		Appendix D
Air	Ventilation	Assessment (Expert Evaluation)

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

Prepared by

Ramboll Hong Kong Limited

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

AIR VENTILATION ASSESSMENT - EXPERT EVALUATION



AVA Report

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

Date 1 September 2025

Prepared by Echo Cao

Environmental Consultant

Signed

Approved by Tony Cheng

Senior Manager

Zoho

Signed

Project Reference FECYKTRZEI00

Document No. R9518_V1.2.docx

No part of this document may be reproduced or transmitted, in any form or by any means electronic, mechanical, photographic, recording or otherwise, or stored in a retrieval system of any nature without the written permission of Ramboll Hong Kong Ltd, application for which shall be made to Ramboll Hong Kong Ltd, 21/F, BEA Harbour View Centre, 56 Gloucester Road, Wan Chai, Hong Kong.

Disclaimer: This report is made on behalf of Ramboll Hong Kong Ltd. No individual is personally liable in connection with the preparation of this report. By receiving this report and acting on it, the client or any third party relying on it accepts that no individual is personally liable in contract, tort or breach of statutory duty (including negligence).

Ramboll Hong Kong Limited

21/F, BEA Harbour View Centre 56 Gloucester Road, Wan Chai, Hong Kong

Tel: (852) 3465 2888 Fax: (852) 3465 2899 Email: hkinfo@ramboll.com

Q:\Projects\SHKKTSS3EI01\04 Deliverables\03 AVA Report\R9518_V1.2.docx



SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

CHAPTERS

		P	age
1.	IN	TRODUCTION	3
	1.1	Project Background	3
	1.2	Objectives	
	1.3	Application Site and its Environs	3
	1.4	Future/ Committed Development	3
	1.5	Baseline Scheme	4
	1.6	Proposed Scheme	4
2.	SI	TE WIND AVAILABILITY	5
	2.1	Regional Atmospheric Modelling System (RAMS)	5
	2.2	Hong Kong Observatory (HKO) Weather Data	
	2.3	Topography and Building Morphology	
	2.4	Summary of Existing Site Wind Availability	7
3.	EV	ALUATION OF AIR VENTILATION PERFORMANCE	9
	3.1	Important Areas	9
	3.2	Assessment Methodology	
	3.3	Wind Flow from NNE Direction	
	3.4	Wind Flow from E Direction	.10
	3.5	Wind Flow from ESE Direction	.10
	3.6	Wind Flow from SE Direction	.10
	3.7	Wind Flow from SSW and SW Directions	.11
4.	CC	DNCLUSION	12
T	ABLE	S	
Ta	ble 2.1	Summary of RAMS Data and Wind Direction	5
	ble 2.2	Monthly Prevailing Wind Direction (Ta Kwu Ling Station)	
	ble 2.3	Building Height of the Surrounding Developments	
Га	ble 2.4	Summary of the Prevailing Wind Directions from Different Data Sourc	es 7



AVA Report

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

FIGURES

Figure 1	Location of the Subject Site and its Environs
Figure 2	(a) Building Separations in the Baseline Scheme (b) Empty Bay on $\ensuremath{G}/\ensuremath{F}$ in the Baseline Scheme
Figure 3	(a) Building Separations in the Proposed Scheme (b) Empty Bay on G/F in the Proposed Scheme
Figure 4	Windrose Diagram (at 200m) extracted from RAMS
Figure 5	Windrose Diagram (1986-2023) of Ta Kwu Ling Station (a: Annual; b: Monthly)
Figure 6	Potential Wind Flow under Existing Condition
Figure 7	Illustration of Wind Flow from NNE Wind Direction
Figure 8	Illustration of Wind Flow from E Wind Direction
Figure 9	Illustration of Wind Flow from ESE Wind Direction
Figure 10	Illustration of Wind Flow from SE Wind Direction
Figure 11	Illustration of Wind Flow from SSW and SW Wind Directions

APPENDICES

Appendix 1 Master Layout Plan of the Baseline Scheme
Appendix 2 Master Layout Plan of the Proposed Scheme



