TOWNLAND CONSULTANTS LTD.
URBAN AND REGIONAL PLANNING, DEVELOPMENT CONSULTANCY, MASTER PLANNING, URBAN DESIGN, ARCHITECTURE, LANDSCAPE ARCHITECTURE, PROJECT MANAGEMENT AND SOCIAL DEVELOPMENT

Reference CEDD/FNNDA/ERIC/09
Date 25 August 2026

By HAND and EMAIL

The Secretary, Town Planning Board
c/o Planning Department
15/F North Point Government Offices,
333 Java Road, North Point, HONG KONG

Dear Sir / Madam,

SECTION 16 PLANNING APPLICATION
THE TOWN PLANNING ORDINANCE (CHAPTER 131)

PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH NEW DEVELOPMENT AREA AND KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT SITE K10, PLANNING AREA 23N, KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES
(TPB REF: A/KTN/111)

We refer to the captioned Planning Application submitted to the Town Planning Board ("**TPB**") on 12 June 2026.

Further to comments received from Urban Design and Landscape Section ("**UD&L**") and Fanling, Sheung Shui & Yuen Long East District Planning Office ("**FSYLE DPO**") of Planning Department ("**PlanD**"), we hereby submit our Responses-to-Comments ("**R-to-C**") at ***Attachment 1*** with relevant supporting documents at ***Attachments 2 to 4***, which have fully addressed the comments received. We kindly request that the TPB consider the Application as soon as possible following the submission of this Further Information at the earliest TPB meeting.

Should there be any queries, please do not hesitate to contact the undersigned, Mr Eric Chan or Mr Kevin Fok.

Yours faithfully,
FOR AND ON BEHALF OF
TOWNLAND CONSULTANTS LIMITED

Vincent Lau
Director
VIN/ERIC/KEVINF

Enc Attachment 1: R-to-C
Attachment 2: Updated SPS
Attachment 3: Updated VA
Attachment 4: Updated AVA-EE

cc CEDD / Team

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Attachment 1

RESPONSES-TO-COMMENTS

PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PROPOSED/PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH AND KWU TUNG NORTH NEW DEVELOPMENT AREA AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT PLANNING AREA 23N OF KWU TUNG NORTH NEW DEVELOPMENT AREA (APPLICATION NO. A/KTN/111)

TOWNLAND

	Comments/ Suggestions	Applicant's Responses
A.	**Comments from Transport Department received from Planning Department on 8 July 2026 (Contact Person: Mr LAU Chung-ki, Elton; Tel.: 2399 2228):**	
1.	As stated in your memo para. 6, the proposed minor relaxation just involves change in building height and does not cover the development parameters (including GFA, population or parking provision). Therefore, there should be no increase in development intensity and no additional infrastructural impact is anticipated. For clarity, please confirm whether the proposed flat size in relevant residential sites is unchanged, such that the overall trip generation/attraction and the parking provision would not be affected.	Please note that there is no change to the assumption for average unit size or person per flat. There is no increase in number of units and population for the Application Sites when compared to Approved Applications (i.e. Application Nos. A/FLN/30 and A/KTN/93). As the land uses and proposed PRs conform with the two (2) Approved Applications, the minor relaxation of BH restriction under the current application is not anticipated to induce any additional traffic impacts.
B	**Comments from Agriculture, Fisheries and Conservation Department received from Planning Department on 8 July 2026 and 17 July 2026 (Contact Person: Mr LAU Yun Kwan; Tel.: 2150 6931):**	
	<u>From nature conservation perspective</u>	
1.	Potential ecological impacts during construction and operation phases due to the proposed minor relaxation of plot ratio and building height restrictions should be evaluated. In particular, any significant impacts on nearby habitats (e.g. Ng Tung River, habitats in "GB" and "CA" zones) and associated wildlife in particular birds should be assessed.	The current submission is seeking for minor relaxation of plot ratio and building height restrictions to reflect the approved development intensity and uses under Application Nos. A/FLN/30 and A/KTN/93, and for the additional required BH to accommodate the aboveground carpark and adoption of MiC method. There are no major changes to the indicative layouts of the Application Sites when compared to the previous approvals. For Application Sites that incorporates podium structures, it will remain confined within the Application Sites and will not encroach into any ecological sensitive area (e.g. "GB" and "CA" zones) and affect any wildlife. Furthermore, the surrounding area of Application Sites will also be characterised by high-rise developments and the stepped height building along Ng Tung River is preserved, thus, significant ecological impact is not anticipated as a result of the increased BH. Furthermore, the adoption of MiC method during the construction phase would help alleviate potential environmental impacts when compared to the conventional in-situ construction method with the shortened construction time and minimised noise and air pollution impact. With the implementation of the previously proposed mitigation measures in the Ecological Impact Assessments under the Approved Environmental Impact Assessment ("**EIA**"), the conclusion of no unacceptable ecological impacts under the Approved EIA remain valid for the current Application.

	Comments/ Suggestions	Applicant's Responses
	From Long Valley Nature Park perspective Supplementary Planning Statement S.4.3.1	
2.	Site K12 is located close to the ecologically sensitive Long Valley Nature Park (LVNP) with a distance of about 160m. In view of the close distance of the site to LVNP, the applicant is requested to critically review the need to relax the BH of the site. Our office is of the view that the maximum BH of the site at 90mPD under the current OZP restriction should be maintained as far as possible to minimise the potential ecological impact and disturbance to the LVNP, especially in terms of light impact to the wildlife in LVNP. The cumulative impact to LVNP from the approved and proposed changes of various Areas near the LVNP (e.g. Areas 32, 33, 34) and site K12 should also be duly considered.	Taking into account the separation from the LVNP, the intervening developments, and the various urban design and ventilation measures incorporated into the indicative scheme, potential adverse impact on the LVNP would be minimised. Nonetheless, in response to AFCD's concern on the maximum BH for Site K12 and avoid any potential ecological impact, Site K12 will not proposed with the two (2) storeys aboveground carpark and adoption of MiC method, thereby allowing the BH to be lowered to the prevailing BH restriction of 90mPD. While minor relaxation of BH restriction will no longer be sought, minor relaxation of PR restriction from 3.5 to 4.2 will be sought to reflect the development intensity under the previously approval (Application No. A/KTN/93). No additional cumulative impact to the LVNP is anticipated. ***Para. 3.1.2, Table 3.1.1*** and ***Figures 3.3, 3.4*** and ***3.6*** of the Supplementary Planning Statement ("**SPS**") have been revised accordingly. Please refer to the replacement pages of the revised SPS at ***Attachment 2***.
	Appendix 1 Visual Appraisal – KTN Throughout the whole report (e.g. Table 4, Table 5, title before S.5.2.23)	
3.	There is no "Long Valley Village" in the area. Please revise to "Long Valley Nature Park" for VP8.	Noted and please refer to ***Attachment 3*** refers) for the revised Visual Appraisal ("**VA**").
C.	**Comments from Urban Design Unit of Planning Department received from Planning Department on 8 July 2026 (Contact Person: Ms LO Yan Ki, Candice; Tel.: 3565 3945):**	
1.	Urban Design and Visual	
(a)	we have no adverse comment from urban design and visual perspectives;	Noted.
(b)	two Visual Appraisals (VAs), each for KTN and FLN NDAs respectively, have been carried out to compare the visual impact of the Proposed Scenario (with the proposed increase in PR and/or BH restrictions) and the Base Scenario (i.e., the OZP-compliant scheme updated with the approved applications No. A/FLN/30 and A/FLN/32 for FLN NDA and A/KTN/93 for KTN NDA); and	Noted.

Comments/ Suggestions		Applicant's Responses
(c)	according to the VAs, the visual impact due to the proposed minor relaxation of PR and/or BH restrictions at five selected viewpoints (VPs) in FLN NDA are slight, while the visual impact at nine VPs in KTN NDA ranged from negligible to moderate. Various mitigation measures have been proposed by the applicant to minimise potential visual impacts, such as provision of vertical greening and green roof. The proposals are considered compatible in scale and height with the planned developments of the NDAs. The stepped BH concept with the overall development intensity and BH profile stepping down from the town centres towards the peripheries and riversides would generally be maintained. As such, significant adverse visual impact arising from the proposed minor relaxation of PR and/or BH restrictions is not anticipated;	Noted.
2.	<u>Air Ventilation</u>	
(a)	two Air Ventilation Assessment - Expert Evaluation (AVA-EE), each for KTN and FLN NDAs respectively, have been carried out to compare the pedestrian wind performance of the Proposed Scenario (with the proposed increase in PR and/or BH restrictions) and the Base Scenario (i.e., the OZP-compliant scheme updated with the approved applications No. A/FLN/30 and A/FLN/32 for FLN NDA and A/KTN/93 for KTN NDA); and	Noted.
(b)	according to the AVA-EE reports, the proposal will result in taller buildings and additional carpark podiums which will inevitably induce larger wind wakes at the immediate downstream areas. Notwithstanding, major wind corridors in both NDAs are retained and no major changes in wind flow patterns are anticipated. Furthermore, good design features in the Sites including terraced podiums design, non-building areas and ground level setbacks are retained to facilitate the wind flow within and across the Sites. Considering all these design measures and the setting of the Sites, significant adverse air ventilation impact arising from the proposed minor relaxation of PR and/or BH restrictions is not anticipated on the overall pedestrian wind environment when compared with the Base Scenario.	Noted.

PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PROPOSED/PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH AND KWU TUNG NORTH NEW DEVELOPMENT AREA AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT PLANNING AREA 23N OF KWU TUNG NORTH NEW DEVELOPMENT AREA (APPLICATION NO. A/KTN/111)

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	Comments/ Suggestions	Applicant's Responses
D.	**Comments from Landscape Unit of Planning Department received from Planning Department on 8 July 2026 (Contact Person: Mr NG Tat Yuen, Henry; Tel.: 3565 3950):**	
(a)	We have no adverse comments on the application from landscape planning perspective. Our detailed comments are as follows:	
(i)	based on the aerial photos taken in Dec 2024 and Jun 2025, the 8 application sites in Fanling North NDA and the 13 application sites in Kwu Tung North NDA were located in an area of rural inland plain/miscellaneous rural fringe landscape character comprising construction sites, village houses, residential developments, river, open storage sites/warehouses and tree clusters. The proposed minor relaxation of plot ratio (PR) and building height (BH) restrictions of respective sites are considered not incompatible with the planned landscape character in the proximity;	Noted.
(ii)	with reference to section 4.2 of the Supplementary Planning Statement, there would be no changes to the land uses and the intended development intensity as approved under Application Nos. A/FLN/30 and A/KTN/93. According to the Application Form, no tree felling will be involved; and	Noted.
(iii)	in view of the above, significant adverse landscape impact arising from proposed minor relaxation of PR and BH restrictions of the application sites is not anticipated.	Noted.
	<u>Advisory Comments</u>	
(b)	The applicant is advised that approval of the application does not imply approval of tree works such as pruning, transplanting and felling. Application for any tree works should be submitted to relevant departments for approval.	Noted.

	Comments/ Suggestions	Applicant's Responses
E.	**Comments from Fanling, Sheung Shui & Yuen Long East District Planning Office, Planning Department on 17 July 2026 (Contact Person: Mr CHAN Chun Yan, Robin; Tel.: 3168 4039):**	
	General Comments	
1.	Regarding the Visual Appraisal (VA) and Air Ventilation Assessment – Expert Evaluation (AVA-EE), please supplement the assessments for both NDAs with additional analysis (supported by photomontages) that quantifies the magnitude of change relative to the building height restrictions stipulated in the respective OZPs. Furthermore, please review all previously submitted components of the VA and AVA-EE reports and incorporate any necessary revisions to ensure consistency.	Noted and please refer to ***Attachments 3*** and ***4*** for the revised VA and AVA-EE respectively.
2.	For the VA of KTN, please incorporate assessments of the residual impact significance upon mitigation measures, to tally with the methodology adopted in the VA of FLN.	Noted and please refer to ***Attachment 3*** for the revised VA.
3.	Please provide the basis for the assumed floor-to-floor heights of 3.15m (without MiC) and 3.3m (with MiC) adopted in the assessment.	Please note that a floor-to-floor height of 3.15m for storeys without adopting MiC is considered a typical floor-to-floor height being adopted in various private housing developments of Hong Kong and has been adopted in the past planning reviews for private housing sites at FLN and KTN NDAs. A floor-to-floor height 3.3m for MiC floor is assumed based on the following observations: (a) Pursuant to Joint Practice Note ("**JPN**") No. 8, favourable consideration may be given to an increase of BH up to 4% of the total storey height MiC floor for application of minor relaxation of BH restriction; and (b) Reference is made to publicly available information on completed private housing development adopting MiC (e.g. Echo House at Cheung Sha Wan) which adopts a floor-to-floor height of the residential floor is 3.26m. Furthermore, it is noted that from planning applications for private residential developments adopting MiC (i.e. Application Nos. A/FLN/32 and A/I-TCTC/71) proposes a floor-to-floor heights of 3.45m and 3.4m respectively. In this regard, the assumption of 3.3m for MiC floor is comparable to references in Hong Kong. The increase is also considered in line with JPN No. 8.

Comments/ Suggestions		**Applicant's Responses**
5.	For the purpose of clarity, please provide the proposed BHs for all sites and assumed floor-to-floor heights for each of the following scenarios: (i) Adoption of MiC but without aboveground car park; and (ii) Provision of aboveground car park but without the adoption of MiC.	Noted and ***Para. 3.1.5*** and ***Table 3.1.2*** of the SPS have been updated (***Attachment 2*** refers).
6.	Please provide the respective commencement and targeted completion year of First Phase and Remaining Phase of KTN/FLN NDA, and also provide the anticipated first population in-take year for the remaining phase of KTN/FLN NDA.	The commencement and targeted completion years for the site formation and infrastructural works for First Phase of KTN and FLN NDAs are 2019 and 2026 (tentative) respectively. Site formation and infrastructural works for the Remaining Phase for KTN and FLN NDAs has commenced in 2024 and are expected to be completed in 2030 and 2031 respectively. The anticipated first population in-take year for the Remaining Phase KTN and FLN NDAs are 2031 and 2029 respectively.
7.	Please ensure that the reports and the assessments reflect the latest development status of KTN/FLN NDA.	Noted.
8.	Please provide justifications for the encroachment into areas zoned "Green Belt" and those shown as 'Road' for the relevant sites in KTN NDA.	The encroachment into "Green Belt" zone and area shown as 'Road' for Application Sites in KTN NDA are to reflect the minor boundary adjustment arising from the revised road alignment.
F.	**Public Comment**	
	During the formal publication period of the S16 Planning Application, four (4) public comments were received with two (2) comments indicate no comment and two (2) comments in objection. The opposing comments are summarised below: <u>Opposing Views</u>	
1.	Further relaxation of the plot ratio and building height restrictions will impact residents' quality of life and add pressure on open space, and medical, educational and community facilities.	Please note that the proposed plot ratio is in line with the previous approvals under Application Nos. A/FLN/30 and A/KTN/93 while the additional BH sought under the current Application is to facilitate the adoption of MiC method and the construction of aboveground carpark per latest Government initiatives. No impact on government, institution and community ("**GIC**") facilities will be incurred.

Comments/ Suggestions		**Applicant's Responses**
2.	The existing traffic impact is anticipated to be worsened and an updated Traffic Impact Assessment should be provided to support the planning application.	As nil increase in flat production and population when compared to previous approvals are proposed, no additional traffic impact is anticipated under the current Application.
3.	Visual openness and sunlight access for the existing residents will be affected by the additional BH and aboveground carpark. Adverse impact on air ventilation is also anticipated.	Visual Appraisals ("**VAs**") and Air Ventilation Assessments – Expert Evaluation ("**AVA-EE**") have been carried out to assess the potential visual and air ventilation impacts, which concluded that while slight visual impact is anticipated, the implementation of mitigation measures ((e.g. soft landscaping including screen planting, green roof, vertical greening or compensatory planting, etc) will be adopted to minimise the preserved visual change. Furthermore, only minimal air ventilation impacts are anticipated, with no significant district-wide deterioration in the wind environment. Notwithstanding, the developments at the Application Site will be required to comply with the Sustainable Building Design Guidelines ("**SBDG**") and sufficient building separation and setback shall be provided to improve building permeability from low to high zones.
4.	While increase in commercial floor area and employment opportunities is supported, plot ratio and building height restrictions should not be further relaxed to impose additional pressure on local infrastructure.	Responses to Items F1 and F2 above refer.
5.	No data is provided regarding the changes in the number of flat or flat size.	Response to Item F1 above refers.

Date: 25 August 2026
File Ref: CEDD/FNNDA

Attachment 2

UPDATED SPS

SECTION 16 PLANNING APPLICATION TOWN PLANNING ORDINANCE (CAP. 131)

PPROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH NEW DEVELOPMENT AREA AND KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT SITE K10, PLANNING AREA 23N, KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES

- Supplementary Planning Statement -

TOWNLAND CONSULTANTS LIMITED

PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH NEW DEVELOPMENT AREA AND KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT SITE K10, PLANNING AREA 23N, KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES

PLANNING STATEMENT

Applicant	Civil Engineering and Development Department
Planning Consultant and Submitting Agent	Townland Consultants Limited
Air Ventilation and Visual Impact Specialists	AtkinsRéalis Asia Limited & AECOM Asia Company Limited

File Reference : CEDD/FNNDA

For and on behalf of Townland Consultants Limited

Approved by : _____

Position : DIRECTOR

Date : 08/06/2026

8 June 2026

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EXECUTIVE SUMMARY

This Section 16 ("**S16**") Planning Application is submitted on behalf of Civil Engineering and Development Department ("**CEDD**" / the "**Applicant**"), to seek permission from the Town Planning Board ("**TPB**"/ the "**BOARD**") for Minor Relaxation of Plot Ratio ("**PR**") and Building Height ("**BH**") Restrictions for eight (8) planned Private Housing Developments (namely at Sites F1, F2, F3, F4, F5, F6, F7, F8) at Planning Areas 10, 13, 14 and 16 of Fanling North New Development Area ("**FLN NDA**") and thirteen (13) planned Private Housing Developments (namely at Sites K1, K2, K3, K4a, K4b, K5, K6, K7, K8, K9, K10, K11, K12) at Planning Areas 14, 15, 20, 22, 23, 25 and 26 of Kwu Tung North New Development Area ("**KTN NDA**"), New Territories ("**Application Sites**"). So as to realise the intended development for Proposed Public Transport Terminus, Shop and Services and Eating Place uses within the Private Housing Development at Site K10, permission is also sought for Proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' uses at this Site. The Application Sites are subject to two (2) previous S16 Planning Approvals (Applications Nos. A/FLN/30 and A/KTN/93) granted on 23 September 2022 for minor relaxation of PR and BH restrictions ("**the Approved s.16s**") to optimise the use of developable land and increase flat production. Additionally, a S16 Planning Application (Application No. A/FLN/32) was submitted by the landowner of Site F4 in 2024 to seek minor relaxation to the approved BH from 140mPD to 144.14mPD to facilitate the adoption of Modular Integrated Construction ("**MiC**") method. This S16 Planning Application was approved on 22 November 2024.

The Application Sites in FLN NDA are zoned "Residential (Group A)1" ("**R(A)1**"), "R(A)3", "Residential (Group B)" ("**R(B)**"), and "Other Specified Uses" annotated "Commercial/Residential Development with Public Transport Interchange (2)" ("**OU(CRDPTI(2))**") on the Draft Fanling North Outline Zoning Plan No. S/FLN/5 ("**Draft FLN OZP**"). The Application Sites in KTN NDA are zoned "R(A)1" and "R(B)" with minor portions of some Sites falling within "Green Belt" ("**GB**") zone or areas shown as 'Road' as result of updated road layouts on the Approved Kwu Tung North Outline Zoning Plan No. S/KTN/4 ("**Approved KTN OZP**"). The Application Sites are subject to various PR and BH restrictions and stipulations of non-building areas ("**NBAs**") and 'Terraced Podium' on the respective OZPs. Based on the individual merits of a development proposal, minor relaxation of the PR and BH Restrictions may be considered by the TPB on application under Section 16 of the Town Planning Ordinance.

As part of the measures to reduce construction costs and expedite housing developments, the Chief Executive ("**CE**") announced in 2025 Policy Address that an enhance measure to allow full gross floor area ("**GFA**") exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of MiC method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety. A Review has been undertaken to identify the BH requirements for the selected private housing sites in the Remaining Phase of FLN NDA and KTN NDA with considerations of the approved development intensity under the Approved s.16s. This S16 Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites (the "**Development Proposal**") to accommodate the required BHs and reflect the approved PR under the Approved s.16s. As indicated, Permission for Proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved s.16s.

The Development Proposal is justified on the following grounds:

- The Development Proposal is in line with Government's Policy initiatives in actively promoting the adoption of MiC in the construction industry;
- The Development Proposal also facilitates the construction of aboveground carpark with consideration of the latest GFA exemption arrangements to shorten the construction time and expedite the delivery of housing units;
- The Proposed BH for the Application Sites are not incompatible with the surrounding development context and will not jeopardise the stepped building height profile in the FLN NDA and KTN NDA;
- There is no change to the development intensity and the Development Proposal will not lead to any infrastructural impact; and
- No adverse visual and air ventilation impacts are anticipated.

Based on the above justifications and as detailed in this Supplementary Planning Statement, we respectfully request the BOARD to give favourable consideration to this Application.

行政摘要

（內文如有差異，以英文版本為準）

根據《城市規劃條例》第 16 條，我司代表土木工程拓展署（下稱「**土拓署**」）向城市規劃委員會（下稱「**城規會**」）呈交規劃申請書，請求批准略為放寬新界粉嶺北新發展區規劃區第 10、13、14 及 16 區內八個已規劃私人住宅發展（分別為 F1、F2、F3、F4、F5、F6、F7 及 F8 地盤）及古洞北新發展區規劃區第 14、15、20、22、23、25 及 26 區內十三個已規劃私人住宅發展（分別為 K1、K2、K3、K4a、K4b、K5、K6、K7、K8、K9、K10、K11 及 K12 地盤）（下稱「**申請地點**」）的地積比率及建築物高度限制。為落實位於 K10 地盤內所規劃的擬議公共車輛總站、商店及服務行業及食肆用途，本申請亦請求批准於該地盤作「公共車輛總站」、「商店及服務行業」及「食肆」用途。申請地點先前有兩項第 16 條規劃申請(申請編號: A/FLN/30 及 A/KTN/93) ，於 2022 年 9 月 23 日獲批准略為放寬地積比率及建築物高度限制獲批 （下稱「**獲批准的第 16 條規劃申請**」），以優化可發展土地的使用及提升房屋單位供應。此外， F4 地盤的土地業權人已於 2024 年根據《城市規劃條例》第 16 條呈交規劃許可申請（申請編號：A/FLN/32），擬議將獲批准的建築物高度由主水平基準以上 140 米略為放寬至主水平基準以上 144.14 米，以配合運用「組裝合成」建築法，該第 16 條規劃申請已於 2024 年 11 月 22 日獲批。

粉嶺北新發展區內的申請地點座落於《粉嶺北分區計劃大綱草圖編號 S/FLN/5》（下稱「**粉嶺北草圖**」）中的「住宅（甲類）1」、「住宅（甲類）3」、「住宅（乙類）」及「其他指定用途（商業／住宅發展暨公共交通交匯處（2））」地帶。古洞北新發展區內的申請地點座落於《古洞北分區計劃大綱核准圖編號 S/KTN/4》（下稱「**古洞北核准圖**」）中的「住宅（甲類）1」及「住宅（乙類）」地帶，並有小部分因應最新的道路佈局修訂，落入「綠化地帶」地帶或顯示為「道路」的地方。根據相關的分區計劃大綱圖，申請地點均受不同的地積比率及建築物高度限制，並有指定非建築用地及「梯級式平台」範圍。城規會如接獲根據《城市規劃條例》第 16 條提出的申請，可按個別發展的情況，考慮略為放寬地積比率及建築物高度限制。

為降低建造成本並加快房屋發展，行政長官於 2025 年施政報告中宣佈私人發展項目停車場總樓面面積的優化措施，容許地面不多於兩層的停車場的總樓面面積獲全數豁免，同時取消興建地庫停車場作為豁免條件的強制要求。此外，政府亦繼續鼓勵業界更廣泛採用「組裝合成」建築法，以縮短建造時間、加快整體房屋供應、減少人手需求和提升工地安全。為配合上述政策方向，土拓署已就粉嶺北新發展區及古洞北新發展區餘下階段發展內的私人住宅用地進行檢討，在考慮先前的獲批准的第 16 條規劃申請下獲批准的發展密度後檢視相關住宅用地的建築物高度要求。此規劃申請擬議略為放寬地積比率及建築物高度限制（下稱「**發展計劃**」），以配合所需的建築物高度及反映獲批准的第 16 條規劃申請的地積比率。如上所述，此申請亦包括古洞北新發展區規劃區第 23N 區的 K10 地盤的擬議「公共車輛總站」、「商店及服務行業」及「食肆」用途，以反映於獲批准的第 16 條規劃申請下的發展意向。

發展計劃具備以下充分理據的支持：

- 發展計劃符合政府積極推動及鼓勵建造業採用「組裝合成」建築法的相關政策及措施；
- 發展計劃考慮了最新的私人發展項目停車場總樓面面積豁免安排，配合興建地面停車場的安排，從而有助縮短建築時間及加快房屋單位落成；
- 申請地點的建築高度與周邊發展相容，並且不會破壞粉嶺北發展區及古洞北新發展區的梯級式建築設計；
- 發展計劃不會改變原有的發展密度，將不會對現有或已規劃的基建設施造成影響；及
- 發展計劃將不會造成負面視覺和通風影響。

基於上述支持理據及此補充規劃文件內的詳述資料，懇請城規會委員對是項申請作出正面的考慮。

Reference: CEDD/FNNDA/ERIC/07
Date: 8 June 2026

TO THE TOWN PLANNING BOARD:

SECTION 16 PLANNING APPLICATION
THE TOWN PLANNING ORDINANCE (CHAPTER 131)

PROPOSED MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS FOR PERMITTED PRIVATE HOUSING DEVELOPMENTS AT VARIOUS SITES WITHIN FANLING NORTH NEW DEVELOPMENT AREA AND KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES AND PROPOSED PUBLIC TRANSPORT TERMINUS, SHOP AND SERVICES AND EATING PLACE WITHIN PERMITTED PRIVATE HOUSING DEVELOPMENT AT SITE K10, PLANNING AREA 23N, KWU TUNG NORTH NEW DEVELOPMENT AREA, NEW TERRITORIES

1 INTRODUCTION

1.1 We are instructed by the Civil Engineering and Development Department (the "**Applicant**"/ "**CEDD**") to submit this Section 16 ("**S16**") Planning Application to seek permission from the Town Planning Board ("**TPB**"/ the "**BOARD**") for Minor Relaxation of Plot Ratio ("**PR**") and Building Height ("**BH**") Restrictions for eight (8) planned Private Housing Developments (namely at Sites F1, F2, F3, F4, F5, F6, F7, F8) at Planning Areas 10, 13, 14 and 16 of Fanling North New Development Area ("**FLN NDA**") and thirteen (13) planned Private Housing Developments (namely at Sites K1, K2, K3, K4a, K4b, K5, K6, K7, K8, K9, K10, K11, K12) at Planning Areas 14, 15, 20, 22, 23, 25 and 26 of Kwu Tung North New Development Area ("**KTN NDA**"), New Territories ("**Application Sites**"). So as to realise the intended development for Proposed Public Transport Terminus, Shop and Services and Eating Place uses within the Private Housing Development at Site K10, permission is also sought for Proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' uses at this Site. The Application Sites are subject to two (2) previous S16 Planning Approvals (Application Nos. A/FLN/30 and A/KTN/93) granted on 23 September 2022 for minor relaxation of PR and BH restrictions ("**Approved s.16s**") to optimise the use of developable land and increase flat production.

1.2 As part of the measures to reduce construction costs and expedite developments, the Chief Executive ("**CE**") announced in 2025 Policy Address that an enhanced measure to allow full gross floor area ("GFA") exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of Modular Integrated Construction ("MiC") method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety.

1.3 In 2026, CEDD commissioned a review ("the Review") to assess the BH implications of accommodating the construction of two levels of aboveground carparks and adoption of MiC method at the private housing sites (i.e. Application Sites) in the Remaining Phase of FLN NDA (excluding four (4) private housing sites that fall into the pilot area under Large-Scale Land Disposal (RNTPC Paper No. 5/26 refers)) and KTN NDA (excluding two (2) sites in Planning Areas 32 and 34 that abut Sheung Yue River and interfaces with Long Valley Nature Park ("LVNP") due to ecological considerations1) (Figures 1.1 and 1.2 refer). It was revealed in the Review that the approved BHs of some sites of the Approved s.16s were not sufficient to

[1] *In 2022, having considered the BH restrictions of the "R(B)" sites to the north, the location of the two sites being close to Sheung Yue River and LVNP to the east, as well as the concern of Agriculture, Fisheries and Conservation Department (AFCD) on possible disturbance to LVNP, a BH restriction of 75mPD and 70mPD have been proposed for Planning Areas 32 and 34 respectively. Under this review, AFCD's view has been further sought and it was confirmed that 75mPD and 70mPD for Planning Areas 32 and 34 were considered acceptable but any further increase in BH at the two Sites would result in increased indirect ecological impact and disturbance to the LVNP, hindering LVNP's objectives in being a mitigation measure for the ecological impact arising from the North East New Territories New Development Area ("**NENT NDA**"), and for conserving and enhancing the ecological value of the LVNP. Therefore, the (2) two private housing sites in Planning Ares 32 and 34 are excluded from this S16 Planning Application.*

accommodate the two levels of aboveground carparks and adoption of MiC. In this regard, this S16 Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites to accommodate aboveground carparks and adoption of MiC method (the "Development Proposal"). Minor Relaxation of PR Restrictions has been included under this S16 Planning Application so as to reflect the approved PR under Application Nos. A/FLN/30 and A/KTN/93, with no change to the Approved PRs for the Application Sites. As indicated, permission for proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved s.16s.

1.4 This Supplementary Planning Statement ("SPS") provides information on the Application to facilitate the BOARD's consideration. The following Sections will provide a description of the Application Sites and the surrounding land uses, the planning context, details of the Development Proposal and planning justifications in support of the Application.

2 SITE AND PLANNING CONTEXT

2.1 Site Location and Statutory Planning Context

Application Sites within FLN NDA

2.1.1 Being situated adjacent to Ng Tung River with hilly terrain to the north, FLN NDA is planned to be developed as a 'Riverside Community' capitalising on the riverside setting, beautiful scenery and hilly backdrop. FLN NDA will be well-integrated with Fanling/ Sheung Shui ("**F/SS**") New Town and the KTN NDA. The Application Sites are located at the western and eastern parts of FLN NDA, which are also known as the Residential Area South of the River and the District Centre respectively. The Application Sites consist of various agricultural lands, squatters, or sites under construction etc.

2.1.2 The Application Sites are zoned "Residential (Group A)1" ("**R(A)1**"), "R(A)3", "Residential (Group B)" ("**R(B)**") and "Other Specified Uses" annotated "Commercial/Residential Development with Public Transport Interchange (2)" ("**OU(CRDPTI(2))**") (***Figures 1.1*** and ***2.1*** refer) on the Draft Fanling North Outline Zoning Plan No. S/FLN/5 ("**Draft FLN OZP**"). The Planning Intentions of the respective zones are as follows:

- "R(A)" zone is intended primarily for "*high-density residential developments. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a free-standing purpose-designed non-domestic building up to five storeys. For the "Residential (Group A) 3" ("R(A)3") and "Residential (Group A) 4" ("R(A)4") zone, the planning intention is purely for residential development*";
- "R(B)" zone is intended primarily for "*medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board*"; and
- "OU(CRDPTI)" zone is intended primarily for "*the provision of commercial and residential uses with public transport interchange. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a free-standing purpose-designed non-domestic building up to five storeys*".

2.1.3 Based on the individual merits of a development proposal, minor relaxation of the PR and BH restrictions may be considered by the TPB on application under S16 of the Town Planning Ordinance.

2.1.4 Details of the Application Sites in FLN NDA are outlined below:

- Site F1 is located in Planning Area 10NW and to the west of the planned housing sites that fall into the pilot area under Large-Scale Land Disposal. It is zoned "OU(CRDPTI(2))" and subject to a PR restriction of 3.05 (of which the domestic PR should not exceed 2.18) and BH restriction of 80mPD. A public transport interchange ("**PTI**") of not less than 5,000m^2 should be provided at Site F1. A strip of land abutting the open space to the southeast is designated as 'Terraced Podium' and subject to a maximum BH of 5m. It has a site area of 0.99 hectares.
- Site F2 is located in Planning Area 13E abutting the planned riverside promenade along Ng Tung River. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 75mPD. A non-building area ("**NBA**") (approx. 3,625m^2/ 16.3% of the site area) is designated at the northwest corner of the site to facilitate direct wind to penetrate to Fanling area. It has a site area of 2.22 hectares.
- Site F3 is located in Planning Area 14W and to the north of Ma Sik Road. It is zoned "R(A)3" and subject to a PR restriction of 5 and BH restriction of 110mPD. It has a site area of 1.05 hectares.
- Site F4 is located in Planning Area 14S and to the north of Ma Sik Road. Site F4 is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 115mPD. An NBA (approx. 1,994m^2/ 13.8% of the site area) in northeast-southwest direction is designated at the site to facilitate direct wind to penetrate to Fanling area. It has a site area of 1.44 hectares.

- Site F5 is located in Planning Area 16NW and to the south of Site F2. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 110mPD. A strip of land along the eastern and southern boundary which abuts the open space is designated as 'Terraced Podium' and subject to a maximum BH of 5m. It has a site area of about 0.93 hectares.
- Site F6 is located in Planning Area 16NE and to the east of Site F5. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 110mPD. A strip of land along the southern and western boundary which abuts the open space is designated as 'Terraced Podium' and subject to a maximum BH of 5m. It has a site area of about 1.25 hectares.
- Site F7 is located in Planning Area 16SW and to the south of Site F5. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 110mPD. A strip of land along the northern and eastern boundary which abuts the open space is designated as 'Terraced Podium' and subject to a maximum BH of 5m. It has a site area of about 1.24 hectares.
- Site F8 is located in Planning Area 16SE and to the northwest of One Innovale. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 110mPD. A strip of land along the northern and western boundary which abuts the open space is designated as 'Terraced Podium' and subject to a maximum BH of 5m. A small piece of land at the southern edge near the cul-de-sac of Road L2 is designated as an NBA to facilitate wind penetration from the east to the FLN NDA. It has a site area of about 1.16 hectares.

Application Sites at KTN NDA

2.1.5 Capitalizing on its strategic location in proximity to the railway link, highways and the Lo Wu, Lok Ma Chau and Lok Ma Chau Spur Line Boundary Control Points ("**BCPs**"), KTN NDA is planned to be developed as a 'Mixed Development Node' with a mix of residential, commercial, R&D and agricultural uses as well as retail and services. Adjoining the north-western part of the Fanling/Sheung Shui New Town, the KTN NDA, together with the FLN NDA, would become extensions of the existing new town to form the FL/SS/KT New Town, in which the existing and new facilities and open spaces could be shared by the residents as a whole. The Application Sites are located at central and eastern parts of KTN NDA, which are also known as the Town Centre, the North Residential Area, Residential Area by the River, and the Business and Technology Park respectively. They are currently occupied by agricultural lands, squatters, sites under construction and open storage sites, etc.

2.1.6 The Application Sites are predominately zoned "R(A)" and "R(B)" with minor portions of some Sites falling within "Green Belt" ("**GB**") zone or areas shown as 'Road' as result of updated road layouts on the Approved Kwu Tung North Outline Zoning Plan No. S/KTN/4 ("**Approved KTN OZP**") (***Figures 2.3*** and ***2.4*** refer). The Planning Intentions of the respective zones are as follows:

- "R(A)" zone is intended primarily for *"high-density residential developments. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a freestanding purpose-designed non-domestic building up to five storeys*";
- "R(B)" zone is intended primarily for "*medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board*". 'Public Transport Terminus or Station', 'Shop and Services' and 'Eating Place' are Column 2 uses that may be permitted with or without conditions on application to the TPB; and
- "GB" zone is intended primarily for "*defining the limits of development areas, to preserve existing natural features, as well as to provide passive recreational outlets for the local population and visitors. There is a general presumption against development within this zone*".

2.1.7 Based on the individual merits of a development proposal, minor relaxation of the PR and BH restrictions may be considered by the TPB on application under S16 of the Town Planning Ordinance.

2.1.8 Details of the Application Sites in KTN NDA are outlined below:

- Site K1 is located in Planning Area 20E and to the north of the planned Kwu Tung MTR Station. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 115mPD. A strip of land abutting the open space to the south and west is designated as 'Terraced Podium' and subject to a maximum BH of 5m. It has a site area of 1.13 hectares.
- Site K2 is located in Planning Area 25E and to the south of the planned Kwu Tung MTR Station. It is zoned "R(A)1" and subject to a PR restriction of 6 (of which the domestic PR should not exceed 5) and BH restriction of 115mPD. A strip of land abutting the open space to the north and west is designated as 'Terraced Podium'. It has a site area of 2.34 hectares.
- Site K3 is located in the Planning Area 14 and to the south of Phoenix Garden. It is zoned "R(B)" with minor encroachment into area shown as 'Road'. It is subject to a PR restriction of 3.5 and BH restriction of 80mPD. It has a site area of 2.83 hectares.
- Site K4a is located in Planning Area 22W and to the northeast of the planned Kwu Tung MTR Station. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 75mPD. An NBA (approx. 2,254m^2/ 17.80% of the site area) in northeast-southwest direction is designated at the centre of Site K4a and Site K4b to divert wind to penetrate through the Town Plaza to the inner parts of KTN NDA. It has a site area of 1.27 hectares.
- Site K4b is located in Planning Area 22E and to the northeast of the planned Kwu Tung MTR Station. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 75mPD. An NBA (approx. 3,562m^2/ 14.00% of the site area) in northeast-southwest direction is designated at the centre of Site K4a and Site K4b to divert wind to penetrate through the Town Plaza to the inner parts of KTN NDA. It has a site area of 2.54 hectares.
- Site K5 is located in Planning Area 26W and to the southeast of the planned Kwu Tung MTR Station. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 75mPD. It has a site area of 1.79 hectares.
- Site K6 is located in Planning Area 26E and to the east of Site K5. It is zoned "R(B)" with minor encroachment into area shown as 'Road'. It is subject to a PR restriction of 3.5 and BH restriction of 75mPD. It has a site area of about 2.35 hectares.
- Site K7 is located in Planning Area 15N and abutting Site K8 in the south. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restrictions of 85mPD at the western portion and 95mPD at the eastern portion. It has a site area of about 1.25 hectares.
- Site K8 is located in Planning Area 15C and sandwiched by Site K7 in the north and Site K9 in the south. It is zoned "R(B)" with minor encroachment into "Green Belt" ("**GB**") zone and area shown as 'Road'. It is subject to a PR restriction of 3.5 and BH restriction of 85mPD. It has a site area of about 1.30 hectares.
- Site K9 is located in Planning Area 15S and abutting Site K8 in the north. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restrictions of 80mPD. NBAs (approx. 2,642m^2/ 22.61% of the site area) are designated at a strip of land along the northern boundary and the southeastern corner of the Site K9 to facilitate the penetration of wind from the east to inner parts of KTN NDA. It has a site area of about 1.17 hectares.
- Site K10 is located in Planning Area 23N and to the northeast of Site K4a and Site K4b. It is zoned "R(B)" with minor encroachment into area shown as 'Road'. It is subject to a PR restriction of 3.5 and BH restriction of 95mPD. A PTI is planned at Site K10. NBAs (approx. 2,366m^2/ 8.24% of the site area) are designated at a strip of land along the southeastern boundary of the site and the northwestern corner of the site to facilitate the penetration of wind from the east to inner parts of KTN NDA. It has a site area of about 2.87 hectares.
- Site K11 is located in Planning Area 23C and to the east of Site K4a and Site K4b. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 90mPD. An NBA (approx. 1,776m^2/ 13.83% of the site area) is designated at a strip of land along the southeastern boundary of the site to facilitate the penetration of wind from the east to the inner parts of KTN NDA. It has a site area of about 1.28 hectares.

- Site K12 is located in Planning Area 23S and to the southeast Site K11. It is zoned "R(B)" and subject to a PR restriction of 3.5 and BH restriction of 90mPD. An NBA (approx. 1,027m^2/ 13.26% of the site area) is designated as a strip of land along the northeastern boundary of the site to facilitate the penetration of wind from the east to inner part of KTN NDA. Site K9 is also located above the East Rail Extension – Sheung Shui Lok Ma Chau Spur Line railway tunnel and the associated railway protected area. It has a site area of about 0.78 hectares.

2.2 Planning History of Application Sites

2.2.1 In 2022, CEDD completed a Planning and Engineering ("**P&E**") Review for the planned housing sites in the Remaining Phase of FLN NDA and KTN NDA and found it technically feasible to relax the PR restrictions by 20% for private housing sites and 30% for public housing sites per the housing policy at the time to increase housing supply. The BHs were assessed accordingly with the assumption that underground carparks will be adopted for private housing developments. To take forward the P&E Review, CEDD submitted two (2) S16 Planning Applications (Application Nos. A/FLN/30 and A/KTN/93) on 17 August 2022 to seek minor relaxation of PR and BH restrictions for the public and private housing sites in the Remaining Phase of FLN NDA and KTN NDA, including the Application Sites. The S16 Planning Applications were approved by the TPB on 23 September 2022. Additionally, a S16 Planning Application (Application No. A/FLN/32) was submitted by the landowner of Site F4 in 2024 to seek minor relaxation to the approved BH from 140mPD to 144.14mPD to facilitate the adoption of MiC. This S16 Planning Application was approved on 22 November 2024. The same Applicant also submitted a S16 Planning Application (Application No. A/FLN/33 approved on 24 October 2025) for minor relaxation of the NBA restriction for proposed footbridges and covered walkways within the Site. ***Table 2.2.1*** tabulated the approved PRs and BHs for the Application Sites.

Table 2.2.1 Permitted and Approved Development Parameters of the Application Sites under Application Nos. A/FLN/30, A/FLN/32 and A/KTN/93

Site	Planning Area	Zoning	Permissible PR* (Approved PR^)	Permissible BH* (Approved BH^)
FLN NDA				
F1	10NW	"OU(CRDPTI(2))"	DPR: 2.18 (2.62) NDPR: 0.87 (1.04)	80mPD (80mPD)
F2	13E	"R(B)"	DPR: 3.50 (4.20)	75mPD (80mPD)
F3	14W	"R(A)3"	DPR: 5.00 (6.00)	110mPD (120mPD)
F4	14S	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	115mPD (144.14mPD)
F5	16NW	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)
F6	16NE	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)
F7	16SW	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)
F8	16SE	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)
KTN NDA				
K1	20E	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	115mPD (130mPD)
K2	25E	"R(A)1"	DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	115mPD (130mPD)
K3	14	"R(B)" and area shown as "Road"	DPR: 3.50 (4.20)	80mPD (95mPD)
K4a	22W	"R(B)"	DPR: 3.50 (4.20)	75mPD (85mPD)
K4b	22E	"R(B)"	DPR: 3.50 (4.20)	75mPD (85mPD)
K5	26W	"R(B)"	DPR: 3.50 (4.20)	75mPD (80mPD)
K6	26E	"R(B)" and area shown as "Road"	DPR: 3.50 (4.20)	75mPD (80mPD)
K7	15N	"R(B)"	DPR: 3.50 (4.20)	85/95mPD (100mPD)

Site	Planning Area	Zoning	Permissible PR* (Approved PR^)	Permissible BH* (Approved BH^&)
K8	15C	"R(B)", "GB" and area shown as "Road" +	DPR: 3.50 (4.20)	85mPD (90mPD)
K9	15S	"R(B)"	DPR: 3.50 (4.20)	80mPD (85mPD)
K10	23N	"R(B)" and area shown as "Road" +	DPR: 3.50 (4.2) NDPR: - (0.23)	95mPD (110mPD)
K11	23C	"R(B)"	DPR: 3.50 (4.20)	90mPD (90mPD)
K12	23S	"R(B)"	DPR: 3.50 (4.20)	90mPD (90mPD)

Remarks:
* *As stipulated on the Draft FLN OZP and Approved KTN OZP*
^ *According to Application Nos. A/FLN/30, A/FLN/32 and A/KTN/93, whichever is greater*
\+ *The encroachment into "Green Belt" zone and area shown as 'Road' for Application Sites in KTN NDA are to reflect the minor boundary adjustment arising from the revised road alignment.*
& *Incorporated buffers to allow design flexibility taking into account various factors, such as urban design consideration (e.g. BH profile, stepped BH and district focal points) and specific site constraints (e.g. NBA, site configurations and terraced podium).*

2.3 Land Status

2.3.1 The Application Sites are situated on Government land, apart from Site F1 (Fanling Sheung Shui Town Lot ("**FSSTL**") No. 307 and adjoining Government Land) and Site F4 (FSSTL No. 297). Sites F1 and F4 are subject of accepted land exchange applications.

2.4 Accessibility

2.4.1 The Application Sites in both FLN NDA and KTN NDA will be supported by public transport such as bus, minibus and taxi. Cycle paths are also planned in both NDAs. PTIs are planned within (i.e. Sites F1 and K10) or near the Application Sites to serve future residents of the Area. The planned Kwu Tung MTR Station will also serve the Application Sites in KTN NDA. The Application Sites will be connected by the planned roads that link to the existing public roads in Fanling and Kwu Tung.

2.5 Non-Statutory Planning Context

Policy Address

2.5.1 The Policy Address is the annual address made by the CE of Hong Kong outlining the policy objectives of the Government for the following year. In the CE's 2022 Policy Address, the Government acknowledged the NM as the new engine for growth and recognised the need to enhance quantity, speed, efficiency and quality to implement the major development projects (***Para. 54 of the CE's 2022 Policy Address*** refers). The Government aimed to complete 40% of the new flats within 10 years of various NDAs, including FLN NDA (***Para. 56 of 2022 Policy Address*** refers).

2.5.2 In the CE's 2024 Policy Address, the Government recapitulated the importance of the NM as the new engine of Hong Kong's economic development with the timely implementation of various economic and housing-related projects (***Para. 138 of 2024 Policy Address*** refers). In the CE's 2025 Policy Address, there is a continued emphasis by the Government on the need to accelerate the development of the NM by removing barriers and uplifting restrictions (***Para. 46 of 2025 Policy Address*** refers). To enhance the efficiency in housing provision, the Government will continue streamline development procedures to lower costs and enhance construction efficiency. One of the enhanced measures is to allow for full GFA exemptions for no more than two (2) storeys of aboveground carpark, while doing away with the requirement of constructing underground carparks (***Para. 217 of 2025 Policy Address*** refers). The measure is anticipated to reduce construction cost (40% cheaper than underground carpark) and time (one year shorter when compared to underground carpark) (***2025 Policy Address Initiatives*** refer).

2.5.3 Aside from emphasising on quantity via optimisation of land, the Government has been encouraging a wider adoption of MiC method and other innovative construction approaches in both public and private projects to shorten construction time, expedite the overall housing supply and reduce manpower in construction industry. In the 2022 Policy Address, the Government recognised the need for wider adoption of MiC approach to enhance speed (***Para. 64 (iii) of 2022 Policy Address*** and ***Para. 57 of 2022 Policy Measures*** refer). Identification for more suitable projects for adoption of the MiC approach to speed up construction remains as specified tasks under the 2023 and 2024 Policy Addresses.

*Updated Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers ("**PNAP APP-2**") - Calculation of Gross Floor Area and Non-accountable Gross Floor Area Building (Planning) Regulation 23(3)(a) and (b)*

2.5.4 According to the updated PNAP APP-2 issued in November 2025, not more than two (2) floors of aboveground carparks could be disregarded from GFA calculation, provided that the car parking spaces are EV charging-enabling, except those installed with automated parking system. Appendix C of PNAP APP-2 also stated that if the BH of a building exceeds the BH restriction stipulated on the statutory plans, a S16 Planning Application to the TPB will be required for minor relaxation of the BH restriction. If the application for minor relaxation of BH restriction is solely for accommodating two (2) storeys of aboveground car parks, the application would normally only require a visual appraisal ("**VA**"), and if the Application Site is situated on major breezeways, a simple review of the air ventilation impacts would be required.

Joint Practice Note No. 8 – Incentive to Promote Green and Innovative Buildings "Enhanced Facilitation Measures for Buildings Adopting Modular Integrated Construction"

2.5.5 In July 2022, the Planning Department ("**PlanD**") and Lands Department ("**LandsD**") issued the joint practice note for the Enhanced Facilitation for Buildings Adopting Modular Integrated Construction with a view to enhance facilitation measures for promoting wider adoption of MiC in new buildings by (a) granting of Gross GFA and Site Coverage concessions and (b) supporting applications for minor relaxation of BH restriction.

2.5.6 Under current technology, the adoption of MiC normally involves thickened/ double slabs between MiC modules, resulting in an increase in storey height of MiC floor and hence in the overall BH of the building. To facilitate the adoption of MiC, favourable consideration may be given to an increase of BH up to 4% of the total storey height of MiC floors. Support to such minor relaxation of BH restriction would be up to 4% of the total storey height of MiC floors, irrespective of the actual additional vertical space taken up arising from the adoption of MiC. If the BH of the development exceeds the BH restriction as a result of the adoption of MiC, a S16 Planning Application will be required for minor relaxation of the BH restriction. Provided that the site is already zoned for development and the minor relaxation of BH restriction is solely for the adoption of MiC, only a simple VA and a simple review of the air ventilation impact would be required if the site is on major breezeways would be required to support the S16 Planning Application.

3 THE INTENSIFICATION PROPOSAL

3.1 The Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions and Proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' Uses

3.1.1 The S16 Planning Application adopts the development intensity according to the intensification proposal approved in 2022 by the TPB (Application Nos. A/FLN/30 and A/KTN/93), while further reviewing the required BHs to accommodate two (2) storeys aboveground carparks and adoption of MiC, against the approved BHs. The approved 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' uses at Site K10 to meet the demand of public transport and better serve the daily needs of the residents in the eastern part of the KTN NDA are also incorporated. There is no change to the assumption for average unit size or person per flat. There is also no increase in number of units and population for the Application Sites when compared to Approved Applications (i.e. Application Nos. A/FLN/30 and A/KTN/93).

3.1.2 At this planning stage, the Review has adopted the indicative layouts under Applications Nos. A/FLN/30 and A/KTN/93 as shown in ***Figures 3.1 to 3.4***. As some of the Application Sites are not planned with non-domestic uses located at podium, a podium has been introduced so as to accommodate the aboveground carpark. Podium gardens are also proposed on top of the aboveground carpark. For the Application Sites that have already assumed the inclusion of a non-domestic podium, two (2) additional storeys are proposed within the podium to accommodate the aboveground carpark. In tandem, consideration of additional floor-to-floor height (domestic storeys) arising from the adoption of MiC have also been included. It was revealed in the Review that the approved BHs under the Approved s.16s were not sufficient to accommodate the additional height arising from the two (2) additional storeys of aboveground carpark and the additional floor-to-floor height arising from the adoption of MiC as both considerations were not taken into account at the times of previous reviews. As a result, further minor relaxation of BH restrictions is required to accommodate the exceedance of about 5% to 19% from the approved BHs. However, in consultation with AFCD, it is noted that further increase in BH for Site K12 may result in potential ecological impact and disturbance to the LVNP arising from lighting. In this connection, the BH restriction of Site K12 will not be further relaxed and the development proposal will be consistent with the approval under Application No. A/KTN/93 (i.e. aboveground carpark or MiC Method is not adopted).

3.1.3 While the ultimate minor relaxation of BH restrictions being sought for are ranged from about 6% to 37.5% from the BH restrictions on the prevailing OZPs, they have included the original BH implications arising from the increase in development intensity and the proposed uses being sought under the Approved s.16s. The additional increase from the approved BHs of about 4% to 18.75% is considered minor in nature. Other than the BH required to accommodate the two storeys of above carpark and the adoption of MiC, no further BH increases are involved.

3.1.4 ***Table 3.1.1*** below and ***Figures 3.5*** and ***3.6*** summarise the major development parameters of the Application Sites based on the preliminary assessment of BHs.

3.1.5 In the event that the future developers of the Application Sites elect to pursue either the incorporation of aboveground carpark or adoption of MiC method only, reduction in corresponding BH may be required to the Proposed BH as indicated under ***Table 3.1.1***. For avoidance of doubt, ***Table 3.1.2*** furnishes the Proposed BH under the scenario where only MiC method is adopted and where only aboveground carpark is adopted.

Table 3.1.1 Development Parameters of the Application Sites

Site	Planning Area	Zoning	Site Area	Permissible PR* (Approved PR)	Proposed PR^	% Increase from Permissible PR	% Increase from Approved PR	Permissible BH (Approved BH)	Proposed BH#	% Increase from Permissible BH*	% Increase from Approved BH^	Application Item(s)
FLN NDA												
F1	10NW	"OU(CRDPTI (2))"	0.99 ha	TPR: 3.05 (3.66) DPR: 2.18 (2.62) NDPR: 0.87 (1.04)	TPR: 3.66 DPR: 2.62 NDPR: 1.04	20.00%	No changes	80mPD (80mPD)	85mPD	6.25%	6.25%	Proposed Minor Relaxation of BH and PR Restrictions
F2	13E	"R(B)"	2.22 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (80mPD)	95mPD	26.67%	18.75%	
F3	14W	"R(A)3"	1.05 ha	DPR: 5.00 (6.00)	DPR: 6.00	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%	
F4	14S	"R(A)1"	1.44 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		115mPD (144.14mPD)	155mPD	34.78%	7.53%	
F5	16NW	"R(A)1"	0.93 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%	
F6	16NE	"R(A)1"	1.25 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%	
F7	16SW	"R(A)1"	1.24 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%	
F8	16SE	"R(A)1"	1.16 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%	
KTN NDA												
K1	20E	"R(A)1"	1.13 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%	No changes	115mPD (130mPD)	130mPD	13.04%	0.00%	Proposed Minor Relaxation of BH and PR Restrictions
K2	25E	"R(A)1"	2.34 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		115mPD (130mPD)	130mPD	13.04%	0.00%	
K3	14	"R(B)" and area shown as "Road"	2.83 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		80mPD (95mPD)	110mPD	37.50%	15.79%	
K4a	22W	"R(B)"	1.27 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (85mPD)	95mPD	26.67%	11.76%	
K4b	22E	"R(B)"	2.54 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (85mPD)	95mPD	26.67%	11.76%	
K5	26W	"R(B)"	1.79 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (80mPD)	85mPD	13.33%	6.25%	
K6	26E	"R(B)" and area shown as "Road"	2.35 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (80mPD)	85mPD	13.33%	6.25%	
K7	15N	"R(B)"	1.25 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		85/95mPD (100mPD)	115mPD	Up to 35.29%	15.00%	

Site	Planning Area	Zoning	Site Area	Permissible PR* (Approved PR)	Proposed PR^	% Increase from Permissible PR	% Increase from Approved PR	Permissible BH (Approved BH)	Proposed BH#	% Increase from Permissible BH*	% Increase from Approved BH^	Application Item(s)
K8	15C	"R(B)", "GB" and area shown as "Road"	1.30 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%	No changes	85mPD (90mPD)	105mPD	23.53%	16.67%	Proposed Minor Relaxation of BH and PR Restrictions
K9	15S	"R(B)"	1.17 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		80mPD (85mPD)	95mPD	18.75%	11.76%	
K10	23N	"R(B)" and area shown as "Road"	2.87 ha	TPR: 3.50 (4.43) DPR: 3.50 (4.20) NDPR: - (0.23)	TPR: 4.43 DPR: 4.20 NDPR: 0.23	26.57%		95mPD (110mPD)	115mPD	21.05%	4.55%	Proposed Minor Relaxation of BH and PR Restrictions; and Proposed 'Public Transport Terminus', 'Shop and Services' and 'Eating Place' Uses on the Lowest Two Floors Above Ground
K11	23C	"R(B)"	1.28 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		90mPD (90mPD)	95mPD	5.56%	5.56%	Proposed Minor Relaxation of BH and PR Restrictions
K12+	23S	"R(B)"	0.78 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		90mPD (90mPD)	90mPD	0.00%	0.00%	Proposed Minor Relaxation of PR Restriction

Remarks:

* *As stipulated on the Draft FLN OZP and Approved KTN OZP*

^ *According to Application Nos. A/FLN/30, A/FLN/32 and A/KTN/93, whichever is greater.*

\# *The assumed floor-to-floor heights of the Development Proposal are as follows:*

- *Domestic storey – 3.3m*
- *Non-domestic storey – 5m*
- *Ground Floor – 6m*
- *Ground Floor (Public Transport Interchange) – 10m*
- *Podium Garden – 5m*
- *Transfer Structure – 2.5m*
- *Car Park – 4m*
- *Car Park with L/UL – 6m*
- *Refuge Floor – 3.2m*

\+ *Further increase in BH for Site K12 is not proposed (**Para. 3.1.2**.refers).*

Table 3.1.2 Proposed BH under Scenarios of Adopting MiC Method Only or Adopting Aboveground Carpark Only

Site	Planning Area	Permissible BH*	Proposed BH	Proposed BH under Scenario of Adopting MiC Method Only+	Proposed BH under Scenario of Adopting Aboveground Carpark Only#
F1	10NW	80mPD	85mPD	75mPD	83mPD
F2	13E	75mPD	95mPD	83mPD	91mPD
F3	14W	110mPD	135mPD	120mPD	126mPD
F4	14S	115mPD	155mPD	144.14mPD@	147mPD
F5	16NW	110mPD	135mPD	122mPD	127mPD
F6	16NE	110mPD	135mPD	122mPD	127mPD
F7	16SW	110mPD	135mPD	122mPD	127mPD
F8	16SE	110mPD	135mPD	122mPD	127mPD
K1	20E	115mPD	130mPD	119mPD	125mPD
K2	25E	115mPD	130mPD	120mPD	126mPD
K3	14	80mPD	110mPD	95mPD	103mPD
K4a	22W	75mPD	95mPD	83mPD	92mPD
K4b	22E	75mPD	95mPD	83mPD	92mPD
K5	26W	75mPD	85mPD	73mPD	82mPD
K6	26E	75mPD	85mPD	73mPD	82mPD
K7	15N	85/95mPD	115mPD	101mPD	110mPD
K8	15C	85mPD	105mPD	90mPD	99mPD
K9	15S	80mPD	95mPD	82mPD	91mPD
K10	23N	95mPD	115mPD	112mPD	108mPD
K11	23C	90mPD	95mPD	83mPD	92mPD
K12	23S	90mPD	90mPD$	N/A	N/A

Remarks:

* *As stipulated on the Draft FLN OZP and Approved KTN OZP*

\+ *BH calculations omitted the floor-to-floor height for aboveground carpark and floor-to-floor heights assumptions for other components in **Table 3.1.1** remain applicable.*

\# *The floor-to-floor height for domestic storey without MiC Method is assumed as 3.15m, which is in line with the assumption made in Application Nos. A/KTN/93 and A/FLN/30. Floor-to-floor heights assumptions for other components in **Table 3.1.1** remain applicable.*

@ *The Approved BH under the Application No. A/FLN/32 reflected the implication of adopting MiC method and was demonstrated feasible.*

$ *Due to AFCD's concern on ecological aspect, relaxation of BH restriction of this Site is not recommended.*

3.2 Design Merits

3.2.1 The Indicative Layouts present various design features to mitigate the impact arising from the increase in BHs. For instance, sufficient building separations will be maintained to enhance airflow, improve street-level environmental quality, and mitigate urban heat island effect. The building separations would also enhance visual permeability and reduce the perceivable building bulk, preserving a more open and visually porous urban environment. The NBAs stipulated at the Application Sites are respected to retain their strategic functions in facilitating prevailing winds penetrating through the Application Sites and reaching the downstream areas. Furthermore, for Application Sites that were assumed with podium-free development, the proposed podium carparks are also broken down with adequate building separation as far as practicable to minimise the impact on air ventilation performance at the pedestrian level.

3.2.2 While the Development Proposal would increase the number of Podium storeys at the Application Sites designated with 'Terraced Podium' requirement, this design intention would not be compromised with the aboveground carpark situated above the non-domestic uses at the lowest levels of the podium (***Figure 3.2*** refers). The intention to enhance vibrancy at street level as well as to direct downward airflow to the pedestrian level will be maintained.

3.2.3 The Indicative Layouts also incorporate podium gardens to enhance the street-level environment through improved visual quality, permeability, and natural ventilation. Along with landscaping, podium gardens can serve as elevated open spaces that enhance well-being and public health, thus improving the quality of life of the residents. The use of permeable design for the podium carparks is encouraged at the detailed design stage to optimise airflow through the site, minimise the use of mechanical ventilation installations, and contribute to overall energy efficiency.

3.2.4 The Indicative Layouts will also provide not less than 20% (site area <20,000m^2) or 30% (site area ≥20,000m^2) of site coverage of greenery per PNAP APP-152. Greenery at the podium level is encouraged to provide visual screening to the podium structure, as well as enable a more visually and climatically pleasant streetscape and pedestrian environment.

3.3 Development Programme

3.3.1 The commencement and targeted completion years for the site formation and infrastructural works for First Phase of KTN and FLN NDAs are 2019 and 2026 (tentative) respectively. Site formation and infrastructural works for the Remaining Phase for KTN and FLN NDAs has commenced in 2024 and are expected to be completed in 2030 and 2031 respectively. The anticipated first population in-take year for the Remaining Phase KTN and FLN NDAs are 2031 and 2029 respectively.

4 PLANNING JUSTIFICATIONS

4.1 In Line with Government Policy

4.1.1 The Government has been actively promoting the use of MiC method in construction projects to improve the industry's productivity and cost effectiveness. The CE's Policy Addresses in recent years have reiterated the Government's commitment to encouraging the adoption of green, sustainable, and innovative technologies throughout the development process. The Government has also reinforced this initiative through the wider adoption of MiC methods across multiple sectors, including the establishment of an inter-departmental steering committee to coordinate MiC-related development and streamline the associated approval procedures.

4.1.2 To enhance construction efficiency and expedite the delivery of housing developments, the Government has also relaxed the GFA exemption arrangement for carparks in private developments to allow for the construction of aboveground carpark with not more than two (2) storeys without compromising the development potential.

4.1.3 The Development Proposal is formulated with consideration of the adoption of MiC method, which would require a higher floor-to-floor height due to thicker slabs between modules, and the application of relevant technical circulars permitting the exemption of up to two (2) storeys of aboveground carpark, fully in line with the abovementioned initiatives or measures. The Review has identified the technical needs for the additional BHs above the permissible and approved BHs and the approval of this S16 Planning Application would reduce the need for further planning applications relaxation of BH restrictions by future proponents and support timely production of housing units.

4.2 In line with Statutory Planning Intention

4.2.1 The Development Proposal is in line with Statutory Planning Intention in respect of the "R(A)", "R(B)" and "OU(CRDPTI)" zones. The Development Proposal mainly seeks for further relaxation of the Approved BHs and there is no change to the land uses and the intended development intensity as approved under Application Nos. A/FLN/30 and A/KTN/93. The Development Proposal is fully compatible with the characters of 'District Centre' and 'Residential Area South of the River' proposed under the Urban Design and Landscape Framework of FLN NDA and 'Town Centre, 'North Residential Area' and 'Residential Area by the River' proposed under the Urban Design and Landscape Framework of KTN NDA. The design intention for 'Terraced Podium' where stipulated will also be preserved to promote street-level vibrancy and facilitate air ventilation.

4.3 Stepped Building Height Profile is Preserved

4.3.1 The Proposed BHs of Application Sites are not incompatible with the surrounding development context. According to the Explanatory Statement of the Draft FLN OZP, a stepped BH concept is adopted where the BH profile steps down from district nodes towards the periphery and to Ng Tung River to allow for better integration with the adjacent rural setting. Similarly, according to the Explanatory Statement of the Approved KTN OZP, a stepped BH concept is adopted where the BH profile steps down from the Town Centre towards the periphery and to Sheung Yue River, and respecting the topography and site constraints in individual sites (e.g. NBAs and railway protection area etc). As illustrated in ***Figures 4.1 and 4.2***, the Proposed BHs for the Application Sites generally retains the development at the southern side of FLN NDA and centre of KTN NDA a high height band, where the developments along the southern banks of Ng Tung River or periphery of KTN NDA adopt a lower height so as to not jeopardise the urban design concept. Notwithstanding, Site F1 is located to the immediate west of two (2) private housing sites that fall into the pilot area of Large-Scale Land Disposal which are proposed for higher development intensity and higher BH up to 110mPD (***RNTPC Paper No. 5/26*** refers). While the proposed BH of 85mPD at Site F1 is slightly lower than the adjacent sites, the overall stepped BH profile of FLN NDA is still broadly maintained.

4.4 No Adverse Visual Impact

4.4.1 Two (2) Visual Appraisals ("**VAs**") have been conducted for the Development Proposal at FLN NDA and KTN NDA respectively (***Appendix 1*** refers). A total of five (5) Viewpoints ("**VPs**") in FLN NDA and nine (9) VPs in KTN NDA which best represent the key visual receivers looking towards the Development Proposal were identified and selected for assessment of the Development Proposal against the Approved Scheme and OZP Compliant Scheme. The VA for FLN NDA concludes that the Proposal in FLN NDA will incur slight to moderate impacts on the identified VPs against the Approved Scheme and OZP Compliant Scheme whereas the VA for KTN NDA concludes that the Proposal in KTN NDA will incur negligible to moderate impacts on the identified VPs against the Approved OZP and OZP Compliant Scheme. Upon implementation of mitigation measures (e.g. soft landscaping including screen planting, green roof, vertical greening or compensatory planting, etc) at detailed design stage to provide visual relief, the resultant visual impact are reduced to slight in FLN NDA and to negligible to moderate in KTN NDA. Overall, the Development Proposal is considered not incompatible with the surrounding context of FLN NDA and KTN NDA in terms of massing, scale and height.

4.5 No Adverse Air Ventilation Impact

4.5.1 Two (2) Air Ventilation Assessment – Expert Evaluation ("**AVA-EE**") were conducted (***Appendix 2*** refers) to identify the characteristics of the site wind availability data and qualitatively assess the ventilation performance of the Development Proposal against the Approved Scheme. A supplementary review against the OZP Compliant Scheme was also undertaken.

FLN NDA

4.5.2 According to the experimental site wind availability data, annual prevailing wind of the FLN NDA are coming from E, ENE and N directions, whilst summer prevailing winds are coming from SW, E, S and WSW directions. A total of 6 wind directions (E, ENE, N, S, SW and WSW) is considered in the qualitative analysis for the Development Proposal.

4.5.3 While the Development Proposal may slightly increase the blockage effect and certain localized air ventilation impact are expected, the Development Proposal has incorporated effective good design features such as maintaining NBAs in Sites F2 and F4, and terraced podiums in Sites F1, F5, F6, F7 and F8.

4.5.4 Under annual easterly wind condition, the Development Proposal could be benefit from the openness at its eastern frontage where prevailing wind can freely enter towards the sites. Since the 10m setback on the first floor of the terraced podium will be retained, the permeability of the pedestrian level is expected to remain effective. The ventilation impact due to the Development Proposal within FLN NDA and existing surrounding development in F/SS New Town area is insignificant.

4.5.5 For northerly annual prevailing wind, the proposed changes would not impose significant impact at the western part of FLN NDA. At the eastern part of FLN NDA, the terraced podium footprint and the 10m setback on the first floor of the podium at Sites F5, F6, F7 and F8 would be maintained to increase the permeability at pedestrian level to channel incoming prevailing wind and mitigate ventilation impact to downstream existing F/SS New Town area.

4.5.6 For south-westerly prevailing wind under summer period, FLN NDA is situated at downwind areas that existing high-rise developments within F/SS New Town area would block and reduce the incoming wind. The terraced podium at Site F1 would maintain the same 10m setback on the first floor which is not expected to affect the overall ventilation. In addition, major wind corridors and local wind paths are retained in the Development Proposal to facilitate wind penetration across FLN NDA.

4.5.7 In light of the above, no significant impact or alteration in the ventilation environment would arise under the Development Proposal in FLN NDA.

KTN NDA

4.5.8 Wind data from the Planning Department's Regional Atmospheric Modelling System ("**PlanD RAMS**"), wind tunnel experiments, and Hong Kong Observatory stations were reviewed. Wind tunnel data is considered relatively appropriate for the KTN NDA which indicated the annual prevailing winds are N, ENE, and E while summer prevailing winds are E, S, and SW.

4.5.9 The Application Sites in KTN NDA lie in the central to south-western sector of the KTN NDA, a predominantly rural area. Surrounding land uses mainly comprise "GB", "Agriculture" ("**AGR**"), "Government, Institution or Community" ("**G/IC**"), and low-density residential zones. The sites currently consist of brownfield areas, temporary structures, and low-rise village houses.

4.5.10 The Application Sites occupy a sizable flatland encircled by hilly terrain: Fung Kong Shan/Crest Hill and Sandy Ridge to the north/north-east, Lok Ma Chau hills (~100 mPD) to the west, and Hadden Hill (~200 mPD) to the south/south-west. Extensive planned and committed developments surround the sites, including residential towers, schools, Government, Institution and Community ("**GIC**") facilities, hospitals, and commercial/R&D buildings. These are assumed unchanged under the Baseline Scenario and Proposed Scenario.

4.5.11 The Proposed Scenario differs mainly from the Baseline Scenario in terms of the BH and the addition of two-storey podiums for aboveground car parking in most sites, plus Public Transport Interchanges. Good air ventilation measures from the Baseline Scenario – such as NBAs, ground-level setbacks, and terraced podiums – are retained. Additional podiums are minimized in bulk, with separations and podium gardens are incorporated to promote permeability.

4.5.12 No major changes in wind flow patterns are expected between both scenarios. Key wind breezeways remain unobstructed under both annual and summer prevailing winds. Although taller buildings and additional podiums in the Proposed Scenario may generate larger wind wakes downwind, these effects are partly offset by stronger downwash from height variations and enhanced local channelling. Overall, air ventilation impacts are anticipated to be minimal, with no significant district-wide deterioration in the wind environment in KTN NDA. The relaxed BHs also offer greater flexibility for refined air ventilation designs at later stages.

4.6 No Adverse Infrastructural Impacts

4.6.1 As the land uses and Proposed PRs conform with the Approved s.16s, there are no changes to development parameters, including GFA, population or parking provision and hence there is no increase in development intensity. Therefore, the Development Proposal with increased BH is not anticipated to induce any additional infrastructural impact (e.g. traffic, sewerage or water supply).

4.7 An Exemplar for MiC Adoption

4.7.1 Given the current Government policy initiatives in expediting housing supply through the wider adoption of MiC method, the relaxation of BH to enable the application MiC technology is considered to be appropriate and beneficial to the overall Proposal, construction industry and environment. The approval of this Application removes the need for future developer of the Application Sites to submit planning application(s) and is favourable to accelerate construction speed to ensure timely delivery of housing units. It will bring a significant positive impact to the housing sector as well as public benefits.

5 CONCLUSION

5.1 This S16 Planning Application seeks planning permission from the BOARD for the Development Proposal to facilitate the construction of two (2) storeys aboveground carpark and the adoption of MiC method at the Application Sites. It has been demonstrated in this SPS that the Development Proposal is justified on the following grounds:

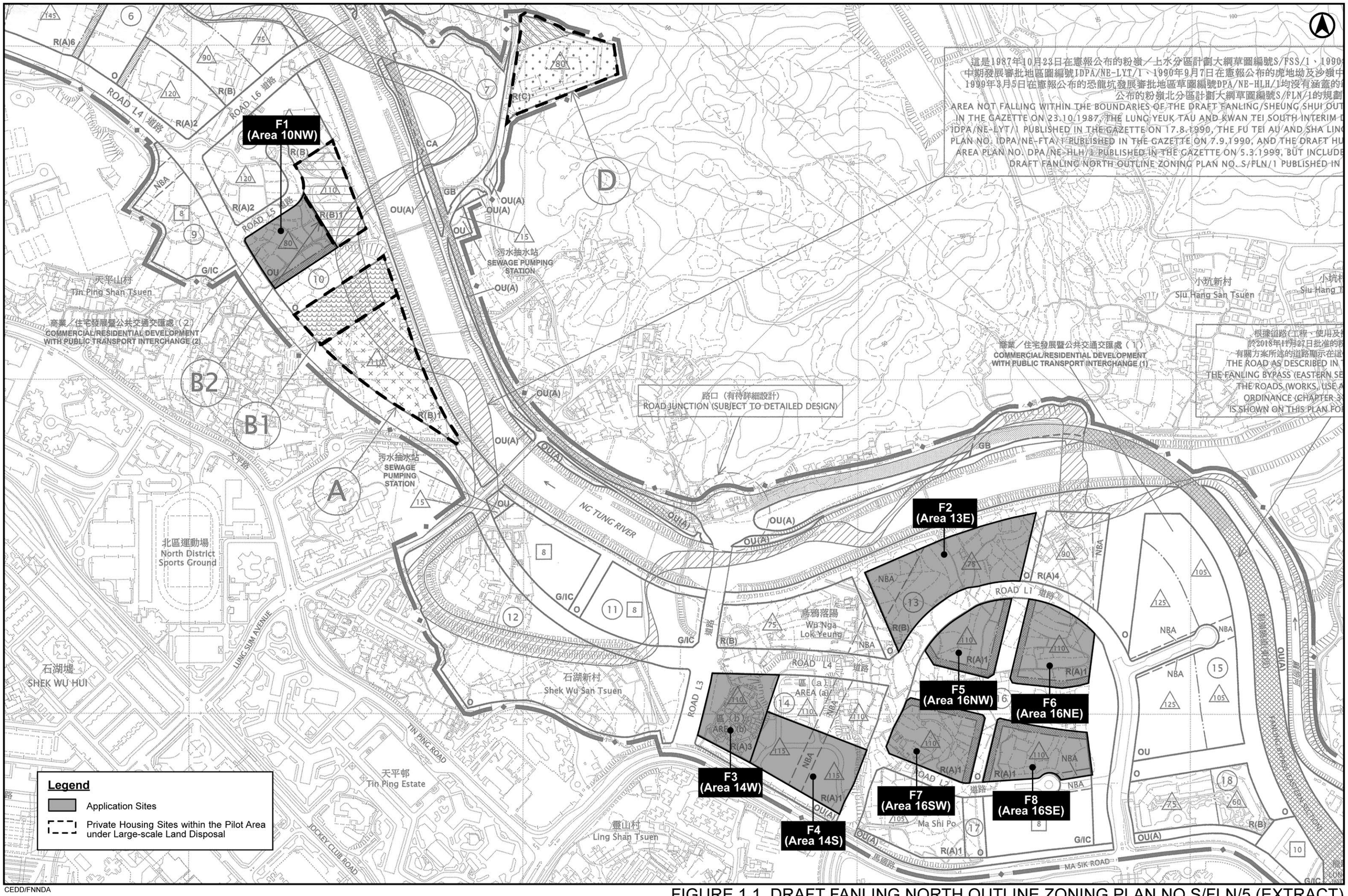
- The Development Proposal is in line with Government's Policy initiatives in actively promoting the adoption of MiC in the construction industry;
- The Development Proposal also facilitates the construction of aboveground carpark with consideration of the latest GFA exemption arrangements to shorten the construction time and expedite the delivery of housing units;
- The Proposed BH for the Application Sites are not incompatible with the surrounding development context and will not jeopardise the stepped building height profile in the FLN NDA and KTN NDA;
- There is no change to the development intensity and the Development Proposal will not lead to any infrastructural impact; and
- No adverse visual and air ventilation impacts are anticipated.

5.2 In light of the justifications and planning merits put forth in this SPS, we sincerely request the BOARD to give favourable consideration to this Application.

Approved by: Vincent Lau
Prepared by: Eric Chan
Kevin Fok

Date: 8 June 2026
File Ref: CEDD/FNNDA

FIGURES



CEDD/FNNDA

FIGURE 1.1 DRAFT FANLING NORTH OUTLINE ZONING PLAN NO.S/FLN/5 (EXTRACT)

SCALE 1 : 5,000

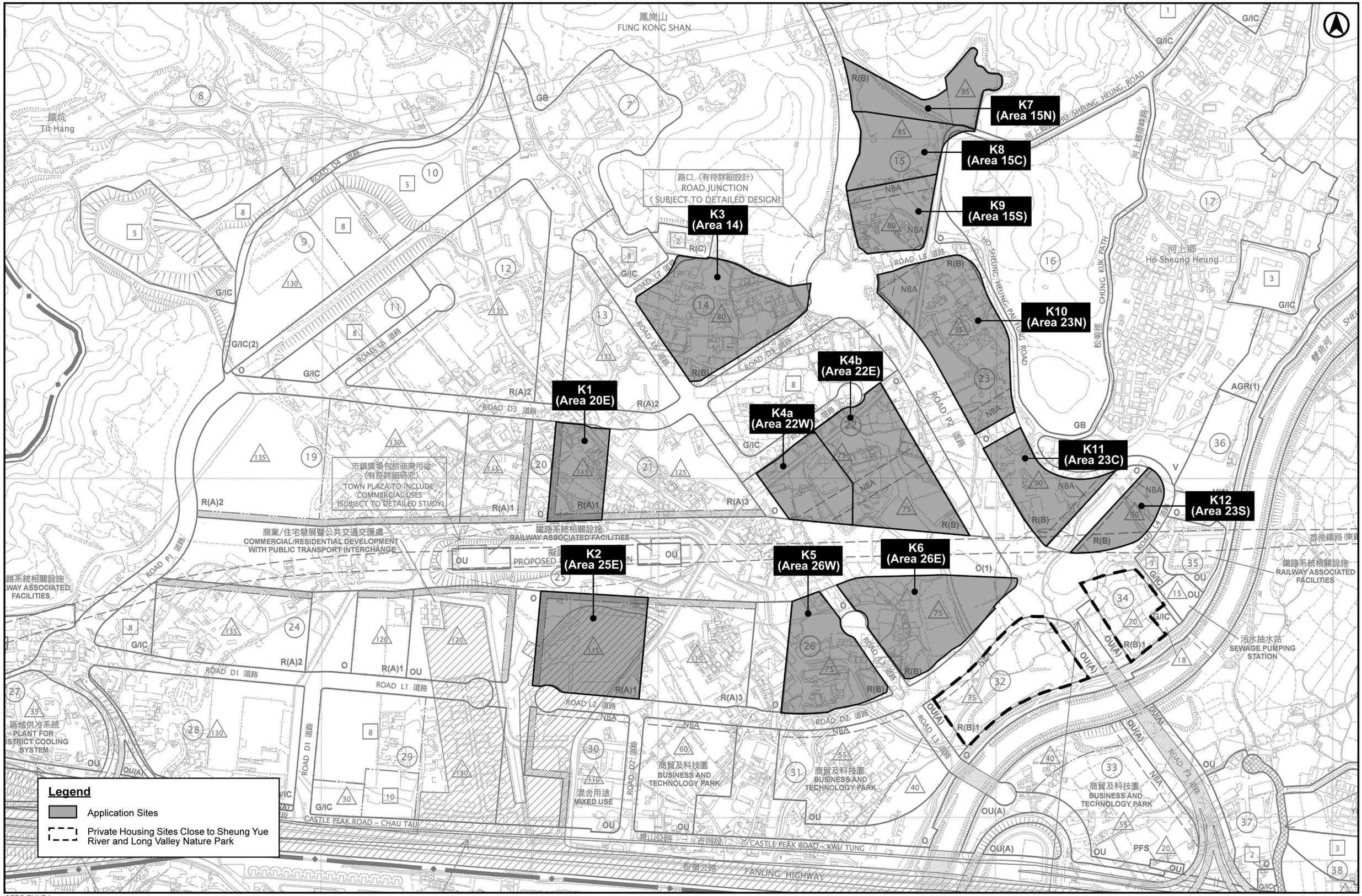


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FIGURE 1.2 APPROVED KWU TUNG NORTH OUTLINE ZONING PLAN NO.S/KTN/4 (EXTRACT)

SCALE 1 : 5,000

RESIDENTIAL (GROUP A)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Flat Government Use (not elsewhere specified) House Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station (excluding open-air terminus or station) Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/ Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Transport Terminus or Station (not elsewhere specified) Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services (not elsewhere specified) Training Centre
In addition, the following uses are always permitted (a) on the lowest two floors of a building excluding basements, or (b) in a free-standing purpose-designed non-domestic building up to five storeys, both excluding floors containing wholly or mainly car parking, loading/unloading bays and/or plant room: Eating Place Educational Institution Institutional Use (not elsewhere specified) Off-course Betting Centre Office Place of Entertainment Private Club Public Convenience Recyclable Collection Centre School Shop and Services Training Centre	

(Please see next page)

CEDD/FNNDA

FIGURE 2.1 STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

RESIDENTIAL (GROUP A) (Cont'd)

Planning Intention

This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a free-standing purpose-designed non-domestic building up to five storeys. For the "Residential (Group A)3" ("R(A)3") and "Residential (Group A)4" ("R(A)4") zone, the planning intention is purely for residential development.

Remarks

(a) On land designated "Residential (Group A)1" ("R(A)1"), no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 6 (of which the domestic plot ratio should not exceed 5), or the plot ratio of the existing building, whichever is the greater.

(b) On land designated "Residential (Group A)2" ("R(A)2"), no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 5 (of which the domestic plot ratio should not exceed 4), or the plot ratio of the existing building, whichever is the greater.

(c) On land designated "R(A)3", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 5, or the plot ratio of the existing building, whichever is the greater.

(d) On land designated "R(A)4", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 4, or the plot ratio of the existing building, whichever is the greater.

(e) On land designated "Residential (Group A)5" ("R(A)5"), no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 4.85, or the plot ratio of the existing building, whichever is the greater.

(f) On land designated "Residential (Group A)6" ("R(A)6"), no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 6.5, or the plot ratio of the existing building, whichever is the greater.

(g) On land designated "R(A)1", "R(A)2", "R(A)3", "R(A)4", "R(A)5" and "R(A)6", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(h) On land designated 'Terraced Podium' in the "R(A)1", "R(A)2" and "R(A)6" zones, the terraced podium is subject to a maximum building height of 5 metres.

(Please see next page)

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FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

RESIDENTIAL (GROUP A) (Cont'd)

Remarks (Cont'd)

(i) In determining the relevant maximum plot ratio for the purposes of paragraphs (a) to (f) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(j) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraphs (a) to (h) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(k) Under exceptional circumstances, for developments and/or redevelopments, minor relaxation of the non-building area restrictions as shown on the Plan may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat Government Use (Police Reporting Centre, Post Office only) House Library Residential Institution School (in free-standing purpose-designed building only) Utility Installation for Private Project	Ambulance Depot Eating Place Educational Institution Government Refuse Collection Point Government Use (not elsewhere specified) Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution School (not elsewhere specified) Shop and Services Social Welfare Facility Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

RESIDENTIAL (GROUP B) (Cont'd)

Remarks

(a) On land designed "Residential (Group B)", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 3.5 and the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(b) On land designated "Residential (Group B)1", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 5 and the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(c) In determining the relevant maximum plot ratio for the purposes of paragraphs (a) and (b) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(d) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraphs (a) and (b) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(e) Under exceptional circumstances, for developments and/or redevelopments, minor relaxation of the non-building area restrictions as shown on the Plan may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

OTHER SPECIFIED USES

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
For "Commercial/Residential Development with Public Transport Interchange" Only	
Ambulance Depot Flat Government Use (not elsewhere specified) Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/ Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services (not elsewhere specified) Training Centre
In addition, the following uses are always permitted (a) on the lowest two floors of a building excluding basements, or (b) in a free-standing purpose-designed non-domestic building up to five storeys, both excluding floors containing wholly or mainly car parking, loading/unloading bays and/or plant room:	
Eating Place Educational Institution Institutional Use (not elsewhere specified) Off-course Betting Centre Office Place of Entertainment Private Club Public Convenience Recyclable Collection Centre School Shop and Services Training Centre	

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FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

OTHER SPECIFIED USES (Cont'd)

For "Commercial/Residential Development with Public Transport Interchange" Only (Cont'd)

Planning Intention

This zone is intended primarily for the provision of commercial and residential uses with public transport interchange. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a free-standing purpose-designed non-domestic building up to five storeys.

Remarks

(a) On land designated "OU(Commercial/Residential Development with Public Transport Interchange (1))", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 5 (of which the domestic plot ratio should not exceed 4.5) and the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(b) On land designated "OU(Commercial/Residential Development with Public Transport Interchange (2))", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 3.05 (of which the domestic plot ratio should not exceed 2.18) and the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the plot ratio and height of the existing building, whichever is the greater.

(c) On land designated 'Terraced Podium' in the "OU(Commercial/Residential Development with Public Transport Interchange (2))" zone, the terraced podium is subject to a maximum building height of 5 metres.

(d) In determining the relevant maximum plot ratio for the purposes of paragraphs (a) and (b) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(e) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraphs (a) to (c) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(f) Under exceptional circumstances, for developments and/or redevelopments, minor relaxation of the non-building area restrictions as shown on the Plan may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(Please see next page)

CEDD/FNNDA

FIGURE 2.1 (CONT'D) STATUTORY NOTES ATTACHED TO THE DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/5 (EXTRACT)

RESIDENTIAL (GROUP A)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Ambulance Depot Flat Government Use (not elsewhere specified) House Library Market Place of Recreation, Sports or Culture Public Clinic Public Transport Terminus or Station (excluding open air terminus or station) Residential Institution School (in free-standing purpose-designed building only) Social Welfare Facility Utility Installation for Private Project	Commercial Bathhouse/ Massage Establishment Eating Place Educational Institution Exhibition or Convention Hall Government Refuse Collection Point Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Office Petrol Filling Station Place of Entertainment Private Club Public Convenience Public Transport Terminus or Station (not elsewhere specified) Public Utility Installation Public Vehicle Park (excluding container vehicle) Religious Institution School (not elsewhere specified) Shop and Services (not elsewhere specified) Training Centre

In addition, the following uses are always permitted (a) on the lowest two floors of a building excluding basements, or (b) in a free-standing purpose-designed non-domestic building up to five storeys :

Eating Place
Educational Institution
Institutional Use (not elsewhere specified)
Off-course Betting Centre
Office
Place of Entertainment
Private Club
Public Convenience
Recyclable Collection Centre
School
Shop and Services
Training Centre

CEDD/FNNDA

FIGURE 2.2 STATUTORY NOTES ATTACHED TO THE APPROVED KWU TUNG NORTH OUTLINE ZONING PLAN NO.S/KTN/4 (EXTRACT)

RESIDENTIAL (GROUP A) (Cont'd)

Planning Intention

This zone is intended primarily for high-density residential developments. Commercial uses are always permitted on the lowest two floors of a building excluding basements, or in a free-standing purpose-designed non-domestic building up to five storeys.

Remarks

(a) On land designated "R(A)1", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 6 (of which the domestic plot ratio should not exceed 5), or the plot ratio of the existing building, whichever is the greater.

(b) On land designated "R(A)2", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 5 (of which the domestic plot ratio should not exceed 4.5), or the plot ratio of the existing building, whichever is the greater.

(c) On land designated "R(A)3", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a total maximum plot ratio of 5 (of which the domestic plot ratio should not exceed 4), or the plot ratio of the existing building, whichever is the greater.

(d) On land designated "R(A)1", "R(A)2" and "R(A)3", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(e) On land designated 'Terraced Podium' in the "R(A)1", "R(A)2" and R(A)3" zones, the terraced podium is subject to a maximum building height of 5m.

(f) In determining the maximum plot ratio for the purposes of paragraphs (a) to (c) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(g) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraphs (a) to (e) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

CEDD/FNNDA FIGURE 2.2 (CONT'D) STATUTORY NOTES ATTACHED TO THE APPROVED KWU TUNG NORTH OUTLINE ZONING PLAN NO.S/KTN/4 (EXTRACT)

RESIDENTIAL (GROUP B)

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat Government Use (Police Reporting Centre, Post Office only) House Library Residential Institution School (in free-standing purpose-designed building only) Utility Installation for Private Project	Ambulance Depot Eating Place Educational Institution Government Refuse Collection Point Government Use (not elsewhere specified) Hospital Hotel Institutional Use (not elsewhere specified) Mass Transit Railway Vent Shaft and/or Other Structure above Ground Level other than Entrances Off-course Betting Centre Office Petrol Filling Station Place of Entertainment Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution Rural Committee/Village Office School (not elsewhere specified) Shop and Services Social Welfare Facility Training Centre

Planning Intention

This zone is intended primarily for medium-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.

(Please see next page)

CEDD/FNNDA FIGURE 2.2 (CONT'D) STATUTORY NOTES ATTACHED TO THE APPROVED KWU TUNG NORTH OUTLINE ZONING PLAN NO.S/KTN/4 (EXTRACT)

RESIDENTIAL (GROUP B) (Cont'd)

Remarks

(a) On land designated "R(B)", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 3.5, or the plot ratio of the existing building, whichever is the greater.

(b) On land designated "R(B)1", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 4.2, or the plot ratio of the existing building, whichever is the greater.

(c) On land designated "R(B)2", the existing Grade 2 historic building, Enchi Lodge (including Main Building and Ancillary Block), shall be preserved. Any demolition of, addition, alteration and/or modification to (except those minor alteration and/or modification works which are ancillary and directly related to the always permitted uses) or redevelopment of the historic building requires permission from the Town Planning Board. No new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 3, or the plot ratio of the existing building, whichever is the greater.

(d) On land designated "R(B)", "R(B)1" and "R(B)2", no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of the maximum building height in terms of metres above Principal Datum as stipulated on the Plan, or the height of the existing building, whichever is the greater.

(e) In determining the maximum plot ratio for the purposes of paragraphs (a), (b) and (c) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.

(f) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio and/or building height restrictions stated in paragraphs (a), (b) (c) and (d) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

(g) Under exceptional circumstances, for developments and/or redevelopments, minor relaxation of the non-building area restrictions as shown on the Plan may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.

CEDD/FNNDA FIGURE 2.2 (CONT'D) STATUTORY NOTES ATTACHED TO THE APPROVED KWU TUNG NORTH OUTLINE ZONING PLAN NO.S/KTN/4 (EXTRACT)

F1 (Area 10NW)
F2 (Area 13E)
F3 (Area 14W)
F4 (Area 14S)
F5 (Area 16NW)
F6 (Area 16NE)
F7 (Area 16SW)
F8 (Area 16SE)

這是1987年10月23日在憲報公布的粉嶺／上水分區計劃大綱草圖編號S/FSS/1、1990
中期發展審批地區圖編號IDPA/NE-LYT/1、1990年9月7日在憲報公布的虎地坳及沙嶺中
1999年3月5日在憲報公布的恐龍坑發展審批地區草圖編號DPA/NE-HLH/1均沒有涵蓋的
公布的粉嶺北分區計劃大綱草圖編號S/FLN/1的規劃
AREA NOT FALLING WITHIN THE BOUNDARIES OF THE DRAFT FANLING/SHEUNG SHUI OUT
IN THE GAZETTE ON 23.10.1987, THE LUNG YEUK TAU AND KWAN TEI SOUTH INTERIM D
IDPA/NE-LYT/1 PUBLISHED IN THE GAZETTE ON 17.8.1990, THE FU TEI AU AND SHA LIN
PLAN NO. IDPA/NE-FTA/1 PUBLISHED IN THE GAZETTE ON 7.9.1990, AND THE DRAFT HU
AREA PLAN NO. DPA/NE-HLH/1 PUBLISHED IN THE GAZETTE ON 5.3.1999, BUT INCLUDE
DRAFT FANLING NORTH OUTLINE ZONING PLAN NO. S/FLN/1 PUBLISHED IN

根據道路(工程、使用及
於2018年11月27日批准的
有關方案所述的道路顯示在這
THE ROAD AS DESCRIBED IN
THE FANLING BYPASS (EASTERN SE
THE ROADS (WORKS, USE A
ORDINANCE (CHAPTER
IS SHOWN ON THIS PLAN FO

Legend

- Application Sites
- Non-building Area
- Residential Tower
- Podium
- Terraced Podium

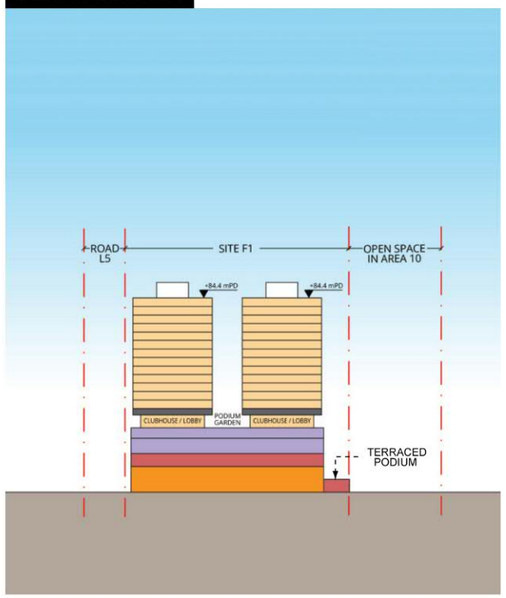
*Drawings and design are indicative only, subject to detailed design by the developers at later stage.

CEDD/FNNDA

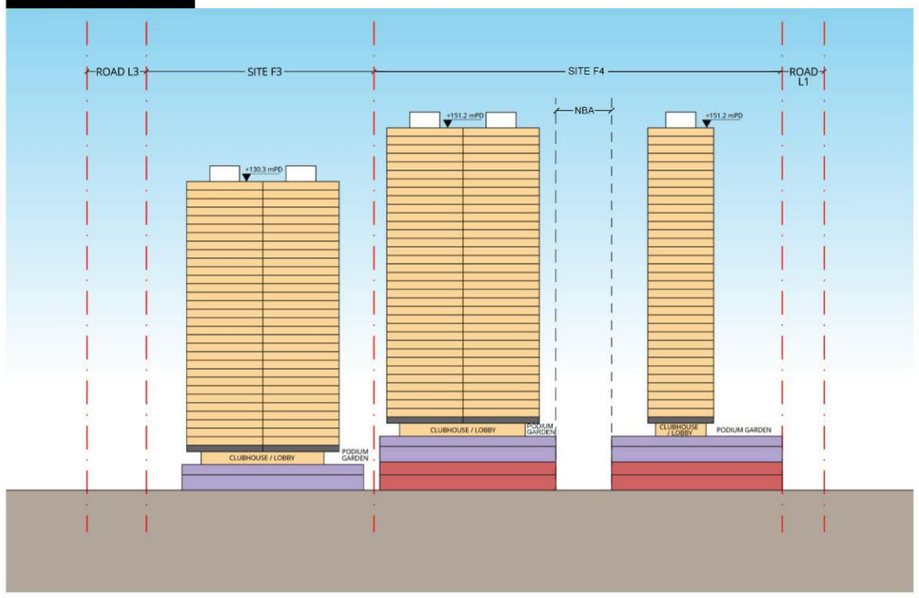
FIGURE 3.1 INDICATIVE LAYOUTS OF APPLICATION SITES IN FLN NDA

SCALE 1 : 5,000

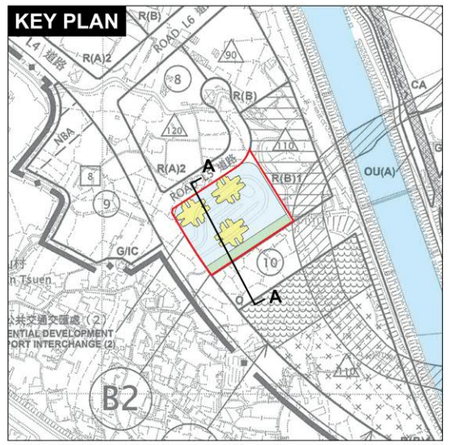
SECTION A-A



SECTION B-B



KEY PLAN



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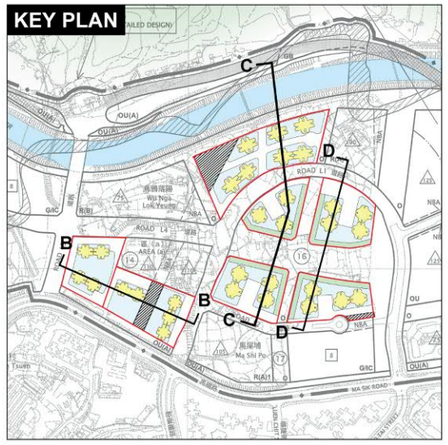

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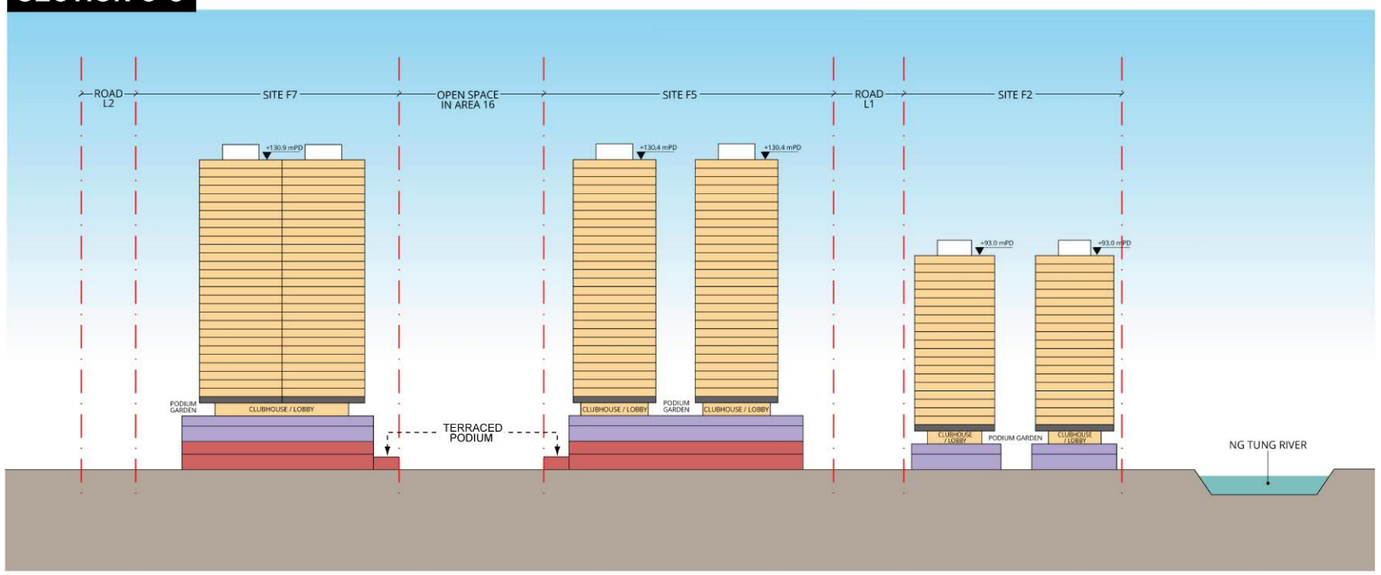

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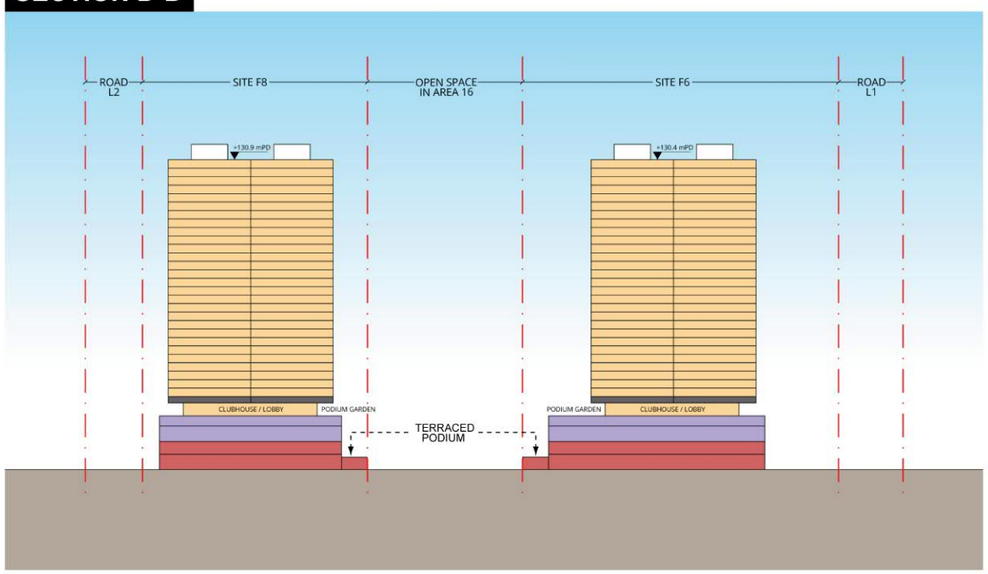
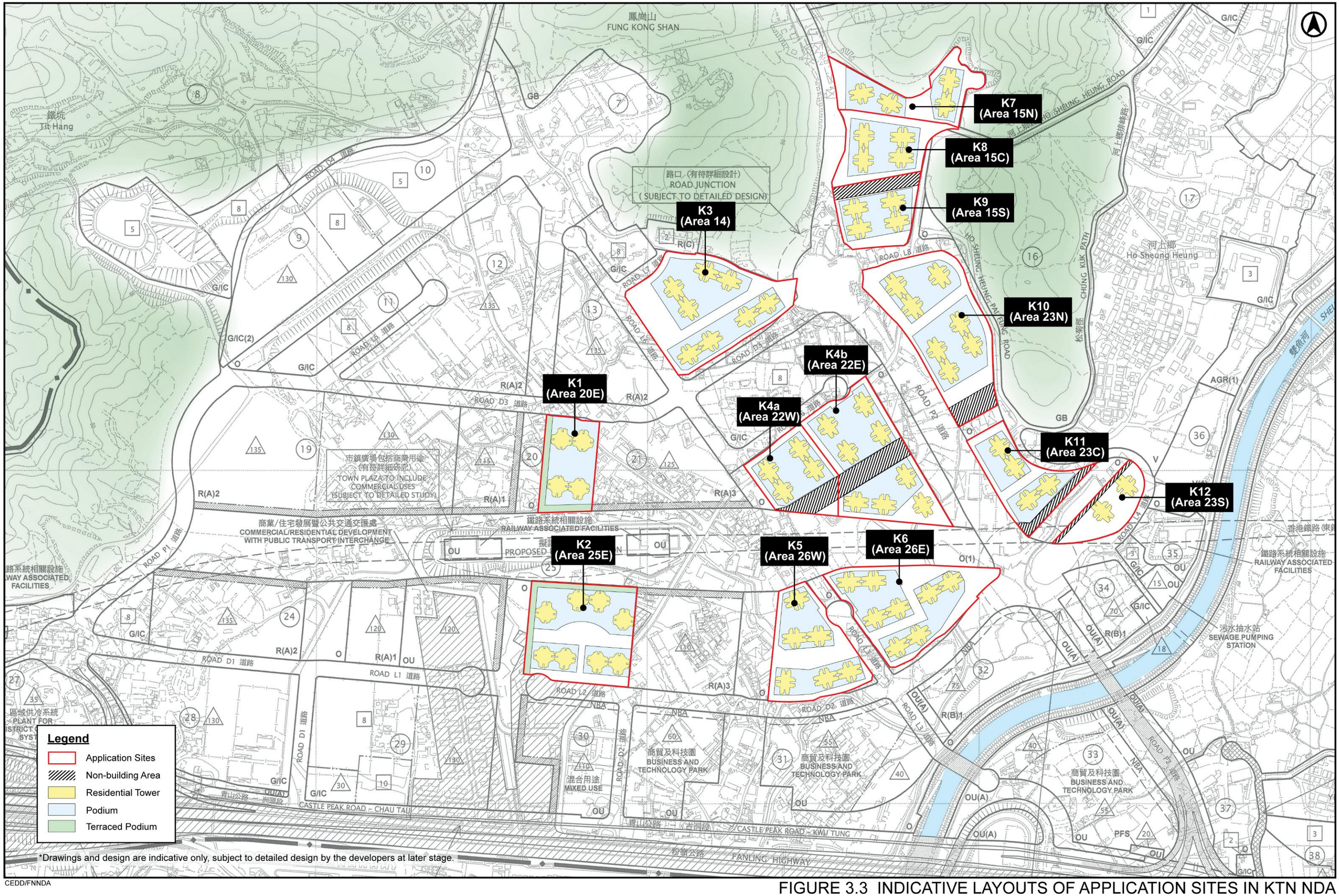


Legend

- Domestic Use
- Transfer Plate
- Retail
- Carpark
- Public Transport Interchange

*Drawings and design are indicative only, subject to detailed design by the developers at later stage.

