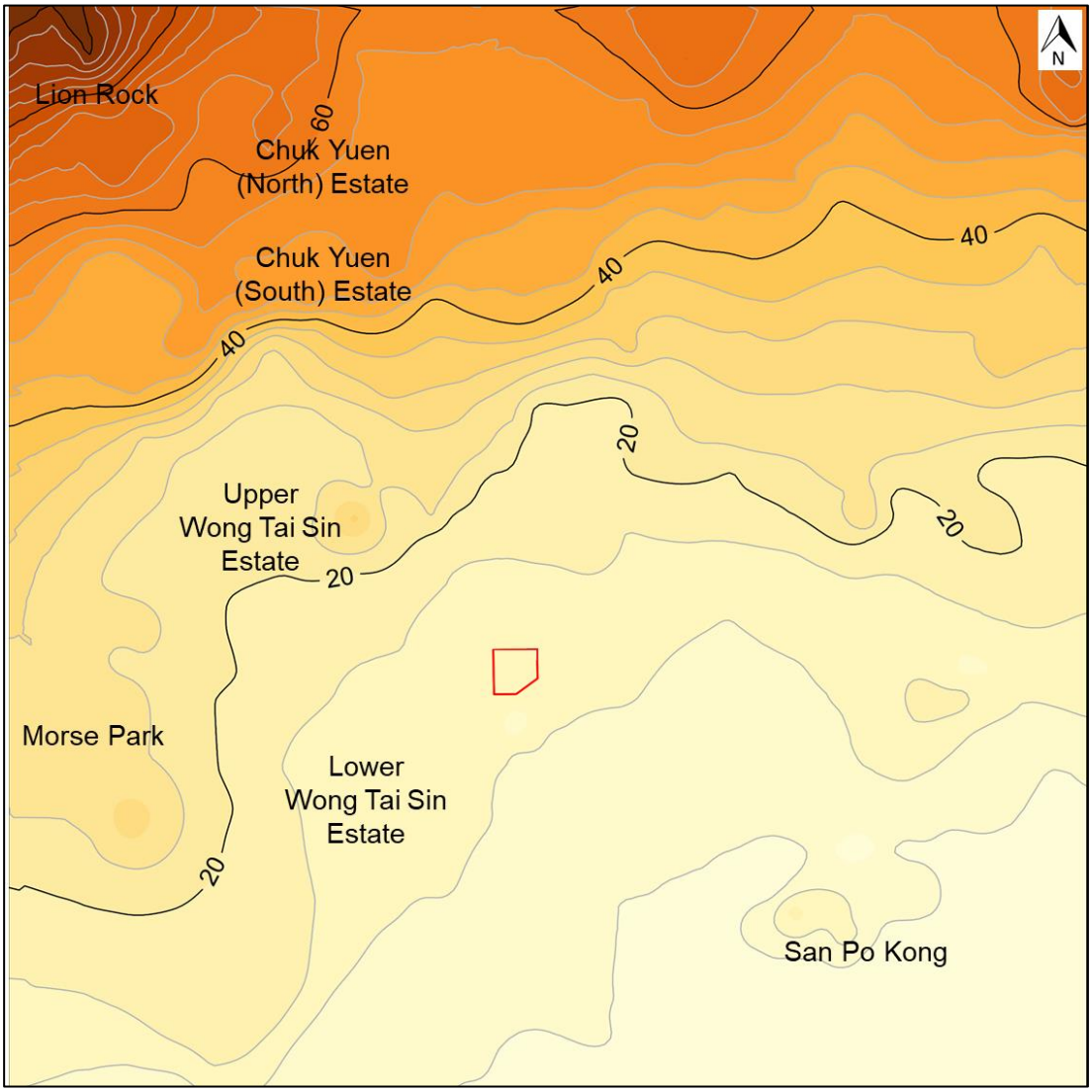


Figure 3.1 Digital Topographical Map of Regions near the WTSCC Site

3.2 Land Uses

3.2.1 The land uses at WTSCC along with their vicinity region are dictated by approved Wang Tau Hom and Tung Tau OZP No. S/K8/23 and approved Tsz Wan Shan, Diamond Hill & San Po Kong OZP No. S/K11/29. The land uses are illustrated in **Figure 3.2**.

WTSCC Project Site Boundary

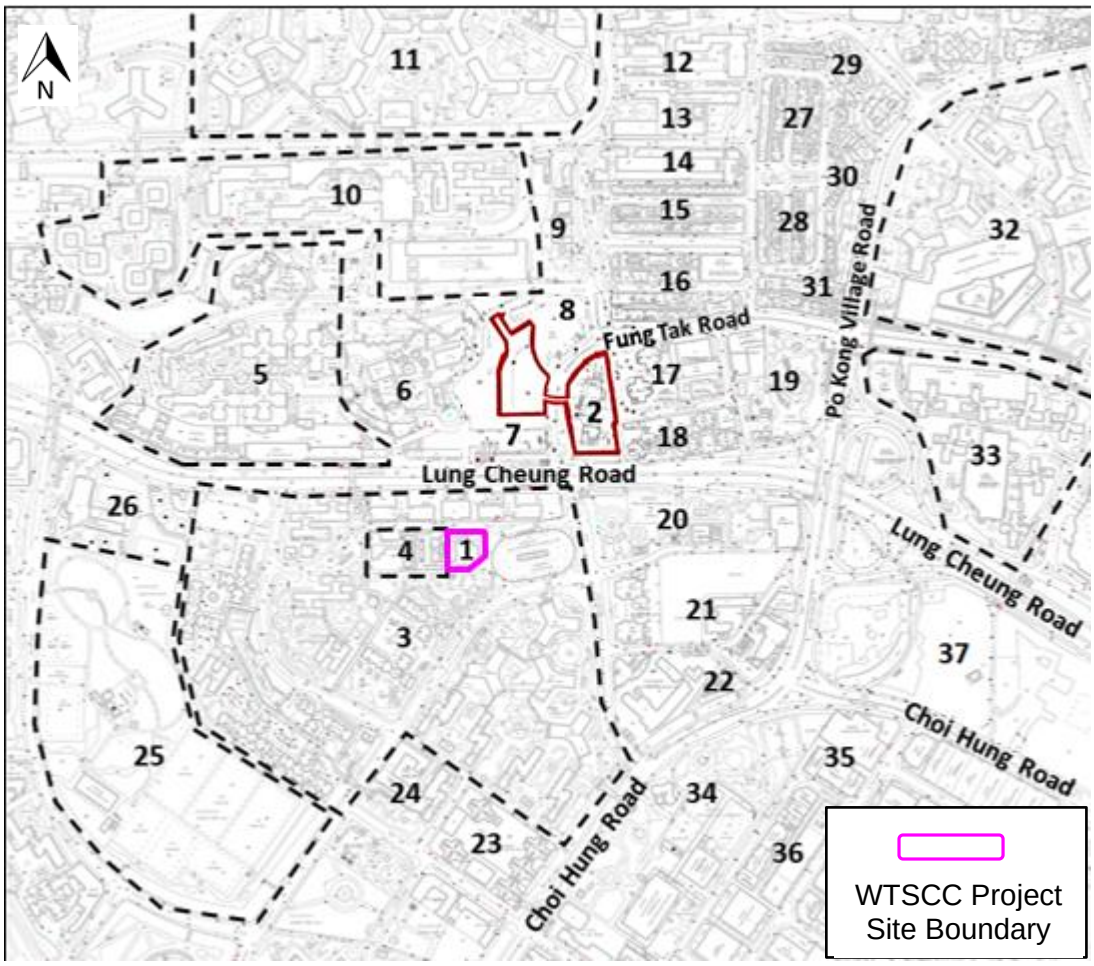
Figure 3.2 Land Uses near Wong Tai Sin Community Centre Site

3.3 Existing Urban Morphology

3.3.1 The regions near the Site are mainly occupied by building morphologies with a variety of heights and footprints. In accordance with the land uses, the areas in vicinity of the WTSCC Site are mainly occupied by high-rise residential buildings with certain low to mid-rise buildings of schools, temples, churches and community centers mixed in. Open areas such as parks and gardens also exist near the Site. A map showing the distribution of major developments is shown in **Figure 3.3** below.

3.3.2 The WTSCC Site is sandwiched between Temple Mall South Carpark A and Wong Tai Sin Catholic Primary School/ Wong Tai Sin Government Primary School. It is also located between Lung Wai House / Lung Chui Yuen Stanley Ho Park and Lung Fai House.

3.3.3 The buildings surrounding the WTSCC further away are also the high-rise residential developments of Lower Wong Tai Sin Estate. The regions southwest to these high-rise developments is a large open space of Morse Park, while small parcels of open spaces (e.g. Choi Hung Road Playground, and Muk Lun Street Playground) also exists to the immediate southeast and northeast of Lower Wong Tai Sin Estate. Meanwhile high-rise urban developments of San Po Kong are located across this Choi Hung Road Playground from the Lower Wong Tai Sin Estate.



1. Wong Tai Sin Community Centre Site (Project Site) (currently ~31 mPD) (max 120mPD for proposed building)	2. Committed Developments at Ying Fung Lane (currently ~26 mPD) (max. 145/120mPD for proposed buildings)	3. Lower Wong Tai Sin Estate (~108 mPD)
4. Wong Tai Sin Government Primary School and Wong Tai Sin Catholic Primary School (~31 mPD)	5. Upper Wong Tai Sin Estate (~143 mPD)	6. Wong Tai Sin Temple (~43 mPD)
7. Wong Tai Sin Square (~25 mPD)	8. Fung Tak EAP/EEP Building	9. Our Lady's Kindergarten (~57 mPD)
10. Chuk Yuen (South) Estate (~121 mPD)	11. Chuk Yuen (North) Estate (~163 mPD)	12. St. Bonaventure College And High School, Evangel Children's Home (~82 mPD)
13. Our Lady of Maryknoll Hospital (~67 mPD)	14. Our Lady's College and Primary School (~70 mPD)	15. Fung Wong Building, Golden Phoenix Building, Po Tsui Mansion and Dragon Glory Mansion (~112 mPD)

16. Sheung Fung Street Market, Wing Wah Building, Evergreen Tower, On Lee Building, Kam Fat Building, Rainbow Home and Profit Mansion (~115 mPD)	17. Kowloon Command Central Division HQ cum Wong Tai Sin Divisional Fire Station, Wong Tai Sin Ambulance Depot, Fire Service Department Wong Tai Sin Quarter (~92 mPD)	18. Hsin Kuang Centre, Tropicana Garden (~130 mPD)
19. Fung Tak Park (~50 mPD)	20. Muk Lun Street Playground, Wong Tai Sin Telephone Exchange (~34 mPD)	21. Lions Rise, Canossa Primary School, Wong Tai Sin Disciplined Services Quarter (~146 mPD)
22. Wong Tai Sin District Headquarter and Police Station, Hong Kong Sheng Kung Hui Nursing Home (~43 mPD)	23. Kai Tak Garden (~124 mPD)	24. C.C.C. Kei Heep Secondary School (~30 mPD)
25. Morse Park (~28 mPD)	26. Morse Park Swimming Pool (~33 mPD)	27. Wing Shing House, Yau Hing House, Fung Wah House and On Hong Mansion (~114 mPD)
28. Fung Cheung House, Fung Wong Chuen Building, On Tat Building and Koon Fung House (~102 mPD)	29. The Vista, San Cheong Building, Tsui Ming Building, Lion Mansion and The Forest Hills (~200 mPD)	30. Fung Po Mansion, Silver Garden, Aspen Crest, St. Bonaventure Church, Hang On Building (~165 mPD)
31. Wah Chung Mansion, Mei Tak House, Ho King Building (~94 mPD)	32. Fung Tak Estate (~148 mPD)	33. Lung Poon Court (~129 mPD)
34. Choi Hung Road Playground and Sports Centre (~31 mPD)	35. Wong King Industrial Building, Kar Chau Industrial Building (~63 mPD)	36. Win Plaza, Cheong Tai Industrial Building (~110 mPD)
37. CDA at Lung Cheung Road/Choi Hung Road (~104-128 mPD)		