1. INTRODUCTION

1.1 Project Background

- 1.1.1 The Subject Site is located at various lots and the adjoining Government land in DD92, Kwu Tung South (the Application Site). It falls within the Approved Kwu Tung South Outline Zoning Plan (OZP) No. S/NE-KTS/22, which was gazetted on 21 February 2025 and is currently zoned "Comprehensive Development Area (3)" ("CDA(3)").
- 1.1.2 A previous Section 12A Application (No. Y/NE-KTS/15) was partially agreed by the Town Planning Board and the Application Site then was rezoned from "CDA" to "CDA(3)".
- 1.1.3 In the previous Application No. Y/NE-KTS/15, development including mid-rise residential towers were proposed to increase the intensity for additional flat production. An AVA Initial Study using CFD model was prepared during the previous planning application, and the finding had shown that there is no adverse air ventilation impact upon the surrounding sensitive area due to the project.
- 1.1.4 Ramboll Hong Kong Limited has been commissioned by the project proponent to prepare the air ventilation assessment (Expert Evaluation) to support this application.

1.2 Objectives

- 1.2.1 This AVA Expert Evaluation is prepared to assess the potential air ventilation impact due to the proposed development upon the sensitive use of the surrounding areas.
- 1.2.2 In this study, two development schemes were reviewed, the approved scheme (hereafter named as Baseline Scheme) and a proposed scheme (hereafter named as Proposed Scheme).

1.3 Application Site and its Environs

- 1.3.1 **Figure 1** shows the location of the Subject Site and the surrounding environs.
- 1.3.2 The Application Site is located at the northern part of Kwu Tung South area and is located to the immediate south of the Kwu Tung North New Development Area (KTN NDA). The Application Site is bounded by Kwu Tung Road to the north, Hang Tau Road to the east and an existing footpath to the west connecting to the river.
- 1.3.3 The Application Site is currently surrounded by low-rise development and village areas, e.g. Casas Domingo to the east, Valais to the west crossing the river.
- 1.3.4 To the immediate west of the Application Site is an area zoned "Agriculture". The Application Site is accessible by the existing Hang Tau Road.

1.4 Future/ Committed Development

- 1.4.1 There are several planned/ committed developments in the nearby area. The planned and committed developments, noise barrier as well as the elevated structures are listed below and also shown in **Figure 1.**
- 1.4.2 The following are the surrounding planned/ committed developments.
 - KTN NDA The layout plan was referenced to the AVA Report for KTN NDA (Planning Application No. A/KTN/54)
 - Approved Residential Development (Planning Application No. A/NE-KTS/506)
 - Approved Residential Development (Planning Application No. Y/NE-KTS/14)



- Approved Residential Development (Planning Application No. Y/NE-KTS/17)
- Approved Residential Care Home for the Elderly (Planning Application No. Y/NE-KTS/16)
- Noise barrier along Fanling highway The layout of proposed barriers are referred to Traffic Noise Mitigation Plan (Version A) of Agreement No. CE 19/2019 (CE) Development of Kwu Tung North New Developments Area, Remaining Phase - Design and Construction.

1.5 Baseline Scheme

- 1.5.1 The scheme adopted in the approved application (Y/NE-KTS/15) serves as the Baseline Scheme of this assessment.
- 1.5.2 Under the S12A Baseline Scheme, there are 3 clusters of residential towers with maximum building height of 70mPD.
- 1.5.3 There are two building separations (25m and 15m respectively) provided under the Baseline Scheme along southeast/ northwest direction. **Figure 2a** shows the building separations in the Baseline Scheme.
- 1.5.4 Residential lobbies, the clubhouse and M&E rooms are located on the ground floor or upper ground floor, while the residential units begin from 1/F and extend upwards. The design features "empty bays" on the ground floor, with four such bays located primarily in the southern section of the Application Site in the Baseline Scheme. **Figure 2b** shows the location of these empty bays.
- 1.5.5 **Appendix 1** shows the Master Layout Plan (MLP) of the Approved Scheme.