FIGURE 3.2 INDICATIVE SECTIONS OF APPLICATION SITES IN FLN NDA

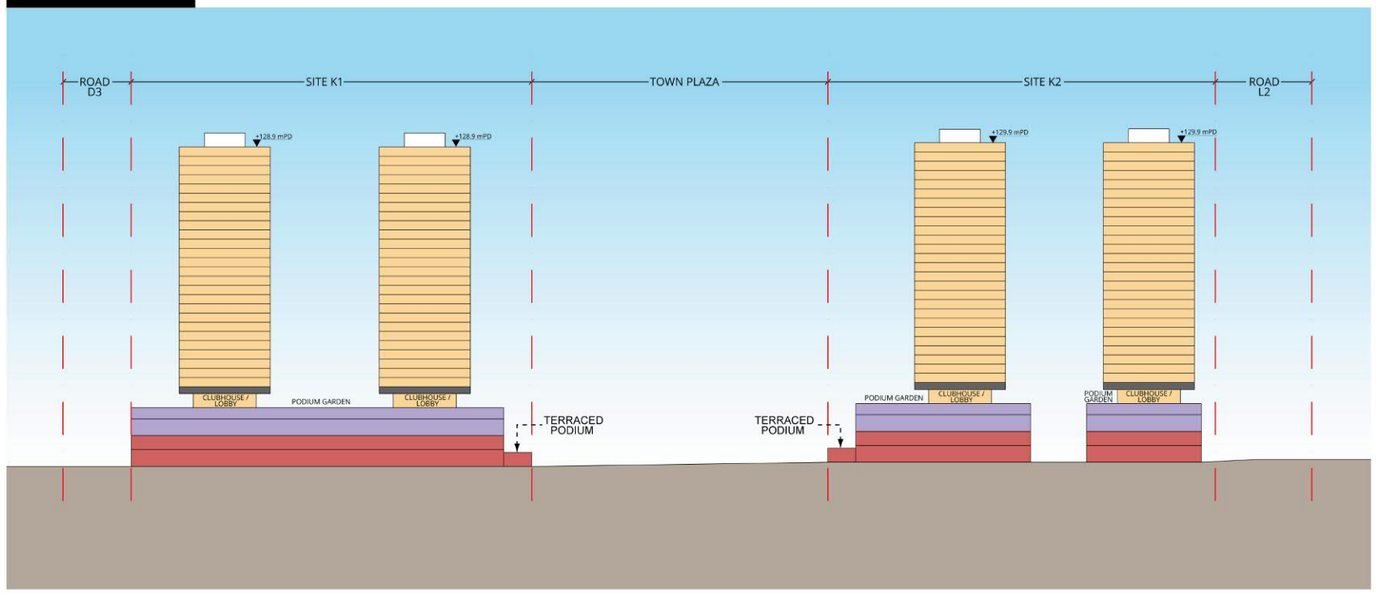


CEDD/FNNDA

FIGURE 3.3 INDICATIVE LAYOUTS OF APPLICATION SITES IN KTN NDA

SCALE 1 : 5,000

SECTION A-A



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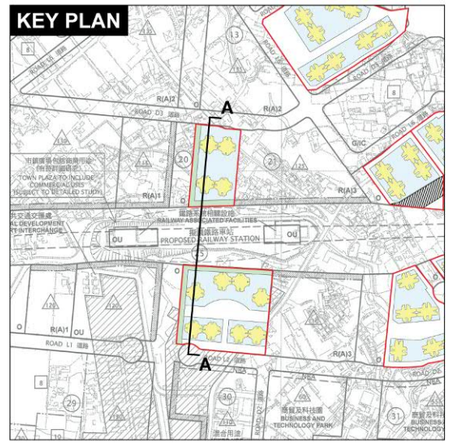

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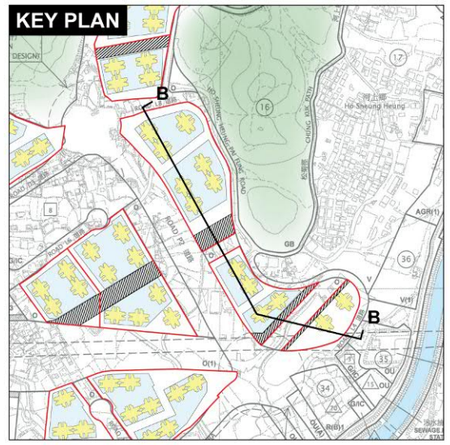
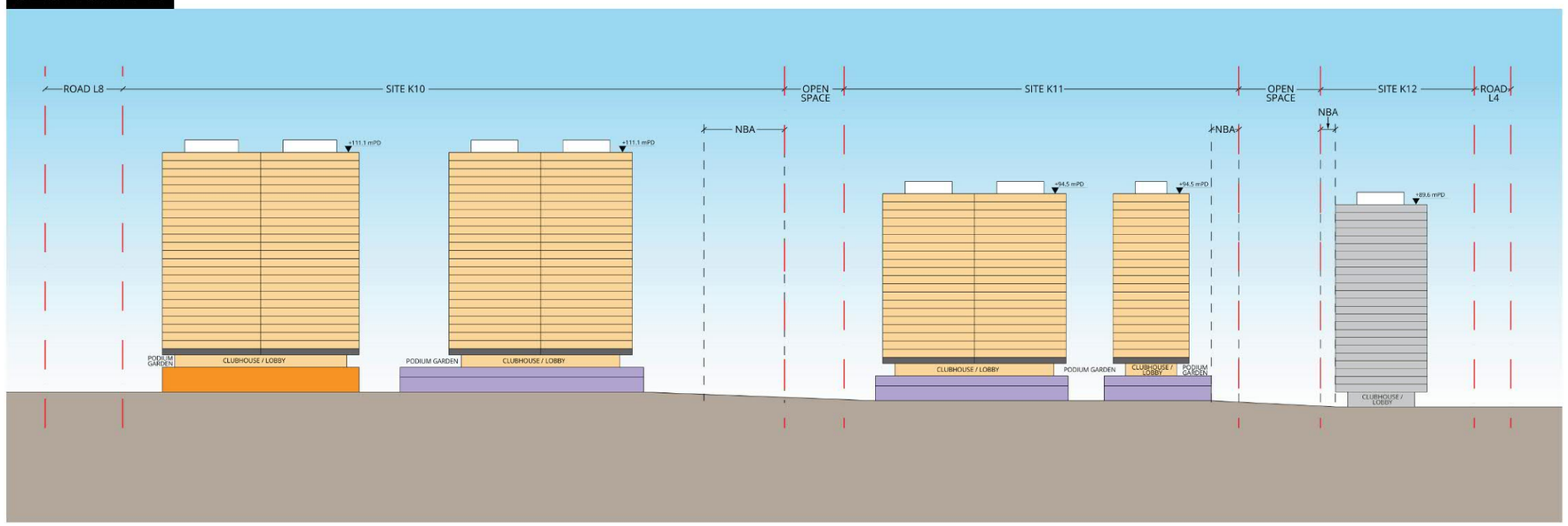


SECTION B-B



Application Sites involve minor relaxation of BH and PR restrictions

Legend

- Domestic Use
- Transfer Plate
- Retail
- Carpark
- Public Transport Interchange

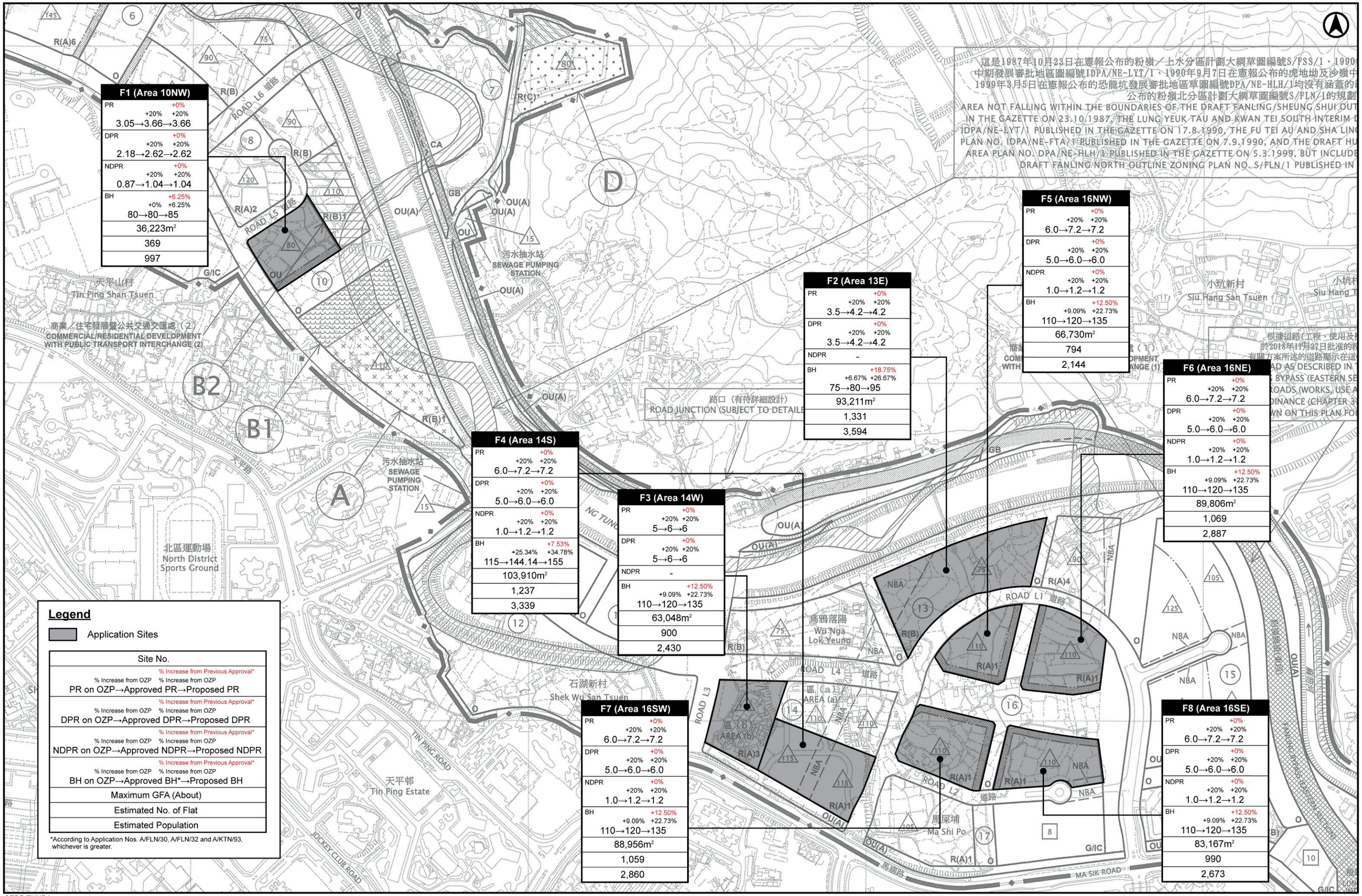
Application Site involves minor relaxation of PR restriction only

Legend

- Domestic Use

*Drawings and design are indicative only, subject to detailed design by the developers at later stage.

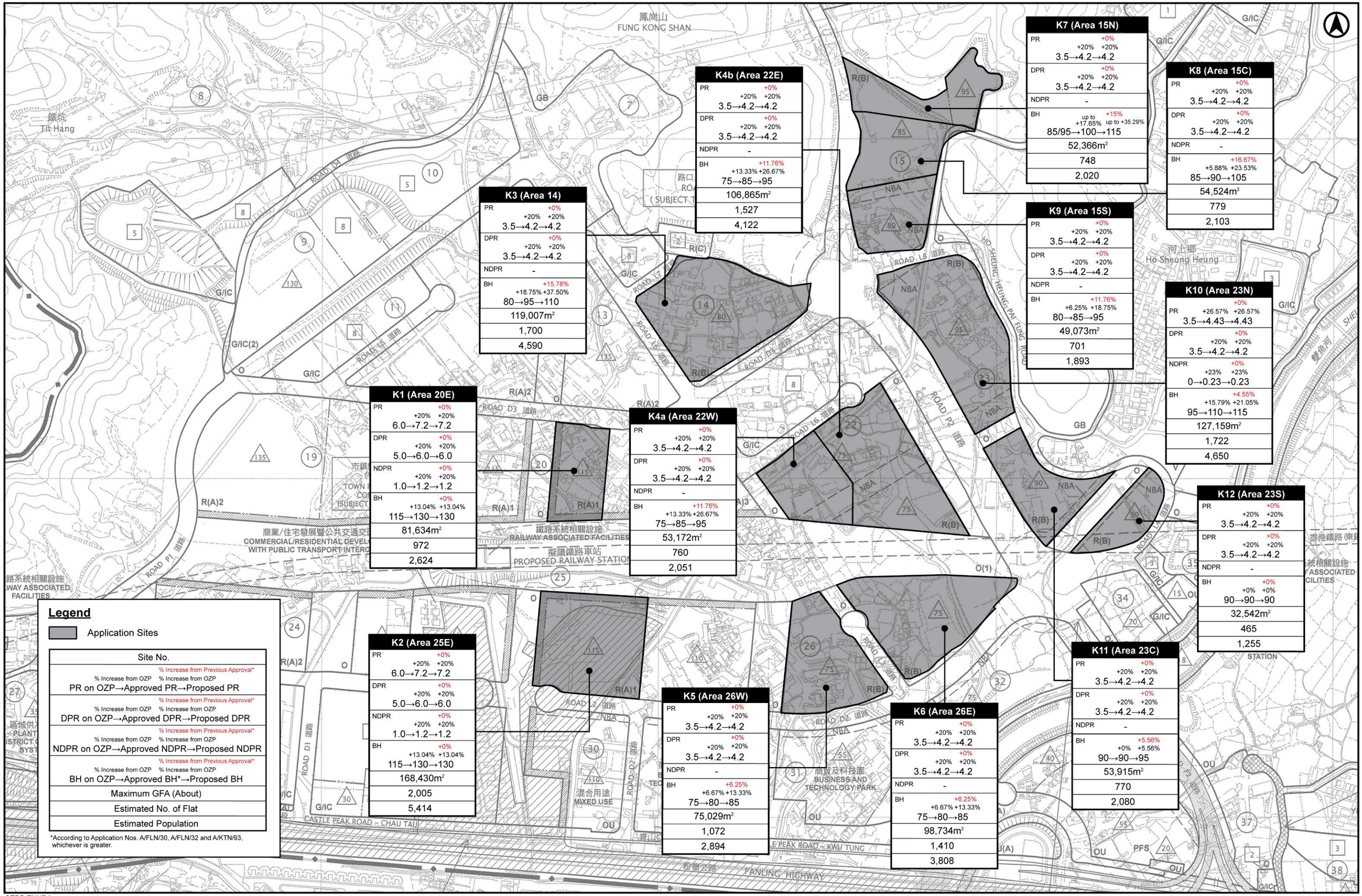
FIGURE 3.4 INDICATIVE SECTIONS OF APPLICATION SITES IN KTN NDA



CEDD/FNNDA

FIGURE 3.5 MAJOR DEVELOPMENT PARAMETERS OF THE APPLICATION SITES IN FLN NDA

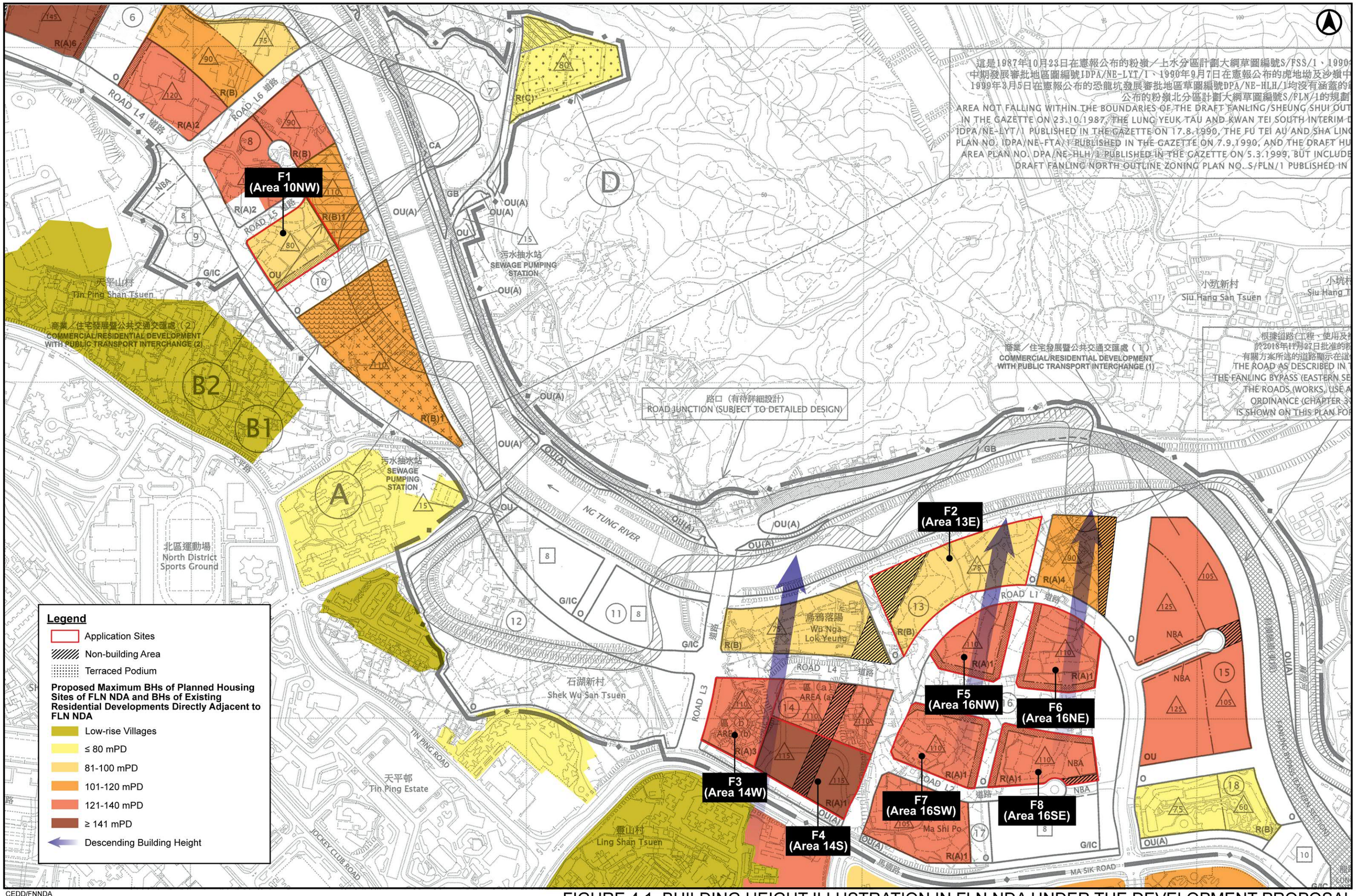
SCALE 1 : 5,000



CEDD/FNNDA

FIGURE 3.6 MAJOR DEVELOPMENT PARAMETERS OF THE APPLICATION SITES IN KTN NDA

SCALE 1 : 5,000



CEDD/FNNDA

FIGURE 4.1 BUILDING HEIGHT ILLUSTRATION IN FLN NDA UNDER THE DEVELOPMENT PROPOSAL

SCALE 1 : 5,000

Legend

- Application Sites
- Non-building Area
- Terraced Podium

Proposed Maximum BHs of Planned Housing Sites of KTN NDA and BHs of Existing Residential Developments Directly Adjacent to KTN NDA

- Low-rise Villages
- ≤ 80 mPD
- 81-100 mPD
- 101-120 mPD
- 121-140 mPD
- ≥ 141 mPD
- Descending Building Height

K1 (Area 20E)
K2 (Area 25E)
K3 (Area 14)
K4a (Area 22W)
K4b (Area 22E)
K5 (Area 26W)
K6 (Area 26E)
K7 (Area 15N)
K8 (Area 15C)
K9 (Area 15S)
K10 (Area 23N)
K11 (Area 23C)
K12 (Area 23S)

鳳崗山 FUNG KONG SHAN
路口 (有待詳細設計) ROAD JUNCTION (SUBJECT TO DETAILED DESIGN)
河上鄉 Ho Sheung Heung
市鎮廣場包括商業用途 (有待詳細研究) TOWN PLAZA TO INCLUDE COMMERCIAL USES (SUBJECT TO DETAILED STUDY)
商業/住宅發展暨公共交通交匯處 COMMERCIAL/RESIDENTIAL DEVELOPMENT WITH PUBLIC TRANSPORT INTERCHANGE
鐵路系統相關設施 RAILWAY ASSOCIATED FACILITIES
擬議鐵路站 PROPOSED RAILWAY STATION
商貿及科技園 BUSINESS AND TECHNOLOGY PARK
混合用途 MIXED USE
污水抽水站 SEWAGE PUMPING STATION
區域供冷系統 PLANT FOR DISTRICT COOLING SYSTEM
CASTLE PEAK ROAD – CHAU TAU
CASTLE PEAK ROAD – KWU TUNG
FANLING HIGHWAY
HO SHEUNG HEUNG ROAD
HO SHEUNG HEUNG PAI FUNG ROAD
CHUNG KUK PATH

CEDD/FNNDA

FIGURE 4.2 BUILDING HEIGHT ILLUSTRATION IN KTN NDA UNDER THE DEVELOPMENT PROPOSAL

SCALE 1 : 5,000

Attachment 3

UPDATED VISUAL APPRAISAL

土 木 工 程 拓 展 署
Civil Engineering and Development Department

Agreement No. CE 18/2019 (CE)
Development of Fanling North New Development Area,
Remaining Phase - Design and Construction

Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Private Housing Developments at Various Sites within Fanling North New Development Area and Kwu Tung North New Development Area, New Territories and Proposed Public Transport Terminus, Shop and Services and Eating Place within Permitted Private Housing Development at Site K10, Planning Area 23N, Kwu Tung North New Development Area, New Territories

Visual Appraisal for Application Sites in Fanling North New Development Area

August 2026

AtkinsRéalis

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APPENDICES

Appendix A	Layout Plan
Appendix B	Key Plan for View Points
Appendix C	Photomontages

1. SUMMARY OF PROPOSED CHANGES

1.1.1 As part of the measures to reduce construction costs and expedite developments, the Chief Executive (“CE”) announced in 2025 Policy Address that an enhance measure to allow full gross floor area (“GFA”) exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of Modular Integrated Construction (“MiC”) method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety.

1.1.2 In 2026, CEDD commissioned a Review to assess the building height ("BH") implications of accommodating the construction of two levels of aboveground carparks and adoption of MiC method at the selected private housing sites (i.e. Application Sites) in the Remaining Phase of Fanling North New Development Area ("FLN NDA") and Kwu Tung North New Development Area ("KTN NDA"). The Study identified that the approved BHs under the previous planning approvals would be insufficient. In this regard, a Section 16 ("S16") Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites to accommodate aboveground carparks and adoption of MiC method (the “Development Proposal”). Minor Relaxation of PR Restrictions has been included under this S16 Planning Application so as to reflect the approved plot ratio ("PR") under Application Nos. A/FLN/30 and A/KTN/93, with no change to the Approved PRs for the Application Sites. As indicated, Permission for Proposed `Public Transport Terminus', `Shop and Services' and `Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved S16.

1.1.3 A Visual Appraisal ("VA") that assesses the visual impact arising from the Development Proposal at the Application Sites at FLN NDA is prepared to support the S16 Planning Application. Table 1 summarises the changes in PR and BH against the restrictions under the Draft Fanling North Outline Zoning Plan No. S/FLN/5 ("OZP Compliant Scheme") and the previous planning approvals ("Approved Scheme").

Table 1 Changes in maximum BH before and after intensification

Site	Planning Area	Zoning	Site Area	Permissible PR* (Approved PR)	Proposed PR^	% Increase from Permissible PR	% Increase from Approved PR	Permissible BH (Approved BH)	Proposed BH	% Increase from Permissible BH*	% Increase from Approved BH^
F1	10NW	“OU(CRDPTI (2))”	0.99 ha	TPR: 3.05 (3.66) DPR: 2.18 (2.62) NDPR: 0.87 (1.04)	TPR: 3.66 DPR: 2.62 NDPR: 1.04	20.00%	No changes	80mPD (80mPD)	85mPD	6.25%	6.25%
F2	13E	“R(B)”	2.22 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (80mPD)	95mPD	26.67%	18.75%
F3	14W	“R(A)3”	1.05 ha	DPR: 5.00 (6.00)	DPR: 6.00	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F4	14S	“R(A)1”	1.44 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		115mPD (144.14mPD)	155mPD	34.78%	7.53%
F5	16NW	“R(A)1”	0.93 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F6	16NE	“R(A)1”	1.25 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F7	16SW	“R(A)1”	1.24 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F8	16SE	“R(A)1”	1.16 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%

Remarks:
* *As stipulated on the Draft FLN OZP*
^ *According to Application Nos. A/FLN/30 and A/FLN/32, whichever is greater.*

2. VIEWING POINTS

2.1.1 Five key VPs are selected as representative views for visual appraisal. The descriptions and locations of these VPs are provided in **Table 2** below, and photomontages showing those views before and after the abovementioned changes are provided in **Appendix C**.

Table 2 List of Selected VPs and Sensitivity of VPs

VP no.	VP Location	Viewing distance	Description	Application sites in view	Type and Sensitivity of Identified VPs in Proximity
VP1	Hiking Trail at Wa Shan	Long	• Located up the hillside on the northern side of Ng Tung River • VP overlooks Hung Kiu San Tsuen towards the southern side of Ng Tung River • The FLN site is partially blocked by tree cover, new developments are visible above the tree line	Site F1	Local Low-rise Recreational VP – **High**
VP2	Ling Shan Road	Short	• Located on the road, looking northward towards the eastern portion of the FLN NDA • Proposed Developments with BH change are in view above the tree line.	Site F2, Site F3, Site F4, Site F5, Site F6, Site F7, Site F8	Local Low-rise Travel VP – **Medium**
VP3	Tsuen Shan, High Hill	Long	• Located at a vantage point on hiking trail on High Hill • Overlooks entire eastern portion of FLN NDA, the mass of new developments is visible above the tree line	Site F2, Site F3, Site F4, Site F5, Site F6, Site F7, Site F8	Strategic Recreational VP – **Medium**
VP4	Kun Lung Tsuen	Medium	• Located at Kun Lung Wai, looking southwestward towards the eastern portion of the FLN NDA • Proposed Developments with BH change are in view above the tree line.	Site F2, Site F3, Site F4, Site F5, Site F6, Site F7, Site F8	Local Low-rise Travel VP – **High**
VP5	Sheung Shui Fire Station	Medium	• Located at Sheung Shui Fire Station • VP looks northeast up the road towards the river • The FLN site is nearly fully blocked by tree cover and topography, new developments are visible above the tree line	Site F1	Local Recreational (& Occupational & Travelling) VP – **Low**

3. VISUAL APPRAISAL

The sources of impact would create varying levels of visual impact during operation phases of the Project.

3.1 Findings of Visual Impact Appraisal

Impacts of proposed changes are listed in **Table 3**. Potential changes in visual impacts to VPs due to BH intensification in FLN NDA are also assessed and described in **Table 5**.

Table 3 Changes in the significance of Visual Impact for Sites F1, F2, F3, F4, F5, F6, F7 and F8 in FLN NDA

Proposed changes in building layout and BH restriction	Potential Impacts on VPs	
	Against OZP Compliant Scheme	**Against Approved Scheme**
FLN Site F1 Proposed Private Housing Development With Proposed BH of 85mPD	Affected VP: Hiking Trail at Wa Shan (represented by VP1) & Sheung Shui Fire Station (represented by VP5)	
	There will be change in BH. It is predicted that there would be **Slight** change in magnitude of impact on the local VPs.	Since the change in BH remains the same comparing to OZP Compliant Scheme. There would be **Slight** change in magnitude of impact on the local VPs.
FLN Site F2 Proposed Private Housing Development With Proposed BH of 95mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	The change in BH will be less significant comparing to OZP Compliant Scheme. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.
FLN Site F3 Proposed Private Housing Development With Proposed BH of 135mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	With a smaller change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.

Proposed changes in building layout and BH restriction	Potential Impacts on VPs	
	Against OZP Compliant Scheme	**Against Approved Scheme**
FLN Site F4 Proposed Private Housing Development With Proposed BH of 155mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be a significant change in BH. It is predicted that there would be **Substantial** to **Moderate** change in magnitude of impact on the local VPs.	With a smaller change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.
FLN Site F5 Proposed Private Housing Development With Proposed BH of 135mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change in BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	With a less significant change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.
FLN Site F6 Proposed Private Housing Development With Proposed BH of 135mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change in BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	With a less significant change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.
FLN Site F7 Proposed Private Housing Development With Proposed BH of 135mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change in BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	With a less significant change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.
FLN Site F8 Proposed Private Housing Development With Proposed BH of 135mPD	Affected VP: Kun Lung Tsuen (represented by VP4), Tsuen Shan, High Hill (represented by VP3) & Ling Shan Road (represented by VP2)	
	There will be change in BH. It is predicted that there would be **Moderate** change in magnitude of impact on the local VPs.	With a less significant change in BH. It is predicted that there would be **Slight** to **Moderate** change in magnitude of impact on the local VPs.

Table 4 Impact Significance on the Affected VPs before mitigation

Affected VP	Magnitude of change from "OZP Compliant Scheme" (Substantial/ Moderate/ Slight/ Negligible)	Magnitude of change from "Approved Scheme" (Substantial/ Moderate/ Slight/ Negligible)
Hiking Trail at Wa Shan (represented by VP1)	Site F1 building blocks will be visible from the VP. The proposed BH will be at a maximum of 85mPD and those buildings are likely to be visible to the residents facing south. It is anticipated that the magnitude of change will be **Slight**. However, the conversation of the open space might provide screening among the buildings. The site is expected to experience **Slight** visual impact before any mitigation.	Site F1 building blocks will be visible from the VP. The proposed BH will be at a maximum of 85mPD and those buildings are likely to be visible to the residents facing south. It is anticipated that the magnitude of change will be **Slight**. However, the conversation of the open space might provide screening among the buildings. The site is expected to experience **Slight** visual impact before any mitigation.
Ling Shan Road (represented by VP2)	With the proposed residential building blocks in Sites F3, F4, F6, F7 and F8 being visible from the VP. While F2 and F5 are screened by planned housing development under A/FSS/294. A **Moderate** magnitude of change in view is predicted for nearby residential VPs (e.g. Good View New Village) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Moderate** visual impact before any mitigation. Overall the area is expected to experience **Moderate** visual impact before any mitigation.	With the proposed residential building blocks in Sites F3, F4, F6, F7 and F8 will be visible from the VP. While F2 and F5 are screened by planned housing development under A/FSS/294. A **Moderate** magnitude of change in view is predicted for nearby residential VPs (e.g. Good View New Village) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Moderate** visual impact before any mitigation. Overall the area is expected to experience **Moderate** visual impact before any mitigation.
Tsuen Shan, High Hill (represented by VP3)	With the proposed residential building blocks in Sites F2, F3, F6 and F8 being visible from the VP. While F4, F5 and F7 are screened by Fung Wong Leng Estate. A **Moderate** magnitude of change in view is predicted for nearby residential VPs (e.g. Siu Hang San Tsuen) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Moderate** visual impact before any mitigation. Overall the area is expected to experience **Moderate** visual impact before any mitigation.	With the proposed residential building blocks in Sites F2, F3, F6 and F8 being visible from the VP. While F4, F5 and F7 are screened by Fung Wong Leng Estate. A **Moderate** magnitude of change in view is predicted for nearby residential VPs (e.g. Siu Hang San Tsuen) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Moderate** visual impact before any mitigation. Overall the area is expected to experience **Slight to Moderate** visual impact before any mitigation.

Affected VP	Magnitude of change from "OZP Compliant Scheme" (Substantial/ Moderate/ Slight/ Negligible)	Magnitude of change from "Approved Scheme" (Substantial/ Moderate/ Slight/ Negligible)
Kun Lung Tsuen (represented by VP4)	Proposed residential building blocks in the Sites F2, F3, F4, F5, F6, F7 and F8 will be screened by Fung Wong Leng Estate in area 15E. A **Slight** magnitude of change in view is predicted for these higher-level VPs that have views looking towards FLN NDA. From the ground level, those views will be partially blocked by other buildings or mature vegetation in the area. Overall the area is expected to experience **Slight** visual impact before any mitigation.	Proposed residential building blocks in the Sites F2, F3, F4, F5, F6, F7 and F8 will be screened by Fung Wong Leng Estate in area 15E. A **Slight** magnitude of change in view is predicted for these higher-level VPs that have views looking towards FLN NDA. From the ground level, those views will be partially blocked by other buildings or mature vegetation in the area. Overall the area is expected to experience **Slight** visual impact before any mitigation.
Sheung Shui Fire Station (represented by VP5)	Tops of proposed 85mPD height of private residential building blocks in Site F1 will be visible above the existing vegetation line. A **Slight** magnitude of change in view is predicted for nearby travelling VPs (e.g.Tin Ping Road) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Slight** visual impact before any mitigation. Overall the area is expected to experience **Slight** visual impact before any mitigation.	Tops of proposed 85mPD height of private residential building blocks in Site F1 will be visible above the existing vegetation line. A **Slight** magnitude of change in view is predicted for nearby travelling VPs (e.g.Tin Ping Road) that have views looking towards FLN NDA. From the ground level, the area is expected to experience **Slight** visual impact before any mitigation. Overall the area is expected to experience **Slight** visual impact before any mitigation.

Table 5 Significance of Visual Impacts for FLN NDA

VP Code (Code for FLN)	Name	VP Category (Strategic/ District/ Local)	VP Type	VP Sensitivity (High/ Medium/ Low)	Magnitude of Change (Substantial/ Moderate/ Slight/ Negligible)		Recommended Mitigation Measures	Residual Impact Significance UPON Mitigation (Substantial/ Moderate/ Slight/ Negligible/ Beneficial)
					OZP Compliant Scheme	Approved Scheme		
VP1	Hiking Trail at Wa Shan	Local	Recreational - Low Rise	High	Slight	Slight	MM1, MM3, MM2	Slight
VP2	Ling Shan Road	Local	Walking - Low Rise	Medium	Moderate	Moderate	MM1, MM3, MM2	Slight
VP3	Tsuen Shan, High Hill	Strategic	Recreational	Medium	Moderate	Slight to Moderate	MM1, MM3, MM2, MM4, MM5	Slight
VP4	Kun Lung Tsuen	Local	Walking & Recreational - Low Rise	High	Slight	Slight	MM1, MM3, MM2, MM4, MM5	Slight
VP5	Sheung Shui Fire Station	Local	Recreational (& Occupational & Travelling)	Low	Slight	Slight	MM1, MM3, MM2, MM4, MM5	Slight

3.2 Visual Appraisal of Specified Viewpoints: Comparison with Approved Scheme

3.2.1 VP1 – Hiking Trail at Wa Shan

VP1 is located along a hiking trail at Wa Shan, looking south towards the FLN NDA. From this viewpoint, the Proposed Development is considered visually compatible with the existing built environment, blending well with the background developments and maintaining overall visual harmony. Although the Proposed Development would partially screen portions of the mountain backdrop, the ridgeline would remain clearly visible. Given the long viewing distance, the openness of the sky and the surrounding vegetation would remain largely unaffected, resulting in only a minimal impact on visual openness.

When comparing the Approved Scheme with the Proposed Scheme, the Proposed Development is anticipated to result in a slight reduction in visual amenity from this viewpoint. Nevertheless, the incorporation of design mitigation measures would help soften the visual effects and facilitate better integration of the development with the surrounding landscape and townscape context.

3.2.2 VP2 – Ling Shan Road

The existing visual composition comprises Good View New Village in the foreground, with greenery and the planned residential development approved under A/FSS/294 in the middle ground, which largely screens Area 17. The open sky and mountain ridgeline form the background and constitute the key visual resources from this viewpoint. The Proposed Development would introduce a moderate degree of visual obstruction to the existing view corridor, partially interrupting the visual connection to the sky and mountain backdrop. As a result, the Proposed Development would inevitably affect the existing visual quality and visual amenity of this viewpoint.

Compared with the Approved Scheme, the Proposed Scheme is anticipated to result in a moderate reduction in visual amenity due to its increased visibility within the existing view corridor. Nevertheless, the visual effects can be alleviated through the implementation of design-related mitigation measures, including MM1 (Detailed Visual Design), MM3 (Vertical Greening), and MM5 (Screen Planting), which would help soften the appearance of the development and enhance its integration with the surrounding environment. With these measures in place, the residual visual impact is expected to be reduced to a slight level.

3.2.3 VP3 – Tsuen Shan, High Hill

VP3 is located at a vantage point along the hiking trail on High Hill, overlooking the FLN NDA and the Proposed Development. From this viewpoint, a substantial portion of the development would be visible in the foreground. Nevertheless, key landscape features, including the mountain ridgeline and the open sky, would remain visible and largely unaffected.

Compared with the Approved Scheme, the Proposed Scheme is anticipated to result in a slight to moderate reduction in visual amenity from this viewpoint due to the increased prominence of the Proposed Development. However, the visual effects can be mitigated through the implementation of design-related mitigation measures, including MM1 (Detailed Visual Design), MM3 (Vertical Greening), and MM5 (Screen Planting), which would help soften the appearance of the development and improve its integration with the surrounding landscape.

3.2.4 VP4 – Kun Lung Tsuen

VP4 is located within Kun Lung Tsuen, looking towards the eastern portion of the FLN NDA. From this viewpoint, the Proposed Development is largely screened by the existing and planned residential developments associated with the Advance Works, including Fung Wong Leng Estate. As a result, the Proposed Development would be predominantly concealed and would not result in the loss of any key visual resources.

Compared with the Approved Scheme, the Proposed Scheme is anticipated to result in a slight reduction in visual amenity from this viewpoint due to the additional screening effect provided by Fung Wong Leng Estate, which further limits the visibility of the Proposed Development. Nevertheless, with the implementation of design-related mitigation measures, including MM1 (Detailed Visual Design), MM3 (Vertical Greening), and MM5 (Screen Planting), the residual visual effects would be moderated, allowing the development to integrate more effectively with the surrounding environment.

3.2.5 VP5 – Sheung Shui Fire Station

VP5 provides a direct view towards Proposed Development Site F1 from Sheung Shui Road near Tin Ping Road, facing north towards the Proposed Development. Existing roadside planting forms the foreground, while open sky constitutes a major component of the background view. Although the existing vegetation provides partial screening, the Proposed Development would introduce a degree of visual obstruction and result in a slight reduction in the extent of open sky visible from this viewpoint. Nevertheless, key visual elements, including the surrounding landscape context, would remain generally perceptible.

Compared with the Approved Scheme, the Proposed Scheme is anticipated to result in a slight reduction in visual amenity from this viewpoint. However, the implementation of design-related mitigation measures, including MM1 (Detailed Visual Design), MM3 (Vertical Greening), and MM5 (Screen Planting), would help soften the visual effects and enhance the integration of the development with the surrounding environment.

Based on the assessments above and photomontages provided in **Appendix C**, the potential changes in visual impacts due to the changes proposed for BH intensification are summarized as follows:

Table 6 Potential Visual Impact comparing with Approved Scheme

Proposed changes	Potential Impacts on VPs
Changes in BHs at Site F1, F2, F3, F4, F5, F6, F7 and F8.	The visual composition of the Proposed Development was still visually compatible with the existing and planned urban context of the area. BH will be stepped down from the inland towards the riverfront and a lower building profile will be adopted for developments to the north near the Ng Tung River, with taller building blocks to the south and east. There are slight to moderate changes in magnitude of impact on all VPs.

3.2.6 According to the visual appraisal of the VP above, the overall visual changes of the proposal is considered as slight and it would not result in significant visual impact to the surrounding. The increased BH are illustrated with photomontages in **Appendix C**.

3.2.7 Effect on Visual Composition: The Developments with relaxation of BH is considered visually compatible with the existing and planned urban developments of the area in term of scale and height. The stepped BH is still respected at the FLN NDA. BH will be stepped down from the inland towards the riverfront and a relatively lower building profile will be adopted for developments to the north near the Ng Tung River.

3.2.8 Effect on Visual Obstruction and Visual Permeability: The change in BH are considered slight and would result in minor obstruction of the VP . The only increases in BH are for Sites F1, F2, F3, F4, F5, F6, F7 and F8. In summary, while there are isolated instances of more apparent height adjustments, the overall change in visual permeability remains minimal, preserving the intended spatial and visual character of the development.

3.2.9 Effect on Visual Resources: There would be no additional impact upon the visual resources as compared with the Proposed Development under the Approved Scheme. The overall townscape of FLN NDA would remain unchanged.

3.2.10 Impact on VPs: There are moderate to slight changes in magnitude of impact on all VPs.

3.3 Visual Appraisal of Specified Viewpoints: Comparison with OZP Compliant Scheme

3.3.1 VP1 –Hiking Trail at Wa Shan

In comparison with the OZP Compliant Scheme, the visual impact of the Proposed Scheme is expected to be similar to that of the Approved Scheme. This is because both the OZP-Compliant Scheme and the Approved Scheme adopt the same maximum building height of 80 mPD, resulting in no material difference in the visual outcome from this viewpoint.

3.3.2 VP2 – Ling Shan Road

When comparing the OZP-Compliant Scheme with the Proposed Scheme, the visual impact is expected to remain moderate. The primary difference between the two Schemes is the increased visibility of Site F3 on the left-hand side of the view. Other portions of the Proposed Development would continue to be largely screened by the planned residential development approved under A/FSS/294. While the Proposed Scheme would appear slightly more prominent, the overall visual character of the view, including the visibility of the open sky and mountain ridgeline, would remain broadly similar, resulting in a moderate visual impact.

3.3.3 VP3 – Tsuen Shan, High Hill

When comparing the OZP Compliant Scheme with the Proposed Scheme, the visual impact is expected to be moderate. As much of the Proposed Development is located in the foreground of the view, the increased building height of the Proposed Scheme would result in a more noticeable built form when compared with the Approved Scheme. However, the mountain ridgeline and open sky would remain largely unchanged and continue to form prominent visual resources within the view. Consequently, while the Proposed Scheme would appear more visually prominent, the overall visual impact is considered to be moderate.

3.3.4 VP4 – Kun Lung Tsuen

When comparing the OZP Compliant Scheme with the Proposed Scheme, the visual impact is expected to remain slight. Most of the Proposed Development would be screened by the intervening residential developments, with only a limited portion of Site F6 potentially visible through a gap between buildings within Fung Wong Leng Estate. As such, no significant difference in visual impact is anticipated between the two Schemes.

3.3.5 VP5 – Sheung Shui Fire Station

In comparison with the OZP Compliant Scheme, the visual impact of the Proposed Scheme is expected to be similar to that of the Approved Scheme. As both the OZP-Compliant Scheme and the Approved Scheme adopt the same maximum building height of 80 mPD, no material difference in visual impact is anticipated from this viewpoint.

Based on the assessments above and photomontages provided in **Appendix C**, the potential changes in visual impacts due to the changes proposed for BH intensification are summarized as follows:

Table 7 Potential Visual Impact comparing with OZP Compliant Scheme

Proposed changes	Potential Impacts on VPs
Changes in BHs at Site F1, F2, F3, F4, F5, F6, F7 and F8.	The visual composition of the Proposed Development was still visually compatible with the existing and planned urban context of the area. BH will be stepped down from the inland towards the riverfront and a lower building profile will be adopted for developments to the north near the Ng Tung River, with taller building blocks to the south and east. There are slight to moderate changes in magnitude of impact on all VPs.

3.3.6 According to the visual appraisal of the VPs above, the overall visual changes of the proposal is considered as slight and it would not result in significant visual impact to the surrounding. The increased BH are illustrated with photomontages in **Appendix C**.

3.3.7 Effect on Visual Composition: The Developments with relaxation of BH is considered visually compatible with the existing and planned urban developments of the area in term of scale and height. The stepped BH is still respected at the FLN NDA. BH will be stepped down from the inland towards the riverfront and a relatively lower building profile will be adopted for developments to the north near the Ng Tung River.

3.3.8 Effect on Visual Obstruction and Visual Permeability: The change in BH are considered slight and would result in minor obstruction of the VPs . The only increases in BH are for Sites F1, F2, F3, F4, F5, F6, F7 and F8. In summary, while there are isolated instances of more apparent height adjustments, the overall change in visual permeability remains minimal, preserving the intended spatial and visual character of the development.

3.3.9 Effect on Visual Resources: There would be no additional impact upon the visual resources as compared with the Proposed Development under the OZP Compliant Scheme. The overall townscape of FLN NDA would remain unchanged.

3.3.10 Impact on VPs: There are slight to moderate changes in magnitude of impact on all VPs.

3.4 Evaluation of Overall Visual Impact of the Proposed Changes

3.4.1 Bearing in mind that the purpose of this report is to assess the proposed changes against the planned development of both the OZP Compliant Scheme and Approved Scheme, the primary difference between the Schemes lies in modification of building arrangement, form and height.

3.4.2 The change in overall visual impact is considered slight as demonstrated in the assessment above and photomontages provided in **Appendix C**. The following mitigations will be adopted to enhance the landscape and visual amenity and minimize any potential adverse visual impacts. The proposed mitigation measures are further elaborated below in **Table 8** to illustrate how they shall be actualized in specificity, providing more details as to how they can be applied in FLN NDA. In particular, measures marked with asterisk (*) in **Table 8** are regarded as visual mitigation measures

Table 8 Visual Mitigation Measures

ID	Description
MM1 *	Detailed Design - Visual Chromatic design in colour tone, finishes and treatments of engineering structures and buildings should be visually unobtrusive, non-reflective compatible with surrounding context. The exterior walls shall be painted with a subtle colour finishes, which is close to the existing site context background colour so as to be more visually compatible with the surrounding backdrop. Further, provision of building gaps to maintain visual permeability, and sensitive building form, height and disposition to minimize impact on perceived bulk and views to visual resources.
MM2	Tree Transplantation To limit visual impact on existing greenery, trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with DevB TCW 6/2015 and 4/2020 and Guidelines on Tree Transplanting by DevB and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.
MM3	Vertical Greening Where space and appropriate planting conditions allow (i.e. where suitable depth of planting medium is possible, maintenance access and appropriate/sufficient level of light penetration to ground level with respect to selected planting species), climbing plants should be considered to grow up vertical surfaces such as viaduct piers or noise barriers. The planting once established will assist in breaking up the visual impact of uniform engineered structures and surfaces. Climber planting shall ensure provision of species diversity to give a naturalistic appeal with variations.
MM4	Green Roof Roof greening where appropriate should be established on proposed buildings to reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VPs at high levels. Green roofs can also provide attractive landscaping and greening, accessibility to green roofs should also be considered where appropriate to allow users to enjoy. CIBSE HK Branch's Technical Guidelines for Green Roof Systems in Hong Kong (2011) and ArchSD Study on Green Roof Application in Hong Kong (2007) should be referred to when considering and developing green roofs. These documents provide further details including information regarding structural loading, design, and maintenance etc. considerations as well as providing information on what types of plants might be suitable.
MM5	Screen Planting Tall screen/buffer trees and shrubs should be planted to assist in screening proposed road corridors and associated above ground structures such as elevated road sections and engineered embankments. This measure may additionally form part of the compensatory/new tree planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment. Roadside planting shall ensure provision of rich planting communities that comprises of trees, shrubs and groundcovers where possible and shall integrate with green and smart city initiatives such as incorporation of blue-green infrastructure. Roadside tree planting shall make reference to the "Right Tree, Right Place" guidelines by DevB such as the Street Tree Selection Guide. With regards to site constraints and incorporation of common utility trench (CUT), additional measures may be considered to ensure the provision of ample soil in the underground space for planters and allow healthy growth of vegetations. Priority should be given for the provision of continuous at-grade roadside verge planning zone in the design of the roadside planting zone.

4. CONCLUSION

4.1.1 Based on the comparison between the Approved Scheme and the Proposed Scheme, the magnitude of visual impact at VP1, VP2, VP3, VP4 and VP5 is assessed as ranging from slight to moderate. Notwithstanding these changes, the Residual Impact Significance upon Mitigation for all five viewpoints is expected to be slight.

The overall changes in building height (BH) and building disposition within the FLN NDA are generally considered slight to moderate, resulting in minor visual obstruction from the assessed viewpoints. Notwithstanding the increases in building height associated with Sites F1, F2, F3, F4, F5, F6, F7 and F8, the proposed architectural treatment and landscape mitigation measures, including screen planting, green roofs, vertical greening, and compensatory planting, are expected to provide effective visual relief and assist in integrating the developments into the surrounding environment.

In addition, soft landscape proposals within the open spaces surrounding the residential developments, including the provision of substantial tree planting, vegetation, and water

features, would further enhance the visual quality of the development and contribute to mitigating adverse visual impacts. With the implementation of these mitigation measures, the residual visual impacts are expected to be reduced to slight.

4.1.2 With regard to the comparison between the OZP Compliant Scheme and the Proposed Scheme, the magnitude of visual impact at VP1, VP2, VP3, VP4 and VP5 is also assessed as slight to moderate. The Residual Impact Significance upon Mitigation for all five viewpoints is expected to remain slight.

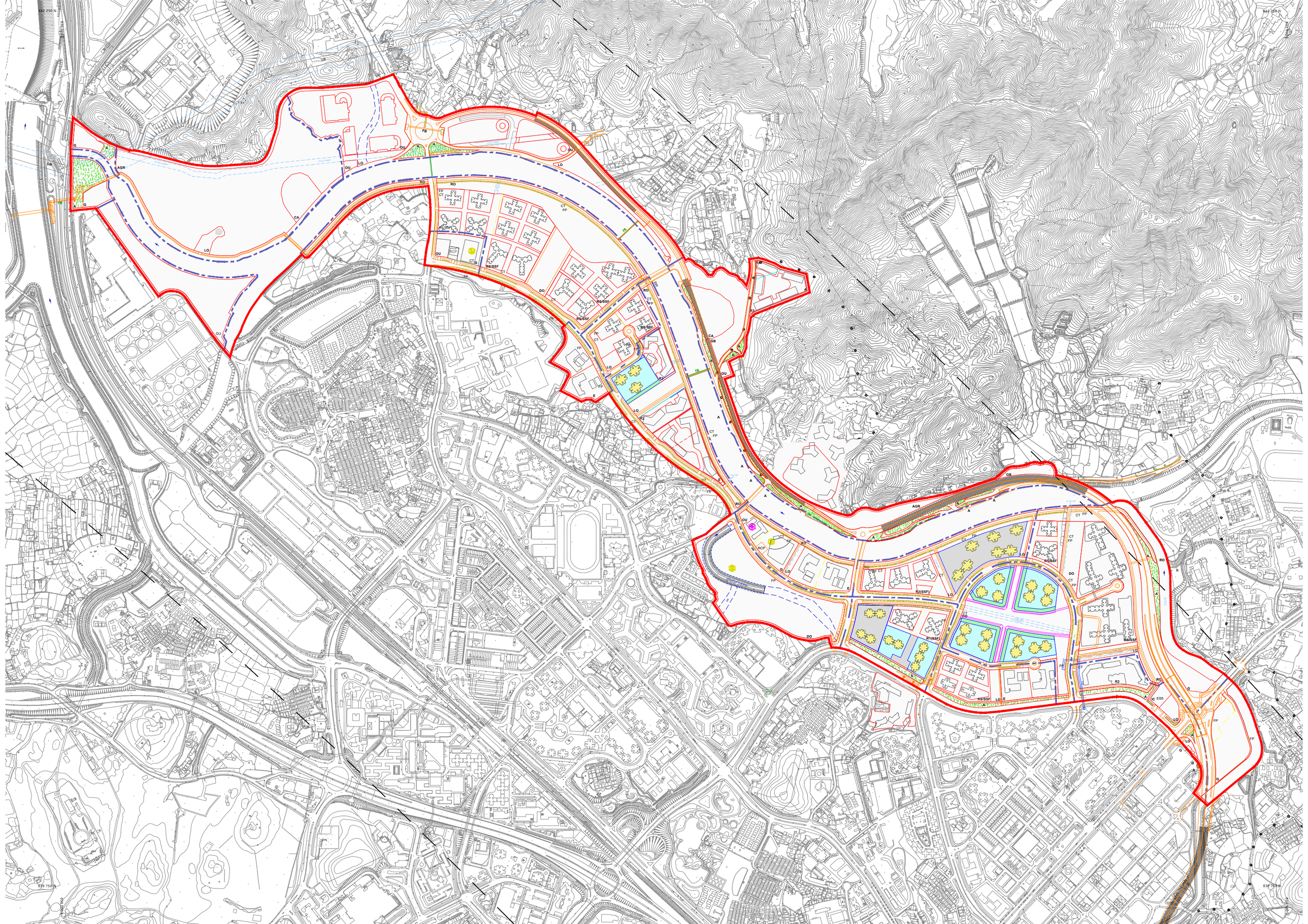
The overall changes in building height and building layout within the FLN NDA are considered slight to moderate and would result in minor visual obstruction from the assessed viewpoints. Compared with the OZP-compliant Scheme, the Proposed Scheme may result in a slightly greater degree of visual obstruction at certain viewpoints due to increases in building height and modifications to building disposition. However, these changes are not considered substantial in the overall visual context.

With the incorporation of the proposed design and landscape mitigation measures, including detailed architectural design, screen planting, vertical greening, green roofs, compensatory planting and other landscape enhancements, the residual visual impacts are expected to be effectively mitigated and maintained at a slight level.

APPENDIX A

LAYOUT PLAN

Indicative Layout of Approved Scheme



AGR
CA
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RS/SSF
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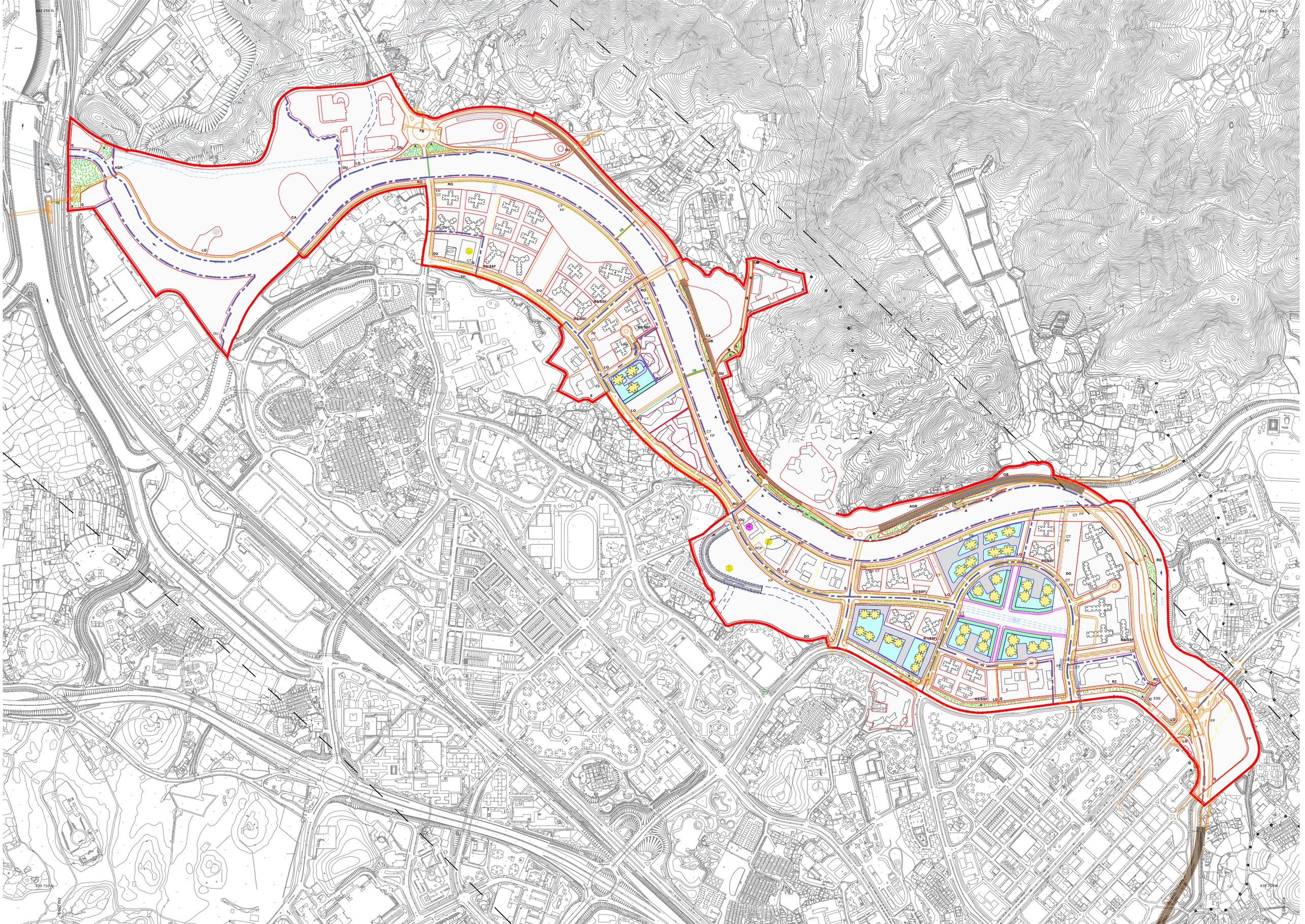
GB
R2(SSF)
R1(SSF)

Indicative Layout of Proposed Scheme



AGR
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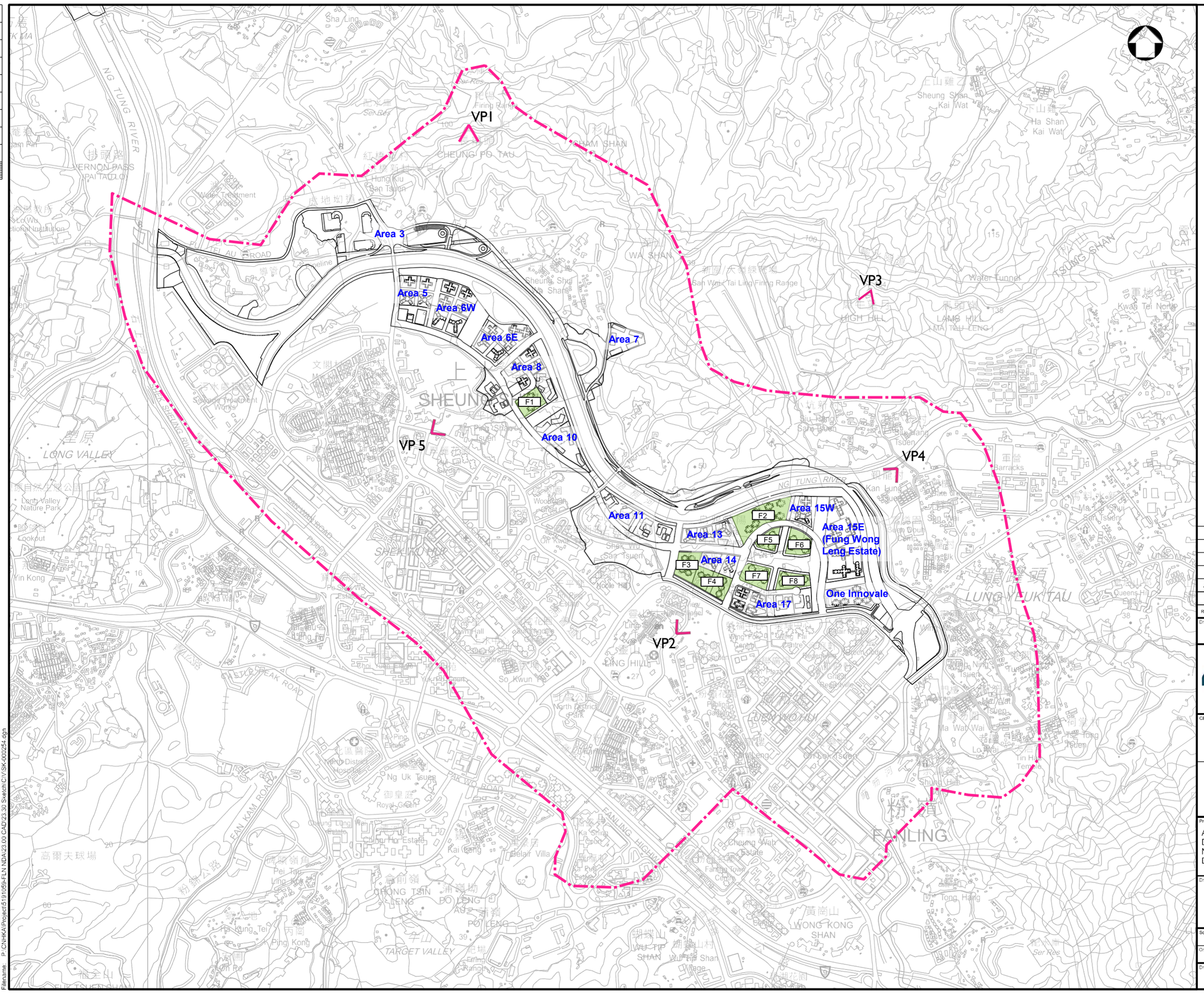
R1(SSF)
R2
GB

APPENDIX B

VISUAL ENVELOPE AND KEY PLAN FOR VIEW POINTS



Legend:

- Viewpoint
- Primary Zone of Visual Influence
- F2 Application Sites

Rev.	Date	Description	By	Chk'd	App'd
A	JUN 2026	LAYOUT UPDATED	BF	DF	DL
-	JUL 22	FIRST ISSUED	BF	DF	DL

Drawing Status: INVESTIGATION

Suitability: -

AtkinsRéalis

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

北拓展處
NORTH DEVELOPMENT OFFICE

Project Title:
AGREEMENT NO. CE 18/2019
DEVELOPMENT OF FANLING NORTH
NEW DEVELOPMENT AREA, REMAINING PHASE - DESIGN AND CONSTRUCTION

Drawing Title:
VISUAL ENVELOPE AND KEY PLAN FOR VIEW POINTS

Scale	Designed	Drawn	Checked	Authorised
N.T.S.	BF	CAD	DF	DL
Original Size: A1	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022	Date: JUL 2022

Drawing Number: SK-000254 Revision: A

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User name: CHEL9011 Date:6/3/2026 Time: 10:45:17 AM
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APPENDIX C

PHOTOMONTAGES

VP1 Hiking Trail at Wa Shan

VP1 Existing View

LEGEND

Application Site for OZP Compliant Scheme
(Light Orange Box)

Application Site for Proposed Scheme
(Light Blue Box)

Building Height Restriction Under Draft OZP No. S/FLN/5

Building Height Relaxation Under Application No. A/FLN/30 or A/FLN/32, whichever is greater

Proposed Building Height Relaxation Under Current Application

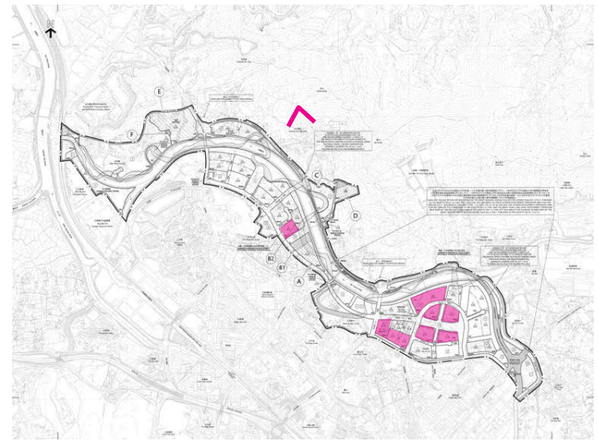
OZP BH Restriction — A/FLN/30 or A/FLN/32, whichever is greater

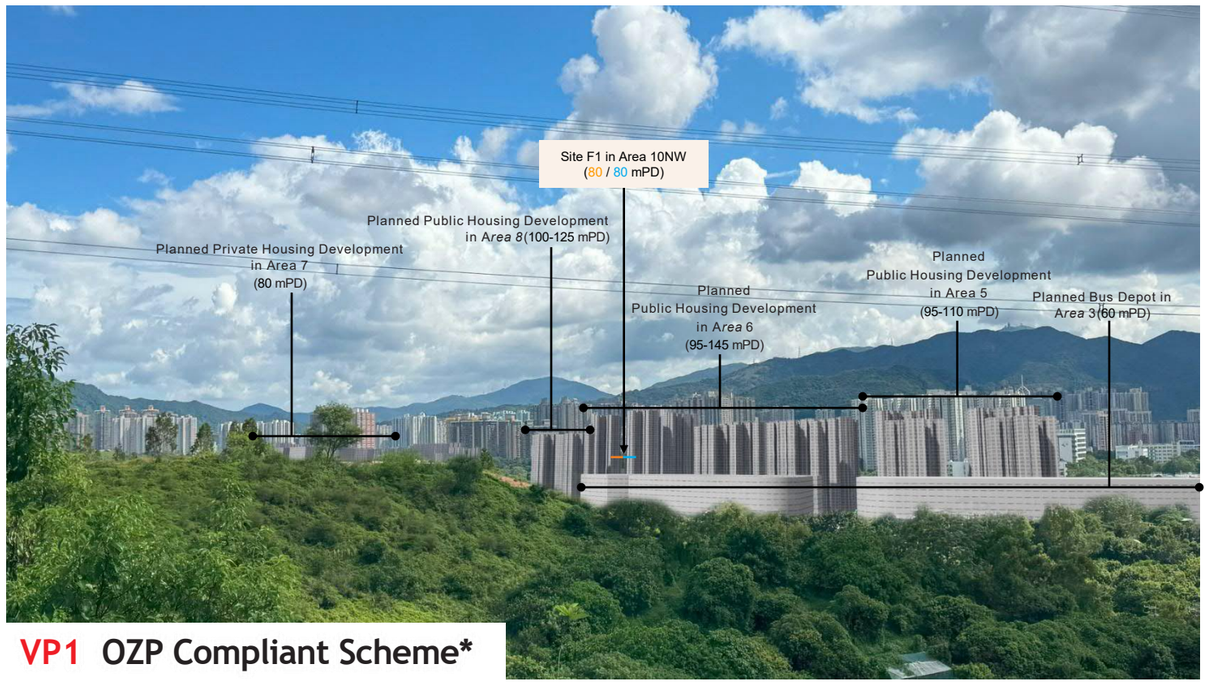
Site F_in Area___ (___/___ mPD)

Under Proposed Scheme

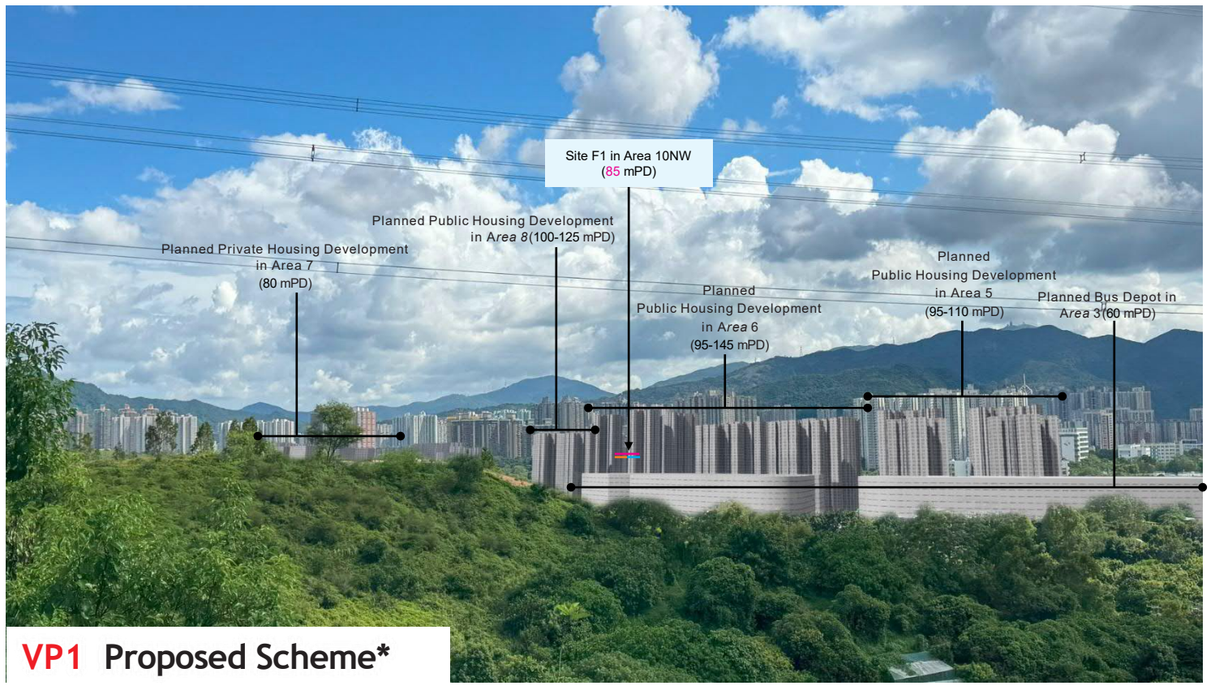
Site F_in Area___ (___ mPD)

Key Plan





VP1 OZP Compliant Scheme*



VP1 Proposed Scheme*

* Taken into account the approved building height under approved planning application No. A/FLN/30 or A/FLN/32, whichever is greater.

VP2 Ling Shan Road

VP2 Existing View

LEGEND

Application Site for OZP Compliant Scheme
(Light Orange Box)

Application Site for Proposed Scheme
(Light Blue Box)

OZP BH Restriction — A/FLN/30 or A/FLN/32, whichever is greater

Site F_in Area___ (___/___ mPD)

Under Proposed Scheme

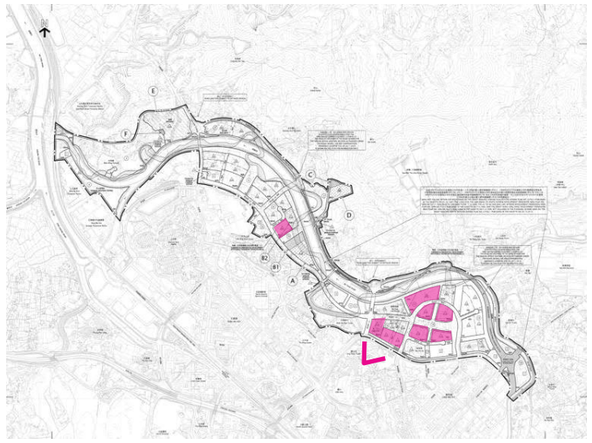
Site F_in Area___ (___ mPD)

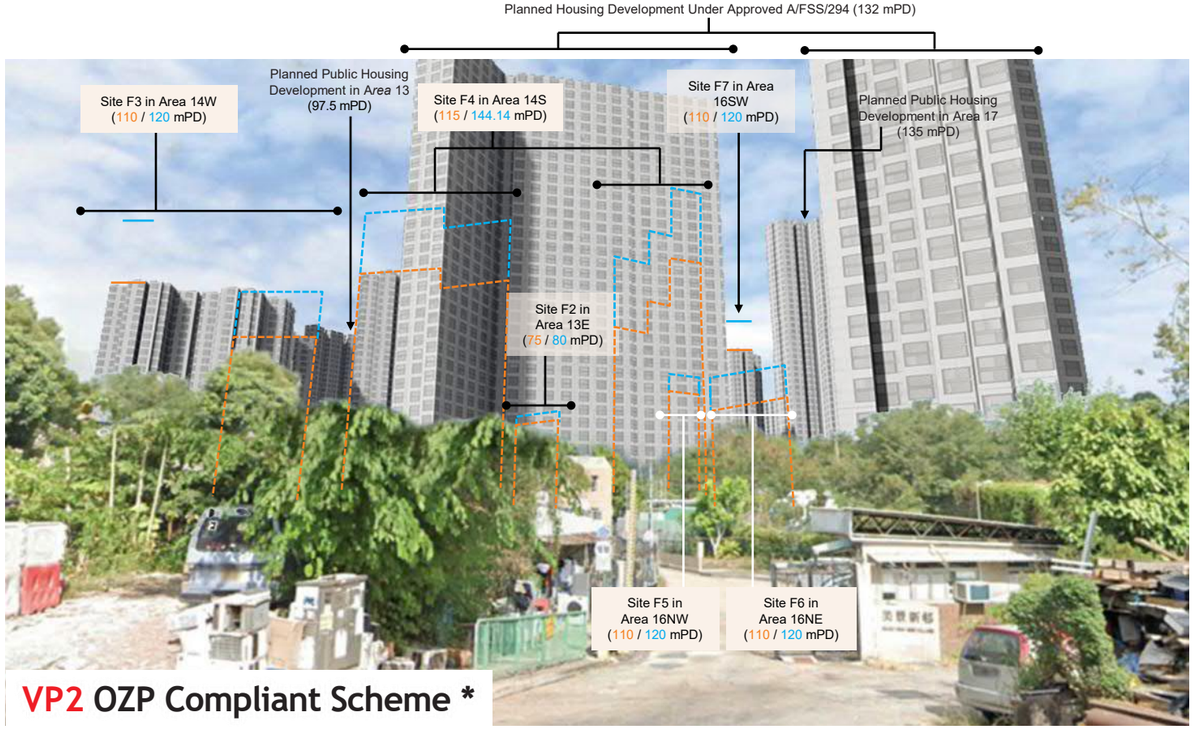
Building Height Restriction Under Draft OZP No. S/FLN/5

Building Height Relaxation Under Application No. A/FLN/30 or A/FLN/32, whichever is greater

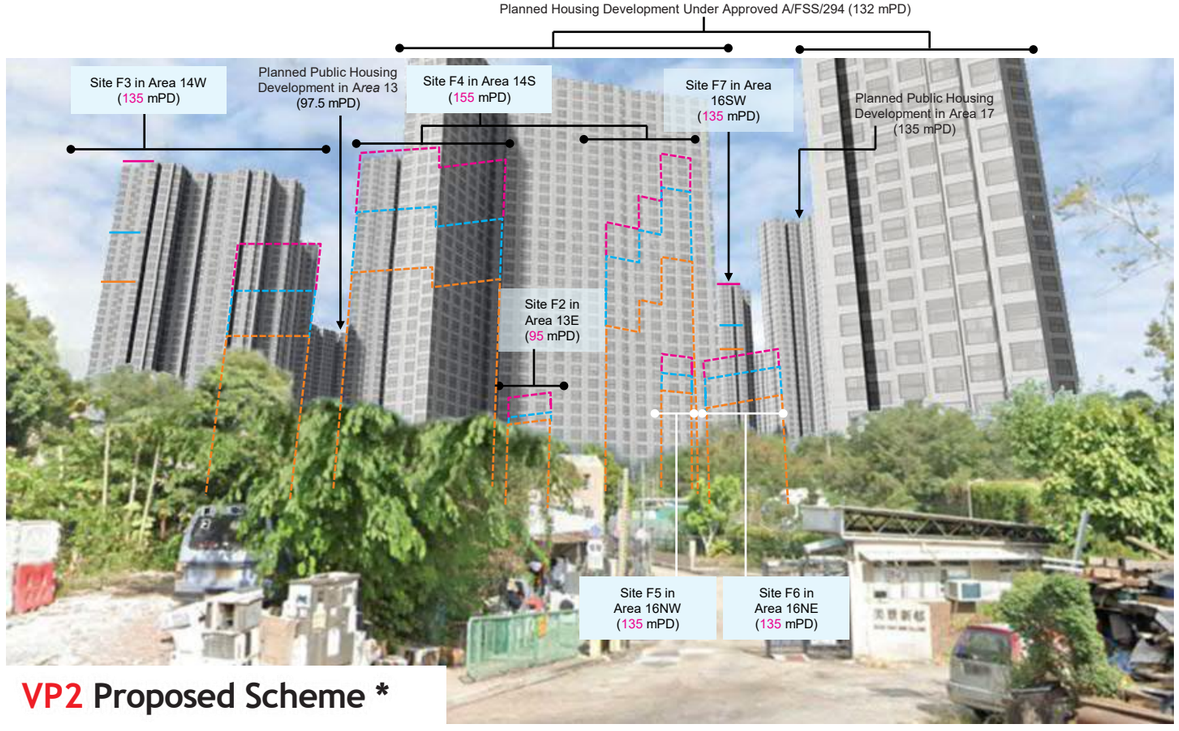
Proposed Building Height Relaxation Under Current Application

Key Plan





VP2 OZP Compliant Scheme *



VP2 Proposed Scheme *

* Taken into account the approved building height under approved planning application No. A/FLN/30 or A/FLN/32, whichever is greater.

VP3 Tsung Shan, High Hill

VP3 Existing View

LEGEND

Application Site for OZP Compliant Scheme
(Light Orange Box)

Application Site for Proposed Scheme
(Light Blue Box)

Building Height Restriction Under Draft OZP No. S/FLN/5

Building Height Relaxation Under Application No. A/FLN/30 or A/FLN/32, whichever is greater

Proposed Building Height Relaxation Under Current Application

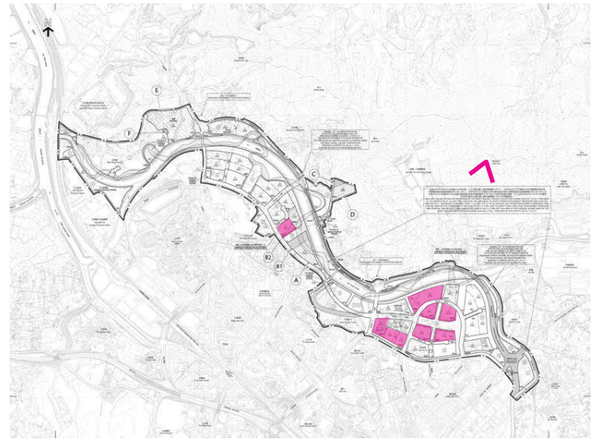
OZP BH Restriction — A/FLN/30 or A/FLN/32, whichever is greater

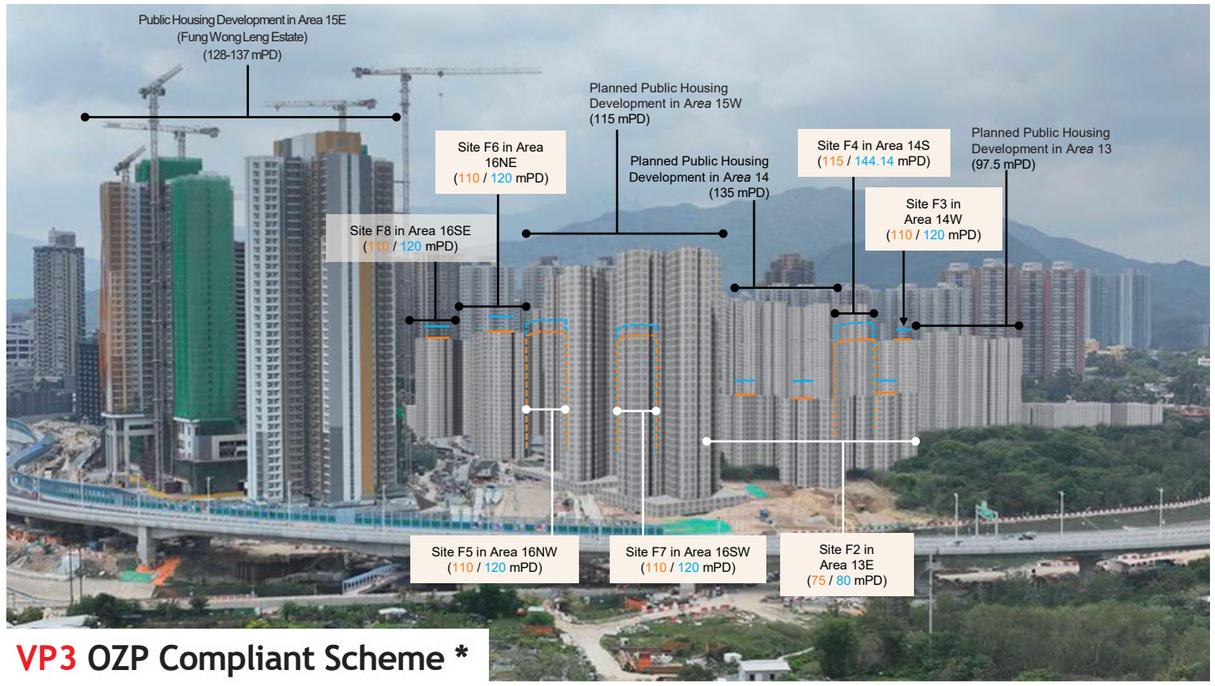
Site F_in Area___ (___/___ mPD)

Under Proposed Scheme

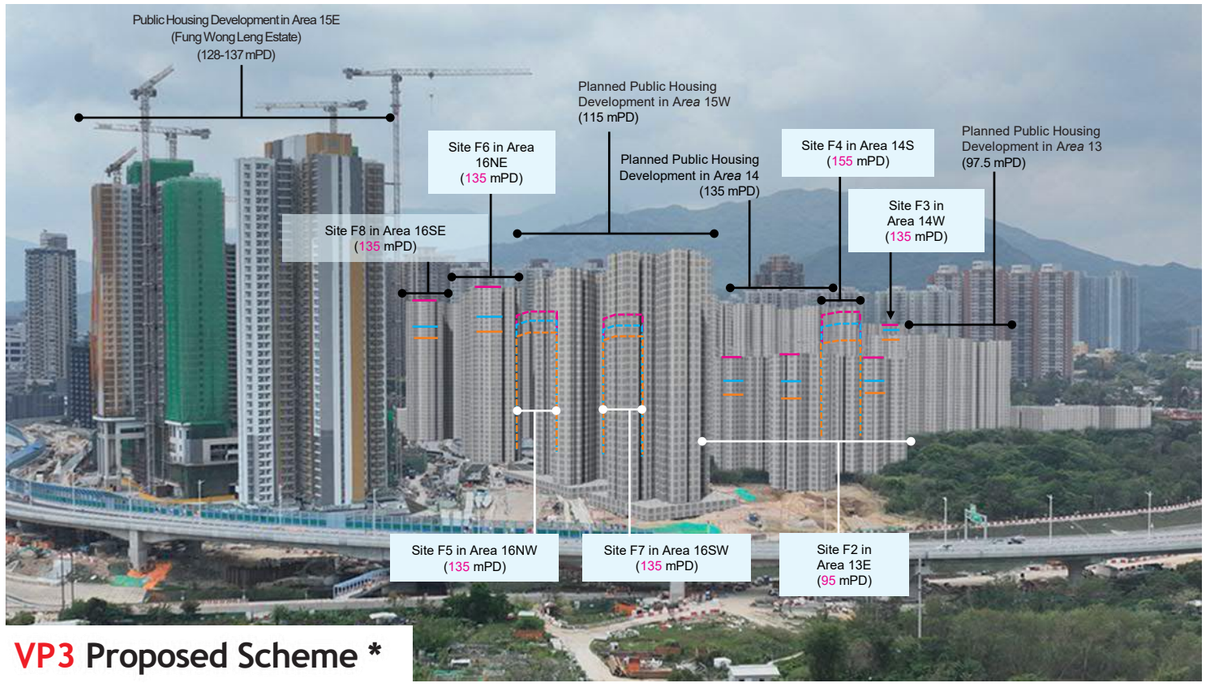
Site F_in Area___ (___ mPD)

Key Plan





VP3 OZP Compliant Scheme *



VP3 Proposed Scheme *

* Taken into account the approved building height under approved planning application No. A/FLN/30 or A/FLN/32, whichever is greater.

VP4 Kun Lung Tsuen

VP4 Existing View

LEGEND

Application Site for OZP Compliant Scheme
(Light Orange Box)

Application Site for Proposed Scheme
(Light Blue Box)

Building Height Restriction Under Draft OZP No. S/FLN/5

Building Height Relaxation Under Application No. A/FLN/30 or A/FLN/32, whichever is greater

Proposed Building Height Relaxation Under Current Application

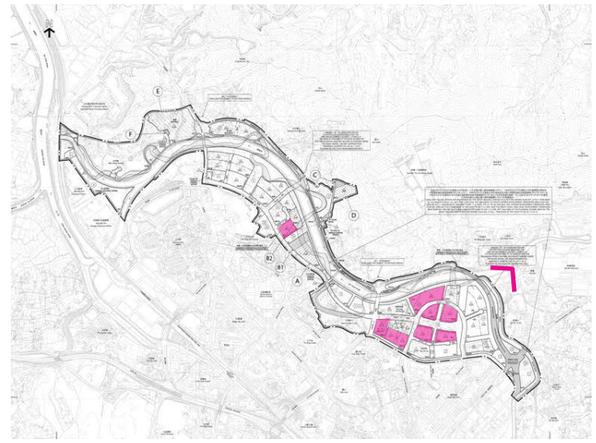
OZP BH Restriction — A/FLN/30 or A/FLN/32, whichever is greater

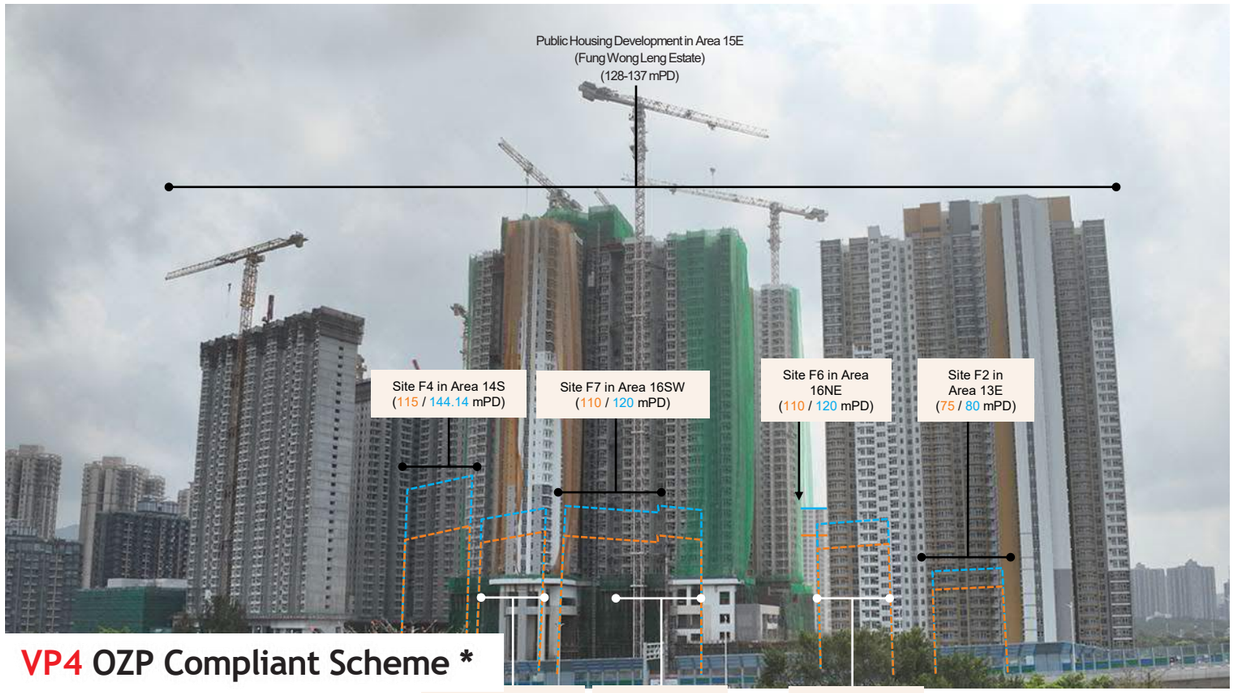
Site F_in Area___ (___/___ mPD)

Under Proposed Scheme

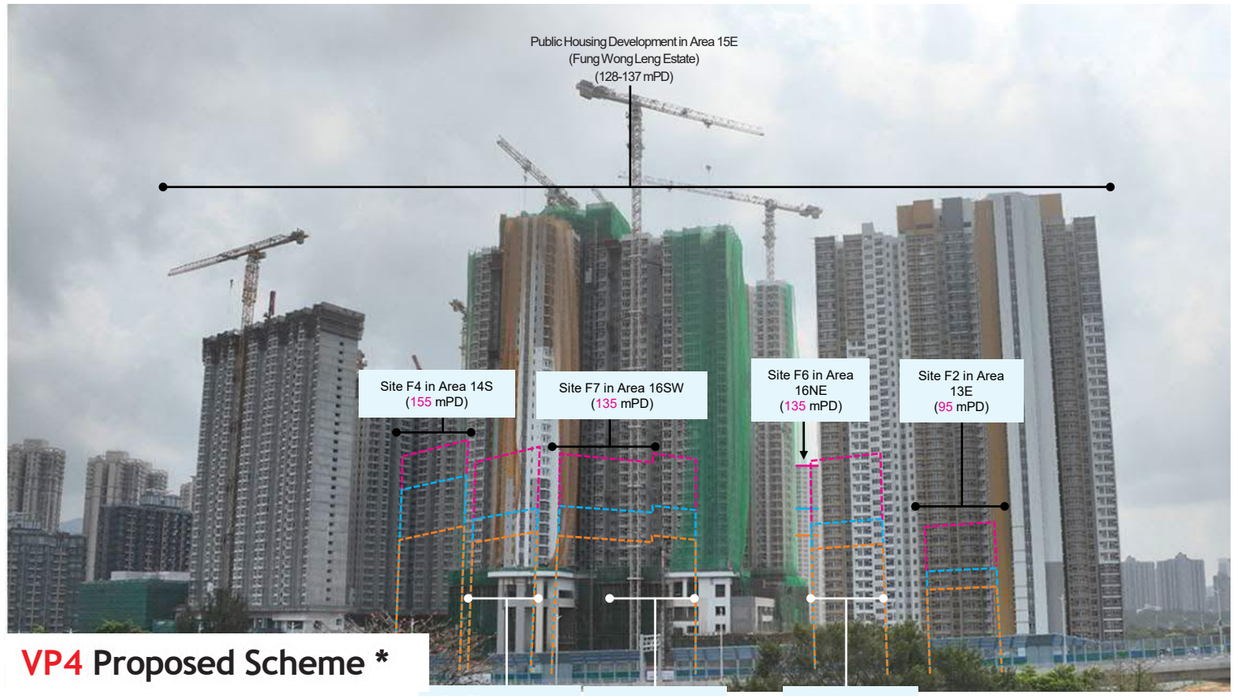
Site F_in Area___ (___ mPD)

Key Plan





VP4 OZP Compliant Scheme *



VP4 Proposed Scheme *

* Taken into account the approved building height under approved planning application No. A/FLN/30 or A/FLN/32, whichever is greater.

VP5 Sheung Shui Fire Station

VP5 Existing View

LEGEND

Application Site for OZP Compliant Scheme
(Light Orange Box)

Application Site for Proposed Scheme
(Light Blue Box)

Building Height Restriction Under Draft OZP No. S/FLN/5

Building Height Relaxation Under Application No. A/FLN/30 or A/FLN/32, whichever is greater

Proposed Building Height Relaxation Under Current Application

OZP BH Restriction

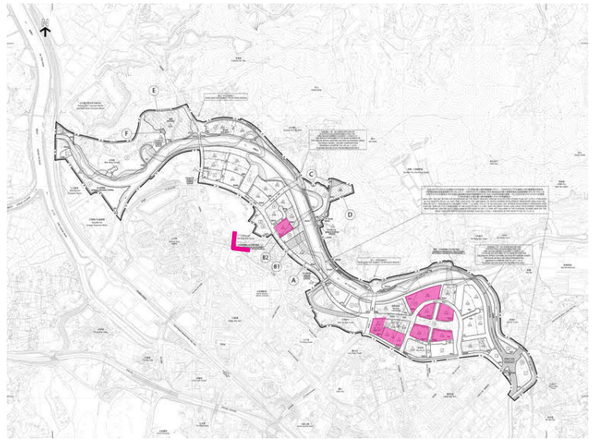
A/FLN/30 or A/FLN/32, whichever is greater

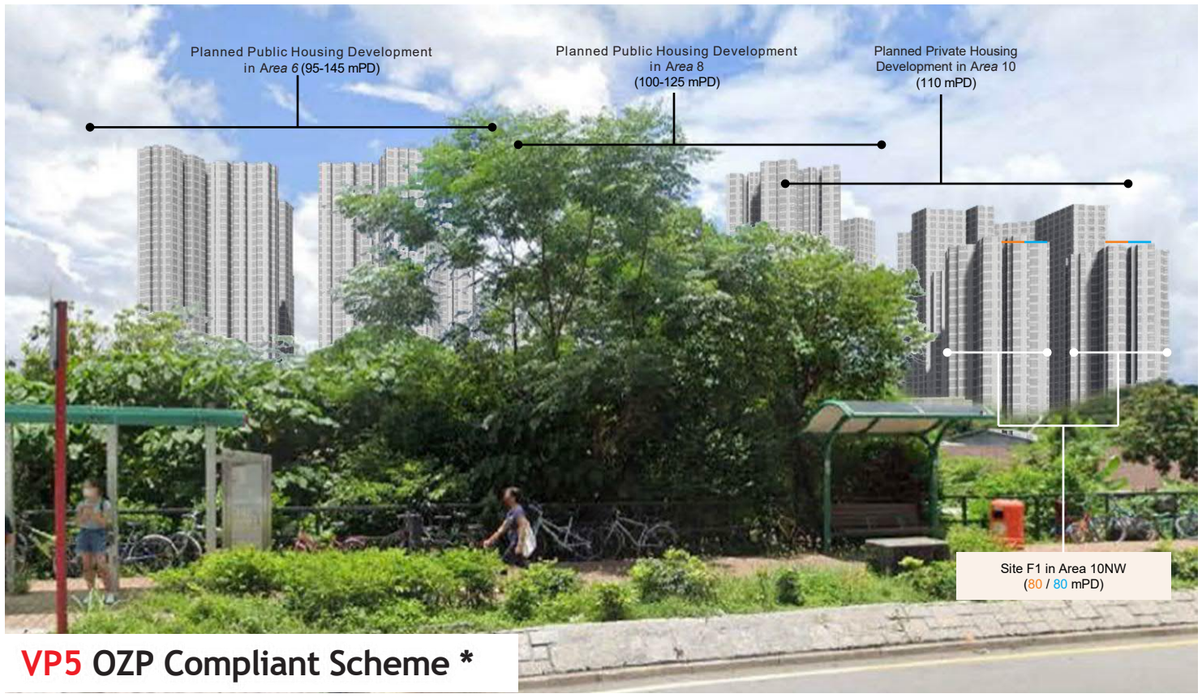
Site F_in Area___ (___/___ mPD)

Under Proposed Scheme

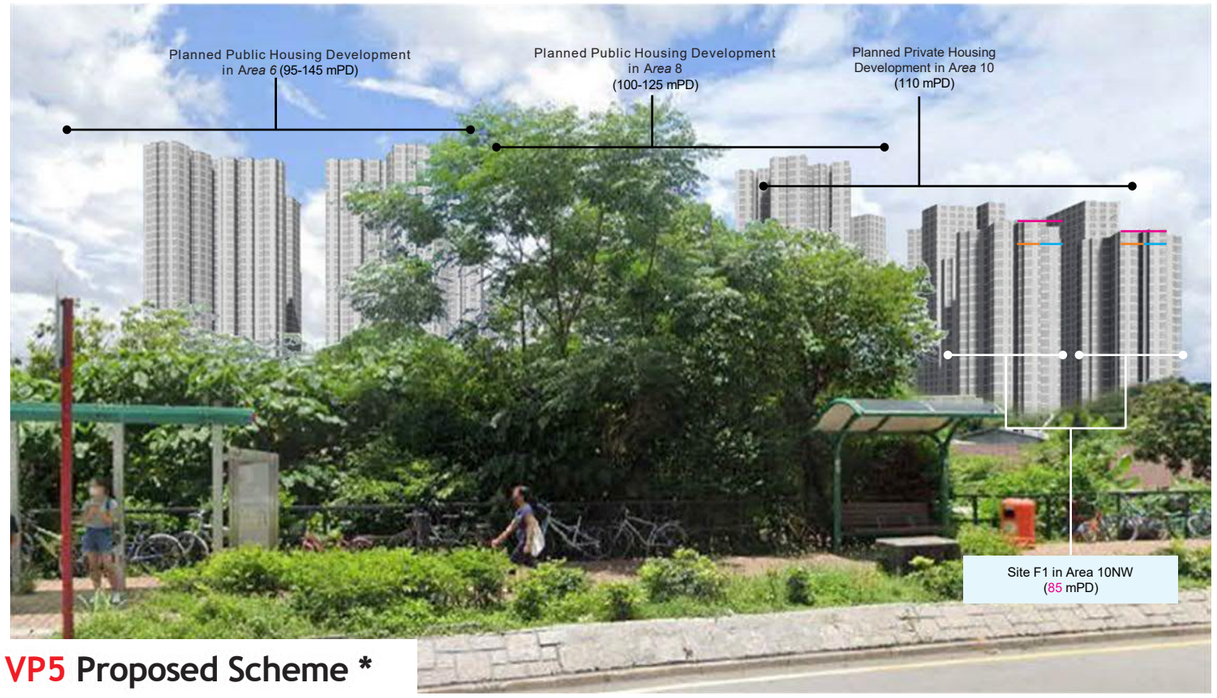
Site F_in Area___ (___ mPD)

Key Plan





VP5 OZP Compliant Scheme *



VP5 Proposed Scheme *

* Taken into account the approved building height under approved planning application No. A/FLN/30 or A/FLN/32, whichever is greater.

土木工程拓展署
Civil Engineering and Development Department
North Development Office

Agreement No. CE 19/2019 (CE)

Development of Kwu Tung North New Development Area, Remaining Phase – Design and Construction

Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Private Housing Developments at Various Sites within Fanling North New Development Area and Kwu Tung North New Development Area, New Territories and Proposed Public Transport Terminus, Shop and Services and Eating Place within Permitted Private Housing Development at Site K10, Planning Area 23N, Kwu Tung North New Development Area, New Territories

Visual Appraisal for Application Sites in Kwu Tun North New Development Area

Aug 2026

AECOM ASIA COMPANY LIMITED

Disclaimer:

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1 INTRODUCTION

1.1 Background

1.1.1 As part of the measures to reduce construction costs and expedite developments, the Chief Executive (“CE”) announced in 2025 Policy Address that an enhance measure to allow full gross floor area (“GFA”) exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of Modular Integrated Construction (“MiC”) method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety.

1.1.2 In 2026, CEDD commissioned a Review to assess the building height ("BH") implications of accommodating the construction of two levels of aboveground carparks and adoption of MiC method at the selected private housing sites (i.e. Application Sites) in the Remaining Phase of Fanling North New Development Area ("FLN NDA") and Kwy Tung North New Development Area ("KTN NDA"). The Study identified that the approved BHs under the previous planning approvals would be insufficient. In this regard, a Section 16 ("S16") Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites to accommodate aboveground carparks and adoption of MiC method (the “Development Proposal”). Minor Relaxation of PR Restrictions has been included under this S16 Planning Application so as to reflect the approved plot ratio ("PR") under Application Nos. A/FLN/30 and A/KTN/93, with no change to the Approved PRs for the Application Sites. As indicated, Permission for Proposed `Public Transport Terminus', `Shop and Services' and `Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved S16.

1.1.3 A Visual Appraisal ("VA") that assesses the visual impact arising from the Development Proposal at the Application Sites at KTN NDA is prepared to support the S16 Planning Application.

1.2 Purpose of Visual Appraisal

1.2.1 The purpose of this VA is to assess the potential visual impact of the Development Proposal to the surrounding areas, and present sufficient information in a structured manner to facilitate the Town Planning Board (TPB) to visualize the three-dimensional relationship of the Development Proposal including the proposals covered by the aforesaid S.16 application with the surrounding context, and to consider the visual effects in accordance with Town Planning Board Guidelines on Submission of Visual Appraisal for Planning Applications to the Town Planning Board (TPB PG-No.41A).

1.3 Structure of the Report

1.3.1 Following this introductory section, the remainder of this VA is arranged as follows:

- Section 2 presents the Methodology of the Visual Appraisal;
- Section 3 summarizes the Proposed Changes;
- Section 4 describes the Assessment Area and Viewpoints;
- Section 5 presents the visual appraisal; and
- Section 6 evaluates the overall visual impact.