Figure 3.3 Land Uses near Wong Tai Sin Community Centre Site

4 THE DEVELOPMENT PROPOSAL

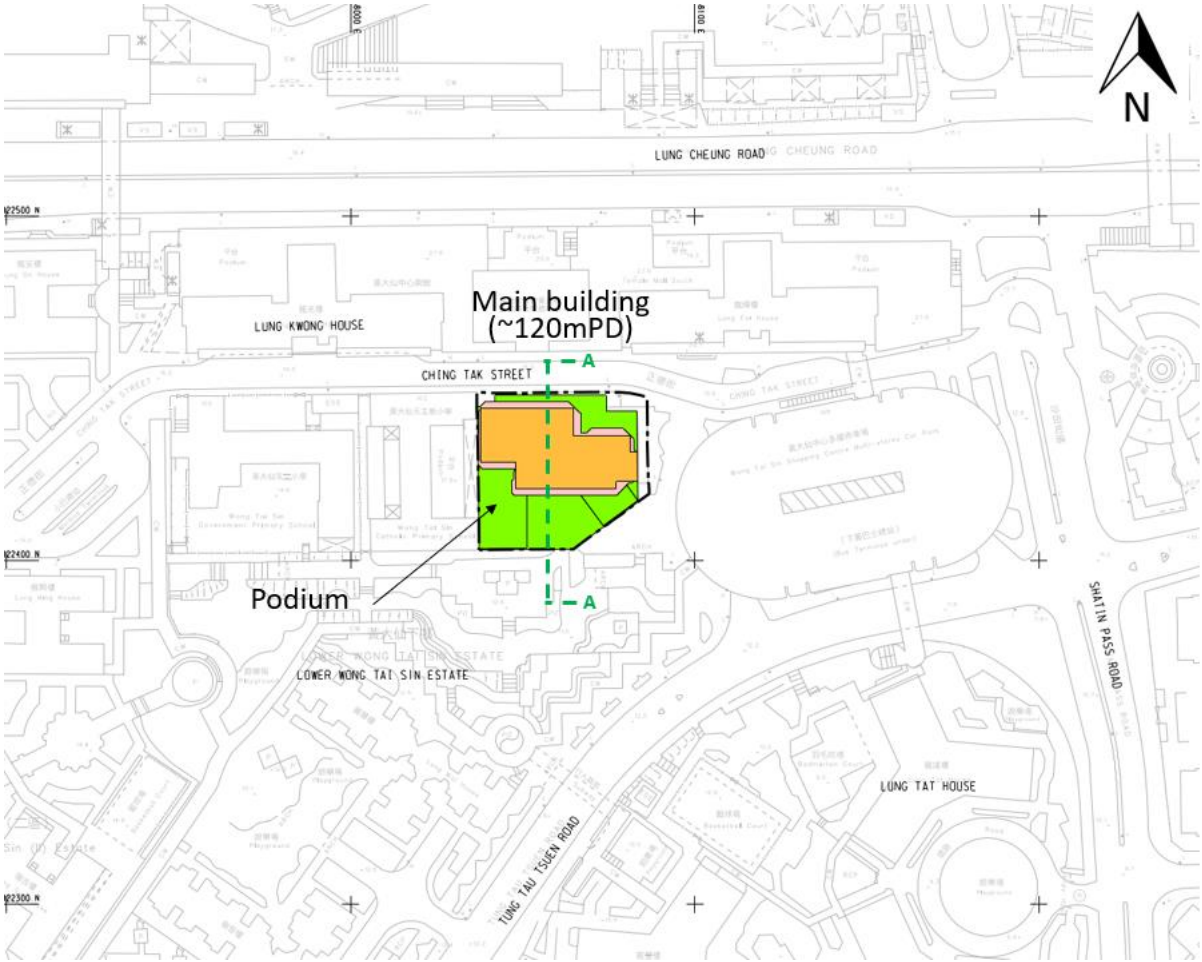
4.1 General

4.1.1 The Development Proposal for review under this assessment includes proposed developments within the WTSCC Site and the YFL Site. The two potential development sites are near each other. Details of the proposed developments within each development sites are discussed in detail below.

4.2 Wong Tai Sin Community Centre (WTSCC) Site

4.2.1 The WTSCC Site, located at the south west direction of the YFL Site with an approximate separation distance of 150m is planned to be developed into a single tower with height around +120 mPD, situated on a podium level of about +44mPD. The scheme is shown in **Figure 4.1** and the section view of the proposed development is shown in **Figure 4.2**.

4.2.2 The main tower of the Proposed Scheme at WTSCC is a single residential building in “Z” shape, with the long façade of the tower perpendicular to north-south direction. The height profile of the residential tower is around +120mPD and sits upon a podium which has the level of approximately +44mPD. It is noticed that the podium and main tower have maintained a setback of around 3m from the eastern boundary of the WTSCC Site.



WTSCC Site

Figure 4.1 Illustration of the Proposed Development at WTSCC Site

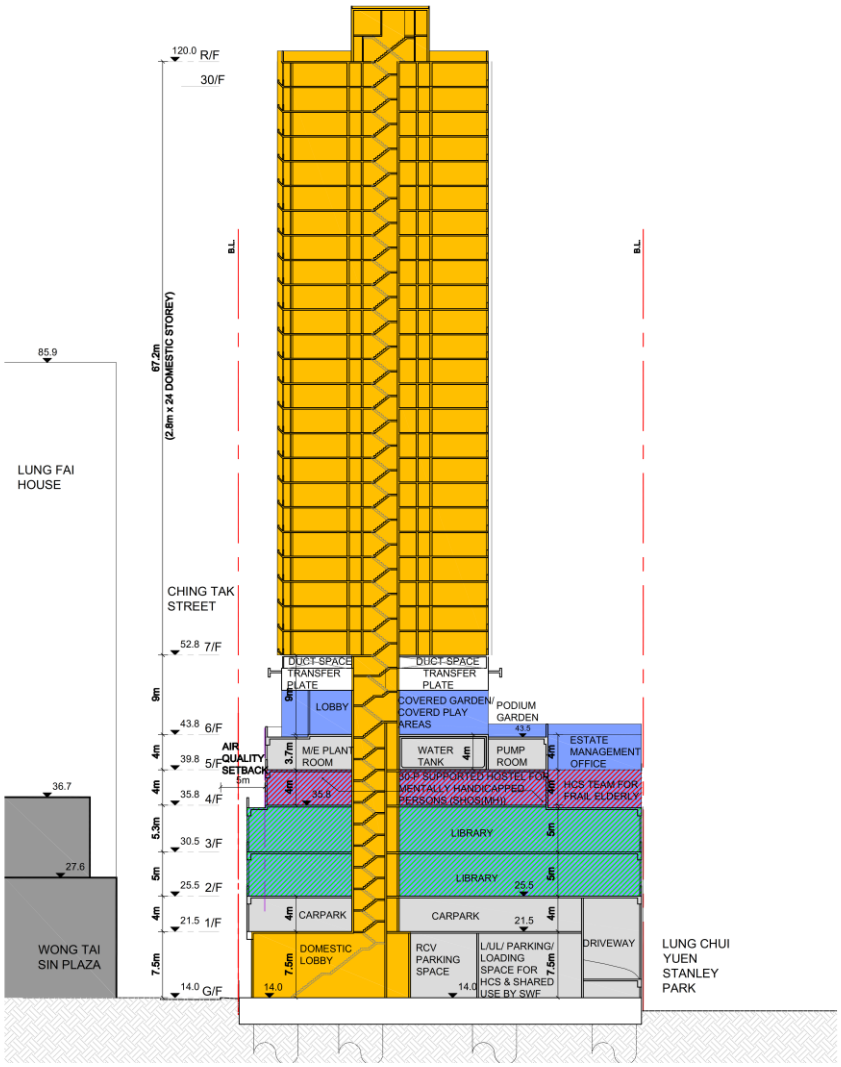


Figure 4.2 Illustration of the Section view (Section AA) of Proposed Development Scheme at WTSCC Site*

* The proposed development scheme is for indicative purpose at EFS Stage only which was subject to further development in subsequent stages

4.3 Ying Fung Lane Site

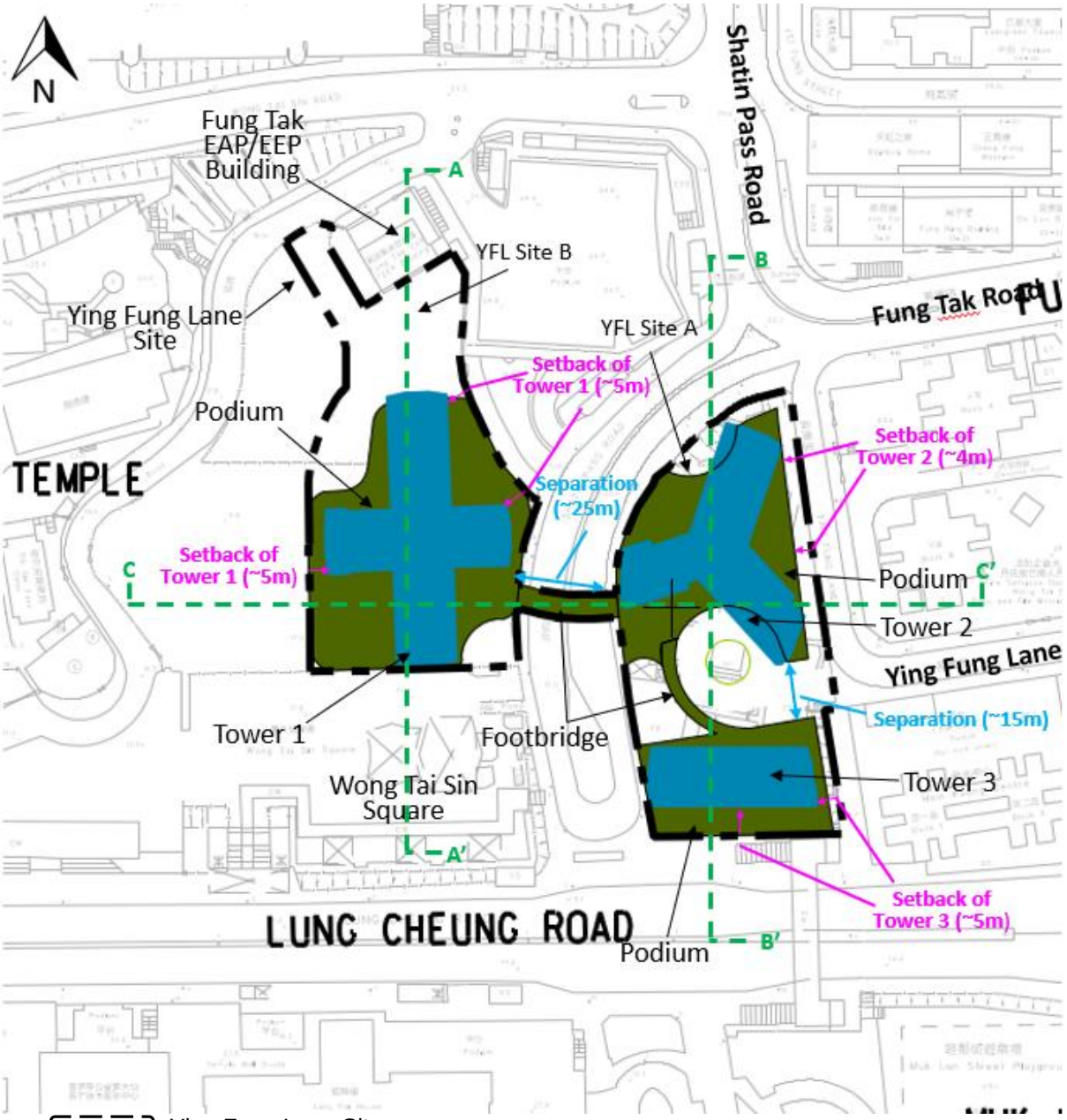
4.3.1 The YFL Site is located to the north of Lung Cheung Road and it consists of two sub-sites, namely Site A and Site B, that are connected by a footbridge which is around +28.5mPD in height and permeable underneath, crossing over the Shatin Pass Road. The Site A covers the existing Chuk Yuen United Village at the western end of Ying Fung Lane, while Site B is located between Wong Tai Sin Square and the Fung Tak Emergency Egress Point (EEP) / Emergency Access Point (EAP) building.