1.6 Proposed Scheme

- 1.6.1 Similar to the Baseline Scheme, there are 3 clusters of residential towers with maximum building height at 70mPD under the Proposed Scheme. **Appendix 2** shows the Master Layout Plan of the Proposed Scheme.
- 1.6.2 The building height of all the towers are at 70 mPD under Proposed Scheme.
- 1.6.3 There are two building separations (25m and 20m respectively) provided under the Proposed Scheme along southeast/ northwest direction. **Figure 3a** shows the building separations in the Proposed Scheme.
- 1.6.4 Residential lobbies, the clubhouse and M&E rooms are located on the ground floor, while the residential units begin from 1/F and extend upwards. The design also includes proposed "empty bays" on the ground floor, which do not contain residential units and have a smaller footprint than the levels above. Compared to the Baseline Scheme, the location of the empty bays has shifted, and there are now a total of six. **Figure 3b** shows the location of these empty bays.
 - Comparison between the Baseline Scheme and Proposed Scheme
- 1.6.5 Compared to the irregular shape of the towers in the Baseline Scheme, the three towers in the Proposed Scheme are primarily rectangular in shape, with two wider extensions at the two ends of Tower 2.
- 1.6.6 Comparing to the Baseline Scheme, which only has 15m of building separation at the southern portion of the Subject Site, the Proposed Scheme has a wider building separation of 20m at a similar location.



2. SITE WIND AVAILABILITY

2.1 Regional Atmospheric Modelling System (RAMS)

- 2.1.1 According to the Planning Department's website, a meso-scale Regional Atmospheric Modeling System (RAMS) was used to produce a simulated 10-year wind climate at the horizontal resolution of 0.5 km x 0.5 km covering the whole territory of Hong Kong. The simulated wind data represents the annual, winter and summer wind conditions at various levels, i.e. 200 m, 300 m, and 500 m above terrain.
- 2.1.2 It is considered an acceptable starting point to use the simulated RAMS data for site wind availability. The use of RAMS data (grid: X;066, Y:083) is preferred over measurement data at Waglan Island as it can reflect the effect of topography to wind availability.
- 2.1.3 The relevant annual windrose for the district under concern has been extracted from the Planning Department's website for Subject Site's wind availability data. **Figure 4** shows the relevant windrose diagram (at 200 m) representing the frequency and wind speed distribution of the district concerned for both summer and annual conditions. The simulated windroses show that the annual prevailing is coming from E direction (24.4%) with contributions from ESE (14.9%); while the summer prevailing is coming from E direction (12.5%) with contributions from SE (11.1%). It is concluded that both annual prevailing winds and summer prevailing winds are in southeast quadrant.
- 2.1.4 **Table 2.1** summarized the simulated wind availability data including probability of occurrence.

Table 2.1 Summary of RAMS Data and Wind Direction

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	4.4	1.6
NNE	13.5	1.7
NE	5.5	1.2
ENE	6.2	2.7
Е	17.2	9.7
ESE	19.7	11.1
SE	6.8	11.6
SSE	2.7	6.3
S	4.4	10.2
SSW	4.9	12.0
SW	4.2	11.2
WSW	3.2	7.7
W	3.4	7.4
WNW	1.5	2.6
NW	1.0	1.5
NNW	1.5	1.4

2.2 Hong Kong Observatory (HKO) Weather Data

2.2.1 The nearest wind station of HKO is located at Ta Kwu Ling. The wind data is collected inside Ta Kwu Ling Farm on the western side of Ping Che Road.



2.2.2 The Ta Kwu Ling Wind Station is generally well-exposed to winds from all directions since there are no high-rise buildings in its vicinity, and the high mountains are mostly located quite far away. The annual wind rose (1986-2023) and the monthly wind roses are presented in **Figure 5a** and **Figure 5b** respectively. **Table 2.2** summarized the dominant prevailing wind directions of the monthly wind rose.

Table 2.2 Monthly Prevailing Wind Direction (Ta Kwu Ling Station)

Month	Prevailing Wind Direction	Month	Prevailing Wind Direction
Jan	N	Jul	E
Feb	ESE	Aug	E
Mar	ESE	Sep	E
Apr	ESE	Oct	E
May	ESE	Nov	N
Jun	ESE	Dec	N

2.2.3 The annual prevailing wind is from ESE and E direction, where summer prevailing wind is mainly E direction.

2.3 Topography and Building Morphology

Topography

2.3.1 The site is relatively flat around the Application Site and the topography rises up slowly towards south. The Fuk Tsuen Shan is the closest mountain with the hilltop at 80 mPD located about 1.5 km to the south of the Application Site.