2 METHODOLOGY OF THE VISUAL APPRAISAL

2.1 Introduction

2.1.1 The visual impacts of the Development Proposal are assessed. The assessment adopts a systematic methodology and includes the following:

- Identification and plotting of visual envelope of the Development Proposal within the Assessment Area. Known and planned developments will be taken into account. Visual Envelope may contain areas, which are fully visible, partly visible and non-visible from the Development Proposal. Identification of the Visual Envelope is achieved by desktop study of topographic maps, street maps, cross sectional drawings, photographs and site visit to determine visibility of the Project from various locations. The assessment area should be up to the visual envelope which is generally the view shed formed by natural/man-made features, such as building blocks.

- Identification of the key public viewing points within the visual envelope and their views at both ground level and elevated vantage points. VPs are considered as viewing points where members of the public or tourists can assess or view the site easily whose views from public areas within the Visual Envelope will be affected by the project during construction and/or operation phases.

- Appraisal of visual changes on the assessment area and description of the visual compatibility of the Development with the surrounding and the planned setting, and its obstruction and interference with the key visual elements, including visual resources and key views of the adjacent areas.

- Evaluation of the overall visual impact of the Development Proposal, including the description of the significance of visual impacts with respect to the sensitivity of receivers and the magnitude of changes, any resultant effect in the visual quality and character of the surrounding area. Any design features or mitigation measures that help moderate the visual impact of the development shall be discussed.

- The overall visual impact of the Development Proposal is evaluated, taking into account the sensitivity of the key public viewers, visual resources and visual amenities likely to be affected, the magnitude, extent and duration of impact and any resultant improvement or degradation in the visual quality and character of the surroundings area, and planning intention and known planned development of the area. **Table 1** shows the matrix used to assess visual impacts.

- Preparation of computer-generated photomontages illustrate the visual impacts and their significance from representative vantage points.

Table 1 - Relationship between Viewing Points / Viewers' Sensitivity and Magnitude of Change in Defining Impact Significance

Magnitude of Change	Low	Medium	High
Substantial	Moderate	Moderate / Substantial	Substantial
Moderate	Slight / Moderate	Moderate	Moderate / Substantial
Slight	Negligible / Slight	Slight / Moderate	Moderate
Negligible	Negligible	Negligible	Negligible

Sensitivity of Viewing Points / Viewers

Note: All impacts are Adverse unless otherwise noted with Beneficial.

2.1.2 The significance of impacts is assessed as "Substantial", "Moderate", "Slight", "Negligible" and "Beneficial". "Negligible" impacts are deemed to make no significant difference to the character of views, even though the Project Site and development may be physically visible in them.

2.1.3 Finally a single summary assessment of the impact is made based on the following thresholds stated in TPB PG-NO.41A Town Planning Board Guidelines on Submission on Visual Appraisal for Planning Applications to the Town Planning Board:

- **Substantial** - Adverse impact where the proposal would cause significant deterioration or improvement in existing visual quality.
- **Moderate** - Adverse impact where the proposal would cause a noticeable deterioration or improvement in existing visual quality;
- **Slight**- Adverse impact where the proposal would cause a barely perceptible deterioration or improvement in existing visual quality;
- **Negligible** - No discernible change in the existing visual quality; and
- **Beneficial** - Beneficial impact where the proposal would complement the visual character of its setting, and/or would improve overall visual quality.

3 SUMMARY OF PROPOSED CHANGES

3.1 Introduction

3.1.1 Site Layout Plan is shown in **Figure 1.1**. The Baseline Scenario and Proposed Scenario of the Development Proposal are shown in **Figure 2.1** and **2.2** respectively. The layouts are indicative for technical assessments purposes.

3.1.2 Due to increasing building height for accommodating aboveground carpark and adoption of MiC method into the private housing sites in KTN NDA, and site review under the latest planning circumstances; the proposed building height restriction will be required to change. The proposed changes in maximum building height restriction are shown in **Table 2** and illustrated in **Figure 2.3**.

Table 2 - Summary of Changes in Building Height Restriction at the Application Sites

Site No.	Area No.	Changes in Building Height Restriction	Building Layout Changed (Yes/No)	Changes in Building Height Restriction	Building Layout Changed (Yes/No)
		Compared to OZP Compliant Scheme		Compared to Approved S16 Application No. A/KTN/93	
Sites under S16 Application					
K1	Area 20E	115mPD to 130mPD	No	N/A	No
K2	Area 25E	115mPD to 130mPD	No	N/A	No
K3	Area 14	80mPD to 110mPD	Yes	95mPD to 110mPD	Yes
K4a	Area 22W	75mPD to 95mPD	Yes	85mPD to 95mPD	Yes
K4b	Area 22E	75mPD to 95mPD	Yes	85mPD to 95mPD	Yes
K5	Area 26W	75mPD to 85mPD	Yes	80mPD to 85mPD	Yes
K6	Area 26E	75mPD to 85mPD	Yes	80mPD to 85mPD	Yes
K7	Area 15N	85/95mPD to 115mPD	Yes	100mPD to 115mPD	Yes
K8	Area 15C	85mPD to 105mPD	Yes	90mPD to 105mPD	Yes
K9	Area 15S	80mPD to 95mPD	Yes	85mPD to 95mPD	Yes
K10	Area 23N	95mPD to 115mPD	Yes	110mPD to 115mPD	Yes
K11	Area 23C	90mPD to 95mPD	Yes	90mPD to 95mPD	Yes
K12	Area 23S	N/A	No	N/A	No

4 ASSESSMENT AREA & VIEWING POINTS

4.1 Assessment Area

4.1.1 The extent of the assessment area for Visual Envelope is according to Methodology of the Visual Appraisal mentioned in **Para 2.1.1**. The extent of the visual envelope is mapped in **Figure 2.1** and **2.2**.

4.2 Viewing Points

4.2.1 Nine viewpoints (VPs) are representative views that would be experienced by adjacent VPs. Description of viewpoints are provided below. Their locations are mapped in **Figure 2.1** and **2.2**.

Table 4 - List of Viewpoints and Sensitivity of VPs

VP ID	Location	Viewing Distance	Description	Type and Sensitivity of Identified Public Viewing Points (VPs)
VP1	View from Western Range - Lok Ma Chau Footpath	Long	This VP is located at the trail to the ridgeline of Lok Ma Chau, which the footpath is not readily accessible due to overgrown vegetation at lower levels. From the high point viewing from the west to the proposed KTN NDA, the viewing general view consists of an open sky view, with high rise buildings of Sheung Shui and Fanling urban area, and hillside landscape of Crest Hill prominent in the background. In the mid-ground, the lowland grasslands of the Kwu Tung and the mass of new development of KTN NDA (Area 19W and 24W) are visible and partially blocked by the hillside landscape of Western Range and Tit Hang in the foreground. Given this area is likely to be inaccessible and very few people use the trail, the sensitivity is considered as low.	Recreational VP - **Low**
VP2	View from Small Valley at the Eastern Foothill of Western Range	Long	This VP is located along the trails in a small valley at the eastern foothills of the Western Range, at the northeast of Tit Hang and the southwest of the Lo Wu and Ma Tso Lung Firing Range. Viewing towards southeast in the direction of the KTN NDA, the general view of this VP consists of an open sky, urban sprawl of Fanling/ Sheung Shui and Tai To Yan / Pat Sin Leng Country Park framing the view from the east at the background. The existing industrial area near Tung Fong and mass of new development of KTN NDA (Area 19W and 24E) is visible in the middle ground, with vegetation of Western Range in the foreground. The duration of views is short to medium, as most viewers along the trails may pause to view the open sky and hillside landscape of Kwu Tung.	Recreational VP - **High**
VP3	View from Fanling Highway near Valais & Europa Garden	Medium	This VP is located along Fanling Highway near Valais and Europa Garden. Viewing to the north, this VP consists of the Fanling Highway which dominated the foreground, with roadside planting of some trees and shrubs the middle ground and open sky view at the background. Rural settlements such as warehouses are also visible in the background. The duration of views is short, as most viewers along Fanling Highway is transient.	Travelling VP - **Medium**
VP4	View from Hadden Hill Footpath	Long	This VP is located on the trail to the ridgeline of Hadden Hill. This general view of this VP consists of an open and panoramic view to KTN NDA, with open sky view, ridgeline of Crest Hill and Shenzhen skyline across the border at the background. The lowland hillside of Hadden Hill, which frames the view with Tit Hang on the west in the foreground. In the middle ground, the mass of new development of KTN NDA (Area 24W, 24E and 29) are visible along the Fanling Highway, and with the agricultural land of Long Valley and Sheung Shui/ Fanling urban area further east. The construction of Kwu Tung North First Phase is also shown. The duration of views is short to medium, as most viewers along the trails may pause to view the open sky and hillside landscape of Kwu Tung.	Recreational VP - **Medium**
VP5	View from Road P2	Short	This VP is located along the proposed Road P2. It provides view to the west with an open sky view, which is looking at the proposed building clusters of KTN NDA, with the mass of new development of KTN NDA (Area 19W and 24E) visible in the background. In the foreground, the view is dominated by the road traffic and roadside landscape. The construction of Kwu Tung North First Phase is also shown. The duration of views is short, as most viewers along Road P2 are transient.	Travelling VP - **Medium**
VP6	View from Road P1	Long	This VP is located at Road P1 near Tit Hang, viewing towards the KTN NDA on the east. The general view is dominated by the mass of new development of KTN NDA (Area 19W, 24W and 24E) next to Road P1 in the foreground, and Sheung Shui/ Fanling urban area with open sky view visible in the background. The duration of views is short, as most viewers	

			along Road P1 are transient.	
VP7	View from Open Space at Town Centre of KTN NDA	Short	This VP is located at the proposed district open space in KTN NDA, near the northeast corner of Site No. K2. The view is dominated by the Kwun Tung Station of Railway Associated Facilities development along roadside and entrance to railway. In the background, the general view of this VP consists of the mass of new development of KTN NDA (Area 19W) with open sky view. This VP shall be exposed to the future recreational users from the planned district open space in KTN, where duration of views is medium to long, as most viewers may stay in the open space for recreational activities.	Recreational VP - **High**
VP8	View from Footpath along Sheung Yue River near Long Valley Nature Park	Medium	The general view of this VP consist of Sheung Yue River with sparse vegetation at the foreground, the Long Valley Nature Centre with lowland woodland at the middle ground, and open sky view at the background. The duration of views is medium to long, as most viewers may stay in the open space along Sheung Yue River for recreational activities.	Recreational VP - **High**
VP9	View from Hiking Trail to Crest Hill	Long	This VP is located at the northeast side of Site which represents the hikers along the trail to Crest Hill. The general view captured lush hillside greenery at the low hill of Crest Hill in the foreground, with overhead, brownfield and storage surrounded by considerable village/ rural vegetation and mass of new development of KTN NDA (Area 19W, 24W and 24E) at the middle-ground, and the mountain backdrop of Hadden Hill, Ngau Tam Shan, Kai Kung Shan / Lam Tsuen Country Park with open sky view at the background. The construction of Kwu Tung North First Phase is also shown. The duration of views is short to medium, as most viewers along the trails may pause to view the open sky and hillside landscape of Kwu Tung.	Recreational VP - **Medium**

5 VISUAL APPRAISAL

5.1.1 The sources of impacts would create varying levels of visual impact during operational phases of the Project, and are shown in **Table 5**.

5.1.2 The summary of the proposed changes is listed in **Section 3**. The potential change in visual impacts due to the proposed changes are assessed and described in **Table 5** and **Table 6**. Baseline Scenario and Proposed Scenario on the proposed changes in building layout and height are illustrated in **Figure 2.1 - 2.3**. Photomontages with and without the proposed changes are prepared and shown in **Figure 3.1** - **3.9** to illustrate the predicted potential visual impact of the viewpoints and the identified VPs. The changes on these Assessment Sites illustrate the changes compared with the prevailing OZP No. S/KTN/4 restrictions and the approved planning application No. A/KTN/93.

Table 5 - Summary of Proposed Changes and the potential visual impacts to identified VPs

Proposed Changes (in comparison with restriction under OZP Compliant Scheme)	Proposed Changes (in comparison with restriction under Approved Scheme)	Potential Visual Impacts
Proposed changes in building heights - Site No. K1 *115mPD to 130mPD* - Site No. K2 *115mPD to 130mPD* - Site No. K3 *80mPD to 110mPD* - Site No. K4a *75mPD to 95mPD* - Site No. K4b *75mPD to 95mPD* - Site No. K5 *75mPD to 85mPD* - Site No. K6 *75mPD to 85mPD* - Site No. K7 *85/95mPD to 115mPD* - Site No. K8 *85mPD to 105mPD* - Site No. K9 *80mPD to 95mPD*	Proposed changes in building heights - Site No. K1 *N/A* - Site No. K2 *N/A* - Site No. K3 *95mPD to 110mPD* - Site No. K4a *85mPD to 95mPD* - Site No. K4b *85mPD to 95mPD* - Site No. K5 *80mPD to 85mPD* - Site No. K6 *80mPD to 85mPD* - Site No. K7 *100mPD to 115mPD* - Site No. K8 *90mPD to 105mPD* - Site No. K9 *85mPD to 95mPD*	Minor building block layout change is involved. Potential VPs to be affected from different direction and types are described below and the photomontages illustrating the potential impact are shown in **Figure 3.1** – **3.9**. Type of VPs • Recreational VPs (hikers) from the View from Western Range - Lok Ma Chau Footpath (VP1); View from Small Valley at the Eastern Foothill of Western Range (VP2); View from Hadden Hill Footpath (VP4); View from Open Space at Town Centre of KTN NDA (VP7); View from Footpath along Sheung Yue River near Long Valley Nature Park (VP8); and View from Hiking trail to Crest Hill (VP9); • Travelling VPs from the View from Fanling Highway near Valais & Europa Garden (VP3); View from Road P2 (VP5); and View from Road P1 (VP6)
- Site No. K10 *90mPD to 115mPD* - Site No. K11 *90mPD to 95mPD* - Site No. K12 *N/A*	- Site No. K10 *110mPD to 115mPD* - Site No. K11 *90mPD to 95mPD* - Site No. K12 *N/A*	

5.2 Visual Appraisal

Visual Appraisal of Specific Viewpoints: Comparison with OZP Compliant Scheme

VP1 - View from Western Range - Lok Ma Chau Footpath

5.2.1 The sources of impacts would create varying levels of visual impact from the permanent works during operation phase shown in **Table 5**.

5.2.2 Viewpoint VP1 has an overall distant view from Lok Ma Chau to proposed Site K7, K8 and K9. Relaxation of building height increase by 20-30m for Site K7, 20m for K8, and by 15m for Site K9 in comparison with restriction under S/KTN/4 are proposed, as illustrated in the photomontages **Figure 3.1**.

5.2.3 The proposed changes in building height and layout in Site K7 – K9 are considered compatible with the existing and planned urban developments in term of scale and height. The overall buildings profile at central view is maintained in a large extent, hence, the visual composition is not disturbed. And the proposed changes are regarded as visually compatible which blend with adjoining building clusters, and would not be significant due to long distance. The magnitude of change to this VP would be considered as slight.

5.2.4 Hence, the visual impact is considered as slight.

VP2 - View from Small Valley at the Eastern Foothill of Western Range

5.2.5 Viewpoint VP2 has an overall view from small valley at the eastern foothill of Western Range to proposed Site K3, K7, K8, K9 and K10. Relaxation of building height increase by 30m for Site K3, 20-30m for Site K7, 20m for K8 and K10, and by 15m for Site K9 in comparison with restrictions under S/KTN/4 are proposed.

5.2.6 The proposed changes in building height and layout in Site K3, K7-10 are considered compatible with the existing and planned urban developments in term of scale and height as illustrated in the photomontages **Figure 3.2**. While existing visual resources including hillside vegetation at foreground and mountain backdrop to the east will not be affected, which also act as a screening agent to reduce the bulkiness of proposed building blocks. Though certain portion of sky view will be intruded due to increased building height, but there would be no significant alteration to the visual permeability which overall sense of openness is maintained. The magnitude of change to this VP would be considered as slight.

5.2.7 Hence, the visual impact is considered as slight.

VP3 - View from Fanling Highway near Valais & Europa Garden

5.2.8 Viewpoint VP3 is a direct view from the section of Fanling Highway near the Valais Residential Development at the south to the proposed Site K1, K2 and K5, with Site K1 located behind Site K2 and Site K5 located behind Area 31W, both Site K1 and K5 are not visible in this VP. Relaxation of building height increase by 15m for Site K1 and K2, and by 10m for Site B5 in comparison with restriction under S/KTN/4 .

5.2.9 Existing village greenery at front view will not be affected which provide screening effect to the lower portion of building blocks as illustrated in the photomontages **Figure 3.3**. While small portion of sky will be intruded due to increased building height, but there would be no significant alteration to the visual permeability which overall sense of openness is maintained. The magnitude of change to this VP would be considered as slight.

5.2.10 Hence, the visual impact is considered as slight.

VP4 - View from Hadden Hill Footpath

5.2.11 Viewpoint VP4 is a direct overview from Hadden Hill to the proposed KTN NDA. For the Site K2 and K5, the relaxation of building height increase by 15m (Site K2), and by 10m (Site K5) in comparison with restriction under S/KTN/4 are proposed. The proposed changes in building height of the Sites would not result in noticeable change in the existing visual context and create obstruction to the existing mountainous backdrop and open sky view.

5.2.12 The proposed changes in building height and layout in Site K2 and K5 are considered compatible with the existing and planned urban developments in terms of scale and height. The overall buildings profile at central view is maintained in a large extent, hence, the visual composition is not disturbed. The proposed changes are regarded as visually compatible, which blend with adjoining building clusters, and would not be significant due to long distance. The magnitude of change to this VP would be considered as negligible.

5.2.13 Hence, the visual impact is considered as negligible as illustrated in the photomontage in **Figure 3.4**.

VP5 - View from Road P2

5.2.14 Viewpoint VP5 has a direct view from Road P2 to proposed Site K3, K4a and K4b. The proposed relaxation of building height would be by 30m (Site K3) and by 20m (Site K4a & K4b) in comparison with restriction under S/KTN/4 .

5.2.15 Though the changes would result in minor change of the skyline at the background and small portion of sky will be intruded due to increased building height, with partial blockage of public housing sites at the background, the overall sense of openness is maintained and no significant alteration to visual permeability, as illustrated in the photomontages in **Figure 3.5**.

5.2.16 The proposed changes in building height and layout in Site K3, K4a and K4b are considered compatible with the existing and planned urban developments in terms of scale and height. Due to short viewing distance, the magnitude of change to this VP would be considered as moderate, and the visual impact is considered as moderate.

VP6 - View from Road P1

5.2.17 Viewpoint VP6 is a direct view from Pak Shek Au to proposed Site K1, K2, and K4 – K6. Relaxation of building height increase by 20m (Site K4a & K4b), by 15m (Site K1 & K2), and by 10m (Site K5 & K6) in comparison with restrictions under S/KTN/4 are proposed.

5.2.18 The proposed changes would result in minor change of the skyline in the background as illustrated in the photomontages in **Figure 3.6**. The perceived change to the skyline is considered slight due to the long distance of this viewpoint.

5.2.19 The proposed changes in Site K1, K2, and K4 – K6 are considered compatible with the existing and planned urban developments in term of scale and height. The magnitude of change to this VP would be considered as slight, and the visual impact is considered as slight.

VP7 - View from Open Space at Town Centre of KTN NDA

5.2.20 Viewpoint VP7 is a direct view from town center to proposed Site K1 and K3. Relaxation of building height increase by 30m for Site K3 and by 15m for Site K1 in comparison with restriction under S/KTN/4.

5.2.21 The proposed increase in building height would result in in minor change to the visual openness of the view compared with the Baseline Scenario. As illustrated in the photomontages in **Figure 3.7**, visual gaps between the developments would be maintained and the visual permeability would not be significantly affected.

5.2.22 The building height in Site K1 and K3 is considered compatible with the existing and planned urban developments in terms of scale and height. The magnitude of change to this VP would be considered as slight, and the visual impact is considered as slight.

VP8 - View from Footpath along Sheung Yue River near Long Valley Nature Park

5.2.23 Viewpoint VP8 is a distant and glimpse view from Long Village to proposed Site K4a & K4b, K6, K7, K10-12. With the medium distant view, the proposed change for building height by 20-30m (Site K7), 20m (Site K4a & K4b and K10), 10m (Site K6), and 5m (Site K11) in comparison with restriction under S/KTN/4 respectively would result in minor obstruction that is may be noticeable to the existing visual context as illustrated in photomontages in **Figure 3.8**. There is no building height and layout changes by Site K12 in comparison with restriction under S/KTN/4.

5.2.24 Mitigation measures in relation to watercourse and provision of greenery in the foreground would offer screening effect for the lower portion of building, at the same time serve as a visual relief and visual resources at the front row. The overall visual quality of the view is still considered as high.

5.2.25 Although the visual openness of this view might be slightly affected, the proposed changes of the Sites is considered minor, while it could be mitigated with well-implementation of soft landscape and detailed design measures. The magnitude of change to this VP would be considered as slight. Hence, the visual impact is considered as slight.

VP9 - View from Hiking Trail to Crest Hill

5.2.26 Viewpoint VP9 is an overview from Crest Hill to the proposed KTN NDA covering Site K3, K7, K8 and K10-12. Relaxation of building height by 30m (Site K3), 20-30m (Site K7), 20m (K8 and K10), and 5m (Site K11) in comparison with restriction under S/KTN/4 are proposed, and there is no building height and layout changes by Site K12. Compared to baseline scenario scheme, the proposed changes in building height and layout of the Sites would have minor impact to open sky view, partial blockage to the public housing sites and result in partial intrusion towards mountain and building backdrops. The magnitude of change to this VP would be considered as moderate.

5.2.27 Proposed changes are perceived in a holistic manner and would not be significant due to long distances. Hence, the visual impact is considered as moderate as illustrated in the photomontage in **Figure 3.9**.

Visual Appraisal of Specific Viewpoints: Comparison with Approved Scheme

VP1 - View from Western Range - Lok Ma Chau Footpath

5.2.28 The sources of impacts would create varying levels of visual impact from the permanent works during operation phase shown in **Table 5**.

5.2.29 Viewpoint VP1 has an overall distant view from Lok Ma Chau to proposed Site K7, K8 and K9. Relaxation of building height increase by 15m for Site K7 and K8, and by 10m for Site K9 in comparison with restriction under A/KTN/93 are proposed, as illustrated in the photomontages **Figure 3.1**.

5.2.30 The proposed changes in building height and layout in Site K7 – K9 are considered compatible with the existing and planned urban developments in term of scale and height. The overall buildings profile at central view is maintained in a large extent, hence, the visual composition is not disturbed. And the proposed changes are regarded as visually compatible which blend with adjoining building clusters, and would not be significant due to long distance. The magnitude of change to this VP would be considered as slight.

5.2.31 Hence, the visual impact is considered as slight.

VP2 - View from Small Valley at the Eastern Foothill of Western Range

5.2.32 Viewpoint VP2 has an overall view from small valley at the eastern foothill of Western Range to proposed Site K3, K7, K8, K9 and K10. Relaxation of building height increase by 15m for Site K3, K7 and K8, by 10m for Site K9, and by 5m for Site K10 in comparison with restrictions under A/KTN/93 are proposed.

5.2.33 The proposed changes in building height and layout in Site K3, K7-10 are considered compatible with the existing and planned urban developments in term of scale and height as illustrated in the photomontages **Figure 3.2**. While existing visual resources including hillside vegetation at foreground and mountain backdrop to the east will not be affected, which also act as a screening agent to reduce the bulkiness of proposed building blocks. Though certain portion of sky view will be intruded due to increased building height, but there would be no significant alteration to the visual permeability which overall sense of openness is maintained. The magnitude of change to this VP would be considered as slight.

5.2.34 Hence, the visual impact is considered as slight.

VP3 - View from Fanling Highway near Valais & Europa Garden

5.2.35 Viewpoint VP3 is a direct view from the section of Fanling Highway near the Valais Residential Development at the south to the proposed Site K1, K2 and K5, with Site K1 located behind Site K2 and Site K5 located behind Area 31W, both Site K1 and K5 are not visible in this VP. There is no building height changes by Site K1 and K2, and by 5m for Site B5 in comparison with restriction under A/KTN/93.

5.2.36 Existing village greenery at front view will not be affected which provide screening effect to the lower portion of building blocks as illustrated in the photomontages **Figure 3.3**. While small portion of sky will be intruded due to increased building height, but there would be no significant alteration to the visual permeability which overall sense of openness is maintained. The magnitude of change to this VP would be considered as negligible.

5.2.37 Hence, the visual impact is considered as negligible.

VP4 - View from Hadden Hill Footpath

5.2.38 Viewpoint VP4 is a direct overview from Hadden Hill to the proposed KTN NDA. For the Site K2 and K5, there are no building height change to Site K2, and the relaxation of building height by 5m (Site K5) in comparison with restriction under A/KTN/93 are proposed. The proposed changes in building height of the Sites would not result in noticeable change in the existing visual context and create obstruction to the existing mountainous backdrop and open sky view.

5.2.39 The proposed changes in building height and layout in Site K5 are considered compatible with the existing and planned urban developments in terms of scale and height. The overall buildings profile at central view is maintained in a large extent, hence, the visual composition is not disturbed. The proposed changes are regarded as visually compatible, which blend with adjoining building clusters, and would not be significant due to long distance. The magnitude of change to this VP would be considered as negligible.

5.2.40 Hence, the visual impact is considered as negligible as illustrated in the photomontage in **Figure 3.4**.

VP5 - View from Road P2

5.2.41 Viewpoint VP5 has a direct view from Road P2 to proposed Site K3, K4a and K4b. The proposed relaxation of building height would be by 15m (Site K3) and by 10m (Site K4a & K4b) in comparison with restriction under A/KTN/93.

5.2.42 Though the changes would result in minor change of the skyline at the background and small portion of sky will be intruded due to increased building height, with partial blockage of public housing sites at the background, the overall sense of openness is maintained and no significant alteration to visual permeability, as illustrated in the photomontages in **Figure 3.5**.

5.2.43 The proposed changes in building height and layout in Site K3, K4a and K4b are considered compatible with the existing and planned urban developments in terms of scale and height. Due to short viewing distance, the magnitude of change to this VP would be considered as slight to moderate, and the visual impact is considered as moderate.

VP6 - View from Road P1

5.2.44 Viewpoint VP6 is a direct view from Pak Shek Au to proposed Site K1, K2 and K4 – K6. There is no building height change to Site K1 and K2, and the relaxation of building height by 5m (Site K5 & K6) and 10m (Site K4a & K4b) in comparison with restrictions under A/KTN/93 are proposed.

5.2.45 The proposed changes would result in minor change of the skyline in the background as illustrated in the photomontages in **Figure 3.6**. The perceived change to the skyline is considered slight due to the long distance of this viewpoint.

5.2.46 The proposed changes in Site K4 – K6 are considered compatible with the existing and planned urban developments in term of scale and height. The magnitude of change to this VP would be considered as slight, and the visual impact is considered as slight.

VP7 - View from Open Space at Town Centre of KTN NDA

5.2.47 Viewpoint VP7 is a direct view from town center to proposed Site K1 and K3. There is no building height change to Site K1 and 15m for Site K3 in comparison with restriction under A/KTN/93.

5.2.48 The proposed increase in building height would result in in minor change to the visual openness of the view compared with the Approved Scheme. As illustrated in the photomontages in **Figure 3.7**, visual gaps between the developments would be maintained and the visual permeability would not be significantly affected.

5.2.49 The building height in Site K3 is considered compatible with the existing and planned urban developments in terms of scale and height. The magnitude of change to this VP would be considered as slight, and the visual impact is considered as slight.

VP8 - View from Footpath along Sheung Yue River near Long Valley Nature Park

5.2.50 Viewpoint VP8 is a distant and glimpse view from Long Village to proposed Site K4a & K4b, K6, K7, K10- 12. With the medium distant view, the proposed change for building height by 5m (Site K6, K10 & K11), 10m (Site K4a & K4b) and 15m (Site K7) in comparison with restriction under A/KTN/93 respectively would result in minor obstruction that is may be noticeable to the existing visual context as illustrated in photomontages in **Figure 3.8**. There is no building height and layout changes by Site K12 in comparison with restriction under A/KTN/93.

5.2.51 Mitigation measures in relation to watercourse and provision of greenery in the foreground would offer screening effect for the lower portion of building, at the same time serve as a visual relief and visual resources at the front row. The overall visual quality of the view is still considered as high.

5.2.52 Although the visual openness of this view might be slightly affected, the proposed changes of the Sites is considered minor, while it could be mitigated with well-implementation of soft landscape and detailed design measures. The magnitude of change to this VP would be considered as slight. Hence, the visual impact is considered as slight.

VP9 - View from Hiking Trail to Crest Hill

5.2.53 Viewpoint VP9 is an overview from Crest Hill to the proposed KTN NDA covering Site K3, K7, K8 and K10-12, the relaxation of building height by 5m (Site K10 & K11), and 15m (Site K3, K7 & K8) in comparison with restriction under A/KTN/93 are proposed, and there is no building height and layout changes by Site K12. Compared to Approved Scheme, the proposed changes in building height and layout of the Sites would have minor impact to open sky view, partial blockage to the public housing sites and result in partial intrusion towards mountain and building backdrops. The magnitude of change to this VP would be considered as slight to moderate.

5.2.54 Proposed changes are perceived in a holistic manner and would not be significant due to long distances. Hence, the visual impact is considered as moderate as illustrated in the photomontage in **Figure 3.9**.

Table 6 – Significance of Visual Impacts

VP ID.	Location of VPs / Key Public Viewers	Sensitivity (High, Medium, Low)	Magnitude of Change (Negligible, Slight, Moderate, Substantial)		Recommended Mitigation Measures (2)	Significance Thresholds of Visual Impact after Mitigation Measure Established (Beneficial, Negligible, Slight, Moderate, Substantial)
			OZP Compliant Scheme	Approved Scheme		
VP1	View from Western Range - Lok Ma Chau Footpath	Low	Slight	Slight	MM1, MM2, MM5	Slight
VP2	View from Small Valley at the Eastern Foothill of Western Range	High	Slight	Slight	MM1, MM2, MM5	Slight
VP3	View from Fanling Highway near Valais & Europa Garden	Medium	Slight	Negligible	MM1, MM5	Slight
VP4	View from Hadden Hill Footpath	Medium	Negligible	Negligible	MM1, MM2, MM5	Negligible
VP5	View from Road P2	Medium	Moderate	Slight to Moderate	MM1	Slight
VP6	View from Road P1	Medium	Slight	Slight	MM1, MM2, MM3, MM5	Slight
VP7	View from Open Space at Town Centre of KTN NDA	High	Slight	Slight	MM1, MM2	Slight
VP8	View from Footpath along Sheung Yue River near Long Valley Nature Park	High	Slight	Slight	MM1, MM2, MM3, MM4, MM5	Slight
VP9	View from Hiking Trail to Crest Hill	Medium	Moderate	Slight to Moderate	MM1, MM2, MM5	Moderate

Cumulative Impact

5.2.55 The assessment would take into account planned developments in the vicinity, including changes for Area 9 to 13, Area 19, Area 20W, Area 21, Area 24, Area 25W, Area 26Wa, Area 28 to 32, Area 34 under approved S16 planning applications, No. A/KTN/84, A/KTN/83 and A/KTN/93 respectively.

5.2.56 The changes in the Application Sites are considered compatible with the planned developments, in term of scale and height which would be perceived in a holistic manner. The overall building profile is anticipated to be similar compared with that in Baseline condition.

Overall Visual Appraisal

5.2.57 Due to the proposed changes in development parameter, Site No. K3 - 11 would involve changes of building height relaxation and layout change as discussed above. According to visual appraisal of the viewpoints VP1 to VP9 mentioned in the paragraphs above, the visual changes of the proposal are considered as negligible to moderate. Photomontages illustrating the proposed changes are provided in **Figure 3.1 - 3.9**.

5.2.58 Effect on Visual Composition: The Developments with the proposed relaxation of building height and layout is visually compatible with the existing and planned urban context of the area in term of scale and height. The holistic building profile is still respected at the Development of KTN NDA.

5.2.59 Effect on Visual Obstruction and Visual Permeability: Although, the proposal would result in increase of visual intrusion to sky to a small extent for some of the viewpoints, the visual obstruction by increase in building height is considered slight. These changes are considered acceptable and no significant alteration to the visual permeability, which the overall sense of openness is maintained.

5.2.60 Effect on Visual Resources: The mountain backdrop and overall townscape of KTN NDA would remain unchanged; while open sky will be intruded to a small extent. There would be no significant impact upon the visual resources as compared with the Development Proposal in the Baseline Scenario.

5.2.61 Impact on Public Viewing Points: No discernible change in magnitude of impact and visual impact significance on all the VPs due to proposed changes are anticipated.

6 MITIGATION MEASURE

6.1.1 Bearing in mind that the purpose of this report is to assess the proposed changes against the planned development of the Baseline Scenario, the primary difference between the two scenarios lies in modification of building form and height. The change in overall visual impact is considered negligible to moderate as demonstrate in the assessment above and photomontages provided in **Figure 3.1 - 3.9**. The following mitigations will be adopted to enhance the visual amenity and minimize any potential adverse visual impact.

6.1.2 Detailed Design (Visual) (MM1)

• The footprint of development components and the works area should also be kept to a practical minimum and the detailed design of development components for construction stage should follow the Sustainable Building Design Guidelines. The form, textures, finishes and colours of the proposed SPS buildings and boundary treatment should aim to be compatible with the existing surroundings.

• To improve visual amenity, designs should be aesthetically pleasing and treatment of structures also improve visual amenity. For example natural building materials such as stone and timber should be considered for architectural features, and light earthy tone colours such as shades of green, shades of grey, shades of brown and off-white should also be considered to reduce the visibility of the development components.

Slope Landscaping (MM2)

• Site formation has been reduced as far as possible to avoid substantial slope cutting. Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedlings and/ or shrubs should be planted where the slope gradient and site conditions allow.

• In addition, landscape planting should be provided for the retaining structures associated with modified slopes, where conditions allow. All slope landscaping works should comply with GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes

Vertical Greening (MM3)

• Planting of climbers to grow up vertical surfaces were appropriate, such as along perimeter fencing/walling and building walls are recommended to break up uniform surfaces and provide visual amenity.

Green Roof (MM4)

• Roof greening where appropriate should be established on proposed buildings to reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to VPs at higher elevations.

Screen Planting (MM5)

• Tall buffer trees and shrubs should be planted to screen proposed structures such as roads and buildings. This measure may additionally form part of the compensatory planting and will improve compatibility with the surrounding landscape.

6.1.3 The proposed changes under the Section 16 application would inevitably create minor changes to visual composition, visual obstruction and permeability, and visual effect on the adjacent VPs. However, in general, there would not be any discernible effect on visual resources. As illustrated in the photomontages prepared under this submission, it is predicted that there would be overall insignificant visual effects to key public viewpoints identified.

7 CONCLUSION

7.1.1 This VA assessed the visual impact arising from the Development Proposal at KTN NDA. When compared to the baseline scenario with restriction under S/KTN/4, there are negligible to moderate in the magnitude of changes by building height relaxation and layout change.

7.1.2 For VP4, as most of the Sites are with blockage of other developments and with no significant visual blockages to existing visual elements, and the anticipated visual impact of operational phase would be negligible. For VP1, VP2, VP3, VP6, VP7 and VP8, although the visual openness of views might be slightly affected, the proposed changes of the Sites is considered minor, while it could be mitigated with well-implementation of soft landscape and detailed design measures, hence the anticipated visual impact of operational phase would be slight. For VP5 and VP9, due to short viewing distance and partial intrusion towards mountain and building backdrops, the visual impact is considered as moderate. As a result of the

development of visual changes, the visual impact to the identified key public viewers would be ranging from negligible to moderate.

7.1.3 With the implementation of the proposed visual mitigation measures, the overall visual impacts would be from negligible to moderate. With full implementation of the recommended mitigation measures, unacceptable adverse residual visual impacts are not expected.

Drawings

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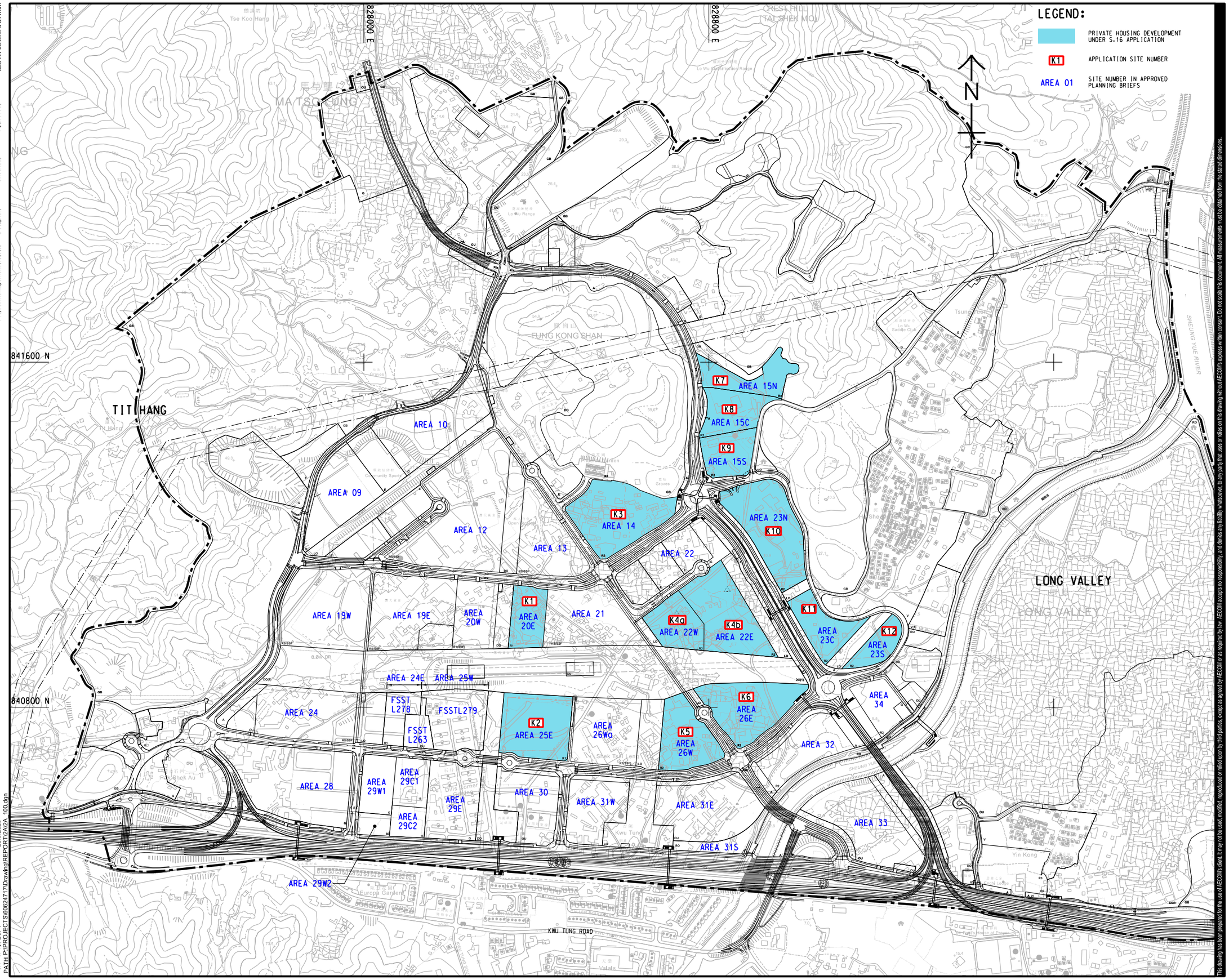

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DIMENSION UNIT 尺寸單位
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SITE LAYOUT PLAN

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60624717/2A/FIGURE 1.1

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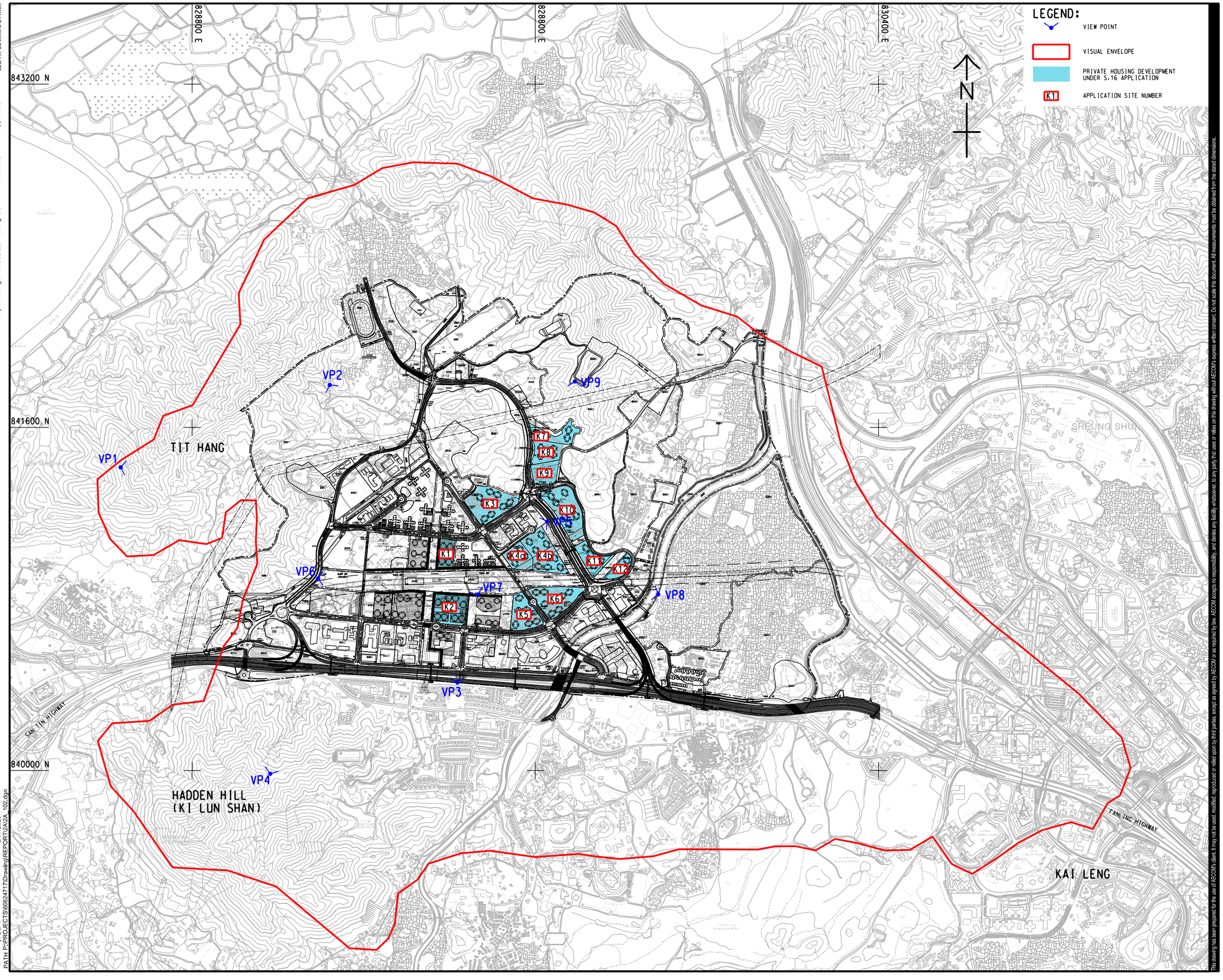

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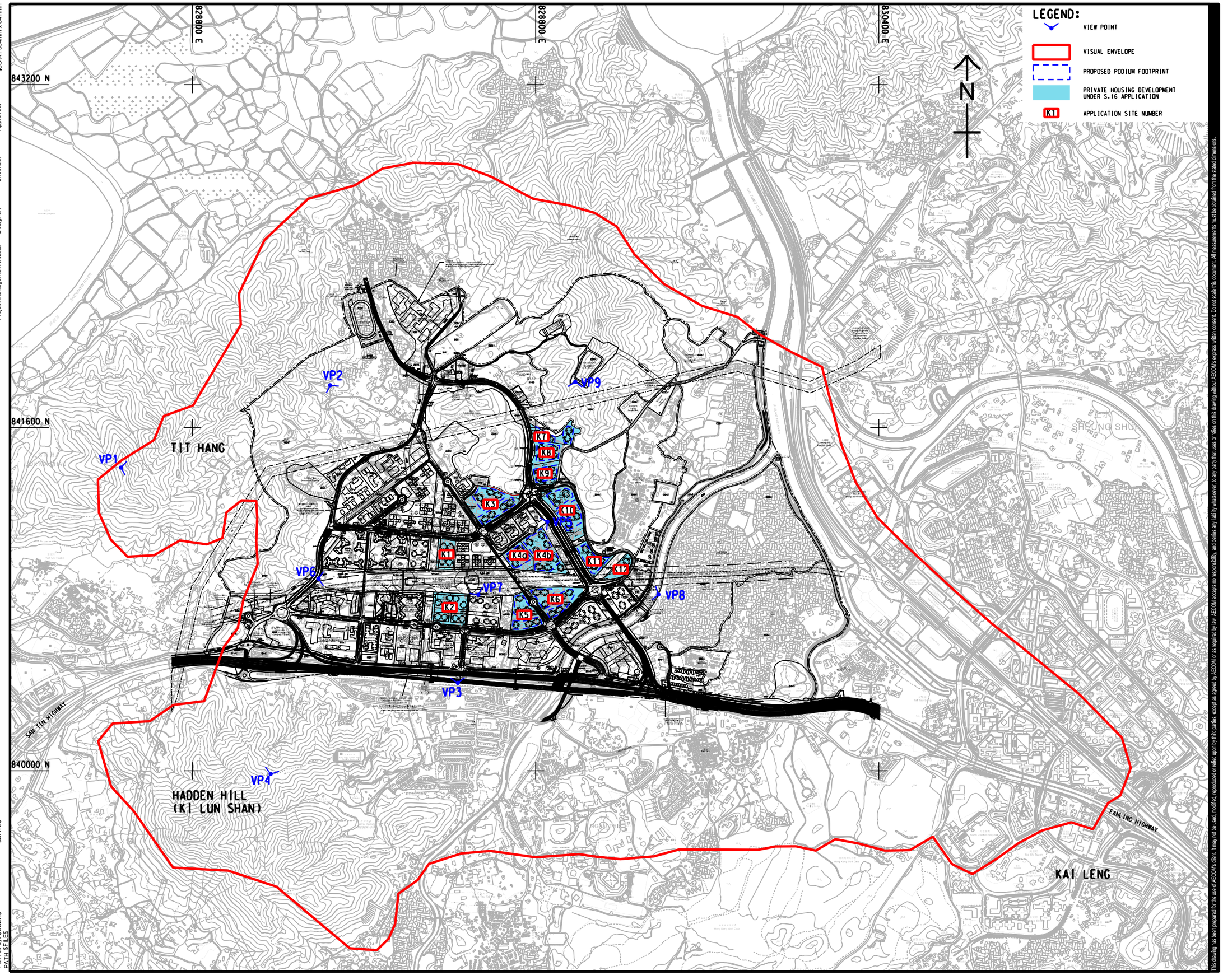

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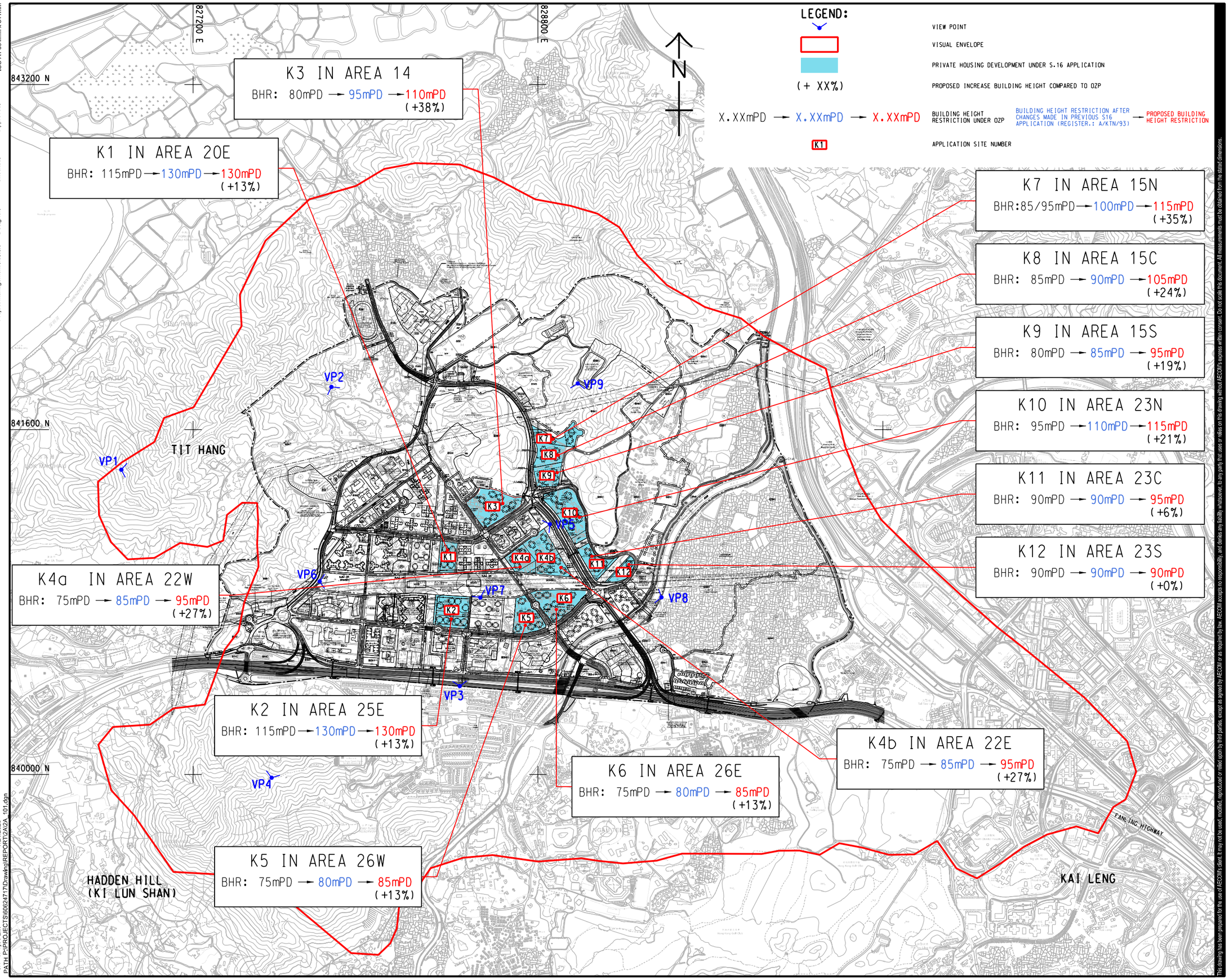

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PROPOSED RELAXATION OF DEVELOPMENT RESTRICTION - UPDATE BUILDING HEIGHT

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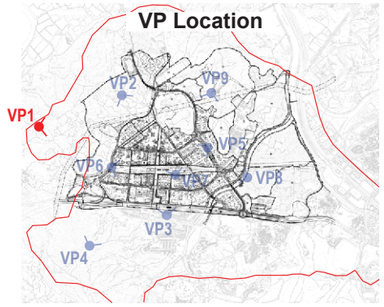
VP1 - Existing View



LEGEND

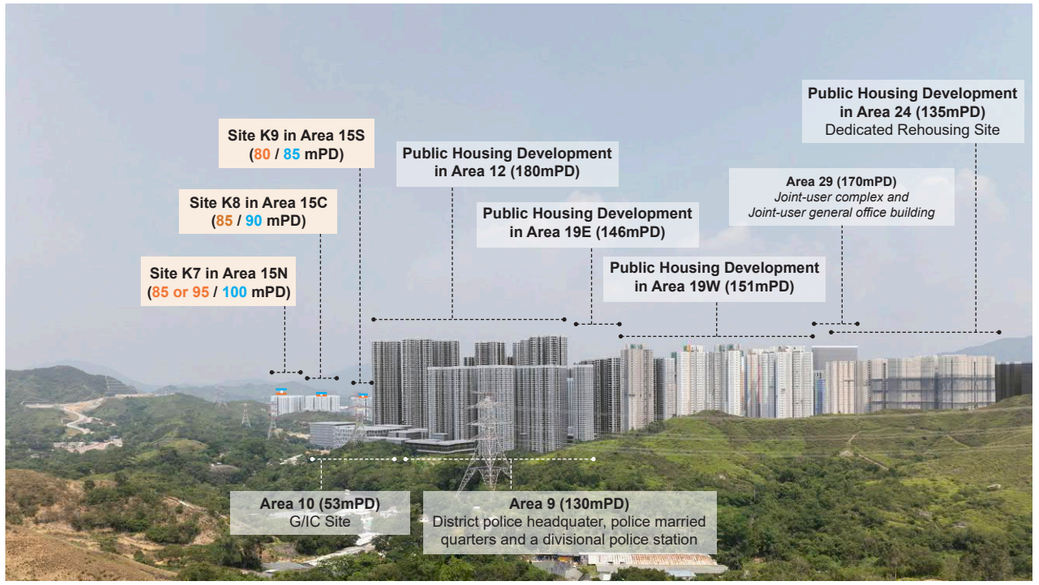
Application Site for Baseline Scenario
(light orange box)

Application Site for Proposed Scenario
(light blue box)

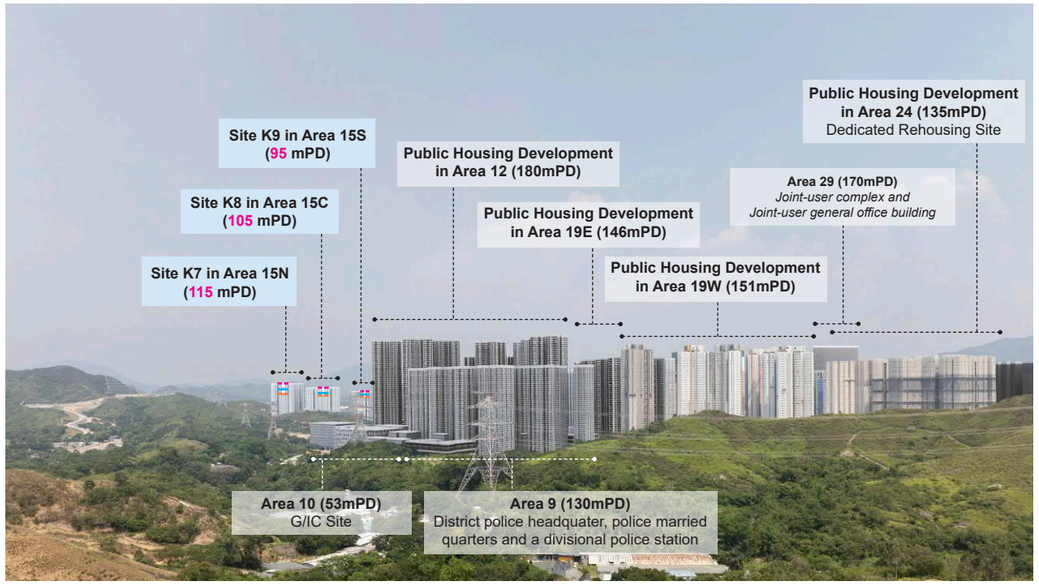
OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP1 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP1 - Proposed Scenario

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圖紙名稱
PHOTOMONTAGE FROM
VIEWPOINT VP1

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.1

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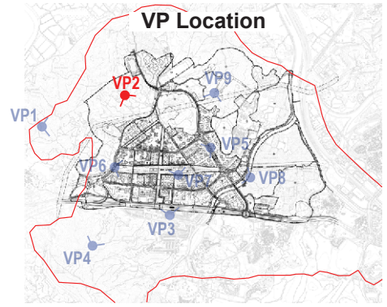
VP2 - Existing View



LEGEND

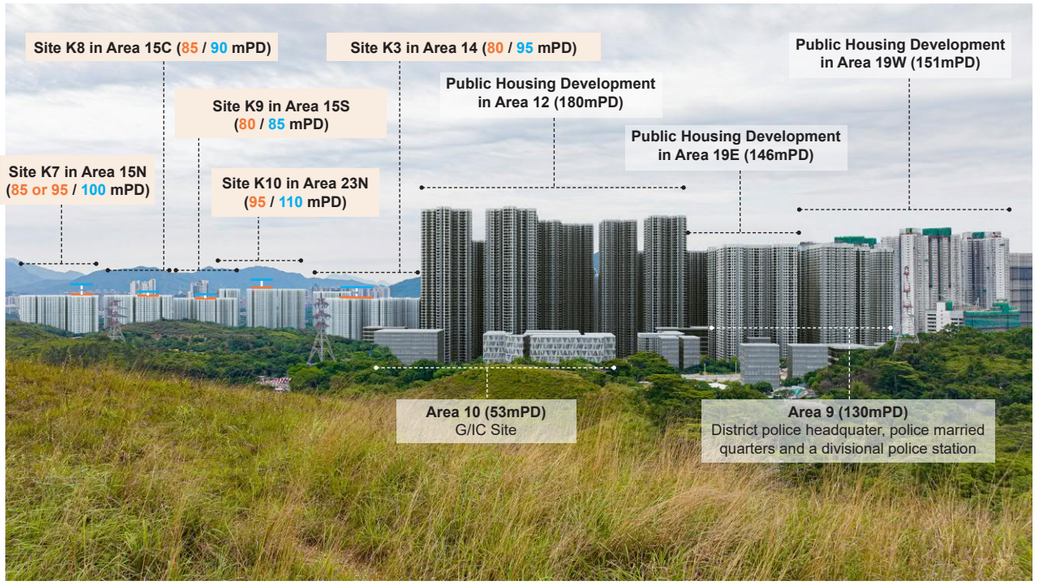
Application Site for Baseline Scenario
(light orange box)

Application Site for Proposed Scenario
(light blue box)

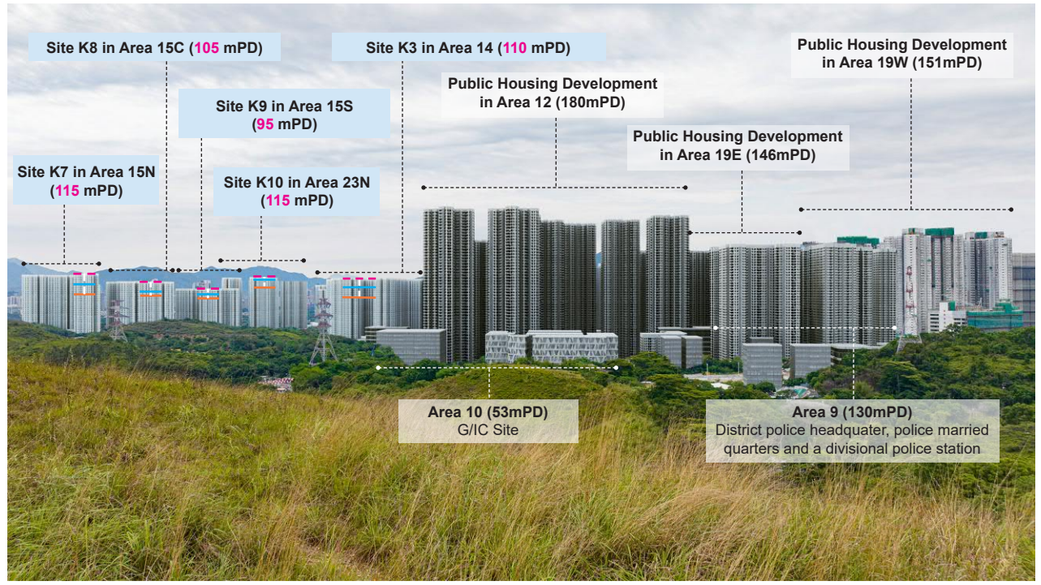
OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP2 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP2 - Proposed Scenario

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ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 事項摘要	CHK. 核對

STATUS
狀況

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

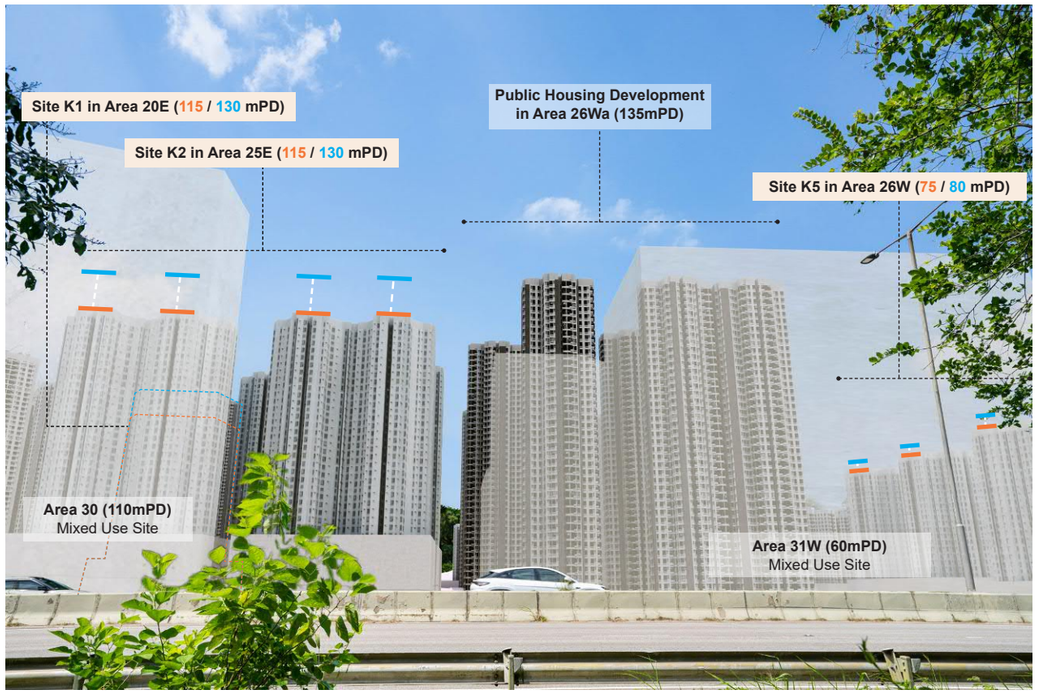
SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM VIEWPOINT VP2

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.2

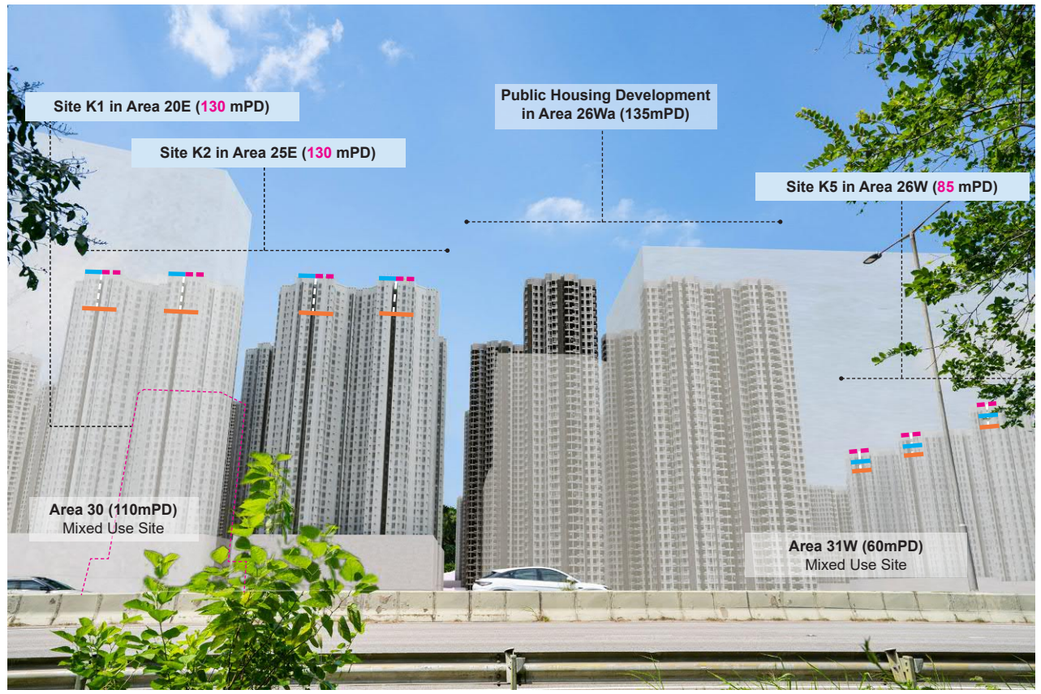
V:\BAK\US95-BAK\CSW\Plotdrv\Create Plt file\new\CSWP-75(color).pltPlot File by: ZhaiZ3
24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\2A_121.dgn

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

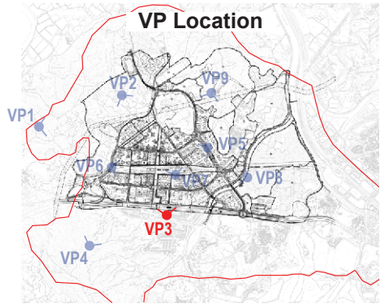
VP3 - Existing View



VP3 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP3 - Proposed Scenario



LEGEND

Application Site for Baseline Scenario
(light orange box)

OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

Application Site for Proposed Scenario
(light blue box)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION

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PROJECT
項目
DEVELOPMENT OF
KWU TUNG NORTH
NEW DEVELOPMENT AREA,
REMAINING PHASE -
DESIGN & CONSTRUCTION

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STATUS
階段

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

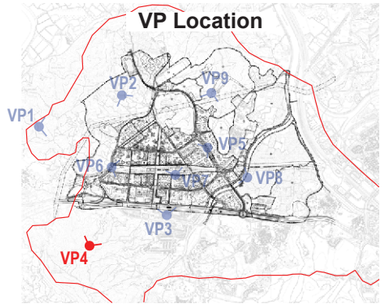
PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM
VIEWPOINT VP3

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.3

V:\BAK\US95-BAK\CSWP\pilotdrv\Create Plt file\new\CSWP-75(color).plt
Plot File by: Zhaiz23
24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\2A_122.dgn

VP4 - Existing View



LEGEND

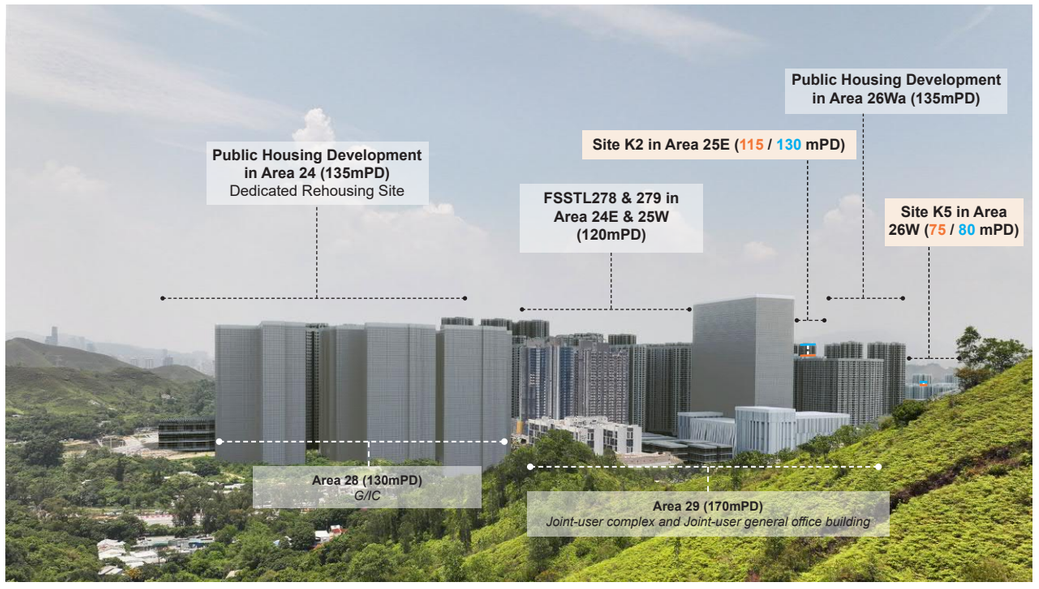
Application Site for Baseline Scenario
(light orange box)

Application Site for Proposed Scenario
(light blue box)

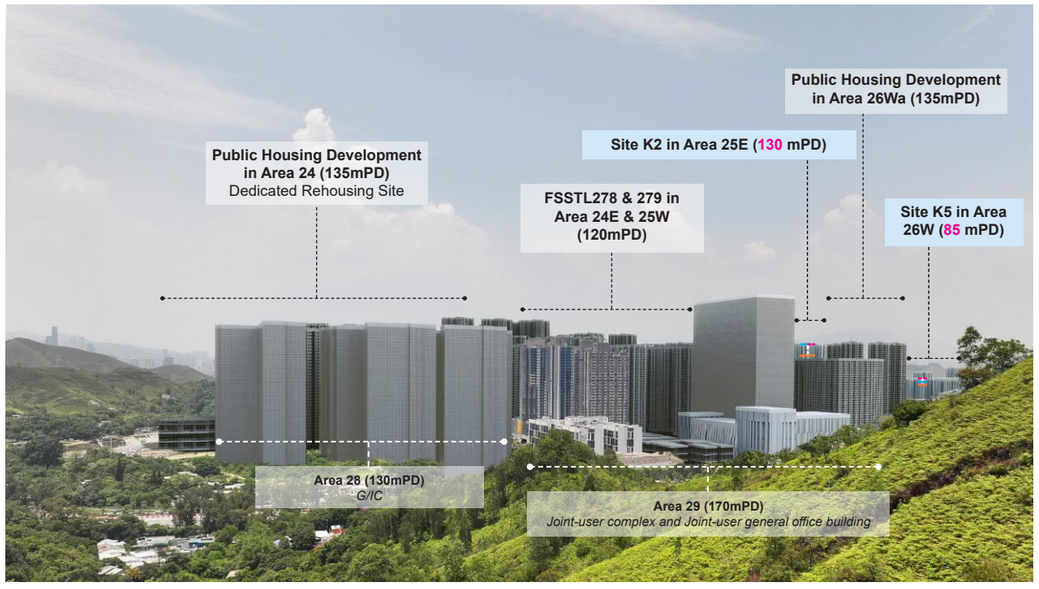
OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (/ mPD)

Under Proposed Scenario
Site K__ in Area ____ (mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP4 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP4 - Proposed Scenario

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階段

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM
VIEWPOINT VP4

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.4

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

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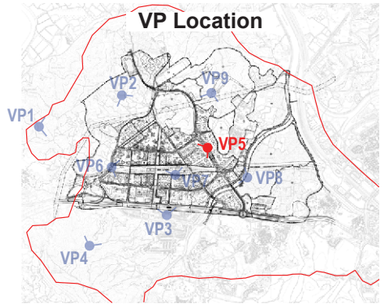
Plot File by: Zhouz3 24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\3A_123.dgn

VP5 - Existing View



LEGEND

Application Site for Baseline Scenario
(light orange box)

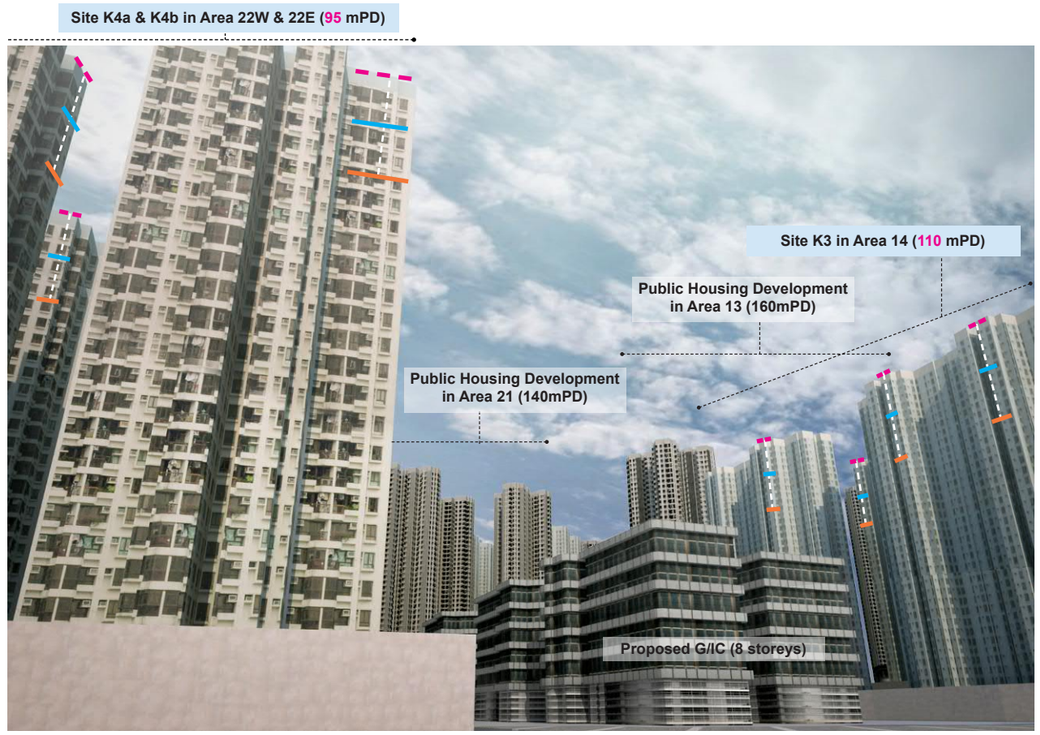
OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

Application Site for Proposed Scenario
(light blue box)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION

VP5 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP5 - Proposed Scenario

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:

V:\BAK\US95-BAK\CSWP\pilotdrv\Create Plt file\new\CSWP-75(color).plt
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24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\2A_124.dgn

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SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

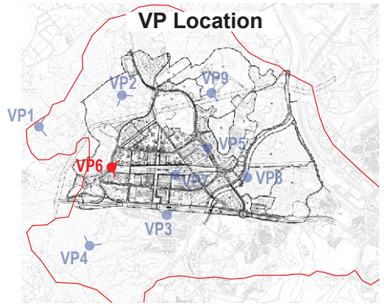
KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM VIEWPOINT VP5

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.5

VP6 - Existing View



LEGEND

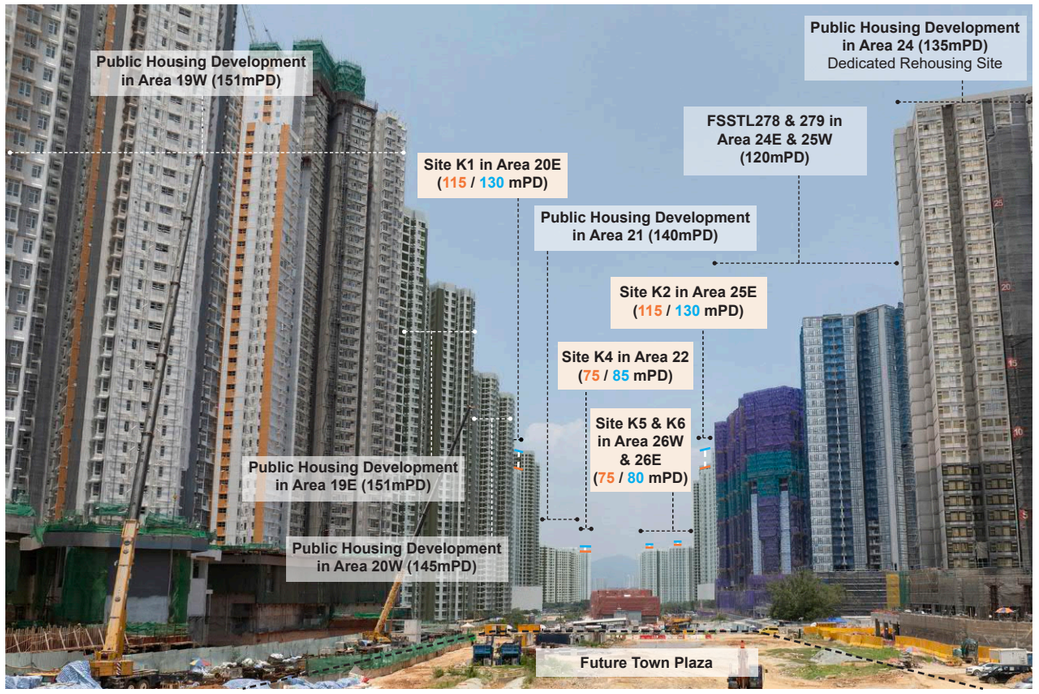
Application Site for Baseline Scenario
(light orange box)

OZP BH Restriction — *A/KTN/93*
Site K__ in Area ____ (___ / ___ mPD)

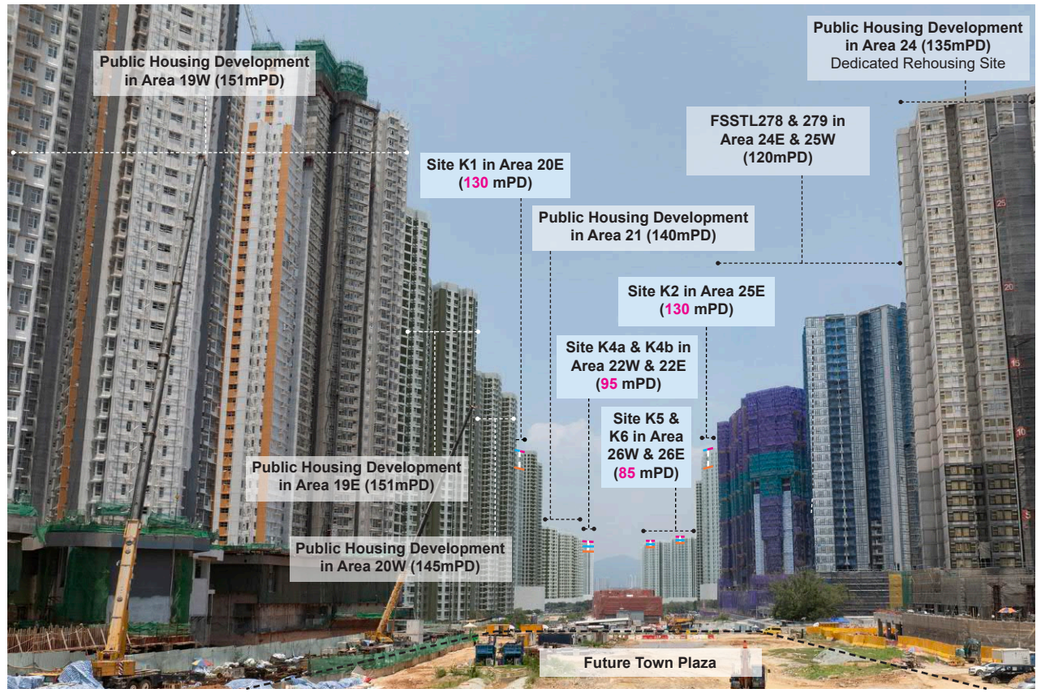
Application Site for Proposed Scenario
(light blue box)

Under Proposed Scenario
Site K__ in Area ____ (___ mPD)

- BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
- BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
- PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP6 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP6 - Proposed Scenario

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PROJECT
項目

DEVELOPMENT OF KWU TUNG NORTH NEW DEVELOPMENT AREA, REMAINING PHASE - DESIGN & CONSTRUCTION

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STATUS
階段

SCALE 比例: N.T.S.

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717

CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱

PHOTOMONTAGE FROM VIEWPOINT VP6

SHEET NUMBER
圖紙編號

60624717/2A/FIGURE 3.6

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Plot File by: ZhouZ3 24/4/2026
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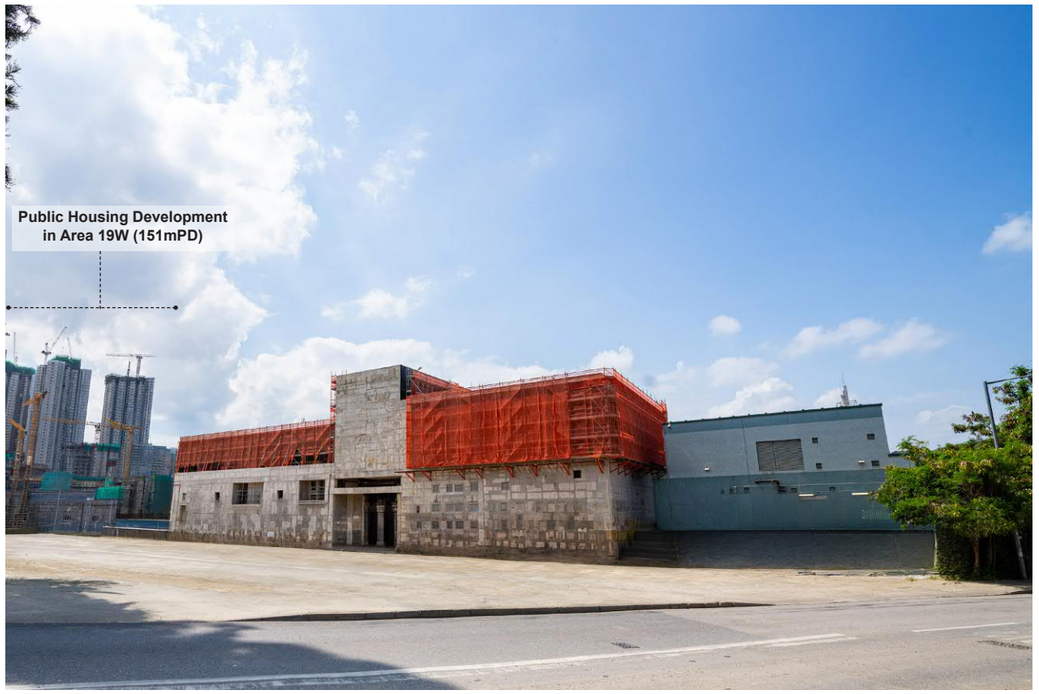
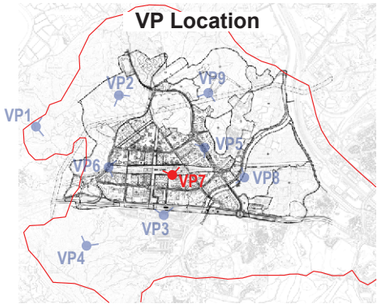
ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:



VP7 - Existing View



LEGEND

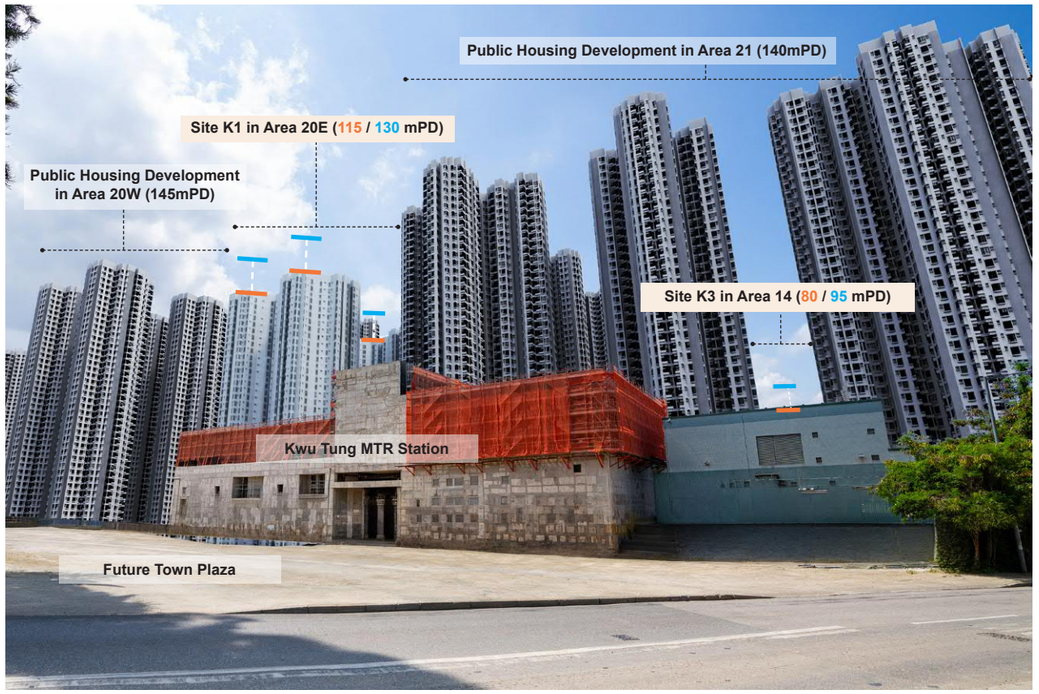
Application Site for Baseline Scenario
(light orange box)

Application Site for Proposed Scenario
(light blue box)

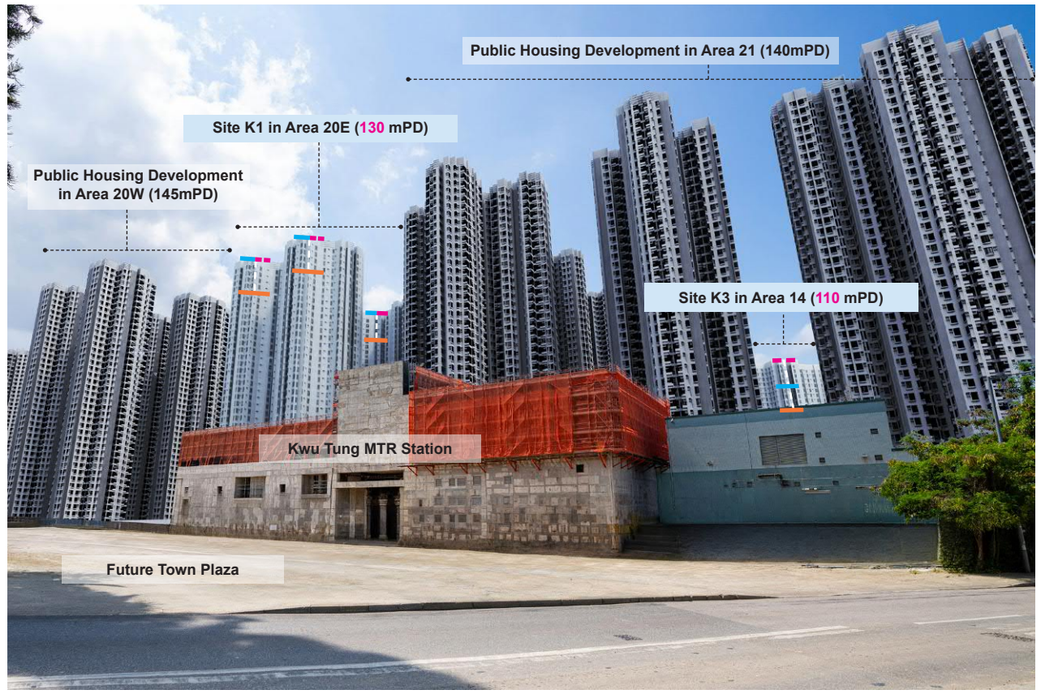
OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP7 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP7 - Proposed Scenario

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階段

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM
VIEWPOINT VP7

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.7

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Plot File by: Zhaiz23
24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\2A_126.dgn

ISO A1 594mm x 841mm
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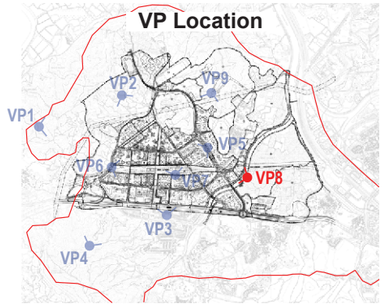
Checked:
Designer:
Project Management Initials:

VP8 - Existing View



LEGEND

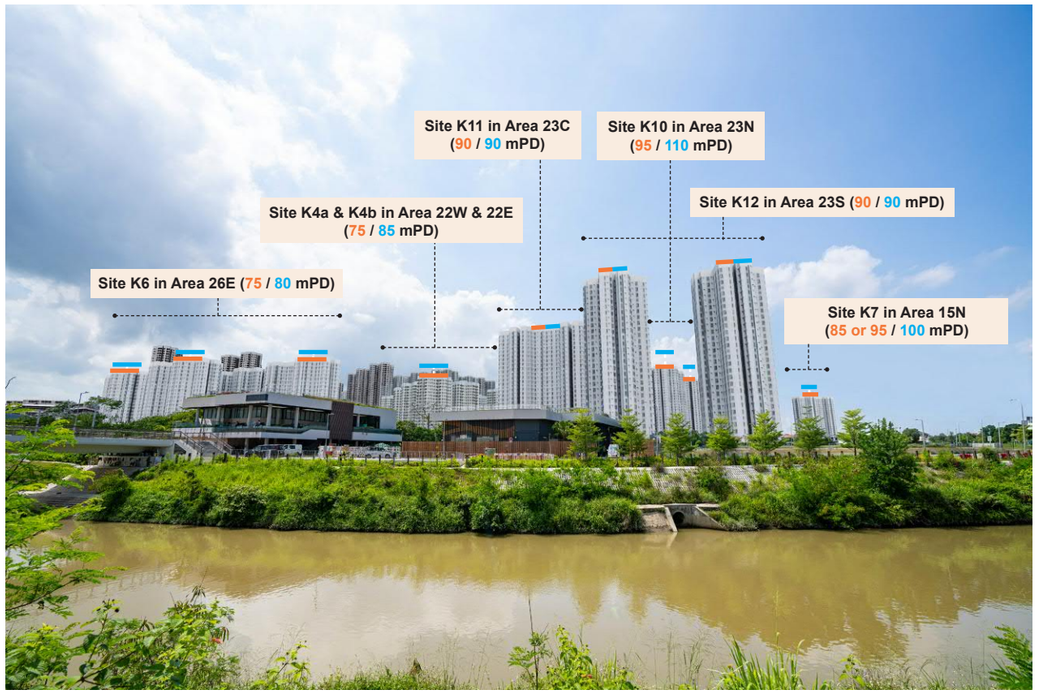
Application Site for Baseline Scenario
(light orange box)

Application Site for Proposed Scenario
(light blue box)

OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (/ mPD)

Under Proposed Scenario
Site K__ in Area ____ (mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP8 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)

VP8 - Proposed Scenario

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STATUS
狀況

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

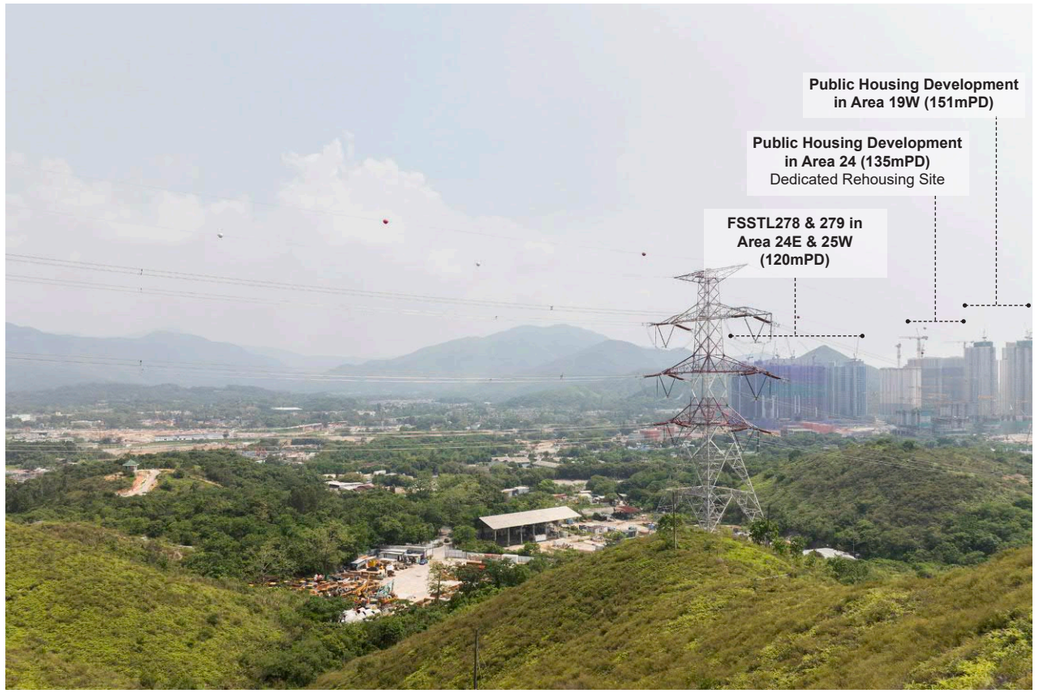
KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

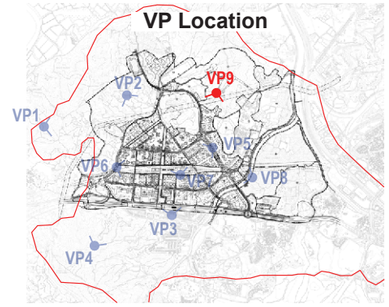
SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM
VIEWPOINT VP8

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.8

V:\BAK\US95-BAK\CSWP\pilotdrv\Create Plt file\new\CSWP-75(color).plt
Plot File by: Zhaiz23
24/4/2026
PATH: P:\PROJECTS\60624717\Drawing\REPORT\2A\2A_127.dgn



VP9 - Existing View



LEGEND

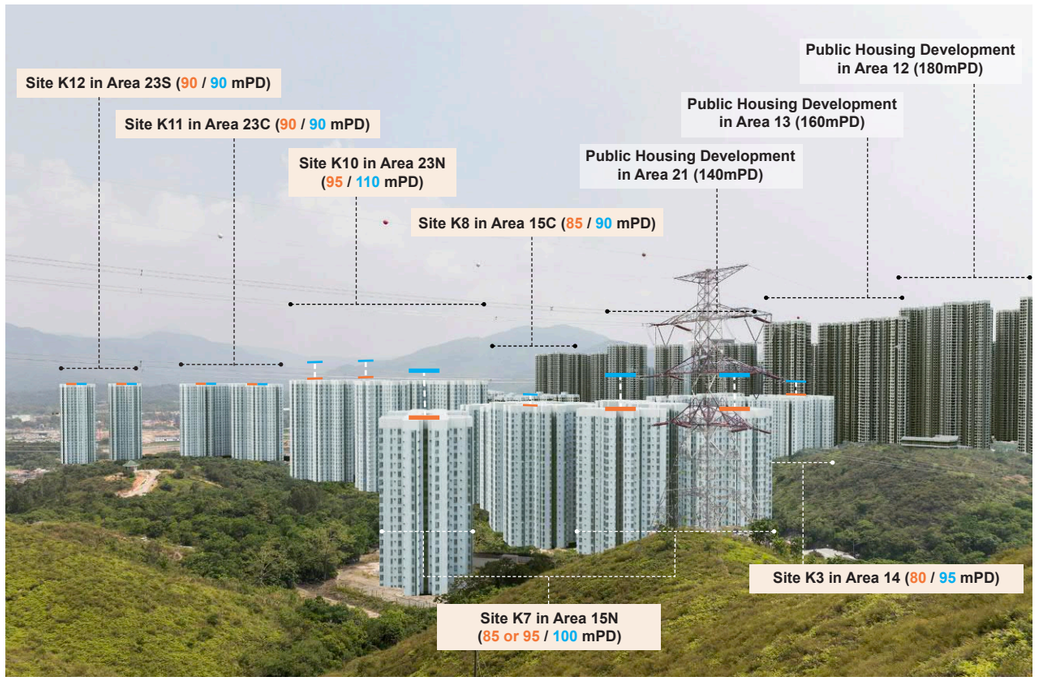
Application Site for Baseline Scenario
(light orange box)

OZP BH Restriction / *A/KTN/93*
Site K__ in Area ____ (__ / __ mPD)

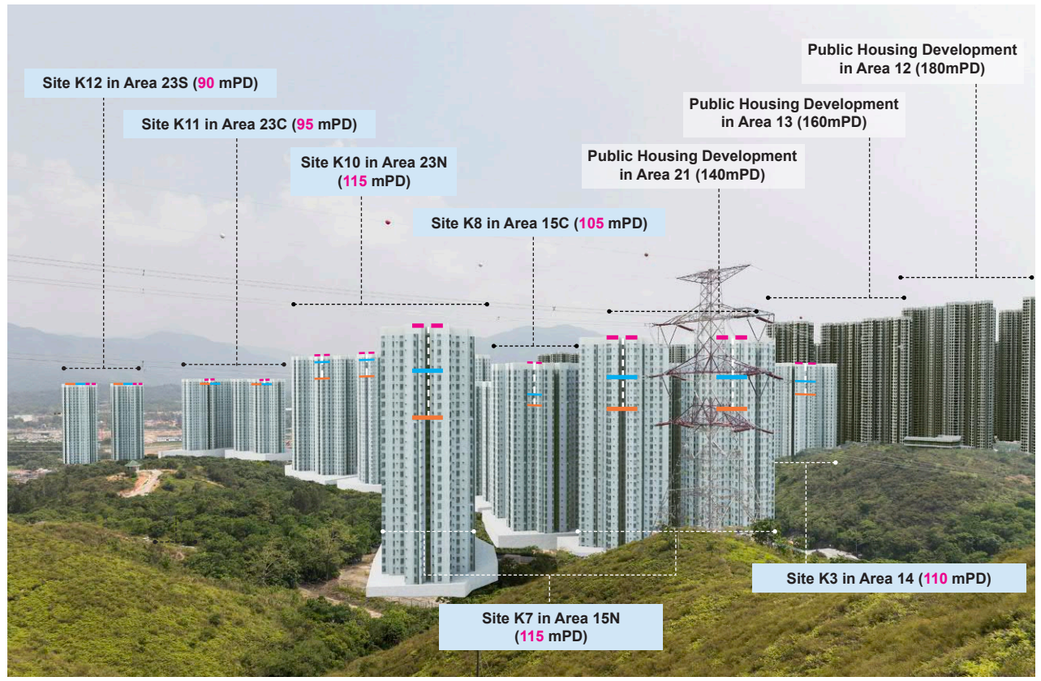
Application Site for Proposed Scenario
(light blue box)

Under Proposed Scenario
Site K__ in Area ____ (__ mPD)

BUILDING HEIGHT RESTRICTION UNDER OZP NO. S/KTN/4
BUILDING HEIGHT RELAXATION UNDER APPLICATION NO. A/KTN/93
PROPOSED BUILDING HEIGHT RELAXATION UNDER CURRENT APPLICATION



VP9 - Baseline Scenario (Compliant scheme under approved KTN OZP no. S/KTN/4)



VP9 - Proposed Scenario

AECOM

PROJECT
項目
DEVELOPMENT OF KWU TUNG NORTH NEW DEVELOPMENT AREA, REMAINING PHASE - DESIGN & CONSTRUCTION

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狀況

SCALE 比例: N.T.S.
DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717
CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱
PHOTOMONTAGE FROM VIEWPOINT VP9

SHEET NUMBER
圖紙編號
60624717/2A/FIGURE 3.9

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Attachment 4

UPDATED AIR VENTILATION ASSESSMENT – EXPERT EVALUATION

土 木 工 程 拓 展 署
Civil Engineering and Development Department

Agreement No. CE 18/2019 (CE)
Development of Fanling North New Development Area,
Remaining Phase - Design and Construction

Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Private Housing Developments at Various Sites within Fanling North New Development Area and Kwu Tung North New Development Area, New Territories and Proposed Public Transport Terminus, Shop and Services and Eating Place within Permitted Private Housing Development at Site K10, Planning Area 23N, Kwu Tung North New Development Area, New Territories

Air Ventilation Assessmet - Expert Evaluation for Application Sites in Fanling North New Development Area (Revision 1)

August 2026

AtkinsRéalis

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APPENDIX

Appendix A Indicative Layout of Approved Scheme
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1. INTRODUCTION

1.1 Background

1.1.1 On 24 December 2019, Civil Engineering and Development Department (hereinafter called "CEDD") of the Government of the Hong Kong Special Administrative Region appointed Atkins China Limited (hereinafter called "Atkins") to undertake the Agreement No. CE 18/2019 (CE) - Development of Fanling North New Development Area, Remaining Phase – Design and Construction (hereinafter called "the Assignment").

1.1.2 As part of the measures to reduce construction costs and expedite developments, the Chief Executive ("CE") announced in 2025 Policy Address that an enhance measure to allow full gross floor area ("GFA") exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of Modular Integrated Construction ("MiC") method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety.

1.1.3 In 2026, CEDD commissioned a Review to assess the building height ("BH") implications of accommodating the construction of two levels of aboveground carparks and adoption of MiC method at the selected private housing sites (i.e. Application Sites) in the Remaining Phase of Fanling North New Development Area ("FLN NDA") and Kwu Tung North New Development Area ("KTN NDA"). The Study identified that the approved BHs under the previous planning approvals would be insufficient. In this regard, a Section 16 ("S16") Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites to accommodate aboveground carparks and adoption of MiC method (the "Development Proposal"). Minor Relaxation of PR Restrictions has been included under this S16 Planning Application so as to reflect the approved plot ratio ("PR") under Application Nos. A/FLN/30 and A/KTN/93, with no change to the Approved PRs for the Application Sites. As indicated, Permission for Proposed `Public Transport Terminus', `Shop and Services' and `Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved S16.

1.1.4 An Air Ventilation Assessment - Expert Evaluation ("AVE-EE") that assesses the air ventilation impact arising from the Development Proposal at the Application Sites at FLN NDA is prepared to support the S16 Planning Application. Table 1.1 overleaf summarises the changes in PR and BH against the restrictions under the Draft Fanling North Outline Zoning Plan No. S/FLN/5 ("OZP Compliant Scheme") and the previous planning approvals ("Approved Scheme").

1.1.5 As there are no individual sites over 2 hectares and with an overall plot ratio of 5 or above and no individual sites with total Gross Floor Area exceeding 100,000 m^2, a qualitative AVA in the form of Expert Evaluation is considered appropriate to support the Application to review the potential ventilation impacts associated with the proposed changes within the Application Sites.

1.2 Purpose of Report and Report Structure

1.2.1 The objective of the Air Ventilation Assessment Review in the form of Expert Evaluation (AVA-EE) is to ensure that ventilation impacts are duly considered as one of the main criteria in the Planning and Engineering Review for minor relaxation of building height restriction to enable aboveground carparks

1.2.2 This AVA-EE is conducted according to methodology outlined in the Technical Guide for AVA for Developments in Hong Kong (Technical Guide) annexed in HPLB and ETWB TC No. 1/06.