4.3.2 There will be three building blocks located within the YFL Site under the Development Proposal. These buildings (designated as Tower 1, 2 and 3 below) are all sitting upon podia of around +41.5mPD high. Tower 1 is designed to be “cross shape” with a proposed building height of +120mPD, while Towers 2 and 3 are designed as “Y-shape” and “rectangle-shape” respectively with a proposed building height of +145mPD.

4.3.3 The podium beneath Tower 2 and Tower 3 in Site A (at the area west of Ying Fung Lane) is interconnected with a linked footbridge elevated at around +28.5mPD (about 5m above ground). Furthermore, the podium in Site A and Site B are also linked up by another elevated footbridge crossing over Shatin Pass Road.

4.3.4 It is noticed that the proposed developments in the YFL Site includes several merit designs measures, including building separations, setback from boundaries, etc. Details are listed as below (see **Figure 4.3**):

- Separation between Tower 1 and Tower 2 of minimum 25m;
- Separation between Tower 2 and Tower 3 of minimum 15m;
- Setback of Tower 1 within YFL Site B with approximately 5m from the western boundary of YFL Site B;
- Setback of Tower 2 and podium beneath within the YFL Site A with approximately 4m from the eastern boundary of YFL Site A (i.e. setback of Tower 2 and podium beneath with approximately 4m from Ying Fung Lane and Shatin Pass Road);
- Setback of Tower 3 within the YFL Site A with approximately 5m from the eastern boundary and southern boundary of YFL Site A (i.e. setback of Tower 3 within the YFL Site A with approximately 5m from Ying Fung Lane and Shatin Pass Road; and setback of Tower 3 with approximately 15m from Lung Cheung Road).


N
Fung Tak EAP/EEP Building
A
YFL Site B
Ying Fung Lane Site
Shatin Pass Road
B
Fung Tak Road
YFL Site A
Setback of Tower 1 (~5m)
Podium
TEMPLE
Separation (~25m)
Setback of Tower 2 (~4m)
C
Setback of Tower 1 (~5m)
Podium
C'
Tower 2
Ying Fung Lane
Separation (~15m)
Tower 1
Footbridge
Wong Tai Sin Square
Tower 3
A'
Setback of Tower 3 (~5m)
LUNG CHEUNG ROAD
Podium
B'
Ying Fung Lane Site

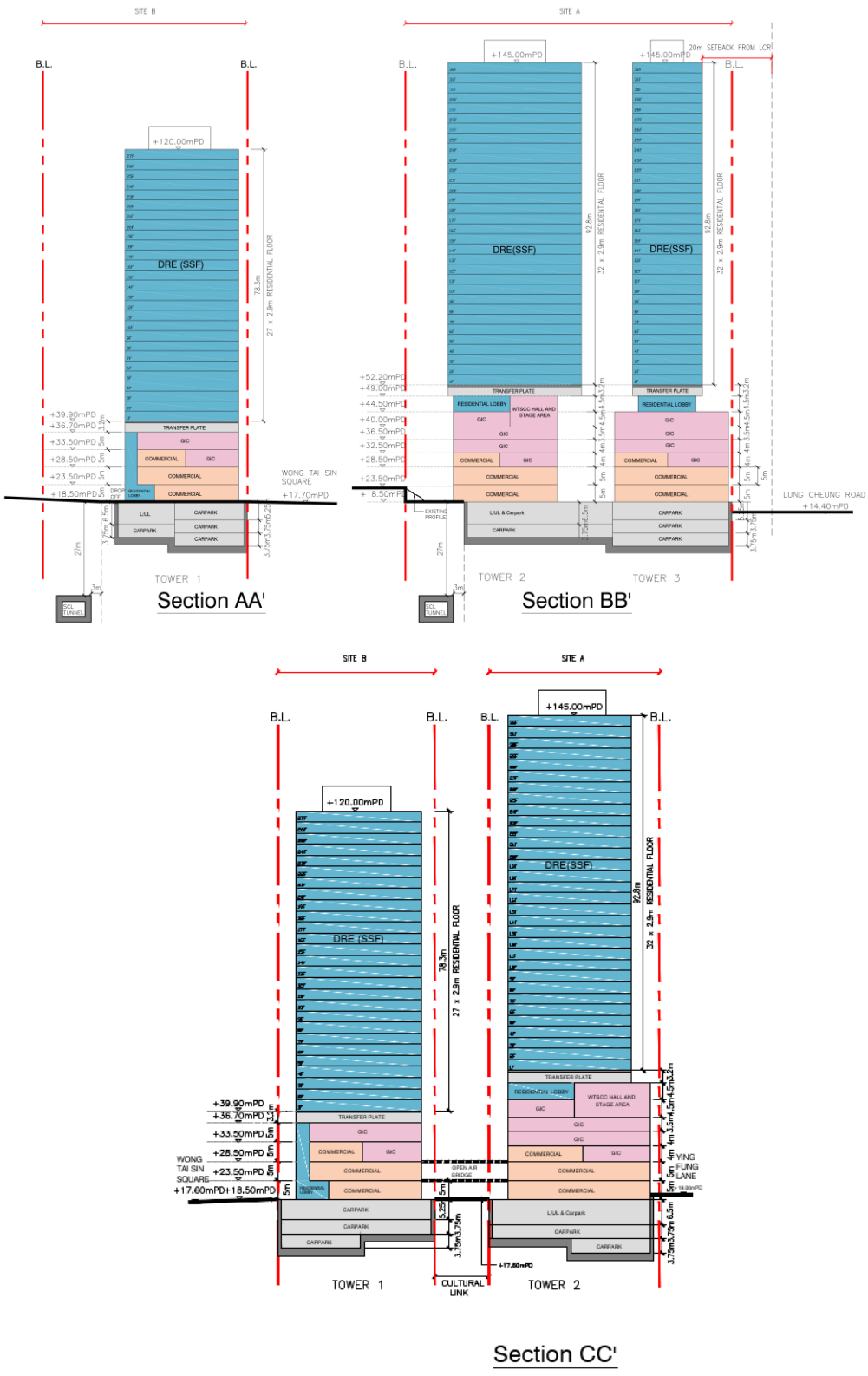


Figure 4.3 Illustration of the Section Views (Section AA', BB', CC') of Proposed Development Scheme at YFL Site

4.3.5 The Proposed Scenario assuming that the proposed developments within both the YFL Site and WTSCC Site are constructed, will be compared with the OZP compliance Baseline Scenario assuming the current situation of relatively open grounds with scattered low-rise squatters covering the YFL Site and the Wong Tai Sin Community Centre occupies the WTSCC Site.

5 EXPERT EVALUATION ON THE DEVELOPMENT PROPOSAL

5.1 General

5.1.1 Air ventilation assessments for "Tsz Wan Shan, Diamond Hill and San Po Kong Area" and also "Wang Tau Hom and Tung Tau Area" have been conducted in 2008 and 2010 respectively and documented in PlanD Term Consultancy and Advisory Services on Air Ventilation Assessment (PLNQ37/2007). The suggestions and findings in these AVA reports would be used as a reference in carrying out directional analysis below for the Expert Evaluation of the Development Proposal (i.e., WTSCC Site and YFL Site).

5.1.2 With a close distance (around 150m) between the YFL Site and the WTSCC Site, the proposed developments within these Sites may induce cumulative effect on the surrounding wind environment.

5.1.3 Comparing to the existing condition of the YFL Site (i.e., being open space and low squatters), the proposed high-rise residential blocks would inevitably induce wind influence on the respective downstream side. Nonetheless, the YFL Site abuts an air path, thus it may alter the wind flow and direction in the vicinity.

5.1.4 Based on the identification of existing wind conditions, the potential developments within the YFL Site are unlikely to alter the wind flow patterns and induce wind impacts against Po Kong Village Road and regions to its east under all the identified annual and summer prevailing wind directions. The major areas that may be affected by the proposed developments within the YFL Site include but not limited to Upper / Lower Wong Tai Sin Estates, Wong Tai Sin Temple, Wong Tai Sin Square, Muk Lun Street Playground, Our Lady's Kindergarten / College and nearby buildings etc. These developments are located at the downwind of the YFL Site under different identified annual wind and summer wind directions.

5.1.5 The proposed developments within the YFL Site avoids blockage of major air path and has implemented certain wind enhancement features into its designs which include breaking up the podia between Tower 2 and Tower 3, incorporate building separations and building setbacks as well as retaining the northern portion of YFL Site B as open ground. Stepped height profile is adopted between Site A (+145mPD) and Site B (+120mPD), whilst the building layout including building separation and building setback is illustrated in **Section 4**. All these measures may alleviate the air ventilation performance to some extent and have been stated and discussed in detail in **Section 4**.

5.1.6 The current low-rise Wong Tai Sin Community Centre located at the WTSCC Site across the Lung Cheung Road to the south-west of the YFL Site is committed to be developed into a high-rise residential tower of +120mPD with a podium, which would impose certain magnitude of wind blockage to the immediate vicinity. In addition, the presence of the proposed high-rise developments within the YFL Site may likely induce alteration of winds under the certain prevailing wind directions near the WTSCC Site compared to the existing wind condition.

5.1.7 Based on the identification of existing wind conditions, the WTSCC Site does not sit in / abut any major air path, such as the Shatin Pass Road. Hence, the potential wind impacts of the proposed development at WTSCC is not likely to escalate to a district level deterioration of air ventilation performance under annual and summer prevailing wind directions. Instead, the potential wind impacts induced by the developments are more likely to fall within the immediate vicinity of the site.

5.1.8 Owing to the fact that the WTSCC site is being surrounded by high-rise residential clusters of Lower Wong Tai Sin Estate, the most significant wind wakes induced by the proposed building at this site would likely to occur in the immediate vicinity of it. Such vicinity regions of the WTSCC site where the wind wakes that would likely to reach include Lung Lok House, Lung Hing House and Lung Wai House, Lung Fai House, Wong Tai Sin Catholic Primary School / Government Primary School, and the Lung Chui Yuen Stanley Ho Park.