1.2.3 The structure of this AVA-EE report is described below.

Section 1 – Describe the project background, the objective of the report and report structure;

Section 2 – Provide brief description on Fanling North New Development Area (FLN NDA) and the Application Sites, and review the site environment including adjacent existing, planned and committed developments and the surrounding topography;

Section 3 – Identify the prevailing wind directions based on available wind data;

Section 4 – Discuss the approved scheme and proposed scheme;

Section 5 – Conduct the Expert Evaluation and qualitatively assess the wind environment at the pedestrian level at or near the Application Sites and its surroundings;

Section 6 – Provide further recommendations on air ventilation perspectives; and

Section 7 – Summarize and conclude the AVA Report.

Table 1.1 Development Parameters of the Application Sites

Site	Planning Area	Zoning	Site Area	Permissible PR* (Approved PR)	Proposed PR^	% Increase from Permissible PR	% Increase from Approved PR	Permissible BH* (Approved BH^)	Proposed BH	% Increase from Permissible BH*	% Increase from Approved BH^
F1	10NW	"OU(CRDPTI(2))"	0.99 ha	TPR: 3.05 (3.66) DPR: 2.18 (2.62) NDPR: 0.87 (1.04)	TPR: 3.66 DPR: 2.62 NDPR: 1.04	20.00%	No changes	80mPD (80mPD)	85mPD	6.25%	6.25%
F2	13E	"R(B)"	2.22 ha	DPR: 3.50 (4.20)	DPR: 4.20	20.00%		75mPD (80mPD)	95mPD	26.67%	18.75%
F3	14W	"R(A)3"	1.05 ha	DPR: 5.00 (6.00)	DPR: 6.00	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F4	14S	"R(A)1"	1.44 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		115mPD (144.14mPD)	155mPD	34.78%	7.53%
F5	16NW	"R(A)1"	0.93 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F6	16NE	"R(A)1"	1.25 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F7	16SW	"R(A)1"	1.24 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%
F8	16SE	"R(A)1"	1.16 ha	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	TPR: 7.20 DPR: 6.00 NDPR: 1.20	20.00%		110mPD (120mPD)	135mPD	22.73%	12.50%

Remarks:

* As stipulated on the Draft FLN OZP

^ According to the Application Nos. A/FLN/30 and A/FLN/32, whichever is greater

2. STUDY AREA AND SITE CHARACTERISTICS

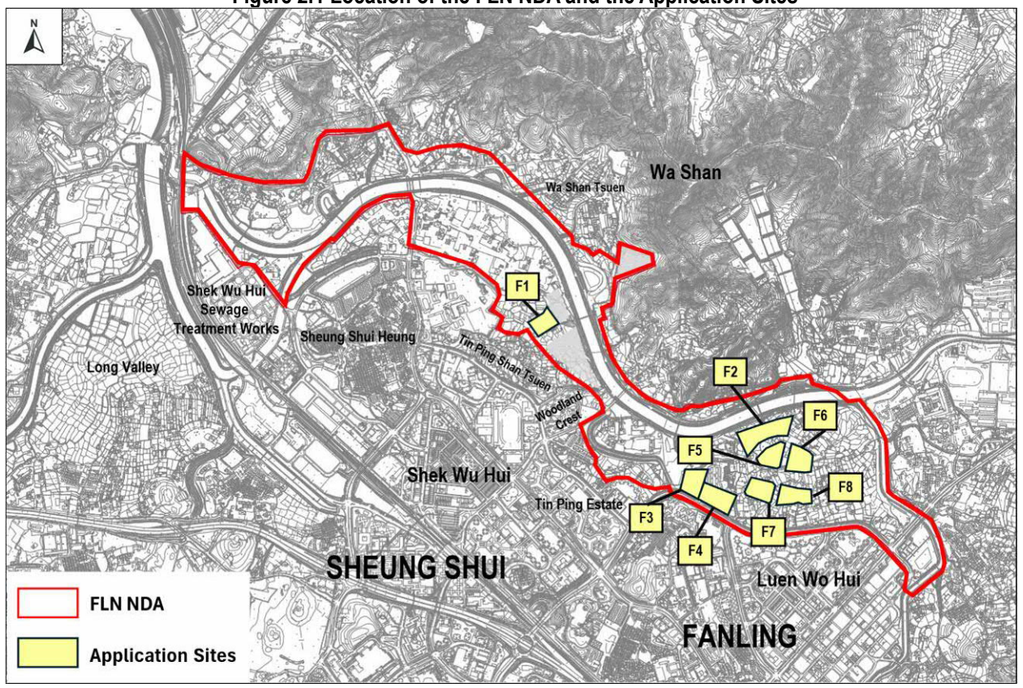
2.1 FLN NDA and Application Sites

2.1.1 The FLN NDA is located at the inland area of North East New Territories, adjoining Fanling / Sheung Shui New Town. The FLN NDA is around 165 ha in total coverage. The FLN NDA is located at a sizable flatland with hilly terrains to the north. The topographical height for FLN Area and the Application Sites are generally less than 50mPD with hilly terrains (maximum height of approximately 160 mPD in height) of High Hill, Lamb Hill and Wa Shan to the north direction of the FLN NDA.

2.1.2 The majority areas of the FLN NDA are currently being occupied by low-rise village type developments, agricultural land, construction sites and open spaces. The proposed FLN NDA covers areas at both sides of the Ng Tung River in which the NDA elongates starting from the Shek Wu Hui Sewage Treatment Works all the way towards the southeast direction and ends near Luen Wo Hui.

2.1.3 A total of eight (8) planned private housing sites (the "Application Sites"), namely Sites F1, F2, F3, F4, F5, F6, F7 and F8, form the primary focus of this AVA review. Site F1 is located at the centre of the FLN NDA, while Sites F2, F3, F4, F5, F6, F7 and F8 are in close proximity to one another in the south-eastern portion of the FLN NDA. Figure 2.1 shows the locations and environs of the FLN NDA and the Application Sites.

Figure 2.1 Location of the FLN NDA and the Application Sites



2.2 Land Use

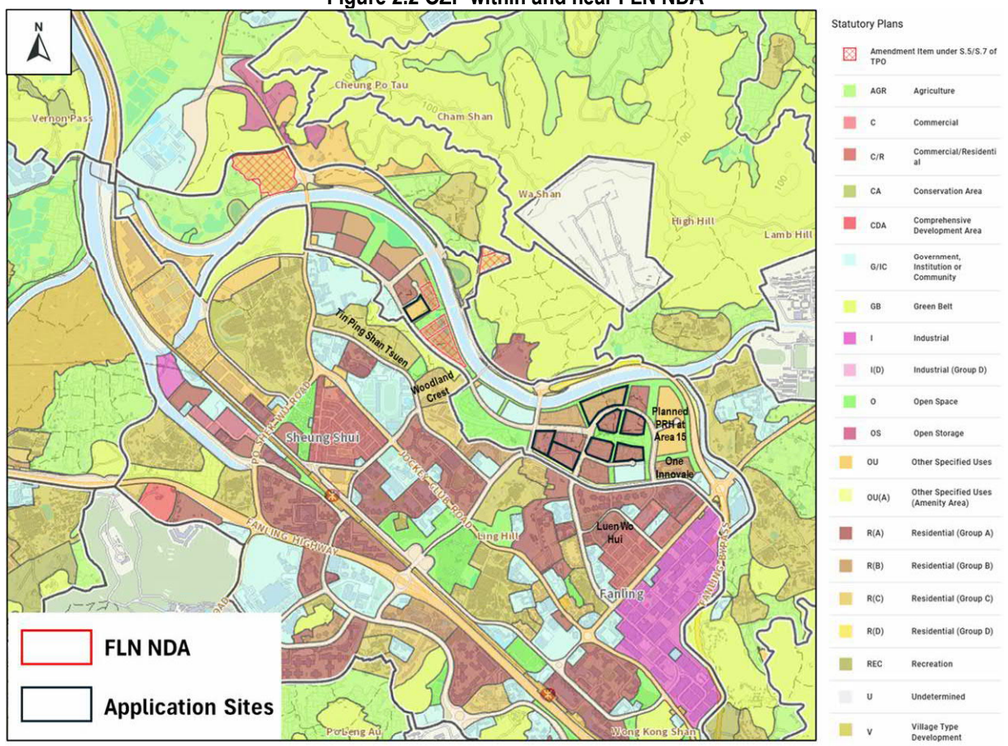
2.2.1 The Outline Zoning Plan of FLN NDA and existing Fanling / Sheung Shui New Town is shown on Figure 2.2. The lands within the FLN NDA are planned to be zoned for various uses which mainly include Government, Institution or Community (G/IC) land use, Open Spaces and Residential land uses. There are also some Agricultural lands and lands zoned for Other Specified Uses.

2.2.2 The eight (8) Application Sites area are currently zoned as "Residential (Group A)1" ("R(A)1"), "R(A)3", "Residential (Group B)" ("R(B)"), or "Other Specified Uses (Commercial/Residential Development with Public Transport Interchange (2))" ("OU(CRDPTI(2))") on the prevailing Draft FLN OZP (Plan No. S/FLN/5).

2.2.3 Planned "Residential (Group A)" and "Residential (Group B)" lands within FLN NDA are located immediately northwest to northeast of Application Site F1, while existing village-type development (Tin Ping Shan Tsuen) and the residential development (Woodland Crest) within Sheung Shui New Town are located to the southwest to south of the site.

2.2.4 For the remaining seven Application Sites, they are bounded by the Ng Tung River to the north, planned public housing development in Area 15 and One Innovale to the east, and are surrounded by other planned "Residential (Group A)" and "Residential (Group B)" lands within FLN NDA. Existing Fanling New Town (Luen Wo Hui) is situated to the south of these sites.

Figure 2.2 OZP within and near FLN NDA

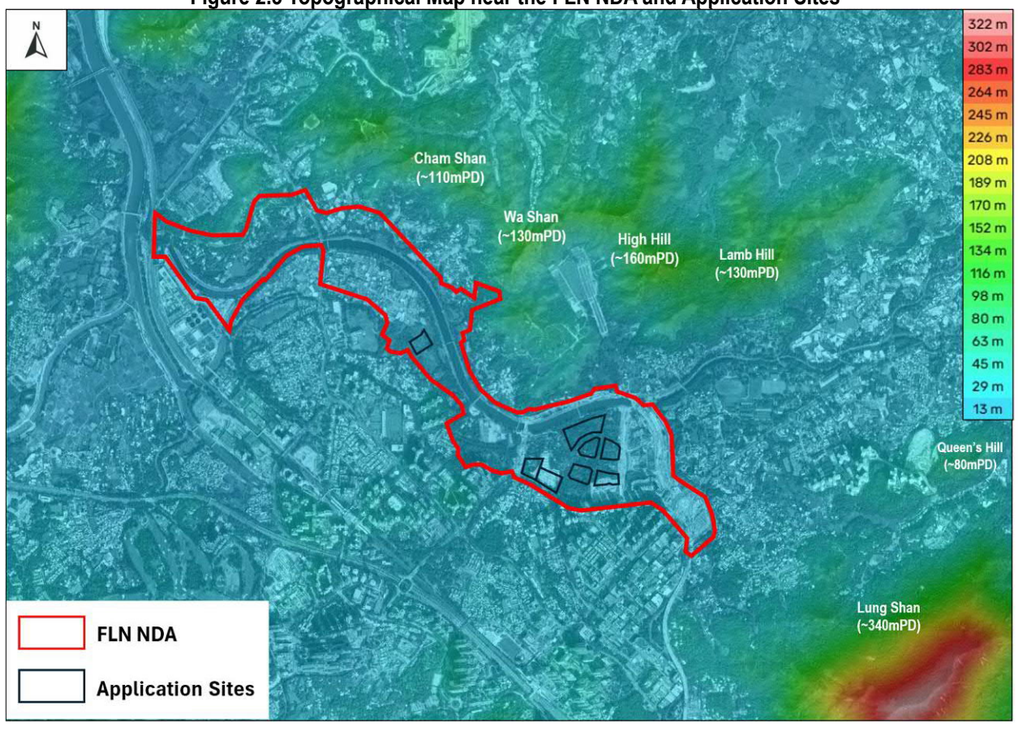


2.3 Existing Topography

2.3.1 The FLN NDA is exposed to a relatively flat sub-urban area and surround by hilly terrains situated at the northern and eastern quadrant of the NDA. High Hill is the highest terrain among all with 160mPD while Queen's Hill is the smoothest terrain with 80mPD. The distance between the Queen's Hill and Application Sites is more than 2km whilst all other hilly terrains are around 1km from the Application Sites. The height and distance of those hilly terrains are illustrated in the figure below.

2.3.2 According to topography of the existing natural environment, the northernly wind flow will be weakened by hilly terrains before entering the FLN NDA at the pedestrian level while easterly can freely pass through the open flat area and then entering to FLN NDA site. For southern and south-westerly prevailing winds, the wind would penetrate through the existing Fanling/Sheung Shui New Town Area before penetrating through FLN NDA.

Figure 2.3 Topographical Map near the FLN NDA and Application Sites



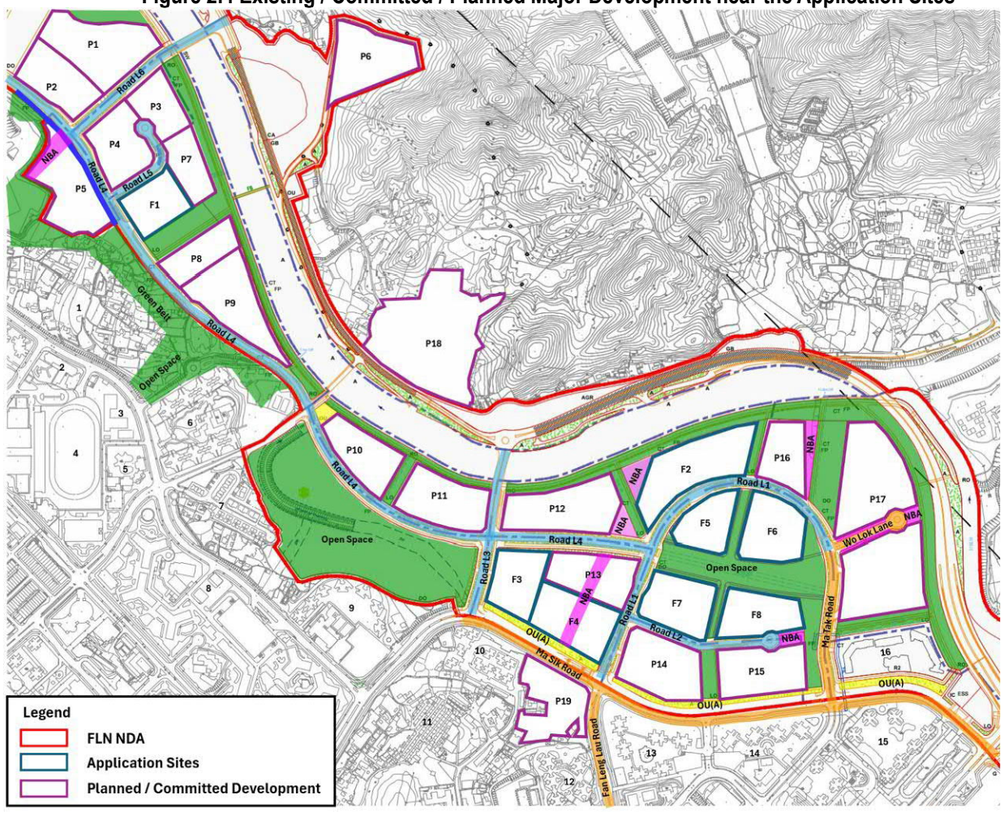
2.4 Existing Urban Morphology

2.4.1 The FLN NDA is situated at the north of existing Fanling / Sheung Shui New Town area. It is currently covered being occupied by low-rise village type developments, agricultural land, construction sites, open spaces as well as open storage yards.

2.4.2 For the following discussion, it will be focusing on the surrounding areas near the Eight Application Sites.

2.4.3 The existing built environment, planned development within FLN NDA and committed developments adjacent to the Application Sites are illustrated in the figure below. The building layouts and morphologies are provided in Appendix A and B.

Figure 2.4 Existing / Committed / Planned Major Development near the Application Sites



Description	Maximum Building Heights (mPD)	Description	Maximum Building Heights (mPD)
Application Sites (A/FLN/30 and A/FLN/32)			
F1	80	F2	80
F3	120	F4	144.14
F5	120	F6	120
F7	120	F8	120
Planned and Committed Developments within the FLN NDA near the Application Sites (reference to S/FLN/5 ("Draft OZP"), A/FLN/28 and A/FLN/30)			
P1 – Residential R(A)	95-110	P2 – Residential R(A)	130
P3 – Residential R(B)	100	P4 – Residential R(A)	125
P5 – GIC Buildings	8 storeys	P6 – Residential R(C)	80
P7 – Residential R(B)	110	P8 – Residential R(B)	110
P9 – Residential R(B)	110	P10 – GIC Buildings	8 storeys
P11 – GIC Buildings	8 storeys	P12 – Residential R(B)	97.5
P13 – Residential R(A)	135	P14 – Residential R(A)	135
P15 – GIC Buildings	8 storeys	P16 – Residential R(A)	115
P17 – "OU(CRDPTI(1))"	128-137		
Planned and Committed Developments outside the FLN NDA and near the Application Sites (reference to S/NE-FTA/18 and A/FSS/294)			
P18 – Residential R(A)	170	P19 – Residential R(A)	132
Existing Development near the Application Sites			
1. Tin Ping Shan Tsuen	below 20	2. Fung Kai Centre and Attention Home for the Elderly	35
3. Lee Chi Tat Memorial School	18	4. North District Sports Ground	-
5. Sheung Shui Swimming Pool	-	6. Woodland Crest	54
7. On Kwok Villa	23	8. Tin Ping Estate	67-108
9. Noble Hill	81-92	10. Good View New Village	21-25
11. Ling Shan Tsuen	19-22	12. Fan Garden	106-108
13. Wing Fok Centre	90-92	14. Wing Fai Centre	106-109
15. Belair Monte	115	16. One Innovale	60-75

2.4.4 Planned sites P1–P17 are located within the FLN NDA. Sites P1–P9 comprise planned residential developments with maximum building heights ranging from 95 mPD to 130 mPD (except P5, which is a GIC site with buildings up to 8 storeys), and are in the vicinity of Application Site F1. Sites P12–P17 comprise planned residential developments with maximum building heights ranging from 97.5 mPD to 137 mPD (except P15, which is a GIC site with buildings up to 8 storeys), and are near Application Sites F2, F3, F4, F5, F6, F7 and F8.

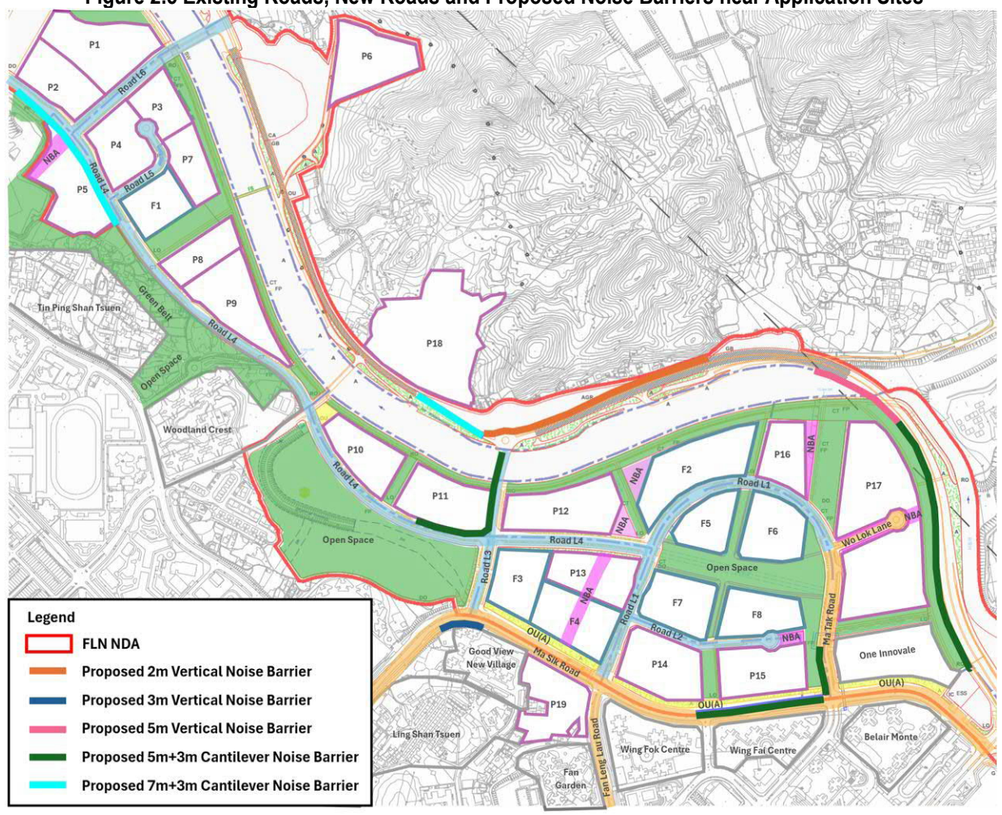
2.4.5 Outside the planned P1–P17 developments within the FLN NDA, Sites P18 and P19 are committed residential sites in the vicinity. Site P18 lies north of GIC Sites P10 and P11 with a proposed maximum height of 170 mPD under the Approved Fu Tei Au & Sha Ling OZP S/NE-FTA/18. Site P19 lies south of Application Site F4 with a proposed maximum height of 132 mPD under planning application no. A/FSS/294.

2.4.6 Tin Ping Shan Tsuen (village-type) and Woodland Crest (residential) lie immediately to the south-west of Application Site F1. One Innovale lies at the south-eastern corner of the FLN NDA. Ling Sha Tsuen (village-type) and the residential developments Good View New Village, Wing Fok Centre, Wing Fai Centre, Fan Garden and Belair Monte are to the south of Application Sites F2, F3, F4, F5, F6, F7 and F8.

2.5 Existing and Formed Roads

2.5.1 For the existing road network at Fanling / Sheung Shui New Town Area next to the FLN NDA, Lung Sum Avenue, Tin Ping Road, Fung Nam Road and Jockey Club Road are the main roads in the vicinity of Application Sites. According to the current OZP, road networks and separations are anticipated to be formed as shown in Figure 2.5. While noise barriers are required to be incorporated along part of the major roads for mitigating the potential traffic noise impacts, such noise barriers would inevitably affect the localised pedestrian wind environment. The locations of the proposed noise barriers are also indicated in Figure 2.5.

Figure 2.5 Existing Roads, New Roads and Proposed Noise Barriers near Application Sites

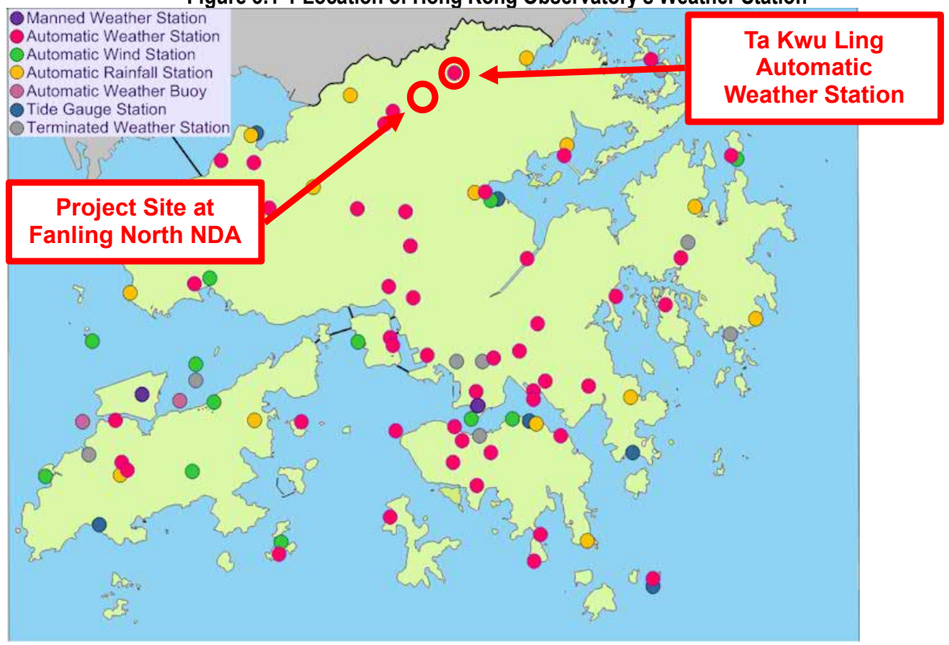


3. SITE WIND AVAILABILITY

3.1 Wind Data from Hong Kong Observatory

3.1.1 Natural wind availability is the key element for the AVA study, this section will state the closest wind data to the Application Sites at Fanling North NDA measured by Hong Kong Observatory (HKO), Ta Kwu Ling automatic weather station.

Figure 3.1-1 Location of Hong Kong Observatory's Weather Station



3.1.2 As shown in above figure, Ta Kwu Ling automatic weather station is the closest station to the site which collects wind data from the surrounding environment. With reference to figures overleaf, both annual and summer prevailing winds are mainly from the SE quadrant.

3.1.3 However, the Ta Kwu Ling weather station is located at the north-eastern part of North District for which the location of this weather station is around 3 km distant away from the Application Sites at Fanling North NDA. Also, the nearby terrain may lead to differences of the weather data between this weather station and that of the Application Sites. Therefore, data from other sources are obtained for more precise wind data compilation.

Figure 3.1-2 Annual Wind Rose from Ta Kwu Ling Weather Station (1986 – 2024)

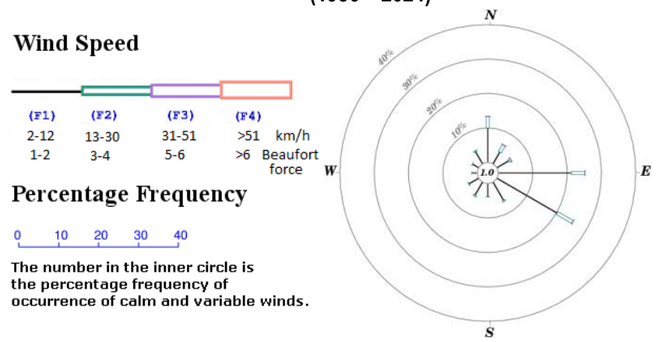
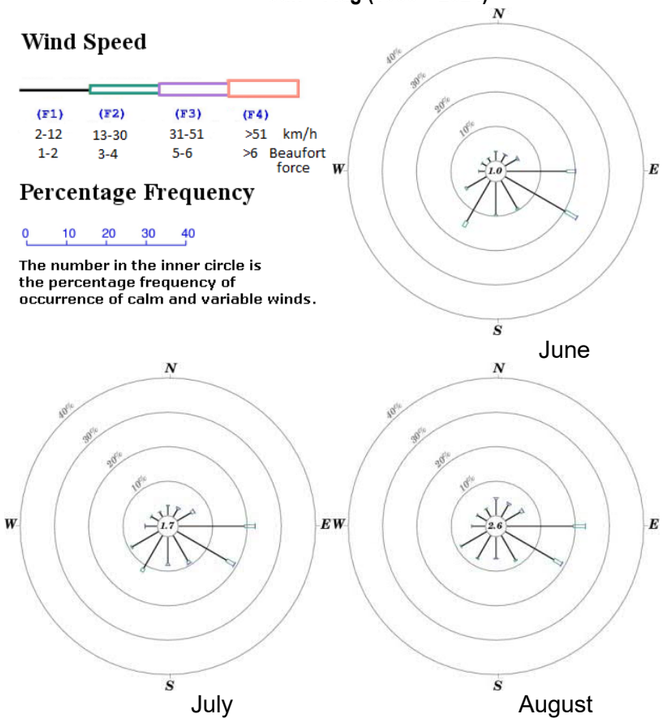


Figure 3.1-3 Summer Wind Rose from Ta Kwu Ling Weather Station Jun – Aug (1986 – 2024)



3.2 Wind Data from Experimental Site Wind Availability Study

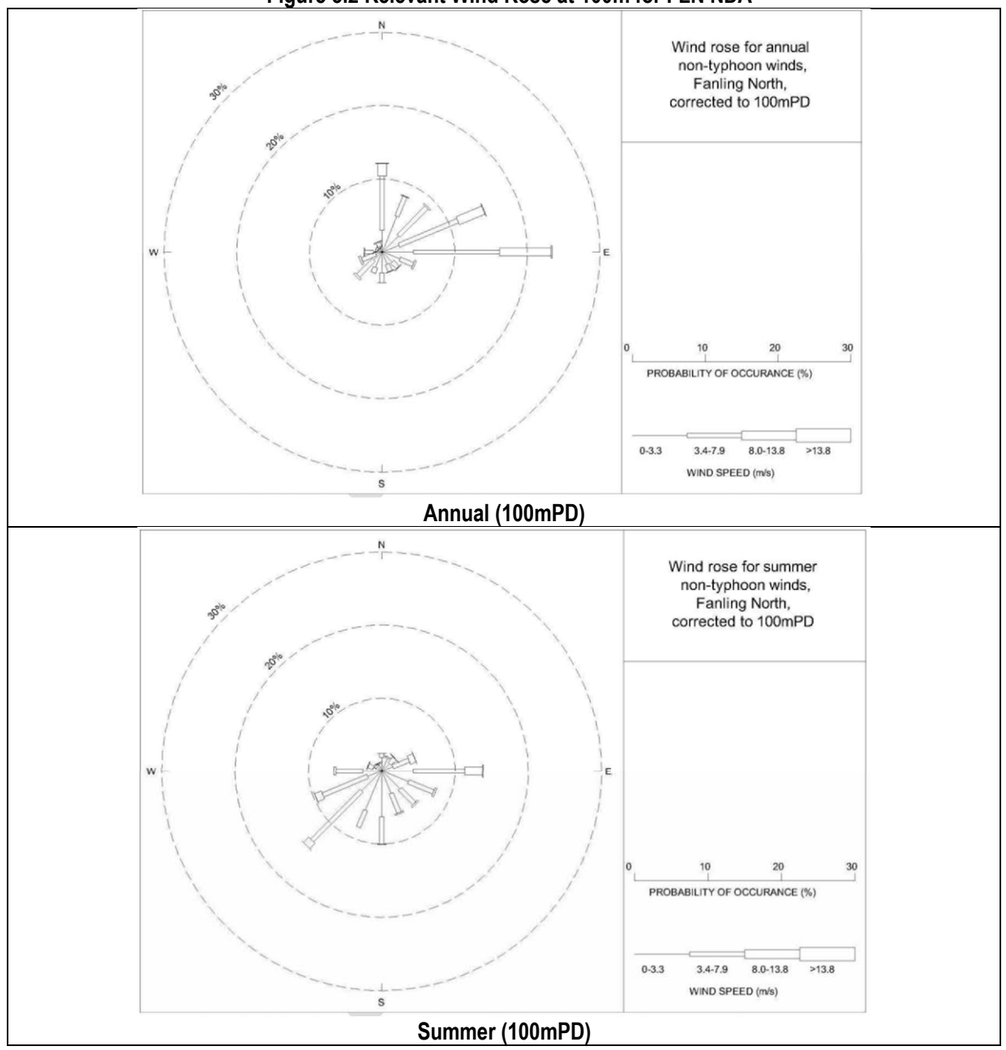
3.2.1 Apart from HKO wind data, “Experimental Site Wind Availability Study for the North-East New Territories New Development Areas” (WWTF018-2010) was conducted in 2010 by the CLP Power Wind/Wave Tunnel Facility (WWTF) at The Hong Kong University of Science and Technology to determine the site wind availability and characteristics for three nominated Study Areas as part of the North East New Territories New Development Areas Planning and Engineering Study commissioned by the Civil Engineering and Development Department and the Planning Department of the Hong Kong Special Administrative Region. The three nominated Study Areas are: the Fanling North Study Area, the Kwu Tung North Study Area and the Ping Che/Ta Kwu Ling Study Area).

3.2.2 1:2000 scale topography studies were undertaken to determine the effects of the surrounding topography and built environment on mean wind direction, mean wind speed and turbulence intensity at the Fanling North, Kwu Tung North and Ping Che/Ta Kwu Ling Study Areas.

3.2.3 As with wind data, wind roses and prevailing wind directions (for both summer and annual periods) information can be obtained from the special tailor made wind tunnel experiment. Wind roses indicating dominance of each of the 16 wind directions and distribution of wind speed at the height below of 100mPD can be extracted. Wind conditions (including prevailing directions and velocity) at the height of 100m is used because this set of data is closest to pedestrian levels and thus will be the most suitable data (for qualitative analysis) to represent the actual conditions of the at the Fanling North New Development Area.

3.2.4 Figures below demonstrate the wind rose and prevailing wind directions (for both summer and annual) at the height of 100mPD extracted from the Experimental Site Wind Availability Study for Fanling North New Development Area.

Figure 3.2 Relevant Wind Rose at 100m for FLN NDA



3.2.5 Referring to the experimental data, E, ENE and N are the most dominant prevailing winds with 23.4%, 15.1% and 12.1% of the annual wind frequency, respectively for the Application Sites. For the summer periods, SW, E and S, WSW are the most dominant prevailing winds with 14.5%, 13.8%, 10.1% and 9.7% of the wind frequency, respectively for the Application Sites.

Table 3.2 Wind Directions from Experimental Site Wind Data

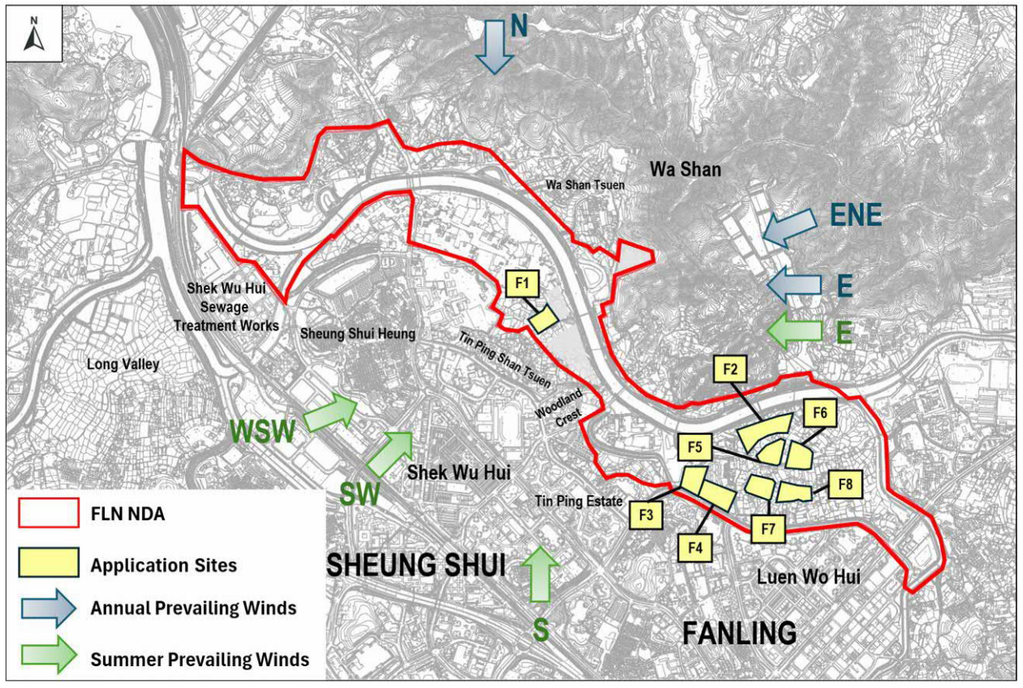
Prevailing Wind	Annual			Summer			
Wind Directions	E	ENE	N	SW	E	S	WSW
Wind Frequency	23.4%	15.1%	12.1%	14.5%	13.8%	10.1%	9.7%

3.3 Wind Data Summary

3.3.1 By comparing the wind data, the prevailing wind directions are summarised as below for FLN NDA. For annual prevailing winds of the Application Sites at FLN are mainly from the north-eastern quadrant whilst summer prevailing winds to the Application Sites are dominated by the south-western quadrant. However, Ta Kwu Ling automatic weather station are located at low height levels. The wind data will be affected by surrounding developments or topography and hence cannot be adopted directly to the Application Sites for AVA purposes. Therefore, experimental site wind data is chosen for analysis, as the wind data were evaluated at the FLN NDA study area.

3.3.2 From the Experimental Site Wind Availability Data, a conclusion can be made that the annual prevailing wind of the Application Sites are coming from E, ENE and N directions, whilst summer prevailing winds are coming from SW, E, S and WSW directions.

Figure 3.3 Prevailing Wind Directions of the FLN NDA



4. APPROVED SCHEME AND PROPOSED SCHEME

4.1 Background

4.1.1 Two Development Scenarios are reviewed in this Study, Approved Scheme and Proposed Scheme. The Approved Scheme reflects the development restrictions in the Fanling North Outline Zoning Plan (S/FLN/5 ("Draft OZP")) with updates to incorporate the scheme in the approved Section 16 applications A/FLN/30 and A/FLN/32. Under these planning permissions, minor relaxation in Plot Ratios (PR) and/or Building Height Restrictions (BHR) was approved in Application Sites.

4.1.2 As compared with the Approved Scheme, relaxation in BHR to enable aboveground carparks in Remaining Phase including Planning Areas 10, 13, 14 and 16 (i.e., Application Sites F1, F2, F3, F4, F5, F6, F7 and F8) are proposed. Table 4.1 shows the change in relevant development parameters.

Table 4.1 Difference in Development Parameters at the Application Sites

Site No.	Planning Area	Site Area	Zoning	Permissible PR* (Approved PR^)	Permissible BH* (Approved BH^)	Proposed BH
F1	10NW	0.99 ha	"OU(CRDPTI(2))"	TPR: 3.05 (3.66) DPR: 2.18 (2.62) NDPR: 0.87 (1.04)	80mPD (80mPD)	85mPD
F2	13E	2.22 ha	"R(B)"	DPR: 3.50 (4.20)	75mPD (80mPD)	95mPD
F3	14W	1.05 ha	"R(A)3"	DPR: 5.00 (6.00)	110mPD (120mPD)	135mPD
F4	14S	1.44 ha	"R(A)1	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	115mPD (144.14mPD)	155mPD
F5	16NW	0.93 ha	"R(A)1	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)	135mPD
F6	16NE	1.25 ha	"R(A)1	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)	135mPD
F7	16SW	1.24 ha	"R(A)1	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)	135mPD
F8	16SE	1.16 ha	"R(A)1	TPR: 6.00 (7.20) DPR: 5.00 (6.00) NDPR: 1.00 (1.20)	110mPD (120mPD)	135mPD

Remarks:

* As stipulated on the Draft FLN OZP

^ According to the Application Nos. A/FLN/30 and A/FLN/32, whichever is greater

4.2 Approved Scheme and Proposed Scheme

4.2.1 Following figures shows the overall layout of Application Sites F1, F2, F3, F4, F5, F6, F7 and F8 within the FLN NDA Remaining Phase under the Approved Scheme and the Proposed Scheme as well as the planned/committed developments and existing built environment that surround the Application Sites. Illustrational figures for zoomed out areas from the Application Sites under the Approved Scheme and Proposed Scheme are also provided in Appendix A and B for reference. Brief discussions on the differences between the Approved Scheme and Proposed Scheme for each of the Application Sites are also provided in this subsection. The layouts are indicative for technical assessment purposes only and is subject to change at detailed design stage by the future developers.

Figure 4.2-1 Building Layouts within the Application Sites under the Approved Scheme

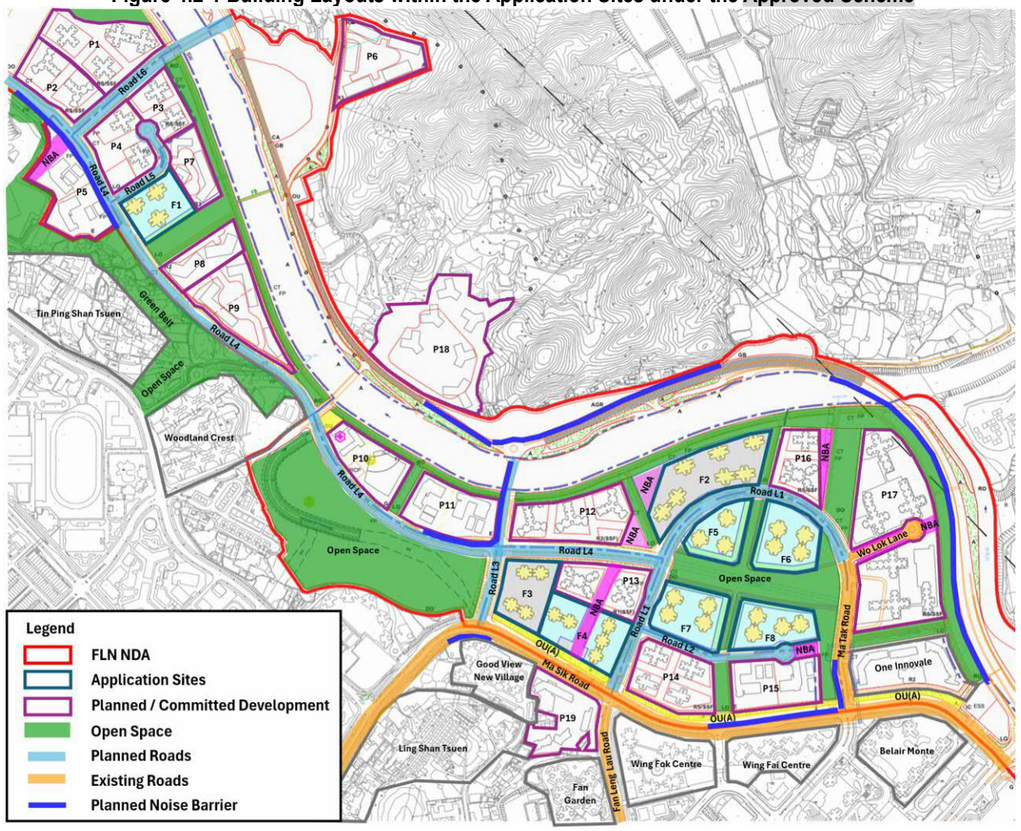


Figure 4.2-2 Building Layouts within the Application Sites under the Proposed Scheme

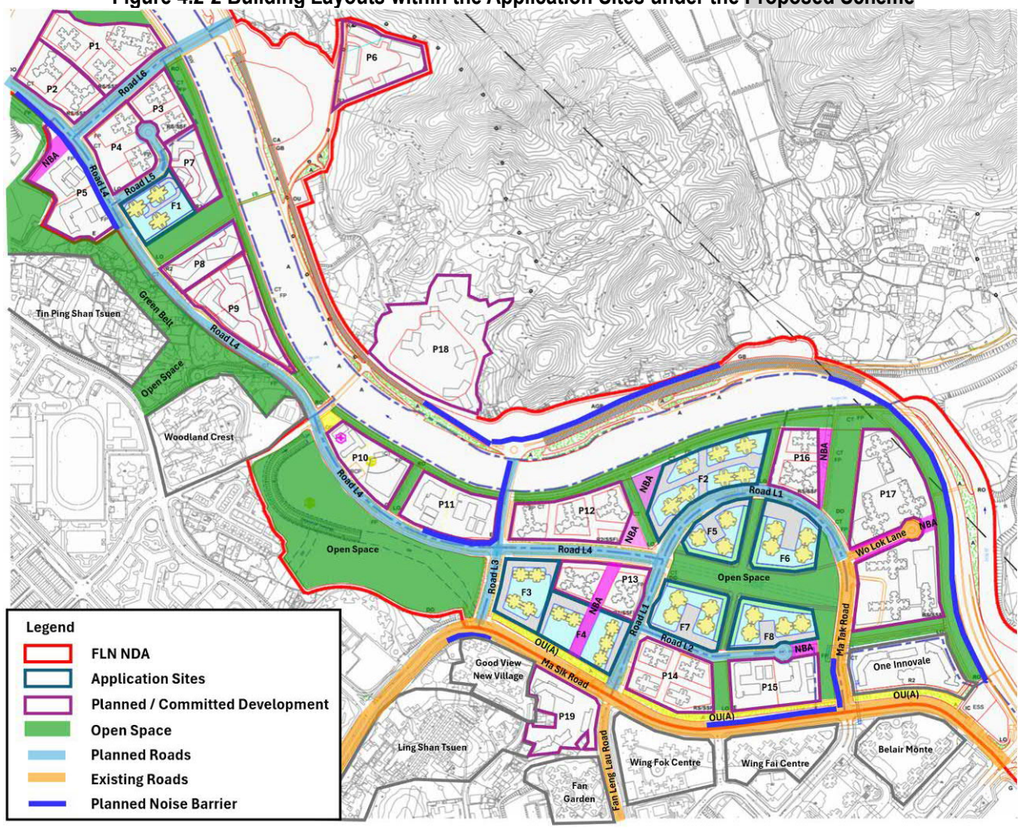


Figure 4.2-3 Indicative Sections Drawing of Application Sites under the Proposed Scheme

OU (Commercial/Residential Development with Public Transport Interchange(2)) - Site F1

4.2.2 Site F1 is zoned "OU (Commercial/Residential Development with Public Transport Interchange(2))". Under the Approved Scheme, Site F1 comprises a two-storey aboveground podium for non-domestic uses including a ground floor public transport interchange with three residential towers above, with an overall maximum building height of 80 mPD. In addition, a terraced podium with a 10 m-wide setback at first-floor is provided along the southeastern boundary abutting the open space in Planning Area 10.

4.2.3 Under the Proposed Scheme, two additional storeys of above-ground car park are proposed above the podium for non-domestic uses and the adoption MiC method also increased the height of the residential tower. The BHR is proposed to be relaxed to 85 mPD. As in the Approved Scheme, the podium block retains a terraced podium design.

Residential (Group A)1 ("R(A)1") - Sites F4, F5, F6, F7, F8

4.2.4 Site F4 is proposed to be developed into five private domestic blocks above a two-storey podium and a podium garden. The building height is assumed to be 144.14 mPD (A/FLN/32 refers). A Non-Building Area (NBA) in northeast-southwest direction is stipulated at the centre of the site.

4.2.5 Under the Proposed Scheme, the NBA is retained within the site. Similar to Site F1, two additional storeys of above-ground car park are proposed above the podium for non-domestic uses and the adoption MiC method also increased the height of the residential tower.The BHR is proposed to be relaxed to 155 mPD. No change to the building footprint is proposed under the Proposed Scheme, as the plot ratio remains unchanged.

4.2.6 Similar to Site F1, Application Sites F5, F6, F7 and F8 comprise two-storey terraced podiums for non-domestic uses along the site boundaries abutting the open space under the Approved Scheme. BHs of 120mPD were approved for these sites under A/FLN/30.

4.2.7 Under the Proposed Scheme, two additional storeys of above-ground car park are proposed above the podiums for non-domestic uses and the adoption MiC method also increased the height of the residential tower The terraced podium design is retained. The BHRs are proposed to relax to 135 mPD for these Application Sites.

Residential (Group A)3 ("R(A)3") - Sites F3

4.2.8 Site F3 is planned to be developed into podium-free residential blocks. A BH of 120 mPD was approved under A/FLN/30 under the Approved Scheme.

4.2.9 Under the Proposed Scheme, an above-ground car-park podium is introduced and the adoption MiC method also increased the height of the residential tower. The BHR is proposed to be relaxed to 135 mPD. A podium garden will be provided below the lowest residential floor to enhance air-ventilation performance.

Residential (Group B) ("R(B)") - Sites F2

4.2.10 Similar to Site F3, the podium-free domestic blocks under the Approved Scheme at Site F2 was approved with BH of 80mPD under A/FLN/30.

Summary

4.2.11 In general, the proposed increases in BH from Approved Scheme for the Application Sites are about 6%–19%, to facilitate the adoption of the MiC method and construction of above-ground car parks. There is no change to the PR proposed under the Approved Scheme. The use of permeable design for podium car parks is encouraged to minimise ventilation impacts. The detailed ventilation implications of these changes are discussed in the subsequent expert evaluation.

5. EXPERT EVALUATION ON THE APPROVED SCHEME AND PROPOSED SCHEME

5.1 General

5.1.1 The FLN NDA Remaining Phase containing the Application Sites is located at the rural areas of Hong Kong, the majority lands surrounding the FLN NDA and the Application Sites are zoned "Green Belt", "Agriculture", "Other Specified Uses", "Government, Institution or Community" as well as scattered areas of "Village Type Development". To the north-eastern boundary of the FLN NDA Remaining Phase and the Application Sites across the Ng Tung River are "Green Belt" areas of Fu Tei Au and Sha Ling. To the south-eastern and south-western boundary of the FLN NDA are existing developments at Fanling and Sheung Shui New Town area.

5.1.2 Site F1 is bounded to the east by planned residential developments and the Ng Tung River, to the south by planned residential developments and open space, to the west by planned Road L4, and to the north by planned Road L5. The other Application Sites, F2, F3, F4, F5, F6, F7 and F8, are generally bounded to the north by the Ng Tung River, to the east by planned public housing developments, to the west by planned GIC buildings and open space, and to the south by existing residential development in the Fanling New Town area. The most prominent terrain feature to the north of the Application Sites is High Hill, with a maximum elevation of approximately 160 mPD.

5.1.3 Owing to the current rural nature of the Application Sites within the FLN NDA Remaining Phase, the wind flows driven by the prevailing wind can freely penetrate the Application Sites under the current conditions. After the proposed developments within the Application Sites as well as their surroundings in the future, road networks and separations are anticipated to be formed to facilitate the penetration of the prevailing wind.

5.1.4 Two Development Scenarios would be examined in this Study, namely Approved Scheme and the Proposed Scheme (see Figure 4.2). Under the Approved Scheme and Proposed Scheme, as discussed in Section 4 above, both domestic residential blocks and podium structures are to be appeared within the Application Sites. Both Approved Scheme and Proposed Scheme would maintain all air ventilation good design measures (i.e., wind corridors) as required under the OZP to promote the air ventilation performance. All major wind corridors under the Proposed Scheme would be remained and without affecting its effectiveness for facilitating wind penetration through the Application Sites when compared with Approved Scheme.

5.1.5 In view of the discussion in paragraph 5.1.4, the changes in the building height restriction and addition of aboveground carpark in the Proposed Scheme would inevitably result in change of localized pedestrian wind environment around the Application Sites when compared with the Approved Scheme. However, it is anticipated the overall wind environment around the Application Sites would not be significantly affected under the Proposed Scheme due to the keeping of all major wind corridors.

5.2 Major Wind Corridors

5.2.1 By considering the topographical features and the planned/committed built environment, a number of major wind corridors are adopted in the existing OZP and identified in the vicinity of the Project Sites of the FLN NDA as shown in Figure 5.2-1.

5.2.2 The major wind corridors include designation of various open space areas in the FLN NDA. The local roads connect with the open spaces strategically align with north-east/south-west and east/west directions to from these major wind corridors which allow the annual and summer prevailing winds to penetrate the FLN NDA built environment as well as existing Fanling / Sheung Shui New Town area. For ease of reference and description, the major wind corridors are denoted as "A" to "F" in Figure 5.2-1.

5.2.3 ***Wind Corridor A*** is a major breezeway running in east to west direction along the amenity areas in the southern edge of Planning Areas 14, 17 and 18 abutting Mak Sik Road.

5.2.4 ***Wind Corridor B*** is arranged broadly in an east to west direction, it is defined by the open space between Planned Site P17 in Planning Area 15 and One Innovale in Planning Area 18. The corridor generally directs flow along this open space towards the NBA between Application Site F8 in Planning Area 16 and Planned Site P15 in Planning Area 17, before reaching Road L2.

5.2.5 ***Wind Corridor C*** is an east-north-east to west-south-west oriented corridor through Wo Lok Lane and the NBA located at Planned Site P17 in Planning Area 15 towards the open space between the site separation of Application Site F6 and F8 in Planning Area 16.

5.2.6 ***Wind Corridor D*** is the corridor running north-east to south-west along the designated NBA within Application Site F2 and Planned Site P12 in Planning Area 13, and through the NBA within the Planned Site P13 and Application Site F4 in Planning Area 14.

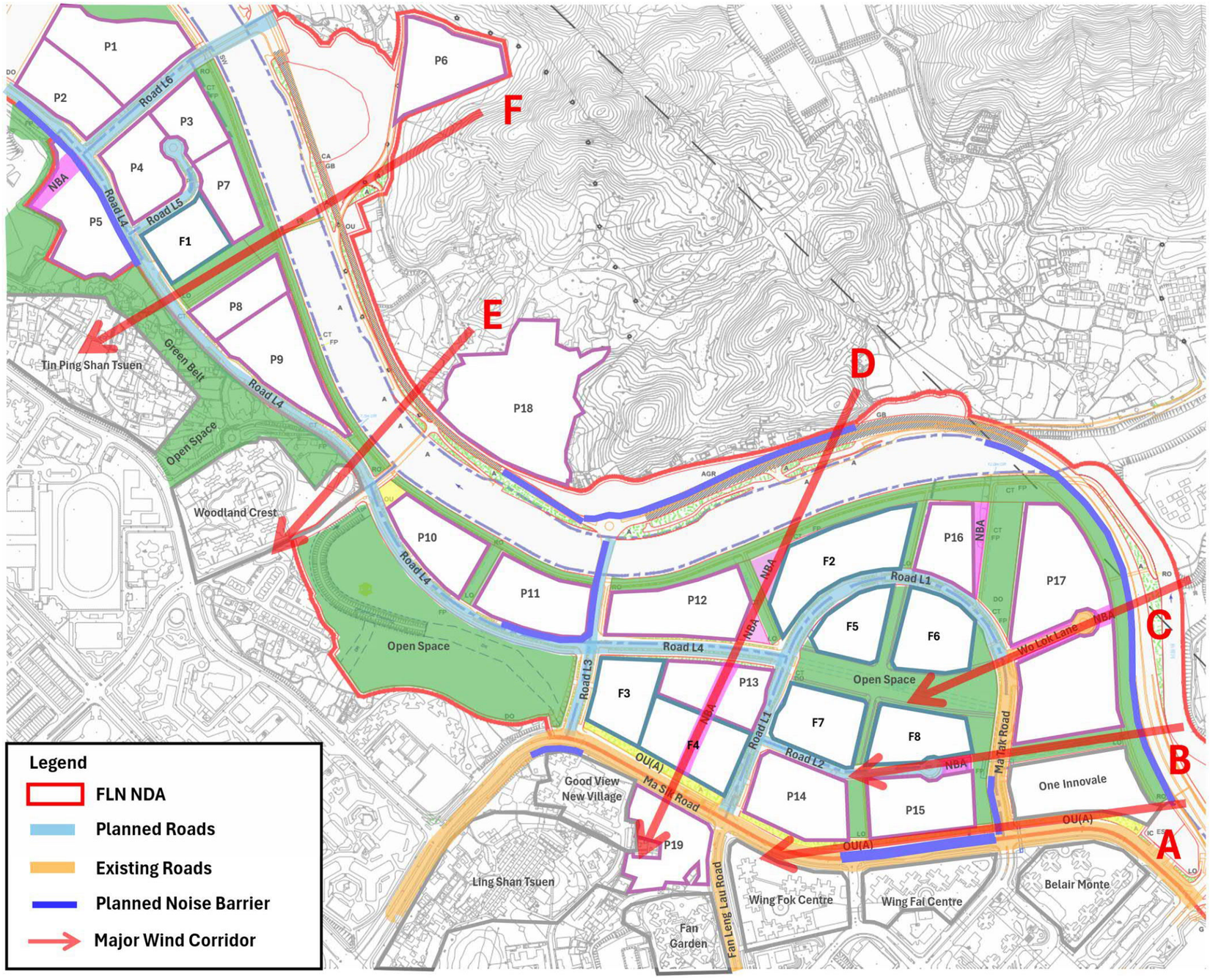
5.2.7 ***Wind Corridor E*** is along road between Planned Site P9 in Planning Area 10 and Planned Site P10 in Planning Area 11 serves as a major breezeway running in north-east to south-west direction to existing Fanling / Sheung Shui New Town Area.

5.2.8 ***Wind Corridor F*** is a 50m-wide open space separation running in north-east to south-west direction between Application Site F1, Planned Site P7 and Planned Site P8 in Planning Area 10.

5.2.9 Taken together, Wind Corridors A to F form the principal air paths within the FLN NDA. Their combined function is to preserve permeability through the planned urban fabric, enhance wind penetration into the interior development areas, and maintain connectivity between the open edges, open spaces and road network of the Study Area.

5.2.10 Wind Corridor A, B and C act as an important cross-ventilation path feeding air from the eastern frontage into the internal development area of FLN NDA. Wind Corridor D provides a key penetration route for air movement from the northern open edge into the inland areas of Planning Areas 13 and 14. Wind Corridor E and F benefits from the relatively open setting between the northwestern topographical edge and the Planning Areas 10, 11 and 12. It functions as an important diagonal breezeway linking the upper and lower parts of the FLN NDA.

Figure 5.2-1 Major Wind Corridors near Application Sites



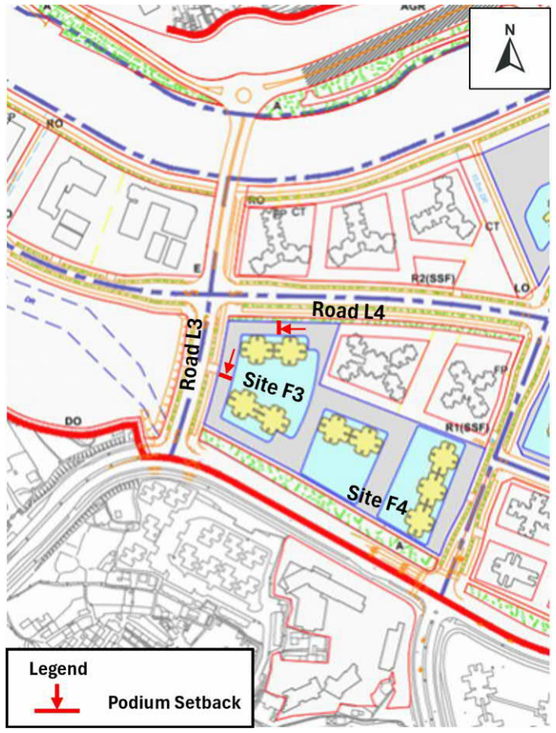
5.3 Good Air Ventilation Features to be Retained in the Proposed Scheme

5.3.1 Major wind corridors have been identified under the prevailing wind directions. These identified wind corridors are useful in maintaining the wind environment within and at the surroundings of the Application Sites. The identified wind corridors under each prevailing wind directions have been discussed in detail in Section 5.2 above in which the most are along roads and open spaces.

5.3.2 From the discussion of indicative proposed building layouts under the Approved Scheme and Proposed Scheme in Section 4, it is observed that these identified major wind corridors are retained and remained non-obstructed under the proposed layouts of the Approved Scheme as well as after the proposed developments of the Proposed Scheme.

5.3.3 For Sites F1, F5, F6, F7 and F8, terraced podium is retained to direct downward airflow to the pedestrian level of the adjacent open spaces. For Sites F2 and F3, a podium garden will be provided below the lowest residential floor to complement the introduction of an aboveground carpark podium. In addition, it is recommended to incorporate podium setback from Road L3 and Road L4 in Site F3 to maximize the separation of identified wind corridor and local road network. Besides, the use of permeable design for podium car parks is encouraged to enhance the overall permeability and minimize the air ventilation impact.

Figure 5.3-1 Podium Setback of Application Site F3



5.3.4 The evaluation of the two Scenarios is based on potential variations in anticipated wind flow patterns, changes in the extent of wind wake zones, building permeability, and the identification of wind sensitive and potential wind-affected areas, as well as major district wind corridors and local air paths under the prevailing wind directions. The directional analysis and anticipated wind flow patterns under the Approved Scheme and Proposed Scheme are discussed below.

5.4 Expert Evaluation

Under E Annual and Summer Prevailing Wind Direction

Approved Scheme

5.4.1 Under the Approved Scheme, the prevailing easterly wind approaches the FLN NDA from the east after skimming over the existing low-rise developments and open areas at the eastern side of the Study Area. Owing to the relatively open nature of the eastern frontage and the presence of east-west oriented road corridors and open spaces within the NDA, the easterly wind is expected to remain generally available for penetration into the FLN NDA.

5.4.2 On the northern end of the Study Area, the relatively open frontage adjoining the Ng Tung River also allows part of the prevailing easterly wind to pass westward along the northern edge of the FLN NDA. Although the easterly wind is not fully align with the orientation of major wind corridor formed by 50m-wide open space separation between Application Site F1, Planned Sites P7 and P8 (denoted as “F” in Figure 5.2-1), portion of approaching airflow is expected to be captured and channelled into the corridor and provide supplementary ventilation to the downwind area in Sheung Shui New Town, including the vicinity of Application Site F1.

5.4.3 At the northern side of Application Site F2, Planned Sites P16 and P17, the open space alongside Ng Tung River forms an open frontage that allows the prevailing easterly wind to channel westward along the northern edge of the FLN NDA. This prevailing easterly wind is expected to flow along Ng Tung River and arrive western side of FLN NDA.

5.4.4 The major wind corridor formed by the NBA within Planned Site P17 and along Wo Lok Lane (denoted as “C” in Figure 5.2-1) is generally aligned with the prevailing easterly wind. Subject to the generally unobstructed upwind condition at the eastern side, this corridor is expected to serve as an effective ventilation path, allowing the easterly airflow to be channelled into the cross-shaped open space in Planning Area 16. Thereby improving air movement around Application Sites F5, F6, F7 and F8.

5.4.5 The major wind corridors formed by open space between Planned Site P17 and One Innovale and along Road L2 and Ma Sik Road (denoted as “A” & “B” in Figure 5.2-1) are well aligned with the prevailing easterly wind direction. These corridors effectively bring in the easterly wind to the downwind areas including the Application Sites F8, F7, Planned Sites P15 and P14, and existing developments Wing Fai Centre and Wing Fok Centre in the Fanling New Town.

5.4.6 Overall, under the Approved Scheme, the prevailing easterly wind is expected to enter the FLN NDA mainly through the relatively open eastern frontage and then propagate westward along both the northern riverside edge and the internal east-west ventilation paths within the NDA. These wind paths collectively contribute to ventilation penetration towards the central and western parts of the FLN NDA.

5.4.7 Figure 5.4-1 illustrates the anticipated easterly annual and summer prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.8 For Application Site F1, although the Proposed Scheme introduces increased podium and building tower heights, the terraced podium footprint and the 10m setback on the first floor remain the same as those under the Approved Scheme. As the site is located at the more western and north-western part of the FLN NDA, where only part of the prevailing easterly wind is expected to reach from wind corridor F, the proposed changes are not expected to materially alter the wind environment at pedestrian level.

5.4.9 For Application Site F2, the Proposed Scheme introduces a new 2-storey podium structure together with an increase in tower height. As the upwind developments of Planned Sites P16 and P17 are anticipated to block a major portion of the easterly wind reaching Application Site F2, the pedestrian wind environment is relatively weak in the Approved Scheme, and the Proposed Scheme generally maintains the same case.

5.4.10 For Application Site F3, the Proposed Scheme introduces a new 2-storey podium structure and an increase in tower height, while Application Site F4 introduces increased podium and building tower height. As these sites are located further downwind within the internal part of the FLN NDA under easterly wind conditions, the proposed changes may result in some localised reduction in wind permeability at the site and its immediate western side. Nevertheless, the site does not encroach upon the major east-west wind paths identified within the Study Area, and the surrounding road and open space network would remain largely unchanged. The overall wind penetration effect towards the downwind areas is therefore expected to be broadly comparable to that under the Approved Scheme.

5.4.11 For Application Sites F5, F6, F7 and F8, the Proposed Scheme introduces increased podium and tower heights while maintaining the same terraced podium footprint as the Approved Scheme. Since the 10m setback on the first floor of the terraced podium will be retained, the permeability of the pedestrian level through the cross-shaped open space in Planning Area 16 is expected to remain generally effective under easterly wind conditions. The proposed changes are therefore not expected to materially affect the ventilation performance of this open space network or the associated wind penetration towards the more inland parts of the Study Area.

5.4.12 Figure 5.4-2 illustrates the anticipated easterly annual and summer prevailing wind flow for the Proposed Scheme.

Figure 5.4-1 Wind Flow under the E Annual and Summer Prevailing Wind for the Approved Scheme

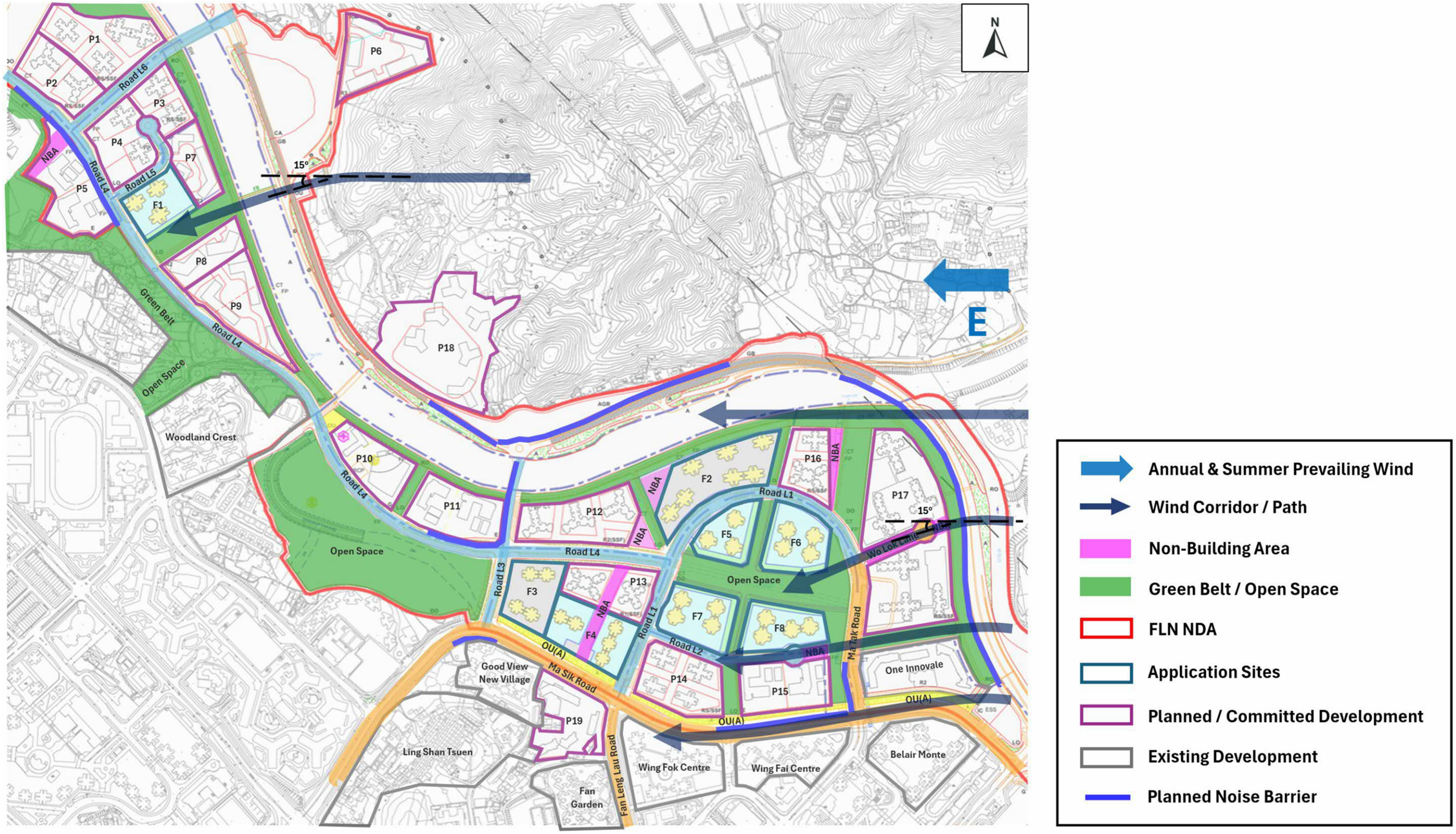
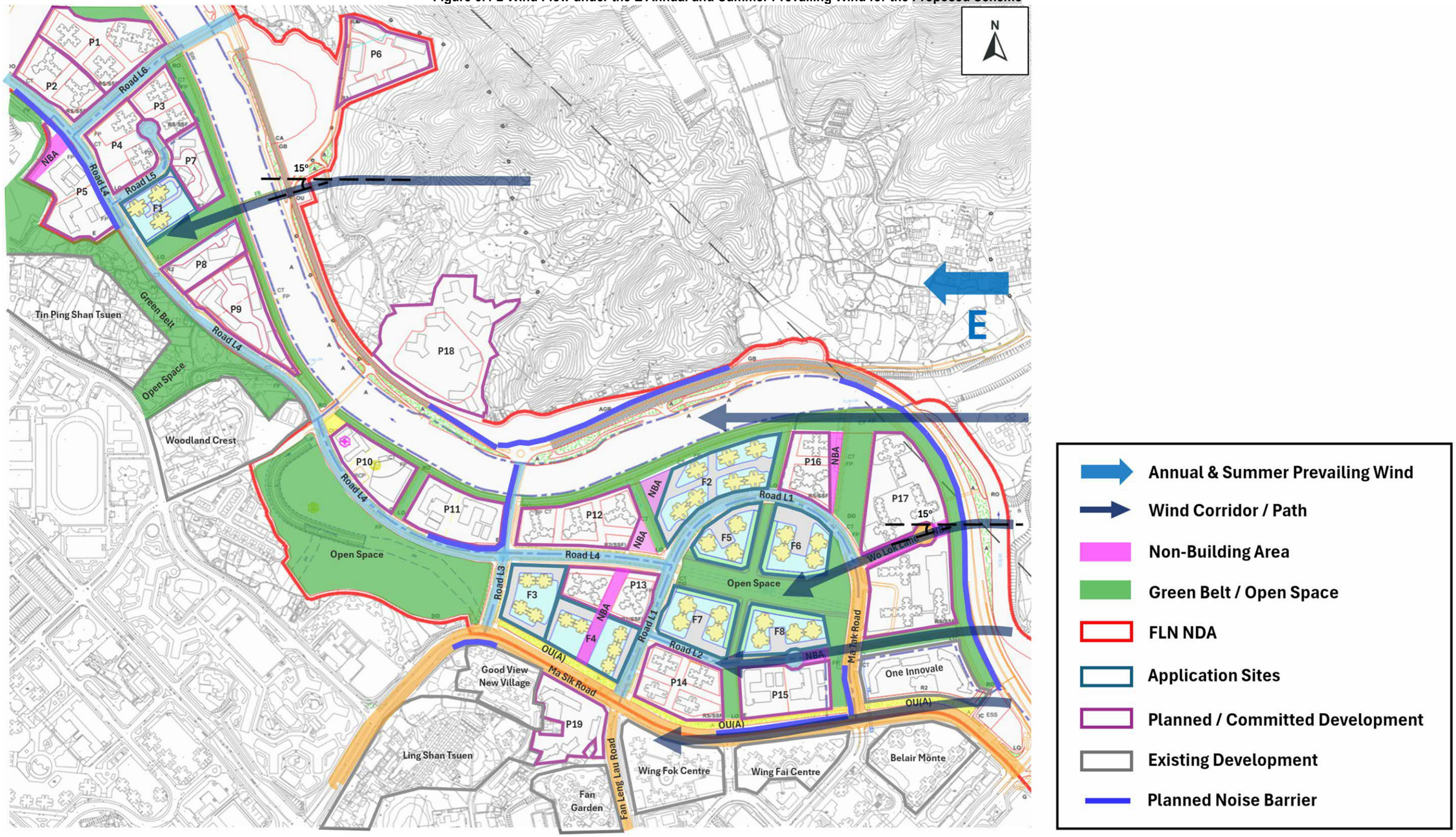


Figure 5.4-2 Wind Flow under the E Annual and Summer Prevailing Wind for the Proposed Scheme



Under ENE Annual Prevailing Wind Direction

Approved Scheme

5.4.13 Under the Approved Scheme, the prevailing north-easterly wind approaching the FLN NDA is expected to follow a broadly similar overall pattern to that under the easterly condition, after passing over the existing low-rise developments and open areas at the eastern side of the FLN NDA. Given the relatively open character of the eastern frontage and the presence of a number of east-west road corridors and open spaces within the NDA, the north-easterly wind is expected to remain generally available for penetration into the FLN NDA.

5.4.14 Part of the prevailing north-easterly wind is expected to pass over the area of Sheung Shui Wa Shan and across the Ng Tung River towards Planning Areas 7 and 10. With limited major obstruction along this approach, part of the airflow is expected to be captured by the 50m-wide major wind corridor F, thereby facilitating ventilation to Planned Sites P7 and P8, Application Site F1 and the further downwind areas in Sheung Shui New Town, including the adjoining green belt and Tin Ping Shan Tsuen.

5.4.15 Along the northern side of the FLN NDA, the open frontage adjoining the Ng Tung River in the vicinity of Planning Areas 13 and 15 is also expected to allow part of the prevailing north-easterly wind to extend westward along the river edge. This open river corridor would help convey airflow towards the northern riverfront developments within the FLN NDA, including Planned Sites P16 and P12 as well as Application Site F2.

5.4.16 The major wind corridor formed by the NBA within Planned Site P17 and along Wo Lok Lane (denoted as “C” in Figure 5.2-1) is expected to remain favourable for capturing part of the prevailing north-easterly wind. Given the generally open upwind condition to the east of the FLN NDA, this corridor is expected to continue functioning as an effective ventilation path, allowing airflow to be directed into the cross-shaped open space in Planning Area 16, thereby enhancing air movement around Application Sites F5, F6, F7 and F8.

5.4.17 The major wind corridors formed by the open space between Planned Site P17 and One Innovale and along Road L2 (denoted as “B” in Figure 5.2-1), and Ma Sik Road (denoted as “A” in Figure 5.2-1) are also expected to support further penetration of the prevailing north-easterly wind into the downwind areas, including Application Sites F8 and F7, Planned Site P15, and the existing developments such as Wing Fai Centre in Fanling New Town.

5.4.18 By contrast, Application Sites F3 and F4 are located within the more internal downwind part of the FLN NDA, where the penetration of the prevailing north-easterly wind is constrained by other mixed-use and high-rise developments, including Application Sites F5, F6, F7 and F8, as well as Planned Sites P12 and P13.

5.4.19 Figure 5.4-3 illustrates the anticipated north-easterly annual prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.20 For Application Site F1, although the Proposed Scheme introduces increased podium and tower heights, the terraced podium footprint and the 10m setback at the first floor would remain the same as those under the Approved Scheme. As the width and general permeable area of wind corridor F would be maintained, the proposed changes are not expected to materially alter the wind environment in the adjacent and further downwind areas.

5.4.21 For Application Site F2, the introduction of the new podium may reduce the immediate permeability of the site to the approaching airflow and may locally weaken wind availability in the immediate downwind areas to the west and south-west. Nevertheless, as the adjoining NBA and the surrounding road and open space connections would remain unchanged, the overall ventilation function of the nearby internal wind paths is expected to remain generally effective.

5.4.22 For Application Sites F3 and F4, the Proposed Scheme introduces a new 2-storey podium and increased tower height for Application Site F3, together with increased podium and tower height for Application Site F4. As these sites are already located within the more internal downwind part of the FLN NDA, where the availability of the prevailing north-easterly wind is relatively limited under the Approved Scheme, the proposed changes are not expected to materially affect the wind environment under this wind condition.

5.4.23 For Application Sites F5, F6, F7 and F8, the 10m setback at the first floor of the terraced podium would be retained under the Proposed Scheme. Together with the continued presence of the cross-shaped open space in Planning Area 16, which remains open to airflow brought in via wind corridor C, the overall ventilation performance under the prevailing north-easterly wind is expected to remain broadly comparable to that under the Approved Scheme. As for the wind corridor between Planned Site P17 and One Innovale (wind corridor B), the corridor is expected to remain generally effective in conveying part of the prevailing north-easterly wind towards the internal road/open space network. While the increased podium and tower height at Application Site F8 may cause some localised shielding near the site, these effects are expected to be confined to the immediate vicinity and not materially affect the corridor-scale airflow performance

5.4.24 Figure 5.4-4 illustrates the anticipated north-easterly annual prevailing wind flow for the Proposed Scheme.

Figure 5.4-3 Wind Flow under the ENE Annual Prevailing Wind for the Approved Scheme

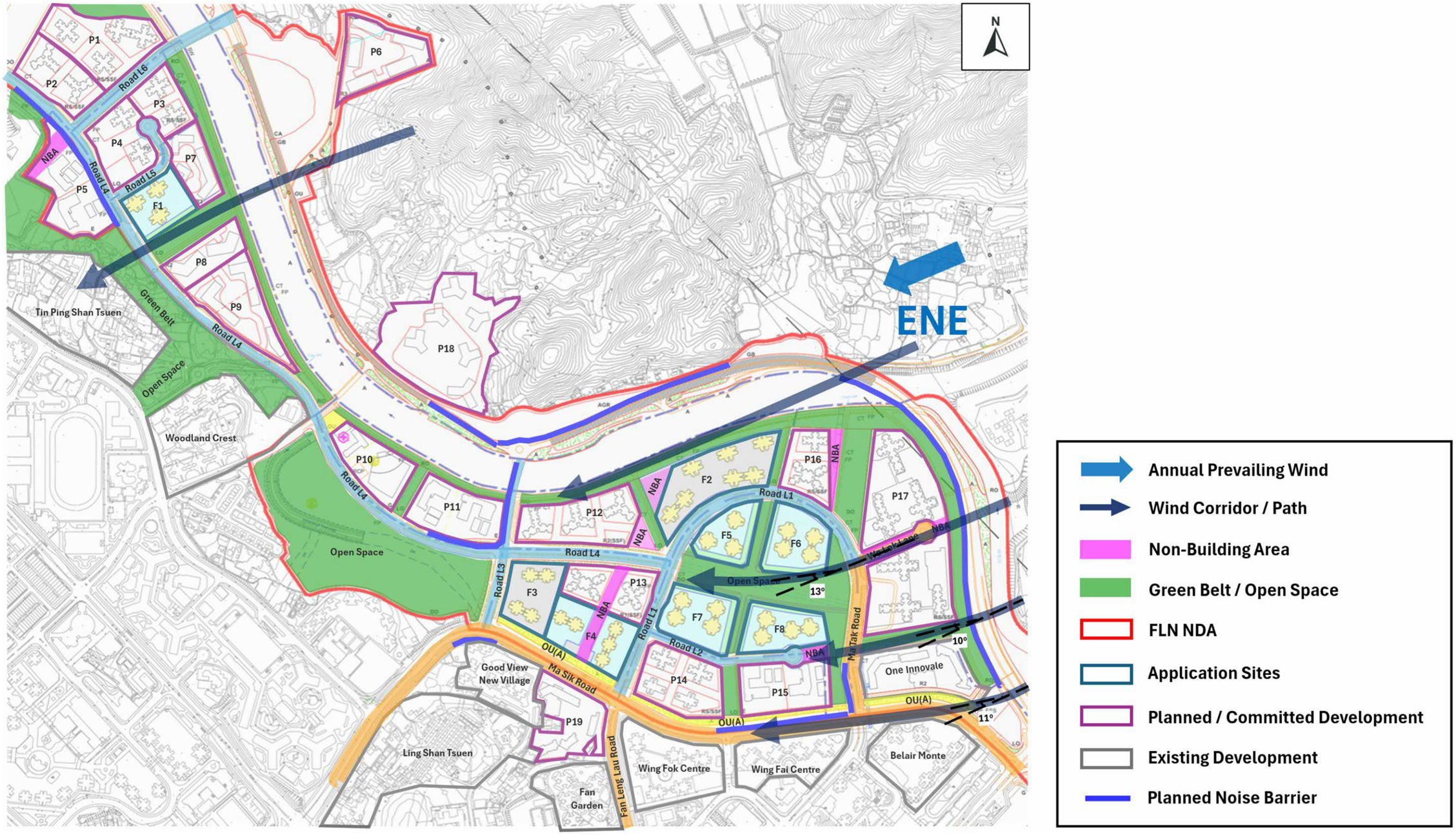
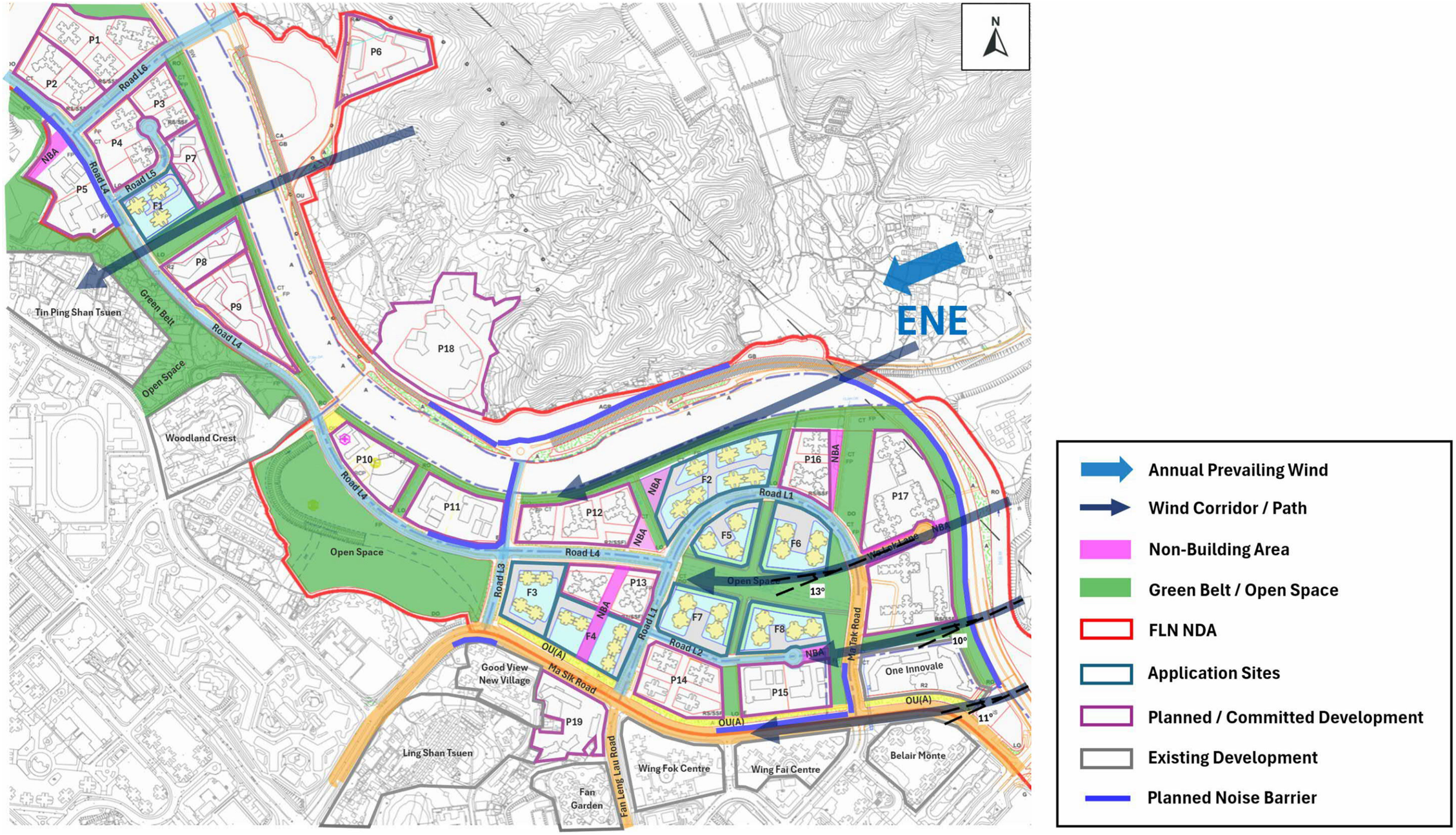


Figure 5.4-4 Wind Flow under the ENE Annual Prevailing Wind for the Proposed Scheme



Under N Annual Prevailing Wind Direction

Approved Scheme

5.4.25 Under the Approved Scheme, the annual prevailing northerly wind approaches the FLN NDA after skimming over the elevated terrain of Wa Shan, High Hill, as well as the low-rise village building clusters of Wa Shan Tsuen and Siu Hang San Tsuen. Owing to the generally open character of the upstream hillside and low-rise developments, the northerly wind is expected to remain generally available for penetration into the FLN NDA.

5.4.26 Along the wind corridor formed by the 50m-wide open space between Planned Sites P7 and P8 (denoted as "F" in Figure 5.2-1), the approaching northerly wind is expected to reach the corridor entrance near the Ng Tung River without significant upstream obstruction. However, as this wind corridor is aligned generally in a north-east to south-west direction, which is not fully consistent with the prevailing northerly wind direction, only part of the approaching airflow is expected to be captured and channelled into the corridor. As a result, the wind penetration effect along this corridor towards Application Site F1 and the further downwind areas within Sheung Shui New Town is expected to be moderate.

5.4.27 Road L3 is favourably aligned with the annual prevailing northerly wind and therefore serves as an effective wind path. The northerly airflow is expected to be channelled southward through the spaces between Planned Sites P11 and P12 and further through Application Site F3, thereby facilitating air penetration towards the downwind areas of Fanling New Town.

5.4.28 The 20m-wide wind corridor formed by the NBAs adjacent to Planned Site P12 and Application Site F2, and continuing southward through Planned Site P13 and Application Site F4 (denoted as "D" in Figure 5.2-1), is generally aligned in an NNE-to-SSW direction, which is broadly compatible with the annual prevailing northerly wind. Subject to the generally unobstructed upwind condition, this corridor is expected to provide an effective ventilation path towards the downwind areas, including Planned Site P19.

5.4.29 Similarly, the 15m-wide open space between Application Site F2 and Planned Site P16 also functions as a local ventilation path under northerly wind conditions. The airflow is expected to be guided through the cross-shaped open space in Planning Area 16, thereby improving air movement around Application Sites F5, F6, F7 and F8.

5.4.30 Along Ma Tak Road, a major wind path of approximately 50m in width is formed by the NBA and open space between Planned Sites P16 and P17, together with the adjoining open space within Planning Area 16. This wind path is expected to facilitate further southward wind penetration towards the downwind areas of Fanling New Town.

5.4.31 Figure 5.4-5 illustrates the anticipated northerly annual prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.32 For Application Site F1, although the Proposed Scheme introduces increased podium and building tower heights, the terraced podium footprint and the 10m setback on the first floor remain the same as those under the Approved Scheme. It is therefore anticipated that the wind environment at pedestrian level would not be materially affected by the proposed height increase.

5.4.33 For Application Site F2, the Proposed Scheme introduces a new 2-storey podium structure together with an increase in tower height. As Application Site F2 is located at the northern part of the FLN NDA, it lies within the upwind region of the remaining developments in the NDA as well as the existing Fanling New Town area under the annual prevailing northerly wind. The introduction of the new podium would inevitably weaken the prevailing wind reaching the immediate downwind area to the south, including Application Sites F5, F6, F7 and F8, as well as Planned Sites P14 and P15. Nevertheless, as the proposed changes would not obstruct the NBA to the west of the site, the ventilation effectiveness of the 20m-wide Wind Corridor D is expected to be maintained.

5.4.34 Similarly, for Application Site F3, the Proposed Scheme introduces a new 2-storey podium structure and an increase in tower height. The footprint of the new podium would maintain the same setback distance from the western site boundary as the original tower setback under the Approved Scheme. The proposed changes are therefore not expected to adversely affect the ventilation effectiveness of the local wind path along Road L3. A similar extent of the prevailing northerly wind is expected to continue to be channelled towards the downwind areas of Fanling New Town.

5.4.35 For Application Site F4, the Proposed Scheme introduces increased podium and building tower heights. Nevertheless, the width of the NBA along Wind Corridor D would be maintained. While the proposed building height relaxation would inevitably reduce wind availability in the immediate downwind area, including Planned Site P19, the overall function of Wind Corridor D as a ventilation path is expected to remain.

5.4.36 For Application Sites F5, F6, F7 and F8, the Proposed Scheme introduces increased podium and tower heights while maintaining the same terraced podium footprint and the 10m setback on the first floor as those under the Approved Scheme. Along the local ventilation path through the cross-shaped open space in Planning Area 16, the ventilation effectiveness and the anticipated wind availability at the downwind areas are expected to be generally maintained.

5.4.37 Figure 5.4-6 illustrates the anticipated northerly annual prevailing wind flow for the Proposed Scheme.

Figure 5.4-5 Wind Flow under the N Annual Prevailing Wind for the Approved Scheme

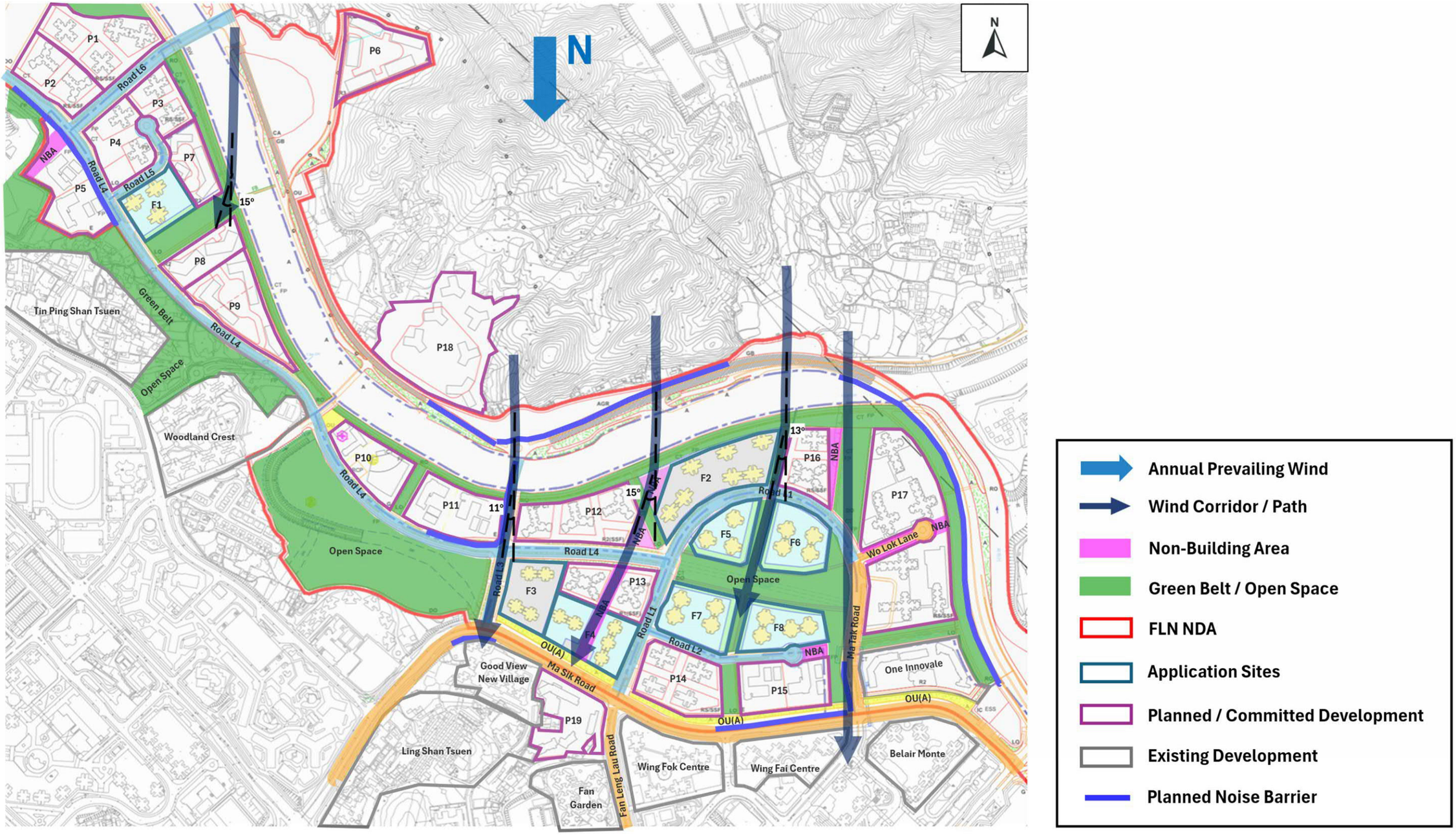
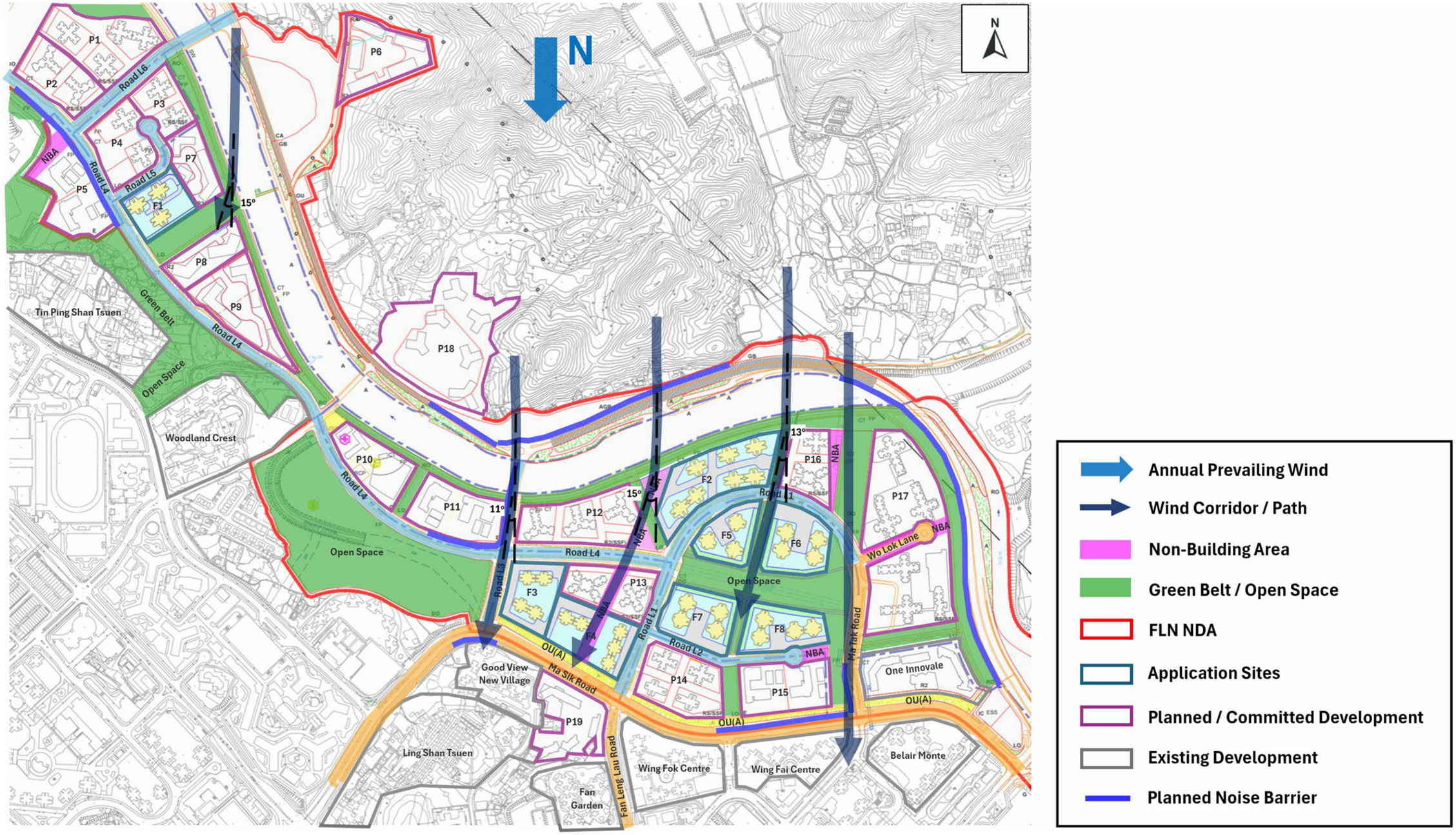


Figure 5.4-6 Wind Flow under the N Annual Prevailing Wind for the Proposed Scheme



Under SW Summer Prevailing Wind Direction

Approved Scheme

5.4.38 Under the Approved Scheme, the prevailing south-westerly wind approaches the FLN NDA after passing over the existing urban developments and open areas in the adjoining Fanling / Sheung Shui New Town area. Owing to the relatively open character of the upwind development and the presence of a number of local road corridors and open spaces within the NDA, the south-westerly wind is expected to remain generally available for penetration into Planning Area 7 to 12 in the FLN NDA. However, since the existing high-rise developments in Fanling New Town area act as the major ventilation obstruction to the Planning Areas 13 to 18 at the southeastern part of the FLN NDA.

5.4.39 The immediate area on the southwest of Planning Area 9 and 10 in the FLN DNA is a cluster of low-rise buildings of Tin Ping Shan Tsuen and a wide green belt area. The summer south-westerly wind is expected to pass through these open areas without major obstruction and reaching Application Site F1. As the 50m-wide wind corridor F, formed by the open space in Planning Area 10, is well aligned in the south-west to north-east direction, the prevailing south-westerly wind is expected to penetrate effectively into the corridor and reach the further downwind areas in the vicinity of Planned Site P7 and P6.

5.4.40 A major portion of the prevailing south-westerly wind is expected to enter the FLN NDA through the south-western opening along the western part of Ma Sik Road, in the vicinity of Ling Shan Tsuen and Good View New Village. This local opening is broadly aligned with the approaching wind direction and is expected to facilitate north-eastward wind penetration into the central part of the FLN NDA, reaching the eastern part of the open space in Planning Area 12, Application Site F3 and further channel to the downwind regions of Planned Sites P11 and P12 along Road L3.

5.4.41 On the side of Fanling New Town, the existing mixed developments serve as major blockages that hinder the penetration of the prevailing summer south-westerly wind. Although the major wind corridor formed by the NBAs within Application Site F4 and Planned Site P13, together with the NBAs adjacent to Planned Site P12 and Application Site F2 (denoted as “D” in Figure 5.2-1), is generally aligned with the summer southerly wind direction, major blockage from the upwind developments, including Fan Garden and Planned Site P19 in Fanling New Town, is anticipated. In view of these upstream obstructions, no significant southerly ventilation effect is expected along wind corridor D.

5.4.42 Similarly, the high-rise building blocks in Wing Fok Centre and Wing Fai Centre of Fanling New Town together with Planned Sites P14 and P15 in the southern part of the FLN NDA, would pose blockages to the south-westerly wind, thereby limiting its penetration into the more inland developments, including Application Site F7, F8, F5, F6 and F2.

5.4.43 Figure 5.4-7 illustrates the anticipated south-westerly summer prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.44 For Application Site F1, the proposed increase in podium height may inevitably weaken wind availability at pedestrian level in the immediate downwind area of Planned Site P7 to some extent. Nevertheless, as the podium footprint and the 10m setback on the first podium floor are maintained the same as those under the Approved Scheme, the overall permeability to the south-westerly along wind corridor F is expected to be retained without significant impact.

5.4.45 For Application Site F3, the proposed new podium structure and increase in tower height may reduce wind permeability and hence affect the immediate downwind developments, including Planned Sites P12 and P13, to some extent. However, the new podium structure would retain the same setback distance from the western site boundary as the original tower setbacks under the Approved Scheme. With this setback retained, the permeable area of the local wind path along Road L3 is expected to be maintained, and the associated ventilation effectiveness towards the downwind areas, including Planned Sites P11 and P12, is therefore not expected to be materially affected.

5.4.46 For Application Site F2, F4, F5, F6, F7 and F8, these sites are located within the more internal downwind region of the FLN NDA, where the availability of the prevailing summer south-westerly wind is already relatively limited under the Approved Scheme. Although various increases in building height and, in some cases, additional podium structures are introduced under the Proposed Scheme, such changes are not expected to give rise to any direct impact on prevailing the south-westerly wind environment in the vicinity of these sites.

5.4.47 Figure 5.4-8 illustrates the anticipated south-westerly summer prevailing wind flow for the Proposed Scheme.

Figure 5.4-7 Wind Flow under the SW Summer Prevailing Wind for the Approved Scheme

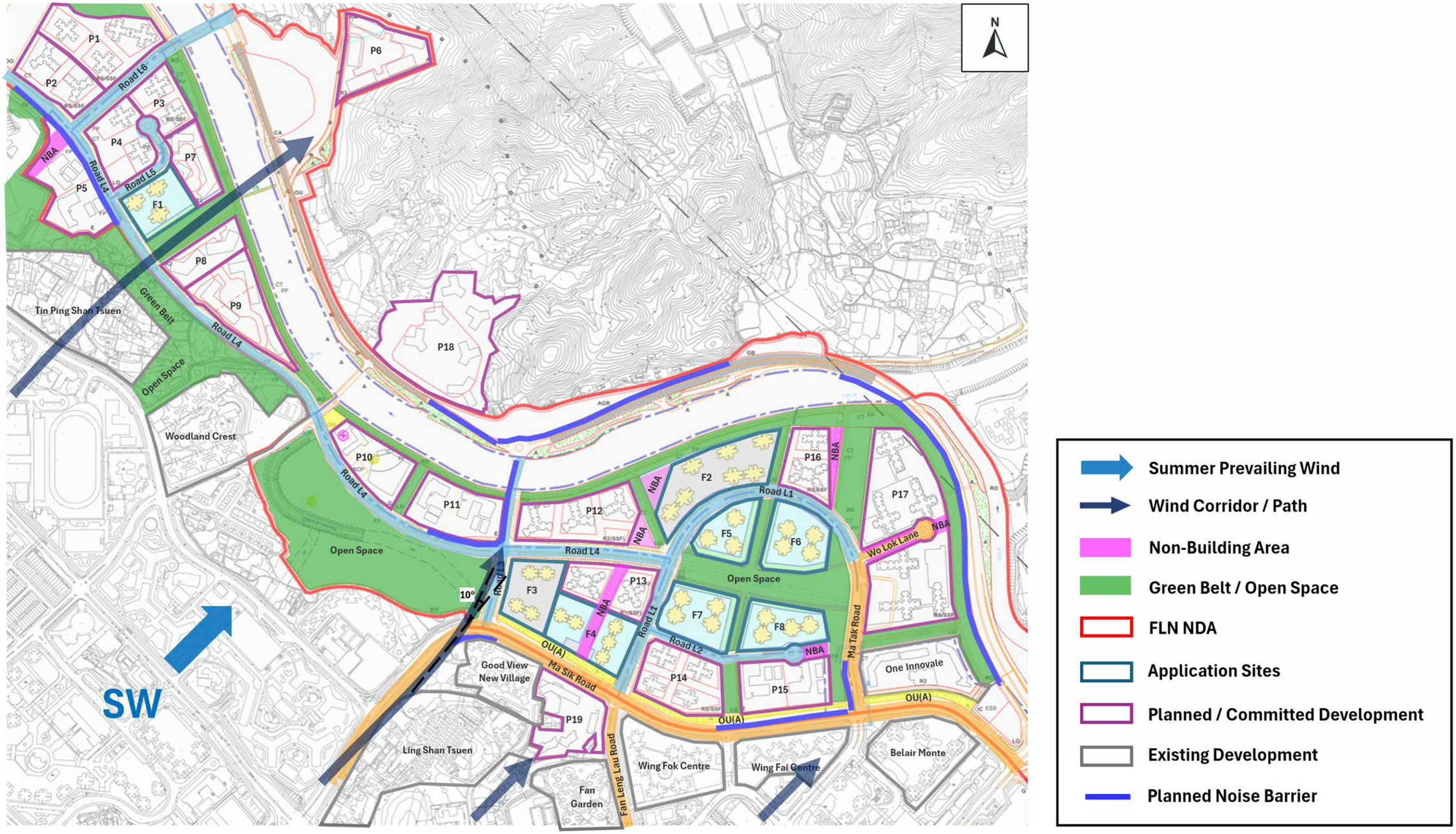
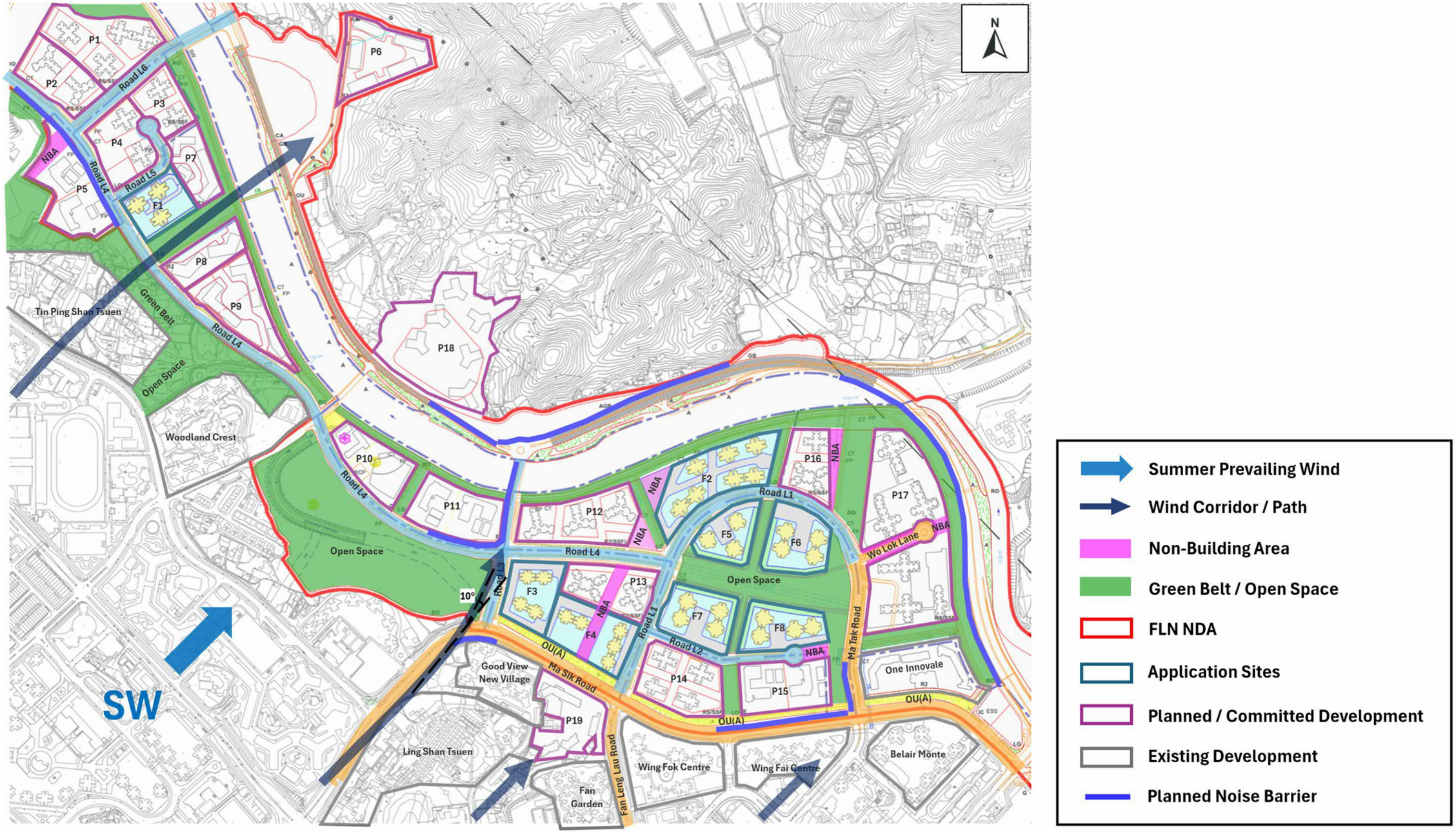


Figure 5.4-8 Wind Flow under the SW Summer Prevailing Wind for the Proposed Scheme



Under WSW Summer Prevailing Wind Direction

Approved Scheme

5.4.48 Under the Approved Scheme, the summer west-south-westerly wind approaching the FLN NDA is expected to follow a broadly similar pattern to that under the south-westerly condition, after passing over the existing built-up areas and open land in the adjoining Fanling / Sheung Shui New Town area. Given the relatively open character of the upwind setting and the presence of local road corridors and open spaces within the NDA, the prevailing west-south-westerly wind is expected to remain generally available for penetration into Planning Areas 7 to 12 of the FLN NDA. In contrast, the existing high-rise developments in Fanling New Town would continue to form the major ventilation barriers to Planning Areas 13 to 18 in the southern part of the FLN NDA.

5.4.49 For Planning Areas 9 and 10, the west-south-westerly wind is expected to pass over the low-rise cluster of Tin Ping Shan Tsuen and the adjoining green belt area without major obstruction before reaching Application Site F1. Although wind corridor F is not as directly aligned as under the west-south-westerly condition, it is still expected to provide a relatively open route for further wind penetration towards the downwind areas in the vicinity of Planned Sites P7 and P6.

5.4.50 In the area immediately southwest of Planning Area 12, the low-rise developments in Sheung Shui New Town are expected to allow the west-south-westerly wind to pass with limited obstruction, enabling it to enter the large open space within Planning Area 12 and Application Site F3. Part of the airflow is then expected to be channelled eastward along Road L4, which serves as a local breezeway conveying the prevailing wind towards the more internal parts of the FLN NDA, including Planned Sites P12 and P13 as well as Application Sites F5 and F7.

5.4.51 In the vicinity of Ma Sik Road, the low-rise clusters at Ling Shan Tsuen and Good View New Village are also expected to permit partial passage of the west-south-westerly wind, thereby contributing local airflow towards the vicinity of Application Sites F3 and F4.

5.4.52 However, Application Site F2 is located within the downwind wake of Planned Site P12 under the west-south-westerly condition, and wind availability in its immediate vicinity is therefore expected to be limited. Likewise, Application Sites F6 and F8 are screened by a series of mixed-use and high-rise developments, including Fan Garden, Wing Fok Centre and Planned Site P19 in Fanling New Town, as well as Application Site F4 and Planned Site P14 in the FLN NDA. As a result, the availability of the prevailing west-south-westerly wind at these locations is expected to remain relatively low.

5.4.53 Figure 5.4-9 illustrates the anticipated west-south-westerly summer prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.54 For Application Site F1, the proposed increase in podium height may lead to some reduction in pedestrian-level wind availability in the immediate downwind area, particularly in the vicinity of Planned Site P7. Nevertheless, as the podium footprint and the 10m setback at the first podium level would remain unchanged from the Approved Scheme, the overall permeability to the west-south-westerly flow along wind corridor F is expected to be broadly retained, with no significant impact anticipated.

5.4.55 For Application Site F3, the proposed new podium structure and increase in tower height may reduce local wind permeability and hence affect the immediate downwind developments to some extent. However, the new podium would retain the same setback from the northern site boundary as the original tower setback under the Approved Scheme. With this setback preserved, the permeable area of the local wind path along Road L4 is expected to be maintained, and the associated ventilation performance towards Planned Sites P12 and P13, as well as the adjoining part of Planning Area 16, is therefore not expected to be materially affected.

5.4.56 For Application Site F4, the proposed increases in podium and tower height may intercept part of the west-south-westerly airflow and cause some reduction in wind reaching the immediate downwind areas, including Application Site F7 and Planned Site P14. Nevertheless, having regard to the already constrained wind availability in this internal part of the NDA under the Approved Scheme, the effect is expected to remain localized.

5.4.57 For Application Sites F2, F5, F6, F7 and F8, these sites are situated within the more internal downwind part of the FLN NDA, where the availability of the prevailing summer west-south-westerly wind is already limited under the Approved Scheme. Although various increases in building height and, for some sites, additional podium structures are introduced under the Proposed Scheme, such changes are not expected to result in any material change to the broader west-south-westerly wind environment in the vicinity of these sites.

5.4.58 Figure 5.4-10 illustrates the anticipated west-south-westerly summer prevailing wind flow for the Proposed Scheme.

Figure 5.4-9 Wind Flow under the WSW Summer Prevailing Wind for the Approved Scheme

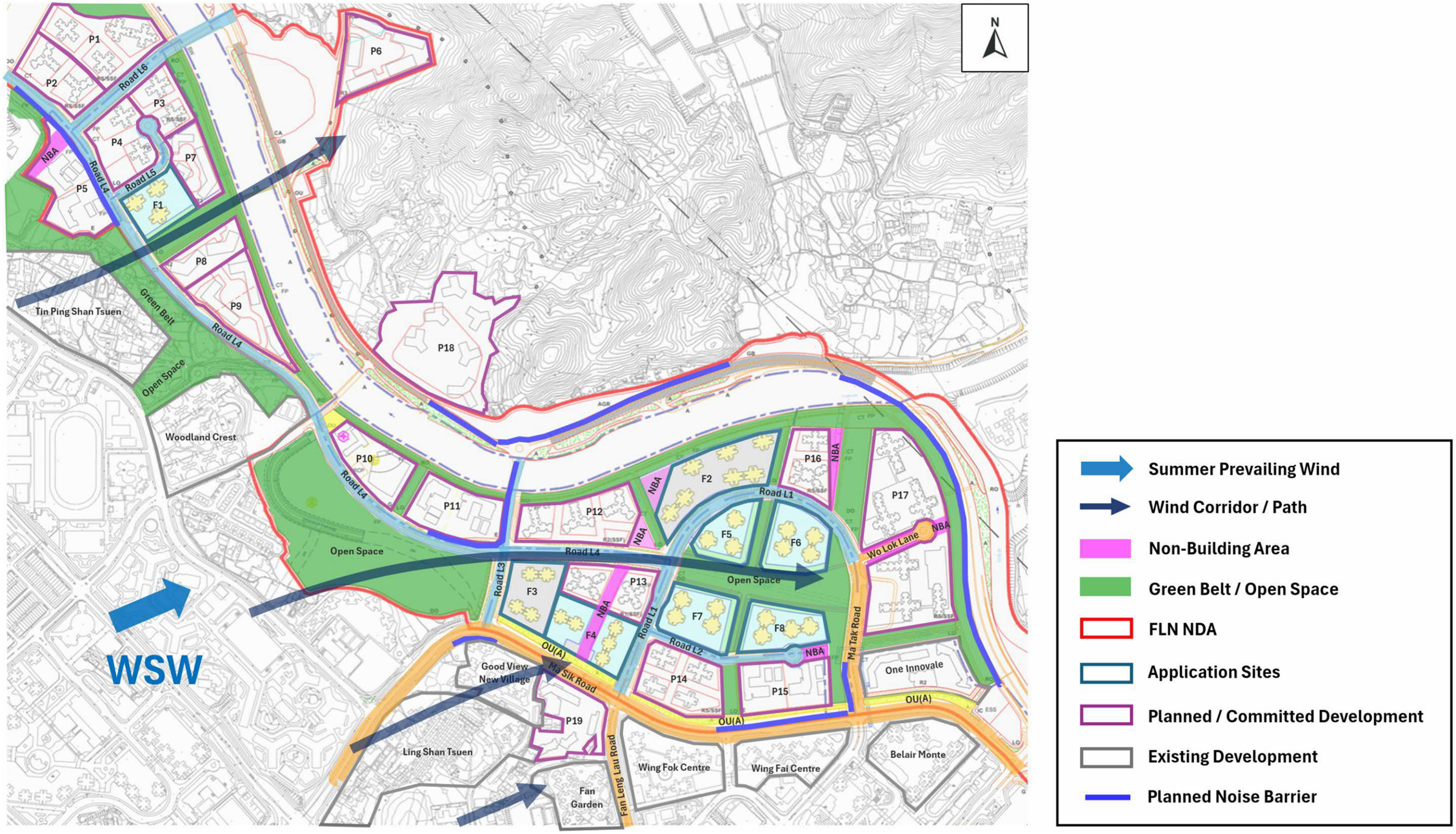
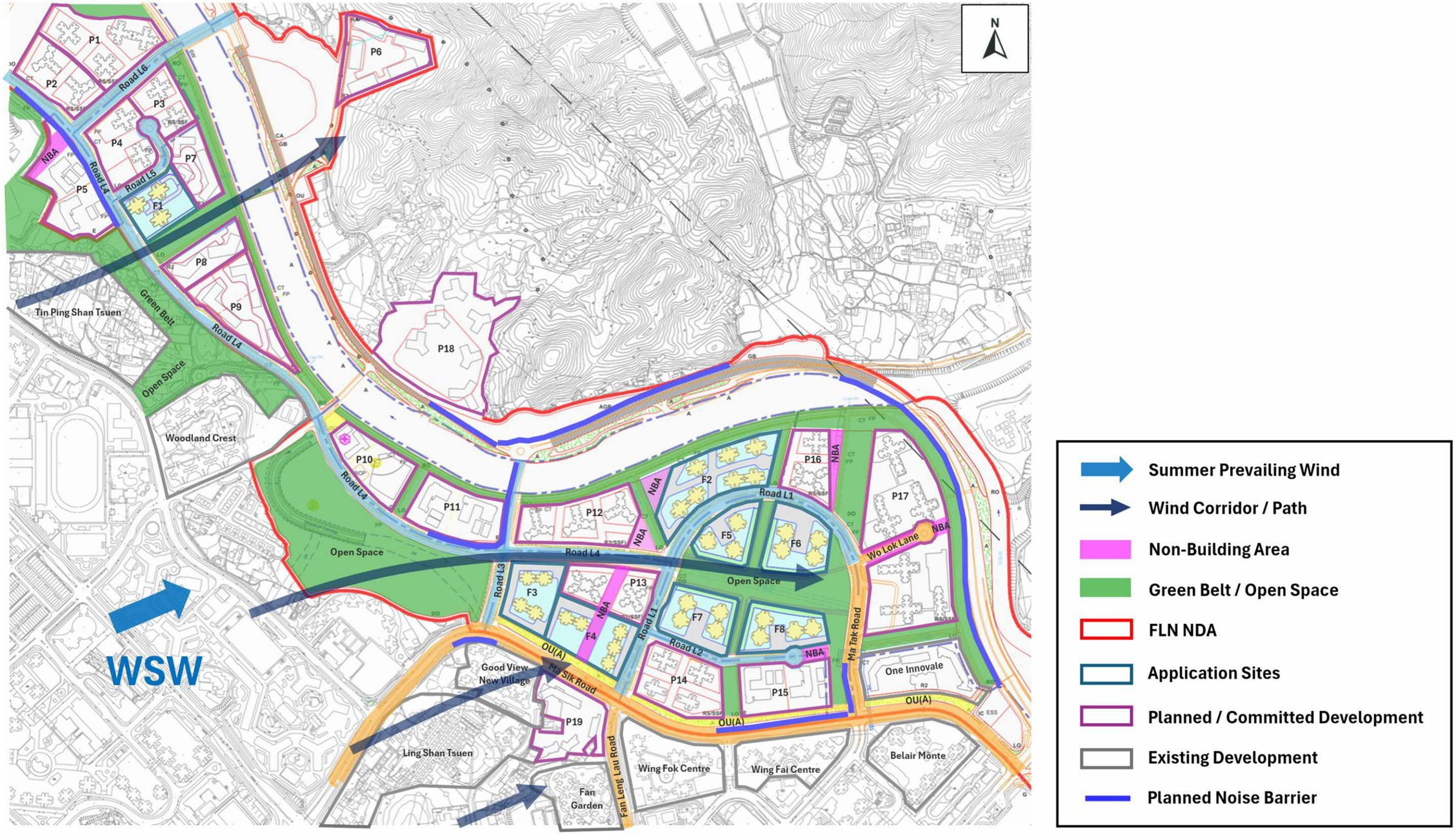


Figure 5.4-10 Wind Flow under the WSW Summer Prevailing Wind for the Proposed Scheme



Under S Summer Prevailing Wind Direction

Approved Scheme

5.4.59 Under the Approved Scheme, the prevailing southerly wind approaches the FLN NDA after passing through the developed upwind areas of Sheung Shui and Fanling New Town. These upwind areas comprise a mix of high-rise towers and low-rise building clusters, which inherently obstruct a portion of the wind at the pedestrian level before it reaches the Application Sites and further downwind areas.

5.4.60 The prevailing southerly wind is expected to reach Application Site F1 after skimming over the low-rise developments of Tin Ping Shan Tsuen in Sheung Shui New Town. However, due to the misalignment between the southerly wind direction and the 50m-wide major wind corridor F along the open space between Application Site F1 and Planned Site P6, only a very limited portion of the approaching airflow is expected to be channelled further into the corridor after reaching its entrance.

5.4.61 On the side of Fanling New Town, the existing mixed developments serve as major blockages that hinder the penetration of the prevailing summer southerly wind. Ling Shan Tsuen and Good View New Village comprise low-rise building clusters, which the southerly wind is expected to skim over before being channelled through Planned Road L3, which is favourably aligned with the prevailing southerly wind direction. This wind path is expected to facilitate air penetration towards the further downwind areas in the vicinity of Application Site F3, Planned Site P11 and Planned Site P12.

5.4.62 Although the major wind corridor formed by the NBAs within Application Site F4 and Planned Site P13, together with the NBAs adjacent to Planned Site P12 and Application Site F2 (denoted as “D” in Figure 5.2-1), is generally aligned with the summer southerly wind direction, major blockage from the upwind developments, including Fan Garden and Planned Site P19 in Fanling New Town, is anticipated. In view of these upstream obstructions, no significant southerly ventilation effect is expected along wind corridor D.

5.4.63 Along Fan Leng Lau Road and Road L1, a wind path of approximately 25m in width serves as an air channel facilitating the passage of the southerly wind from Fanling New Town into the FLN NDA, reaching the eastern boundary of Application Site F4 and the western boundary of Planned Site P14.

5.4.64 Similarly, the 15m-wide open space between Application Site F2 and Planned Site P16 also functions as a local ventilation path under southerly wind conditions. The airflow is expected to be guided through the separation between Wing Fok Centre and Wing Fai Centre, via the open space between Planned Sites P14 and P15, and then through the cross-shaped open space in Planning Area 16, thereby improving air movement around Application Sites F5, F6, F7 and F8.

5.4.65 Between Wing Fai Centre and Belair Monte in Fanling New Town, a major wind path of approximately 50m in width is formed along Ma Tak Road and continues through the adjoining open space within Planning Area 16 adjacent to Application Sites F8 and F6, as well as Planned Sites P15, P16 and P17. This wind path is expected to facilitate further northward wind penetration towards the downwind areas across the Ng Tung River.

5.4.66 Figure 5.4-11 illustrates the anticipated southerly summer prevailing wind flow for the Approved Scheme.

Proposed Scheme

5.4.67 For Application Site F1, the Proposed Scheme retains the same podium footprint and general built form while applying building height relaxation to both the podium and towers. As the site is located away from the principal southerly wind entry paths and receives airflow only after redistribution across Tin Ping Shan Tsuen, the proposed changes are not expected to materially alter the wind environment at pedestrian level and at the entrance of major wind corridor F.

5.4.68 For Application Site F2, the site is located within the development cluster along the northern boundary of the FLN NDA and lies in a further downwind region under southerly wind conditions. The proposed new podium structure at Application Site F2 may locally weaken wind availability at the immediate downwind open space to the north. Nevertheless, the impact is considered minimal, as this area is anticipated to receive only a very limited portion of the prevailing summer southerly wind due to the major blockages posed by the developments in the existing Fanling New Town and the upwind developments within the FLN NDA.

5.4.69 For Application Site F3, the Proposed Scheme introduces a new 2-storey podium structure and an increase in tower height, while for Application Site F4, the Proposed Scheme introduces increased podium and building tower heights. As these sites are located along the wind penetration paths associated with Road L3 and Road L1, the proposed changes may reduce wind permeability at the sites to some extent. Nevertheless, the footprints of the proposed podium structures would maintain the same setback distances from the site boundaries as the original tower setbacks under the Approved Scheme. The proposed changes are therefore not expected to materially affect the ventilation effectiveness of these local wind paths.

5.4.70 For Application Sites F5, F6, F7 and F8, as the Proposed Scheme maintains the same terraced podium footprint and the 10m setback on the first floor, the pedestrian-level permeability of the cross-shaped open space in Planning Area 16 would be retained. The local ventilation path through this area is therefore expected to remain generally effective under southerly wind conditions. The proposed changes are not expected to materially affect the associated wind penetration through this part of the Study Area.

5.4.71 Figure 5.4-12 illustrates the anticipated southerly summer prevailing wind flow for the Proposed Scheme.

Figure 5.4-11 Wind Flow under the S Summer Prevailing Wind for the Approved Scheme

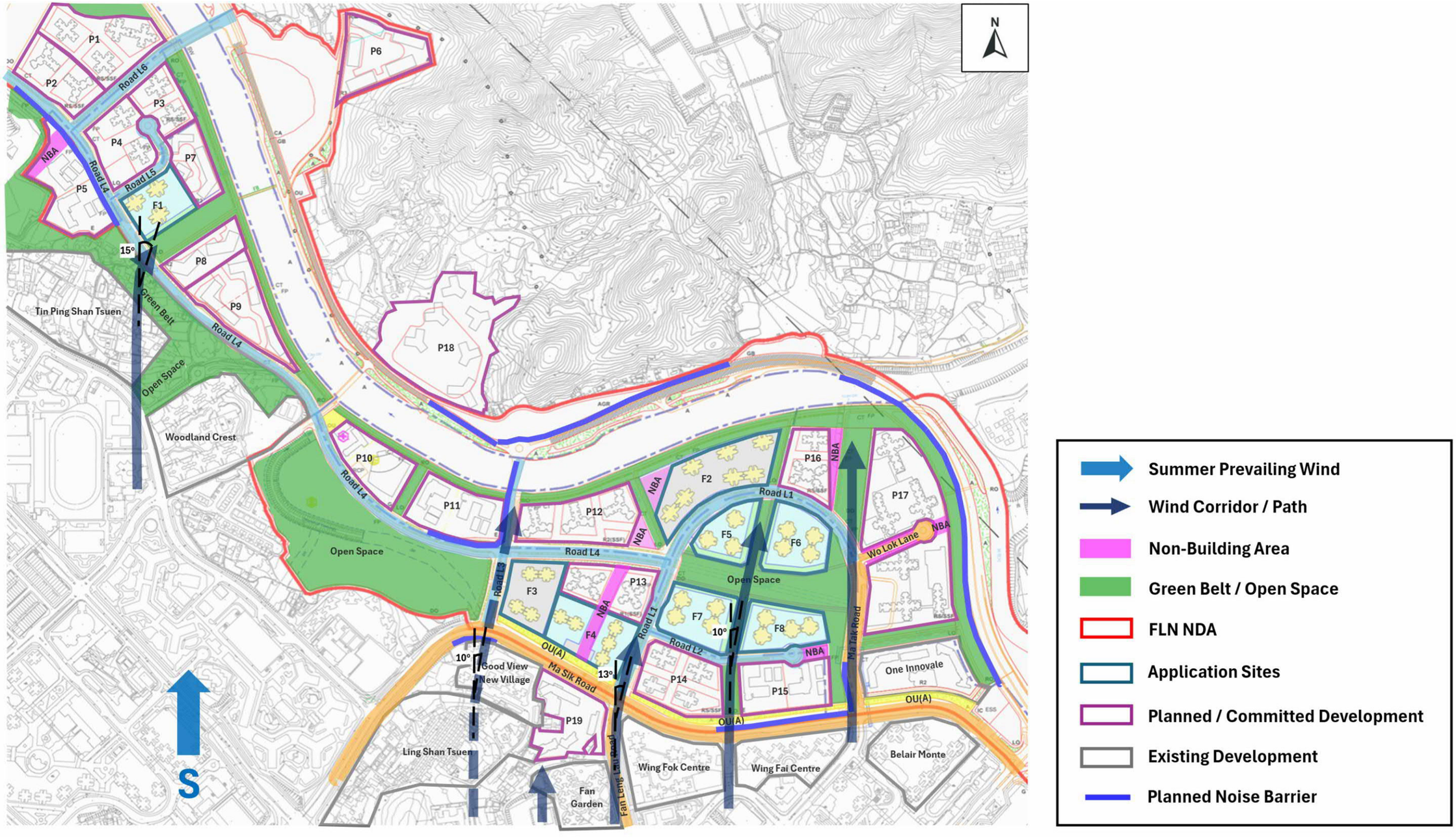
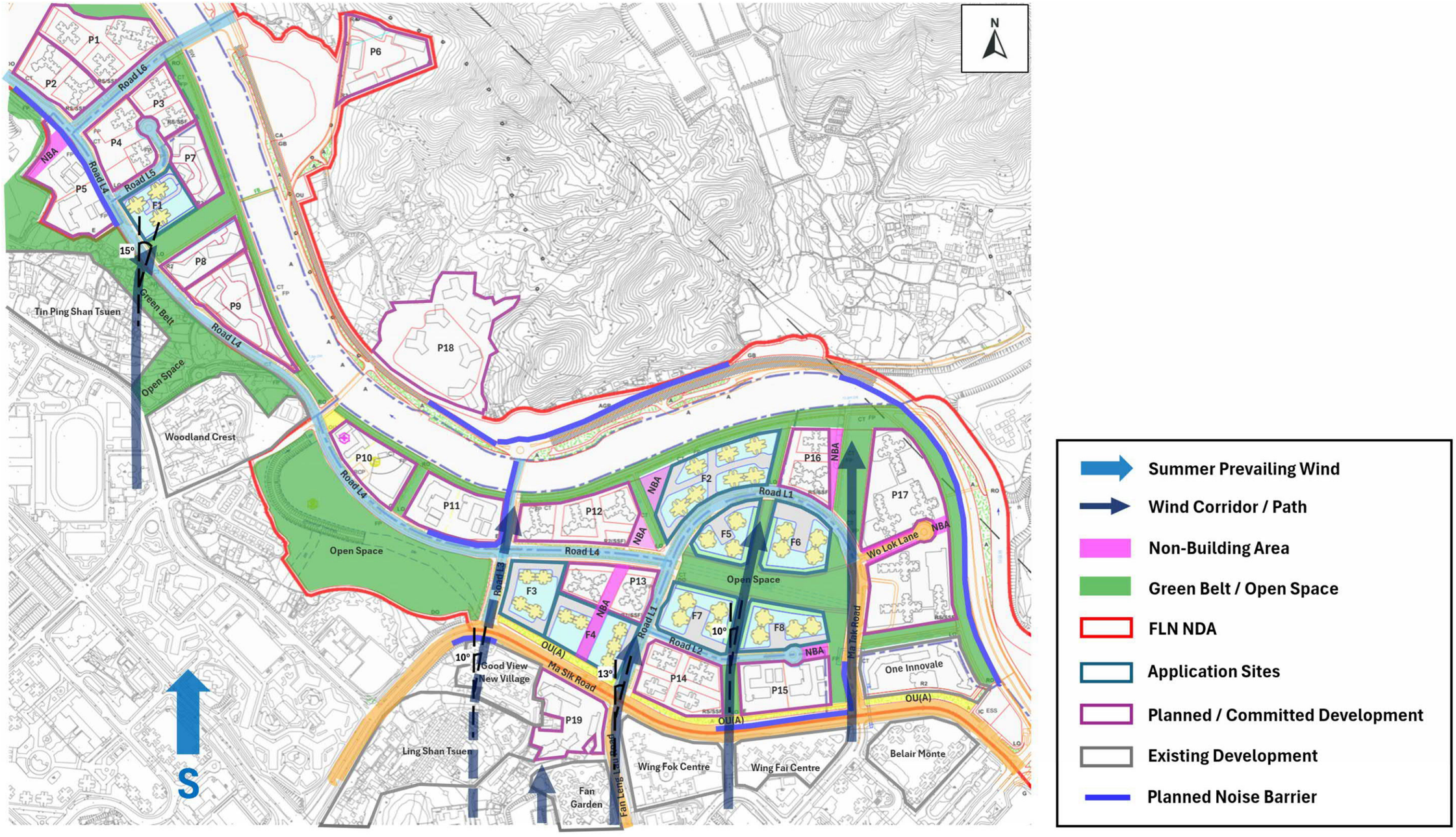


Figure 5.4-12 Wind Flow under the S Summer Prevailing Wind for the Proposed Scheme



Expert Evaluation Review against OZP Compliant Scheme

5.4.72 In addition to the comparison between the Approved Scheme and the Proposed Scheme, a supplementary review has been undertaken with reference to the OZP Compliant Scheme based on the permissible building height restrictions stipulated on the Draft FLN OZP. Compared with the OZP Compliant Scheme, the Proposed Scheme represents a greater magnitude of building height increase than that assessed under the Approved Scheme as shown in Table 1.1. Whilst the increased building heights may give rise to a larger wake region and some reduction in local wind availability in the immediate downwind areas, and additional podium structures are proposed at Application Sites F2 and F3, the extent of impact would also depend on the overall development disposition, building separation, non-building areas, open space network and continuity of the identified air paths.

5.4.73 As reviewed in the preceding sections, the Proposed Scheme would generally retain the major wind corridors, non-building areas, open spaces and key breezeways established under the planning framework of the FLN NDA. The overall building disposition and principal ventilation paths would remain largely unchanged, and no major new obstruction to the identified air paths would be introduced. Whilst new podium structures are proposed at Application Sites F2 and F3, the identified major wind corridors and principal ventilation paths would remain unaffected, and any associated air ventilation impact is expected to be localised. These features would continue to facilitate wind penetration through and around the Application Sites under the prevailing annual and summer wind conditions identified for the FLN NDA. The surrounding planned and committed development context also comprises buildings of comparable or greater heights, and the Proposed Scheme would not introduce a new continuous built frontage that would materially obstruct the identified wind corridors.

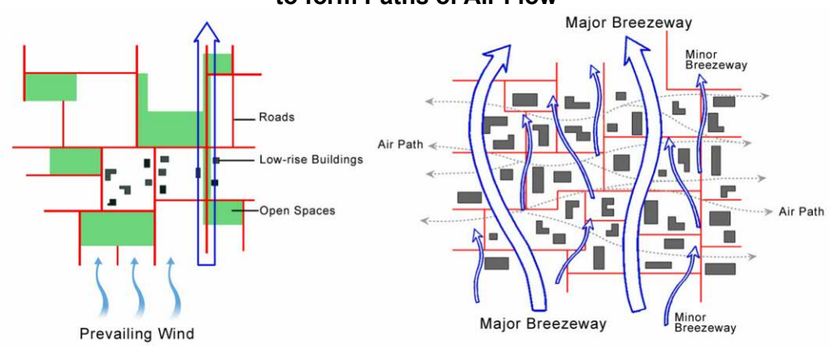
5.4.74 In this regard, the review does not indicate any material deterioration in the overall wind environment of the FLN NDA. The conclusions of this AVA-EE therefore remain unchanged, and the Proposed Scheme is considered compatible with the established air ventilation planning framework of the FLN NDA, subject to the retention of the key air ventilation features and recommendations identified in this report.

6. FURTHER RECOMMENDATION

6.1 Hong Kong Planning Standards and Guidelines (HKPSG)

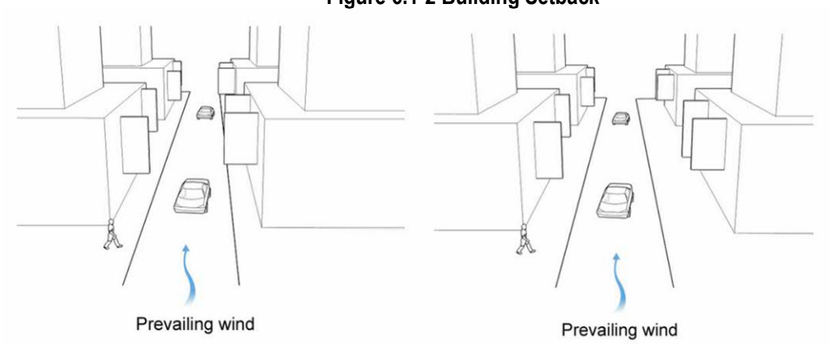
6.1.1 From a district-level perspective, maintaining a favourable wind environment involves adhering to key planning principles outlined in Chapter 11 of the Hong Kong Planning Standards and Guidelines (HKPSG). One of the most important principles is the alignment of breezeways and air paths with prevailing wind directions, complemented by perpendicular air paths to enhance cross-ventilation (see Figure 6.1-1). This configuration promotes effective wind penetration through urbanised areas. Breezeways can be established by linking major roads, open spaces, amenity areas, non-building areas (NBAs), building setbacks, and corridors formed by low-rise developments.

Figure 6.1-1 Linkage of Roads / Open Space / Low-rise Buildings to form Paths of Air Flow



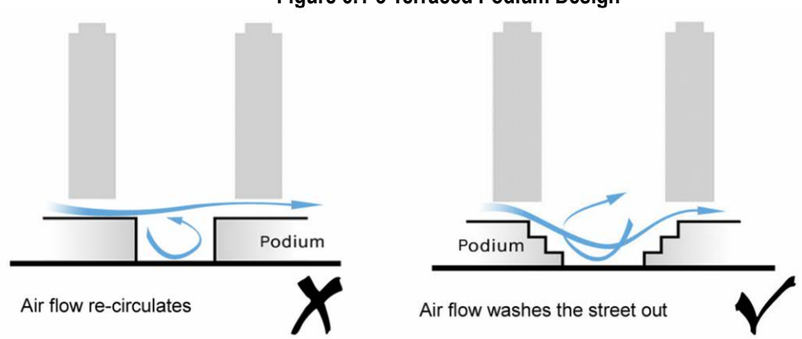
6.1.2 In addition to the HKPSG, the Sustainable Building Design Guidelines (SBDG) aim to improve building permeability and mitigate the screen wall effect, thereby enhancing air movement and mixing between developments. One of the key requirements under the SBDG is building setback, which significantly improves wind conditions at the pedestrian level. According to the guidelines, for streets narrower than 15 metres, buildings should be set back such that no part of the structure up to 15 metres in height encroaches within 7.5 metres from the street centreline. This setback requirement can lead to substantial improvements in air ventilation, particularly along narrow streets. An illustration is provided in Figure 6.1-2.

Figure 6.1-2 Building Setback



6.1.3 Building separation is another important strategy for increasing permeability within the urban fabric, helping to mitigate the urban heat island effect arising from the undesirable screening effect of long buildings. Introducing porosity into building design facilitates air movement between structures and enhances air diffusion and mixing. Permeability at the lower levels is especially crucial for improving ventilation at the pedestrian zone. For developments incorporating podia, the inclusion of podium gardens is recommended to allow wind to penetrate closer to ground level. Additionally, terraced podium designs (see Figure 6.1-3) can further enhance ventilation by directing downward airflow toward the pedestrian level.

Figure 6.1-3 Terraced Podium Design



6.2 Additional Recommendations

6.2.1 From a building-level perspective, several general recommendations can be adopted to enhance wind permeability and penetration, while minimising adverse ventilation impacts on surrounding areas:

- Avoid long, continuous façades and orient shorter building frontages toward prevailing wind directions to facilitate airflow;
- Minimize podium bulk by reducing ground coverage or adopting podium-free designs where feasible;
- Incorporate permeable elements at the ground floor of podium, such as empty bays or podium gardens, to improve wind permeability at pedestrian level;
- Adopt terraced podium designs to help direct airflow downward and enhance ventilation near ground level;
- Refer to design strategies outlined in the Sustainable Building Design Guidelines (SBDG) and the Hong Kong Planning Standards and Guidelines (HKPSG);
- Ensure building permeability equivalent to 20% to 33.3% of the total frontal area, in accordance with to Practice Note for Authorized Persons (PNAP) APP-152; and
- Implement full building or podium setbacks at suitable locations, also with reference to PNAP APP-152.

7. CONCLUSION

7.1 Summary

7.1.1 Qualitative air ventilation assessment (AVA) is prepared to support the S16 Planning Application for minor relaxation of the BH restrictions for Application Sites F1, F2, F3, F4, F5, F6, F7 and F8.

7.1.2 From comparing the wind data from HKO weather stations and "Experimental Site Wind Availability Study for the North-East New Territories New Development Areas" (WWTF018-2010). As the Site Wind data by wind tunnel approach focused on the site wind for the FLN NDA, it is considered more appropriate to adopt the wind tunnel experimental data to identify the prevailing wind directions. Referring to the wind data, E, ENE and N are the most dominant prevailing winds with 23.4%, 15.1% and 12.1% of the annual wind frequency, respectively for the Application Site. For the summer periods, SW, E and S, WSW are the most dominant prevailing winds with 14.5%, 13.8%, 10.1% and 9.7% of the wind frequency, respectively for the Application Sites.

7.1.3 The FLN NDA Remaining Phase containing the Application Sites is located at the rural areas of Hong Kong, the majority lands surrounding the FLN NDA and the Application Sites are "Green Belt", "Agriculture", "Other Specified Uses", "Government, Institution or Community", "Residential" as well as scattered areas of "Village Type Development".

7.1.4 Surround the eight Application Sites exist extensive areas with planned/committed developments. These surrounding areas are planned to be developed into public and private residential towers, schools, G/IC blocks as well as other specified usage buildings. The planned/committed building morphologies within these surrounding planned/committed areas near the Application Sites are assumed to be consistent under both the Approved Scheme and Proposed Scheme for the Expert Evaluation.

7.1.5 Site F1 is bounded to the east by planned residential developments and the Ng Tung River, to the south by planned residential developments and open space, to the west by planned Road L4, and to the north by planned Road L5. The other Application Sites, F2, F3, F4, F5, F6, F7 and F8, are generally bounded to the north by the Ng Tung River, to the east by planned public housing developments, to the west by planned GIC buildings and open space, and to the south by existing residential development in the Fanling New Town area.

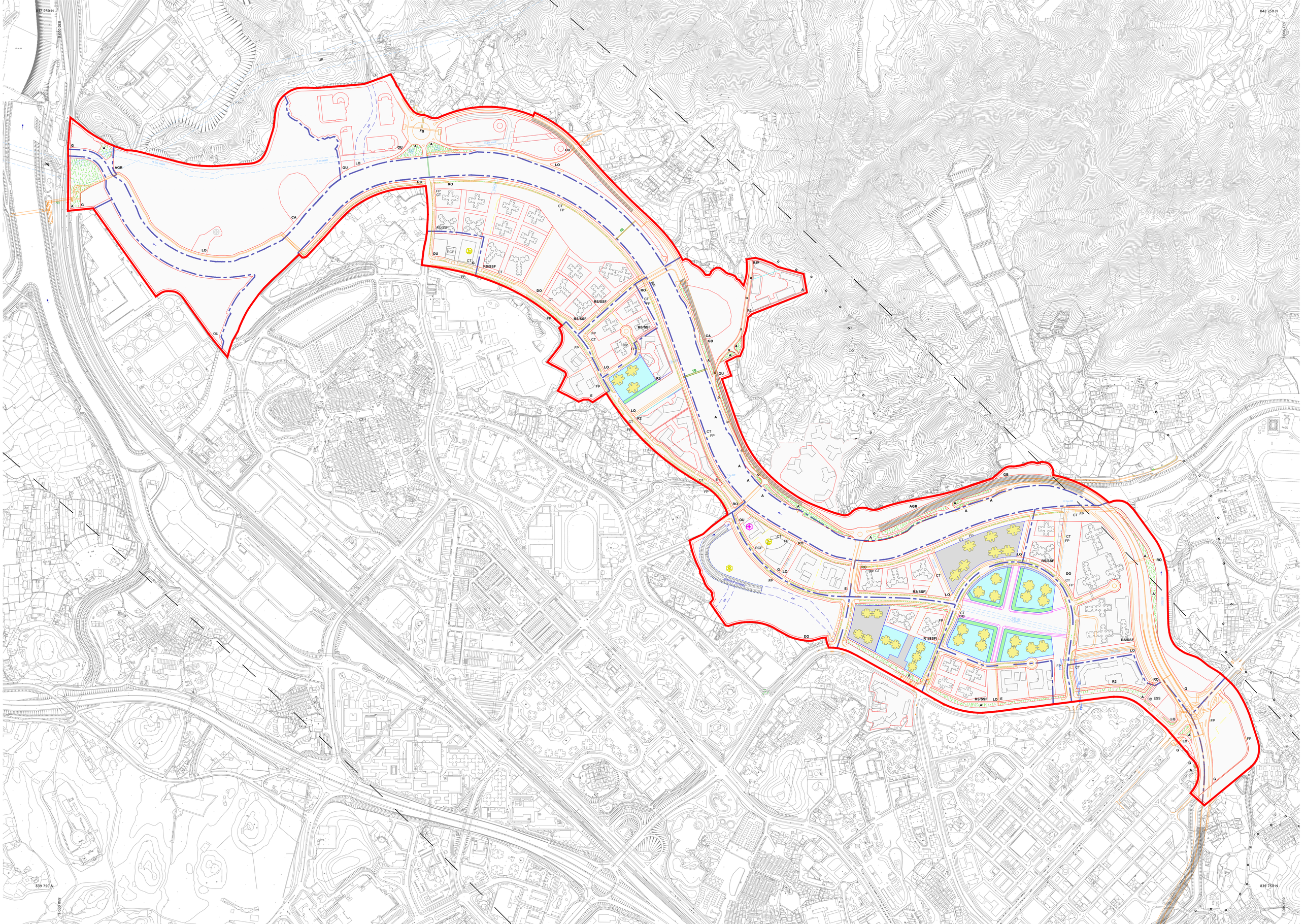
7.1.6 Two Development Scenarios are examined in this Study, Approved Scheme and the Proposed Scheme. The Approved Scheme reflects the development restrictions in the Fanling North Outline Zoning Plan (S/FLN/5 ("Draft OZP")) with updates to incorporate the scheme in the approved Section 16 applications A/FLN/30 and A/FLN/32. For the Proposed Scheme, relaxation in BHR to enable aboveground carparks in the Application Sites are proposed.

7.1.7 The building layouts under Proposed Scheme of the Application Sites have paid the very best efforts in maintaining the wind environment by retaining the established major wind corridors under major prevailing wind directions. It is anticipated there is no great alteration in wind flow patterns between the Approved Scheme and the Proposed Scheme in district wise wind environment. Nevertheless, due to the overall relaxation in building heights and incorporation of new carpark podium structure under the Proposed Scheme as compared to the Approved Scheme, it appears that the Proposed Scheme may induce larger wakes in the immediate downstream area when compared with the Approved Scheme.

7.1.8 In conclusion, it is expected that no significant impact or alternation in the ventilation environment would arise under the Proposed Scheme when compared with the Approved Scheme. Whilst new podium structures are proposed at Application Sites F2 and F3, the identified major wind corridors, non-building areas, open spaces and principal ventilation paths within the FLN NDA would remain substantially unchanged, and any associated air ventilation impact is expected to be localised. A supplementary review against the OZP Compliant Scheme, which involves a greater magnitude of building height increase than that assessed against the Approved Scheme, likewise does not indicate any material deterioration in the overall wind environment of the FLN NDA. It is proposed to retain the terraced podium design at Application Sites F1, F5, F6, F7 and F8 to facilitate downward airflow to the pedestrian level. It is also recommended to incorporate podium and tower setback of Application Site F3 to maximize the wind penetration. In addition, general recommendations in accordance with the Sustainable Building Design Guidelines and the Hong Kong Planning Standards and Guidelines have been suggested for incorporation at the advanced design stage, attempting to further enhance the local wind availability.

APPENDIX A

INDICATIVE LAYOUT OF APPROVED SCHEME



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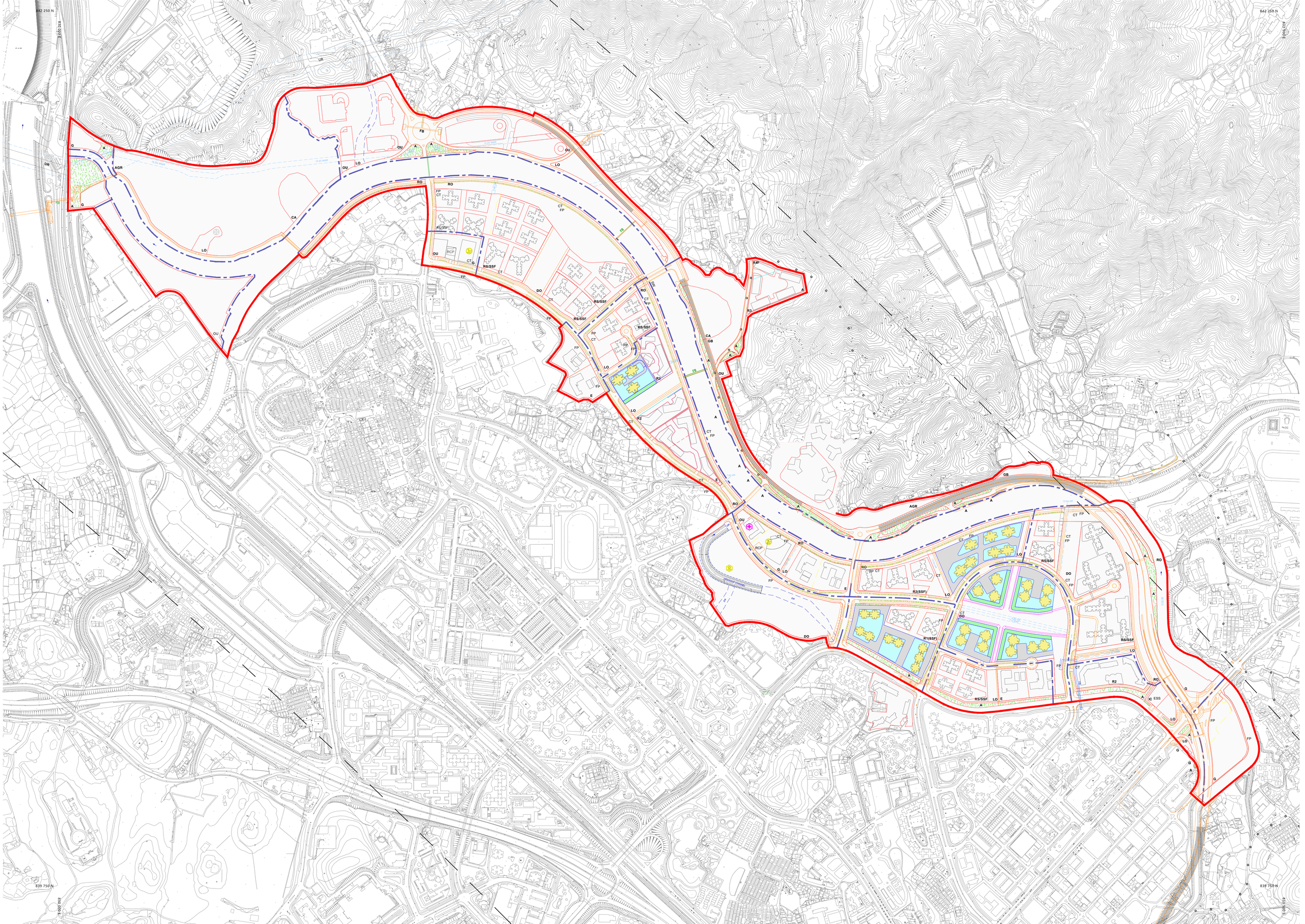
APPENDIX B

INDICATIVE LAYOUT OF PROPOSED SCHEME



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土木工程拓展署
Civil Engineering and Development Department
North Development Office

Agreement No. CE 19/2019 (CE)

Development of Kwu Tung North New Development Area, Remaining Phase – Design and Construction

Proposed Minor Relaxation of Plot Ratio and Building Height Restrictions for Permitted Private Housing Developments at Various Sites within Fanling North New Development Area and Kwu Tung North New Development Area, New Territories and Proposed Public Transport Terminus, Shop and Services and Eating Place within Permitted Private Housing Development at Site K10, Planning Area 23N, Kwu Tung North New Development Area, New Territories

Air Ventilation Assessment – Expert Evaluation for Application Sites in Kwu Tung North New Development Area

Aug 2026

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1 INTRODUCTION

1.1 Study Background

1.1.1 As part of the measures to reduce construction costs and expedite developments, the Chief Executive (“CE”) announced in 2025 Policy Address that an enhance measure to allow full gross floor area (“GFA”) exemption for no more than two levels of aboveground carparks, while doing away with the prerequisite of constructing some of the carparks underground. Furthermore, the Government continues to encourage a wider adoption of Modular Integrated Construction (“MiC”) method to shorten construction time, expedite the overall housing supply, reduce manpower in construction industry and enhance on-site safety.

1.1.2 In 2026, CEDD commissioned a Review to assess the building height ("BH") implications of accommodating the construction of two levels of aboveground carparks and adoption of MiC method at the selected private housing sites (i.e. Application Sites) in the Remaining Phase of Fanling North New Development Area ("FLN NDA") and Kwy Tung North New Development Area ("KTN NDA"). The Study identified that the approved BHs under the previous planning approvals would be insufficient. In this regard, a Section 16 ("S16") Planning Application has been prepared to seek for Minor Relaxation of PR and BH Restrictions for the Application Sites to accommodate aboveground carparks and adoption of MiC method (the “Development Proposal”). Minor Relaxation of PR Restrictions has been included under this S16 Planning Application so as to reflect the approved plot ratio ("PR") under Application Nos. A/FLN/30 and A/KTN/93, with no change to the Approved PRs for the Application Sites. As indicated, Permission for Proposed `Public Transport Terminus', `Shop and Services' and `Eating Place' uses at the planned Private Housing Development at Site K10 in Planning Area 23N of KTN NDA is also sought to reflect the development intention of the Site as approved under the Approved S16.

1.1.3 An Air Ventilation Assessment - Expert Evaluation ("AVA-EE") that assesses the air ventilation impact arising from the Development Proposal at the Application Sites at KTN NDA is prepared to support the S16 Planning Application.

2 PURPOSE AND STRUCTURE OF THIS AVA EXPERT EVALUATION REPORT

2.1 Purpose of this Report

2.1.1 The objective of the AVA-EE is to ensure that air ventilation impacts are duly considered as one of the main criteria in the planning and design process for the increase in building heights of the Development Proposals with the Application Sites.

2.1.2 This AVA-EE will provide a qualitative assessment of the intensified development scenario (Proposed Scheme) and compare it with the approved scenario (Approved Scheme), considering the planned and committed developments in the surrounding areas. It will identify potential air ventilation issues that warrant attention, including major breezeways, air paths, problematic areas, localized wind effects, and any significant changes in wind patterns arising from the proposed relaxation of building height restrictions across most Application Sites (except for K1, K2 and K12). Where necessary, this report will also recommend possible design improvements and mitigation measures and advise on the need for further quantitative AVA studies.

2.1.3 This Expert Evaluation will be conducted in accordance with “Housing Planning and Lands Bureau – Technical Circular No. 1/06, Environment, Transport and Works Bureau – Technical Circular No. 1/06” issued on 19th July 2006 (the Technical Circular) and “Technical Guide for Air Ventilation Assessment for Development in Hong Kong – Annex A” (the Technical Guide).

2.2 Structure of the Expert Evaluation Report

2.2.1 Apart from the introductory section on the study background (**Section 1**) and the current section describing the purpose of this AVA Report (**Section 2**), the other sections are structured as follows:

- **Section 3** provides a brief description of the Kwu Tung North New Development Area (KTN NDA) and the Application Sites.
- **Section 4** examines the Application Sites, including adjacent existing, planned and committed developments, land uses, and surrounding topographic characteristics.
- **Section 5** identifies the prevailing wind directions by reviewing the applicability of available wind data.
- **Section 6** identifies potential wind sensitive areas and provide discussions on major breezeways.
- **Section 7** presents the Development Proposal layouts and evaluation scenarios.
- **Section 8** conducts the Expert Evaluation which qualitatively assessing the prevailing wind patterns and directions at the pedestrian level within and around the Application Sites.
- **Section 9** recommends strategies for design optimization and good air ventilation design measures for the Development Proposals.
- **Section 10** summarizes the findings and conclusions of this AVA-EE Report.

3 KTN NDA AND APPLICATION SITES

3.1 Description of the Site Environs

3.1.1 The Kwu Tung North New Development Area (KTN NDA) is located in the inland area of the North-East New Territories, immediately to the west of the Fanling North New Development Area (FLN NDA). The KTN NDA is roughly trapezoidal in shape and covers approximately 447 hectares. It encompasses the areas of Tsung Yuen, Ho Sheung Heung, Long Valley and Yin Kong in the eastern portion; Fung Kong, Tung Fong and Tong Kok in the central portion; and Kwu Tung, Shek Tsai Leng, Dills Corner Garden and Pak Shek Au in the southern portion. The northern part of the NDA includes the knoll of Fung Kong Shan. Further north lies the terrain of Crest Hill (Tai Shek Mo), while the areas to the west belong to Lok Ma Chau.

3.1.2 At present, the area is predominantly occupied by brownfield uses, including rural workshops, warehouses, and temporary structures. Scattered among these are some rural residential dwellings and vegetation. The proposed KTN NDA is bounded by Sheung Yue River to the east, the hilly terrain of Lok Ma Chau to the west, the terrain of Crest Hill to the north, and Fanling Highway to the south. The western portion of the KTN NDA under the First Phase development is currently undergoing site formation and associated construction works. The thirteen Application Sites (i.e., K1 to K3, K4a, K4b, K5 to K12), which are the major focus of the current AVA Study, are located close to one another in the central to south-western portions of the KTN NDA. The location and surrounding context of the KTN NDA and the Application Sites are illustrated in **Figure 3.1**.

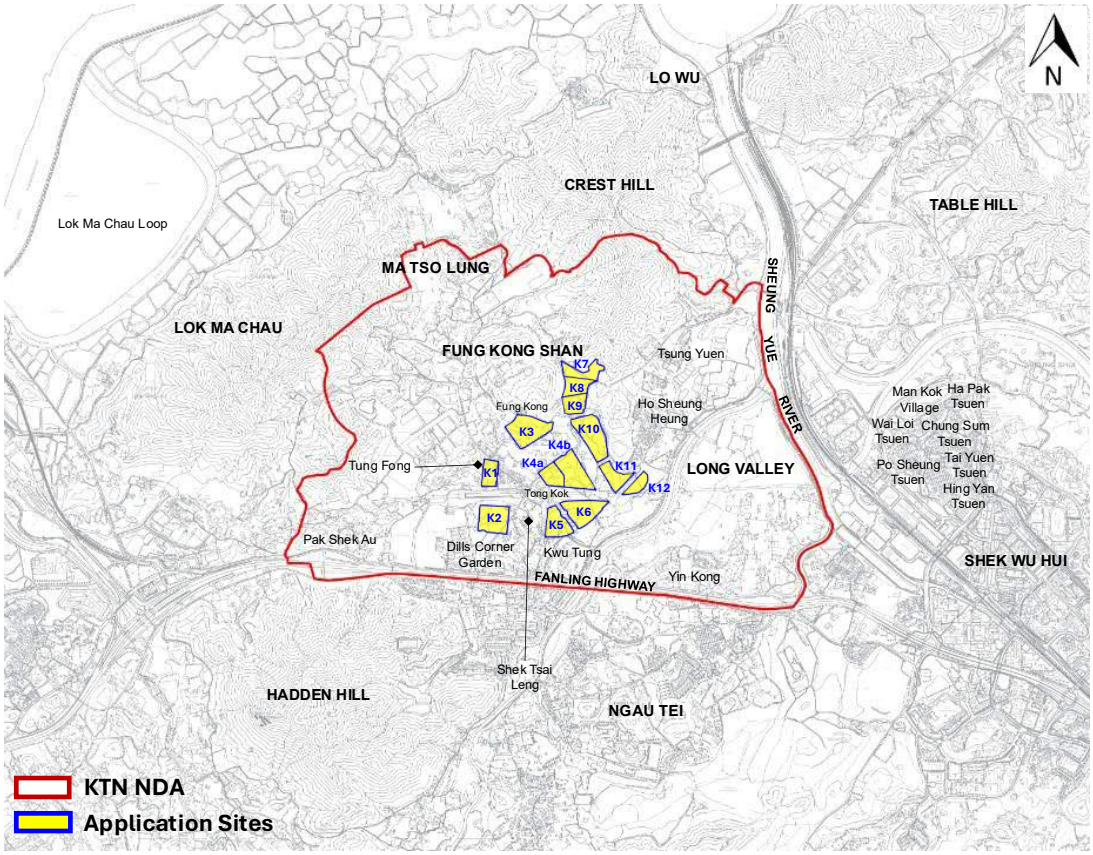


Figure 3.1 Location of the KTN NDA and Application Sites

4 LAND USE, TOPOGRAPHY AND EXISTING URBAN MORPHORLOGIES

4.1 Land Use

4.1.1 The land uses within the Kwu Tung North New Development Area (KTN NDA) are guided by the prevailing Approved Kwu Tung North Outline Zoning Plan (OZP) No. S/KTN/4. Various planned land uses are shown in **Figure 4.1**.

4.1.2 Reflecting the rural character of the area, the largest land-use zoning within the KTN NDA is "Green Belt" ("GB"), which is mainly located in the northern sector, with some "Government, Institution or Community" ("G/IC") sites intermixed. "Agriculture" ("AGR"), "Other Specified Uses" ("OU"), and "Village Type Development" ("V") zones are primarily found in the eastern sector of the NDA.

4.1.3 Among the 13 Application Sites located in the central to south-western sector of the KTN NDA, two are zoned for "Residential (Group A)" ("R(A)") developments while the remaining ten are zoned for "Residential (Group B)" ("R(B)"). The existing developments within the Application Sites mainly comprise brownfields, temporary structures, and low-rise village houses of Tung Fong, Fung Kong, Tong Kok, and Shek Tsai Leng. There are also several residential sites in the immediate vicinity of the Application Sites. Most of the areas at Dills Corner Gardens have already been zoned as "Other Specified Uses" ("OU") annotated "Business and Technology Park", "OU" annotated "Commercial/Residential Development with Public Transport Interchange", "OU" annotated "Mixed Use", and "Government, Institution or Community" uses. Minor areas between the clusters of Application Sites fall under "Open Space" zoning on the prevailing Approved KTN OZP Plan No. S/KTN/4. The northern part of the NDA is zoned "OU" annotated "Research and Development".

4.1.4 As the KTN NDA is situated in a rural part of Hong Kong, most of the surrounding areas outside the NDA boundary are zoned "Green Belt" ("GB"), "Agriculture" ("AGR"), and "Other Specified Uses" ("OU"), with scattered "Village Type Development" ("V") zones. To the west of the Application Sites (outside the NDA) are "GB" areas at Lok Ma Chau. To the north are "GB" areas at Fung Kong Shan, with "AGR" lands at Ma Tso Lung and "GB" areas at Crest Hill further north. Immediately to the east of the Application Sites are the village houses of Ho Sheung Heung, which will be retained. Further east, across Sheung Yue River, lie "OU" zones and village houses at Wai Lo Tsuen, with the Long Valley Nature Park located in the eastern lowland area beyond the river. To the south of the Application Sites, across Fanling Highway, are "Residential (Group C)" ("R(C)") zones occupied by existing low-rise residential developments, including Europa Garden, The Valais, and Casas Domingo. Immediately to the east of the low-rise residential developments belonging to The Valais, and near Yin Kong Village, an area is zoned "Comprehensive Development Area" ("CDA") intended for comprehensive low-density residential development with the provision of open space and supporting facilities.

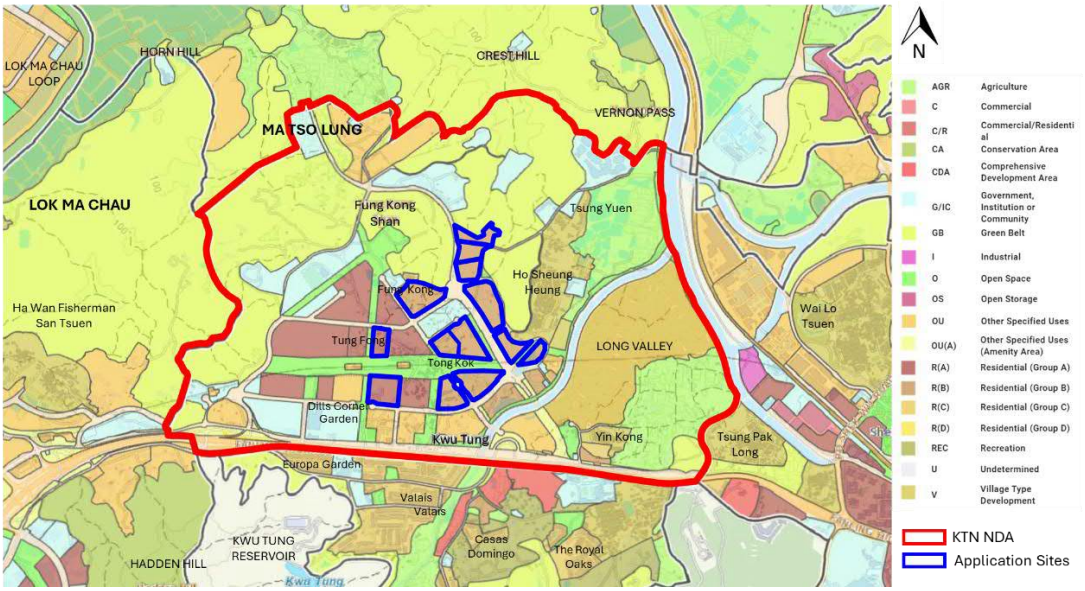


Figure 4.1 Land Use within and near the KTN NDA

4.2 Topography

4.2.1 The Kwu Tung North New Development Area (KTN NDA) is located in the north-eastern part of the New Territories. As shown in **Figure 4.2**, most of the Application Sites are situated on a relatively large flatland area, surrounded by hilly terrain of varying heights. To the north and north-east of the KTN NDA lie the hilly terrains of Crest Hill (~150mPD) and Sandy Ridge (~120mPD), both exceeding 100mPD. To the east are the flatlands of Fanling and Sheung Shui New Towns, with High Hill (~160mPD) located further east. To the west are the hilly areas of Lok Ma Chau (~100mPD and above), while the San Tin area planned with extensive future developments to the south-west is relatively flat.

4.2.2 The topography in the south-western, southern, and south-eastern portions of the KTN NDA is generally below 50mPD. Prominent hills to the south and south-west include Hadden Hill (maximum ~200mPD) and Ngau Tam Shan (maximum ~340mPD). Fuk Tsuen Shan (~50mPD), a gentler terrain, lies to the south-east, while Kei Lak Tsai (~250mPD) is located further south-east. **Figure 4.2** illustrates the surrounding topography of the KTN NDA.

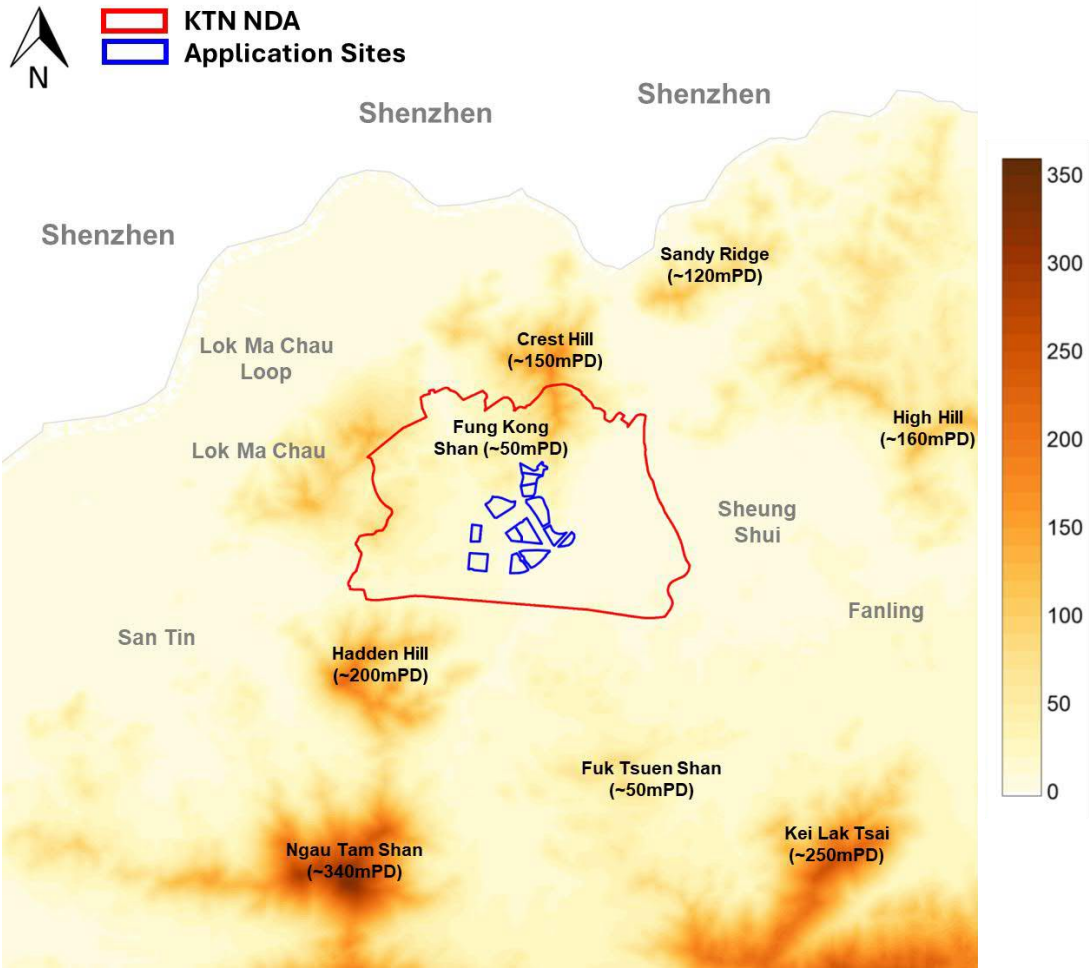


Figure 4.2 Topographical Map near the KTN NDA and Application Sites

4.3 Existing Urban Morphology

4.3.1 The Kwu Tung North New Development Area (KTN NDA) is located in the north-eastern part of the New Territories, within a relatively less developed region of Hong Kong. The area is currently characterized by rural settlements, low-rise low-density villages, open storage yards, and rural industries.

4.3.2 The KTN NDA is generally flat. Several existing village environs lie within the NDA and are largely preserved or will be redeveloped with low-rise buildings up to 3 storeys in height. These include Ho Sheung Heung, Yin Kong, and associated villages in the eastern section. The areas to the north and west of the KTN NDA remain predominantly rural, with scattered village house developments such as Ma Tso Lung San Tsuen, Chau Tau Tsuen, Pun Uk Tsuen, and San Tin Heung. To the north-west, the Lok Ma Chau Loop is planned for mid-rise development with building heights of up to approximately 54mPD.

4.3.3 To the south of the KTN NDA, east of Hadden Hill, there are several low-density private residential developments, including Europa Garden, Valais, Casas Domingo, The Royal Oaks, Goodwood Park, Regent Garden, St. Andrews Place, and Oakville. To the south-east, on both sides of Fanling Highway near Shek Wu Hui, more urbanized areas exist, featuring public housing estates such as Cheung Lung Wai Estate, Ching Ho Estate, Tai Ping Estate, Choi Yuen Estate, and Po Shek Wu Estate.

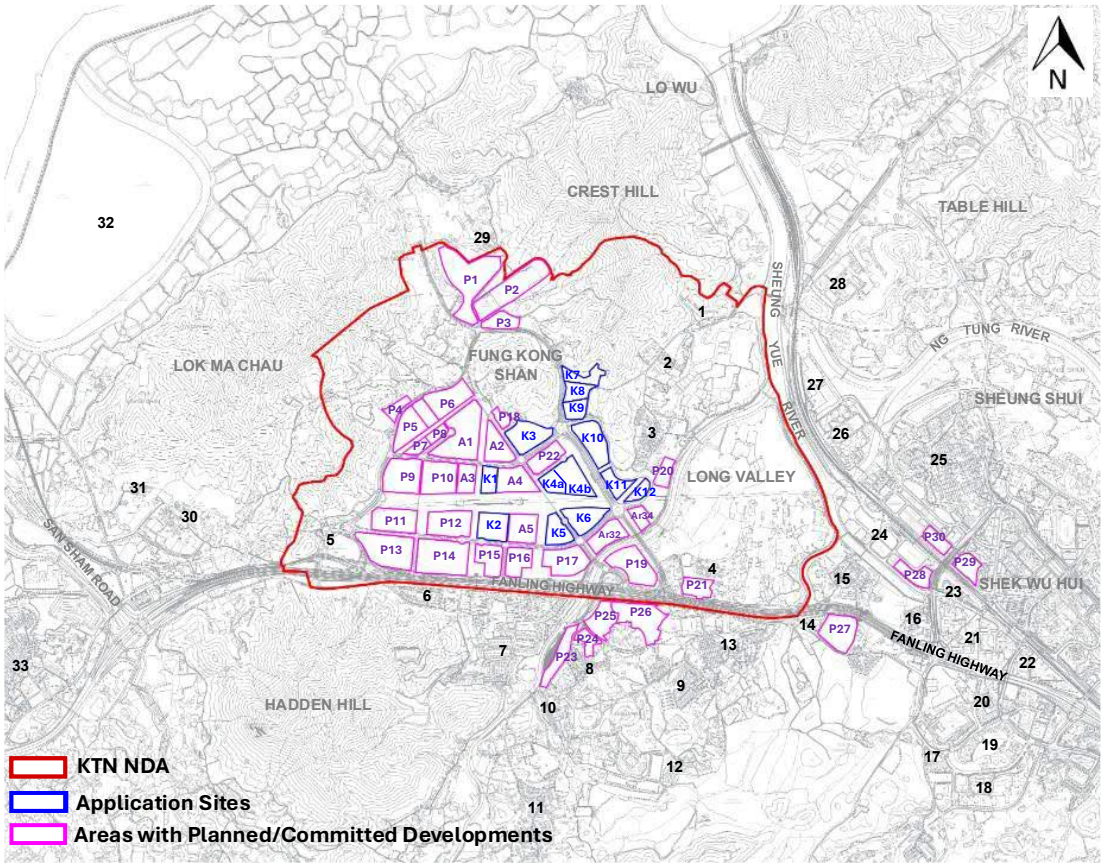
4.3.4 To the east of the KTN NDA, across the Sheung Yue River, the land is primarily used for industrial purposes, including the Hi Tech Centre, Advanced Technology Centre, and Jumbo Plaza. The Shek Wu Hui Sewage Treatment Works and Sheung Shui Sewage Treatment Works are also located on the eastern side. Further east and north of the Shek Wu Hui Sewage Treatment Works lie the Sheung Shui Slaughterhouse and Chung Sum Tsuen with its surrounding villages. The locations of these areas are indicated in **Figure 4.3**.

4.3.5 The thirteen Application Sites are located within the KTN NDA and are labelled K1 to K3, K4a, K4b, K5 to K12 in **Figure 4.3**. Within the KTN NDA, extensive areas with planned or committed developments surround the cluster of Application Sites. These areas are marked with the prefix P (i.e., P1 to P22) in **Figure 4.3**.

4.3.6 Areas P1 to P3, located in the northern portion of the KTN NDA, are primarily planned for Government, Institution or Community (GIC) and other specified uses. Areas P4 to P8 and P13 to P14, situated to the north-west and south-west of Areas A1 and A3 respectively, are also mainly designated for GIC uses. Areas P9 to P12, to the west of the Application Sites cluster, are planned for high-rise residential blocks with ancillary facilities. Other planned developments in Areas P13 to P19 include hospitals, clinics, health centers, commercial buildings, research and development facilities, and additional GIC uses such as schools. Non-Building Areas (NBAs) are incorporated within Areas P15 to P17, P19, Ar32 as well as Application Sites K4, K9 to K12. Terraced podiums, a measure to enhance air ventilation, are provided in Areas P10, P12, and P15, A1 – A5 as well as Application Sites K1 and K2.

4.3.7 In addition to the planned or committed developments within the KTN NDA (P1 to P22), several areas with planned or committed residential developments are in immediate vicinity (P23 to P30). Areas P23 to P26 (to the south) and P27 (to the south-east) are designated for residential blocks. High-rise residential blocks are also anticipated in Areas P28 to P30.

4.3.8 The illustrative figures in **Appendix A** provide an overview of the building layouts and morphologies in the areas with planned or committed developments, together with the maximum building heights and the locations of required NBAs and terraced podiums.



Description	Max. Building Height Restriction (mPD)	Description	Max. Building Height Restriction (mPD)
Application Sites (under OZP S/KTN/4)			
K1	~115mPD	K2	~115mPD
K3	~80mPD	K4a, b	~75mPD
K5	~75mPD	K6	~75mPD
K7	~85/95mPD	K8	~85mPD
K9	~80mPD	K10	~95mPD
K11	~90mPD	K12	~90mPD
Application Sites (under S16 Application no. A/KTN/93)			
K1	~130mPD	K2	~130mPD
K3	~95mPD	K4a, b	~85mPD
K5	~80mPD	K6	~80mPD
K7	~100mPD	K8	~90mPD
K9	~85mPD	K10	~110mPD
K11	~90mPD	K12	~90mPD
Planned and Committed Developments within the KTN NDA (under OZP S/KTN/4)			
A1 – Residential Buildings	~135mPD	A2 – Residential Buildings	~135mPD
A3 – Residential Buildings	~115mPD	A4 – Residential Buildings	~125mPD
A5 – Residential Buildings	~110mPD	-	-
Planned and Committed Developments within the KTN NDA (under S16 Application no. A/KTN/93)			
A1 – Residential Buildings	~180mPD	A2 – Residential Buildings	~160mPD
A3 – Residential Buildings	~145mPD	A4 – Residential Buildings	~140mPD
A5 – Residential Buildings	~135mPD	Ar32 – Residential Buildings	~75mPD
Ar34 – Residential Buildings	~70mPD	-	-
P1 – Other Specified Uses (Research and Development, Commercial)	~65mPD	P2 – Existing Firing Range	-
P3 – GIC Buildings	~65mPD	P4 – GIC Building (School)	~52mPD

Description	Max. Building Height Restriction (mPD)	Description	Max. Building Height Restriction (mPD)
P5 – GIC Buildings (District Headquarters and its Associated Married Staff Quarters, Divisional Police Station)	~130mPD	P6 – GIC Buildings (Standard Swimming Pools and Sports Centre)	~53mPD
P7 – GIC Buildings (Schools)	~44mPD	P8 – GIC Buildings (Schools)	~52mPD
P9 – Residential Buildings	~151mPD	P10 – Residential Buildings	~146mPD
P11 – Residential Buildings	~135mPD	P12 – Residential Buildings	~125mPD
P13 – GIC Buildings	~130mPD	P14 – GIC Buildings	~170mPD
P15 – Mixed Use (Residential and Commercial Buildings)	~110mPD	P16 – Other Specified Uses (Business and Technology Park)	~60mPD
P17 – Other Specified Uses (Business and Technology Park)	~55mPD	P18 – GIC Buildings (School)	~44mPD
P19 – Other Specified Uses (Business and Technology Park)	~55mPD	P20 – Village Houses	~16mPD
P21 – Residential Buildings	~55mPD	P22 – GIC Buildings (School)	~35mPD
Planned and Committed Developments outside and near the KTN NDA			
P23 – Residential Buildings	~70mPD	P24 – Residential Buildings	~72mPD
P25 – Residential Buildings	~75mPD	P26 – Residential Buildings	~75mPD
P27 – Residential Buildings	~130mPD	P28 – Residential Buildings	~144mPD
P29 – Residential Buildings	~149mPD	P30 – Residential Buildings	~149mPD
Existing Developments within and near the KTN NDA			
1. Lo Wu Correctional Institute	4 storeys	2. Tsung Yuen	~23mPD
3. Ho Sheung Heung	~23mPD	4. Yin Kong	~16mPD
5. Pak Shek Au/Planned Plant for district cooling system	~35mPD	6. Europa Garden	~36mPD
7. Valais	~23mPD	8. Casas Domingo	~22mPD
9. The Royal Oaks	~27mPD	10. Goodwood Park	~17mPD
11. Regent Garden	~22mPD	12. St. Andrews Place	~41mPD
13. Oakville	3-4 storeys	14. Golf Parkview	~31mPD
15. Tsung Pak Long	~17mPD	16. Tai Tau Leng	~15mPD
17. Cheung Lung Wai Estate	~143mPD	18. Ching Ho Estate	~133mPD
19. Royal Green	~136mPD	20. Tai Ping Estate	~91mPD
21. Choi Yuen Estate	~90mPD	22. Yuk Po Court	~71mPD
23. Po Shek Wu Estate	~114mPD	24. Hi Tech Centre, Advanced Technology Centre, Jumbo Plaza	~40mPD
25. Chung Sum Tsuen and surrounding villages	~20mPD	26. Shek Wu Hui Sewage Treatment Works	~25mPD
27. Sheung Shui Slaughterhouse	4 storeys	28. Sheung Shui Treatment Works and Freshwater Pumping Station	-
29. Ma Tso Lung San Tsuen	~25mPD	30. Chau Tau Tsuen	~13mPD
31. Pun Uk Tsuen	~19mPD	32. Lok Ma Chau Loop	Development Proposal of around ~54mPD
33. San Tin Heung	~19mPD		

Figure 4.3 Existing / Committed / Planned Major Developments near / within the KTN NDA

4.4 Formed Roads and Separations in between Application Sites

4.4.1 The surroundings of the Application Sites are relatively open and are currently occupied by low-rise squatters and structures. According to the latest Outline Zoning Plan (OZP), a new road network and separations are planned, as shown in **Figure 4.4**. The major roads and their respective sections are highlighted and annotated in red in **Figure 4.4** to facilitate discussion of wind flow patterns in later sections of this report. In addition, the major separations between the Application Sites and the surrounding planned or committed developments are indicated in magenta. In total, fifteen major roads (Roads D1 to D5, Roads P1 to P2, and Roads L1 to L8) and four major separations have been identified. While noise barriers are required along portions of these major roads to mitigate potential traffic noise impacts, such noise barriers, together with the elevated highways, will inevitably affect the localized pedestrian wind environment. The locations of the proposed noise barriers are shown in **Propo B** for reference.

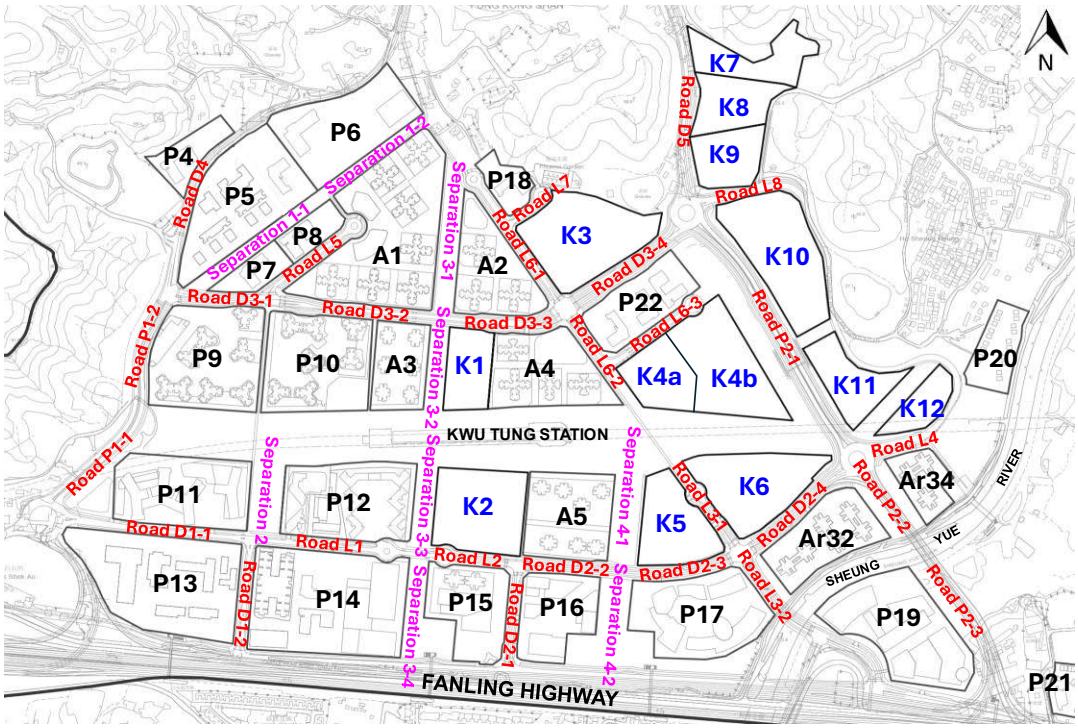


Figure 4.4 Annotation and Indication of the New Roads and Separations formed by Application Sites and the Surrounding Planned/Committed Developments

5 WIND AVAILABILITY

5.1 Planning Department RAMS Wind Data

5.1.1 Natural wind availability is critical for assessing wind ventilation performance and determining prevailing wind directions at the site. Site wind data can be obtained from three main sources: Regional Atmospheric Modelling System (RAMS) data provided by the Planning Department, experimental wind tunnel test data, and on-site measured data from the Hong Kong Observatory (HKO) weather stations.

5.1.2 This section analyses and compares computed wind data from the Regional Atmospheric Modelling System (RAMS) for the area near the KTN NDA to identify the prevailing wind directions.

5.1.3 The Hong Kong Planning Department (hereafter referred to as PlanD) has released a set of predicted wind data simulated using the RAMS model. For this study, wind data representing the predicted wind availability was extracted from four grids covering the Application Sites. The locations of these grids in relation to the KTN NDA are shown schematically in **Figure 5.1**. The annual and summer wind roses at the 200 m level for these grids are presented in **Figure 5.2**.

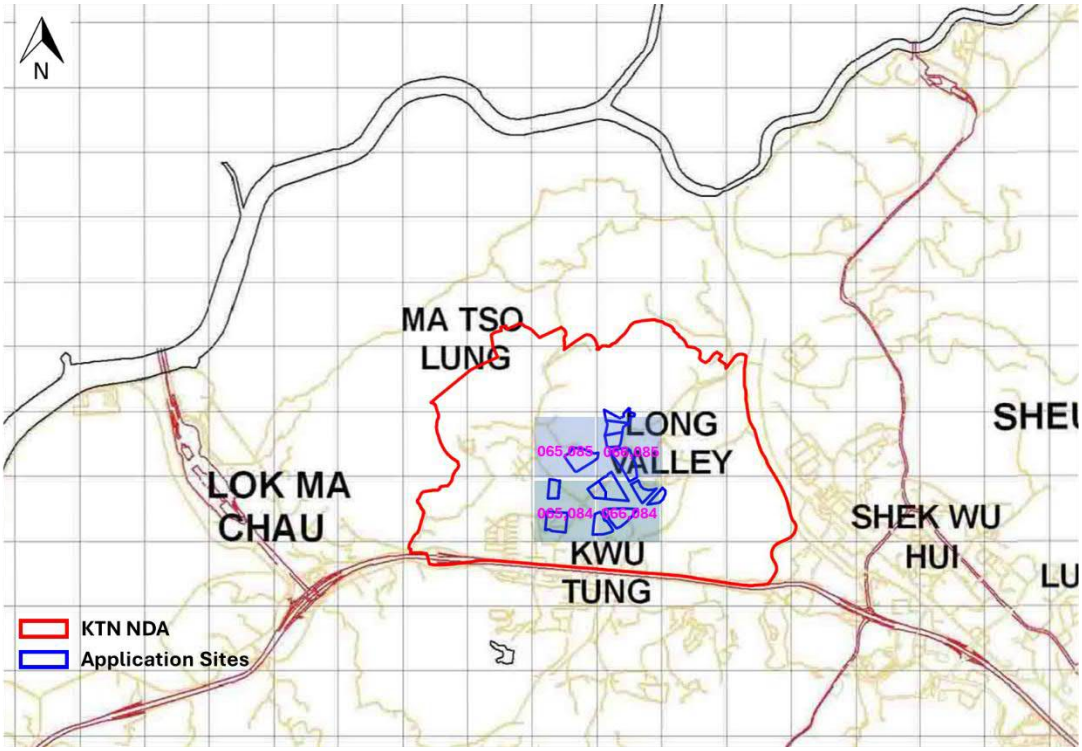


Figure 5.1 Locations of RAMS grids covering the Application Sites for Wind Data Extraction

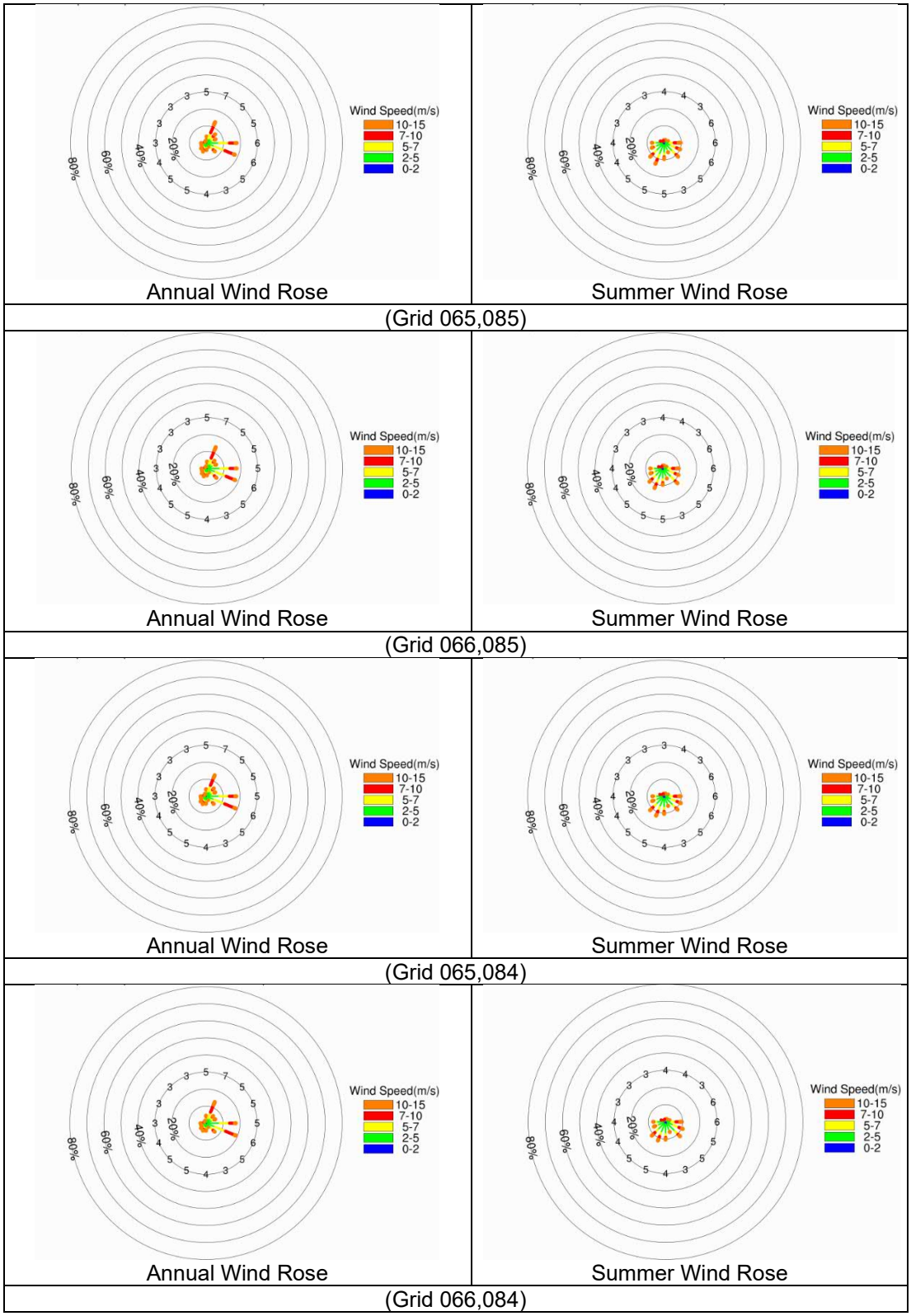


Figure 5.2 200m Annual and Summer Wind Roses of the four RAMS grids covering the Application Sites

5.1.4 The directional winds with the highest frequency of occurrence were identified for both the annual and summer seasons. The percentage occurrences for these dominant wind directions are summarized in **Table 5.1a** (annual) and **Table 5.1b** (summer). As shown in these tables, the prevailing winds at the grids covering the Application Sites are generally from the NNE, E, and ESE directions during the annual season. In contrast, during the summer season, the

prevailing winds predominantly originate from the southern quadrant, including ESE, SE, S, SSW, and SW, with an average frequency of occurrence exceeding 10% across the four identified RAMS grids.

Table 5.1a Frequencies of Annual Occurrence of Individual Wind Directions at 200mPD for KTN NDA and Application Sites

Annual, 200m				
Wind Directions	Frequency Occurrence			
	Grid (65,85)	Grid (66,85)	Grid (65,84)	Grid (66,84)
N	3.9%	4.1%	4.2%	4.3%
NNE	**13.3%**	**13.6%**	**13.3%**	**13.4%**
NE	7.2%	6.3%	6.5%	5.9%
ENE	5.8%	5.9%	5.9%	6.0%
E	**17.8%**	**17.6%**	**17.9%**	**17.6%**
ESE	**18.1%**	**18.1%**	**18.8%**	**19.1%**
SE	7.0%	7.9%	6.4%	7.1%
SSE	2.5%	2.6%	2.6%	2.7%
S	4.1%	4.2%	4.5%	4.5%
SSW	5.4%	5.1%	5.1%	4.8%
SW	4.5%	5.1%	4.4%	4.2%
WSW	3.3%	3.2%	3.2%	3.1%
W	3.2%	3.3%	3.1%	3.2%
WNW	1.4%	1.4%	1.5%	1.5%
NW	1.1%	1.0%	1.1%	1.1%
NNW	1.4%	1.4%	1.5%	1.5%

Table 5.1b Frequencies of Summer Occurrence of Individual Wind Directions at 200mPD for KTN NDA and Application Sites

Summer, 200m				
Wind Directions	Frequency Occurrence			
	Grid (65,85)	Grid (66,85)	Grid (65,84)	Grid (66,84)
N	1.6%	1.7%	1.6%	1.6%
NNE	1.8%	1.9%	1.8%	1.8%
NE	1.3%	1.2%	1.2%	1.3%
ENE	2.6%	2.6%	2.7%	2.6%
E	9.9%	9.6%	9.9%	9.6%
ESE	**10.2%**	**10.2%**	**10.7%**	**10.9%**
SE	**11.6%**	**12.4%**	**11.2%**	**11.9%**
SSE	6.1%	6.5%	6.2%	6.4%
S	**9.6%**	**9.8%**	**10.5%**	**10.4%**
SSW	**13.4%**	**12.6%**	**12.4%**	**11.8%**
SW	**11.6%**	**11.2%**	**11.7%**	**11.4%**
WSW	7.8%	7.8%	7.5%	7.3%
W	7.2%	7.4%	6.9%	7.2%
WNW	2.5%	2.6%	2.8%	2.8%
NW	1.4%	1.3%	1.5%	1.5%
NNW	1.4%	1.2%	1.4%	1.5%

5.2 Wind Tunnel Experimental Wind Data

5.2.1 Reference is made to the "Experimental Site Wind Availability Study for the North-East New Territories New Development Areas" conducted in 2010. The study was carried out using a 1:2000 scale topographical model to evaluate the effects of surrounding topography and the urban environment on mean wind speeds and turbulence intensities over the KTN NDA and FLN NDA. Although **Figure 5.3** shows the locations of both NDAs and the corresponding measurement points from the wind availability study, the present study focuses on wind data for the KTN NDA. Photographs of the 1:2000 scale topographical model of the KTN NDA in the low-speed wind tunnel test section, taken under north, east, south, and west wind directions, are presented in **Figure 5.4** for reference.

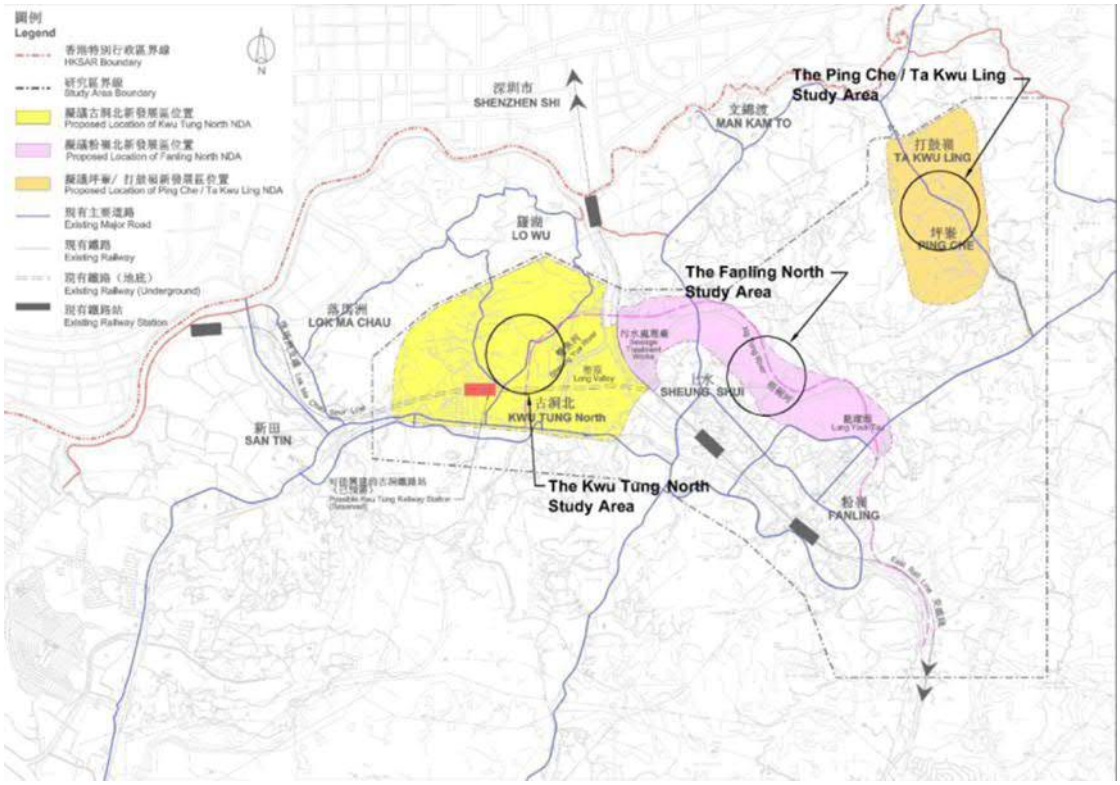


Figure 5.3 Wind Tunnel Test for KTN NDA

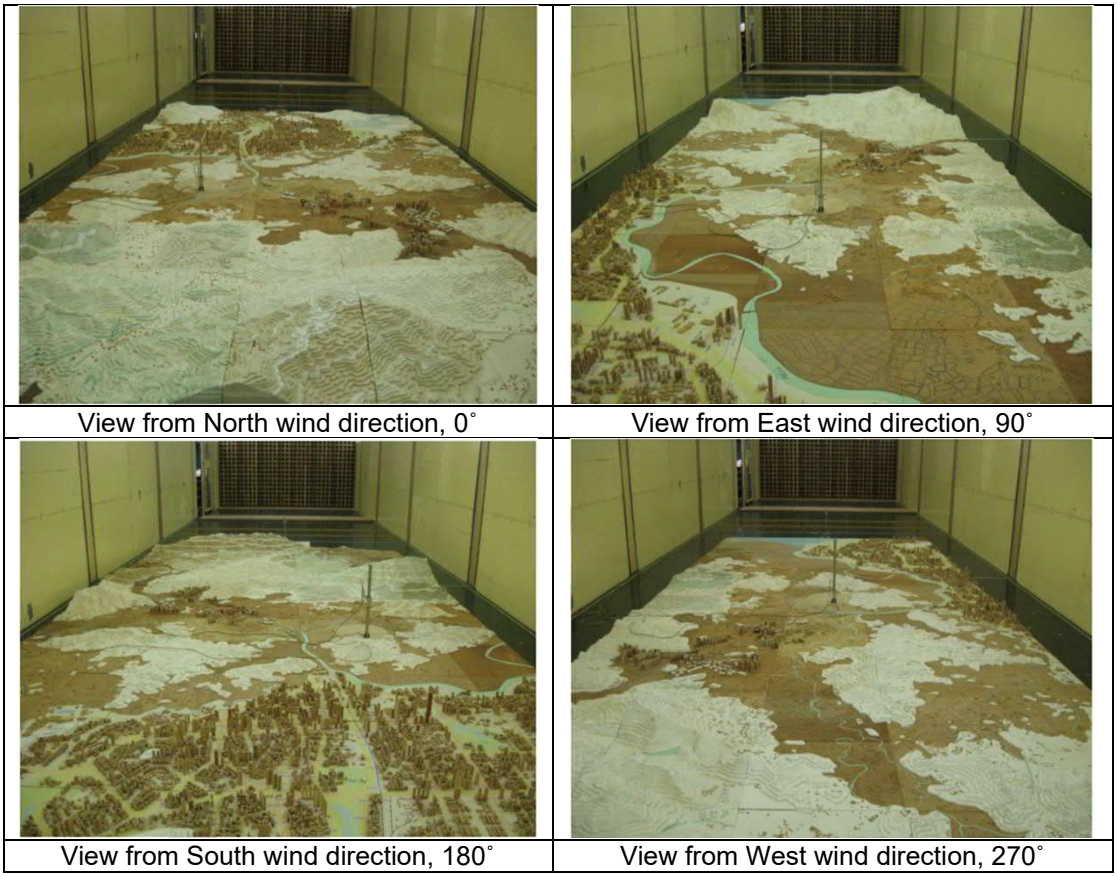


Figure 5.4 1:2000 scale topographical model of the Kwu Tung North Study Area in the low-speed test section from different views

5.2.2 The wind tunnel testing techniques employed in the site wind availability study complied with the quality assurance requirements stipulated in the Australasian Wind Engineering Society Quality Assurance Manual, AWES-QAM-1-2001 (2001), and the American Society of Civil Engineers Manual and Report on Engineering Practice No. 67 – Wind Tunnel Studies of Buildings and Structures (1999). The study was also conducted in accordance with the recommendations set out in the Planning Department's Feasibility Study for Establishment of Air Ventilation Assessment System – Final Report (2005) and the Technical Guide for Air Ventilation Assessment for Developments in Hong Kong (2006).

5.2.3 The wind tunnel test results were subsequently combined with a statistical model to derive the directional wind characteristics and wind availability for the KTN NDA. The annual and summer wind roses for the KTN NDA are presented in **Figure 5.5**. These wind roses illustrate the frequency of occurrence of each of the 16 wind directions and the corresponding wind speed distribution at 100mPD.