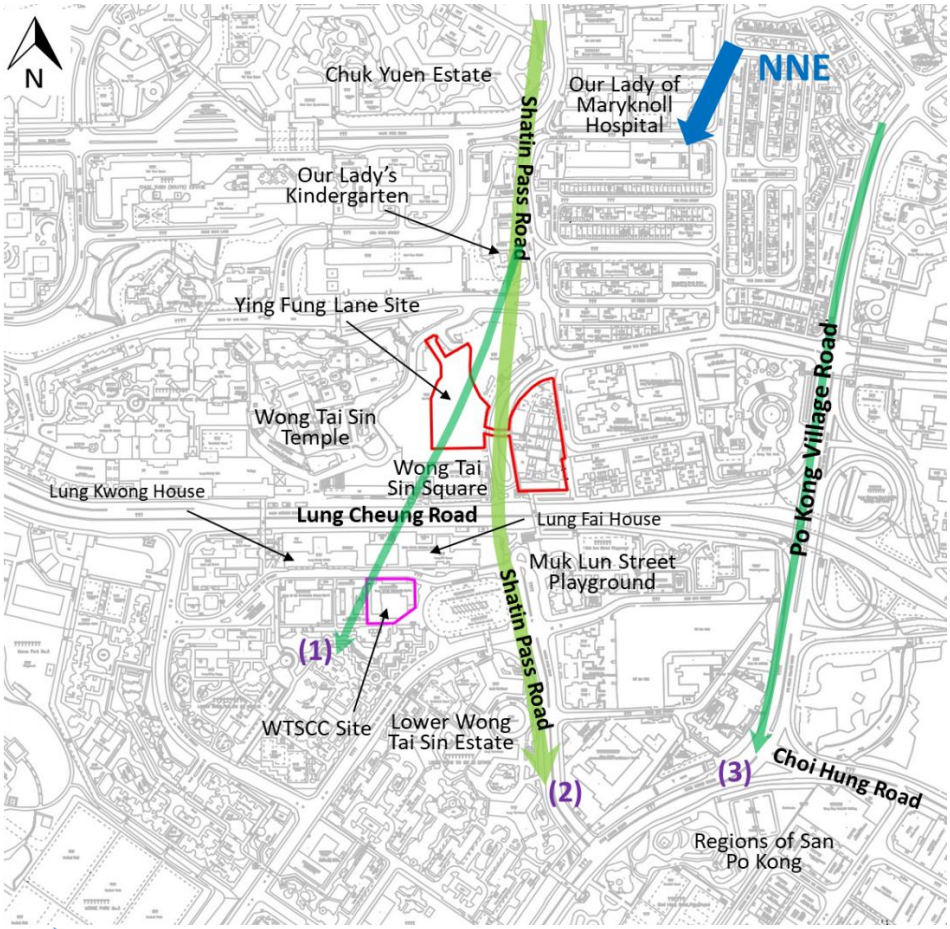
5.1.9 Detailed wind directional analysis and changes in potential wind flow pattern for the Proposed Scenario (i.e., with the proposed developments within the YFL Site and the WTSCC Site both constructed) when compared to the Baseline Scenario (i.e., Open space/low rise squatters within the YFL Site and Wong Tai Sin Community Centre within the WTSCC Site) under the identified prevailing wind directions are discussed below.

5.2 Under the Annual NNE Prevailing Wind

Baseline Scenario

5.2.1 Despite being moderated and weakened by the high-rise hills and densely packed urban morphologies, the NNE annual wind would flow along Shatin Pass Road between the Chuk Yuen Estate and Our Lady of Maryknoll Hospital. The stream of wind would continue to flow towards Lung Cheung Road, passing through the YFL Site and the Wong Tai Sin Square. After flowing across the Lung Cheung Road, a portion of this wind will continue its flow along the Shatin Pass Road towards the Regions of San Po Kong (see Marker (2) in **Figure 5.1**), while another portion of the wind flow under the current condition may skim over the podium structure between Lung Fai House and Lung Kwong House to reach the WTSCC Site and Wong Tai Sin Catholic Primary School as well as the Lung Wai House in Lower Wong Tai Sin Estate (see Marker (1) in **Figure 5.1**). It is also noted that the Explanatory Statement of the approved Tsz Wan Shan, Diamond Hill and San Po Kong OZP No. S/K11/29 has indicated the reservation of the eastern region of Wong Tai Sin Temple for the provision of institution and community facilities. The future developments may hinder partial of wind flow, with the magnitude of obstruction depending on the future designed building morphologies in the area.

5.2.2 NNE wind would flow along Po Kong Village Road. The wind flowing along this road would skim over Lung Cheung Road and reach the Choi Hung Road near San Po Kong (see Marker (3) in **Figure 5.1**). The potential air flows under the NNE prevailing wind under the Baseline Scenario are illustrated in **Figure 5.1**.



Annual prevailing wind directions
Air path
Air flow
Ying Fung Lane Site
WTSCC Site

Figure 5.1 Illustration of Wind Flows under NNE Prevailing Wind Direction under the Baseline Scenario

Proposed Scenario

5.2.3 Under the NNE wind, the wind wakes of the proposed developments within the YFL Site would reach Lung Cheung Road near Lower Wong Tai Sin Estate, as well as the Wong Tai Sin Square, which are located at the downstream areas (see **Figure 5.2**).

5.2.4 Muk Lun Street Park is located at the downwind side of YFL Site A. The proposed Tower 2 and Tower 3 developments within YFL Site A will create greater shelter and generate wind wakes that will reach the park, reducing the wind availability under the Proposed Scenario as compared to the Baseline Scenario.

5.2.5 The YFL Site abuts the air path along Shatin Pass Road, with the podia under the Proposed Scheme connected by a footbridge which is permeable underneath. As the Proposed Scheme within the Site does not step onto and obstruct the Shatin Pass Road by retaining podium separations of more than 25m in distance across the Shatin Pass Road, majority portion of NNE wind is still able to skim over or flow beneath the linked footbridge to reach eastern portion of Wong Tai Sin Square and flow across the Lung Cheung Road. Similar to that under the Baseline Scenario, after flowing across the Lung Cheung Road, this stream of wind flow would continue its way along Shatin Pass Road to reach the further downstream areas (see Marker (2) in **Figure 5.2**). This would help to maintain the wind environment at the areas near the Muk Lun Street Playground, Lung Fai House and the Lower Wong Tai Sin Estate.

5.2.6 Instead of skimming over the low-rise squatters to flow towards Lung Fai House, Lung Kwong House and WTSCC Site as under the Baseline Scenario, a portion of wind flow driven under the NNE prevailing wind may be diverted by the Tower 1 under the proposed developments within the YFL Site, to penetrate through the open grounds to the north of YFL Site B and slip through the area between YFL Site B and Wong Tai Sin Temple (see Marker (1) in **Figure 5.2**). With Tower 1 and the podium beneath in place, it is anticipated there will be a reduction in wind availability at the central portion of Wong Tai Sin Square as compared to the Baseline Scenario. On the other hand, the diverted wind flow would eventually reach the western portion of Wong Tai Sin Square and Lung Kwong House across the Lung Cheung Road. As a result, it is not anticipated that the wind environment at western portion of Wong Tai Sin Square and the area north to Lower Wong Tai Sin Estate would be greatly weakened.

5.2.7 The proposed building of WTSCC Site sits to the near south region of the Lung Kwong House and Lung Fai House. Being a high-rise building, it would inevitably create certain blockage against wind flows under the NNE prevailing wind from penetrating into the Lower Wong Tai Sin Estate. Moreover, it should also be noted that the proposed buildings within the Ying Fung Lane Site would alter the NNE prevailing wind approaching the Lower Wong Tai Sin Estate and WTSCC Site, i.e. the presence of the proposed buildings within the Ying Fung Lane Site, would redirect the stream of wind originally approaching the low-rise podium block of the Temple Mall South (located between Lung Fai House and Lung Kwong House) to flow towards the Lung Kwong House instead. This re-direction and alteration of the NNE wind by the proposed buildings at Ying Fung Lane Site would reduce the wind availability at WTSCC Site, leading to cumulative influences at the downstream of WTSCC Site and its surroundings (Lung Chui Yuen Stanley Ho Park, Lung Wai House, etc.).

5.2.8 On the other hand, construction of proposed building within the WTSCC Site would enlarge the height variation between the tower in site and the existing podium structure (i.e. the Temple South Mall). Such profile distribution would induce a more significant vertical wind flow, inviting a portion of prevailing wind to reach down to Ching Tak Street at ground level after flowing over the Temple South Mall. As a result, the localized pedestrian wind environment at Ching Tak Street and the primary schools would be alleviated.

5.2.9 The Po Kong Village Road near Tsz Wan Shan Estate corridor still facilitates the flow of NNE wind. The wind flowing along this road would skim over Lung Cheung Road and reach the Choi Hung Road near San Po Kong under the Proposed Scenario (see Marker (3) in **Figure 5.2**). **Figure 5.2** illustrates the wind flow of the NNE prevailing wind under the Proposed Scenario.

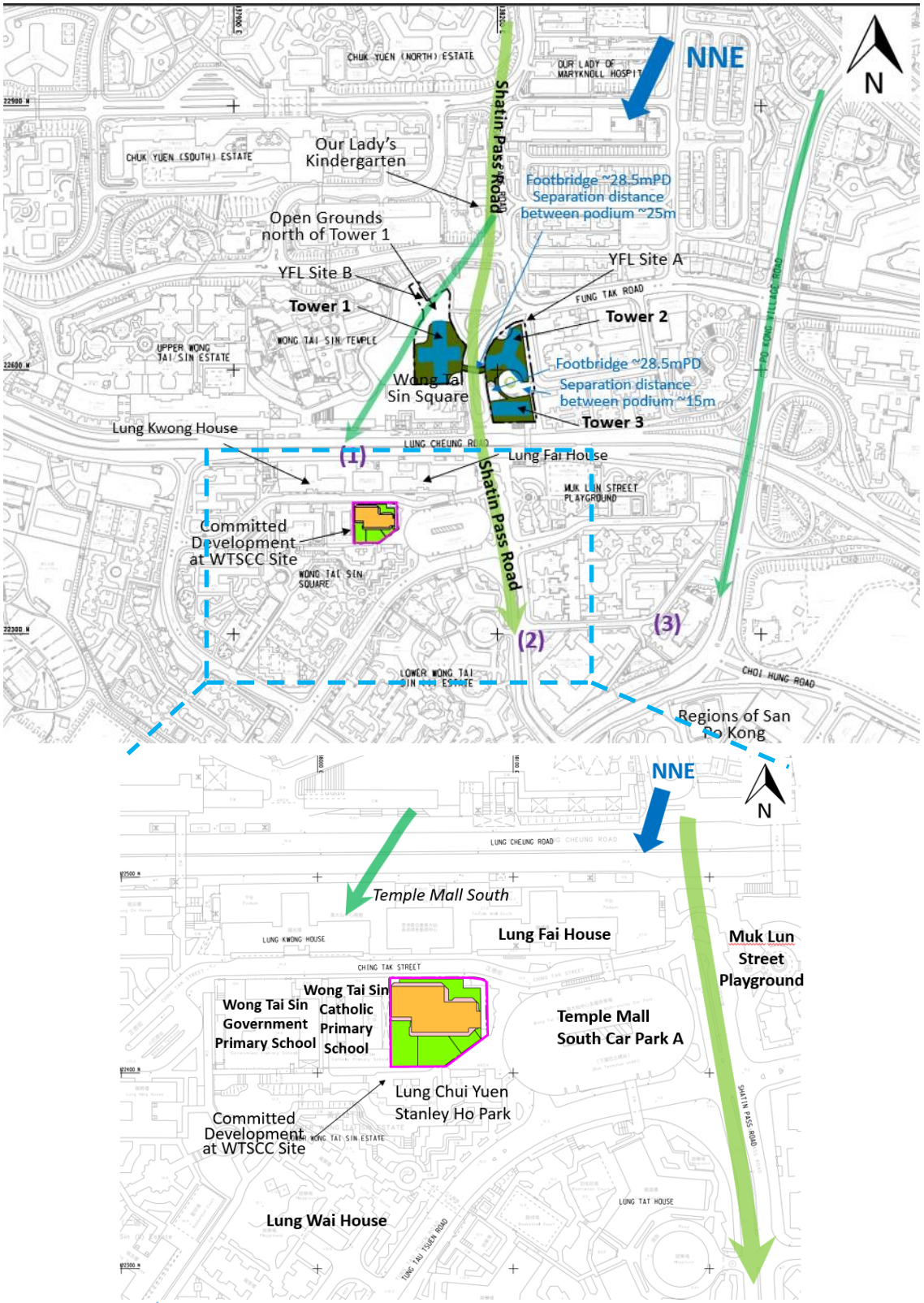


Figure 5.2 **Illustration of Wind Flows under NNE Prevailing Wind Direction under the Proposed Scenario**

5.3 Under the Annual ENE / E and Summer E Prevailing Wind

Baseline Scenario

5.3.1 Owing to the high-rise and bulky morphologies of Fung Tak Estate, Plaza Hollywood and Lung Poon Court, the annual ENE and E wind from the open areas east to Fung Tak Estate would be limited along Fung Tak Road until reaching Fung Tak Park. The ENE prevailing wind would approach Ying Fung Lane after skimming over the Fung Tak Park and continue to flow across the YFL Site and Wong Tai Sin Square before reaching Lung Cheung Road (see Marker (2) in **Figure 5.3**). Meanwhile, the easterly wind will continue to flow along the Fung Tak Road after passing over the Fung Tak Park, and reach the northern portion of the YFL Site and Wong Tai Sin Temple (see Marker (1) in **Figure 5.3**).

5.3.2 The wind would channel along Lung Cheung Road to the north of the committed public housing development at the CDA site under easterly wind. This portion of wind would flow around the southern side of the Plaza Hollywood, skim along the Lung Cheung Road and Muk Lun Street Playground to reach the Wong Tai Sin Community Centre at the WTSCC Site and the Lower Wong Tai Sin Estate region along Ching Tak Street (see Marker (3) in **Figure 5.3**). The potential wind flows near ground level can be seen in **Figure 5.3**.

5.3.3 Similar to that under the annual east wind condition, the wind flow driven by easterly summer wind would skim into the urbanized area via the Fung Tak Road to reach Ying Fung Lane, Lung Cheung Road near Wong Tai Sin Temple and Wong Tai Sin Square. While another portion of wind would flow along the Lung Cheung Road and Muk Lun Street Playground and reach the WTSCC Site as well as the Lower Wong Tai Sin Estate.

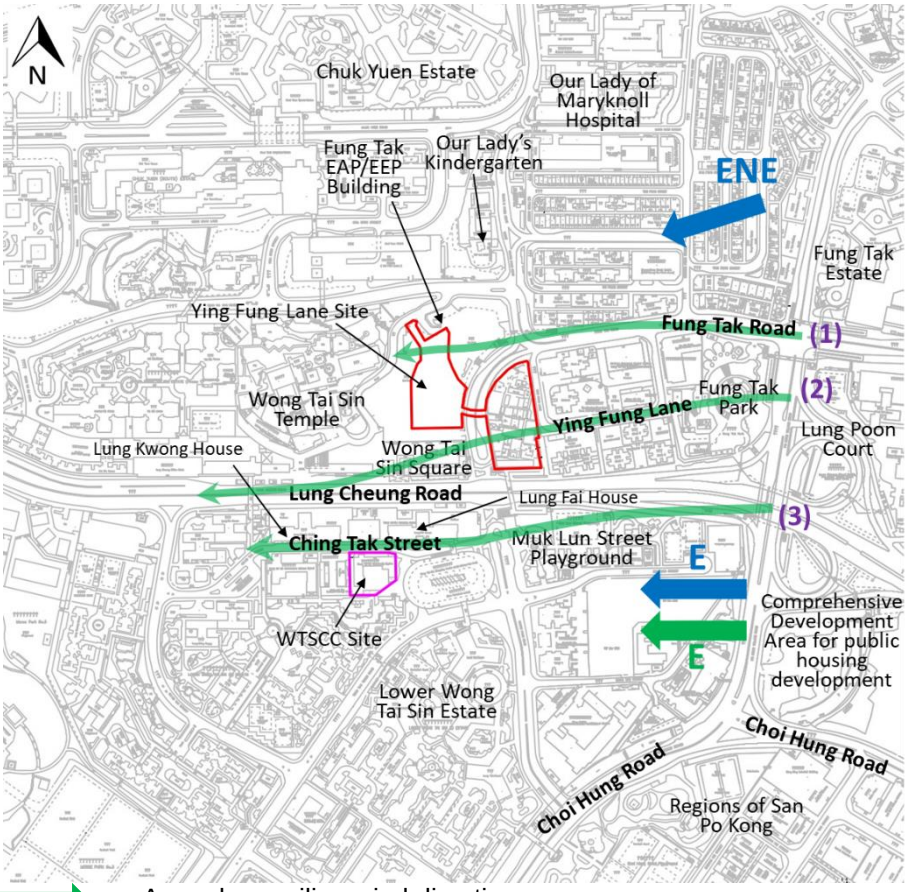


Figure 5.3 Illustration of Wind Flows under E and ENE Prevailing Wind Directions under the Baseline Scenario

Proposed Scenario

5.3.4 The streams of local wind flow under the ENE/E prevailing wind directions are not likely to be altered under the Proposed Scenario as compared the Baseline Scenario as illustrated in **Figure 5.4**.

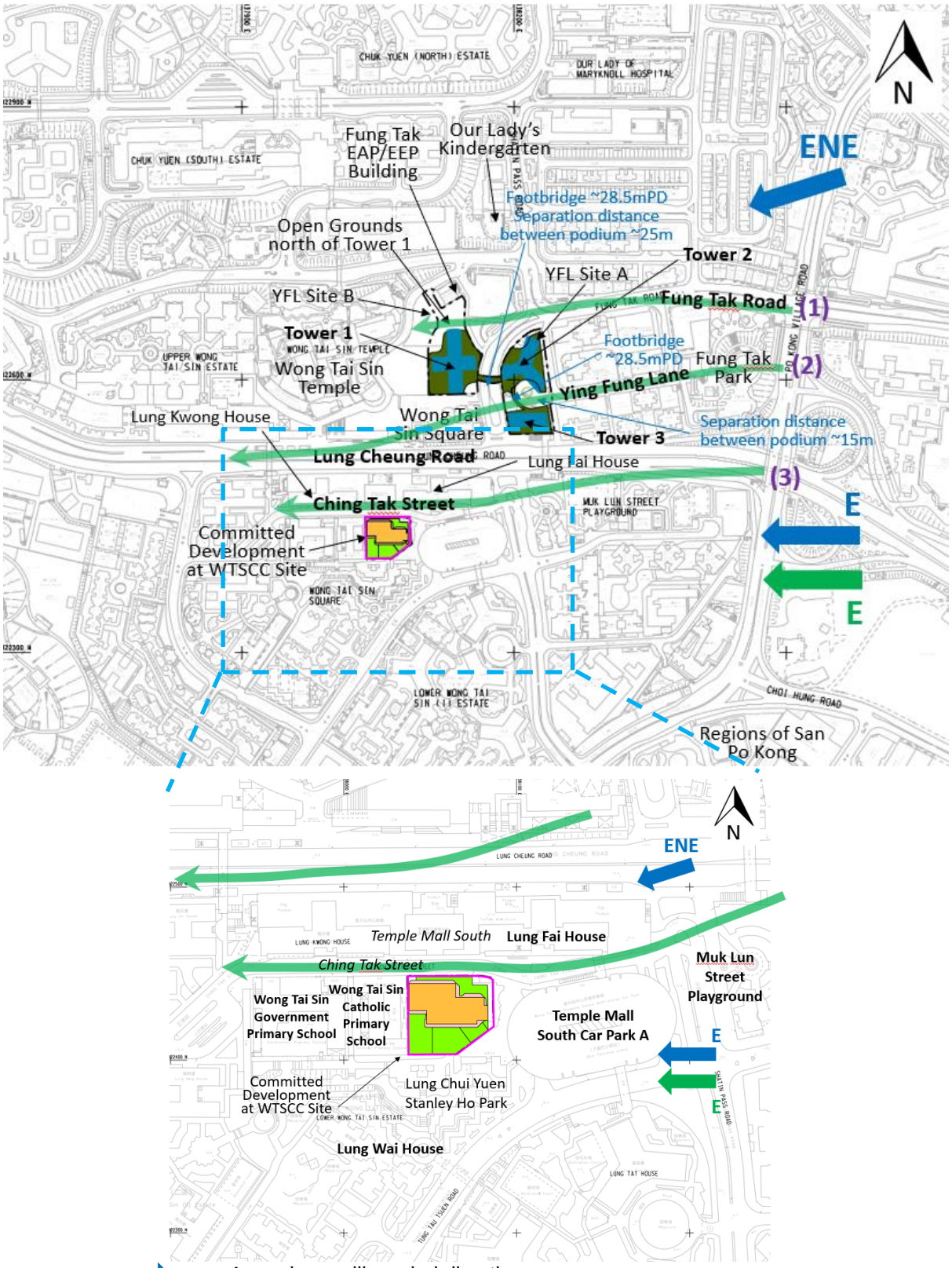
5.3.5 The design of residential blocks and the podium beneath under the Proposed Scenario does not occupy whole Site B area by retaining an open ground at the northern section of it. No major obstruction to the easterly wind from Fung Tak Road is envisaged under the Proposed Scenario. Similar to the Baseline Scenario, the E/ENE prevailing wind flow along the Fung Tak Road may still reach the Wong Tai Sin Temple areas after flowing pass the open ground north to the Tower 1 (see Marker (1) in **Figure 5.4**). In addition, separated podia linked by a footbridge are provided, with podium separation distance of approximately 15m. This allows the wind flow from Ying Fung Lane to penetrate Site A by flowing over / under the footbridge to reach Wong Tai Sin Square, Lung Cheung Road and its nearby regions and the Wong Tai Sin Temple areas (see Marker (2) in **Figure 5.4**). These good designs would help to minimize the wind impacts under the Proposed Scenario and attempt to maintain a wind environment as close as possible to the Baseline Scenario under the easterly quadrant prevailing wind directions.

5.3.6 Moreover, the wind flow along Lung Cheung Road under ENE / E wind would not be affected by the proposed development layout within the Site. Same to the Baseline Scenario, the wind flow could still flow through the Muk Lun Street Playground and penetrate it to reach the eastern portion of Lower Wong Tai Sin Estate along Ching Tak Street near the Wong Tai Sin Community

Centre (see Marker (3) in **Figure 5.4**). The wind environment at the WTSCC Site will not be affected due to its geographical location of which it is located at the sidewards of the YFL Site under the eastern quadrant prevailing wind.

5.3.7 Localized wind flow accumulates at Muk Lun Street Playground may flow across Shatin Pass Road and approach the Temple Mall South Carpark A at Lower Wong Tai Sin Estate and the WTSCC Site. It is noticed that the proposed high-rise tower in the WTSCC Site would inevitably create partial blockage against the low-rise primary school developments to its west. However, since the frontal façade of the proposed building facing the incoming wind is relatively short, which allows a portion of the wind flow to skim around the northern side of the proposed building and reach the downstream area via Ching Tak Street, preventing the occurrence of significant deterioration in terms of wind environment at the schools.

5.3.8 Given the fact that the WTSCC Site and the YFL Site are located at sideway of each other under the eastern quadrant prevailing wind directions, it is not expected that the proposed buildings in YFL Site would induce cumulative influence of wind with the proposed building within WTSCC Site. **Figure 5.4** illustrates the wind flow of the eastern quadrant prevailing wind under the Proposed Scenario.



Annual prevailing wind directions
Summer prevailing wind directions
Air flow
Ying Fung Lane Site
WTSCC Site

Figure 5.4 **Illustration of Wind Flows under ENE and E Prevailing Wind Directions under the Proposed Scenario**

5.4 Under the Summer S and SSW Prevailing Wind

Baseline Scenario

5.4.1 The S and SSW summer winds flowing from the eastern portion of Morse Park would be channeled into the Lower Wong Tai Sin Estate via the air path of Tung Tau Tsuen Road, and directed towards the Temple Mall South Carpark A and reach the vicinity of WTSCC Site and towards Lung Fai House (see Marker (1) in **Figure 5.5**).

5.4.2 Air under the S and SSW wind directions will flow from Choi Hung Road to the GIC areas near Chuk Yuen Estate along Shatin Pass Road, which is a major air path. Southerly quadrant wind would enter the Shatin Pass Road, crossing over the YFL Site and continue to flow into the region near Our Lady's Kindergarten (see Marker (2) in **Figure 5.5**).