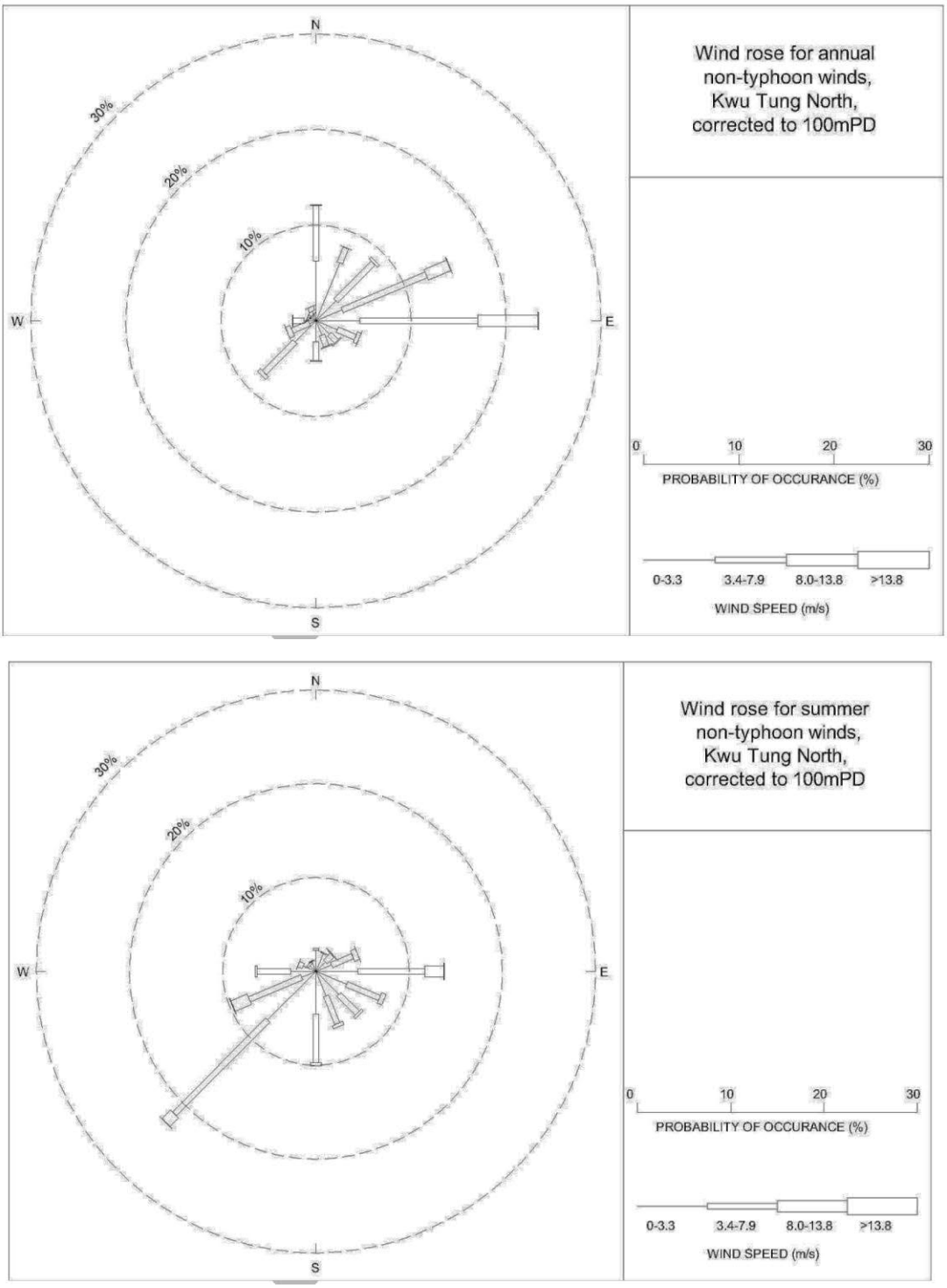


Figure 5.5 Wind Roses for annual and summer, non-typhoon winds for Kwu Tung North corrected to 100mPD

5.2.4 The wind roses from the experimental site wind availability study indicates that the annual prevailing winds at the KTN NDA are predominantly from the east (E), east-north-east (ENE), and north (N) directions. In summer, the prevailing winds mainly originate from the east (E), south (S), and south-west (SW) directions. The frequencies of occurrence of individual wind directions during the annual and summer seasons at 100mPD for the KTN NDA are summarized in **Table 5.2**.

Table 5.2 Frequencies of Annual and Summer Season Occurrence of Individual Wind Directions at 100mPD for KTN NDA

Wind Direction	% of Annual Occurrence	% of Summer Occurrence
0º (N)	**12.1%**	2.5%
22.5º (NNE)	8.3%	2.2%
45º (NE)	8.8%	2.5%
67.5º (ENE)	**15.1%**	4.8%
90º (E)	**23.4%**	**13.8%**
112.5º (ESE)	4.9%	7.9%
135º (SE)	3.1%	6.5%
157.5º (SSE)	3.0%	6.4%
180º (S)	4.3%	**10.1%**
202.5º (SSW)	0.0%	0.0%
225º (SW)	8.1%	**22.8%**
247.5º (WSW)	3.2%	9.7%
270º (W)	2.5%	6.5%
292.5º (WNW)	1.0%	2.0%
315º (NW)	0.6%	1.1%
337.5º (NNW)	1.5%	1.2%

5.3 HKO Weather Station Wind Data

5.3.1 The Lok Ma Chau and Au Tau automatic rainfall stations, located near the KTN NDA and the Application Sites, do not record wind data. The nearest operating weather stations to the Application Sites and the KTN NDA are the Tai Lung, Sheung Shui, and Beas River Automatic Weather Stations, as shown in **Figure 5.6**. However, these stations do not measure wind speed or direction and therefore cannot be used for wind data comparison in this study. The nearest weather station equipped with wind measurement instruments is the Wetland Park Weather Station. Due to its considerable distance from the KTN NDA and the Application Sites, wind data from this station is also considered unsuitable for comparative purposes.

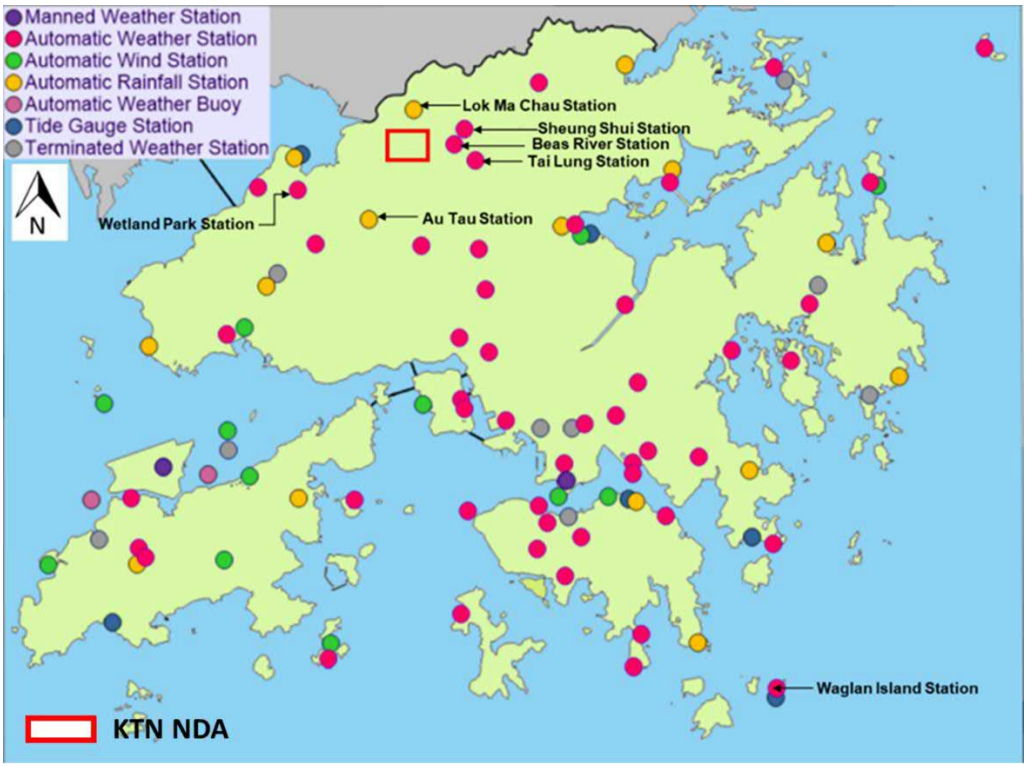


Figure 5.6 Locations of HKO Weather Stations

5.3.2 In addition to the weather stations mentioned above, the Waglan Island Weather Station is noted for its generally unobstructed exposure and is often regarded as a representative reference for the prevailing wind conditions across the Hong Kong region. However, due to its considerable distance from the KTN NDA and the Application Sites, it is not considered representative for identifying the prevailing wind directions specific to the KTN NDA. The annual and summer wind roses for the Waglan Island Weather Station are presented in **Figure 5.7** for reference. Based on the discussions in **Section 5.3.1** and the points raised above, wind data from Hong Kong Observatory (HKO) weather stations will not be used as a reference for determining the prevailing wind directions in this study.

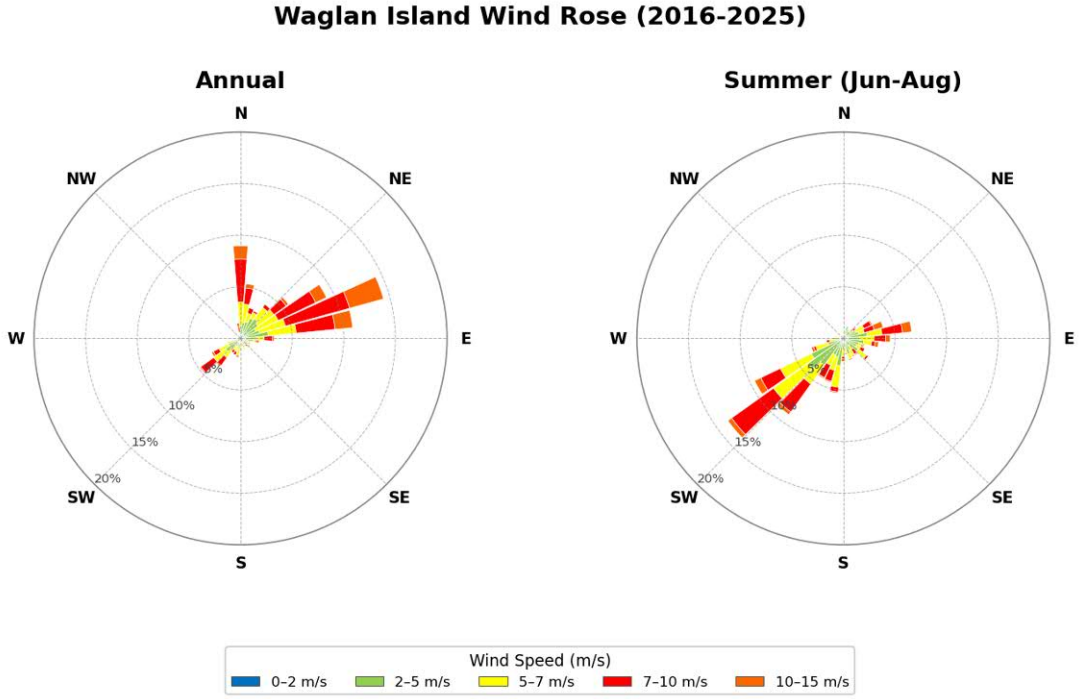


Figure 5.7 Wind Roses recorded at Waglan Island Weather Station (2016-2025)

5.4 Summary

5.4.1 As the "Experimental Site Wind Availability Study for the North-East New Territories New Development Areas" conducted in 2010 specifically focused on the site wind conditions for the KTN NDA, the wind tunnel experimental data are considered the most appropriate source for identifying the prevailing wind directions in this study. Wind data from the Hong Kong Observatory (HKO) weather stations and the RAMS model are still presented above for reference. The wind availability data from the wind tunnel experiment indicates that the annual prevailing winds towards the Application Sites are predominantly from the north (N), east-northeast (ENE), and east (E) directions. In summer, the wind environment is dominated by winds from the east (E), south (S), and south-west (SW) directions. **Figure 5.8** illustrates the prevailing wind directions towards the KTN NDA and the Application Sites.

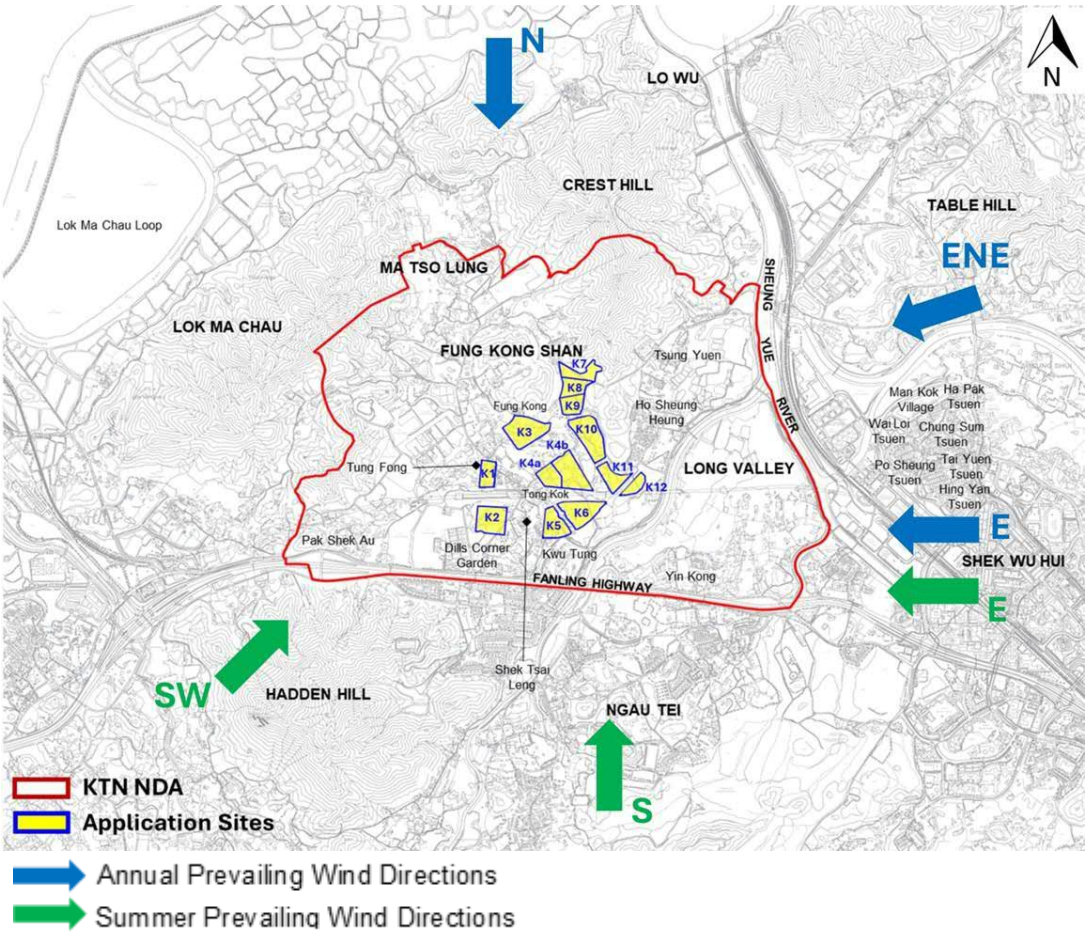


Figure 5.8 Illustration of Prevailing Wind Directions approaching the KTN NDA and Application Sites

6 WIND SENSITIVE AREAS AND IDENTIFIED BREEZEWAYS

6.1 Potential Wind Sensitive Areas

Potential Wind Sensitive Areas under the Identified Prevailing Wind Directions

6.1.1 Potential wind sensitive areas identified under northerly (N) annual prevailing wind include the areas along Kwu Tung Station immediately downstream of Application Sites K1 and K4; Area P15 located downwind of Application Site K2; Eastern portion of Area A2, Areas A4 and P22 located downwind of Application Site K3; Areas P17 and Ar32 located downwind of Application Sites K5 and K6, and Area Ar34 located downwind of Application Site K12.

6.1.2 Potential wind sensitive areas identified under east-northeast (ENE) annual wind conditions include Areas A3 and P12/P14 located immediately downstream of Application Sites K1 and K2 respectively; Area A2 located immediately downwind of Application Site K3; Areas A4 and Kwu Tung Station located downwind of Application Site K4a, K4b; Area A5 located downwind of Application Sites K5, K6, as well as Area P22 located to the downwind of Application Site K10 across Road P2-1.

6.1.3 Under the easterly (E) annual and summer prevailing wind, several potential wind sensitive areas have been identified. These include Area A3 located within Application Site K1; Area P12 situated immediately downstream of Application Site K2; Area A2 located immediately downwind of Application Site K3; Area A4 located immediately downwind of Application Site K4; Area A5 located immediately downwind of Application Sites K5 and K6, as well as Area P22 situated downstream of Application Site K10 across Road P2-1.

6.1.4 Under the southerly (S) summer prevailing wind, several potential wind sensitive areas have been identified. These include Area A2 located immediately downstream of Application Site K1 across Road D3-3. In addition, Area A4 and Kwu Tung Station, which experience frequent pedestrian access, are located downwind of Application Site K2 and are also identified as potential wind sensitive areas. Furthermore, Area P22, which contains planned schools, is situated downwind of Application Site K4 and represents another potential wind sensitive area. Finally, the wind environment at Ho Sheung Heung may be affected by wind wakes generated by the Development Proposals within Application Sites K11 and K12, which are located upwind of the area. As such, Ho Sheung Heung is also regarded as a potential wind sensitive area under southerly winds.

6.1.5 Under the southwesterly (SW) summer prevailing wind, several potential wind sensitive areas have been identified. Portions of Areas A2 and A4 are located immediately downwind of Application Site K1. In addition, Area A4 and Kwu Tung Station, which are also situated downwind of Application Site K2, are identified as potential wind sensitive areas. Furthermore, the Ho Sheung Heung region, which contains village houses and is located downwind of Application Sites K10 to K12, is another potential wind sensitive area under the southwesterly summer prevailing wind. **Figure 6.1** presents the location of identified potential wind sensitive areas.

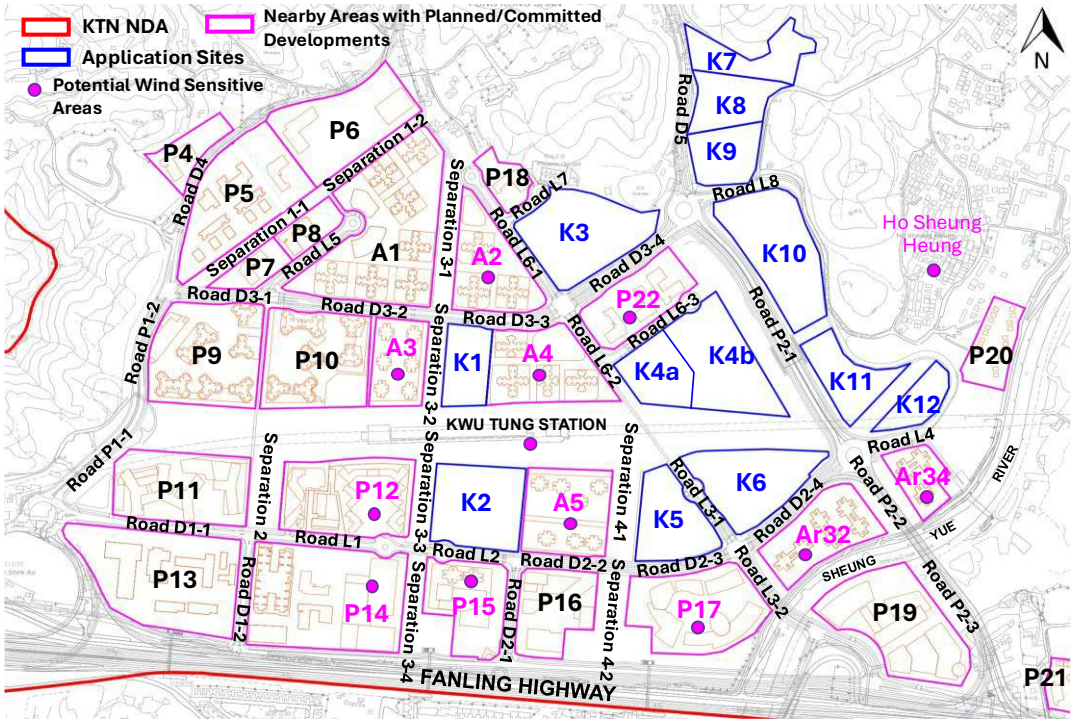


Figure 6.1 Potential Wind Sensitive Areas

6.2 Identified Major Breezeways

6.2.1 Considering the topographical features and the planned/committed built environment in the vicinity of the Application Sites, several major breezeways have been identified within the KTN NDA. These breezeways are illustrated in **Figure 6.2**.

6.2.2 Starting from the western side of the KTN NDA, a breezeway is formed between Areas P4 and P5, abutting Areas P9 and P11 (i.e., along Roads P1-1, P1-2 and D4 as annotated in **Figure 6.1**). This breezeway would facilitate the flow of northerly, southerly, east-north-easterly, and south-westerly prevailing winds, thereby helping to maintain a favorable wind environment near Areas P4, P5, P9, P11, and P13 (see Marker (1) in **Figure 6.2**).

6.2.3 In addition, a north-south oriented wind breezeway, formed by Separations 3-1 to 3-4 between Areas A1, A3, P12 and P14 on one side and Areas A2, Application Sites K1 and K2, and Area P15 on the other (refer to **Figure 6.1**), would connect Fung Kong Shan and Fanling Highway. This breezeway promotes the penetration of northerly and southerly prevailing winds into the area (see Marker (2) in **Figure 6.2**).

6.2.4 Roads D5 and P2-1 to P2-3 (refer to **Figure 6.1**) form another major breezeway that facilitates the flow of northerly and southerly prevailing winds. This breezeway abuts Areas Ar32, Ar34, P19 and P22, as well as Application Sites K3, K4 and K6 to K12. It promotes the movement of prevailing winds from Fung Kong Shan towards Fanling Highway, and vice versa, across the Sheung Yue River (see Marker (3) in **Figure 6.2**).

6.2.5 The Sheung Yue River itself serves as a major breezeway. Its branch stream directs east-north-easterly and south-westerly winds towards Areas P17, P19, P20, Ar32 and Ar34, as well as the regions near Long Valley (see Marker (4) in **Figure 6.2**).

6.2.6 A major breezeway is formed by the connection of Road L8 (between Application Sites K9 and K10) with Road D3-4 (between Area P22 and Application Site K3), as well as Roads D3-2 and D3-3 (between Areas A1–A2 and Application Site K1, and Areas A3, A4 and P10). The annotations and alignments of these roads are illustrated in **Figure 6.1**. The NBAs within Application Sites K9 and K10 help widen Road L8, thereby enhancing the effectiveness of this breezeway. In particular, it facilitates the penetration of easterly and east-north-easterly prevailing winds from Tsung Yuen towards Areas P22, A1 to A4, as well Application Sites K1 and K3 after flowing past Application Sites K9 and K10 via Road L8 (see Marker (5) in **Figure 6.2**).

6.2.7 Another major breezeway is formed by linking Ho Sheung Heung with Kwu Tung Station, facilitating the flow of easterly and east-north-easterly prevailing winds. The incorporation of Non-Building Areas (NBAs) within Application Sites K10 and K4 enhances the effectiveness of this breezeway, allowing prevailing winds from the village houses of Ho Sheung Heung to reach Kwu Tung Station (see Marker (6) in **Figure 6.2**).

6.2.8 Another major breezeway connects the lower regions of Ho Sheung Heung near Area P20 with Roads D1-1, L1, L2, and D2-2 to D2-4 (refer to **Figure 6.1** for the road annotations and Marker (7) in **Figure 6.2** for the location of the breezeway). Two strips of Non-Building Areas (NBAs) incorporated within Application Sites K11 and K12 enhance the effectiveness of this breezeway by allowing easterly (E) and east-north-easterly (ENE) prevailing winds to penetrate these sites and flow along the breezeway. In addition, the section formed by Roads D1-1, L1, L2, and D2-2 facilitates the flow of easterly prevailing winds towards the Pak Shek Au area, while the section formed by Roads D2-3 and D2-4 supports the movement of south-westerly prevailing winds towards the planned and committed residential developments within Application Sites K11 and K12.

6.2.9 Fanling Highway, which runs in an approximately east-west direction, facilitates the flow of easterly prevailing winds (see Marker (9) in **Figure 6.2**). In addition, a green corridor located in the middle portion of the KTN NDA serves as another major breezeway. This corridor extends from Long Valley, across the Sheung Yue River, and along Road L4 between Area Ar34 and Application Site K12 (refer to **Figure 6.1**), continuing towards Kwu Tung Station and the areas immediately north of Pak Shek Au. The green corridor enhances the penetration of easterly winds, allowing them to flow across the Application Sites and further westward (see Marker (8) in **Figure 6.2**).

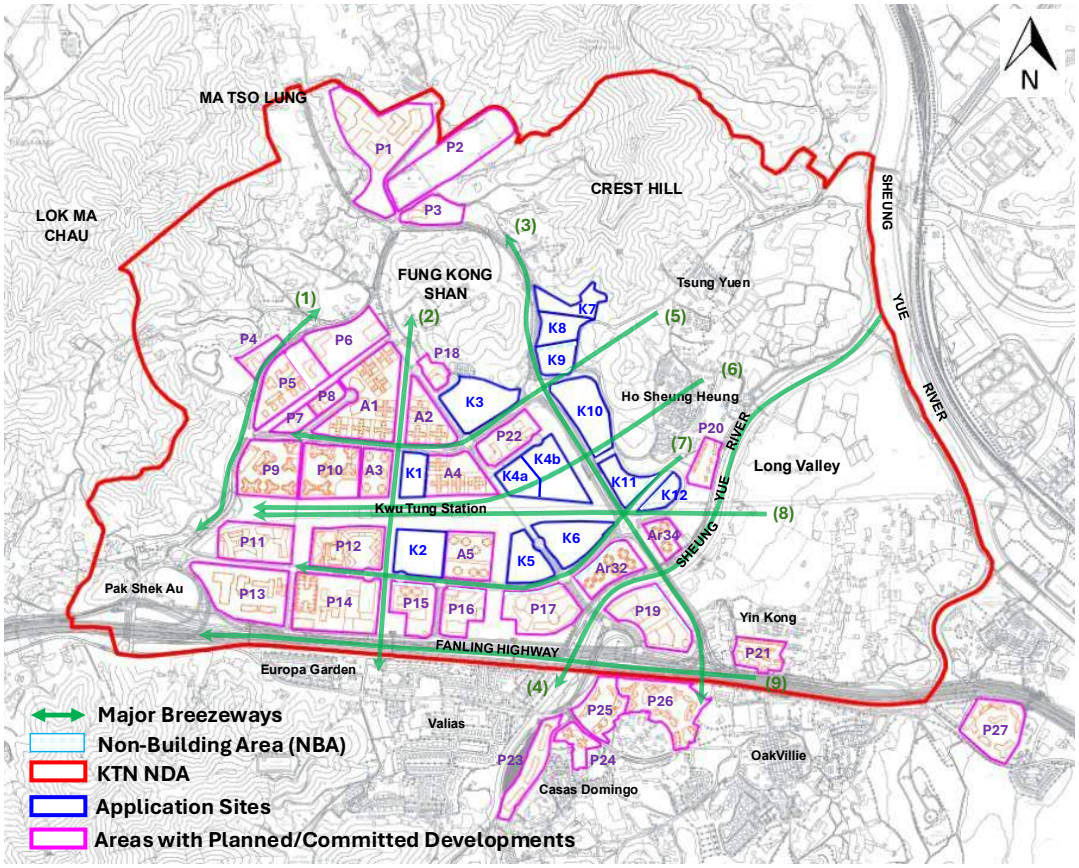


Figure 6.2 Major Breezeways near Application Sites

7 THE APPROVED SCHEME AND PROPOSED SCHEME

7.1 Background

7.1.1 Two development scenarios are examined in this Study: Approved Scheme and Proposed Scheme. The Approved Scheme was approved by the Town Planning Board under planning application No. A/KTN/93 on 23 September 2022. It incorporated minor relaxations of the Plot Ratio (PR) and Building Height Restrictions (BHR) for Planning Areas 14, 15, 20, 22, 23, 25 and 26.

7.1.2 Compared with the Approved Scheme, the Proposed Scheme seeks further minor relaxations of the BHR in Planning Areas 14, `15, 22, 23, 25 and 26 (i.e., Application Sites K3, K4a, K4b, K5 – K11). These additional relaxations are required to accommodate the extra height arising from above-ground car parks and the adoption of Modular Integrated Construction (MiC). The changes in the relevant development parameters are summarized in **Table 7.1**.

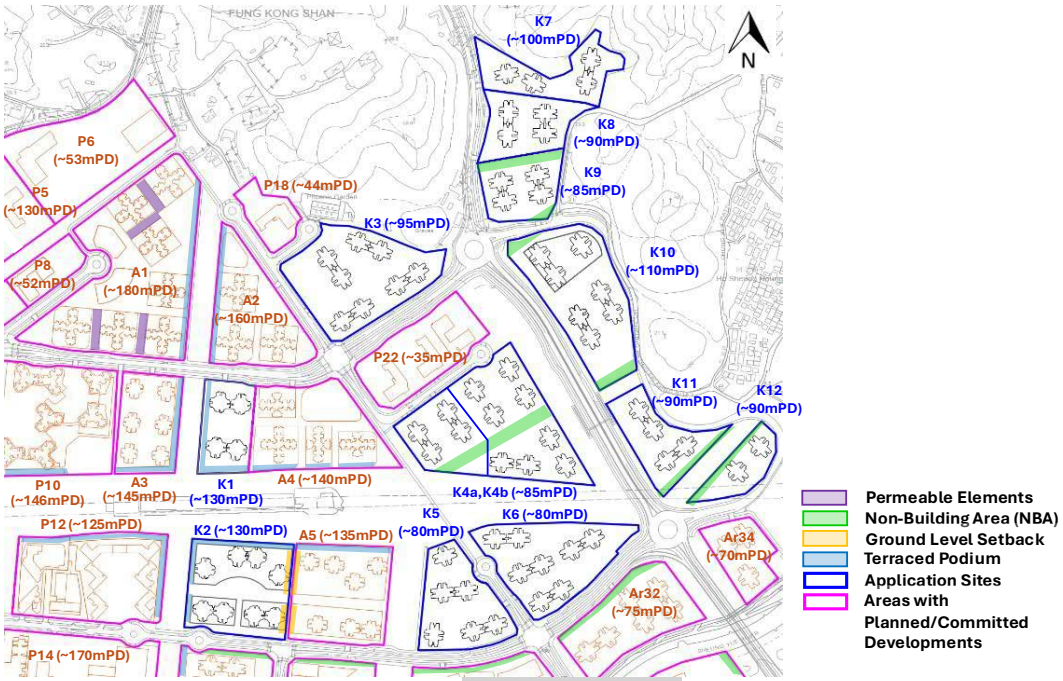
Table 7.1 Difference in Development Parameters at the Application Sites

Site No.	Planning Area	Zoning	Site Area (about) (ha) [land area in Area shown as 'Road'/"GB" (about)(ha)]	Under OZP No. S/KTN/4				Under Approved Planning Application A/KTN/93				Proposed under this Application			
				Total Max Plot Ratio	Domestic Max Plot Ratio	Non-Domestic Max Plot Ratio	Building Height Restrictions (mPD)	Total Max Plot Ratio	Domestic Max Plot Ratio	Non-Domestic Max Plot Ratio	Building Height Restrictions (mPD)	Proposed Total Max Plot Ratio	Proposed Domestic Max Plot Ratio	Proposed Non-Domestic Max Plot Ratio	Proposed Building Height Restrictions (mPD)
K1	20	R(A)1	1.13	6	5	1	115	7.2	6	1.2	130	7.2	6	1.2	130
K2	25	R(A)1	2.34	6	5	1	115	7.2	6	1.2	130	7.2	6	1.2	130
K3	14	R(B)	2.83 [0.04]	3.5	3.5	N/A	80	4.2	4.2	N/A	95	4.2	4.2	N/A	110
K4a	22	R(B)	1.27	3.5	3.5	N/A	75	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K4b	22	R(B)	2.54	3.5	3.5	N/A	75	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K5	26	R(B)	1.79	3.5	3.5	N/A	75	4.2	4.2	N/A	80	4.2	4.2	N/A	85
K6	26	R(B)	2.35 [0.03]	3.5	3.5	N/A	75	4.2	4.2	N/A	80	4.2	4.2	N/A	85
K7	15	R(B)	1.25	3.5	3.5	N/A	85/95	4.2	4.2	N/A	100	4.2	4.2	N/A	115
K8	15	R(B), GB and Road	1.3 [0.05]	3.5	3.5	N/A	85	4.2	4.2	N/A	90	4.2	4.2	N/A	105
K9	15	R(B)	1.17	3.5	3.5	N/A	80	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K10*	23	R(B)	2.87 [0.04]	3.5	3.5	0	95	4.43	4.2	0.23	110	4.43	4.2	0.23	115
K11	23	R(B) and Road	1.28	3.5	3.5	N/A	90	4.2	4.2	N/A	90	4.2	4.2	N/A	95
K12	23	R(B) and Road	0.78	3.5	3.5	N/A	90	4.2	4.2	N/A	90	4.2	4.2	N/A	90

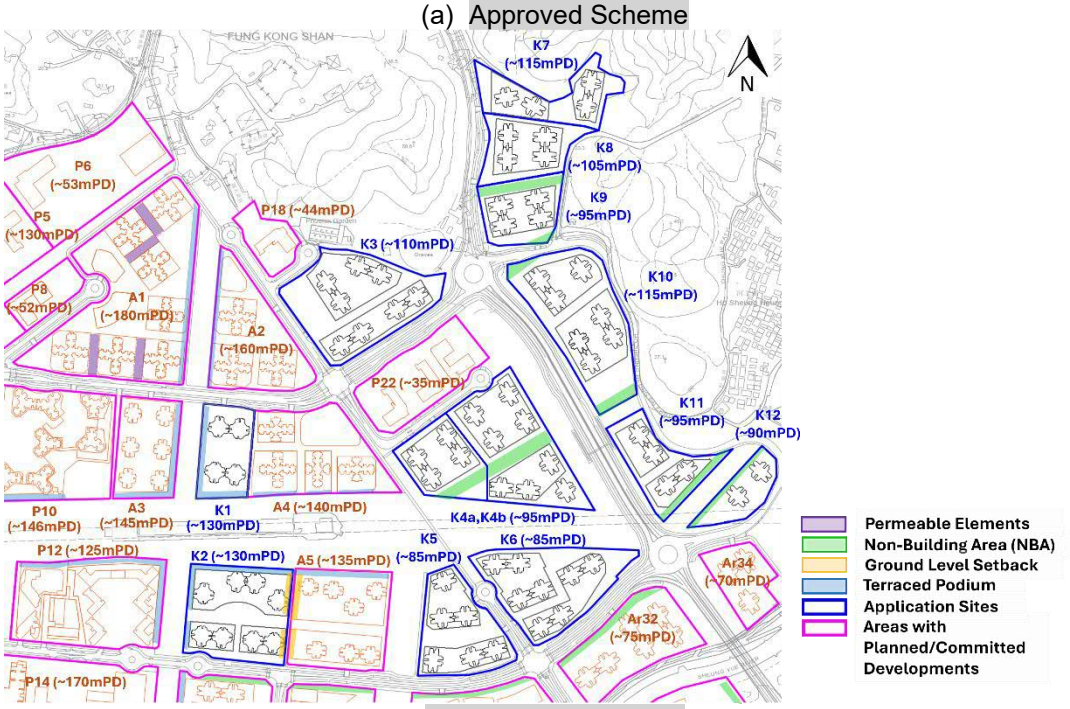
* Site area and area shown as ‘Road’/ “GB” are subject to detailed survey.
* Site K10: NDPR includes a public transport terminus/interchange of 3,500 m².

7.2 Approved Scheme and Proposed Scheme

7.2.1 **Figure 7.1** shows the overall layout of Application Sites K1 to K12 within the KTN NDA under both the Approved Scheme and the Proposed Scheme, together with some of the surrounding planned and committed developments. Illustrative figures showing zoomed-out views of the areas surrounding the Application Sites under the Approved Scheme and Proposed Scheme are also provided in **Figures A4** and **A5** in **Appendix A** for reference. Brief discussions on the key differences between the Approved Scheme and the Proposed Scheme for each of the Application Sites are provided in this subsection. It should be noted that the layouts presented are indicative only and are intended for technical assessment purposes. They may be subject to revision at future stages of the project.



(a) Approved Scheme



(b) Proposed Scheme

Figure 7.1 Indicative Building Layouts within the Application Sites under the Approved Scheme and Proposed Scheme

7.2.2 In general, the overall domestic building footprints within each of the Application Sites are the same under the Proposed Scheme as under the Approved Scheme. The terraced podium designs for Application Sites K1 and K2 and the podium-free design for Application Site K12 remain unchanged under the Proposed Scheme. However, instead of adopting podium-free designs, additional podiums are provided beneath the domestic blocks in most of the Application Sites under the Proposed Scheme. These include Application Sites K3 to K11. Brief descriptions for each Application Site are provided below:

Application Site K1

7.2.3 Under the Approved Scheme, Application Site K1 comprises four domestic blocks with a Building Height Restriction of 130mPD (see **Figure A2**), situated above a massive podium of 24mPD. A terraced podium design is adopted within the site (see **Figures 7.1(a)** and **A4**).

7.2.4 Under the Proposed Scheme, while the building height restriction and footprints for Application Site K1 are identical to the Approved Scheme, the height of the podium providing full site coverage is increased to 35mPD. (see **Figure A3**). Consistent with the Approved Scheme, a terraced podium design is adopted within Application Site K1 (see **Figures 7.1(b)** and **A5**).

Application Site K2

7.2.5 Under the Approved Scheme, Application Site K2 comprises eight domestic blocks, as shown in **Figure 7.1(a)**. The four domestic blocks in the northern portion of the site are situated on a larger podium adopting terraced design, while the remaining four in the southern portion are placed above two smaller podiums (two domestic blocks above per podium). All the podiums are heights of 26.5mPD. The prevailing Building Height Restriction of 130mPD applies to Application Site K2 (see **Figures A2** and **A4**). In addition, ground-level setbacks are included along the eastern boundary of Application Site K2 to widen the separation between Application Site K2 and the adjacent Area A5.

7.2.6 Under the Proposed Scheme, the building footprints of the eight domestic blocks in Application Site K2 remain largely consistent with the Approved Scheme (see **Figure 7.1(b)**). As in the Approved Scheme, the domestic blocks are located above three non-domestic podiums, with the relatively larger podium in the northern portion as well as the smaller podium located at the lower left adopting a terraced design. The maximum Building Height Restriction of the domestic blocks is as the same as it under the Approved Scheme (see **Figure A3**). However, the height of the podium increased to 36.5mPD. Similar to the Approved Scheme, ground-level setbacks are incorporated along the eastern boundary of Application Site K2 to widen the separation between Application Site K2 and the adjacent Area A5.

Application Site K3

7.2.7 Under the Approved Scheme, Application Site K3 comprises podium-free domestic blocks with a maximum building height of 95mPD (see **Figure A2**). These domestic blocks are set back slightly from the Application Site boundary (see **Figures 7.1(a)** and **A4**).

7.2.8 Under the Proposed Scheme, the building footprints of the eight domestic blocks in Application Site K3 remain identical to those in the Approved Scheme (see **Figure 7.1(b)** and **Figure A5**). However, the maximum Building Height Restriction is proposed to be relaxed to 110mPD (see **Figure A3**). In addition, two 2-storey podiums providing above-ground car parks are introduced beneath the domestic blocks with four domestic blocks above per podium.

Application Sites K4a, K4b

7.2.9 Under the Approved Scheme, Application Site K4 is occupied by podium-free domestic blocks as shown in **Figure 7.1(a)** and **Figure A4**. A building height restriction of 85mPD is applied (see **Figure A2**). In addition, a 30 m-wide Non-Building Area (NBA) running in a north-east to south-west direction is reserved at the southern part of Application Site K4, in compliance with the requirement stipulated in the Outline Zoning Plan (OZP) (see **Figure 7.1(a)** and **Figure A4**).

7.2.10 Under the Proposed Scheme, three additional 2-storey podiums for above-ground car parks are introduced within Application Site K4, with the maximum building height restriction proposed to be relaxed to 95mPD (see **Figure A3**). The building footprints of the domestic blocks remain unchanged compared to the Approved Scheme (see **Figure 7.1(b)** and **Figure**

A5). The domestic block located at the southeastern tip of the site remains podium-free. The 30m-wide Non-Building Area (NBA) running in a north-east to south-west direction is retained to facilitate wind diversion and penetration (see **Figure 7.1(b)** and **Figure A5**).

Application Site K5

7.2.11 The Approved Scheme for Application Site K5 adopts podium-free design with domestic blocks at a height of 80mPD. The blocks are arranged in a scattered layout, set back from the Application Site boundary (see **Figure A2**, **Figure 7.1(a)** and **Figure A4**).

7.2.12 In the Proposed Scheme, two podiums each of two-storey in height are introduced to provide above-ground car parking — one beneath the three northern domestic blocks and one beneath the three southern domestic blocks. The height of the domestic blocks is proposed to slightly increase from 80mPD to 85mPD. The footprint and placement of the domestic blocks remain unchanged from the Approved Scheme (see **Figure 7.1(b)**, **Figure A3** and **Figure A5**).

Application Site K6

7.2.13 Under the Approved Scheme, the domestic blocks within Application Site K6 have a height of 80mPD and adopt a podium-free design. Their placement is largely similar to that of Application Site K5 (see **Figure A2**, **Figure 7.1(a)** and **Figure A4**).

7.2.14 In the Proposed Scheme, the building footprints of the domestic blocks remain unchanged from the Approved Scheme (see **Figure 7.1(b)** and **Figure A5**). Apart from a proposal to relax the maximum building height restriction to 85mPD (see **Figure A3**), two additional 2-storey podiums are introduced to provide above-ground car parking.

Application Site K7

7.2.15 Under the Approved Scheme, Application Site 7 is subject to a building height restriction of 100mPD. The domestic blocks adopt a podium-free design and are placed in a scattered manner (see **Figure A2**, **Figure 7.1(a)** and **Figure A4**).

7.2.16 In the Proposed Scheme, the building orientations, arrangements, and footprints of the domestic blocks remain unchanged from the Approved Scheme. Two additional 2-storey podiums are introduced beneath the eastern and western domestic blocks respectively with each podium supporting two domestic towers to provide above-ground car parking, and the maximum building height is proposed to be relaxed from 100mPD to 115mPD (see **Figure A3**, **Figure 7.1(b)** and **Figure A5**).

Application Site K8

7.2.17 Application Site K8, located immediately south of Application Site K7, is subject to a building height restriction of 90mPD under the Approved Scheme (see **Figure A2**). The domestic blocks adopt a podium-free design (see **Figure 7.1(a)** and **Figure A4**).

7.2.18 In the Proposed Scheme, a two-storey podium is introduced beneath the domestic blocks to provide above-ground car parking. The building orientations and arrangements of the domestic blocks remain unchanged from the Approved Scheme. However, the maximum building height is proposed to be slightly relaxed from 90mPD to 105mPD (see **Figure A3**, **Figure 7.1(b)** and **Figure A5**).

Application Site K9

7.2.19 Application Site K9, located adjacent to Application Site K8, is subject to a building height restriction of 85mPD under the Approved Scheme (see **Figure A2**). The domestic blocks adopt a podium-free design. In addition, a strip of Non-Building Area (NBA) is imposed at the southern tip of the site, and another strip of NBA runs along the northern boundary (see **Figure 7.1(a)** and **Figure A4**).

7.2.20 In the Proposed Scheme, a 2-storey podium is introduced beneath the four domestic blocks to provide above-ground car parking. The domestic building blocks' orientations and arrangements remain unchanged from the Approved Scheme. The maximum building height is proposed to be slightly relaxed from 85mPD to 95mPD. The strips of Non-Building Area (NBA) at the southern tip and along the northern boundary are fully retained (see **Figure A3**, **Figure 7.1(b)** and **Figure A5**).

Application Site K10

7.2.21 Under the Approved Scheme, Application Site K10 is subject to a building height restriction of 110mPD and comprises seven domestic blocks. A podium with a height of 27mPD, accommodating a Public Transport Interchange (PTI) at ground level and car parks above, is provided beneath the three northern domestic blocks. The remaining four domestic blocks are podium-free. Strips of Non-Building Area (NBA) are incorporated at the northwestern tip and along the southern boundary of the site (see **Figure A2**, **Figure 7.1(a)** and **Figure A4**).

7.2.22 In the Proposed Scheme, the two strips of Non-Building Area (NBA) are fully retained to enhance the effectiveness of prevailing winds. The footprint and placement of the domestic blocks remain unchanged from the Approved Scheme. In addition to the existing podium beneath the three northern domestic blocks, one additional two-storey podium is introduced beneath the four southern domestic blocks to provide above-ground car parking. The podiums in the Proposed Scheme have a reduction in height from 27mPD to 24mPD but the maximum building height is proposed to be relaxed from 110mPD to 115mPD (see **Figure A3**, **Figure 7.1(b)** and **Figure A5**).

Application Sites K11 and K12

7.2.23 Application Sites K11 and K12, located immediately to the southeast of Application Site K10, are planned for podium-free domestic housing developments with a building height restriction of 90mPD under the Approved Scheme. Strips of Non-Building Area (NBA) are incorporated within both sites (see **Figure A2**, **Figure 7.1(a)** and **Figure A4**).

7.2.24 In the Proposed Scheme, the building footprints of the domestic blocks and the strips of Non-Building Area (NBA) remain unchanged. The maximum building height is proposed to be slightly relaxed from 90mPD to 95mPD for Application Site K11, while remaining unchanged. for Application Site K12. Two additional two-storey podiums are introduced in Application Site K11 (each supporting two domestic blocks) to provide above-ground car parking, while Application Site K12 remains a podium-free design. (see **Figure A3**, **Figure 7.1(b)** and **Figure A5**).

Typologies of Podiums within Application Sites under the Proposed Scheme

7.2.25 Podiums can generally be categorized into four types:

- Typology 1 – Terraced podium with non-domestic uses and above-ground car parks, and a podium garden which appears in Application Sites K1 and K2.
- Typology 2 – Podiums for above-ground car parking and garden, which appear in Application Sites K3 to K9, K10 (southern podium), and K11.
- Typology 3 – Podiums containing a ground-level Public Transport Interchange (PTI)and a garden, which appears in Application Site K10 (northern podium)
- Typology 4 – Podium free, which appear in Application Site K12.

Indicative sections of these podium typologies are shown in **Figure 7.2**.

Figure 7.2 Indicative Sections of Different Types of Podiums within the Application Sites under the Proposed Scheme

8 EXPERT EVALUATION ON THE APPROVED SCHEME AND PROPOSED SCHEME

8.1 General

8.1.1 Several major breezeways have been identified under the prevailing wind directions. These breezeways play an important role in maintaining the wind environment within and around the Application Sites. The major breezeways have been discussed in detail in **Section 6.2** above. Most of them are aligned along major roads, with the most prominent ones including Fanling Highway, the breezeway along Kwu Tung Station, and the Sheung Yue River.

8.1.2 The indicative layouts under both the Approved Scheme and the Proposed Scheme (as discussed in **Section 7**) demonstrate that all identified major breezeways are fully retained and remain unobstructed.

8.1.3 Non-Building Areas (NBAs) are incorporated within Areas P15 to P19 and Application Sites K4 and K9 to K12. These NBAs are retained in the same locations and with the same widths under both the Approved Scheme and the Proposed Scheme. Although the Proposed Scheme includes building height relaxations and additional podiums in certain Application Sites to meet above-ground car parks and the adoption of Modular Integrated Construction (MiC) requirements, all designated NBAs remain unchanged in position and dimension.

8.1.4 Two-storey terraced and stepping podiums, consistent with the requirements of the current Outline Zoning Plan (OZP), have been adopted for Application Sites K1 and K2 under both the Approved Scheme and Proposed Scheme. These podiums promote downward airflow to the pedestrian level. For the remaining Application Sites, residential tower footprints have maintained consistent across both scenarios. Additional podiums are incorporated only in certain Application Sites to satisfy design requirements (for provision of above ground car parking and Public Transport Interchange) under the Proposed Scheme.

8.1.5 Variations in building height profiles between certain Application Sites and the surrounding committed or planned developments are observed in both scenarios. These variations help promote downwash wind effects. All the above-mentioned good design measures for maintaining air ventilation performance — including building separations, terraced podium designs, and designated NBAs — that appear in the Approved Scheme are fully retained in the Proposed Scheme.

8.1.6 Ground-level setbacks are incorporated at strategic locations within certain buildings in Application Site K2. These setbacks improve north-south connectivity and enhance the penetration of northerly and southerly prevailing winds (see **Figure 7.1, Figure A4** and **Figure A5** for the locations of the ground-level setbacks).

8.1.7 Two development scenarios are examined in this study: the Approved Scheme and the Proposed Scheme (see **Figure 7.1**, **Figure A4** and **Figure A5**). Both scenarios fully retain all air ventilation good design measures required under the Outline Zoning Plan (OZP), including building separations, terraced podium designs, and designated Non-Building Areas (NBAs), to promote effective air ventilation performance. The evaluation focuses on potential changes in wind flow patterns, the extent of wind wake areas, building permeability, and the performance of major district breezeways and local air paths under the identified prevailing wind directions.

8.1.8 To summarize, the only differences between the Approved Scheme and the Proposed Scheme are those within the Application Sites (K1 to K12). While the residential tower footprints remain consistent across all Application Sites, the Proposed Scheme incorporates maximum building height relaxations and additional podiums in certain sites. The layouts of surrounding planned and committed developments (i.e., Areas P1 to P30, A1 to A5, Ar32 and Ar34) are treated as background. The most up-to-date road layouts have been adopted. The expert evaluation, including directional analysis and anticipated wind flow patterns under both scenarios, is presented below.

8.2 Expert Evaluation

Under N Annual Prevailing Wind Direction

Approved Scheme

8.2.1 Under the Approved Scheme, northerly winds would flow along Road D4, passing between the committed school in Area P4 and the GIC blocks in Area P6. The wind would then continue along Road P1-2, located to the west of Area P9, and proceed towards the committed/planned high-rise residential blocks in Area P11 with minimal obstruction. These high-rise buildings would subsequently block the northerly wind, preventing it from reaching further downstream areas (see Marker (1) in **Figure 8.1(a)**).

8.2.2 Under the Approved Scheme, northerly wind from Road D3-1 would skim over the planned schools in Areas P7 and P8, then flow through the separation between Areas P9 and P10. It would continue across Kwu Tung Station, proceed along the separation between Areas P11 and P12 (Separation 2 in **Figure 8.1(a)**), and flow along Road D1-2 between Areas P13 and P14, before reaching Europa Garden (see Marker (2) in **Figure 8.1(a)**).

8.2.3 The separation between Areas A1 and A3, Areas P12 and P14, and Area A2 together with Application Sites K1, K2 and Area P15 (Separations 3-1 to 3-4 in **Figure 8.1(a)**) forms a major north-south district-wide wind breezeway. This breezeway links Fung Kong Shan with Fanling Highway and helps maintain a favorable wind environment around Areas A1–A3, Application Sites K1–K2, and Areas P12, P14 and P15 (see Marker (3) in **Figure 8.1(a)**).

8.2.4 Under the Approved Scheme, the podiums within Application Site K2 and Area A5 incorporate ground-level setbacks, which create ground level separations for formation of a wind breezeway originating from Application Site K1 and Area A4. This breezeway flows along Road D2-1 towards Fanling Highway (see Marker (4) in **Figure 8.1(a)**).

8.2.5 After skimming over the proposed schools in Area P22, the northerly wind would flow along Road L6-2 towards Kwu Tung Station. It would then continue along the separations between Area A5 / Application Site K6 and Areas P16 / P17 (Separations 4-1 and 4-2 in **Figure 8.1(a)**) before reaching Fanling Highway (see Marker (5) in **Figure 8.1(a)**).

8.2.6 Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway. It directs northerly wind from Crest Hill towards Application Site K4 (see Marker (6) in **Figure 8.1(a)**). The upwind schools in Area P22 have lower building heights than the proposed blocks in Application Site K4. As a result, vertical air movement is expected along Road L6-3 under the Approved Scheme. Weakening of the northerly wind is anticipated after it flows past Application Sites K4, K5 and K6. However, the proposed blocks within these sites adopt podium-free designs and are arranged in a scattered layout. These design measures help maximize the availability of northerly wind towards the downwind Areas P17 and P18 under the Approved Scheme. Another branch of northerly wind would flow along Road P2-1 towards Road P2-2, thereby maintaining a favorable wind environment near Application Sites K10 to K12 and Application Site K4.

8.2.7 The Sheung Yue River serves as another major district-wide wind breezeway. Northerly wind originating from the areas near Ho Sheung Heung would flow along the river, reaching the downwind areas near Area Ar34 and continuing towards Area P19 (see Marker (7) in **Figure 8.1(a)**).

8.2.8 Among the thirteen Application Sites (K1 to K3, K4a, K4b and K5 to K12), building separations are provided between most of the proposed domestic blocks. These separations enhance wind permeability and help reduce potential wind impacts on the surrounding areas. **Figure 8.1(a)** illustrates the anticipated northerly annual prevailing wind flow under the Approved Scheme.

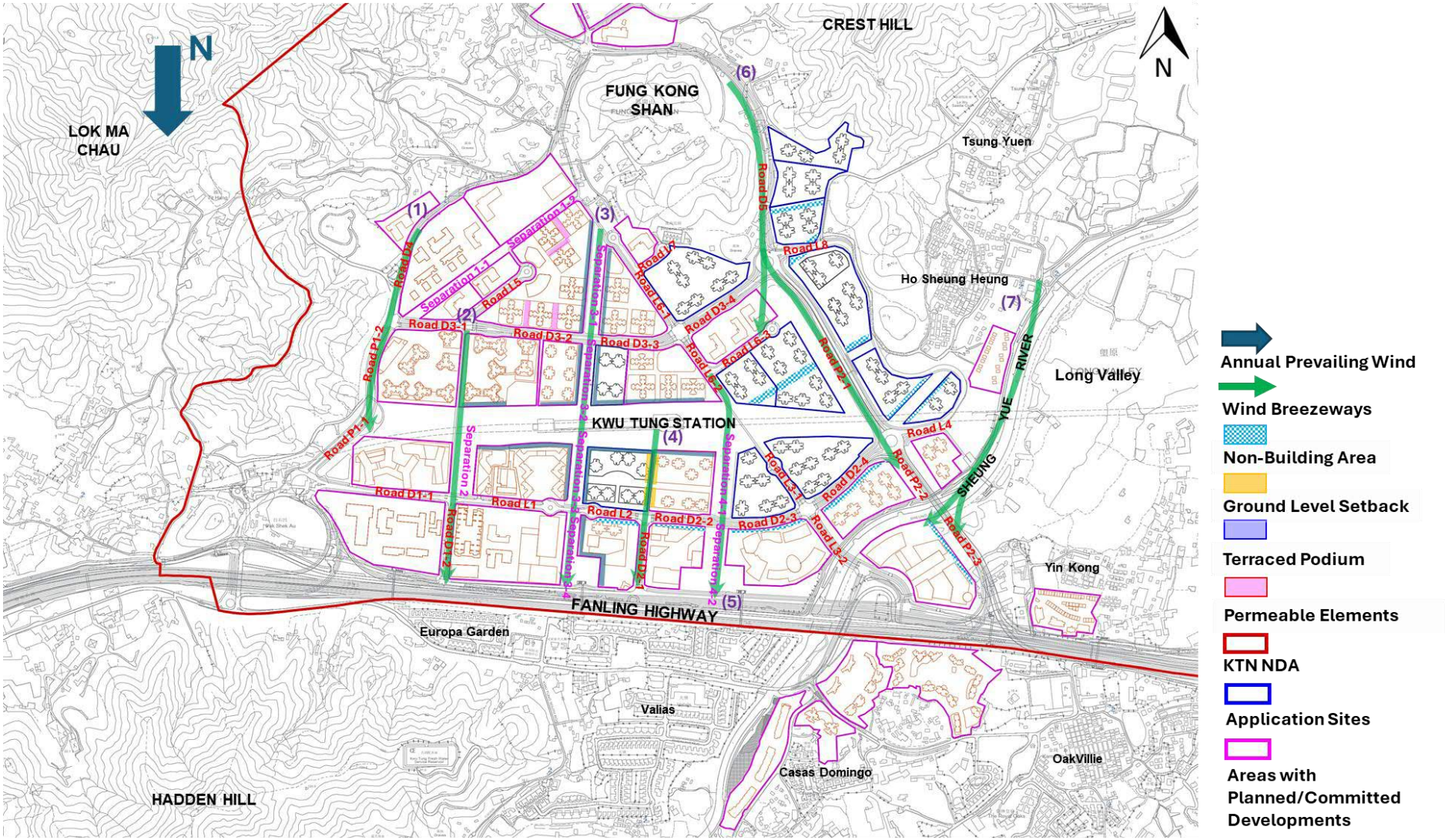


Figure 8.1(a) Wind Flow under the N Annual Prevailing Wind for the Approved Scheme

Proposed Scheme:

General

8.2.9 The Development Proposal layout under the Proposed Scheme retains the good air ventilation design measures from the Approved Scheme. These include terraced podiums in Application Sites K1 and K2, and Non-Building Areas (NBAs) in Application Site K4 and Application Sites K9 to K12. In addition to the retained measures, the Proposed Scheme incorporates ground-level setbacks along the eastern boundary of Application Site K2. Furthermore, the added podiums have been minimized in bulk as far as possible, with most maintaining podium separations of at least 15m. All added podiums also incorporate 5m podium gardens to enhance wind penetration.

Similarities in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.10 Under the Proposed Scheme, northerly winds would flow along Road D4 between the committed school in Area P4 and the GIC blocks in Area P6. The wind would then proceed westward along Road P1-2, located to the west of Area P9, and approach the committed and planned high-rise residential blocks in Area P11. These high-rise developments would block the wind, stopping it from advancing into further downstream areas (see Marker (1') in **Figure 8.1(b)**).

8.2.11 Owing to the consistent building morphology in the vicinity of the Application Sites, the local breezeway originating from Road D3-1 and leading to Europa Garden via the separation between Areas P9 and P10 and along Road D1-2 continues to function effectively under the Proposed Scheme, as identified in the Approved Scheme (see Marker (2') in **Figure 8.1(b)**).

8.2.12 Under the Proposed Scheme, the separation between Areas A1, A3, P12 and P14, and Application Sites K1, K2, Area A2 and Area P15 (Separations 3-1 to 3-4 in **Figure 8.1(b)**) continues to serve as a major north-south district-wide wind breezeway, linking Fung Kong Shan with Fanling Highway. This breezeway already existed under the Approved Scheme and remains unchanged (see Marker (3') in **Figure 8.1(b)**). In addition, terraced podiums are provided beneath the proposed domestic towers on both sides of Separations 3-1 to 3-3 and on the eastern side of Separation 3-4. These terraced podium designs, which were also incorporated under the Approved Scheme, would facilitate the passage of northerly prevailing winds and enhance the overall effectiveness of this major breezeway.

8.2.13 The podiums in Application Site K2 and Area A5 have retained ground-level setbacks under the Proposed Scheme, creating ground-level separations that form a wind breezeway by and large the same as under the Approved Scheme. This breezeway, which originates from Application Site K1 and Area A4, flows along Road D2-1 towards Fanling Highway and remains effective under the Proposed Scheme (see Marker (4') in **Figure 8.1(b)**).

8.2.14 Similar to the Approved Scheme, the northerly wind path under the Proposed Scheme remains effective. After skimming over the proposed schools in Area P22, the wind flows along Road L6-2 towards Kwu Tung Station and continues through the separations between Area A5/ Application Site K6, and Areas P16/P17 (Separations 4-1 and 4-2 in **Figure 8.1(b)**), eventually reaching Fanling Highway (see Marker (5') in **Figure 8.1(b)**).

8.2.15 Under the Proposed Scheme, and similar to the Approved Scheme, Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway. It directs northerly wind from Crest Hill towards Application Site K4 (see Marker (6') in **Figure 8.1(b)**). Another branch of northerly wind flows along Road P2-1 towards Road P2-2, thereby maintaining a favorable wind environment near Application Sites K10 to K12 and Application Site K4.

8.2.16 Under the Proposed Scheme, the Sheung Yue River continues to serve as another major district-wide wind breezeway, as it did under the Approved Scheme. Northerly wind originating from the areas near Ho Sheung Heung flows along the river, reaching the downwind areas near Area Ar34 and continuing towards Area P19 (see Marker (7') in **Figure 8.1(b)**).

Differences in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.17 Under the Proposed Scheme, additional podiums are introduced in most Application Sites, together with a relaxation of building height restrictions of up to 15m across most Application Sites. This results in taller domestic blocks compared with the Approved Scheme.

8.2.18 It is anticipated that the Proposed Scheme would generate wind wakes of greater extent and coverage in downstream areas. In particular, podium height in Application Site K1 would rise from 24mPD to 35mPD, while podium height in Application Site K2 increased from 26.5mPD to 36.5mPD.

8.2.19 These changes mentioned in the above paragraph are expected to induce larger wind wakes to the downstream areas. Consequently, northerly winds towards Kwu Tung Station and further downwind areas are likely to be weakened. The cumulative wind impacts on downwind Areas P17 and Ar32 from Application Sites K4, K5 and K6, as well as on Area P15 immediately downwind of Application Sites K1 and K2, are also anticipated to increase. Nevertheless, the relaxation in building height restrictions provides greater flexibility for incorporating air ventilation design measures. Appropriate design strategies should therefore be explored in future detailed developments within these Application Sites to enhance wind permeability and mitigate the induced wind wakes.

8.2.20 Under the Proposed Scheme, the wind environment at Areas A2, A4 and P22 is expected to weaken under northerly winds. This is primarily due to stronger wind wakes generated by the Development Proposals in the upwind Application Site K3, arising from the introduction of podiums and taller domestic buildings. Nevertheless, the increased building height difference between the proposed schools in Area P22 and the blocks in the adjacent Application Site K4 is expected to produce stronger downwash winds along Road L6-3 compared with the Approved Scheme.

8.2.21 Similarly, the maximum building heights within Application Sites K7 to K11 are slightly relaxed under the Proposed Scheme, with extensive podiums also incorporated. These changes are expected to result in larger wind wake areas and greater cumulative wind impacts on the downwind Areas Ar32 and Ar34 compared with the Approved Scheme.

8.2.22 Under the Proposed Scheme, only minor changes to the local wind flow patterns are anticipated, despite some modifications in building morphologies within the Application Sites. The building footprints, orientations, and arrangements of the domestic blocks remain largely unchanged, with adequate separations retained between tower blocks to enhance wind permeability and minimize wind impacts. In addition, most podiums maintain separations of at least 15m to further improve wind permeability. In particular, the proposed layouts in Application Sites K2 and Area A5 retain ground-level setbacks. These setbacks increase the separation distances between buildings, thereby extending the length and effectiveness of the identified wind breezeways and wind paths. Importantly, the addition of podiums and the relaxation of building height restrictions do not obstruct the major identified wind breezeways, with the requirements for Non-Building Areas (NBAs) continuing to be fully complied with. Overall, the district-wide wind flow patterns are generally maintained compared with the Approved Scheme.

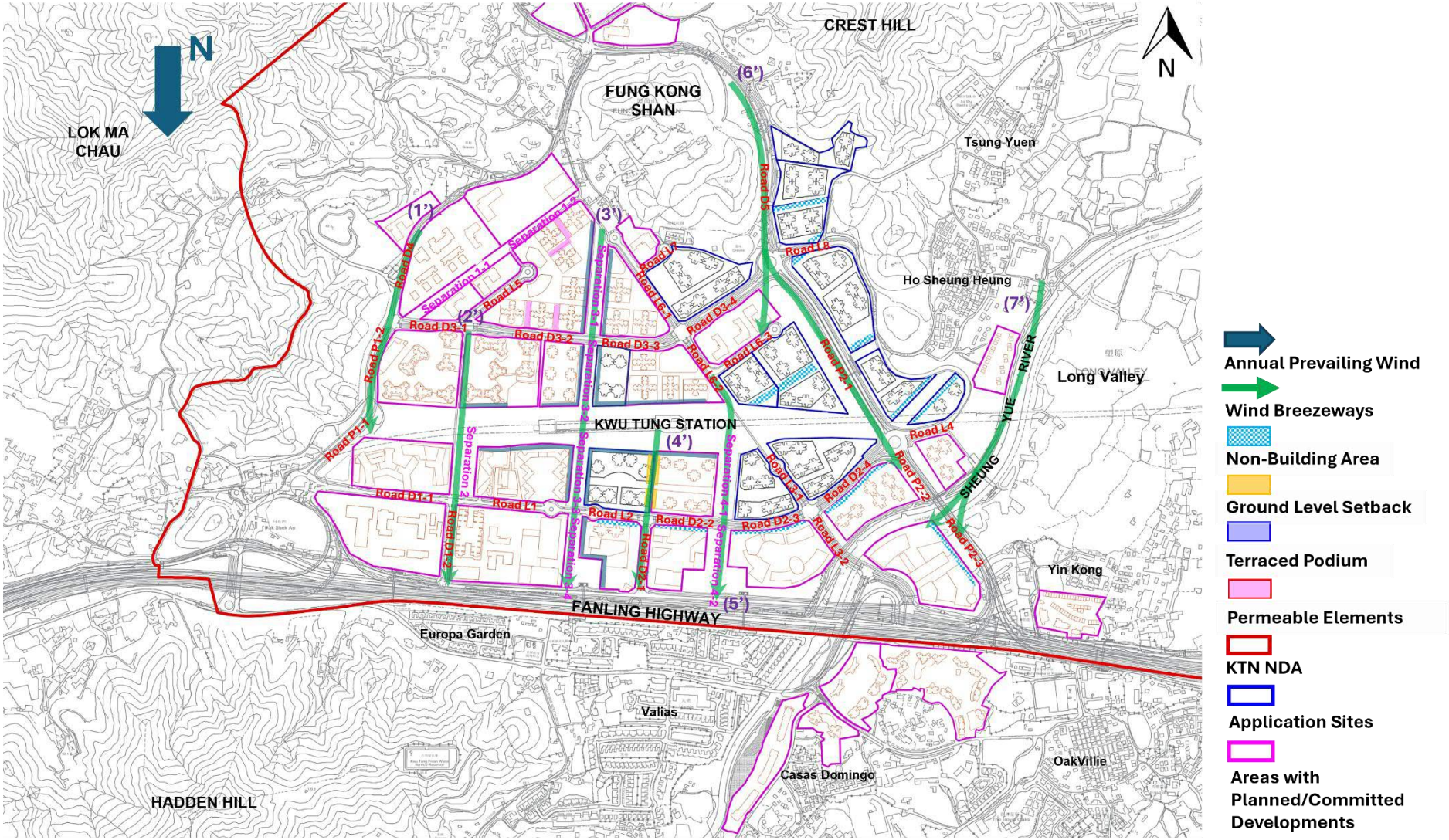


Figure 8.1(b) Wind Flow under the N Annual Prevailing Wind for the Proposed Scheme

Under ENE Annual Prevailing Wind Direction

Approved Scheme

8.2.23 One pathway of the ENE annual prevailing wind originating from Fung Kong Shan would flow along Road D4, passing between the planned school in Area P4 and the planned GIC buildings in Area P5, before reaching the downwind areas (see Marker (1) in **Figure 8.2(a)**). Another pathway of the ENE wind would flow along the separations between Area A1, Areas P7/P8 and Areas P5/P6 (Separations 1-1 and 1-2 in **Figure 8.2(a)**), then continue towards Road P1-2 and further downwind areas (see Marker (2) in **Figure 8.2(a)**). These two ENE wind breezeways, as annotated in Markers (1) and (2), would help maintain good air ventilation performance in the vicinity of Area A1 and Areas P4 to P8.

8.2.24 The ENE wind originating from Tsung Yuen would flow along Road L8 between Application Sites K9 and K10, then continue along Road D3-4 towards Application Site K1. From there, the wind would be directed along Road D3-3 (see Marker (3) in **Figure 8.2(a)**). It should be noted that two strips of Non-Building Areas (NBAs) are incorporated at the southern boundary of Application Site K9 and the northern boundary of Application Site K10. These NBAs widen Road L8 and facilitate better flow of the ENE prevailing wind.

8.2.25 Good penetration of the ENE annual prevailing wind is observed from the village houses at Ho Sheung Heung towards the Kwu Tung Station area. The wind passes through the Non-Building Area (NBA) within Application Site K10 and the NBA within Application Site K4. This major ENE breezeway is annotated as Marker (4) in **Figure 8.2(a)**.

8.2.26 The ENE annual prevailing wind originating from the southern regions of Ho Sheung Heung would penetrate Application Sites K11 and K12 through strips of Non-Building Areas (NBAs) and the building separations between the proposed blocks. The wind would then flow across Road P2 and continue along Roads D2-4, D2-3, D2-2 and L2, passing between Area A5, Application Sites K5 and K6, and Areas P15 to P18 (see Marker (5) in **Figure 8.2(a)**). It should be noted that NBAs are provided at the northern boundaries of Areas P15 to P18. These NBAs widen Roads D2-2 to D2-4 and L2, thereby enhancing the overall effectiveness of this wind breezeway.

8.2.27 The ENE wind originating from Long Valley flows along the Sheung Yue River between Areas Ar32 and P19, then continues towards Area P17 and Fanling Highway. This forms an effective district-wide ENE wind breezeway (see Marker (6) in **Figure 8.2(a)**).

8.2.28 Under the Approved Scheme, an analysis of building height variations between the Development Proposals within the Application Sites and the planned developments in the surrounding areas (see **Figure A2**) indicates that downwash wind is anticipated along Roads L6-1 and L6-2 near the Kwu Tung Station area under ENE prevailing winds. These downwash winds, induced by the differences in building heights, play an important role in maintaining the local wind environment near the Application Sites and their surrounding areas.

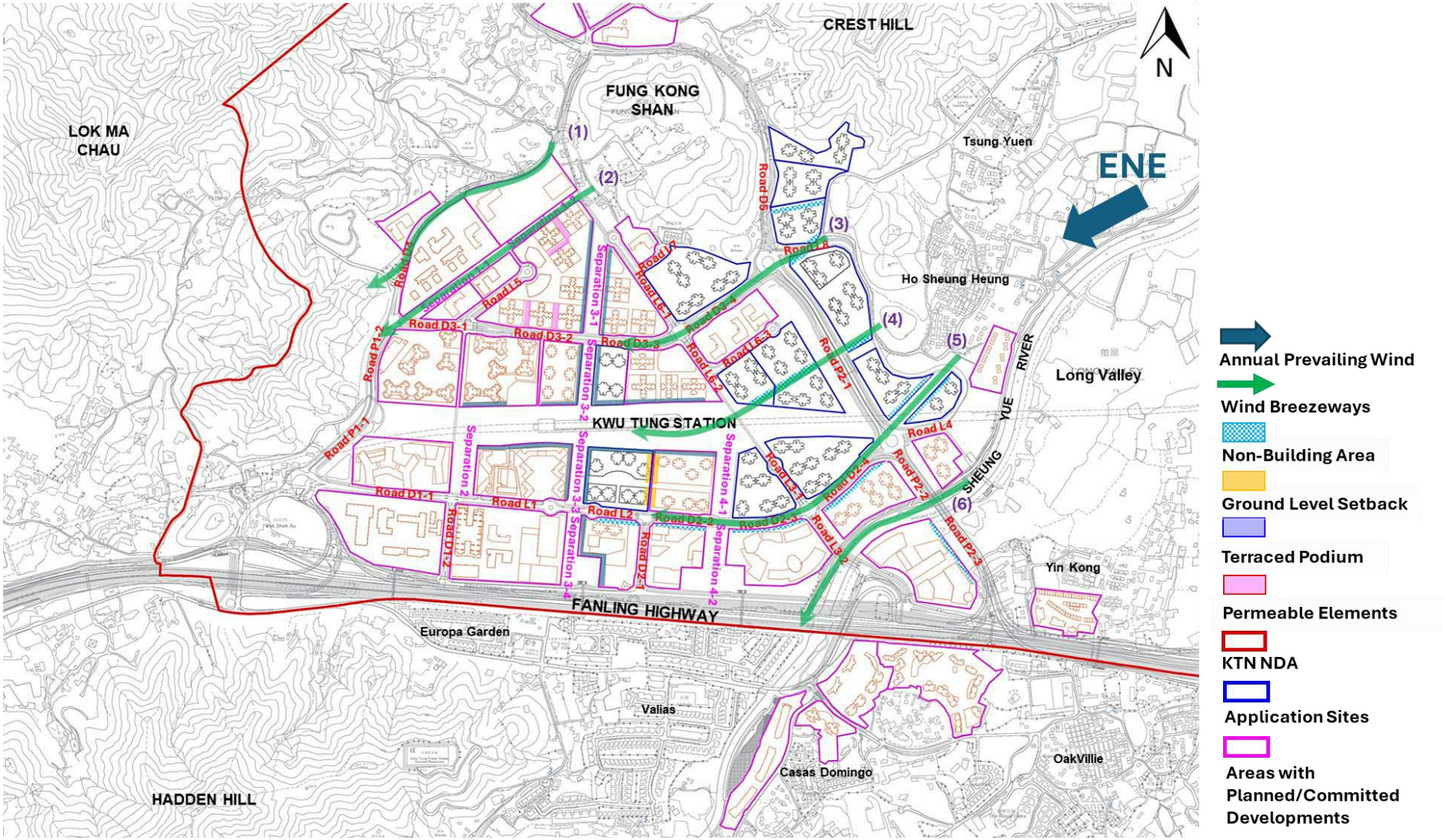


Figure 8.2(a) Wind Flow under the ENE Annual Prevailing Wind for the Approved Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.29 Under the Proposed Scheme, the pathway of the ENE annual prevailing wind originating from Fung Kong Shan remains unchanged from the Approved Scheme. The wind continues to flow along Road D4 between the planned school in Area P4 and the planned GIC buildings in Area P5 towards the downwind areas (see Marker (1') in **Figure 8.2(b)**). As there is no change in the surrounding building morphologies, another pathway of ENE wind from Fung Kong Shan flows along the separations between Area A1, Areas P7/P8 and Areas P5/P6 (Separations 1-1 and 1-2), then continues towards Road P1-2 and further downwind areas (see Marker (2') in **Figure 8.2(b)**). Similar to the Approved Scheme, these two ENE wind breezeways (Markers (1') and (2')) help maintain good air ventilation in the vicinity of Areas P4 to P8 under the Proposed Scheme.

8.2.30 Since there is no significant change in the domestic building arrangements, orientations, or locations of the Non-Building Areas (NBAs) within the upstream Application Sites K9 to K12, the ENE wind originating from Tsung Yuen continues to flow along Road L8 between Application Sites K9 and K10, then along Road D3-4 towards Application Site K1, before being directed along Road D3-3 under the Proposed Scheme (see Marker (3') in **Figure 8.2(b)**). The two strips of NBAs at the southern boundary of Application Site K9 and the northern boundary of Application Site K10 are retained. These NBAs continue to widen Road L8 and facilitate wind flow. Although the relaxation of maximum building heights and the addition of podiums in Application Sites K9 and K10 are expected to enhance wind channeling, the overall wind flow patterns remain largely unchanged under the Proposed Scheme as compared with the Approved Scheme.

8.2.31 Under the Proposed Scheme, good penetration of the ENE annual prevailing wind from the village houses at Ho Sheung Heung towards the Kwu Tung Station area can still be observed despite the addition of podiums and relaxation of maximum building heights in Application Sites K10 and K11. The wind continues to flow through the Non-Building Area (NBA) between the proposed blocks in Application Site K10 and the NBA within Application Site K4, with no observable change in the overall wind flow pattern. This major ENE breezeway is annotated as Marker (4') in **Figure 8.2(b)**.

8.2.32 Under the Proposed Scheme, the building arrangements and orientations of the domestic blocks within the upstream Application Sites K11 and K12 remain largely unchanged, with only additional podiums introduced in Application Site K11 that do not obstruct the major wind flow. The general placement of buildings in Application Sites K5 and K6 is also unchanged except for the addition of podiums for above-ground car parks. As a result, and similar to the Approved Scheme, the ENE annual prevailing wind originating from the southern regions of Ho Sheung Heung continues to penetrate Application Sites K11 and K12 through strips of Non-Building Areas (NBAs). The wind then flows across Road P2 and proceeds along Roads D2-4, D2-3, D2-2 and L2, passing between Area A5, Application Sites K2, K5 and K6, and Areas P15 to P18 (see Marker (5') in **Figure 8.2(b)**). The NBAs at the northern boundaries of Areas P15 to P18 are retained under the Proposed Scheme. As in the Approved Scheme, these NBAs widen Roads D2-4 to D2-2 and L2, thereby enhancing the effectiveness of this wind breezeway.

8.2.33 Under the Proposed Scheme, and as in the Approved Scheme, the ENE wind originating from Long Valley flows along the Sheung Yue River between Areas Ar32 and P19, then continues towards Area P17 and Fanling Highway. This corridor still serves as an effective district-wide ENE wind breezeway, helping to maintain the local wind environment (see Marker (6') in **Figure 8.2(b)**).

Differences in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.34 Compared with the Approved Scheme, the overall domestic building footprints within the Application Sites remain unchanged under the Proposed Scheme. However, more massive podiums for above-ground car parking have been introduced across most Application Sites, together with taller domestic blocks resulting from the relaxation of building height restrictions. As a result, the Proposed Scheme is expected to generate wind wakes of greater extent and coverage in the downwind areas (where certain potential wind sensitive areas are situated) compared with the Approved Scheme.

8.2.35 In particular, the larger wind wakes induced by the taller podiums in Application Sites K1 and K2 would affect the wind environment at Areas A3 and P12/P14, which are located immediately downstream. In Application Site K4, the increase in maximum building height from 85mPD to 95mPD and the addition of two-storey podiums are expected to create cumulative wind wakes of greater extent, affecting Areas A4 and the Kwu Tung Station nearby areas. In addition, the relaxation of maximum building heights in Application Sites K5 and K6 from 80mPD to 85mPD, together with the addition of podiums, would further increase wind blockage and reduce wind availability at its downwind Area A5.

8.2.36 Although the building arrangements, orientations of domestic buildings as well as locations of Non-Building Areas (NBAs) within Application Sites K7 to K11 remain unchanged under the Proposed Scheme, the maximum building heights in these Application Sites have been relaxed, and podiums for above-ground car parks have been added. As a result, the Development Proposals within Application Sites K7 to K11 together with the Development Proposals within Application Site K3 are expected to generate larger wind wakes in the downstream areas — specifically Areas A2, P18 and P22 across Road P2-1 — compared with the Approved Scheme.

8.2.37 Under the Proposed Scheme, an analysis of building height variations between the Development Proposals within the Application Sites and the planned/committed developments in the surrounding areas (see **Figure A3**) shows that the differences in building heights are less pronounced due to the relaxation of maximum building heights. As a result, a slight reduction in the magnitude of downwash wind compared with the Approved Scheme is anticipated along Separation 4-1 as well as along Roads L6-1 and L6-2 under ENE prevailing winds. Nevertheless, vertical air movements are still expected to occur along the previously mentioned roads and separations, which play an important role in maintaining the local wind environment near the Application Sites and surrounding areas. Apart from the above, all newly added podiums have incorporated podium gardens of 5m in height aiming to enhance wind permeability. Most importantly, the addition of podiums and the relaxation of building height restrictions under the Proposed Scheme do not obstruct the major identified ENE wind breezeways, and the requirements for Non-Building Areas (NBAs) continue to be fully complied with. In view of this, the district-wide wind flow patterns are generally maintained compared with the Approved Scheme under the ENE prevailing wind.

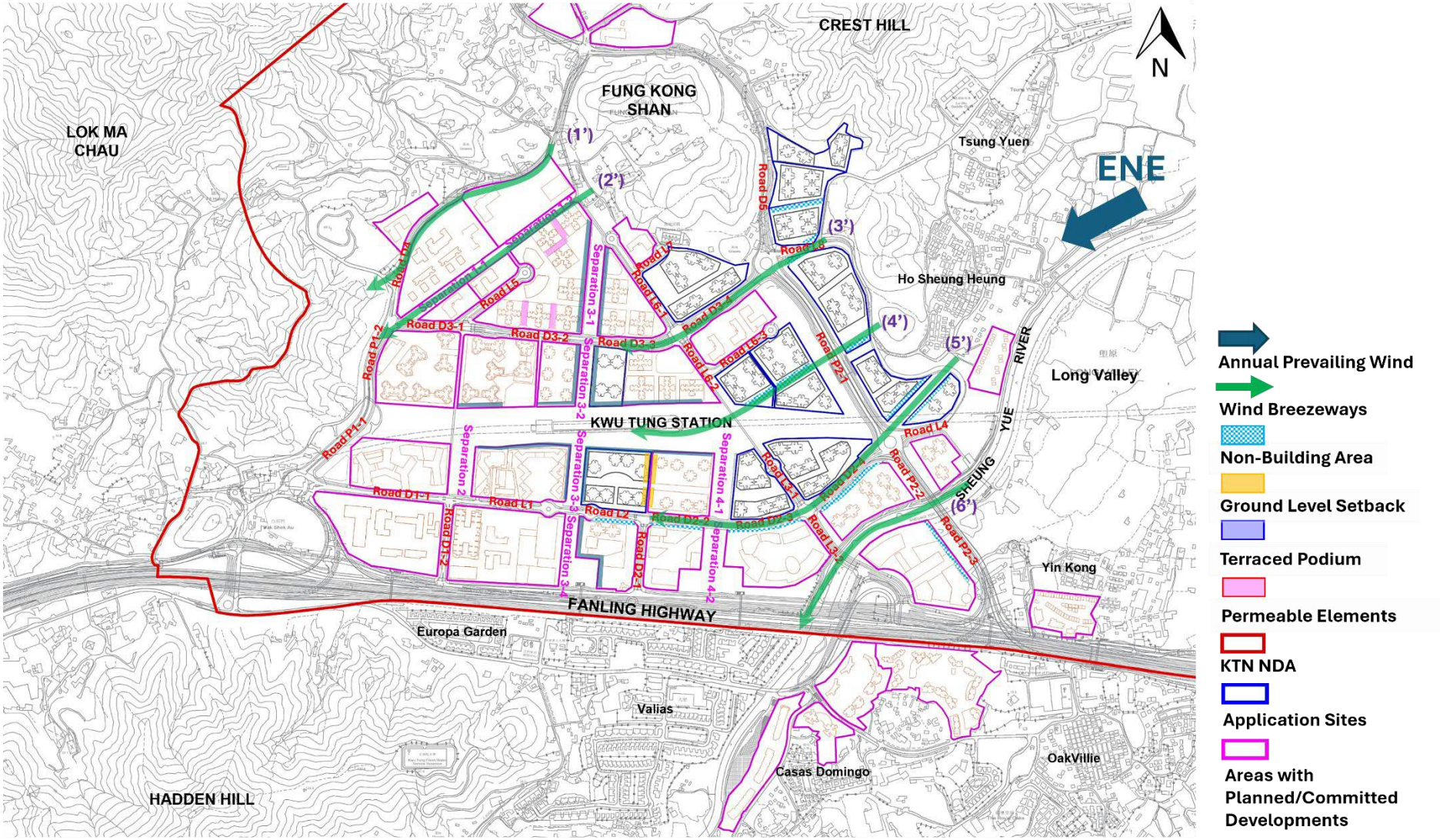


Figure 8.2(b) Wind Flow under the ENE Annual Prevailing Wind for the Proposed Scheme

Under E Annual and Summer Prevailing Wind Direction

Approved Scheme

8.2.38 An easterly wind path originating from the village houses at Ho Sheung Heung would be divided into two streams. One stream would flow through Road L8, which is located between Application Sites K9 and K10, and then continue along Roads D3-4, D3-3 and D3-2. The other stream would flow along the western side of Application Site K3 towards the school site in Area P18. To facilitate the penetration of the prevailing easterly wind, two strips of Non-Building Areas (NBAs) are incorporated along the southern boundary of Application Site K10 and the northern boundary of Application Site K11. These NBAs would widen Road L8 and ensure unobstructed wind flow (see Marker (1) in **Figure 8.3(a)**).

8.2.39 The Non-Building Areas (NBAs) provided within Application Sites K10 and K4 would facilitate the flow of the prevailing easterly wind from Ho Sheung Heung across Road P2-1 towards Kwu Tung Station. These NBAs, which link Ho Sheung Heung and Kwu Tung Station, would form an effective wind breezeway that enhances the penetration of easterly wind (see Marker (2) in **Figure 8.3(a)**). In addition, the building morphology within Application Site K4 would divert a stream of easterly wind to flow along Road P2-1 towards Fung Kong Shan.

8.2.40 The prevailing easterly wind originating from the Sheung Yue River would penetrate the southern portion of Application Site K12 and continue across the east-west oriented wind breezeway along Kwu Tung Station towards Road P1-1 (see Marker (3) in **Figure 8.3(a)**).

8.2.41 The prevailing easterly wind from Road D2-4 will utilize Roads D1-1, L1, L2, D2-2 and D2-3 as the primary easterly wind pathway. This route facilitates wind flow between Application Sites K2, K5 and K6 and Areas A5, P15 to P17, and Ar32 (see Marker (4) in **Figure 8.3(a)**). Non-Building Areas (NBAs) are provided along the northern boundaries of Areas P15 to P17 and Ar32. These NBAs would widen Roads L2, D2-2 to D2-4 and enhance the effectiveness of this easterly wind breezeway.

8.2.42 Fanling Highway, which runs adjacent to the southern boundary of the KTN NDA, serves as one of the major easterly wind breezeways that contributes to district-wide air ventilation. The easterly wind from the area near Area P21 (see Marker (6) in **Figure 8.3(a)**) merges with the easterly wind from Long Valley, which is channeled along the section of the Sheung Yue River between Areas Ar32 and P19 (see Marker (5) in **Figure 8.3(a)**). The combined wind stream then flows along Fanling Highway.

8.2.43 Under the Approved Scheme, the building height variations between the Development Proposals within the Application Sites and the planned developments in the surrounding areas (as shown in **Figure A2**) would induce downwash wind along Roads L6-1 and L6-2, as well as along the major separations between the Application Sites and the surrounding areas, namely Separation 3-2 and Separation 4-1, under the prevailing easterly wind. In addition, vertical air movements are anticipated along Road D2-1 and Separations 3-1, 3-4 and 4-2, which are located between the surrounding areas. These downwash winds/vertical air movements, induced by the differences in building heights, play an essential role in maintaining the local wind environment.

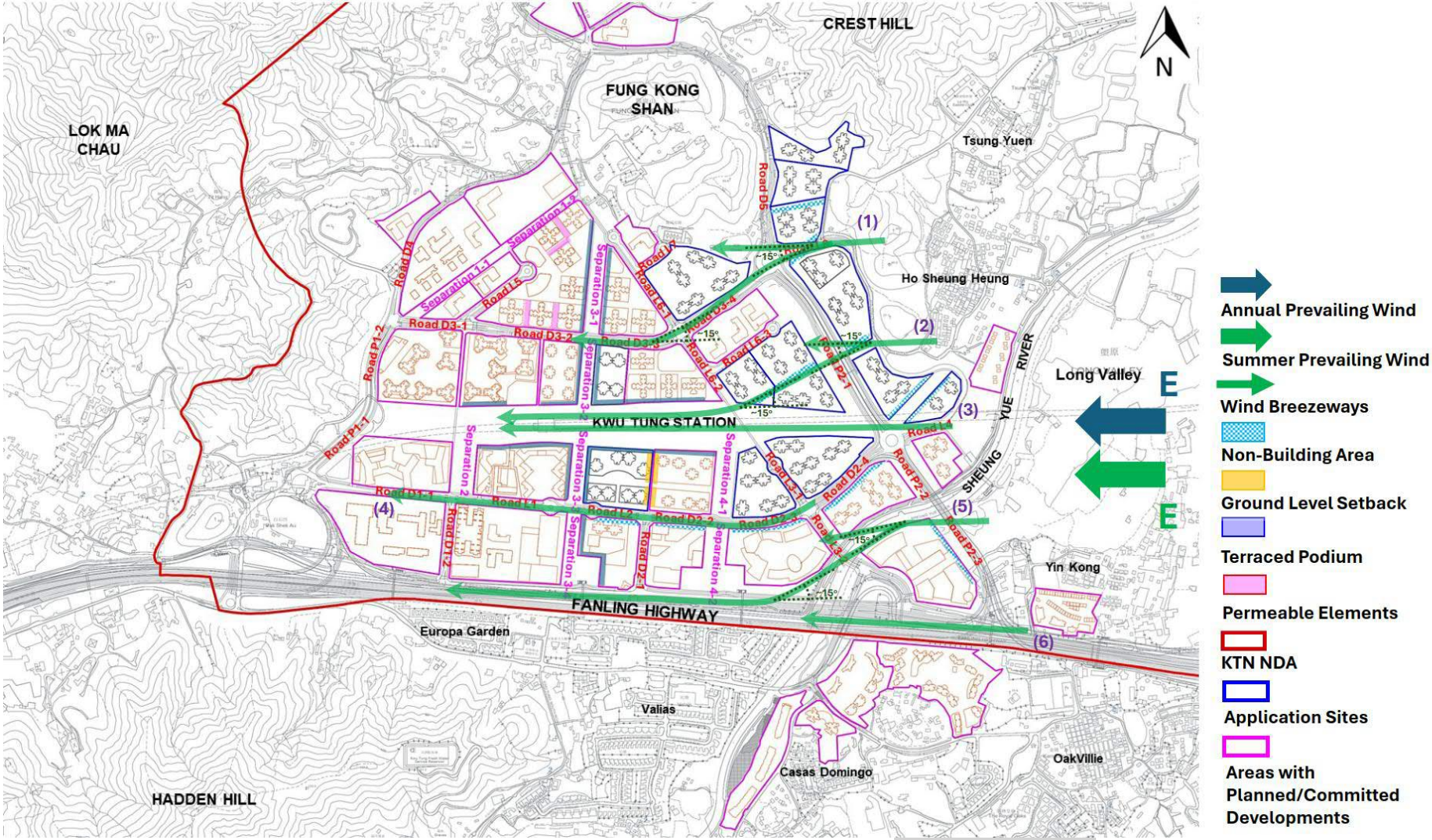


Figure 8.3(a) Wind Flow under the E Annual and Summer Prevailing Wind for the Approved Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.44 As the building morphologies in the surrounding areas are identical under both the Approved Scheme and the Proposed Scheme, the easterly wind path originating from the village houses at Ho Sheung Heung would remain unchanged. The wind would continue to flow along Road L8, which is located between Application Sites K9 and K10, and then divide into two streams. The descriptions set out in paragraph 8.2.38 for the Approved Scheme remain valid for the Proposed Scheme. To facilitate the smooth penetration of the prevailing easterly wind, two strips of Non-Building Areas (NBAs) are incorporated along the southern boundary of Application Site K9 and the northern boundary of Application Site K10. These NBAs would widen Road L8 (see Marker (1') in **Figure 8.3(b)**).

8.2.45 The easterly wind flow patterns through the Non-Building Areas (NBAs) within Application Site K10 and Application Site K4, from Ho Sheung Heung towards Kwu Tung Station across Road P2-1, remain unchanged under the Proposed Scheme compared with the Approved Scheme. These NBAs, which link Ho Sheung Heung and Kwu Tung Station, would continue to form an effective breezeway that enhances the penetration of the prevailing easterly wind (see Marker (2') in **Figure 8.3(b)**). As in the Approved Scheme, the introduction of podiums within Application Site K4b under the Proposed Scheme would result in improved diversion of a stream of easterly wind along Road P2-1 towards Fung Kong Shan.

8.2.46 The two district-wide easterly breezeways identified in the Approved Scheme remain unchanged and effective under the Proposed Scheme. The areas along Kwu Tung Station and Fanling Highway, both aligned in an east-west direction, would continue to support district-wide air ventilation performance (see Markers (3') and (6') in **Figure 8.3(b)**).

8.2.47 The stream of prevailing easterly wind from Road D2-4 that flows along Roads D2-3, D2-2, L2, L1 and D1-1 under the Approved Scheme remains unchanged under the Proposed Scheme (see Marker (4') in **Figure 8.3(b)**). As in the Approved Scheme, the incorporation of Non-Building Areas (NBAs) along the northern boundaries of Areas P15 to P17 and Ar32 would widen Roads L2, D2-2 to D2-4 and enhance the effectiveness of this easterly wind breezeway under the Proposed Scheme.

8.2.48 With the building morphologies in the areas adjacent to the Application Sites remaining unchanged, the easterly wind from Long Valley would continue to be channeled along the section of the Sheung Yue River lying between Areas Ar32 and P19. This stream would then merge with the easterly wind originating from the Yin Kong area near Area P21, and the combined flow would continue along Fanling Highway (see Markers (5') and (6') in **Figure 8.3(b)**).

8.2.49 By investigating the building height variations of the Development Proposals within the Application Sites and the planned developments at the surrounding areas under the Proposed Scheme in **Figure A3**, locations where downwash wind is anticipated to occur under the Proposed Scheme are generally consistent with the Approved Scheme which are along Roads L6-1, L6-2, D2-1 as well as along the major separations: Separations 3-1, 3-2, 3-4, 4-1 and 4-2, formed in under the E prevailing wind for the Proposed Scheme.

Differences in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.50 Similar to the situation under the ENE prevailing wind, the overall building footprints, orientations and arrangements of the domestic blocks within the Application Sites remain unchanged under the Proposed Scheme compared with the Approved Scheme. However, the domestic blocks would be taller due to the relaxation of Building Height Restrictions (BHR). In addition, higher podiums have been introduced across most Application Sites to accommodate aboveground car parks and Public Transport Interchanges (PTIs). As a result, under the prevailing easterly annual and summer winds, the Proposed Scheme is anticipated to generate wind wakes with greater extent and coverage in the downwind areas compared with the Approved Scheme. In particular, the wind environment at the potential wind-sensitive receivers in Areas A2 to A5, P12 and P22, which are located immediately downstream of Application Sites K1 to K5 and K10, would be more significantly influenced by the larger wind wakes induced by the taller domestic buildings (within Application Sites K3 to K5 and K10) and the additional elevated podiums (within Application Sites K1 to K5 and K10) under the Proposed Scheme. However, it is worthwhile mentioning that the newly introduced podiums

maintain separations of at least 15m between them to enhance wind permeability and promote wind penetration through the Application Sites.

8.2.51 Within Application Sites K8 to K10, a slight relaxation of building heights and the adoption of podium designs (instead of podium-free designs) are proposed. Consequently, slightly stronger wind channeling effects are expected along the Non-Building Areas (NBAs) within these sites. However, larger wake zones are also anticipated under the Proposed Scheme, which may affect the downwind areas, particularly Areas P18 and P22.

8.2.52 Due to the increased building heights within the Application Sites, the differences in building height variations between the Development Proposals and the planned/committed developments in the surrounding areas are less pronounced than under the Approved Scheme. As a result, downwash wind would still occur but would be less strengthened. Downwash wind is nevertheless anticipated along Roads L6-1 and L6-2, as well as along Separation 4-1. These induced downwash winds remain essential in maintaining the local wind environment at and near the Application Sites under the Proposed Scheme.

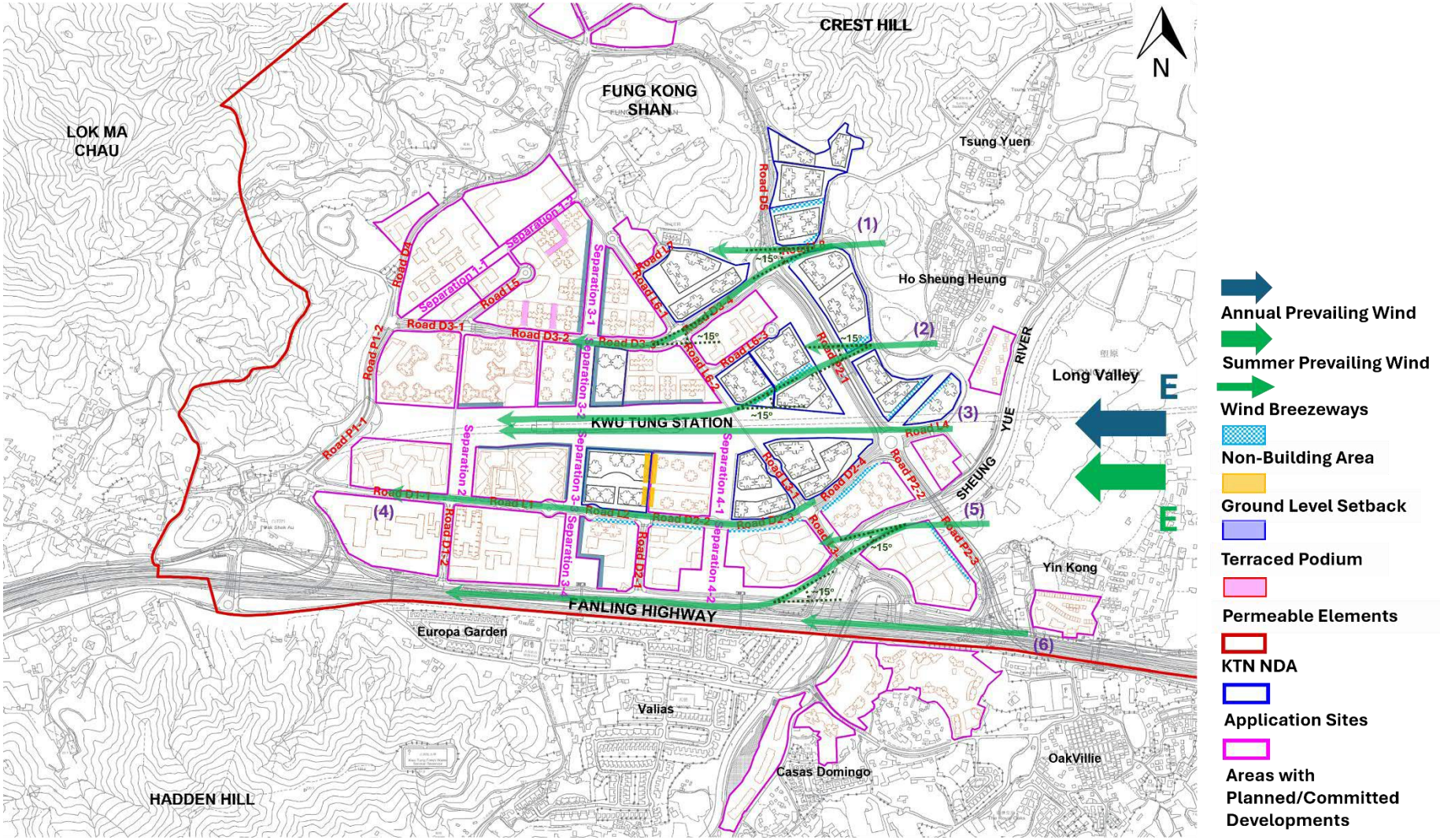


Figure 8.3(b) Wind Flow under the E Annual and Summer Prevailing Wind for the Proposed Scheme

Under S Summer Prevailing Wind Direction

Approved Scheme

8.2.53 Under the Approved Scheme, southerly winds are largely sheltered by the committed and planned high-rise residential blocks in Areas P11 and P13. The wind channels westward along Road P1-2, passes the western side of the committed school in Area P4, and continues northward towards Road D4 with minimal further obstruction (see Marker (1) in **Figure 8.4(a)**).

8.2.54 A local southerly wind path is identified originating from Europa Garden near the Fanling Highway and flowing towards Areas P7 and P8 (see Marker (2) in **Figure 8.4(a)**). This wind stream travels along Road D1-2 between Areas P13 and P14, as well as through the separation between Areas P11 and P12 (Separation 2), before reaching the Kwu Tung Station area. After passing the separation between Areas P9 and P10, the wind continues towards Road D3-1 and the planned schools in Areas P7 and P8.

8.2.55 The series of separations (Separations 3-1 to 3-4 in **Figure 8.4(a)**) located between Areas A1/A3/P12/P14 and Area A2/Application Sites K1 and K2/Area P15 form a major district-wide north-south wind breezeway. This breezeway links Fung Kong Shan with the Fanling Highway and helps maintain a favorable wind environment around Application Sites K1 and K2, as well as in Areas A1–A3, P12, P14, and P15 (see Marker (3) in **Figure 8.4(a)**).

8.2.56 One southerly wind stream from the Fanling Highway flows along Road D2-1 between Areas P15 and P16, then continues towards the Kwu Tung Station by passing through the space between Area A5 and Application Site K2. Ground-level setbacks have been incorporated along the eastern boundary of Application Site K2 and the western boundary of Area A5 to facilitate the penetration of this southerly wind (see Marker (4) in **Figure 8.4(a)**).

8.2.57 After flowing through the separations between Areas A5/P16 and Application Site K5/Area P17 (Separations 4-1 and 4-2 in **Figure 8.4(a)**), the southerly wind continues towards the Kwu Tung Station and is then channeled along Road L6-2 (see Marker (5) in **Figure 8.4(a)**).

8.2.58 Due to the urban grid layout and building placement within Areas P17 and P19, the southerly wind diverges into two streams. The first stream flows along Road L3-1 (between Application Sites K5 and K6) and Road L3-2 (between Areas P17 and Ar32). The second stream is directed along the portion of the Sheung Yue River sandwiched between Areas Ar32 and P19 (see Marker (6) in **Figure 8.4(a)**).

8.2.59 Some weakening of the southerly wind is expected after it passes Application Sites K4, K5, and K6. Nevertheless, the Development Proposals in these sites adopt podium-free designs and are arranged in a scattered manner with generous building separations. These design measures help maintain southerly wind availability towards the downwind Application Sites K7 to K10. In addition, Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway that helps sustain the wind environment around Application Sites K3, K7–K9, and Area P22 (see Marker (7) in **Figure 8.4(a)**).

8.2.60 The Sheung Yue River functions as another important district-wide south-north wind breezeway. Southerly winds originating from the Fanling Highway and the areas near P19 and P21 (close to Yin Kong) flow along the river corridor, reaching the downwind areas near Area P20 and to the east of Ho Sheung Heung (see Marker (8) in **Figure 8.4(a)**).

8.2.61 Under the Approved Scheme, downwash effects associated with the southerly prevailing wind are observed at several locations, as indicated by the maximum building height distribution (see **Figure A2**). These include Roads D1-1, L2, D2-2, D2-3, and D2-4, where the planned buildings in Areas P13, P15–P17, and Ar32 are notably lower than those in Area P11, Application Site K2, Area A5, and Application Sites K5 and K6. Downwash is also anticipated along Roads D3-2 to D3-4 and in the vicinity of the Kwu Tung Station, where buildings facing the southerly wind are lower than those behind them.

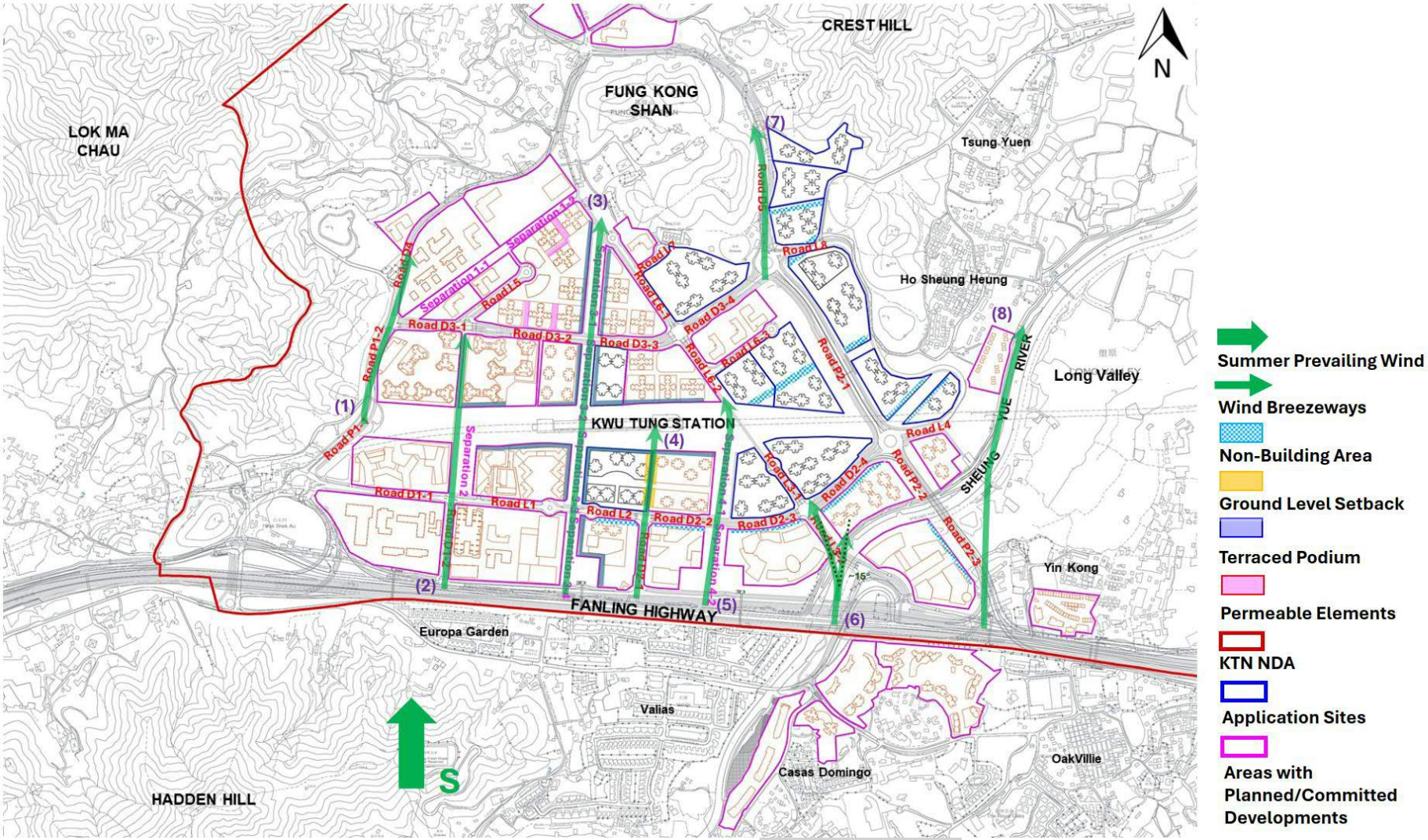


Figure 8.4(a) Wind Flow under the S Summer Prevailing Wind for the Approved Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.62 Under the Proposed Scheme, the surrounding building morphologies in Areas P4 to P14, located to the west of the Application Sites, remain unchanged from the Approved Scheme. Therefore, the wind flow patterns described in paragraphs 8.2.53 to 8.2.54 for the Approved Scheme remain valid (see Markers (1') and (2') in **Figure 8.4(b)**).

8.2.63 The series of separations (Separations 3-1 to 3-4 in **Figure 8.4(b)**) between Areas A1 and A2, Area A3 and Application Site K1, Area P12 and Application Site K2, and Area P14 and Area P15 continue to link Fung Kong Shan with the Fanling Highway. This forms a major district-wide north-south wind breezeway under the Proposed Scheme, identical to the Approved Scheme (see Marker (3') in **Figure 8.4(b)**). This breezeway helps maintain a favorable wind environment around Application Sites K1 and K2, as well as Areas A1–A3, P12, P14, and P15.

8.2.64 The ground-level setbacks within Application Site K2 and Area A5, which serve as a good air ventilation design measure, are retained under the Proposed Scheme. These setbacks, located along the eastern boundary of Application Site K2 and the western boundary of Area A5, provide a passage for southerly winds from the Fanling Highway to flow along Road D2-1 and reach the Kwu Tung Station area (see Marker (4') in **Figure 8.4(b)**).

8.2.65 Consistent with the Approved Scheme, southerly winds originating from the Fanling Highway would flow along the separations between Area A5/Application Site K5 and Areas P16/P17 (Separations 4-1 and 4-2 in **Figure 8.4(b)**). The wind would continue towards Kwu Tung Station and then be channeled along Road L6-2 (see Marker (5') in **Figure 8.4(b)**).

8.2.66 As the urban grid and building placement within Areas P17, P19, and Ar32 remain unchanged under the Proposed Scheme, the southerly wind from the Fanling Highway continues to diverge into two streams. The wind flow pattern in this area is therefore similar to that under the Approved Scheme (see Marker (6') in **Figure 8.4(b)**).

8.2.67 Similar to the Approved Scheme, the weakened southerly wind would flow along Road D5, which abuts Application Sites K7 to K9. This road serves as a major north-south wind breezeway that helps maintain the wind environment around Application Sites K3, K7–K10, and Area P22 under the Proposed Scheme (see Marker (7') in **Figure 8.4(b)**).

8.2.68 With no observable changes in building morphologies within Areas P19 and P21 under the Proposed Scheme, southerly winds originating from the Fanling Highway would flow across Road P2-3 to the northeast of Area P19 and continue along the Sheung Yue River towards the areas near Area P20 (see Marker (8') in **Figure 8.4(b)**).

Differences in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.69 The Proposed Scheme retains the key air ventilation design measures from the Approved Scheme, including terraced podiums in Application Sites K1 and K2, ground-level setbacks in Application Site K2, and Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12. These measures help maintain good air penetration. Nevertheless, the introduction of additional podiums and increases in building heights across most Application Sites are expected to generate stronger wind wakes. These changes may reduce the wind availability at the identified potential wind-sensitive receivers, namely Areas A2 and A4, Area P22, Kwu Tung Station, and Ho Sheung Heung village.

8.2.70 Although the terraced podium designs and the maximum building height restriction in Application Sites K1 and K2 remain unchanged, the slight increase in podium height under the Proposed Scheme are anticipated to generate stronger wind wakes. This would reduce wind availability at Kwu Tung Station and in Areas A2 and A4. In addition, cumulative wind wakes induced by the developments in Application Sites K1 and K2 may create potential wind impacts on the downwind Area A2 under southerly summer prevailing winds.

8.2.71 The maximum building heights within Application Sites K4a and K4b increase from 85mPD under the Approved Scheme to 95mPD under the Proposed Scheme. Together with the addition of three 2-storey podiums for above-ground car parking, these changes are expected to produce stronger wind wakes affecting the downwind Area P22.

8.2.72 The building footprints, orientation and arrangements of the domestic blocks and the strips of Non-Building Areas (NBAs) within Application Sites K11 and K12 remain unchanged.

However, the slight relaxation in building heights and the introduction of 2-storey podiums for car parking in Application Site K11 are expected to generate wind wakes that extend over a slightly larger area, potentially affecting the village houses in Ho Sheung Heung.

8.2.73 Despite the relaxations in maximum building heights and the adoption of two-storey podiums across most Application Sites, which are expected to generate wind wakes of greater extent and coverage compared to the Approved Scheme, the overall wind flow patterns under southerly summer prevailing winds are anticipated to remain largely the same. The footprints of the additional podiums have been minimized as far as practicable, while maintaining at least 15m separation between them and incorporating 5m podium gardens. The good air ventilation design measures from the Approved Scheme have been retained. With the identified wind breezeways remaining unobstructed and enhanced channeling effects, penetration of southerly prevailing winds is promoted. In addition, due to the greater height differences between Area P17 and Application Site K5, and Area Ar32 and Application Site K6, a slight enhancement in downwash effects is anticipated along Roads D2-3 and D2-4 compared with the Approved Scheme.

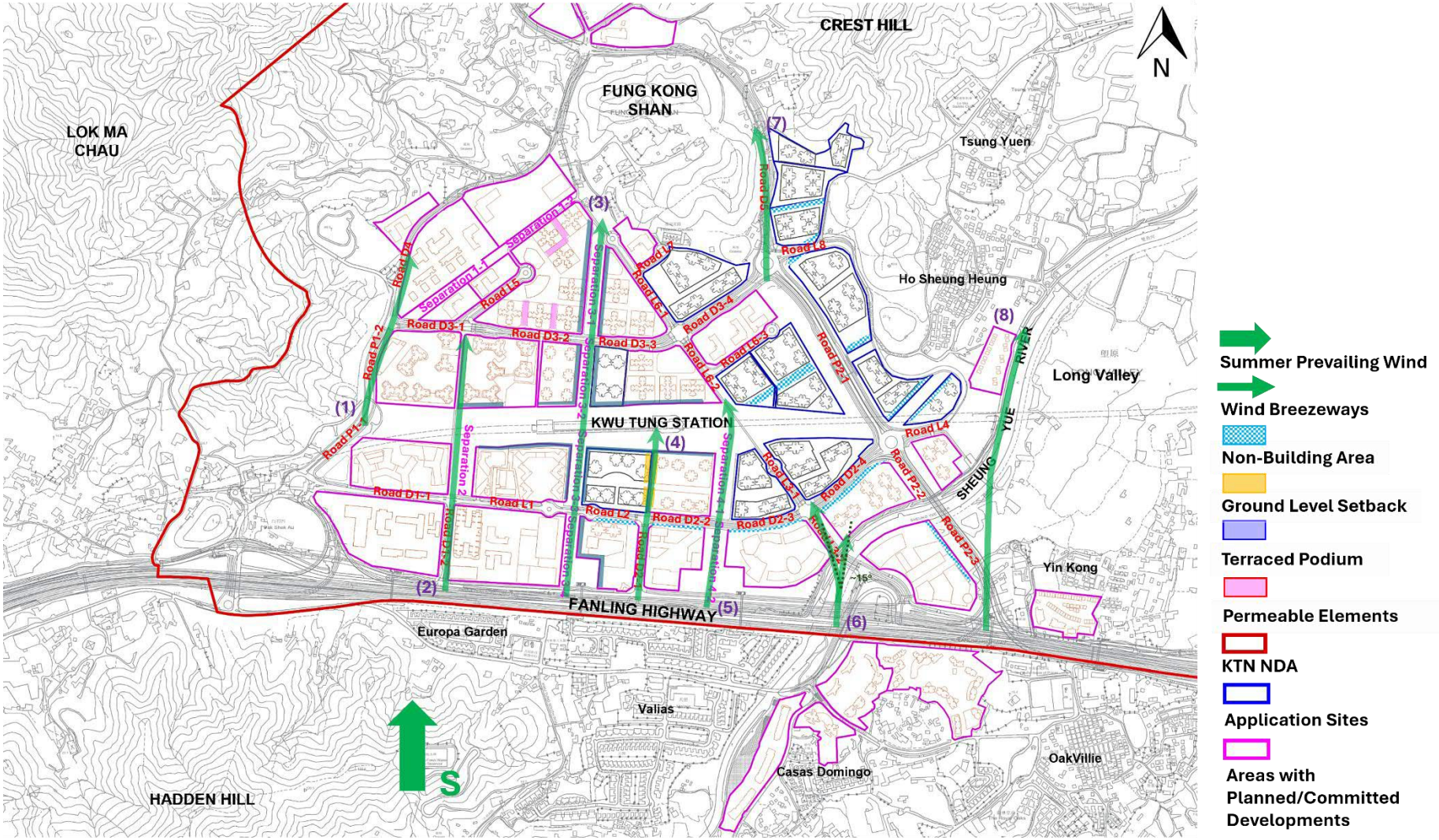


Figure 8.4(b) Wind Flow under the S Summer Prevailing Wind for the Proposed Scheme

Under SW Summer Prevailing Wind Direction

Approved Scheme

8.2.74 Under the Approved Scheme, the majority of the proposed buildings within the Application Sites and the planned/committed developments in the surrounding areas are not oriented in a southwest-northeast (SW-NE) direction. As a result, elongated and continuous air pathways penetrating the Application Sites are generally not observed under the southwesterly (SW) summer prevailing wind. Nevertheless, several localized wind paths can still be identified after the wind is sheltered by the Development Proposals.

8.2.75 Three major SW summer wind breezeways are identified. The first is Road D4, which flows between the planned school in Area P4 and the GIC blocks in Area P5 (see Marker (1) in **Figure 8.5(a)**). The second follows the separations (Separation 1-1 and Separation 1-2) between Areas P5/P6 and Areas P7/P8/A1, extending towards Fung Kong Shan (see Marker (2) in **Figure 8.5(a)**). The third SW wind path originates from the Fanling Highway, travels between Areas Ar32 and P19 and alongside Area Ar34, crosses the Sheung Yue River, and proceeds towards Long Valley (see Marker (9) in **Figure 8.5(a)**).

8.2.76 Dominated by the urban grid layout, SW winds flowing along the Fanling Highway diverge into several streams that enter Road D1-2, Separation 3-4, Road D2-1, and Separation 4-2. These streams help promote the wind environment in the vicinity of Areas P13 to P17 (see Marker (8) in **Figure 8.5(a)**).

8.2.77 After being sheltered by the proposed residential developments in Area A2, SW winds flow along Road L7, which abuts the southern boundary of Area P18 and the northwestern boundary of Application Site K3 (see Marker (3) in **Figure 8.5(a)**). SW winds from Road D3-3 near Application Site K1 and Area A4 continue along Road D3-4. Two strips of Non-Building Areas (NBAs) at the southeast tip of Application Site K9 and the northwest tip of Application Site K10 help widen Road L8, thereby enhancing the penetration of this SW prevailing wind (see Marker (4) in **Figure 8.5(a)**). Another SW wind path leading towards Application Site K10 is identified along Road L6-3, located between Area P22 and Application Site K4 (see Marker (5) in **Figure 8.5(a)**).

8.2.78 Two additional SW wind paths directed towards the Ho Sheung Heung area are identified. The first originates from Kwu Tung Station area and flows along the SW-NE aligned Non-Building Areas (NBAs) within Application Sites K4 and K10 before reaching the village houses of Ho Sheung Heung (see Marker (6) in **Figure 8.5(a)**). The second path starts from Road D2-3 between Area P17 and Application Site K5, enters Road D2-4, and continues along the separation between Application Sites K11 and K12 towards the Ho Sheung Heung area (see Marker (7) in **Figure 8.5(a)**).

8.2.79 Under the Approved Scheme, downwash effects associated with the SW prevailing wind are observed at several locations based on the building height distribution (see **Figure A2**). These include Roads D1-1, L2, D2-2, D2-3, D2-4, and L4, where the planned buildings in Areas P13, P15–P17, Ar32, and Ar34 are lower than those in Areas P11 and A5 and Application Sites K2, K5, K6, and K12. Downwash is also anticipated along Roads D3-2 and D3-3, where buildings in Areas P10, A3, A4, and Application Site K1 are lower than those in Areas A1 and A2. Furthermore, downwash effects occur near the Kwu Tung Station in the vicinity of Areas P10/P12/A3 and Areas A4/A5, as well as along Road P2-1, where the proposed/planned developments in Area P22 and Application Sites K4 and K6 have lower building heights than those in Application Sites K10 and K11.

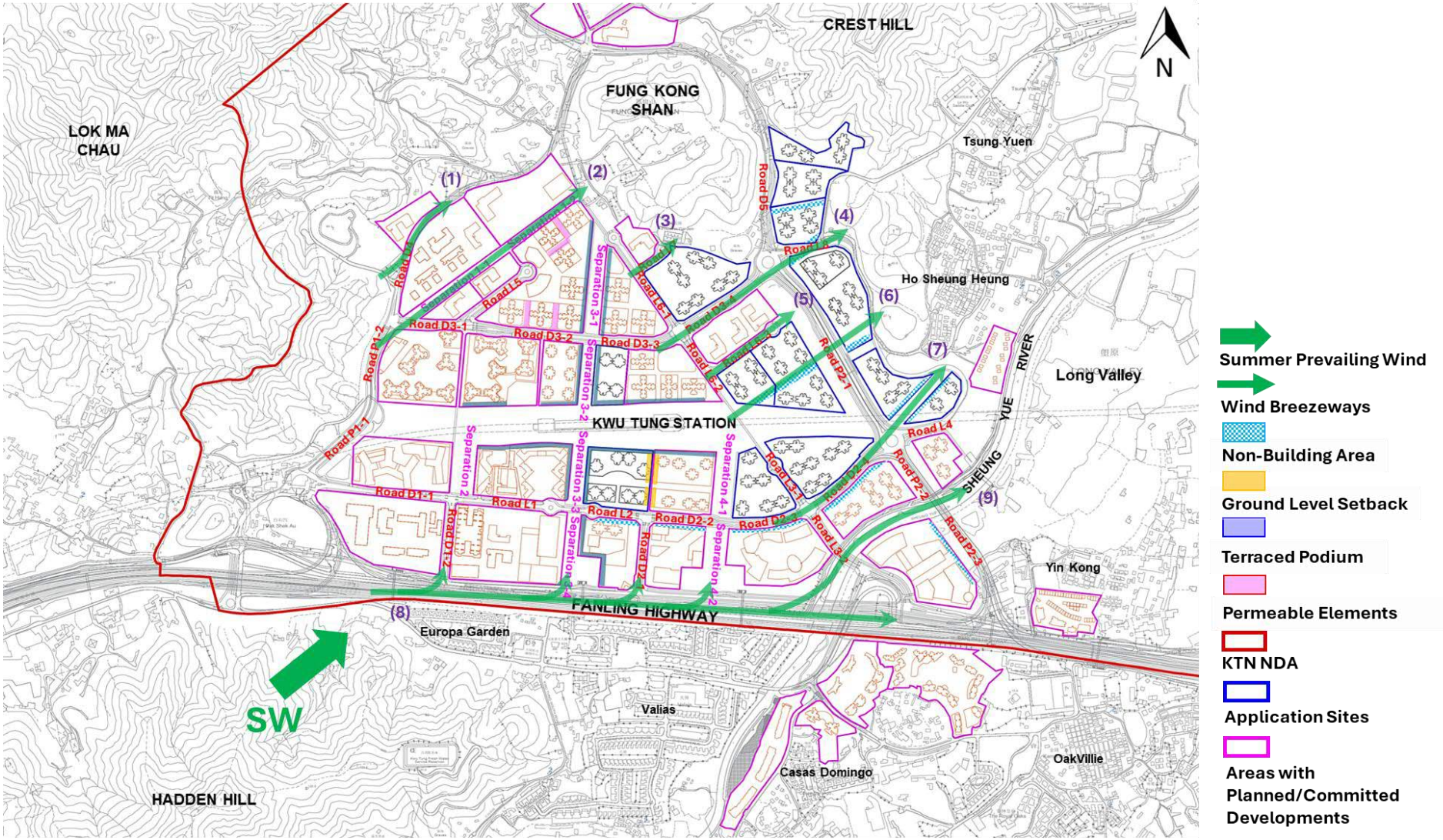


Figure 8.5(a) Wind Flow under the SW Summer Prevailing Wind for the Approved Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.80 Under the Proposed Scheme, there are no changes in building morphologies within Areas P4–P8, A1, P13–P17, and P19. As a result, the three major SW summer wind breezeways identified in the Approved Scheme remain effective (see Markers (1'), (2'), and (9') in **Figure 8.5(b)**). Similarly, the SW winds flowing along the Fanling Highway continue to diverge into several streams that enter Road D1-2, Separation 3-4, Road D2-1, and Separation 4-2 (see Marker (8') in **Figure 8.5(b)**). Therefore, the descriptions of wind flow patterns along these breezeways and the Fanling Highway provided in paragraphs 8.2.75 and 8.2.76 for the Approved Scheme remain valid under the Proposed Scheme.

8.2.81 Consistent with the Approved Scheme, SW prevailing wind weakened by the high-rise buildings in Area A2 would continue to flow along Road L7, which lies between Area P18 and Application Site K3 (see Marker (3') in **Figure 8.5(b)**). The two strips of Non-Building Areas (NBAs) within Application Sites K9 and K10, which widen Road L8 and enhance penetration of the SW prevailing wind, are retained under the Proposed Scheme. These features help maintain a favorable wind environment in the vicinity of Application Sites K3, K9, K10, and Area P22 (see Marker (4') in **Figure 8.5(b)**). In addition, the SW wind stream originating from Area A4, which flows across Road L6-2 along the northwestern boundary of Application Site K4 and continues along Road L6-3 towards Application Site K10, remains effective under the Proposed Scheme (see Marker (5') in **Figure 8.5(b)**).

8.2.82 The two SW wind paths directed towards the Ho Sheung Heung area under the Proposed Scheme are unchanged from the Approved Scheme. The first path originates from the Kwu Tung Station area, flows along the SW-NE aligned Non-Building Areas (NBAs) within Application Sites K4 and K10, crosses Road P2-1, and proceeds towards the village houses of Ho Sheung Heung (see Marker (6') in **Figure 8.5(b)**). The second path is formed by Road D2-3, Road D2-4, and the separation between Application Sites K11 and K12, allowing the SW wind stream to reach the areas near Ho Sheung Heung (see Marker (7') in **Figure 8.5(b)**).

Differences in Pedestrian Wind Environment as compared to the Approved Scheme

8.2.83 Due to the relaxation in maximum building heights and the addition of two-storey podiums for above-ground car parking in most Application Sites, the Proposed Scheme is expected to induce wind wakes of greater extent and coverage compared to the Approved Scheme. These enhanced wind wakes would further affect the wind environment at the identified potential wind-sensitive receivers located downwind under the southwesterly (SW) prevailing wind, namely Areas A2 and A4, the Kwu Tung Station, and Ho Sheung Heung village.

8.2.84 The slight increase in podium height within Application Sites K1 and K2 would weaken the southwesterly prevailing wind reaching the downwind areas, resulting in larger wind wakes that affect Areas A2 and A4 as well as the Kwu Tung Station. Cumulative wind wakes impacting Area A4 from the combined developments in Application Sites K1 and K2 are anticipated to be more pronounced under SW summer prevailing winds.

8.2.85 Although the building arrangements, orientations of domestic blocks, and locations of Non-Building Areas (NBAs) within Application Sites K10 to K11 remain unchanged, the relaxation in building heights (5mPD for both sites) and the introduction of podiums to accommodate public transport interchanges and above-ground car parking would generate wind wakes of greater extent and coverage in the downwind Ho Sheung Heung area, thereby reducing wind availability compared to the Approved Scheme. It should be noted, however, that despite the addition of an extra podium in Application Site K10, the height of the podiums has been reduced from 27mPD to 24mPD under the Proposed Scheme. Consequently, no observable increase in impacts casted by wind wakes induced by Development Proposals from Application Site K10 on Ho Sheung Heung is expected under SW summer prevailing winds.

8.2.86 Owing to the more pronounced differences in building heights between the Application Sites and the surrounding planned/committed developments under the Proposed Scheme, the magnitude of downwash effects is expected to be slightly stronger than under the Approved Scheme. This enhanced downwash is anticipated along Roads D2-3, D2-4, and D5 as well as Separation 4-2, where the planned buildings in Application Sites K5, K6, and K7–K9 have relaxed maximum building height restrictions.

8.2.87 It should be noted that under the south westerly summer prevailing wind, the height difference between Application Sites K4 and K10 has been reduced from 25mPD to 20mPD. As a result, the magnitude of downwash wind along Road P2-1 abutting Application Site K4 is expected to weaken slightly. Nevertheless, this modification is minor and will not result in significant changes to vertical air movements, thereby maintaining air ventilation performance in the surrounding areas.

8.2.88 Despite the anticipated wind wakes of greater extent and coverage in the downwind areas due to increased building heights and the addition of two-storey podiums, the Proposed Scheme retains all the good air ventilation design measures from the Approved Scheme. These include terraced podiums in Application Sites K1 and K2, ground-level setbacks in Application Site K2, and Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12. Furthermore, the footprints of the additional podiums have been minimized as far as practicable, while maintaining at least 15m separation between them and incorporating 5m podium gardens to promote wind penetration and enhance site permeability. Most importantly, the added podiums and relaxed building heights do not obstruct the major identified SW wind breezeways. In view of the above, the district-wide wind flow patterns and the overall pedestrian wind environment around the Application Sites are expected to remain generally comparable to those under the Approved Scheme for southwesterly prevailing winds.

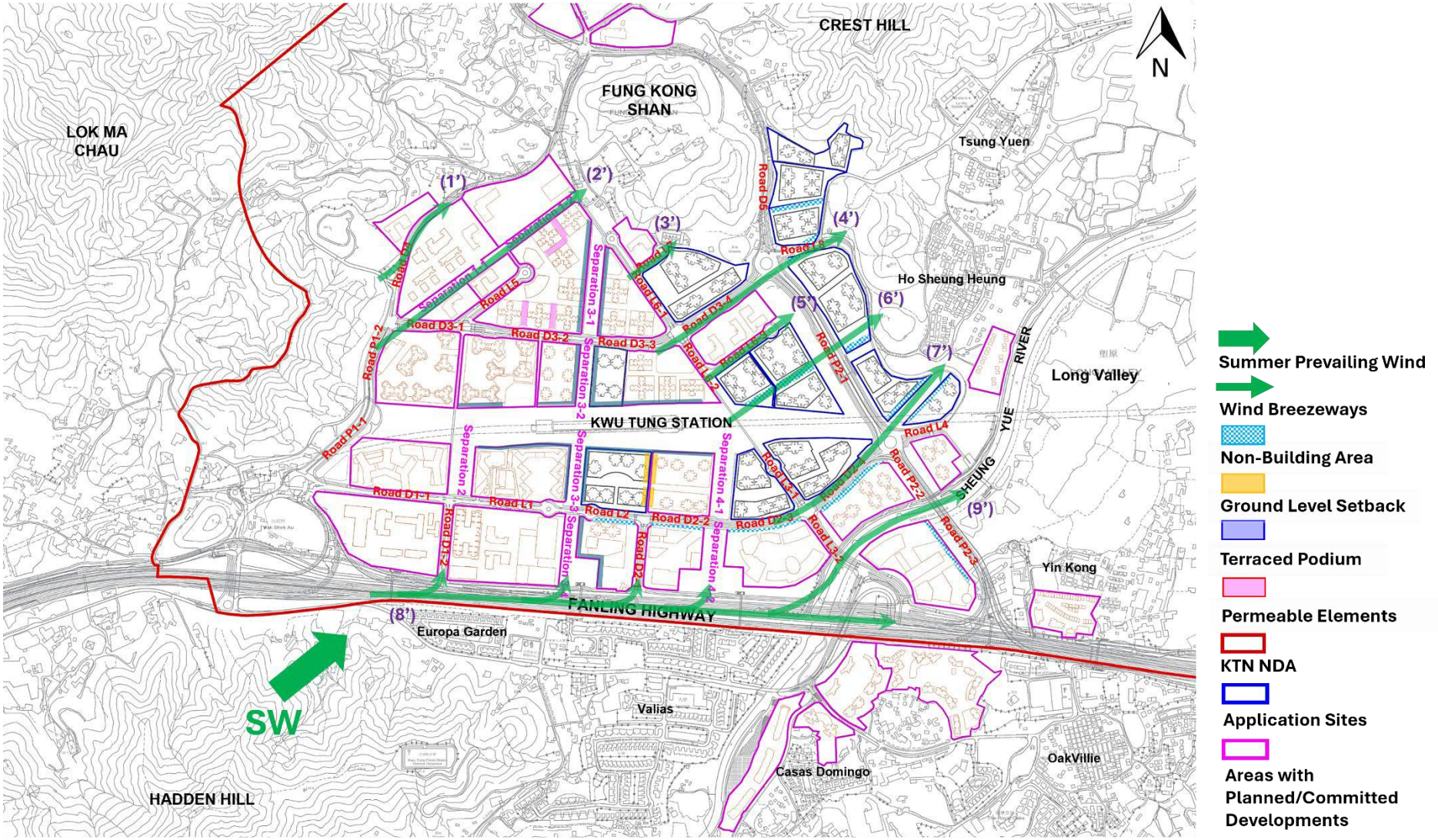


Figure 8.5(b) Wind Flow under the SW Summer Prevailing Wind for the Proposed Scheme

Summary

8.2.89 In summary, the directional wind flow analysis indicates that the overall wind flow patterns across the KTN NDA would remain largely unchanged between the Approved Scheme and the Proposed Scheme. Although the Proposed Scheme involves slight increases in building heights and the introduction of two-storey podiums in most Application Sites, these modifications are expected to generate somewhat larger wind wakes in the immediate downwind areas. Conversely, the greater differences in building heights at certain locations would enhance downwash effects and strengthen local wind channeling along key roads.

8.2.90 Importantly, the key air ventilation design measures from the Approved Scheme — including terraced podiums, ground-level setbacks, Non-Building Areas (NBAs), generous building separations, podium gardens, and unobstructed district-wide breezeways (such as those along the Sheung Yue River and the separations linking Fung Kong Shan with the Fanling Highway) have been retained. The footprints of additional podiums have also been minimized as far as practicable while maintaining at least 15m separation and incorporating 5m podium gardens. These design features, together with enhanced channeling and downwash effects, would continue to promote effective penetration of prevailing winds. As a result, no significant deterioration on the district-wide pedestrian wind environment is anticipated under the Proposed Scheme.

Supplementary Expert Evaluation of the Proposed Scheme against OZP Compliant Scheme

8.2.91 In addition to the comparison between the Approved Scheme and the Proposed Scheme, a supplementary Expert Evaluation has been conducted to assess the air ventilation performance of the Proposed Scheme against the OZP Compliant Scheme, which is based on the permissible building height restrictions stipulated on the Draft KTN OZP.

8.2.92 Compared with the OZP Compliant Scheme, the Proposed Scheme exhibits a more noticeable increase in building heights within the Application Sites than that assessed under the Approved Scheme (see **Table 7.1**). While the increased building heights may enlarge wind wake regions and potentially reduce local wind availability in the immediate downwind areas, the greater height variations at certain locations would enhance downwash effects and strengthen local wind channelings along key roads.

8.2.93 As reviewed in the preceding sections, the Proposed Scheme generally retains the major wind breezeways, non-building areas and key air ventilation design measures established under the KTN NDA planning framework. The footprints of additional podiums have been minimised as far as practicable, while maintaining at least 15 m separation and incorporating 5 m podium gardens. These design features, together with the enhanced channelling and downwash effects, would continue to facilitate effective penetration of prevailing winds

8.2.94 Moreover, the overall building morphologies and disposition between the OZP Compliant Scheme and the Approved Scheme remain largely unchanged. In this regard, the supplementary Expert Evaluation does not indicate any material deterioration in the overall wind environment of the KTN NDA. The conclusions of this AVA-EE therefore remain valid, and the Proposed Scheme is considered compatible with the established air ventilation planning framework of the KTN NDA, subject to the retention of the key air ventilation features and recommendations identified in this report. The supplementary Expert Evaluation is attached in **Appendix C**.

9 FURTHER PROPOSED SCHEME OPTIMIZATION AND GOOD AIR VENTILATION DESIGN MEASURES

9.1 Hong Kong Planning Standards and Guidelines (HKPSG) and SBDG

9.1.1 From a district-level perspective, maintaining a favorable wind environment is an important planning consideration. According to Chapter 11 of the Hong Kong Planning Standards and Guidelines (HKPSG), one of the key principles is to align breezeways and air paths with the prevailing wind directions, supplemented by perpendicular air paths (see **Figure 9.1**). This layout promotes better wind penetration through urbanized areas. Breezeways can be effectively created by linking major roads, open spaces, amenity areas, Non-Building Areas (NBAs), building setbacks, and low-rise building corridors.

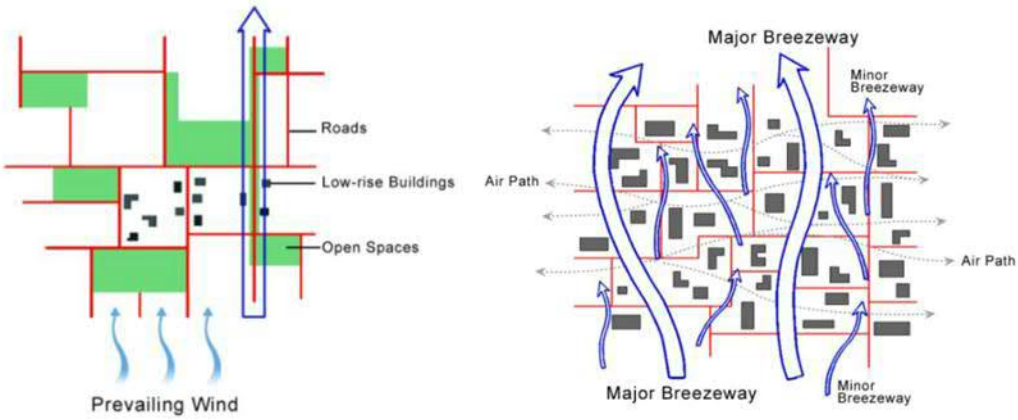


Figure 9.1 Linkage of roads / open space / low-rise buildings to form paths of air flow

9.1.2 The orientation of streets also plays a key role in maximizing the infiltration of prevailing winds into the urban grid (see **Figure 9.2**). Ideally, the main streets or wide avenues should be aligned parallel to the prevailing wind directions, or within 30 degrees of them. Long street grids that face directly into the incoming winds should be avoided, as they can create wind stagnant zones. Widening of streets and building setbacks are also regarded as merit design features that help enhance air ventilation.

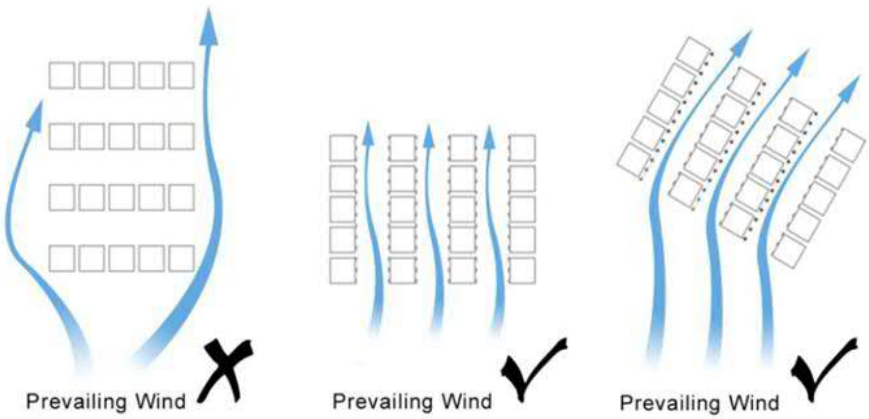


Figure 9.2 Illustration of orientation of streets

9.1.3 Building height variation also plays an important role in facilitating wind flow within the urban district (see **Figure 9.3**). In particular, a gradual decrease in building height in the direction from which the prevailing wind originates helps induce vertical air movement throughout the district. This effect is further enhanced when low-rise buildings and open spaces are widely dispersed across the area.

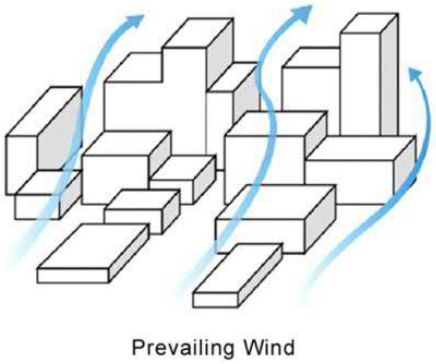


Figure 9.3 Varying building height profile

9.1.4 In addition to the HKPSG, the Sustainable Building Design Guidelines (SBDG) aim to enhance building design and permeability by avoiding screen-wall effects and promoting better air movement between developments, thereby improving dispersion and air mixing. Building setbacks are one of the key requirements under the SBDG for improving the pedestrian-level wind environment. According to the SBDG, for buildings facing streets narrower than 15m wide, no part of the building up to 15m above street level should be located within 7.5m from the centerline of the street. Adopting such building setbacks on narrow streets (currently less than 15 m wide) can significantly improve air ventilation. An illustration of this requirement is shown in **Figure 9.4**.

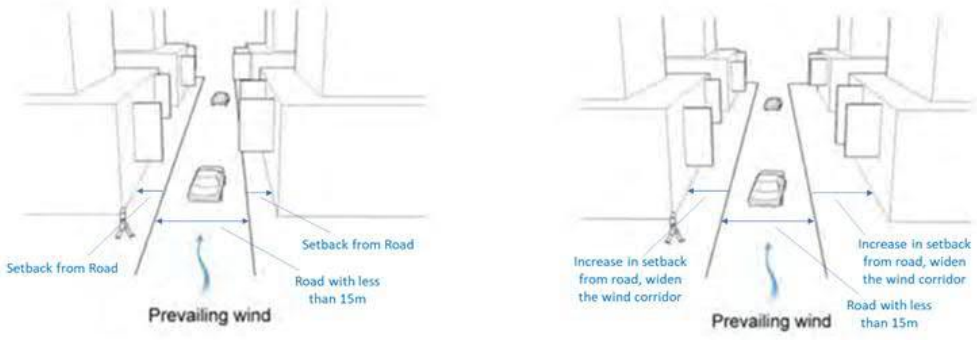


Figure 9.4 Building setback

9.1.5 Adequate building separation increases permeability within the urban built environment and helps mitigate the urban heat island effect caused by the screening effect of long, continuous buildings. Incorporating building porosity into the design further promotes air movement between developments and enhances the diffusion and mixing of air. Permeability at the lower levels is particularly important for improving pedestrian-level ventilation. For developments with podiums, the provision of podium gardens is recommended to allow wind to penetrate closer to the pedestrian level. In addition, a terraced podium design has been adopted (as illustrated in **Figure 9.5**) to further facilitate ventilation. This design helps direct downward airflow towards the pedestrian level.

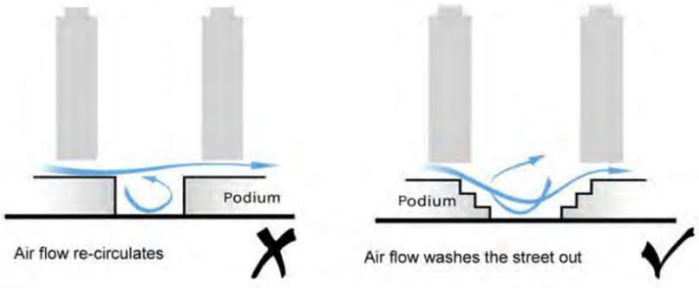


Figure 9.5 Terraced podium design

9.1.6 Some generic recommendations from the building level perspective are listed below to further enhance the wind permeability/ penetration and minimize the ventilation impacts to their surrounding areas:

- Avoid long continuous façades and face shorter frontages of proposed buildings to the prevailing wind directions
- Minimization/Break down of podium bulk with small ground coverage or adoption of podium-free design
- Adopt empty bay design on the ground floor of podium or incorporate permeable elements/podium gardens to enhance the wind permeability at pedestrian level
- Adopt terraced podium designs for podia to enhance ventilation.
- Reference to the recommendations of design measures in the Sustainable Building Design Guideline (SBDG) and Hong Kong Planning Standards and Guidelines (HKPSG)
- Ensure building permeability equivalent to 20% to 33.3% of total frontal area, with reference to PNAP APP-152
- Design the urban grids within the KTN NDA containing the Application Sites in accordance with major prevailing wind directions
- Adopt full building/podium setbacks at feasible locations, with reference to PNAP APP-152.
- Incorporate greeneries (preferably tree planting at grade) covering no less than 30% within the Application Sites

10 SUMMARY AND CONCLUSION

10.1.1 AECOM has been commissioned by the Civil Engineering and Development Department (CEDD) to conduct an Air Ventilation Assessment (AVA) for the thirteen Application Sites. The assessment supports a Section 16 planning application to relax building height restrictions from those stipulated in the previous planning application No. A/KTN/93 and the approved Outline Zoning Plan (OZP) No. S/KTN/4. The proposed relaxations aim to accommodate additional heights arising from above-ground car parks and the adoption of Modular Integrated Construction (MiC).

10.1.2 Wind data from the Planning Department's Regional Atmospheric Modelling System (PlanD RAMS), wind tunnel experiments, and Hong Kong Observatory (HKO) weather stations were reviewed. As the Site Wind Availability Study for the Kwu Tung North (KTN) New Development Area (NDA) was based on wind tunnel testing, the wind tunnel experimental data is considered most appropriate for identifying prevailing wind directions at the Application Sites. The annual prevailing wind directions are north (N), east-northeast (ENE), and east (E), while the summer prevailing wind directions are east (E), south (S), and southwest (SW).

10.1.3 The KTN NDA, which encompasses the Application Sites, is situated in a predominantly rural area of Hong Kong. The surrounding land uses mainly comprise "Green Belt", "Agriculture", "Other Specified Uses", "Government, Institution or Community" (GIC), and scattered "Village Type Development" zones. To the west of the Application Sites (outside the NDA) are Green Belt areas at Lok Ma Chau. To the north lie the Green Belt areas of Fung Kong Shan, with "Agriculture" lands at Ma Tso Lung and Green Belt areas at Crest Hill located further north. Immediately to the east of the Application Sites are existing scattered low-rise developments, which are planned for future GIC buildings and residential blocks, while the village houses at Ho Sheung Heung will be retained. Further east, across the Sheung Yue River, are "Other Specified Uses" lands and village houses at Wai Lo Tsuen. To the south of the Application Sites, across the Fanling Highway, are "Residential (Group C)" zones occupied by existing low-rise residential developments, namely Europa Garden, The Valais, and Casas Domingo.

10.1.4 The existing developments within the thirteen Application Sites (K1 to K3, K4a, K4b, and K5 to K12) consist primarily of brownfield sites, temporary structures, and low-rise village houses at Tung Fong, Fung Kong, Tong Kok, and Shek Tsai Leng. These sites are in the central to south-western sector of the KTN NDA. Two of the sites are zoned for "Residential (Group A)" development, while the remainder are zoned for "Residential (Group B)".

10.1.5 The thirteen Application Sites occupy a sizable flatland surrounded by hilly terrain of varying elevations. To the near north and north-east are the hilly areas of Fung Kong Shan / Crest Hill and Sandy Ridge. To the near east lie the flatlands of Sheung Shui and Fanling towns, with the terrain of High Hill located further east. To the near west are hilly areas of approximately 100mPD in the Lok Ma Chau area, while the lands at San Tin are relatively flat. The most prominent terrain feature to the south and south-west is Hadden Hill, which reaches a maximum elevation of approximately 200mPD.

10.1.6 Extensive planned and committed developments surround the thirteen Application Sites. These areas are intended for schools, public and private residential towers, GIC blocks, hospitals, clinics, health centers, commercial buildings, and research and development facilities. For this Expert Evaluation, the building morphologies of these surrounding planned and committed developments are assumed to remain consistent under the two assessed scenarios.

10.1.7 Two development scenarios are examined in this study: the Approved Scheme and the Proposed Scheme. Under both scenarios, the Application Sites will comprise domestic building blocks, and non-domestic podiums. The indicative layouts show that the orientations, number, and general arrangement of the domestic building blocks remain consistent between the two scenarios. The major differences are the relaxation of building height restrictions and the addition of podiums to accommodate above-ground car parking in most Application Sites as well as Public Transport Interchange under the Proposed Scheme. For Application Sites K1 and K2, there is an increase in podium height while the building heights remain the same. For Application Site K10, the podiums accommodating the Public Transport Interchange and above-ground car parks are slightly reduced in heights, with one additional two-storey podium introduced. For Application Site K12, podium free design and building height restriction remain unchanged.

10.1.8 Under the Proposed Scheme, additional two-storey podiums for above-ground car parking are introduced in most Application Sites (except K1, K2 and K12), together with relaxation of building height restrictions of up to 15mPD across most sites. These changes will result in taller domestic blocks and additional podiums compared with the Approved Scheme, which are expected to generate wind wakes of greater extent and coverage in the downwind areas, potentially affecting certain potential wind-sensitive areas. Nevertheless, the relaxed building height restrictions provide greater flexibility for the exploration and implementation of appropriate air ventilation design strategies at future detailed design stages to enhance wind permeability and mitigate any stronger wind wakes.

10.1.9 The building footprints of the domestic blocks within the Application Sites remain unchanged under the Proposed Scheme. All good air ventilation design measures adopted in the Approved Scheme have been retained, including Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12, a ground-level setback along the eastern boundary of Application Site K2, and terraced podium designs in Application Sites K1 and K2. The additional podiums within Application Sites K3 to K11 have been minimized in bulk as far as practicable, with most maintaining at least 15m separation and all incorporating 5m podium gardens to promote wind penetration. The relaxation in building height restrictions has also increased height differences between some buildings facing the prevailing wind and those at the rear, which is expected to induce slightly stronger downwash effects in specific areas. Most importantly, the major wind breezeways identified in the Approved Scheme remain unobstructed under the Proposed Scheme.

10.1.10 To conclude, no major alterations in wind flow patterns are anticipated between the Approved Scheme and the Proposed Scheme. A supplementary review against the OZP Compliant Scheme, which involves a greater magnitude of building height increase than that assessed against the Approved Scheme, likewise does not indicate any material deterioration in the overall wind environment of the KTN NDA. As there are no significant changes in domestic building arrangements, orientations, ground-level setbacks, or locations of non-building areas (NBAs) within the Application Sites, the identified wind breezeways under both annual and summer prevailing winds will continue to function effectively and help maintain good air ventilation in the vicinity of the Application Sites. Although the overall relaxation in building heights as well as the introduction of additional podiums under the Proposed Scheme are expected to induce larger wind wakes in the downwind areas, these will be partly offset by stronger downwash effects and enhanced local wind channeling. Consequently, the potential air ventilation impacts are expected to be minimal, with no significant district-wide deterioration in the wind environment.

Appendix A

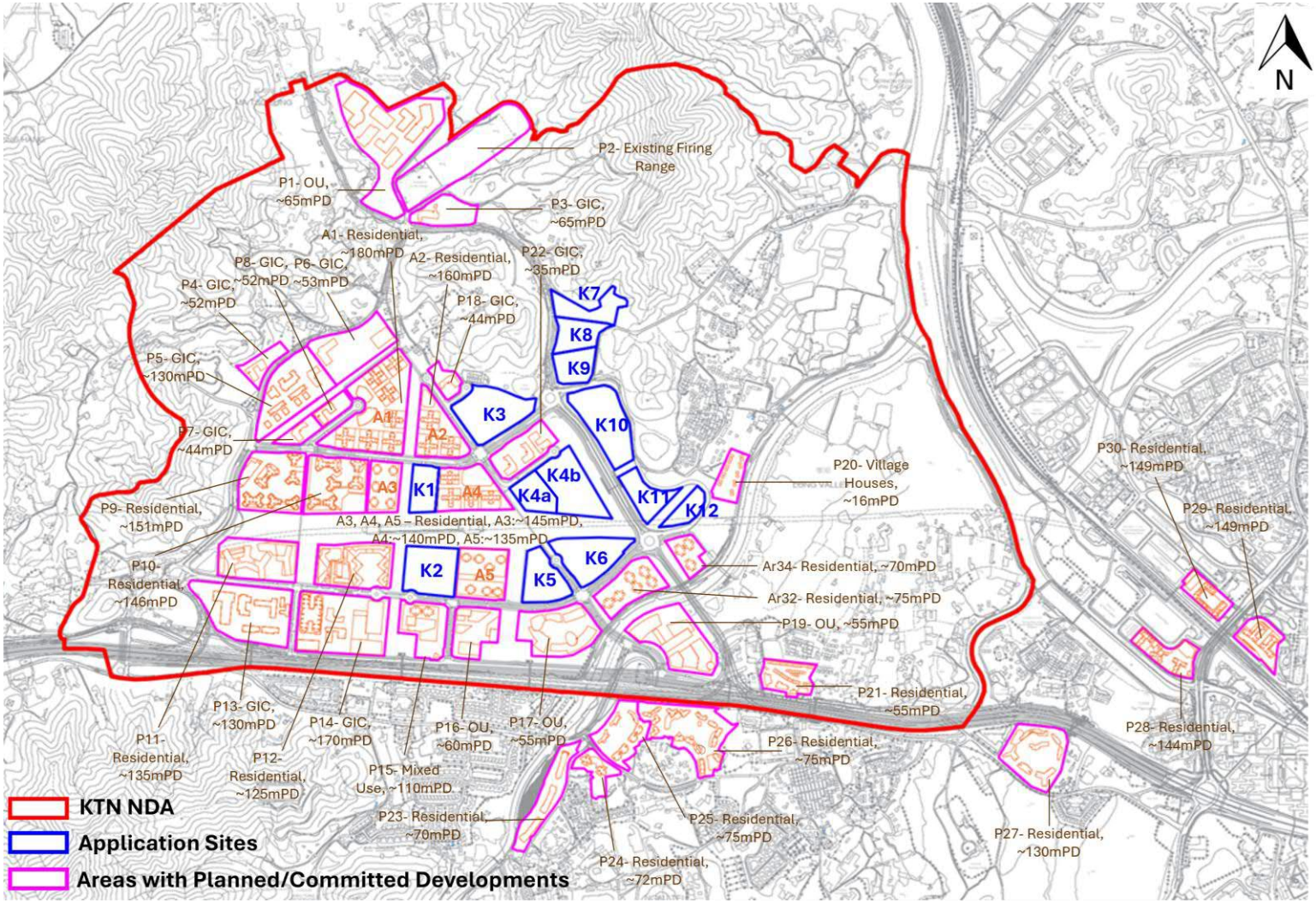


Figure A1: Land Use and Maximum Building Heights of Planned/Committed Developments near/within the KTN NDA

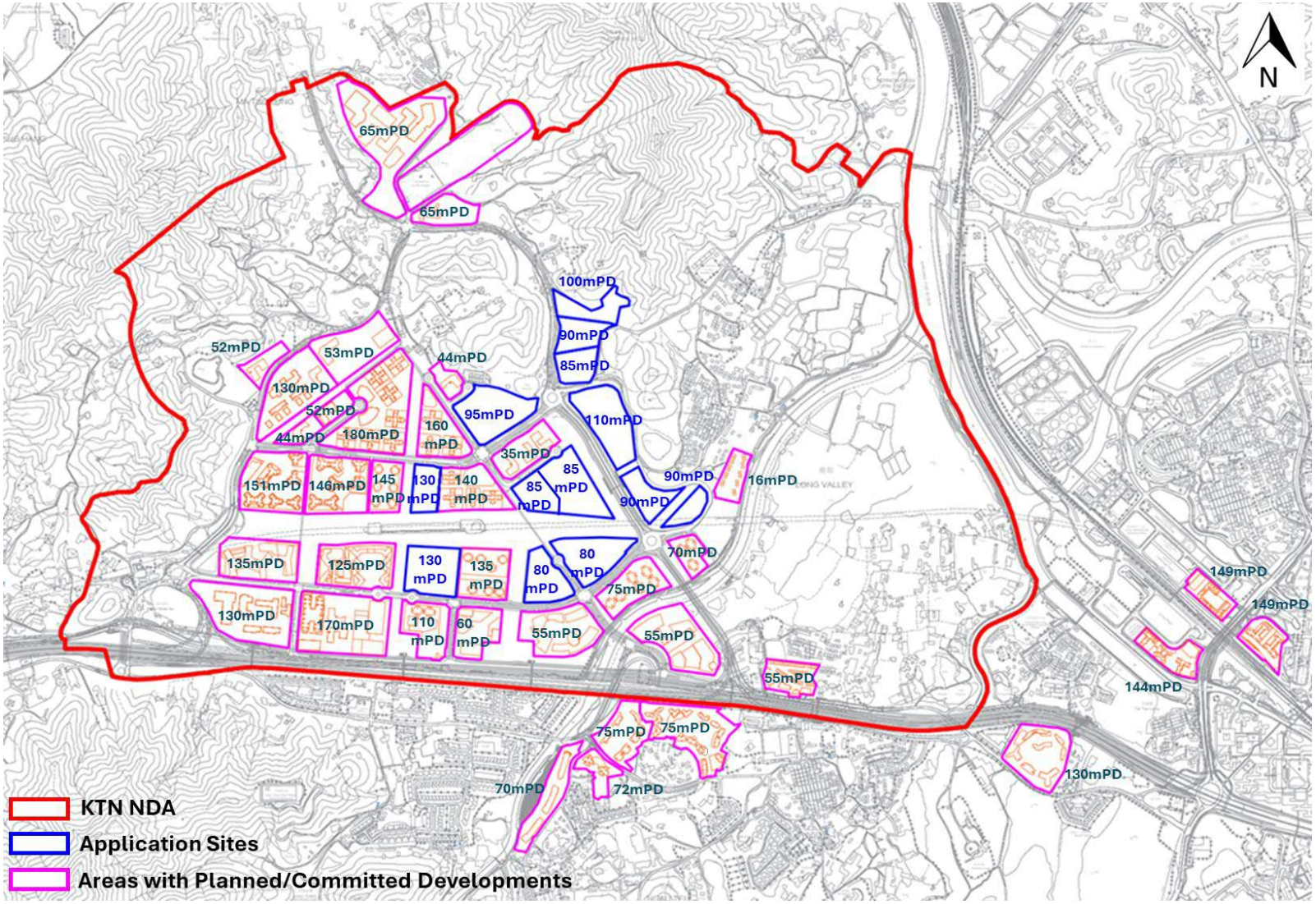


Figure A2: Maximum Proposed Building Heights within the Application Sites and Areas with Planned/Committed Developments under the Approved Scheme

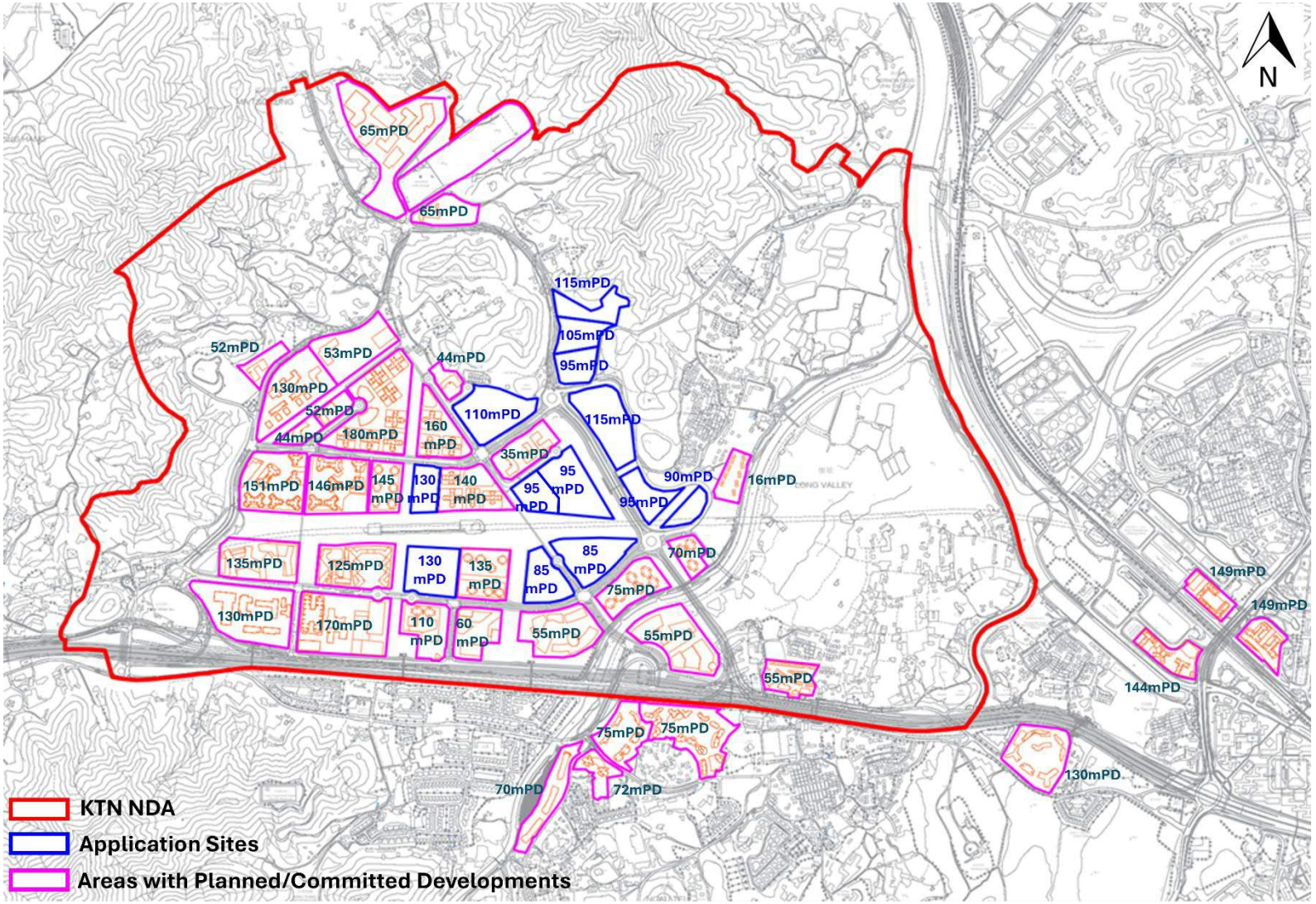


Figure A3: Maximum Proposed Building Heights within the Application Sites and Areas with Planned/Committed Developments under the Proposed Scheme

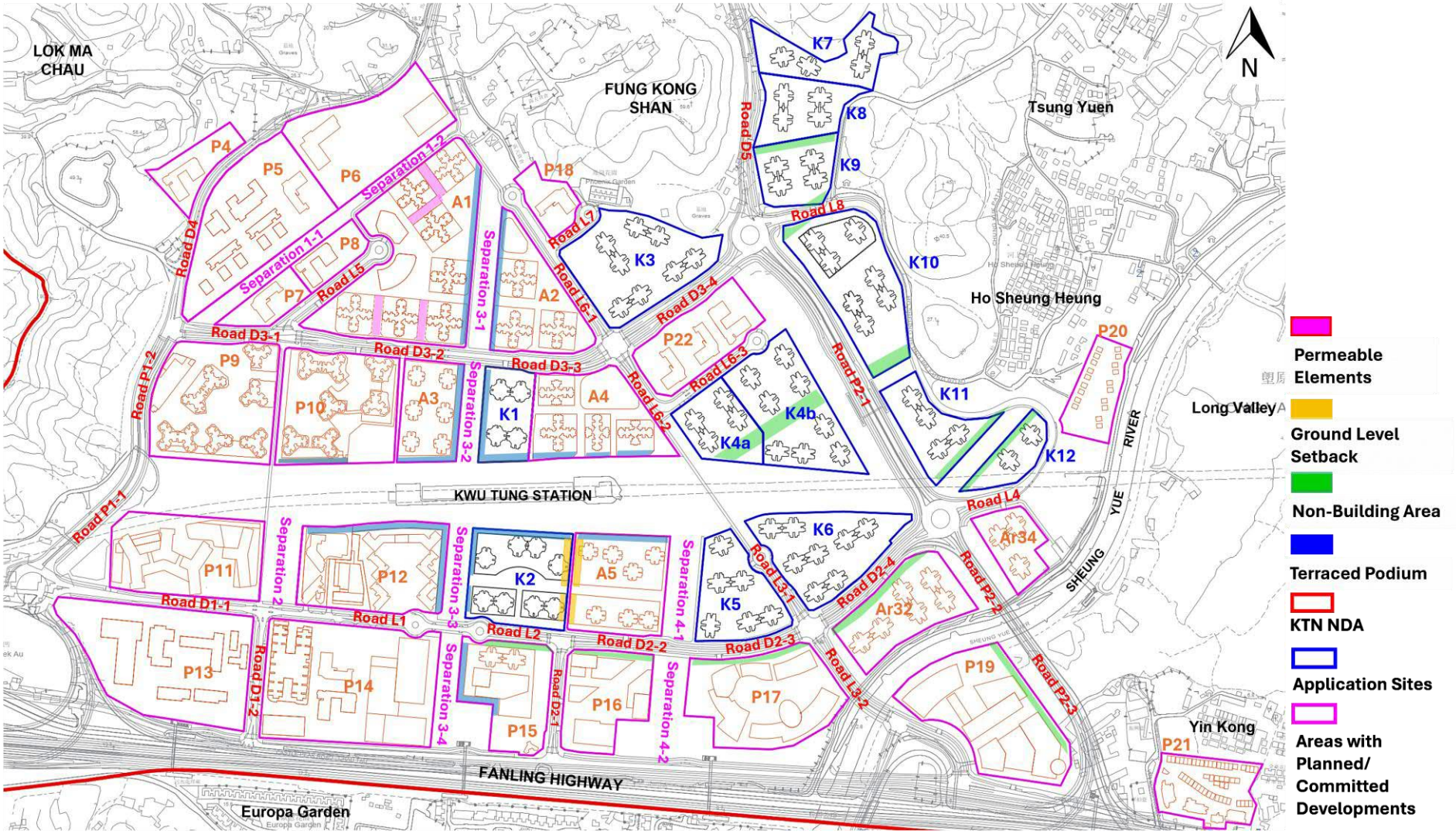


Figure A4: Locations of Non-Building Areas, Terraced Podiums and Proposed Building Blocks within the Application Sites and Surroundings under the Approved Scheme

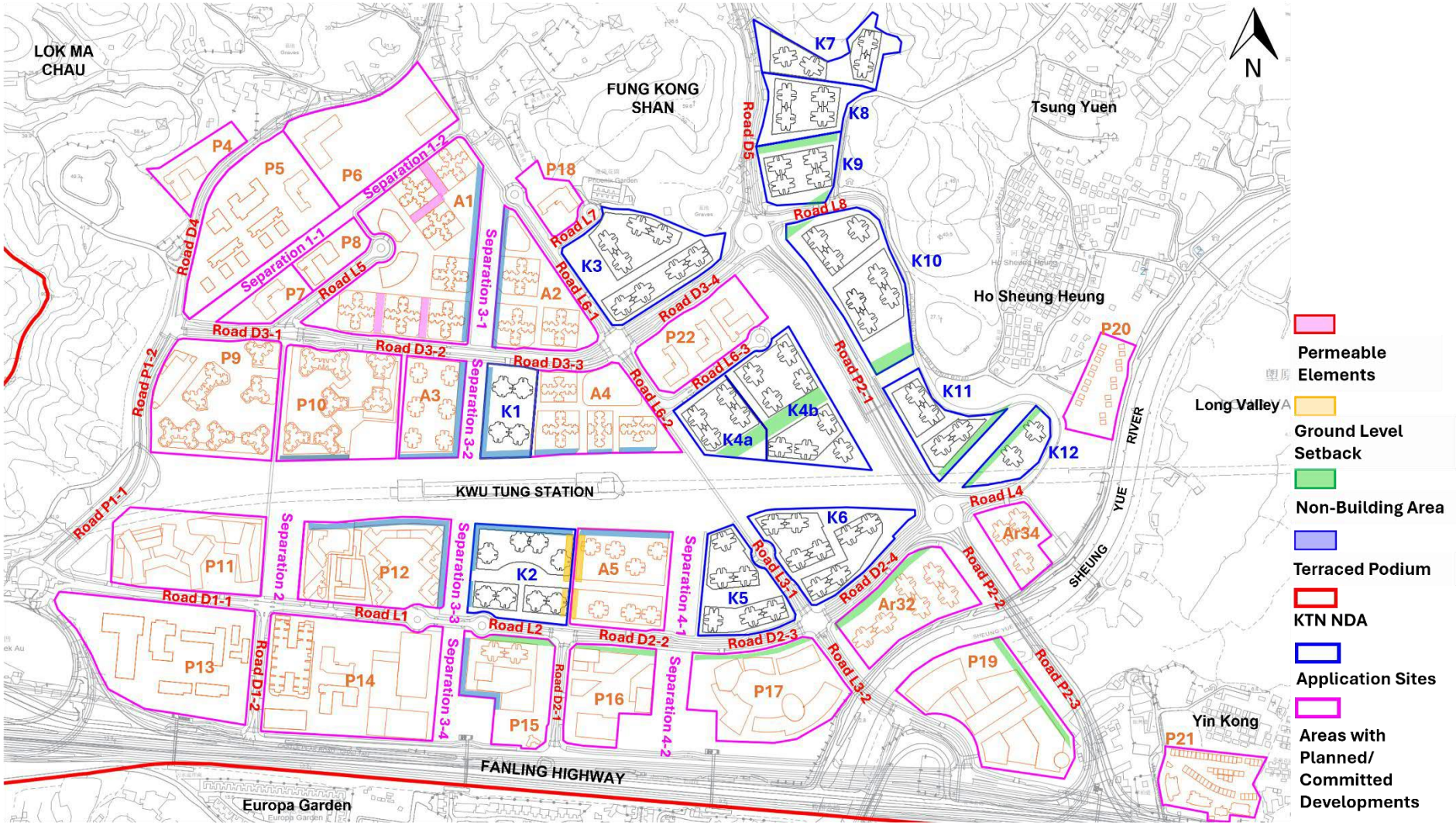


Figure A5: Locations of Non-Building Areas, Terraced Podiums, Ground Level Setback, Locations of Permeable Elements and Proposed Building Blocks within the Application Sites and Surroundings under the Proposed Scheme

Appendix B

Proposed Noise Mitigation Measures

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ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

827200 E

828800 E

830400 E

841600 N

840000 N

LEGEND:

KTN NDA BOUNDARY

LO WU

SHEUNG SHUI

60624717/TNMP/DP4/APPENDIX 1.2.1

60624717/TNMP/DP4/APPENDIX 1.2.2

60624717/TNMP/DP4/APPENDIX 1.2.3

MTRC EAST RAIL

FAN KAM ROAD

N

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AECOM

PROJECT
項目

DEVELOPMENT OF
KWU TUNG NORTH
NEW DEVELOPMENT AREA,
REMAINING PHASE -
DESIGN & CONSTRUCTION

CLIENT
業主

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

CONSULTANT
土木顧問公司

AECOM Asia Company Ltd.
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STATUS
階段

SCALE
比例

A1 1 : 8000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號

60624717

CONTRACT NO.
合約編號

CE 19/2019 (CE)

SHEET TITLE
圖紙名稱

UPDATED TRAFFIC NOISE
MITIGATION MEASURES
PROPOSAL - KEY PLAN

SHEET NUMBER
圖紙編號

60624717/TNMP/DP4/APPENDIX 1.2

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ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

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1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60624717/TNMP/DP4/APPENDIX 1.2.1 TO APPENDIX 1.2.3.
2. IN VIEW OF THE SIGHTLINE CONSTRAINT OF THE ASSOCIATED ROADS, KTN-NB09 & KTN-NB10 AND KTN-NB15 & KTN-NB16 COULD NOT BE CONNECTED.

LEGEND:

- KTN NDA BOUNDARY
- PROPOSED 0.5m STRUCTURE
- PROPOSED 3m VERTICAL NOISE BARRIER (ABSORPTIVE)
- PROPOSED 5m VERTICAL NOISE BARRIER (ABSORPTIVE)
- PROPOSED 7m VERTICAL NOISE BARRIER (ABSORPTIVE)
- PROPOSED 5m + 3m CANTILEVER NOISE BARRIER (ABSORPTIVE)
- PROPOSED 7m + 3m CANTILEVER NOISE BARRIER (ABSORPTIVE)
- OPENING SIDE
- PROPOSED SEMI ENCLOSURE (WITH OPENING SIDE)
- PROPOSED FULL ENCLOSURE
- PROPOSED LOW NOISE ROAD SURFACING
- LOW NOISE ROAD SURFACING PROVISION FOR ROAD TRAFFIC SPEED HIGHER THAN 80KPH
- INDICATIVE LOCATIONS OF FACADES THAT WOULD BE PROVIDED WITH AT RECEIVER END MITIGATION MEASURES (WITHIN KTN NDA)

THE EXACT LOCATIONS OF FACADES THAT REQUIRE AT-RECEIVER END MITIGATION MEASURES ARE SUBJECT TO THE DETAILED TNIA TO BE CONDUCTED BY RELAVANT PARTIES AT LATER STAGE

841000 N

840500 N

827500 E

820000 E

N

MA TSO LUNG

CUT LINE B-B

SEE DRAWING NO.
60624717/TNMP/DP4/APPENDIX 1.2.2

PAK SHEK AU

KTN-NB02
KTN-NB06
KTN-NB05
KTN-NB04
KTN-LN01
KTN-LN02
KTN-LN03
KTN-NB55
KTN-LN07
KTN-LN09
KTN-LN10
KTN-NB18
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KTN-NB21
KTN-NB22
KTN-NB26
KTN-SEQ1
KTN-FE01
KTN-NB29

CUT LINE A-A
SEE DRAWING NO.
60624717/TNMP/DP4/APPENDIX 1.2.3

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AECOM

PROJECT
項目

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STATUS
階段

SCALE 比例
A1 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60624717

CONTRACT NO. 合約編號
CE 19/2019 (CE)

SHEET TITLE
圖紙名稱

UPDATED TRAFFIC NOISE
MITIGATION MEASURES PROPOSAL

SHEET 1 OF 3

SHEET NUMBER
圖紙編號

60624717/TNMP/DP4/APPENDIX 1.2.1

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Designer:

Project Management Initials:

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2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING NOS. 60624717/TNMP/DP4/APPENDIX 1.2.1 TO APPENDIX 1.2.3.

828000 E

828500 E

829000 E

842000 N

841500 N

MA TSO LUNG

MA TSO LUNG SAN TSUEN

FUNG KONG

WO SHEUNG HEUNG ROAD

KTN-NB01

KTN-NB02

KTN-NB04

KTN-NB05

KTN-NB06

KTN-NB08

KTN-NB09

KTN-NB10

KTN-NB55

KTN-LN01

KTN-LN02

KTN-LN03

KTN-LN05

KTN-LN06

CUT LINE B-B

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2/8/2025

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DEVELOPMENT OF
KWU TUNG NORTH
NEW DEVELOPMENT AREA,
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SCALE 比例
A1 1 : 2500

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60624717

CONTRACT NO. 合約編號
CE 19/2019 (CE)

SHEET TITLE
圖紙名稱

UPDATED TRAFFIC NOISE
MITIGATION MEASURES PROPOSAL

SHEET 2 OF 3

SHEET NUMBER
圖紙編號

60624717/TNMP/DP4/APPENDIX 1.2.2

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N

CUT LINE B-B

SEE DRAWING NO.
60624717/TNMP/DP4/APPENDIX 1.2.2

CUT LINE A-A

SEE DRAWING NO.
60624717/TNMP/DP4/APPENDIX 1.2.1

828500 E

829000 E

829500 E

841000 N

840500 N

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KTN-LN04
KTN-LN05
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KTN-NB39
KTN-NB40
KTN-NB41
KTN-NB42
KTN-NB43
KTN-NB44
KTN-NB45
KTN-NB46
KTN-NB47
KTN-NB48
KTN-NB49
KTN-NB54

TONG KOK

KWU TUNG

FANLING HIGHWAY

KWU TUNG ROAD

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Plot Date: 2/8/2025
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PROJECT
項目

DEVELOPMENT OF
KWU TUNG NORTH
NEW DEVELOPMENT AREA,
REMAINING PHASE -
DESIGN & CONSTRUCTION

CLIENT
業主

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

CONSULTANT
土木顧問公司

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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: A1 1 : 2500

DIMENSION UNIT 尺寸單位: METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號: 60624717

CONTRACT NO. 合約編號: CE 19/2019 (CE)

SHEET TITLE
圖紙名稱

UPDATED TRAFFIC NOISE
MITIGATION MEASURES PROPOSAL

SHEET 3 OF 3

SHEET NUMBER
圖紙編號

60624717/TNMP/DP4/APPENDIX 1.2.3

Appendix C

Supplementary Expert Evaluation

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1 THE OZP COMPLIANT SCHEME AND PROPOSED SCHEME

1.1 Background

1.1.1 Two development schemes are examined in this Supplementary Expert Evaluation: OZP Compliant Scheme and Proposed Scheme. The OZP Compliant Scheme was approved by the Town Planning Board under the approved Outline Zoning Plan (OZP) No. S/KTN/4. It incorporated minor relaxations of the Plot Ratio (PR) and Building Height Restrictions (BHR) for Planning Areas 14, 15, 20, 22, 23, 25 and 26.

1.1.2 Compared with the OZP Compliant Scheme, the Proposed Scheme seeks further minor relaxations of the BHR in Planning Areas 14, 15, 22, 23, 25 and 26 (i.e., Application Sites K1 – K11). These additional relaxations are required to accommodate the extra height arising from above-ground car parks and the adoption of Modular Integrated Construction (MiC). The changes in the relevant development parameters are summarized in **Table C.1**.

1.1.3 The contents of the sections below remain valid and can be referred to in the main report:

- Introduction
- Purpose and Structure of the AVA Expert Evaluation Report
- KTN NDA and Application Sites
- Land Use, Topography and Existing Urban Morphologies
- Wind Availability
- Wind Sensitive Areas and Identified Breezeways
- Further Proposed Scheme Optimization and Good Air Ventilation Design Measures

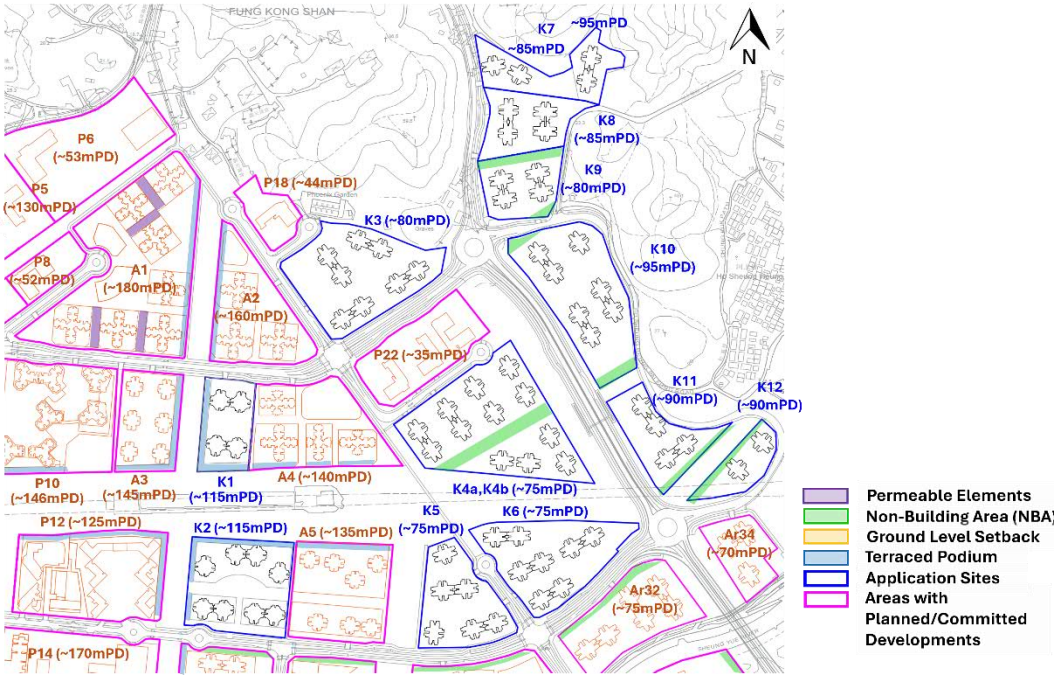
Table C.1 Difference in Development Parameters at the Application Sites

Site No.	Planning Area	Zoning	Site Area (about) (ha) [land area in Area shown as 'Road'/"GB" (about)(ha)]	Under OZP No. S/KTN/4				Under Approved Planning Application A/KTN/93				Proposed under this Application			
				Total Max Plot Ratio	Domestic Max Plot Ratio	Non-Domestic Max Plot Ratio	Building Height Restrictions (mPD)	Total Max Plot Ratio	Domestic Max Plot Ratio	Non-Domestic Max Plot Ratio	Building Height Restrictions (mPD)	Proposed Total Max Plot Ratio	Proposed Domestic Max Plot Ratio	Proposed Non-Domestic Max Plot Ratio	Proposed Building Height Restrictions (mPD)
K1	20	R(A)1	1.13	6	5	1	115	7.2	6	1.2	130	7.2	6	1.2	130
K2	25	R(A)1	2.34	6	5	1	115	7.2	6	1.2	130	7.2	6	1.2	130
K3	14	R(B)	2.83 [0.04]	3.5	3.5	N/A	80	4.2	4.2	N/A	95	4.2	4.2	N/A	110
K4a	22	R(B)	1.27	3.5	3.5	N/A	75	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K4b	22	R(B)	2.54	3.5	3.5	N/A	75	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K5	26	R(B)	1.79	3.5	3.5	N/A	75	4.2	4.2	N/A	80	4.2	4.2	N/A	85
K6	26	R(B)	2.35 [0.03]	3.5	3.5	N/A	75	4.2	4.2	N/A	80	4.2	4.2	N/A	85
K7	15	R(B)	1.25	3.5	3.5	N/A	85/95	4.2	4.2	N/A	100	4.2	4.2	N/A	115
K8	15	R(B), GB and Road	1.3 [0.05]	3.5	3.5	N/A	85	4.2	4.2	N/A	90	4.2	4.2	N/A	105
K9	15	R(B)	1.17	3.5	3.5	N/A	80	4.2	4.2	N/A	85	4.2	4.2	N/A	95
K10*	23	R(B)	2.87 [0.04]	3.5	3.5	0	95	4.43	4.2	0.23	110	4.43	4.2	0.23	115
K11	23	R(B) and Road	1.28	3.5	3.5	N/A	90	4.2	4.2	N/A	90	4.2	4.2	N/A	95
K12	23	R(B) and Road	0.78	3.5	3.5	N/A	90	4.2	4.2	N/A	90	4.2	4.2	N/A	90

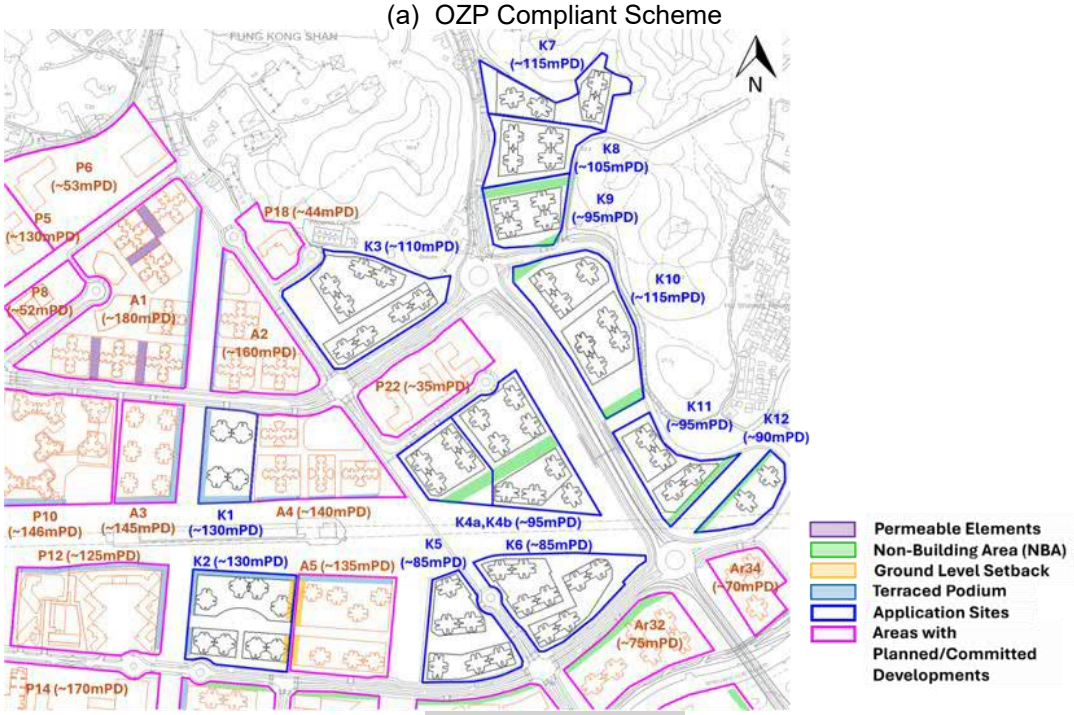
* Site area and area shown as ‘Road’/ “GB” are subject to detailed survey.
* Site K10: NDPR includes a public transport terminus/interchange of 3,500 m².

1.2 OZP Compliant Scheme and Proposed Scheme

1.2.1 **Figure C.1** shows the overall layout of Application Sites K1 to K12 within the KTN NDA under both the OZP Compliant Scheme and the Proposed Scheme, together with some of the surrounding planned and committed developments. Illustrative figures showing zoomed-out views of the areas surrounding the Application Sites under the OZP Compliant Scheme and Proposed Scheme are also provided in **Figures CA4** and **CA5** for reference. Brief discussions on the key differences between the OZP Compliant Scheme and the Proposed Scheme for each of the Application Sites are provided in this subsection. It should be noted that the layouts presented are indicative only and are intended for technical assessment purposes. They may be subject to revision at future stages of the project.



(a) OZP Compliant Scheme



(b) Proposed Scheme

Figure C.1 Indicative Building Layouts within the Application Sites under the OZP Complaint Scheme and Proposed Scheme

1.2.2 In general, the building layouts and morphologies within each of the Application Sites are by and large the same under the Proposed Scheme as under the OZP Compliant Scheme. The terraced podium designs for Application Sites K1 and K2 and the podium-free design for Application Site K12 remain unchanged under the Proposed Scenario. However, instead of adopting podium-free designs, additional podiums are provided beneath the domestic blocks in most of the Application Sites under the Proposed Scheme. These include Application Sites K3 to K11. Brief descriptions for each Application Site are provided below:

Application Site K1

1.2.3 Under the OZP Compliant Scheme, Application Site K1 comprises four domestic blocks with a Building Height Restriction of 115mPD (see **Figure CA2**), situated above a massive podium. Podium with terraced design can be found within Application Site K1(see **Figures C1.1(a)** and **CA4**).

1.2.4 Under the Proposed Scheme, while the domestic building footprints remain the same as the OZP Compliant Scheme, the building height restriction for Application Site K1 is recommended to be relaxed to 130mPD. (see **Figure CA3**). Consistent with the OZP Compliant Scheme, a two-storey terraced podium design is adopted within Application Site K1 with the height of podium is suggested to be 35mPD (see **Figures C1.1(b)** and **CA5**).

Application Site K2

1.2.5 Under the OZP Compliant Scheme, Application Site K2 comprises eight domestic blocks, as shown in **Figure C1.1(a)**. The four domestic blocks in the northern portion of the site are situated on a larger podium adopting terraced design, while the remaining four in the southern portion are placed above two smaller podiums (two domestic blocks above per podium). The prevailing Building Height Restriction of 115mPD applies to Application Site K2 (see **Figures CA2** and **CA4**).

1.2.6 Under the Proposed Scheme, the building layout of the eight domestic blocks in Application Site K2 remains largely consistent with the OZP Compliant Scheme (see **Figure C1.1(b)**). As in the OZP Compliant Scheme, the domestic blocks are located above three non-domestic podiums, with the relatively larger podium in the northern portion as well as the smaller podium located at the lower left adopting a terraced design. The height of the two-storey podiums is 36.5mPD under the Proposed Scheme. However, the maximum Building Height Restriction is relaxed to 130mPD (see **Figure CA3**). In addition, ground-level setbacks are incorporated along the eastern boundary of Application Site K2 to widen the separation between Application Site K2 and the adjacent Area A5.

Application Site K3

1.2.7 Under the OZP Compliant Scheme, Application Site K3 comprises podium-free domestic blocks with a maximum building height of 80mPD (see **Figure CA2**). These domestic blocks are set back slightly from the Application Site boundary (see **Figures C1.1(a)** and **CA4**).

1.2.8 Under the Proposed Scheme, the building footprints of the eight domestic blocks in Application Site K3 remain identical to those in the OZP Compliant Scheme (see **Figure C1.1(b)** and **Figure CA5**). However, the maximum Building Height Restriction is proposed to be relaxed to 110mPD (see **Figure CA3**). In addition, two 2-storey podiums providing above-ground car parks are introduced beneath the domestic blocks with four domestic blocks above per podium.

Application Sites K4a, K4b

1.2.9 Under the OZP Compliant Scheme, Application Site K4 is occupied by podium-free domestic blocks as shown in **Figure C1.1(a)** and **Figure CA4**. A building height restriction of 75mPD is applied (see **Figure A2**). In addition, a 30 m-wide Non-Building Area (NBA) running in a north-east to south-west direction is reserved at the southern part of Application Site K4, in compliance with the requirement stipulated in the Outline Zoning Plan (OZP) (see **Figure 1.1(a)** and **Figure A4**).

1.2.10 Under the Proposed Scheme, three additional 2-storey podiums for above-ground car parks are introduced within Application Site K4, with the maximum building height restriction proposed to be relaxed to 95mPD (see **Figure CA3**). The building footprints of the domestic blocks remain unchanged compared to the OZP Compliant Scheme (see **Figure C1.1(b)** and **Figure CA5**). The domestic block located at the southeastern tip of the site remains podium-

free. The 30m-wide Non-Building Area (NBA) running in a north-east to south-west direction is retained to facilitate wind diversion and penetration (see **Figure C1.1(b)** and **Figure CA5**).

Application Site K5

1.2.11 The OZP Compliant Scheme for Application Site K5 adopts podium-free design with domestic blocks at a height of 75mPD. The blocks are arranged in a scattered layout, set back from the Application Site boundary (see **Figure CA2**, **Figure C1.1(a)** and **Figure CA4**).

1.2.12 In the Proposed Scheme, two podiums each of two-storey in height are introduced to provide above-ground car parking — one beneath the three northern domestic blocks and one beneath the three southern domestic blocks. The height of the domestic blocks is proposed to slightly increase from 75mPD to 85mPD. The footprint and placement of the domestic blocks remain unchanged from the OZP Compliant Scheme (see **Figure C1.1(b)**, **Figure CA3** and **Figure CA5**).

Application Site K6

1.2.13 Under the OZP Compliant Scheme, the domestic blocks within Application Site K6 have a height of 75mPD and adopt a podium-free design. Their placement is largely similar to that of Application Site K5 (see **Figure CA2**, **Figure C1.1(a)** and **Figure CA4**).

1.2.14 In the Proposed Scheme, the building footprints of the domestic blocks remain unchanged from the OZP Compliant Scheme (see **Figure C1.1(b)** and **Figure CA5**). Apart from a proposal to relax the maximum building height restriction to 85mPD (see **Figure CA3**), two additional 2-storey podiums are introduced to provide above-ground car parking.

Application Site K7

1.2.15 Under the OZP Compliant Scheme, Application Site 7 is subject to a building height restriction of 85/95mPD. The domestic blocks adopt a podium-free design and are placed in a scattered manner (see **Figure CA2**, **Figure C1.1(a)** and **Figure CA4**).

1.2.16 In the Proposed Scheme, the building orientations and arrangements of the two western domestic blocks show a slight difference compared to those in OZP Compliant Scheme, while the building orientations, arrangements and footprints remain unchanged for the two eastern blocks. Two additional 2-storey podiums are introduced beneath the eastern and western domestic blocks respectively with each podium supporting two domestic towers to provide above-ground car parking, and the maximum building height is proposed to be relaxed to 115mPD (see **Figure CA3**, **Figure C1.1(b)** and **Figure CA5**).

Application Site K8

1.2.17 Application Site K8, located immediately south of Application Site K7, is subject to a building height restriction of 85mPD under the OZP Compliant Scheme (see **Figure CA2**). The domestic blocks adopt a podium-free design (see **Figure C1.1(a)** and **Figure CA4**).

1.2.18 In the Proposed Scheme, a two-storey podium is introduced beneath the domestic blocks to provide above-ground car parking. The building orientations and arrangements of the domestic blocks remain unchanged from the OZP Compliant Scheme. However, the maximum building height is proposed to be relaxed from 85mPD to 105mPD (see **Figure CA3**, **Figure C1.1(b)** and **Figure CA5**).

Application Site K9

1.2.19 Application Site K9, located adjacent to Application Site K8, is subject to a building height restriction of 80mPD under the OZP Compliant Scheme (see **Figure CA2**). The domestic blocks adopt a podium-free design. In addition, a strip of Non-Building Area (NBA) is imposed at the southern tip of the site, and another strip of NBA runs along the northern boundary (see **Figure C1.1(a)** and **Figure CA4**).

1.2.20 In the Proposed Scheme, a 2-storey podium is introduced beneath the four domestic blocks to provide above-ground car parking. The domestic building blocks' footprints, orientations and arrangements are broadly identical to the OZP Compliant Scheme. The maximum building height is proposed to be slightly relaxed from 80mPD to 95mPD. The strips of Non-Building Area (NBA) at the southern tip and along the northern boundary are fully retained (see **Figure CA3**, **Figure C1.1(b)** and **Figure CA5**).

Application Site K10

1.2.21 Under the OZP Compliant Scheme, Application Site K10 is planned to be developed into podium free private housing blocks and subject to a building height restriction of 95mPD. Strips of Non-Building Area (NBA) are incorporated at the northwestern tip and along the southern boundary of the site (see **Figure CA2**, **Figure C1.1(a)** and **Figure CA4**).

1.2.22 In the Proposed Scheme, the two strips of Non-Building Area (NBA) are fully retained to enhance the effectiveness of prevailing winds. The building arrangements of the three northern domestic blocks are broadly identical to those in the OZP Compliant Scheme, while the building layouts of the four southern domestic blocks remain unchanged. The maximum building height is proposed to be relaxed from 95mPD to 115mPD. In addition, two podiums with a height of 24mPD are introduced in the Proposed Scheme, with one beneath the three northern domestic blocks accommodating a Public Transport Interchange (PTI) and car parks, and another beneath the four southern domestic blocks to provide above-ground car parking (see **Figure CA3**, **Figure C1.1(b)** and **Figure CA5**).

Application Sites K11 and K12

1.2.23 Application Sites K11 and K12, located immediately to the southeast of Application Site K10, are planned for podium-free domestic housing developments with a building height restriction of 90mPD under the OZP Compliant Scheme. Strips of Non-Building Area (NBA) are incorporated within both sites (see **Figure CA2**, **Figure C1.1(a)** and **Figure CA4**).

1.2.24 In the Proposed Scheme, the building footprints, orientations and arrangements of the domestic blocks and the strips of Non-Building Area (NBA) remain substantially unchanged. The maximum building height is proposed to be slightly relaxed from 90mPD to 95mPD for Application Site K11, while remaining unchanged for Application Site K12. Two additional two-storey podiums are introduced in Application Site K11 (each supporting two domestic blocks) to provide above-ground car parking, while Application Site K12 remains a podium-free design (see **Figure CA3**, **Figure C1.1(b)** and **Figure CA5**).

Typologies of Podiums within Application Sites under the Proposed Scheme

1.2.25 Podiums can generally be categorized into four types:

- Typology 1 – Terraced podium with non-domestic uses and above-ground car parks, and a podium garden which appears in Application Sites K1 and K2.
- Typology 2 – Podiums for above-ground car parking and garden, which appear in Application Sites K3 to K9, K10 (southern podium), and K11.
- Typology 3 – Podiums containing a ground-level Public Transport Interchange (PTI)and a garden, which appears in Application Site K10 (northern podium)
- Typology 4 – Podium free, which appear in Application Site K12.

Indicative sections of these podium typologies are shown in **Figure C1.2**.

Figure C1.2 Indicative Sections of Different Types of Podiums within the Application Sites under the Proposed Scheme

2 EXPERT EVALUATION ON THE OZP COMPLIANT SCHEME AND PROPOSED SCHEME

2.1 General

2.1.1 Several major breezeways have been identified under the prevailing wind directions. These breezeways play an important role in maintaining the wind environment within and around the Application Sites. The major breezeways have been discussed in detail in **Section 6.2** of main report. Most of them are aligned along major roads, with the most prominent ones including Fanling Highway, the breezeway along Kwu Tung Station, and the Sheung Yue River.

2.1.2 The indicative layouts under both the OZP Compliant Scheme and the Proposed Scheme (as discussed in **Section 1**) demonstrate that all identified major breezeways are fully retained and remain unobstructed.

2.1.3 Non-Building Areas (NBAs) are incorporated within Areas P15 to P19 and Application Sites K4 and K9 to K12. These NBAs are retained in the same locations and with the same widths under both the OZP Compliant Scheme and the Proposed Scheme. Although the Proposed Scheme includes building height relaxations and additional podiums in certain Application Sites to meet above-ground car parks and the adoption of Modular Integrated Construction (MiC) requirements, all designated NBAs remain unchanged in position and dimension.

2.1.4 Two-storey terraced and stepping podiums have been adopted for Application Sites K1 and K2 under both the OZP Compliant Scheme and Proposed Scheme. These podiums promote downward airflow to the pedestrian level. Under the Proposed Scheme, the building orientations, arrangements and footprints are by and large the same as under the OZP Compliant Scheme. Additional podiums are incorporated only in certain Application Sites to satisfy design requirements (for provision of above ground car parking and Public Transport Interchange) under the Proposed Scheme.

2.1.5 Variations in building height profiles between certain Application Sites and the surrounding committed or planned developments are observed in both scenarios. These variations help promote downwash wind effects. All the above-mentioned good design measures for maintaining air ventilation performance — including building separations, terraced podium designs, and designated NBAs — that appear in the OZP Compliant Scheme are fully retained in the Proposed Scheme.

2.1.6 Two development scenarios are examined in this study: the OZP Compliant Scheme and the Proposed Scheme (see **Figure C1.1**, **Figure CA4** and **Figure CA5**). Both scenarios fully retain all air ventilation good design measures required under the Outline Zoning Plan (OZP), including building separations, terraced podium designs, and designated Non-Building Areas (NBAs), to promote effective air ventilation performance. The evaluation focuses on potential changes in wind flow patterns, the extent of wind wake areas, building permeability, and the performance of major district breezeways and local air paths under the identified prevailing wind directions.

2.1.7 While the building layouts remain broadly similar across all Application Sites, the Proposed Scheme incorporates maximum building height relaxations and additional podiums in certain sites. In addition, Ground-level setbacks are integrated into the proposed developments near the eastern boundary of Application Site K2 and the western boundary of Area A5 to widen the separation between them. To summarize, the only differences between the OZP Compliant Scheme and the Proposed Scheme are those within the Application Sites (K1 to K12), except for the setback near the western boundary of Area A5. The layouts of surrounding planned and committed developments (i.e., Areas P1 to P30, A1 to A5, Ar32 and Ar34) are treated as background. The most up-to-date road layouts have been adopted. The expert evaluation, including directional analysis and anticipated wind flow patterns under both scenarios, is presented below.

2.2 Expert Evaluation

Under N Annual Prevailing Wind Direction

OZP Compliant Scheme

2.2.1 Under the OZP Compliant Scheme, northerly winds would flow along Road D4, passing between the committed school in Area P4 and the GIC blocks in Area P6. The wind would then continue along Road P1-2, located to the west of Area P9, and proceed towards the committed/planned high-rise residential blocks in Area P11 with minimal obstruction. These high-rise buildings would subsequently block the northerly wind, preventing it from reaching further downstream areas (see Marker (1) in **Figure C2.1(a)**).

2.2.2 Under the OZP Compliant Scheme, northerly wind from Road D3-1 would skim over the planned schools in Areas P7 and P8, then flow through the separation between Areas P9 and P10. It would continue across Kwu Tung Station, proceed along the separation between Areas P11 and P12 (Separation 2 in **Figure C2.1(a)**), and flow along Road D1-2 between Areas P13 and P14, before reaching Europa Garden (see Marker (2) in **Figure C2.1(a)**).

2.2.3 The separation between Areas A1 and A3, Areas P12 and P14, and Area A2 together with Application Sites K1, K2 and Area P15 (Separations 3-1 to 3-4 in **Figure C2.1(a)**) forms a major north-south district-wide wind breezeway. This breezeway links Fung Kong Shan with Fanling Highway and helps maintain a favorable wind environment around Areas A1–A3, Application Sites K1–K2, and Areas P12, P14 and P15 (see Marker (3) in **Figure C2.1(a)**).

2.2.4 After skimming over the proposed schools in Area P22, the northerly wind would flow along Road L6-2 towards Kwu Tung Station. It would then continue along the separations between Area A5 / Application Site K6 and Areas P16 / P17 (Separations 4-1 and 4-2 in **Figure C2.1(a)**) before reaching Fanling Highway (see Marker (4) in **Figure C2.1(a)**).

2.2.5 Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway. It directs northerly wind from Crest Hill towards Application Site K4 (see Marker (5) in **Figure C2.1(a)**). The upwind schools in Area P22 have lower building heights than the proposed blocks in Application Site K4. As a result, vertical air movement is expected along Road L6-3 under the OZP Compliant Scheme. Weakening of the northerly wind is anticipated after it flows past Application Sites K4, K5 and K6. However, the proposed blocks within these sites adopt podium-free designs and are arranged in a scattered layout. These design measures help maximize the availability of northerly wind towards the downwind Areas P17 and P18 under the OZP Compliant Scheme. Another branch of northerly wind would flow along Road P2-1 towards Road P2-2, thereby maintaining a favorable wind environment near Application Sites K10 to K12 and Application Site K4.

2.2.6 The Sheung Yue River serves as another major district-wide wind breezeway. Northerly wind originating from the areas near Ho Sheung Heung would flow along the river, reaching the downwind areas near Area Ar34 and continuing towards Area P19 (see Marker (6) in **Figure C2.1(a)**).

2.2.7 Among the thirteen Application Sites (K1 to K3, K4a, K4b and K5 to K12), building separations are provided between most of the proposed domestic blocks. These separations enhance wind permeability and help reduce potential wind impacts on the surrounding areas. **Figure C2.1(a)** illustrates the anticipated northerly annual prevailing wind flow under the OZP Compliant Scheme.

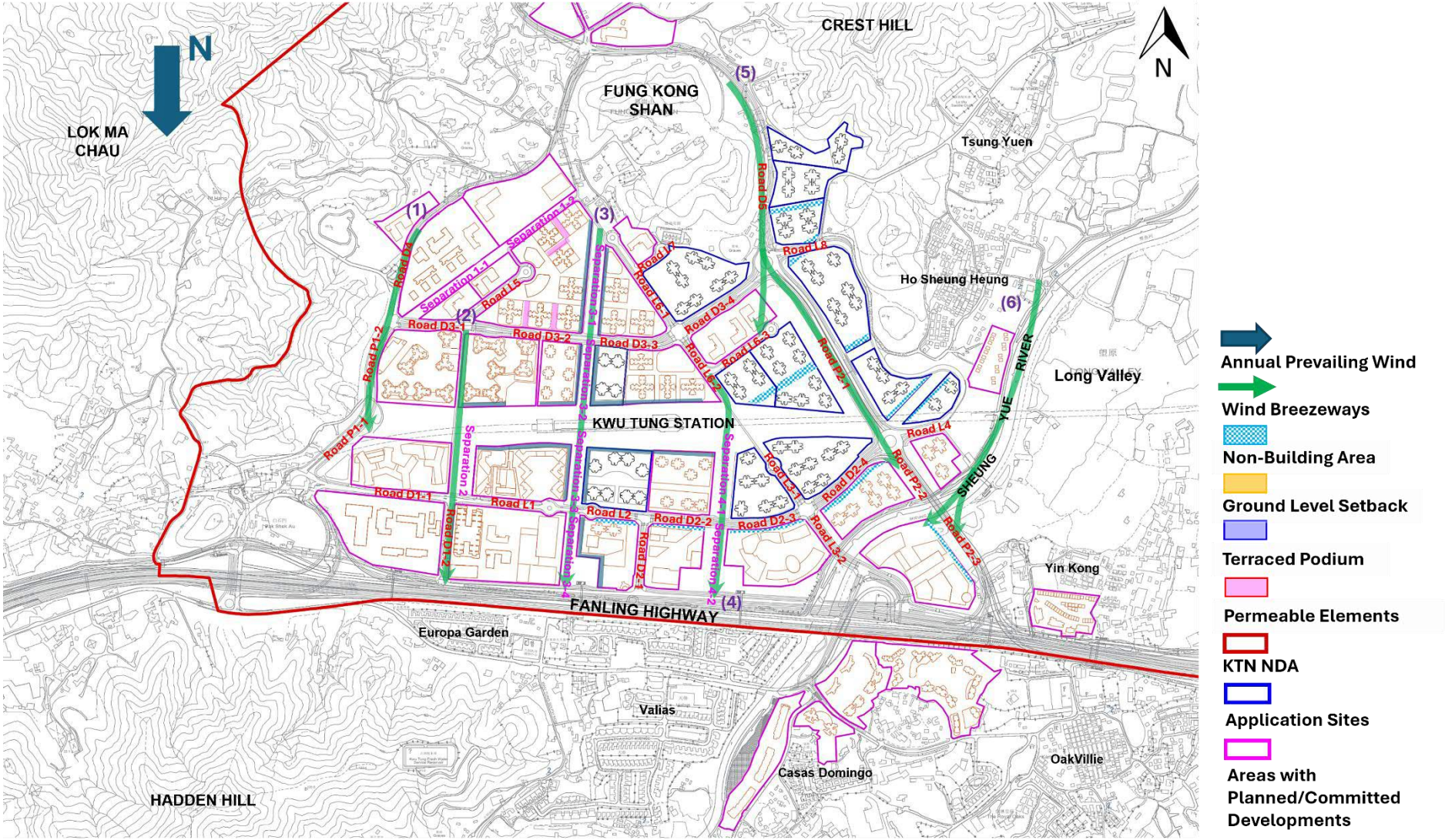


Figure C2.1(a) Wind Flow under the N Annual Prevailing Wind for the OZP Compliant Scheme

Proposed Scheme:

General

2.2.8 The Development Proposal layout under the Proposed Scheme retains the good air ventilation design measures from the OZP Compliant Scheme. These include terraced podiums in Application Sites K1 and K2, and Non-Building Areas (NBAs) in Application Site K4 and Application Sites K9 to K12. In addition to the retained measures, ground-level setbacks at strategic locations within certain buildings in Application Site K2 and Area A5 are incorporated under the Proposed Scheme. Furthermore, the added podiums have been minimized in bulk as far as possible, with most maintaining podium separations of at least 15m. All added podiums also incorporate 5m podium gardens to enhance wind penetration.

Similarities in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.9 Under the Proposed Scheme, northerly winds would flow along Road D4 between the committed school in Area P4 and the GIC blocks in Area P6. The wind would then proceed westward along Road P1-2, located to the west of Area P9, and approach the committed and planned high-rise residential blocks in Area P11. These high-rise developments would block the wind, stopping it from advancing into further downstream areas (see Marker (1') in **Figure C2.1(b)**).