5.4.3 Apart from the above discussed wind flow patterns, the southerly prevailing wind originated from the Choi Hung Road Playground would flow along the Po Kong Village Road and directed towards the areas near Fung Tak Estate (see Marker (3) in **Figure 5.5**). The air flows described are illustrated in **Figure 5.5**.

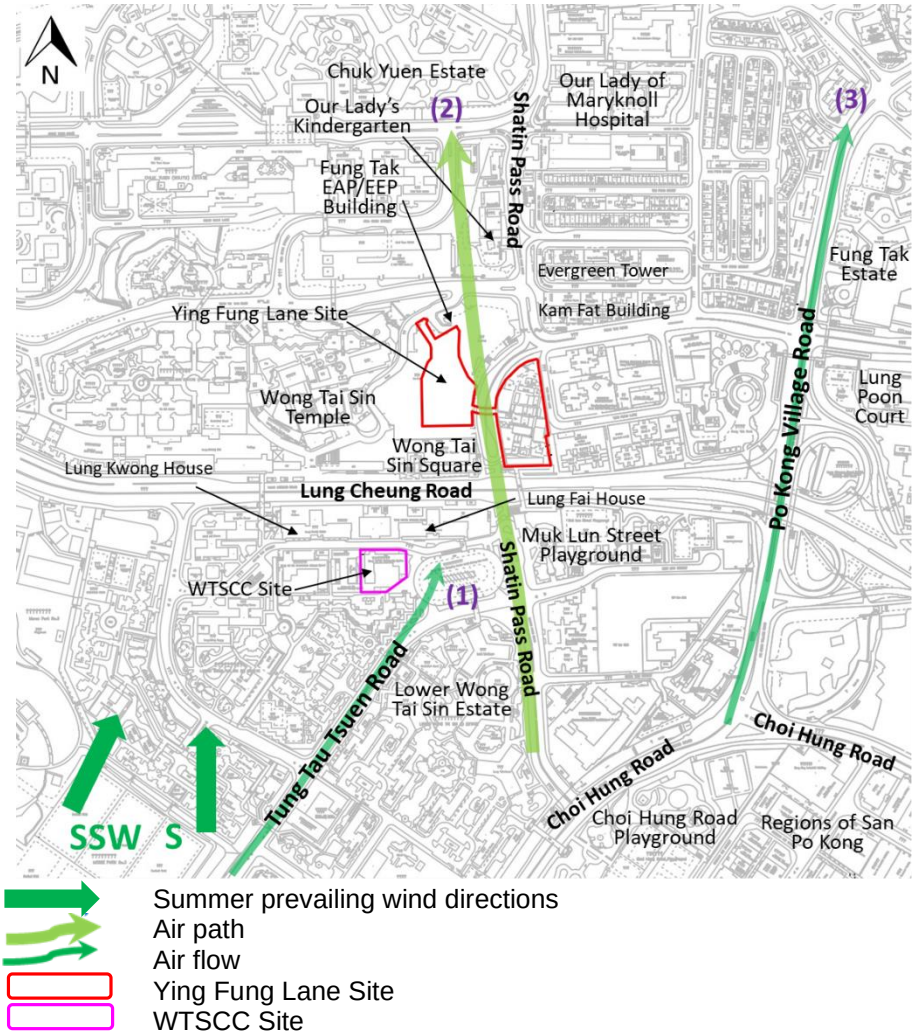


Figure 5.5 Illustration of Wind Flows under S and SSW Prevailing Wind Directions under the Baseline Scenario

5.4.4 An air ventilation assessment for Tsz Wan Shan, Diamond Hill and San Po Kong Area has been conducted in 2008 and documented in PlanD Term Consultancy and Advisory Services on Air Ventilation Assessment (PLNQ37/2007). Shatin Pass Road was identified as a major air path in the region. Air under the S and SSW wind directions will flow from Choi Hung Road to the GIC areas near Chuk Yuen Estate along Shatin Pass Road. This is because under these

wind directions, the wind flow would flow along Choi Hung Road south to the Lower Wong Tai Sin Estate would enter the Shatin Pass Road, crossing over the areas near Ying Fung Lane and continue to flow into the region near Our Lady's Kindergarten.

Proposed Scenario

5.4.5 Under the S/SSW wind, the wind flow could approach the Site via Shatin Pass Road south to the Lung Cheung Road. The incorporated podium separation of more than 25m in width across the Shatin Pass Road under the Development Proposal for the Site would still allow portions of wind flow to reach the area near Fung Tak EEP and Our Lady's Kindergarten at the downstream areas (see Marker (2) in **Figure 5.6**). Hence, the major air path of Shatin Pass Road is remained unobstructed, with non-alteration of the wind environment at north to the Site after the proposed developments when compared to the Baseline Scenario.

5.4.6 Under the S/SSW wind, the wind flow from Shatin Pass Road south to the Site may skim over the Muk Lun Street Playground before crossing the Lung Cheung Road, after which the wind would be sheltered by YFL Site (see Marker (3) in **Figure 5.6**). As a result, the wind availability at region near the Kam Fat Building and Evergreen Tower would be reduced for the Proposed Scenario as compared to the Baseline Scenario under the SSW wind.

5.4.7 The wind coming from Tung Tau Tsuen Road would pass through Lung Chui Yuen Stanley Ho Park and flow towards the car park. Meanwhile, the wind flow may likely be able to reach Lung Fai House by infiltrate through the gap between podium (which has a 3m setback from eastern boundary) in WTSCC Site and the Temple Mall South Carpark A, ultimately being stopped by the "wall structure" of Lung Fai House – Temple Mall South – Lung Kwong House (see Marker (1) in **Figure 5.6**). It is noticed that the replacement of WTSCC with a proposed high-rise single block building with the WTSCC Site would inevitably slightly reduce the wind availability towards the area to the north of the building under the S and SSW prevailing wind. However, the wind wake generated by the single block building would be limited by the Lung Kwong House and the Lung Fai House. In other words, the wind wake due to the single block building within the WTSCC Site is unlikely to reach the YFL Site, therefore, less affecting the wind environment near it.

5.4.8 Given the fact that the WTSCC Site is located at the sideway with certain distance from the Shatin Pass Road, the Development Proposal within the WTSCC Site would not disturb this portion of wind flow. In addition, the S/SSW wind flow along the Po Kong Village Road still remain unaffected in the Proposed Scenario as compared to the Baseline Scenario because of the far distance of this road from the WTSCC Site and the YFL Site (see Marker (4) in **Figure 5.6**. **Figure 5.6** illustrates the wind flow of the S and SSW prevailing wind under the Proposed Scenario.

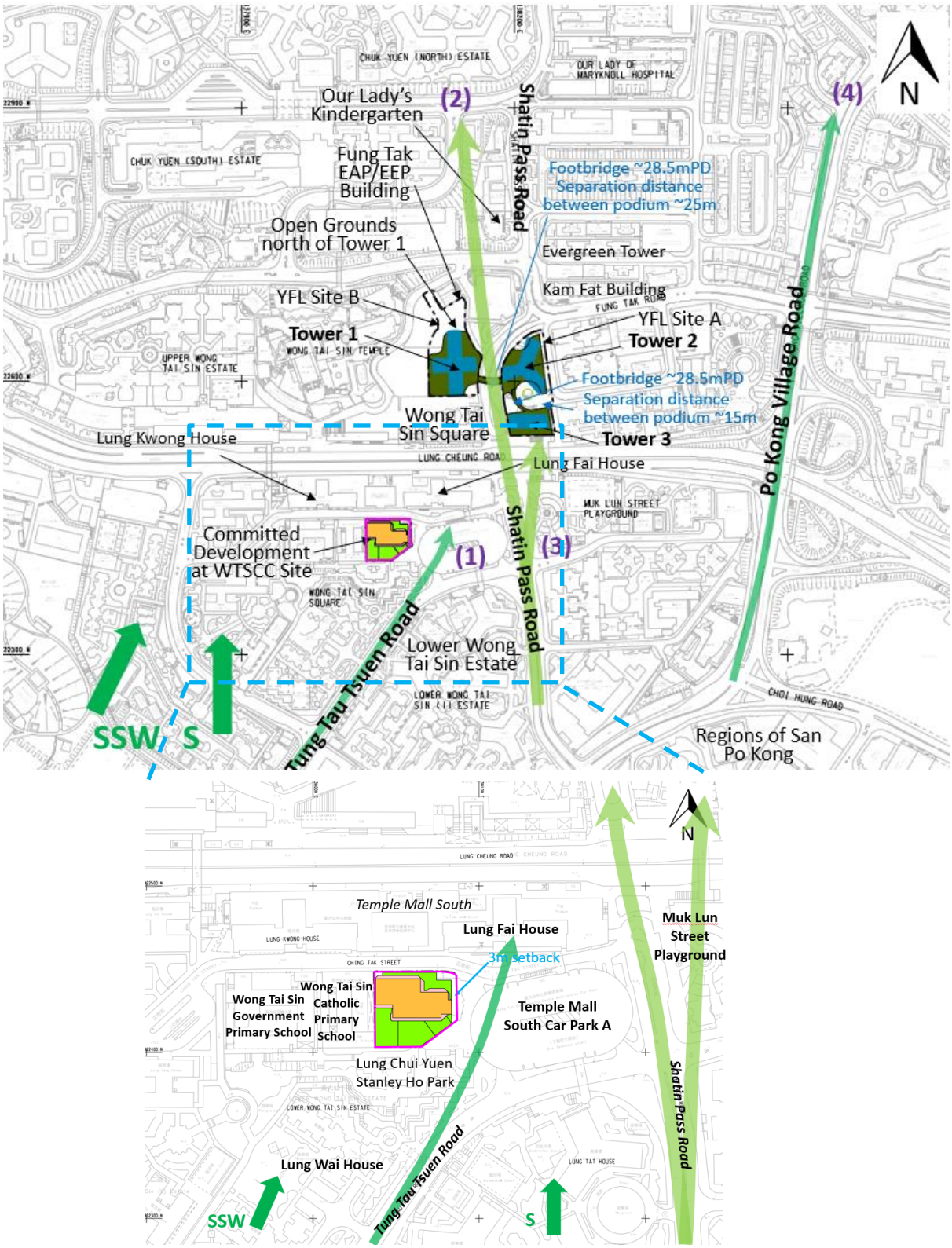


Figure 5.6 **Illustration of Wind Flows under S and SSW Prevailing Wind Directions under the Proposed Scenario**

5.5 Under the Summer SW Prevailing Wind

Baseline Scenario

5.5.1 The SW wind would approach the region near WTSCC Site from the open space of Morse Park, this portion of wind would be channeled into Lower Wong Tai Sin Estate via of Tung Tau Tsuen Road and be directed to the Temple Mall South Carpark A carpark and Lung Fai House located immediately west to Shatin Pass Road. In addition, the wind from Morse Park can also be channeled into the western portion of Lower Wong Tai Sin Estate and eventually stopped at the area near the existing Wong Tai Sin Community Centre (see Marker (1) in **Figure 5.7**).

5.5.2 Another portion SW wind would flow into the region east to the Lower Wong Tai Sin Estate, along the Choi Hung Road southeast to the estate towards the regions near Lung Poon Court (see Marker (3) in **Figure 5.7**). The potential wind flow patterns are illustrated in **Figure 5.7**. It should be noted that due to the high-rise building morphologies south of Lung Cheung Road (i.e. the high-rise residential blocks of Lower Wong Tai Sin Estate), the air path near the YFL Site could not effectively carry the prevailing wind to reach it. As a result, the existing wind availability at the YFL Site is anticipated to be relatively weak under the SW prevailing wind, when comparing to other prevailing wind directions.