2.2.10 Owing to the consistent building morphology in the vicinity of the Application Sites, the local breezeway originating from Road D3-1 and leading to Europa Garden via the separation between Areas P9 and P10 and along Road D1-2 continues to function effectively under the Proposed Scheme, as identified in the OZP Compliant Scheme (see Marker (2') in **Figure C2.1(b)**).

2.2.11 Under the Proposed Scheme, the separation between Areas A1, A3, P12 and P14, and Application Sites K1, K2, Area A2 and Area P15 (Separations 3-1 to 3-4 in **Figure C2.1(b)**) continues to serve as a major north-south district-wide wind breezeway, linking Fung Kong Shan with Fanling Highway. This breezeway already existed under the OZP Compliant Scheme and remains unchanged (see Marker (3') in **Figure C2.1(b)**). In addition, terraced podiums are provided beneath the proposed domestic towers on both sides of Separations 3-1 to 3-3 and on the eastern side of Separation 3-4. These terraced podium designs, which were also incorporated under the OZP Compliant Scheme, would facilitate the passage of northerly prevailing winds and enhance the overall effectiveness of this major breezeway.

2.2.12 Similar to the OZP Compliant Scheme, the northerly wind path under the Proposed Scheme remains effective. After skimming over the proposed schools in Area P22, the wind flows along Road L6-2 towards Kwu Tung Station and continues through the separations between Area A5/ Application Site K6, and Areas P16/P17 (Separations 4-1 and 4-2 in **Figure C2.1(b)**), eventually reaching Fanling Highway (see Marker (4') in **Figure C2.1(b)**).

2.2.13 Under the Proposed Scheme, and similar to the OZP Compliant Scheme, Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway. It directs northerly wind from Crest Hill towards Application Site K4 (see Marker (5') in **Figure C2.1(b)**). Another branch of northerly wind flows along Road P2-1 towards Road P2-2, thereby maintaining a favorable wind environment near Application Sites K10 to K12 and Application Site K4.

2.2.14 Under the Proposed Scheme, the Sheung Yue River continues to serve as another major district-wide wind breezeway, as it did under the OZP Compliant Scheme. Northerly wind originating from the areas near Ho Sheung Heung flows along the river, reaching the downwind areas near Area Ar34 and continuing towards Area P19 (see Marker (6') in **Figure C2.1(b)**).

Differences in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.15 Under the Proposed Scheme, additional podiums are introduced in most Application Sites, together with a relaxation of building height restrictions of up to 30m across most Application Sites. This results in taller domestic blocks compared with the OZP Compliant Scheme.

2.2.16 It is anticipated that the Proposed Scheme would generate wind wakes of greater extent and coverage in downstream areas, considering the heights of podiums are increased to 35mPD and 36.5mPD in Application Site K1 and K2, respectively.

2.2.17 These changes mentioned in the above paragraph are expected to induce larger wind wakes to the downstream areas. Consequently, northerly winds towards Kwu Tung Station and further downwind areas are likely to be weakened. The cumulative wind impacts on downwind Areas P17 and Ar32 from Application Sites K4, K5 and K6, as well as on Area P15 immediately downwind of Application Sites K1 and K2, are also anticipated to increase. Nevertheless, the relaxation in building height restrictions provides greater flexibility for incorporating air ventilation design measures. Appropriate design strategies should therefore be explored in future detailed developments within these Application Sites to enhance wind permeability and mitigate the induced wind wakes.

2.2.18 Under the Proposed Scheme, the wind environment at Areas A2, A4 and P22 is expected to weaken under northerly winds. This is primarily due to stronger wind wakes generated by the Development Proposals in the upwind Application Site K3, arising from the introduction of podiums and taller domestic buildings. Nevertheless, the increased building height difference between the proposed schools in Area P22 and the blocks in the adjacent Application Site K4 is expected to produce stronger downwash winds along Road L6-3 compared with the OZP Compliant Scheme.

2.2.19 Similarly, the maximum building heights within Application Sites K7 to K11 are slightly relaxed under the Proposed Scheme, with extensive podiums also incorporated. These changes are expected to result in larger wind wake areas and greater cumulative wind impacts on the downwind Areas Ar32 compared with the OZP Compliant Scheme.

2.2.20 Under the Proposed Scheme, an additional wind breezeway is observed. The incorporation of ground-level setbacks for the proposed buildings at Application Site K2 and Area A5 widens the separation between these two sites, which facilitates the penetration of northerly wind. As a result, a wind breezeway originating from Application Site K1 and Area A4 can flow along the separation between Application Site K2 and Area A5 and then flow along Road D2-1 toward Fanling Highway (see Marker (7') in **Figure C2.1(b)**).

2.2.21 Under the Proposed Scheme, only minor changes to the local wind flow patterns are anticipated, despite some modifications in building morphologies within the Application Sites. The building footprints, orientations, and arrangements of the domestic blocks remain largely unchanged, with adequate separations retained between tower blocks to enhance wind permeability and minimize wind impacts. Ground-level setbacks are suggested for the proposed developments near the eastern boundary of Application Site K2 and near the western boundary of Area A5. These setbacks increase the separation distances between buildings, thereby improving north-south connectivity and forming an additional wind breezeway under the Proposed Scheme. In addition, most podiums maintain separations of at least 15m in between to further improve wind permeability. Importantly, the addition of podiums and the relaxation of building height restrictions do not obstruct the major identified wind breezeways, with the requirements for Non-Building Areas (NBAs) continuing to be fully complied with. Overall, under the Proposed Scheme, district-wide wind flow patterns are generally maintained compared to the OZP Compliant Scheme, with an improvement in the wind environment near Areas A5, P15, and P16, as well as Kwu Tung Station, due to the appearance of an additional wind breezeway.

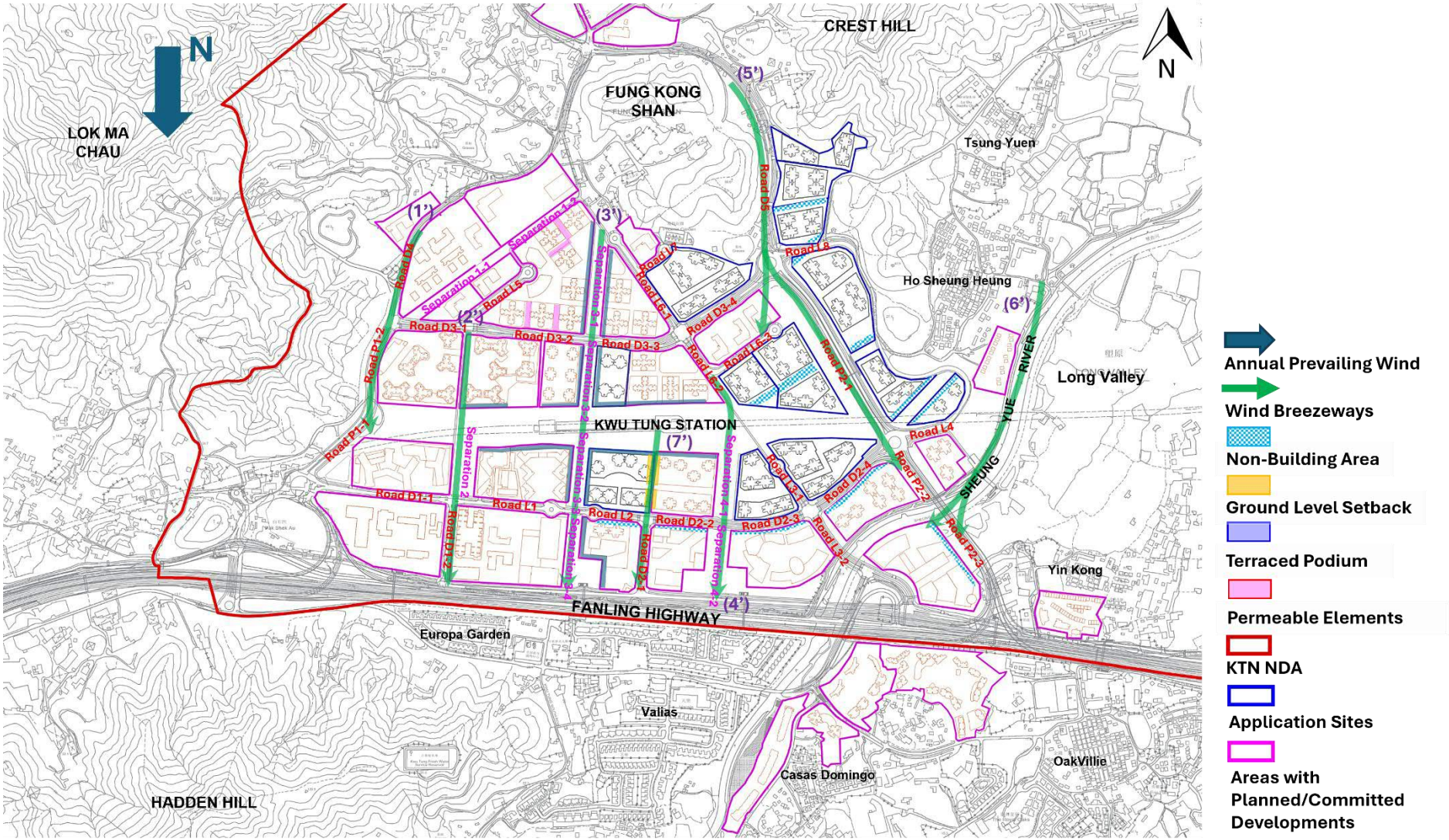


Figure C2.1(b) Wind Flow under the N Annual Prevailing Wind for the Proposed Scheme

Under ENE Annual Prevailing Wind Direction

OZP Compliant Scheme

2.2.22 One pathway of the ENE annual prevailing wind originating from Fung Kong Shan flows along Road D4, passing between the planned school in Area P4 and the planned GIC buildings in Area P5, before reaching the downwind areas (see Marker (1) in **Figure C2.2(a)**). Another pathway of the ENE wind would flow along the separations between Area A1, Areas P7/P8 and Areas P5/P6 (Separations 1-1 and 1-2 in **Figure C2.2(a)**), then continue towards Road P1-2 and further downwind areas (see Marker (2) in **Figure C2.2(a)**). These two ENE wind breezeways, as annotated in Markers (1) and (2), would help maintain good air ventilation performance in the vicinity of Area A1 and Areas P4 to P2.

2.2.23 The ENE wind originating from Tsung Yuen would flow along Road L8 between Application Sites K9 and K10, then continue along Road D3-4 towards Application Site K1. From there, the wind would be directed along Road D3-3 (see Marker (3) in **Figure C2.2(a)**). It should be noted that two strips of Non-Building Areas (NBAs) are incorporated at the southern boundary of Application Site K9 and the northern boundary of Application Site K10. These NBAs widen Road L8 and facilitate better flow of the ENE prevailing wind.

2.2.24 Good penetration of the ENE annual prevailing wind is observed from the village houses at Ho Sheung Heung towards the Kwu Tung Station area. The wind passes through the Non-Building Area (NBA) within Application Site K10 and the NBA within Application Site K4. This major ENE breezeway is annotated as Marker (4) in **Figure C2.2(a)**.

2.2.25 The ENE annual prevailing wind originating from the southern regions of Ho Sheung Heung would penetrate Application Sites K11 and K12 through strips of Non-Building Areas (NBAs) and the building separations between the proposed blocks. The wind would then flow across Road P2 and continue along Roads D2-4, D2-3, D2-2 and L2, passing between Area A5, Application Sites K5 and K6, and Areas P15 to P18 (see Marker (5) in **Figure C2.2(a)**). It should be noted that NBAs are provided at the northern boundaries of Areas P15 to P12. These NBAs widen Roads D2-2 to D2-4 and L2, thereby enhancing the overall effectiveness of this wind breezeway.

2.2.26 The ENE wind originating from Long Valley flows along the Sheung Yue River between Areas Ar32 and P19, then continues towards Area P17 and Fanling Highway. This forms an effective district-wide ENE wind breezeway (see Marker (6) in **Figure C2.2(a)**).

2.2.27 Under the OZP Compliant Scheme, an analysis of building height variations between the Development Proposals within the Application Sites and the planned developments in the surrounding areas (see **Figure CA2**) indicates that downwash wind is anticipated along Separations 3-2, 3-3, 4-1 as well as Roads L6-1 and L6-2 near the Kwu Tung Station area under ENE prevailing winds. These downwash winds, induced by the differences in building heights, play an important role in maintaining the local wind environment near the Application Sites and their surrounding areas.

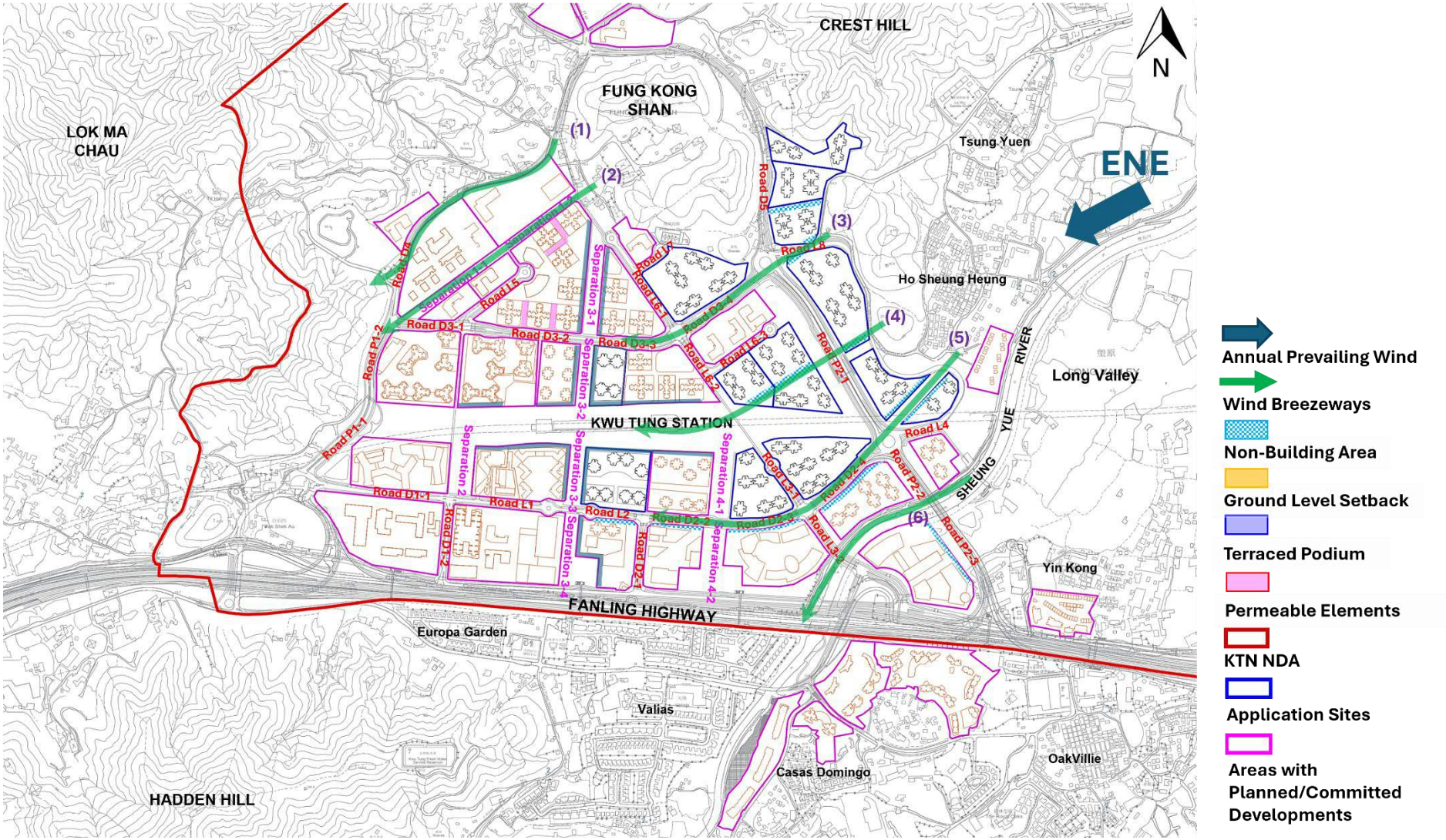


Figure C2.2(a) Wind Flow under the ENE Annual Prevailing Wind for the OZP Compliant Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.28 Under the Proposed Scheme, the pathway of the ENE annual prevailing wind originating from Fung Kong Shan remains unchanged from the OZP Compliant Scheme. The wind continues to flow along Road D4 between the planned school in Area P4 and the planned GIC buildings in Area P5 towards the downwind areas (see Marker (1') in **Figure C2.2(b)**). As there is no change in the surrounding building morphologies, another pathway of ENE wind from Fung Kong Shan flows along the separations between Area A1, Areas P7/P8 and Areas P5/P6 (Separations 1-1 and 1-2), then continues towards Road P1-2 and further downwind areas (see Marker (2') in **Figure C2.2(b))**. Similar to the OZP Compliant Scheme, these two ENE wind breezeways (Markers (1') and (2')) help maintain good air ventilation in the vicinity of Areas P4 to P8 under the Proposed Scheme.

2.2.29 Since there is no significant change in the domestic building arrangements, orientations, or locations of the Non-Building Areas (NBAs) within the upstream Application Sites K9 to K12, the ENE wind originating from Tsung Yuen continues to flow along Road L8 between Application Sites K9 and K10, then along Road D3-4 towards Application Site K1, before being directed along Road D3-3 under the Proposed Scheme (see Marker (3') in **Figure C2.2(b)**). The two strips of NBAs at the southern boundary of Application Site K9 and the northern boundary of Application Site K10 are retained. These NBAs continue to widen Road L8 and facilitate wind flow. Although the relaxation of maximum building heights and the addition of podiums in Application Sites K9 and K10 are expected to enhance wind channeling, the overall wind flow patterns remain largely unchanged under the Proposed Scheme as compared with the OZP Compliant Scheme.

2.2.30 Under the Proposed Scheme, good penetration of the ENE annual prevailing wind from the village houses at Ho Sheung Heung towards the Kwu Tung Station area can still be observed despite the addition of podiums and relaxation of maximum building heights in Application Sites K10 and K11. The wind continues to flow through the Non-Building Area (NBA) between the proposed blocks in Application Site K10 and the NBA within Application Site K4, with no observable change in the overall wind flow pattern. This major ENE breezeway is annotated as Marker (4') in **Figure C2.2(b)**.

2.2.31 Under the Proposed Scheme, the building arrangements and orientations of the domestic blocks within the upstream Application Sites K11 and K12 remain largely unchanged, with only additional podiums introduced in Application Site K11 that do not obstruct the major wind flow. The general placement of buildings in Application Sites K5 and K6 is also unchanged except for the addition of podiums for above-ground car parks. As a result, and similar to the OZP Compliant Scheme, the ENE annual prevailing wind originating from the southern regions of Ho Sheung Heung continues to penetrate Application Sites K11 and K12 through strips of Non-Building Areas (NBAs). The wind then flows across Road P2 and proceeds along Roads D2-4, D2-3, D2-2 and L2, passing between Area A5, Application Sites K2, K5 and K6, and Areas P15 to P18 (see Marker (5') in **Figure C2.2(b)**). The NBAs at the northern boundaries of Areas P15 to P18 are retained under the Proposed Scheme. As in the OZP Compliant Scheme, these NBAs widen Roads D2-4 to D2-2 and L2, thereby enhancing the effectiveness of this wind breezeway.

2.2.32 Under the Proposed Scheme, and as in the OZP Compliant Scheme, the ENE wind originating from Long Valley flows along the Sheung Yue River between Areas Ar32 and P19, then continues towards Area P17 and Fanling Highway. This corridor still serves as an effective district-wide ENE wind breezeway, helping to maintain the local wind environment (see Marker (6') in **Figure C2.2(b)**).

Differences in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.33 Compared with the OZP Compliant Scheme, the overall domestic building footprints within the Application Sites are by and large the same as under the Proposed Scheme. However, more massive podiums for above-ground car parking have been introduced across most Application Sites, together with taller domestic blocks resulting from the relaxation of building height restrictions. As a result, the Proposed Scheme is expected to generate wind wakes of greater extent and coverage in the downwind areas (where certain potential wind sensitive areas are situated) compared with the OZP Compliant Scheme.

2.2.34 In particular, the larger wind wakes induced by the taller podiums in Application Sites K1 and K2 would affect the wind environment at Areas A3 and P12/P14, which are located immediately downstream. In Application Site K4, the increase in maximum building height from 75mPD to 95mPD and the addition of two-storey podiums are expected to create cumulative wind wakes of greater extent, affecting Areas A4/A5 and the Kwu Tung Station nearby areas. In addition, the relaxation of maximum building heights in Application Sites K5 and K6 from 75mPD to 85mPD, together with the addition of podiums, would further increase wind blockage and reduce wind availability at its downwind Area A5.

2.2.35 Although the building arrangements, orientations of domestic buildings as well as locations of Non-Building Areas (NBAs) within Application Sites K7 to K11 remain largely the same under the Proposed Scheme, the maximum building heights in these Application Sites have been relaxed, and podiums for above-ground car parks have been added. As a result, the Development Proposals within Application Sites K7 to K11 together with the Development Proposals within Application Site K3 are expected to generate larger wind wakes in the downstream areas — specifically Areas A2, P18 and P22 across Road P2-1 — compared with the OZP Compliant Scheme.

2.2.36 Under the Proposed Scheme, an analysis of building height variations between the Development Proposals within the Application Sites and the planned/committed developments in the surrounding areas (see **Figure CA3**) shows that the differences in building heights are less pronounced at certain areas due to the relaxation of maximum building heights. As a result, a slight reduction in the magnitude of downwash wind compared with the OZP Compliant Scheme is anticipated along Separations 3-2, 4-1 as well as along Roads L6-1 and L6-2 under ENE prevailing winds Nevertheless, vertical air movements are still expected to occur along the previously mentioned roads and separations, which play an important role in maintaining the local wind environment near the Application Sites and surrounding areas. Nevertheless, the maximum building height in Application Site K2 rises from 115mPD to 130mPD under the Proposed Scheme which is higher than the proposed building height within Area P12 (125mPD), thereby eliminating the downwash effects near the along Separation 3-3 under ENE prevailing wind. Apart from the above, all newly added podiums have incorporated podium gardens of 5m in height aiming to enhance wind permeability. Most importantly, the addition of podiums and the relaxation of building height restrictions under the Proposed Scheme do not obstruct the major identified ENE wind breezeways, and the requirements for Non-Building Areas (NBAs) continue to be fully complied with. In view of this, the district-wide wind flow patterns are generally maintained compared with the OZP Compliant Scheme under the ENE prevailing wind.

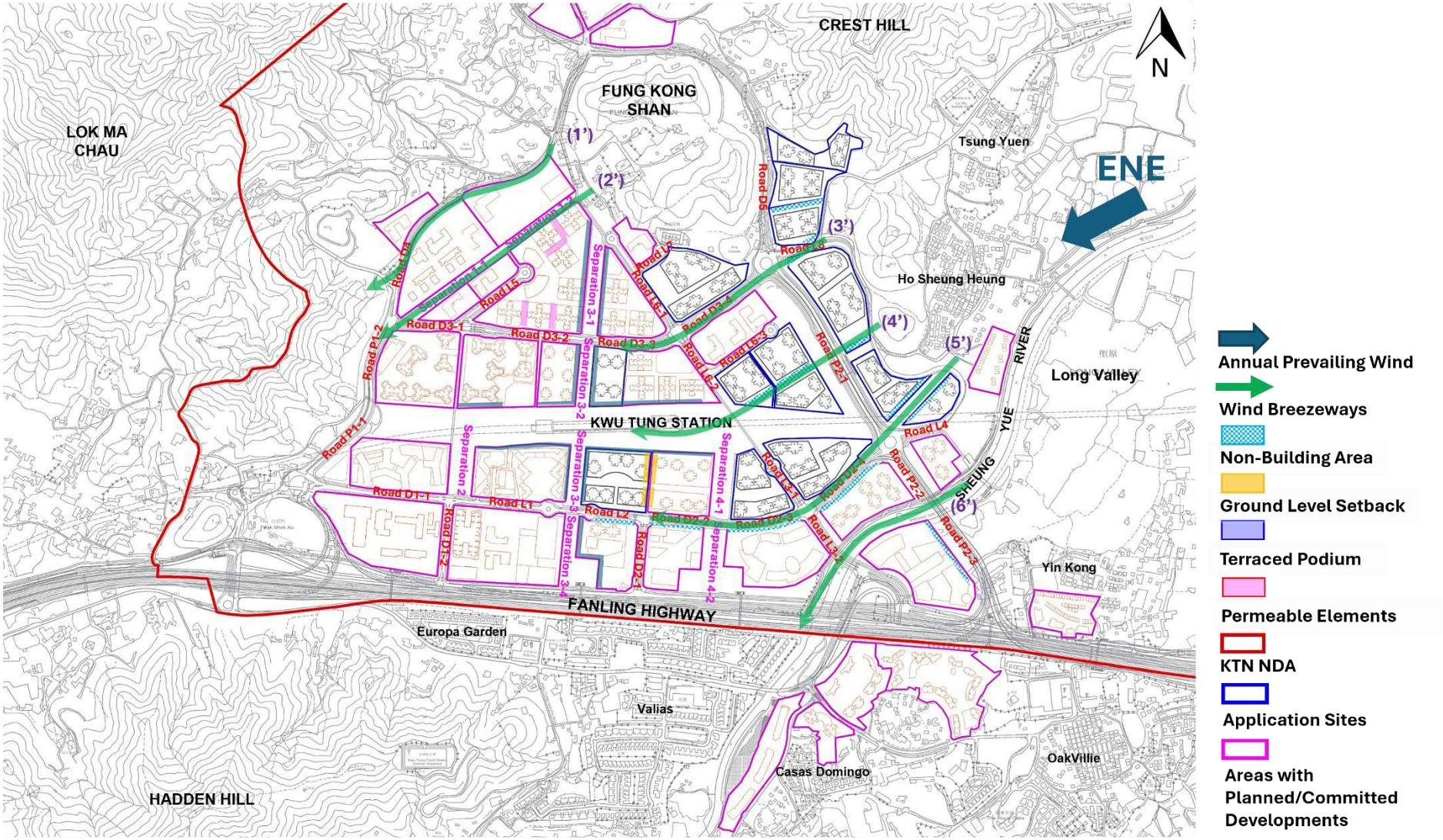


Figure C2.2(b) Wind Flow under the ENE Annual Prevailing Wind for the Proposed Scheme

Under E Annual and Summer Prevailing Wind Direction

OZP Compliant Scheme

2.2.37 An easterly wind path originating from the village houses at Ho Sheung Heung would be divided into two streams. One stream would flow through Road L8, which is located between Application Sites K9 and K10, and then continue along Roads D3-4, D3-3 and D3-2. The other stream would flow along the western side of Application Site K3 towards the school site in Area P12. To facilitate the penetration of the prevailing easterly wind, two strips of Non-Building Areas (NBAs) are incorporated along the southern boundary of Application Site K10 and the northern boundary of Application Site K11. These NBAs would widen Road L8 and ensure unobstructed wind flow (see Marker (1) in **Figure C2.3(a)**).

2.2.38 The Non-Building Areas (NBAs) provided within Application Sites K10 and K4 would facilitate the flow of the prevailing easterly wind from Ho Sheung Heung across Road P2-1 towards Kwu Tung Station. These NBAs, which link Ho Sheung Heung and Kwu Tung Station, would form an effective wind breezeway that enhances the penetration of easterly wind (see Marker (2) in **Figure C2.3(a)**). In addition, the building morphology within Application Site K4 would divert a stream of easterly wind to flow along Road P2-1 towards Fung Kong Shan.

2.2.39 The prevailing easterly wind originating from the Sheung Yue River would penetrate the southern portion of Application Site K12 and continue across the east-west oriented wind breezeway along Kwu Tung Station towards Road P1-1 (see Marker (3) in **Figure C2.3(a)**).

2.2.40 The prevailing easterly wind from Road D2-4 will utilize Roads D1-1, L1, L2, D2-2 and D2-3 as the primary easterly wind pathway. This route facilitates wind flow between Application Sites K2, K5 and K6 and Areas A5, P15 to P17, and Ar32 (see Marker (4) in **Figure C2.3(a)**). Non-Building Areas (NBAs) are provided along the northern boundaries of Areas P15 to P17 and Ar32. These NBAs would widen Roads L2, D2-2 to D2-4 and enhance the effectiveness of this easterly wind breezeway.

2.2.41 Fanling Highway, which runs adjacent to the southern boundary of the KTN NDA, serves as one of the major easterly wind breezeways that contributes to district-wide air ventilation. The easterly wind from the area near Area P21 (see Marker (6) in **Figure C2.3(a)**) merges with the easterly wind from Long Valley, which is channeled along the section of the Sheung Yue River between Areas Ar32 and P19 (see Marker (5) in **Figure C2.3(a)**). The combined wind stream then flows along Fanling Highway.

2.2.42 Under the OZP Compliant Scheme, the building height variations between the Development Proposals within the Application Sites and the planned developments in the surrounding areas (as shown in **Figure CA2**) would induce downwash wind along Roads L6-1 and L6-2, as well as along the major separations between the Application Sites and the surrounding areas, namely Separation 3-2, Separation 3-3 and Separation 4-1, under the prevailing easterly wind. In addition, vertical air movements are anticipated along Road D2-1 and Separations 3-1, 3-4 and 4-2, which are located between the surrounding areas. These downwash winds/vertical air movements, induced by the differences in building heights, play an essential role in maintaining the local wind environment.

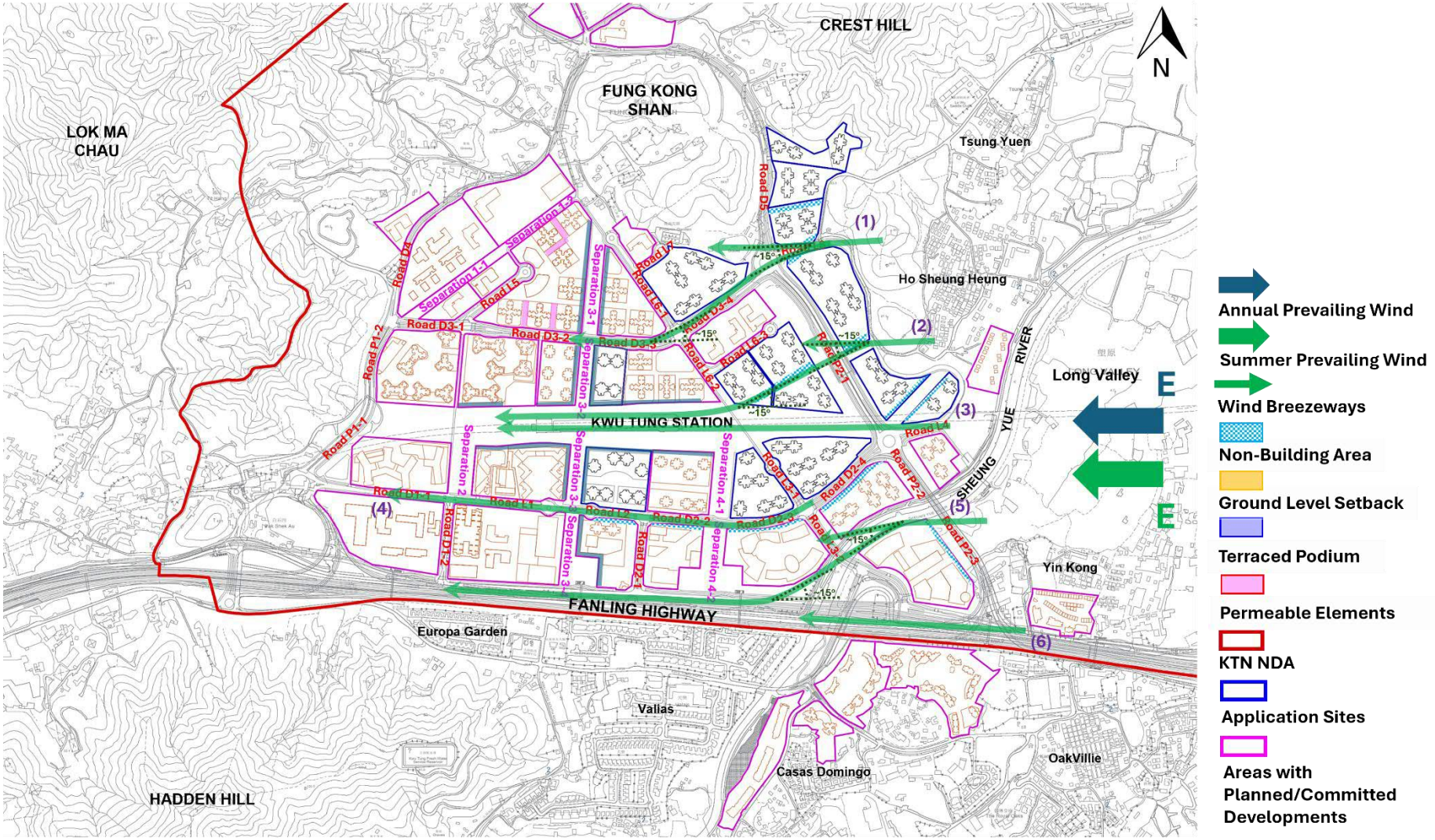


Figure C2.3(a) Wind Flow under the E Annual and Summer Prevailing Wind for the OZP Compliant Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.43 As the building morphologies in the surrounding areas are identical under both the OZP Compliant Scheme and the Proposed Scheme, the easterly wind path originating from the village houses at Ho Sheung Heung would remain unchanged. The wind would continue to flow along Road L8, which is located between Application Sites K9 and K10, and then divide into two streams. The descriptions set out in paragraph 2.2.38 for the OZP Compliant Scheme remain valid for the Proposed Scheme. To facilitate the smooth penetration of the prevailing easterly wind, two strips of Non-Building Areas (NBAs) are incorporated along the southern boundary of Application Site K9 and the northern boundary of Application Site K10. These NBAs would widen Road L8 (see Marker (1') in **Figure C2.3(b)**).

2.2.44 The easterly wind flow patterns through the Non-Building Areas (NBAs) within Application Site K10 and Application Site K4, from Ho Sheung Heung towards Kwu Tung Station across Road P2-1, remain unchanged under the Proposed Scheme compared with the OZP Compliant Scheme. These NBAs, which link Ho Sheung Heung and Kwu Tung Station, would continue to form an effective breezeway that enhances the penetration of the prevailing easterly wind (see Marker (2') in **Figure C2.3(b)**). As in the OZP Compliant Scheme, the introduction of podiums within Application Site K4b under the Proposed Scheme would result in improved diversion of a stream of easterly wind along Road P2-1 towards Fung Kong Shan.

2.2.45 The two district-wide easterly breezeways identified in the OZP Compliant Scheme remain unchanged and effective under the Proposed Scheme. The areas along Kwu Tung Station and Fanling Highway, both aligned in an east-west direction, would continue to support district-wide air ventilation performance (see Markers (3') and (6') in **Figure C2.3(b)**).

2.2.46 The stream of prevailing easterly wind from Road D2-4 that flows along Roads D2-3, D2-2, L2, L1 and D1-1 under the OZP Compliant Scheme remains unchanged under the Proposed Scheme (see Marker (4') in **Figure C2.3(b)**). As in the OZP Compliant Scheme, the incorporation of Non-Building Areas (NBAs) along the northern boundaries of Areas P15 to P17 and Ar32 would widen Roads L2, D2-2 to D2-4 and enhance the effectiveness of this easterly wind breezeway under the Proposed Scheme.

2.2.47 With the building morphologies in the areas adjacent to the Application Sites remaining unchanged, the easterly wind from Long Valley would continue to be channeled along the section of the Sheung Yue River lying between Areas Ar32 and P13. This stream would then merge with the easterly wind originating from the Yin Kong area near Area P21, and the combined flow would continue along Fanling Highway (see Markers (5') and (6') in **Figure C2.3(b)**).

2.2.48 By investigating the building height variations of the Development Proposals within the Application Sites and the planned developments at the surrounding areas under the Proposed Scheme in **Figure CA3**, locations where downwash wind is anticipated to occur under the Proposed Scheme are generally consistent with the OZP Compliant Scheme which are along Roads L6-1, L6-2, D2-1 as well as along the major separations: Separations 3-1, 3-2, 3-4, 4-1 and 4-2, formed in under the E prevailing wind for the Proposed Scheme.

Differences in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.49 Similar to the situation under the prevailing ENE wind, the overall building footprints, orientations and arrangements of the domestic blocks within the Application Sites remain substantially consistent under the Proposed Scheme compared with the OZP Compliant Scheme. However, the domestic blocks would be taller due to the relaxation of Building Height Restrictions (BHR). In addition, higher podiums have been introduced across most Application Sites to accommodate aboveground car parks and Public Transport Interchanges (PTIs). As a result, under the prevailing easterly annual and summer winds, the Proposed Scheme is anticipated to generate wind wakes with greater extent and coverage in the downwind areas compared with the OZP Compliant Scheme. In particular, the wind environment at the potential wind-sensitive receivers in Areas A2 to A5, P12 and P22, which are located immediately downstream of Application Sites K1 to K5 and K10, would be more significantly influenced by the larger wind wakes induced by the taller domestic buildings and the additional elevated podiums under the Proposed Scheme. However, it is worthwhile mentioning that the

newly introduced podiums maintain separations of at least 15m between them to enhance wind permeability and promote wind penetration through the Application Sites.

2.2.50 Within Application Sites K8 to K10, relaxations of building heights and the adoption of podium designs (instead of podium-free designs) are proposed. Consequently, slightly stronger wind channeling effects are expected along the Non-Building Areas (NBAs) within these sites. However, larger wake zones are also anticipated under the Proposed Scheme, which may affect the downwind areas, particularly Areas P18 and P22.

2.2.51 Due to the increased building heights within the Application Sites, the differences in building height variations between the Development Proposals and the planned/committed developments in the surrounding areas are less pronounced than under the OZP Compliant Scheme. As a result, downwash wind would still occur but would be less strengthened. Downwash wind is nevertheless anticipated along Roads L6-1 and L6-2, as well as along Separations 3-2 and 4-1 between the Application Sites and the surrounding areas. These induced downwash winds remain essential in maintaining the local wind environment at and near the Application Sites under the Proposed Scheme. In addition, it is anticipated that downwash occurring along Separation 3-3 under the OZP Compliant Scheme would disappear under the Proposed Scheme due to the relaxation in building heights within Application Site K2.

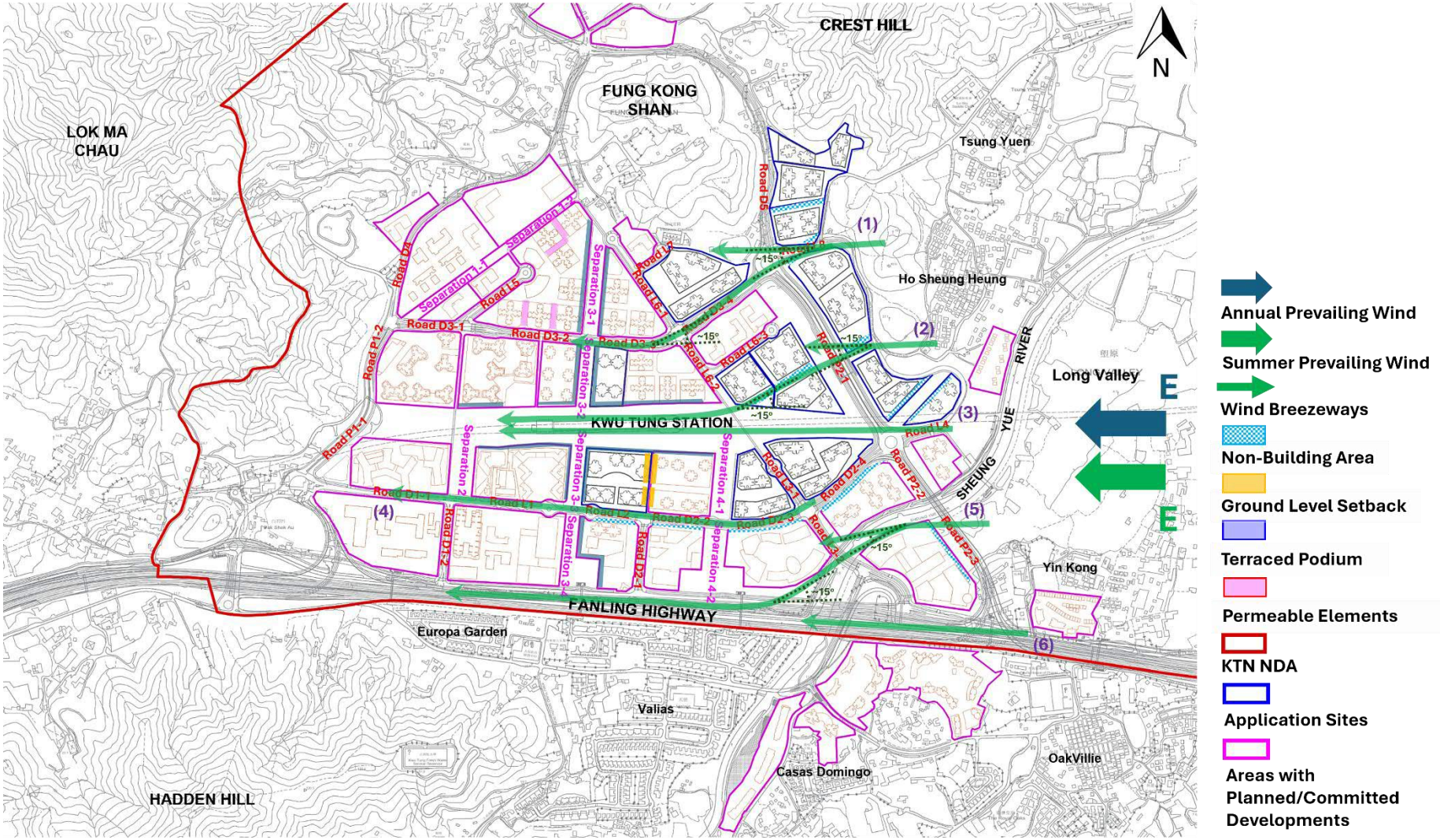


Figure C2.3(b) Wind Flow under the E Annual and Summer Prevailing Wind for the Proposed Scheme

Under S Summer Prevailing Wind Direction

OZP Compliant Scheme

2.2.52 Under the OZP Compliant Scheme, southerly winds are largely sheltered by the committed and planned high-rise residential blocks in Areas P11 and P13. The wind channels westward along Road P1-2, passes the western side of the committed school in Area P4, and continues northward towards Road D4 with minimal further obstruction (see Marker (1) in **Figure C2.4(a)**).

2.2.53 A local southerly wind path is identified originating from Europa Garden near the Fanling Highway and flowing towards Areas P7 and P8 (see Marker (2) in **Figure C2.4(a)**). This wind stream travels along Road D1-2 between Areas P13 and P14, as well as through the separation between Areas P11 and P12 (Separation 2), before reaching the Kwu Tung Station area. After passing the separation between Areas P9 and P10, the wind continues towards Road D3-1 and the planned schools in Areas P7 and P2.

2.2.54 The series of separations (Separations 3-1 to 3-4 in **Figure C2.4(a)**) located between Areas A1/A3/P12/P14 and Area A2/Application Sites K1 and K2/Area P15 form a major district-wide north-south wind breezeway. This breezeway links Fung Kong Shan with the Fanling Highway and helps maintain a favorable wind environment around Application Sites K1 and K2, as well as in Areas A1–A3, P12, P14, and P15 (see Marker (3) in **Figure C2.4(a)**).

2.2.55 One southerly wind stream from the Fanling Highway flows along Road D2-1 between Areas P15 and P16 towards Area A5 and Application Site K2 (see Marker (4) in **Figure C2.4(a)**).

2.2.56 After flowing through the separations between Areas A5/P16 and Application Site K5/Area P17 (Separations 4-1 and 4-2 in **Figure C2.4(a)**), the southerly wind continues towards the Kwu Tung Station and is then channeled along Road L6-2 (see Marker (5) in **Figure C2.4(a)**).

2.2.57 Due to the urban grid layout and building placement within Areas P17 and P19, the southerly wind diverges into two streams. The first stream flows along Road L3-1 (between Application Sites K5 and K6) and Road L3-2 (between Areas P17 and Ar32). The second stream is directed along the portion of the Sheung Yue River sandwiched between Areas Ar32 and P19 (see Marker (6) in **Figure C2.4(a)**).

2.2.58 Some weakening of the southerly wind is expected after it passes Application Sites K4, K5, and K6. Nevertheless, the Development Proposals in these sites adopt podium-free designs and are arranged in a scattered manner with generous building separations. These design measures help maintain southerly wind availability towards the downwind Application Sites K7 to K10. In addition, Road D5, which abuts Application Sites K7 to K9, serves as a major north-south wind breezeway that helps sustain the wind environment around Application Sites K3, K7–K9, and Area P22 (see Marker (7) in **Figure C2.4(a)**).

2.2.59 The Sheung Yue River functions as another important district-wide south-north wind breezeway. Southerly winds originating from the Fanling Highway and the areas near P19 and P21 (close to Yin Kong) flow along the river corridor, reaching the downwind areas near Area P20 and to the east of Ho Sheung Heung (see Marker (8) in **Figure C2.4(a)**).

2.2.60 Under the OZP Compliant Scheme, downwash effects associated with the southerly prevailing wind are observed at several locations, as indicated by the maximum building height distribution (see **Figure CA2**). These include Roads D1-1, L2, D2-2, D2-3, and L4, where the planned buildings in Areas P13, P15–P17, and Ar34 are notably lower than those in Area P11, Application Site K2, Area A5, and Application Sites K5 and K12. Downwash is also anticipated along Roads D3-2 to D3-4 and in the vicinity of the Kwu Tung Station, where buildings facing the southerly wind are lower than those behind them.

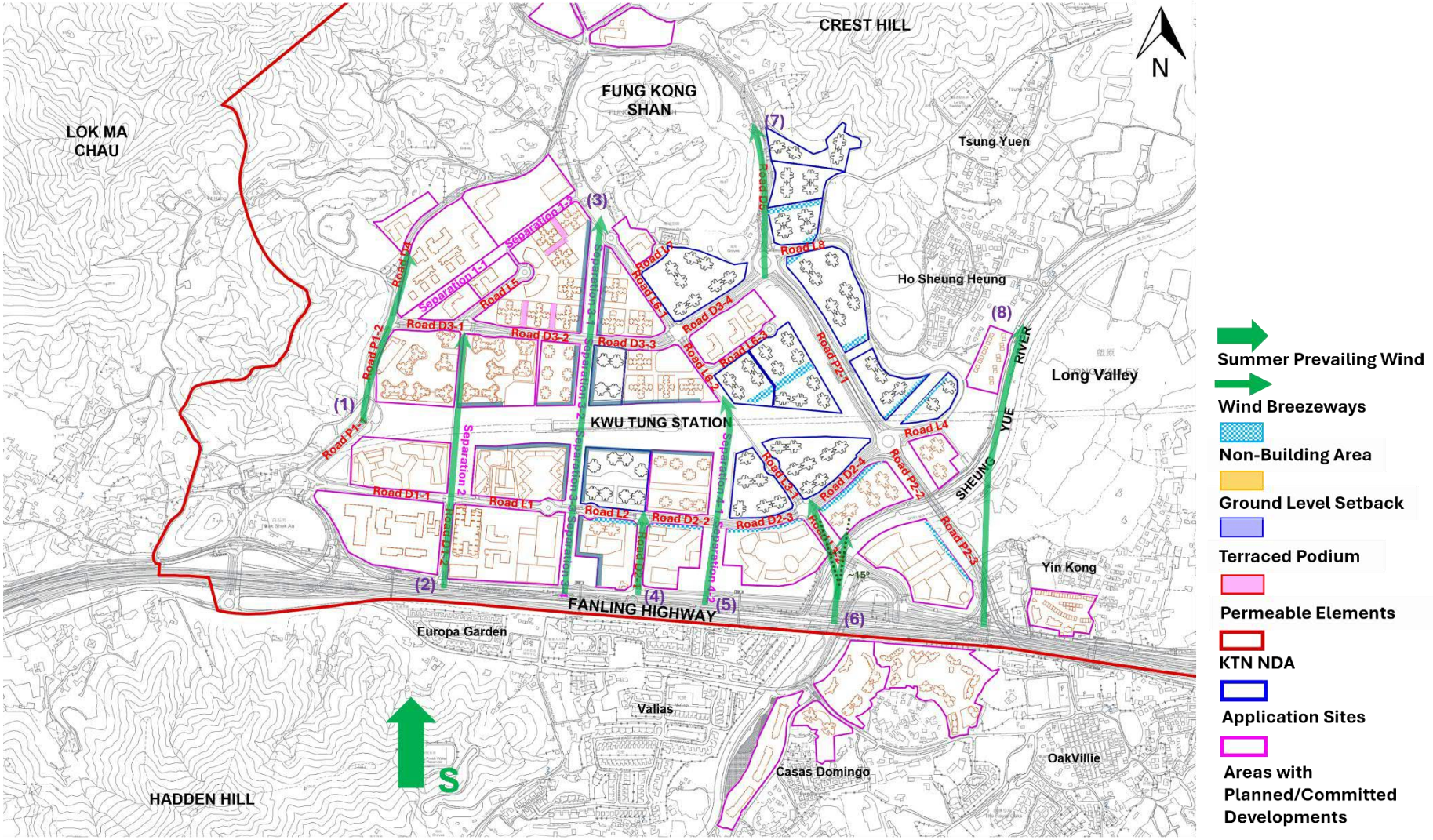


Figure C2.4(a) Wind Flow under the S Summer Prevailing Wind for the OZP Compliant Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.61 Under the Proposed Scheme, the surrounding building morphologies in Areas P4 to P14, located to the west of the Application Sites, remain unchanged from the OZP Compliant Scheme. Therefore, the wind flow patterns described in paragraphs 2.2.53 to 2.2.54 for the OZP Compliant Scheme remain valid (see Markers (1') and (2') in **Figure C2.4(b)**).

2.2.62 The series of separations (Separations 3-1 to 3-4 in **Figure C2.4(b)**) between Areas A1 and A2, Area A3 and Application Site K1, Area P12 and Application Site K2, and Area P14 and Area P15 continue to link Fung Kong Shan with the Fanling Highway. This forms a major district-wide north-south wind breezeway under the Proposed Scheme, identical to the OZP Compliant Scheme (see Marker (3') in **Figure C2.4(b)**). This breezeway helps maintain a favorable wind environment around Application Sites K1 and K2, as well as Areas A1–A3, P12, P14, and P15.

2.2.63 Consistent with the OZP Compliant Scheme, southerly winds originating from the Fanling Highway would flow along the separations between Area A5/Application Site K5 and Areas P16/P17 (Separations 4-1 and 4-2 in **Figure C2.4(b)**). The wind would continue towards Kwu Tung Station and then be channeled along Road L6-2 (see Marker (5') in **Figure C2.4(b)**).

2.2.64 As the urban grid and building placement within Areas P17, P19, and Ar32 remain unchanged under the Proposed Scheme, the southerly wind from the Fanling Highway continues to diverge into two streams. The wind flow pattern in this area is therefore similar to that under the OZP Compliant Scheme (see Marker (6') in **Figure C2.4(b)**).

2.2.65 Similar to the OZP Compliant Scheme, the weakened southerly wind would flow along Road D5, which abuts Application Sites K7 to K3. This road serves as a major north-south wind breezeway that helps maintain the wind environment around Application Sites K3, K7–K10, and Area P22 under the Proposed Scheme (see Marker (7') in **Figure C2.4(b)**).

2.2.66 With no observable changes in building morphologies within Areas P19 and P21 under the Proposed Scheme, southerly winds originating from the Fanling Highway would flow across Road P2-3 to the northeast of Area P19 and continue along the Sheung Yue River towards the areas near Area P20 (see Marker (8') in **Figure C2.4(b)**).

Differences in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.67 The Proposed Scheme retains the key air ventilation design measures from the OZP Compliant Scheme, including terraced podiums in Application Sites K1 and K2, and Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12. These measures help maintain good air penetration. Nevertheless, the introduction of additional podiums and increases in building heights across most Application Sites are expected to generate stronger wind wakes. These changes may reduce the wind availability at the identified potential wind-sensitive receivers, namely Areas A2, A4, P18 and P22, Kwu Tung Station, and Ho Sheung Heung village.

2.2.68 The ground-level setbacks within Application Site K2 and Area A5, which serve as a good air ventilation design measure, are incorporated under the Proposed Scheme. These setbacks, located along the eastern boundary of Application Site K2 and the western boundary of Area A5, would elongate the identified wind breezeway from the Fanling Highway to flow along the separation between Application Site K2 and Area A5 and reach the Kwu Tung Station area (see Marker (4') in **Figure C2.4(b)**).

2.2.69 Although the terraced podium designs in Application Sites K1 and K2 remain unchanged, the increases in podium height and the maximum building height restriction under the Proposed Scheme are anticipated to generate stronger wind wakes. This would reduce wind availability at Kwu Tung Station and in Areas A2 and A4. In addition, cumulative wind wakes induced by the developments in Application Sites K1 and K2 may create potential wind impacts on the downwind Area A2 under southerly summer prevailing winds.

2.2.70 The maximum building heights within Application Sites K4a and K4b increase from 75mPD under the OZP Compliant Scheme to 95mPD under the Proposed Scheme. Together with the addition of three 2-storey podiums for above-ground car parking, these changes are expected to produce stronger wind wakes affecting the downwind Area P22.

2.2.71 The building footprints, orientation and arrangements of the domestic blocks and the strips of Non-Building Areas (NBAs) within Application Sites K11 and K12 remain substantially unchanged. However, the slight relaxation in building heights and the introduction of 2-storey podiums for car parking in Application Site K11 are expected to generate wind wakes that extend over a slightly larger area, potentially affecting the village houses in Ho Sheung Heung.

2.2.72 Despite the relaxations in maximum building heights and the adoption of two-storey podiums across most Application Sites, which are expected to generate wind wakes of greater extent and coverage compared to the OZP Compliant Scheme, the overall wind flow patterns under southerly summer prevailing winds are anticipated to remain largely the same. The footprints of the additional podiums have been minimized as far as practicable, while maintaining at least 15m separation between them and incorporating 5m podium gardens. The good air ventilation design measures from the OZP Compliant Scheme have been retained. With the identified wind breezeways remaining unobstructed and enhanced channeling effects, penetration of southerly prevailing winds is promoted. Ground-level setbacks at Application Site K2 and Area A5 are incorporated to facilitate the flow of southerly winds, elongating one of the identified wind breezeways towards Kwu Tung Station. In addition, due to the greater height differences between Area P15 and Application Site K2, Area P22 and Application Site K3, Application Sites K5/K6 and Application Site K4, Area P17 and Application Site K5, and Area Ar32 and Application Site K6, a slight enhancement in downwash effects is anticipated along Road L2, Road D3-4, region east to Kwu Tung Station, Road D2-3, and Road D2-4 as compared with the OZP Compliant Scheme.

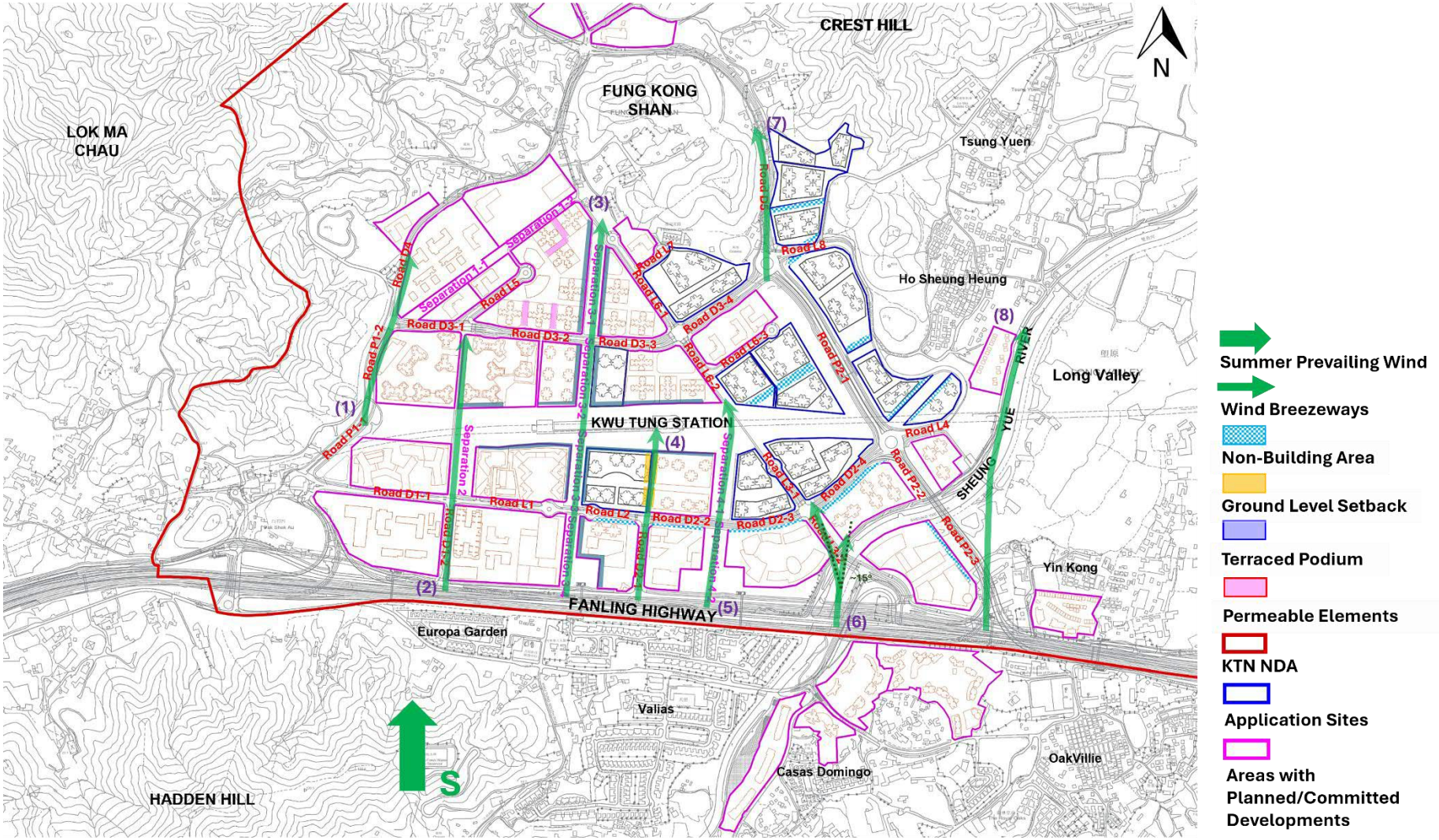


Figure C2.4(b) Wind Flow under the S Summer Prevailing Wind for the Proposed Scheme

Under SW Summer Prevailing Wind Direction

OZP Compliant Scheme

2.2.73 Under the OZP Compliant Scheme, the majority of the proposed buildings within the Application Sites and the planned/committed developments in the surrounding areas are not oriented in a southwest-northeast (SW-NE) direction. As a result, elongated and continuous air pathways penetrating the Application Sites are generally not observed under the southwesterly (SW) summer prevailing wind. Nevertheless, several localized wind paths can still be identified after the wind is sheltered by the Development Proposals.

2.2.74 Three major SW summer wind breezeways are identified. The first is Road D4, which flows between the planned school in Area P4 and the GIC blocks in Area P5 (see Marker (1) in **Figure C2.5(a)**). The second follows the separations (Separation 1-1 and Separation 1-2) between Areas P5/P6 and Areas P7/P8/A1, extending towards Fung Kong Shan (see Marker (2) in **Figure C2.5(a)**). The third SW wind path originates from the Fanling Highway, travels between Areas Ar32 and P19 and alongside Area Ar34, crosses the Sheung Yue River, and proceeds towards Long Valley (see Marker (9) in **Figure C2.5(a)**).

2.2.75 Dominated by the urban grid layout, SW winds flowing along the Fanling Highway diverge into several streams that enter Road D1-2, Separation 3-4, Road D2-1, and Separation 4-2. These streams help promote the wind environment in the vicinity of Areas P13 to P17 (see Marker (8) in **Figure C2.5(a)**).

2.2.76 After being sheltered by the proposed residential developments in Area A2, SW winds flow along Road L7, which abuts the southern boundary of Area P18 and the northwestern boundary of Application Site K3 (see Marker (3) in **Figure C2.5(a)**). SW winds from Road D3-3 near Application Site K1 and Area A4 continue along Road D3-4. Two strips of Non-Building Areas (NBAs) at the southeast tip of Application Site K9 and the northwest tip of Application Site K10 help widen Road L8, thereby enhancing the penetration of this SW prevailing wind (see Marker (4) in **Figure C2.5(a)**). Another SW wind path leading towards Application Site K10 is identified along Road L6-3, located between Area P22 and Application Site K4 (see Marker (5) in **Figure C2.5(a)**).

2.2.77 Two additional SW wind paths directed towards the Ho Sheung Heung area are identified. The first originates from Kwu Tung Station area and flows along the SW-NE aligned Non-Building Areas (NBAs) within Application Sites K4 and K10 before reaching the village houses of Ho Sheung Heung (see Marker (6) in **Figure C2.5(a)**). The second path starts from Road D2-3 between Area P17 and Application Site K5, enters Road D2-4, and continues along the separation between Application Sites K11 and K12 towards the Ho Sheung Heung area (see Marker (7) in **Figure C2.5(a)**).

2.2.78 Under the OZP Compliant Scheme, downwash effects associated with the SW prevailing wind are observed at several locations based on the building height distribution (see **Figure CA2**). These include Roads D1-1, L2, D2-2, D2-3, D2-4, and L4, where the planned buildings in Areas P13, P15–P17, Ar32, and Ar34 are lower than those in Areas P11 and A5 and Application Sites K2, K5, K6, and K12. Downwash is also anticipated along Roads D3-2 and D3-3, where buildings in Areas P10, A3, A4, and Application Site K1 are lower than those in Areas A1 and A2. As the proposed developments facing the southwestern prevailing wind are lower than those behind them, Separation 4-2 is also anticipated to experience downwash. Furthermore, downwash effects occur near the Kwu Tung Station in the vicinity of Areas P10/P12/A3 and Areas A4/A5, as well as along Road P2-1, where the proposed/planned developments in Area P22 and Application Sites K4 and K6 have lower building heights than those in Application Sites K10 and K11.

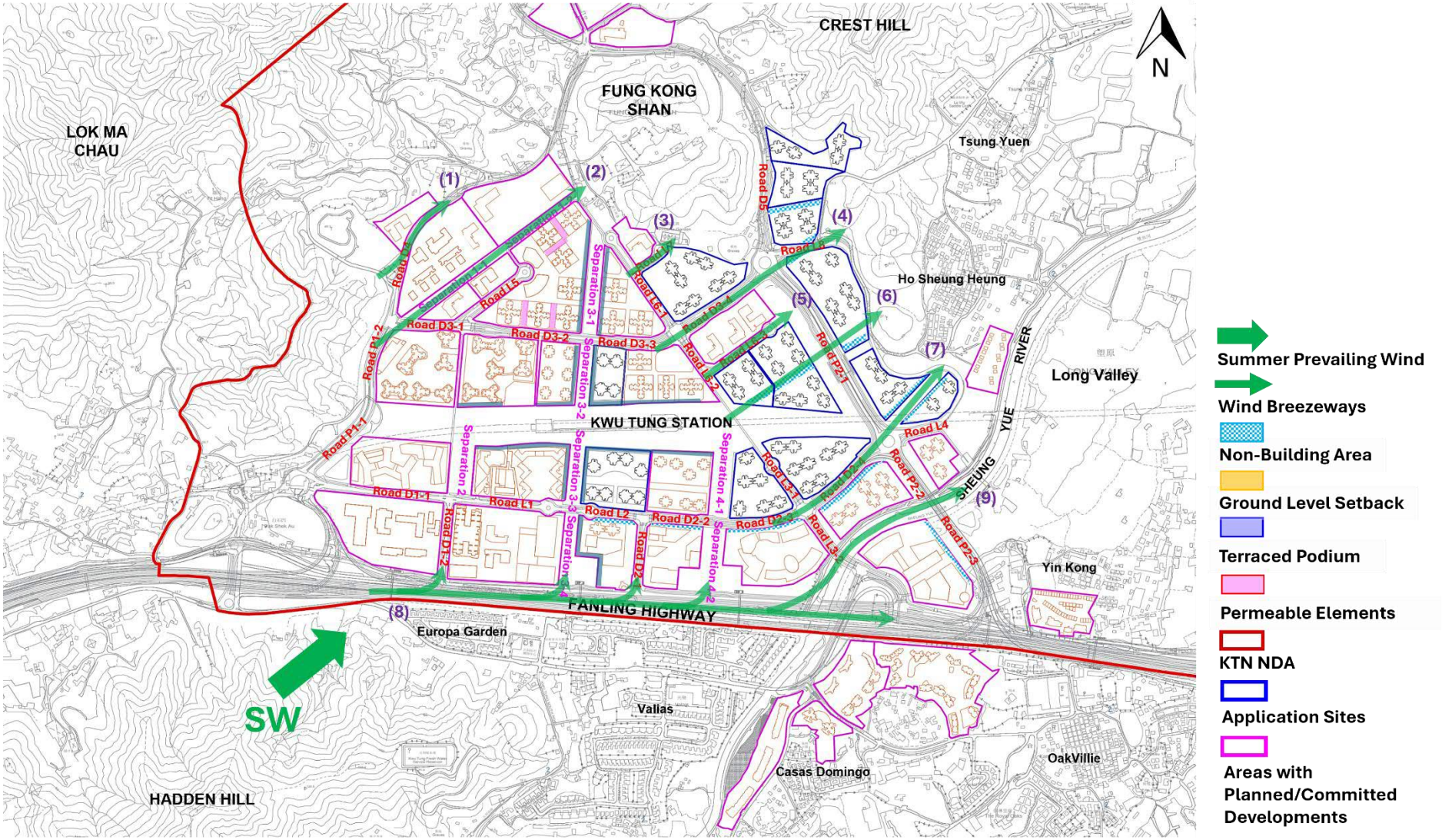


Figure C2.5(a) Wind Flow under the SW Summer Prevailing Wind for the OZP Compliant Scheme

Proposed Scheme

Similarities in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.79 Under the Proposed Scheme, there are no changes in building morphologies within Areas P4–P8, A1, P13–P17, and P13. As a result, the three major SW summer wind breezeways identified in the OZP Compliant Scheme remain effective (see Markers (1'), (2'), and (9') in **Figure C2.5(b)**). Similarly, the SW winds flowing along the Fanling Highway continue to diverge into several streams that enter Road D1-2, Separation 3-4, Road D2-1, and Separation 4-2 (see Marker (8') in **Figure C2.5(b)**). Therefore, the descriptions of wind flow patterns along these breezeways and the Fanling Highway provided in paragraphs 2.2.75 and 2.2.76 for the OZP Compliant Scheme remain valid under the Proposed Scheme.

2.2.80 Consistent with the OZP Compliant Scheme, SW prevailing wind weakened by the high-rise buildings in Area A2 would continue to flow along Road L7, which lies between Area P18 and Application Site K3 (see Marker (3') in **Figure C2.5(b)**). The two strips of Non-Building Areas (NBAs) within Application Sites K9 and K10, which widen Road L8 and enhance penetration of the SW prevailing wind, are retained under the Proposed Scheme. These features help maintain a favorable wind environment in the vicinity of Application Sites K3, K9, K10, and Area P22 (see Marker (4') in **Figure C2.5(b)**). In addition, the SW wind stream originating from Area A4, which flows across Road L6-2 along the northwestern boundary of Application Site K4 and continues along Road L6-3 towards Application Site K10, remains effective under the Proposed Scheme (see Marker (5') in **Figure C2.5(b)**).

2.2.81 The two SW wind paths directed towards the Ho Sheung Heung area under the Proposed Scheme are unchanged from the OZP Compliant Scheme. The first path originates from the Kwu Tung Station area, flows along the SW-NE aligned Non-Building Areas (NBAs) within Application Sites K4 and K10, crosses Road P2-1, and proceeds towards the village houses of Ho Sheung Heung (see Marker (6') in **Figure C2.5(b)**). The second path is formed by Road D2-3, Road D2-4, and the separation between Application Sites K11 and K12, allowing the SW wind stream to reach the areas near Ho Sheung Heung (see Marker (7') in **Figure C2.5(b)**).

Differences in Pedestrian Wind Environment as compared to the OZP Compliant Scheme

2.2.82 Due to the relaxation in maximum building heights and the addition of two-storey podiums for above-ground car parking in most Application Sites, the Proposed Scheme is expected to induce wind wakes of greater extent and coverage compared to the OZP Compliant Scheme. These enhanced wind wakes would further affect the wind environment at the identified potential wind-sensitive receivers located downwind under the southwesterly (SW) prevailing wind, namely Areas A2 and A4, the Kwu Tung Station, and Ho Sheung Heung village.

2.2.83 The increases in maximum building height and podium height within Application Sites K1 and K2 would weaken the southwesterly prevailing wind reaching the downwind areas, resulting in larger wind wakes that affect Areas A2 and A4 as well as the Kwu Tung Station. Cumulative wind wakes impacting Area A4 from the combined developments in Application Sites K1 and K2 are anticipated to be more pronounced under SW summer prevailing winds.

2.2.84 Although the building arrangements, orientations of domestic blocks, and locations of Non-Building Areas (NBAs) within Application Sites K10 and K11 remain substantially unchanged, the relaxation in building heights (20mPD for Application Site K11 and 5mPD for Application Site K11) and the introduction of podiums to accommodate public transport interchanges and above-ground car parking would generate wind wakes of greater extent and coverage in the downwind Ho Sheung Heung area, thereby reducing wind availability compared to the OZP Compliant Scheme.

2.2.85 Owing to the more pronounced differences in building heights between the Application Sites and the surrounding planned/committed developments under the Proposed Scheme, the magnitude of downwash effects is expected to be slightly stronger than under the OZP Compliant Scheme. This enhanced downwash is anticipated along Roads L2, D2-3, D2-4 and Separation 4-2, where the planned buildings in Application Sites K2, K5, and K6, have relaxed maximum building height restrictions.

2.2.86 The northern section of Road P2-1 is also expected to experience slightly greater downwash under the Proposed Scheme, as the height difference between the proposed developments

within Area P22 and those within Application Site K10 has increased. However, it should be noted that, under the south westerly summer prevailing wind, the height difference between Application Sites K4/K6 and K11 has been reduced. As a result, the magnitude of downwash wind along Road P2-1 abutting Application Site K11 is expected to weaken slightly. Nevertheless, this modification is minor and will not result in significant changes to vertical air movements, thereby maintaining air ventilation performance in the surrounding areas.

2.2.87 Despite the anticipated wind wakes of greater extent and coverage in the downwind areas due to increased building heights and the addition of two-storey podiums, the Proposed Scheme retains all the good air ventilation design measures from the OZP Compliant Scheme. These include terraced podiums in Application Sites K1 and K2, and Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12. Furthermore, the ground level setbacks within Application Site K2 and A5 under the Proposed Scheme are incorporated, aiming to increase building separation distances. In addition, the footprints of the additional podiums have been minimized as far as practicable, while maintaining at least 15m separation between them and incorporating 5m podium gardens to promote wind penetration and enhance site permeability. Most importantly, the added podiums and relaxed building heights do not obstruct the major identified SW wind breezeways. In view of the above, the district-wide wind flow patterns and the overall pedestrian wind environment around the Application Sites are expected to remain generally comparable to those under the OZP Compliant Scheme for southwesterly prevailing winds.

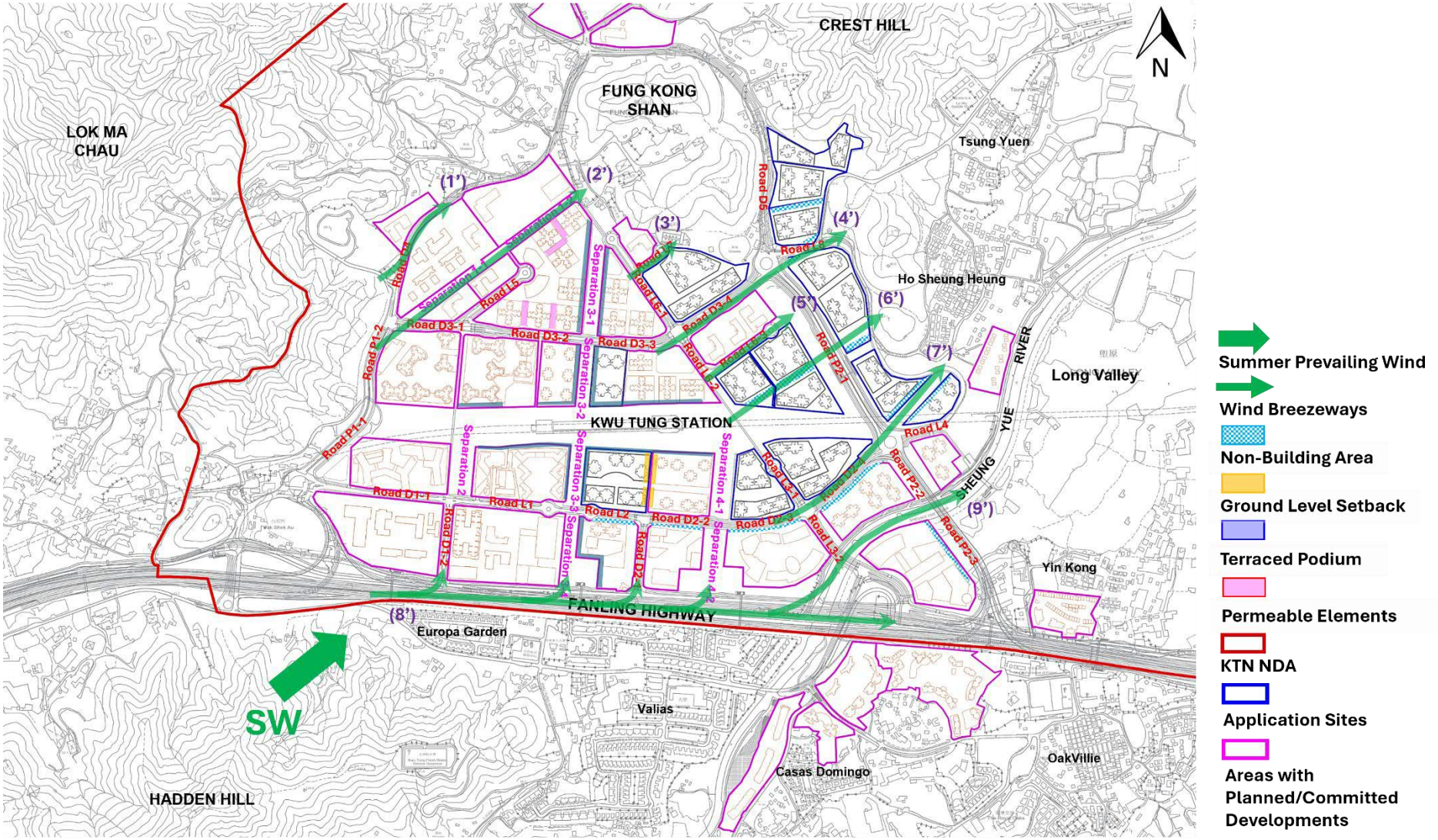


Figure C2.5(b) Wind Flow under the SW Summer Prevailing Wind for the Proposed Scheme

Summary

2.2.88 In summary, the directional wind flow analysis indicates that the overall wind flow patterns across the KTN NDA would remain largely unchanged between the OZP Compliant Scheme and the Proposed Scheme. Although the Proposed Scheme involves slight increases in building heights and the introduction of two-storey podiums in most Application Sites, these modifications are expected to generate somewhat larger wind wakes in the immediate downwind areas. Conversely, the greater differences in building heights at certain locations would enhance downwash effects and strengthen local wind channeling along key roads.

2.2.89 Importantly, the key air ventilation design measures from the OZP Compliant Scheme — including terraced podiums, Non-Building Areas (NBAs), generous building separations, podium gardens, and unobstructed district-wide breezeways (such as those along the Sheung Yue River and the separations linking Fung Kong Shan with the Fanling Highway) have been retained. Ground-level setbacks are incorporated at strategic locations within certain buildings in Application Site K2 and Area A5 to enhance the penetration of northerly and southerly prevailing winds and elongating identified wind breezeways in the Proposed Scheme. The footprints of additional podiums have also been minimized as far as practicable while maintaining at least 15m separation and incorporating 5m podium gardens. These design features, together with enhanced channeling and downwash effects, would continue to promote effective penetration of prevailing winds. As a result, no significant deterioration on the district-wide pedestrian wind environment is anticipated under the Proposed Scheme.

3 CONCLUSION

3.1.1 AECOM has been commissioned by the Civil Engineering and Development Department (CEDD) to conduct an Air Ventilation Assessment (AVA) for the thirteen Application Sites. The assessment supports a Section 16 planning application to relax building height restrictions stipulated in the approved Outline Zoning Plan (OZP) No. S/KTN/4. The proposed relaxations aim to accommodate additional heights arising from above-ground car parks and the adoption of Modular Integrated Construction (MiC).

3.1.2 Wind data from the Planning Department's Regional Atmospheric Modelling System (PlanD RAMS), wind tunnel experiments, and Hong Kong Observatory (HKO) weather stations were reviewed. As the Site Wind Availability Study for the Kwu Tung North (KTN) New Development Area (NDA) was based on wind tunnel testing, the wind tunnel experimental data is considered most appropriate for identifying prevailing wind directions at the Application Sites. The annual prevailing wind directions are north (N), east-northeast (ENE), and east (E), while the summer prevailing wind directions are east (E), south (S), and southwest (SW).

3.1.3 The KTN NDA, which encompasses the Application Sites, is situated in a predominantly rural area of Hong Kong. The surrounding land uses mainly comprise "Green Belt", "Agriculture", "Other Specified Uses", "Government, Institution or Community" (GIC), and scattered "Village Type Development" zones. To the west of the Application Sites (outside the NDA) are Green Belt areas at Lok Ma Chau. To the north lie the Green Belt areas of Fung Kong Shan, with "Agriculture" lands at Ma Tso Lung and Green Belt areas at Crest Hill located further north. Immediately to the east of the Application Sites are existing scattered low-rise developments, which are planned for future GIC buildings and residential blocks, while the village houses at Ho Sheung Heung will be retained. Further east, across the Sheung Yue River, are "Other Specified Uses" lands and village houses at Wai Lo Tsuen. To the south of the Application Sites, across the Fanling Highway, are "Residential (Group C)" zones occupied by existing low-rise residential developments, namely Europa Garden, The Valais, and Casas Domingo.

3.1.4 The existing developments within the thirteen Application Sites (K1 to K3, K4a, K4b, and K5 to K12) consist primarily of brownfield sites, temporary structures, and low-rise village houses at Tung Fong, Fung Kong, Tong Kok, and Shek Tsai Leng. These sites are in the central to south-western sector of the KTN NDA. Two of the sites are zoned for "Residential (Group A)" development, while the remainder are zoned for "Residential (Group B)".

3.1.5 The thirteen Application Sites occupy a sizable flatland surrounded by hilly terrain of varying elevations. To the near north and north-east are the hilly areas of Fung Kong Shan / Crest Hill and Sandy Ridge. To the near east lie the flatlands of Sheung Shui and Fanling towns, with the terrain of High Hill located further east. To the near west are hilly areas of approximately 100mPD in the Lok Ma Chau area, while the lands at San Tin are relatively flat. The most prominent terrain feature to the south and south-west is Hadden Hill, which reaches a maximum elevation of approximately 200mPD.

3.1.6 Extensive planned and committed developments surround the thirteen Application Sites. These areas are intended for schools, public and private residential towers, GIC blocks, hospitals, clinics, health centers, commercial buildings, and research and development facilities. For this Expert Evaluation, the building morphologies of these surrounding planned and committed developments are assumed to remain consistent under the two assessed scenarios.

3.1.7 Two development schemes are examined in this supplementary Expert Evaluation: the OZP Compliant Scheme and the Proposed Scheme. Under both scenarios, the Application Sites will comprise domestic building blocks, and non-domestic podiums. The indicative layouts show that the orientations, numbers, and general arrangement of the domestic building blocks remain substantially consistent between the two scenarios. The major differences are the relaxation of building height restrictions and the addition of podiums to accommodate above-ground car parking in most Application Sites as well as Public Transport Interchange under the Proposed Scheme. For Application Sites K1 and K2, the terraced podiums remain, alongside an increase in podium and overall building heights. For Application Site K12, the podium-free design and building height restriction remain unchanged.

3.1.8 Under the Proposed Scheme, additional two-storey podiums for above-ground car parking are introduced in most Application Sites (except K1, K2 and K12), together with relaxation of building height restrictions by 5mPD to 30mPD across most Application Sites (expect K12).

These changes will result in taller domestic blocks and additional podiums compared with the OZP Compliant Scheme, which are expected to generate wind wakes of greater extent and coverage in the downwind areas, potentially affecting certain potential wind-sensitive areas. Nevertheless, the relaxed building height restrictions provide greater flexibility for the exploration and implementation of appropriate air ventilation design strategies at future detailed design stages to enhance wind permeability and mitigate any stronger wind wakes.

3.1.9 The building footprints of the domestic blocks within the Application Sites remain largely the same under the Proposed Scheme. All good air ventilation design measures adopted in the OZP Compliant Scheme have been retained, including Non-Building Areas (NBAs) in Application Sites K4 and K9 to K12, and terraced podium designs in Application Sites K1 and K2. On top of the good design measures already in the Base Scenario, ground level setbacks at some proposed buildings within Application Sites K2 and Area A5 to widen the N-S wind corridors/wind paths are incorporated under the Proposed Scheme. The additional podiums within Application Sites K3 to K11 have been minimized in bulk as far as practicable, with most maintaining at least 15m separation and all incorporating 5m podium gardens to promote wind penetration. The relaxation in building height restrictions has also increased height differences between some buildings facing the prevailing wind and those at the rear, which is expected to induce slightly stronger downwash effects in specific areas. Most importantly, the major wind breezeways identified in the OZP Compliant Scheme remain unobstructed under the Proposed Scheme.

3.1.10 To conclude, no major alterations in wind flow patterns are anticipated between the OZP Compliant Scheme and the Proposed Scheme. As there are no significant changes in domestic building arrangements, orientations, or locations of non-building areas (NBAs) within the Application Sites, the identified wind breezeways under both annual and summer prevailing winds will continue to function effectively and help maintain good air ventilation in the vicinity of the Application Sites. Although the overall relaxation in building heights restrictions as well as the introduction of additional podiums under the Proposed Scheme are expected to induce larger wind wakes in the downwind areas, these will be partly offset by stronger downwash effects and enhanced local wind channeling. In addition, ground level setbacks incorporated at some proposed buildings within Application Site K2 and Area A5 would widen the N-S wind breezeways. Consequently, the potential air ventilation impacts are expected to be minimal, with no significant district-wide deterioration in the wind environment.

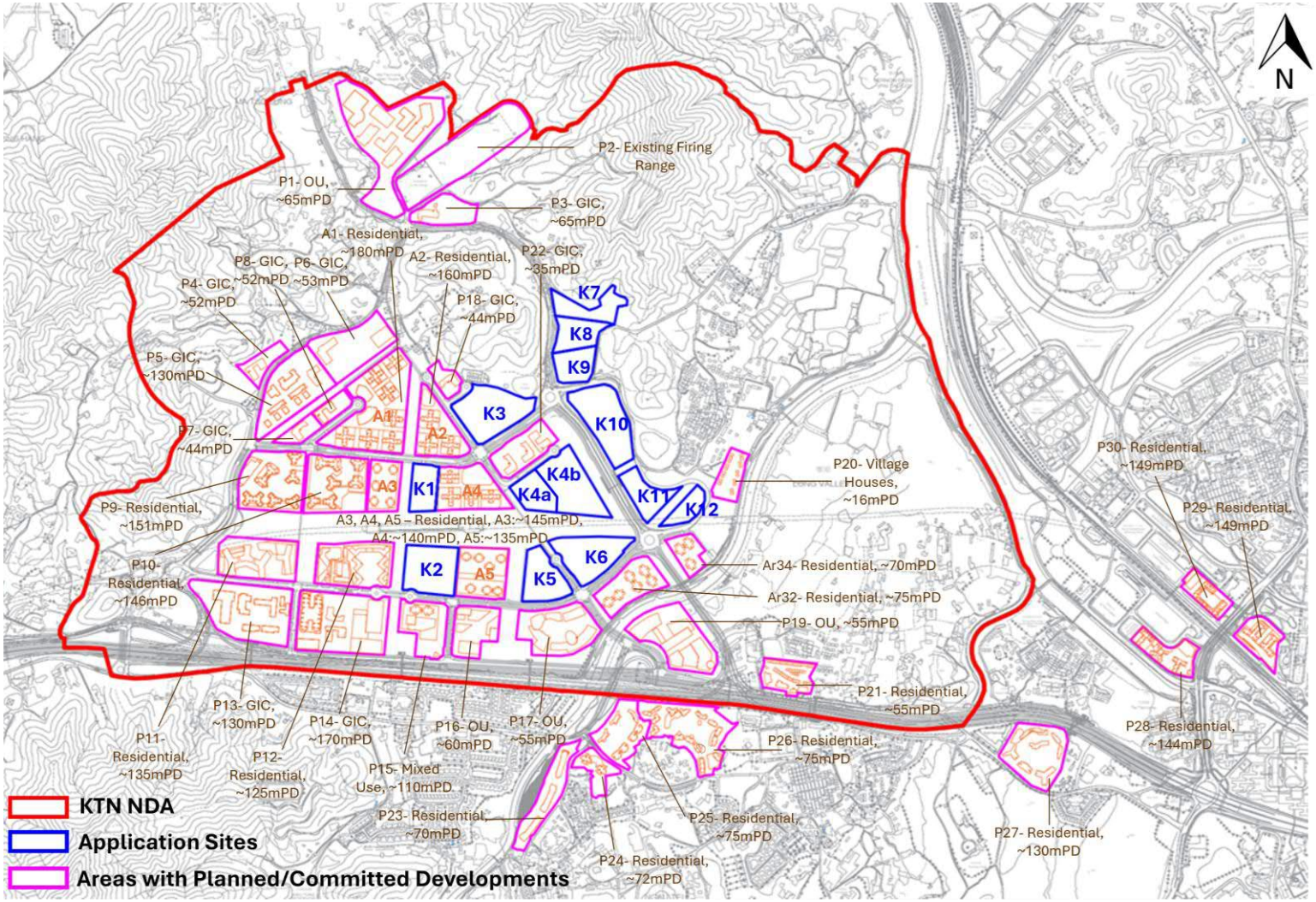


Figure CA1: Land Use and Maximum Building Heights of Planned/Committed Developments near/within the KTN NDA

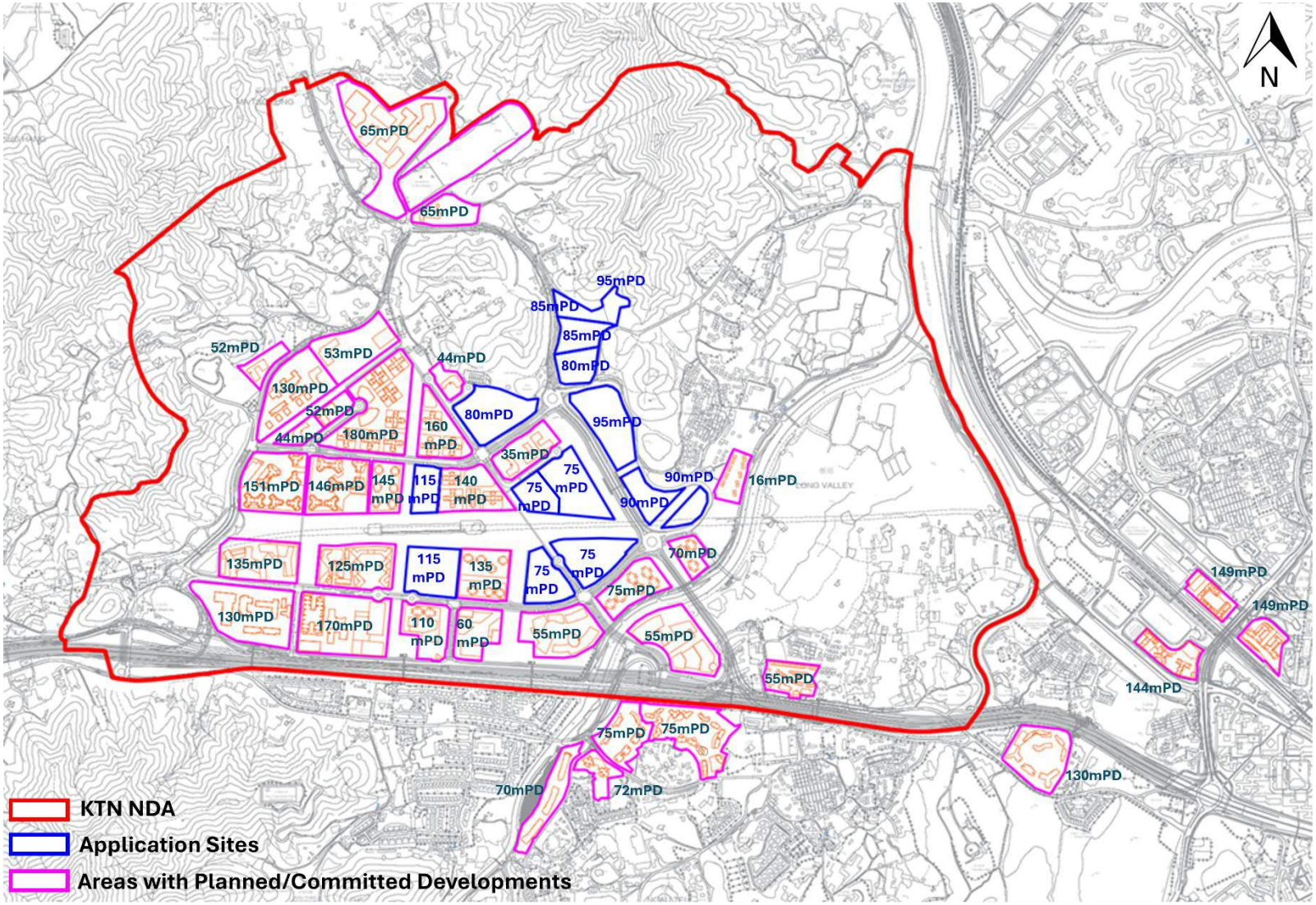


Figure CA2: Maximum Proposed Building Heights within the Application Sites and Areas with Planned/Committed Developments under the OZP Compliant Scheme

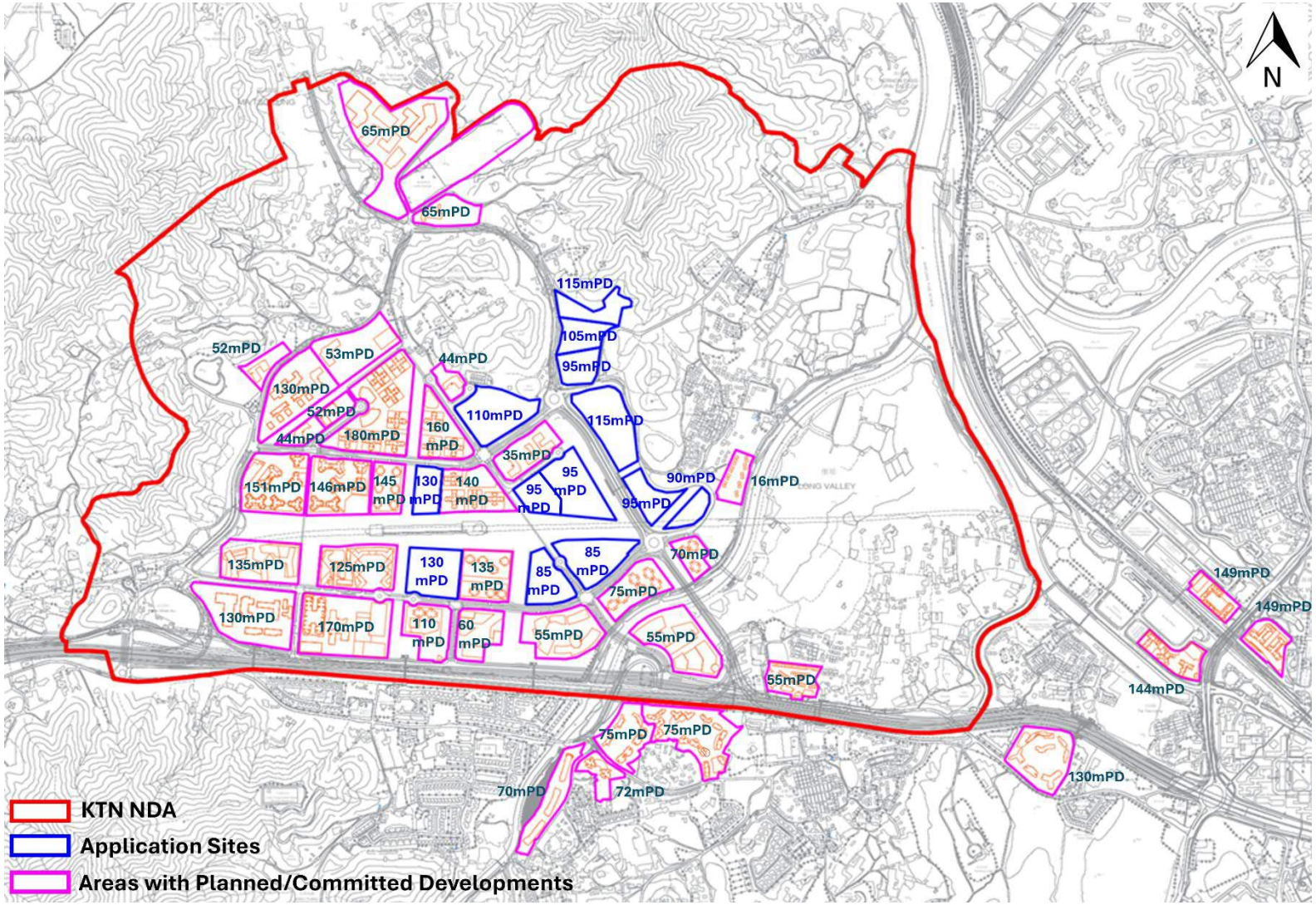


Figure CA3: Maximum Proposed Building Heights within the Application Sites and Areas with Planned/Committed Developments under the Proposed Scheme

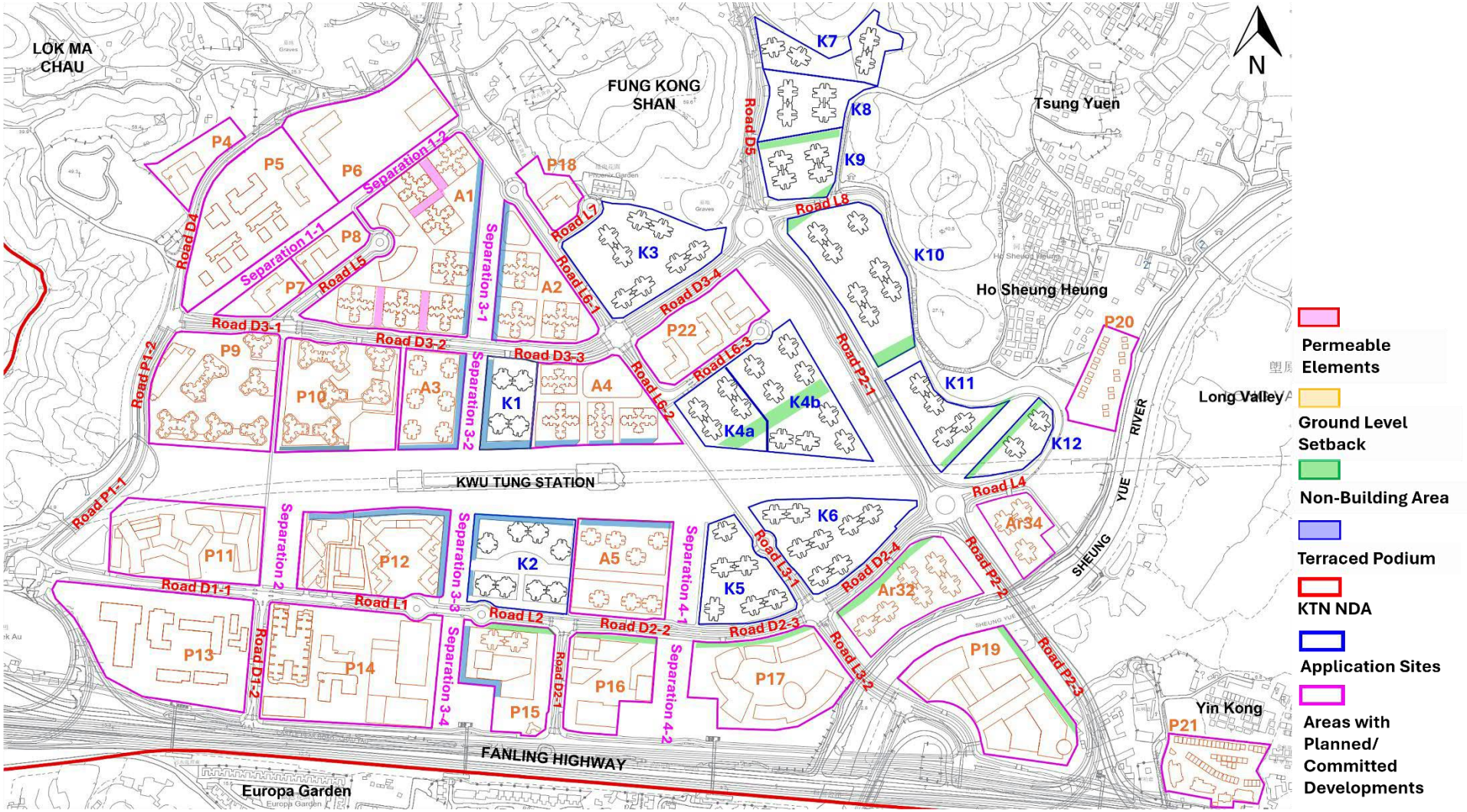


Figure CA4: Locations of Non-Building Areas, Terraced Podiums and Proposed Building Blocks within the Application Sites and Surroundings under the OZP Compliant Scheme

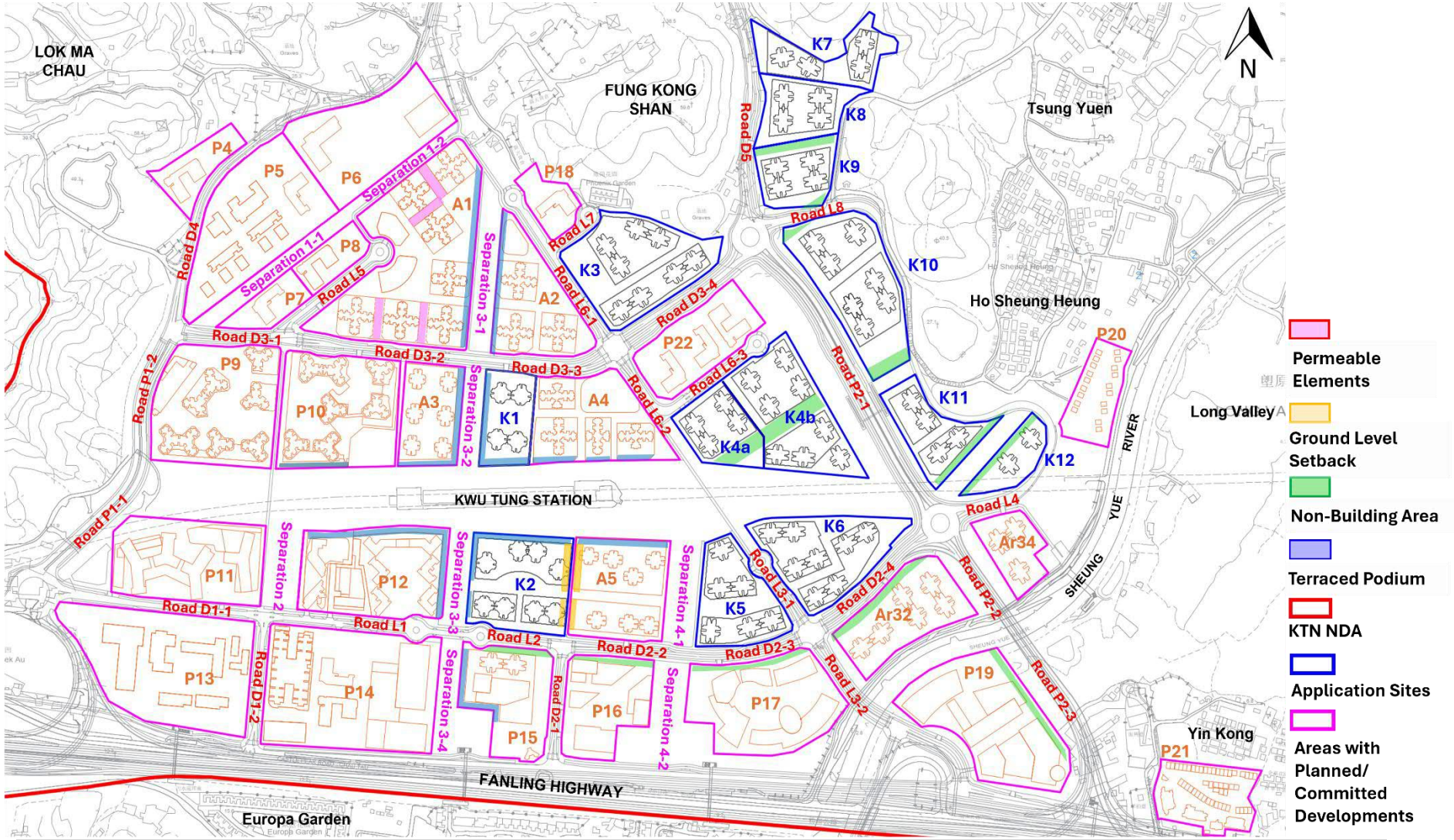


Figure CA5: Locations of Non-Building Areas, Terraced Podiums, Ground Level Setback, Locations of Permeable Elements and Proposed Building Blocks within the Application Sites and Surroundings under the Proposed Scheme