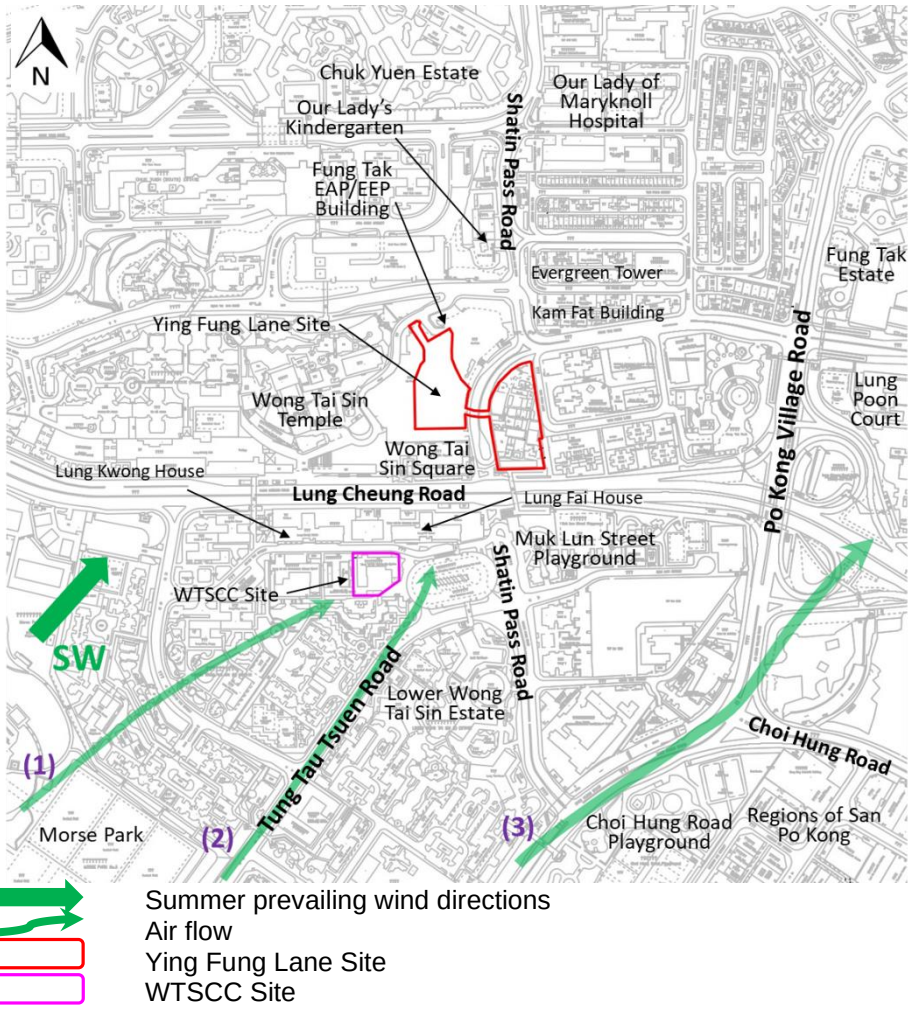


Figure 5.7 Illustration of Wind Flows under SW Prevailing Wind Directions under the Baseline Scenario

Proposed Scenario

5.5.3 Owing to the shielding effect induced by the clusters of high-rise buildings in Lower Wong Tai Sin Estate, the SW wind flow may already be weakened before reaching the Site and its vicinity regions, resulting in a relatively low wind availability both under the Baseline Scenario and the

Proposed Scenario. Hence, it is anticipated that the wind impacts under SW wind may not be as significant to those under other prevailing wind directions. Nevertheless, the construction of the proposed development within the Site will create shelter to the localized wind against the region to its northeast, such as the Kam Fat Building and Evergreen Tower. The wind availability at these regions is considered better under the Baseline Scenario compared to the Proposed Scenario because the SW wind could skim over the low-rise scattered squatters under the current situation to reach these downstream areas.

5.5.4 Weak localized SW wind flow (see Markers (1) and (2) in **Figure 5.8**) originated from the local "ventilation breathing spaces", which include Wong Tai Sin Square and the space between the Site and Wong Tai Sin Temple, may still able to flow via the open grounds north of Site B and via the podium separation of more than 25m between Site A and Site B along the Shatin Pass Road, before reaching the areas near Our Lady's Kindergarten and Evergreen Tower/Kam Fat Building respectively. Therefore, it is anticipated with this proposed development, the wind environment between the Baseline Scenario and the Proposed Scenario would not result in great declination under the SW summer prevailing wind.

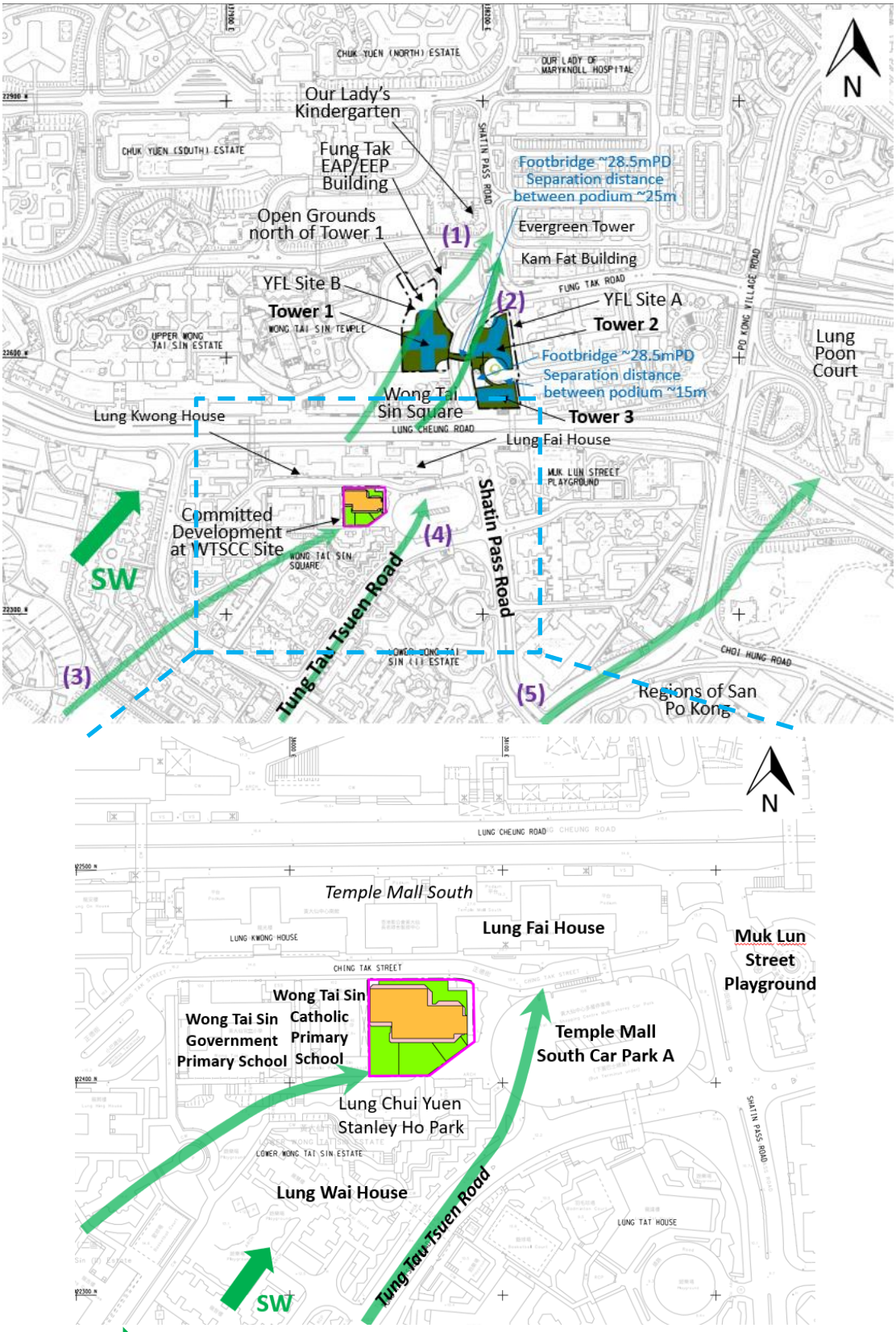
5.5.5 Owing to the geographical location of the proposed development at WTSCC Site, which is located upstream of the YFL Site, the construction of the three proposed Towers within the YFL Site would not affect the wind environment near it under the SW prevailing wind.

5.5.6 The summer wind gather at the Morse Park would enter Tung Tau Tsuen Road and continue proceed to the further northeast region towards the Lung Fai House through the gap between the proposed development at the WTSCC Site (which has a 3m setback from east boundary) and the Temple Mall South Carpark A (see Marker (4) in **Figure 5.8**). The Development Proposal within the WTSCC Site would not obstruct this wind flow since it is located at the side way from Tung Tau Tsuen Road, thus ventilation performance under the Proposed Scenario would likely be maintained in a level similar to the Baseline Scenario under summer SW wind.

5.5.7 In addition to the wind flow along Tung Tau Tsuen Road, the wind flow would also skim over the open space between Lung Gut House and Lung Shing House after flowing over the Morse Park. This portion of wind would then reach the Lung Chui Yuen Stanley Ho Park south to the Wong Tai Sin Catholic Primary School and the WTSCC Site and be blocked by the proposed high-rise building at the WTSCC Site, which shielded the Lung Fai House at the downstream (see Marker (3) in **Figure 5.8**).

5.5.8 The Ying Fung Lane Site is partially located at the downstream of the WTSCC Site across the Lung Cheung Road. However, as the wind approaching the area north of Lung Cheung Road near Lower Wong Tai Sin Estate would have already been shielded by the "wall" structure of Lung Fai House – Lung Kwong House, the wind wakes generated by the Development Proposal within WTSCC Site (hiding behind the Lung Fai House from YFL Site) would not be significant to the YFL Site. Hence, it is expected that limited cumulative wind impact would occur.

5.5.9 The portion of SW wind flowing along the Choi Hung Road towards the regions near Lung Poon Court under the Baseline Scenario remain unaltered under the Proposed Scenario (see Marker (5) in **Figure 5.8**). **Figure 5.8** illustrates the wind flow of the SW prevailing wind under the Proposed Scheme.



Summer prevailing wind directions
Air flow
Ying Fung Lane Site
WTSCC Site

Figure 5.8 **Illustration of Wind Flows under SW Prevailing Wind Direction under the Proposed Scenario**

6 POTENTIAL STRATEGIES FOR FUTURE DESIGN OPTIMIZATION

6.1 Potential Strategies for Future Design Optimization

Ying Fung Lane Site

6.1.1 The layout under the proposed development would keep the major air path unblocked under major prevailing wind directions. The design layout has incorporated several good design measures which include breaking up the podium between Tower 2 and Tower 3 to align with Ying Fung Lane, incorporate building separations and building setbacks as well as retaining the northern portion of YFL Site B as open ground. Apart from the above, the provision of a footbridge which is permeable beneath between Tower 1 and Tower 2 across Shatin Pass Road would promote the penetration of prevailing wind. Furthermore, the difference in building height profile of the proposed developments would promote vertical air movements. As a result, significant wind deterioration on district level after the construction of proposed development is not anticipated.

6.1.2 Besides, if further enhancement of local air ventilation performance is needed in future design stage, several general good design practice in the aspect of air ventilation performance are recommended and listed below:-

- Adopt further building permeability whenever possible and feasible with reference to PNAP APP-152;
- Reduce podium bulk;
- Adopt variation of building height to enhance vertical air movement;
- Incorporate greening measures, preferably through tree planting at-grade; and
- Avoid long continuous façades of building clusters.

Wong Tai Sin Community Centre Site

6.1.3 Given the comparison of building height between the existing community center and the proposed block and the density of development in vicinity of the WTSCC Site, localized wind influence would be inevitable. However, a few good design measures in terms of air ventilation performance were proposed, which include the setback from eastern site boundary and terraced podium design, the relatively short façade to the east annual and prevailing wind flow. This reduces the extent of wind influence zone in the Lower Wong Tai Sin Estate and favors the infiltration of wind into the region at near ground level. Furthermore, the difference in building height profile of the proposed development with surrounding existing buildings would promote vertical air movements. Most importantly, the WTSCC Site is not located within any major air path under the predominant wind, implying that the building in the WTSCC Site is not likely to cause deterioration of wind environment.

6.1.4 The WTSCC Site has small site coverage, and it has already been surrounded by high-rise developments and bulky structures. Due to the site constraints, good air ventilation measures aiming at further mitigating the wind flow would be generally rely on the reduction of site coverage at ground level (i.e. to reduce the bulk of the podium structure), aiming at allowing more localized wind flow to skim around the building at pedestrian level.

6.1.5 In addition, the following general guiding principles are recommended in the detailed design stage for refinement of the scenario:

- Incorporate greeneries;
- Incorporate empty bay at-grade if possible.

7 SUMMARY AND CONCLUSION

7.1.1 The Development Proposal include two potential development sites: The YFL Site and the WTSCC Site. The YFL Site is located at the center of Kowloon. The west portion of the site is currently open space between Wong Tai Sin Square and Fung Tak EEP building, while the east portion is occupied by low squatters of Chuk Yuen United Village. The proposed layout under the Proposed Scheme consists of three residential buildings with building height ranges from +120mPD to +145mPD. These buildings are situated on a podium of about +41.5mPD. The WTSCC Site is currently used as Wong Tai Sin Community Centre, which has a building height of around +31mPD. The proposed building contains a single tower with height around +120mPD, situated on a podium of about +44mPD filling most of the Site.

7.1.2 The annual prevailing wind near the two Sites under the Development Proposal generally comes from NNE, E and ENE directions, while summer prevailing wind include wind from E, S, SSW and SW directions. The regions surrounding the Sites are mainly covered by high-rise buildings while pockets of open spaces such as Wong Tai Sin Square and Muk Lun Street Park also exists near the site. Several major roads, including the Lung Cheung Road, Shatin Pass Road, Fung Tak Road, Ying Fung Lane, Tung Tau Tsuen Road and Muk Lun Street Playground – Ching Tak Street would be essential to facilitate the wind flows in the region near the Sites.

Wong Tai Sin Community Centre Site

7.1.3 According to the AVA Expert Evaluation for Wang Tau Hom & Tung Tau Area, the site does not fall within any identified air paths. Given the site is small and surrounded by medium-to-high-rise buildings, by incorporating good air ventilation measure such as building/podium setback, the proposed development would unlikely induce significant adverse air ventilation impact on the surrounding pedestrian environment. Further quantitative AVA Study is considered not necessary.

7.1.4 Similar to the YFL Site, in view of the potential wind impacts, and taking into account the site constraints, several potential general guiding principles are recommended for the WTSCC Site, including provision of greeneries and incorporation of empty bay at-grade. These measures are suggested to be taken into consideration to further alleviate the wind environment in the further detailed design stage.

Ying Fung Lane Site

7.1.5 The proposed developments within the Site abuts the air path along the Shatin Pass Road as identified under the AVA Expert Evaluation for Tsz Wan Shan, Diamond Hill and San Po Kong Areas. In addition, the building layout design has incorporated several good design measures which include breaking up the podium between Tower 2 and Tower 3 to align with Ying Fung Lane, incorporate building separation between Tower 1 and Tower 2 across Shatin Pass Road, building separation between Tower 2 and 3, as well as retaining the northern portion of Site B as open ground. In addition, there are also building setbacks of the proposed Towers from Site boundaries. The proposed development within the Site would unlikely induce significant adverse air ventilation impacts on the surrounding pedestrian wind environment. Further quantitative AVA Study is considered not necessary.

7.1.6 Moreover, several further mitigation measures are recommended for the Site, including the provision of permeable element at the center of the Site, reducing podium bulk, etc. These measures are suggested to be taken into consideration to further alleviate the wind environment in the further design stage.

7.1.7 To conclude, the proposed developments at both Sites have incorporated several good air ventilation measures to facilitate air flow. Further quantitative AVA Studies for the two Sites are considered not necessary.

Figures

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

838400 E

839200 E

823200 N

822400 N

821600 N

TSZ WAN SHAN

CHUK YUEN NORTH ESTATE

CHUK YUEN SOUTH ESTATE

UPPER WONG TAI SIN ESTATE

LOWER WONG TAI SIN ESTATE

SAN PO KONG

CHOI HUNG ESTATE

NGAU CHI WAN

DIAMOND HILL

HAMMER HILL

KOWLOON CITY

YING FUNG LANE (CHUK YUEN UNITED VILLAGE) SITE

WONG TAI SIN COMMUNITY CENTRE SITE

NGAU CHI WAN VILLAGE SITE

SHATIN PASS ROAD

PO KONG VILLAGE ROAD

LUNG CHEUNG ROAD

CHOI HUNG ROAD

PRINCE EDWARD ROAD EAST

CLEAR WATER BAY ROAD

NOTES:

1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE APPROXIMATE VALUES AND IN METRES ABOVE HONG KONG PRINCIPAL DATUM.

LEGEND:

STUDY BOUNDARY

N

AECOM

PROJECT 項目

SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED PUBLIC HOUSING DEVELOPMENTS AT WONG TAI SIN - FEASIBILITY STUDY

CLIENT 業主

CEDD 土木工程拓展署 Civil Engineering and Development Department

CONSULTANT 土木工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS 分判土木工程顧問公司

ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核核

STATUS 階段

SCALE 比例 A3 1 : 8000

DIMENSION UNIT 尺寸單位 METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號 60625506

AGREEMENT NO. 協議編號 CE 32/2019(CE)

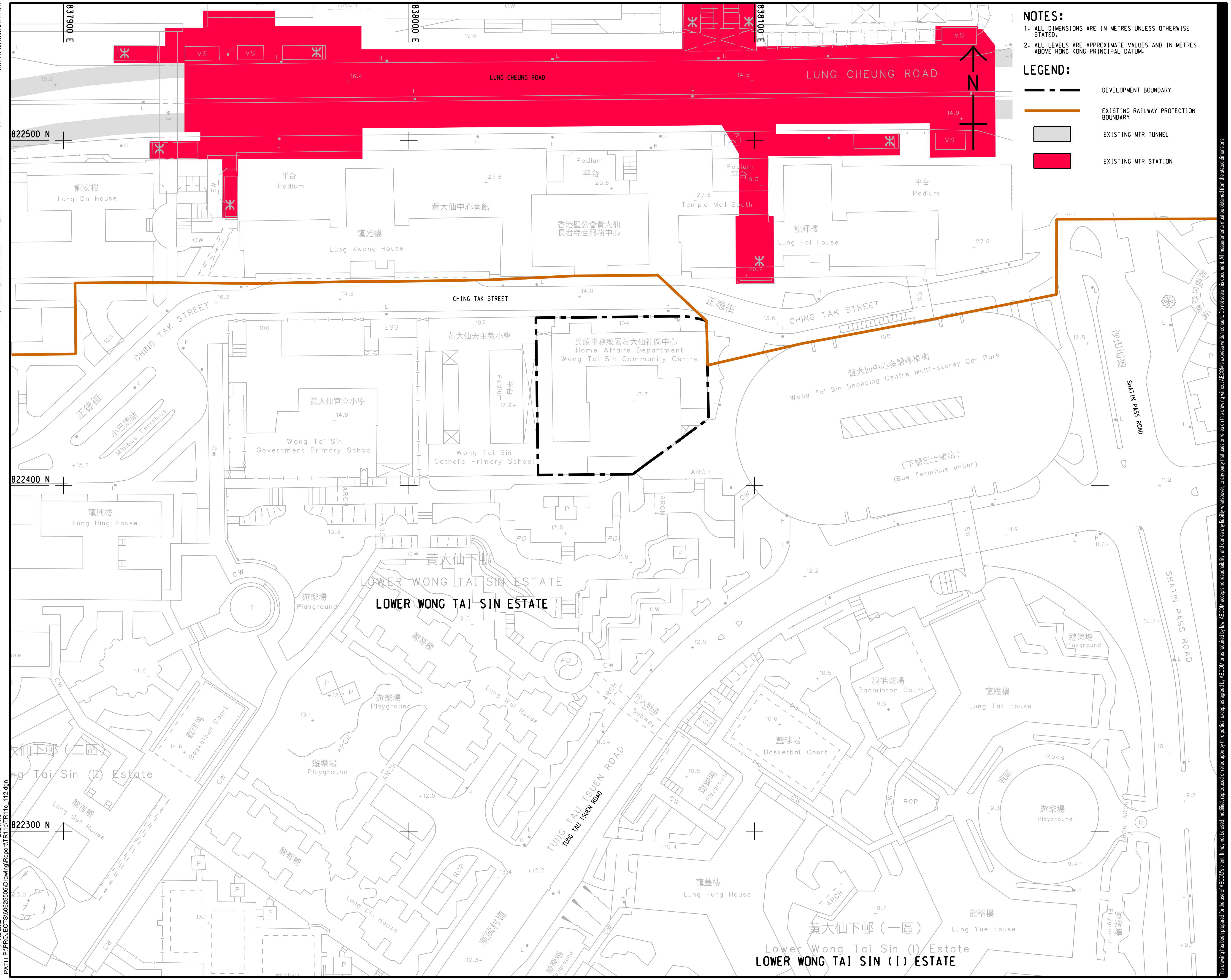
SHEET TITLE 圖紙名稱

GENERAL LAYOUT PLAN

SHEET NUMBER 圖紙編號

60625506/TR14c/FIGURE 1.1

Plot File by: PanT
PATH: P:\PROJECTS\60625506\Drawing\Sketch\SK0048.dgn
2022/4/20



NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE STATED.
2. ALL LEVELS ARE APPROXIMATE VALUES AND IN METRES ABOVE HONG KONG PRINCIPAL DATUM.
LEGEND:
DEVELOPMENT BOUNDARY
EXISTING RAILWAY PROTECTION BOUNDARY
EXISTING MTR TUNNEL
EXISTING MTR STATION
N
837900 E
838000 E
838100 E
822500 N
822400 N
822300 N
LUNG CHEUNG ROAD
CHING TAK STREET
正德街
民政事務總署黃大仙社區中心
Home Affairs Department
Wong Tai Sin Community Centre
黃大仙中心多層停車場
Wong Tai Sin Shopping Centre Multi-storey Car Park
(下層巴士總站)
(Bus Terminus under)
黃大仙官立小學
Wong Tai Sin Government Primary School
黃大仙天主教小學
Wong Tai Sin Catholic Primary School
黃大仙中心南館
Temple Mall South
香港聖公會黃大仙長者綜合服務中心
龍安樓
Lung On House
龍光樓
Lung Kwong House
龍輝樓
Lung Fai House
龍興樓
Lung Hing House
黃大仙下邨
LOWER WONG TAI SIN ESTATE
SHATIN PASS ROAD
沙田坳道
TUNG TAU TSUEN ROAD
LOWER WONG TAI SIN (I) ESTATE

AECOM

PROJECT 項目

SITE FORMATION AND INFRASTRUCTURE WORKS FOR PROPOSED PUBLIC HOUSING DEVELOPMENTS AT WONG TAI SIN - FEASIBILITY STUDY

CLIENT 業主

土木工程拓展署
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ISSUE/REVISION 修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核

STATUS 階段

SCALE 比例 — A3 1 : 1000

DIMENSION UNIT 尺寸單位 — METRES

KEY PLAN 索引圖

PROJECT NO. 項目編號 — 60625506

AGREEMENT NO. 協議編號 — CE 32/2019(CE)

SHEET TITLE 圖紙名稱

LOCATION PLAN OF WONG TAI SIN COMMUNITY CENTRE SITE

SHEET NUMBER 圖紙編號

60625506/TR14c/FIGURE 1.2

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
2021/6/9
Plot File by: Xuan.Li
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