Building Morphology

- 2.3.2 As shown in **Figure 1**, the Application Site is mainly surrounded by low-rise development/ villages or temporary structures. The building height information of these identified developments are extracted from Geo-Reference Database (BG1000) provided by Survey and Mapping Office/ Lands Department.
- 2.3.3 According to the Approved Kwu Tung North OZP (OZP no. S/KTN/4 gazetted on 29 September 2023), there will be a Business and Technology Park located to the northwest, north and northeast of the Application Site. The building heights are ranging from 40 to 60 mPD.
- 2.3.4 According to the minutes of the 662nd meeting of the Rural and New Town Planning Committee, only Site A of the rezoning application of the Y/NE-KTS/14 was approved. Therefore, only Site A of Y/NE-KTS/14 is adopted in this AVA study. Development at Site B was approved separately under Planning Application No. Y/NE-KTS/17, which is also included in this AVA study.
- 2.3.5 With reference to Traffic Noise Mitigation Plan (Version A) of Agreement No. CE 19/2019 (CE) Development of Kwu Tung North New Development Area, Remaining Phase Design and Construction, there will be some noise barriers and elevated road to the north of Application Site along the Fanling Highway.
- 2.3.6 Table 2.3 highlighted the building height of the surrounding developments.



Table 2.3 Building Height of the Surrounding Developments

Name of Development	Building Height (mPD)	Location relative to the Subject Site
Casas Domingo	~24	East
Valais I & II	~21	Northwest
Site A of Y/NE-KTS/14	~65 - ~75	Northeast
Y/NE-KTS/17	72	East
Business and Technology Park	~40 - 60	North
Goodwood Park	~27	South
The Hong Kong Girl Guides Association Jockey Club Beas River Lodge	~24.7 - ~ 26.1	Southeast

2.4 Summary of Existing Site Wind Availability

2.4.1 **Table 2.4** shows the summary of the prevailing wind directions extracted from different wind data sources.

Table 2.4 Summary of the Prevailing Wind Directions from Different Data Sources

	RAMS (200m)	Ta Kwu Ling Wind Station
Annual Condition	NNE, E, ESE	ESE, E
Summer Condition	SE, SSW, SW	E

2.4.2 Based on the summary of data from RMAS and HKO, the annual prevailing winds are mainly from the southeast quadrants. The E and ESE winds are the most dominant annual winds. On the other hand, the major summer prevailing winds also come from the southwest quadrants, i.e. SSW and SW.

Existing NNE Wind Flow

2.4.3 The Business and Technology Park features several mid-density buildings with heights ranging from 40 to 60 mPD. However, due to the considerable distance between the Application Site and the Business and Technology Park, the availability of NNE wind may be slightly reduced, but it will primarily flow along Kwu Tung Road to reach the Application Site.

Existing E and ESE Wind

2.4.4 The E and ESE winds reaching the southern portion of the Application Site are currently unobstructed, as only low-rise buildings, such as Casas Domingo, The Hong Kong Girl Guides Association Jockey Club Beas River Lodge and the village houses, are located in the upwind area. However, the presence of approved residential development under Y/NE-KTS/17, which has a maximum building height of 72 mPD, may partially reduce the wind availability to the northern portion of the Application Site.

Existing SE Wind

2.4.5 There are no high-rise buildings located at the upwind area. Only low-rise buildings, such as Casas Domingo, The Hong Kong Girl Guides Association Jockey Club Beas River Lodge and village houses are located in the upwind area. Therefore, SE wind is unobstructed and wind availability is considered to be optimal.



SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

Existing SSW and SW Wind

2.4.6 There are no high-rise buildings located at the upwind area. Only low-rise buildings, such as Goodwood Park at 16mPD and some village houses are located in the upwind area. Thus, the upcoming SSW and SW wind is allowed to penetrate the Application Site and the downwind areas.

Identified Potential Air Corridors/ Air Paths

- 2.4.7 The existing Fanling Highway runs from east to west of the area. With sufficient road width, it would be the major air corridor for wind passing through the area.
- 2.4.8 Sheung Yue River and Hang Tau Road, located on two sides of the Application Site and aligned in SSW NNE direction, can facilitate the passage of summer winds through the area.
- 2.4.9 **Figure 6** shows the annual and summer prevailing wind directions under the existing condition.



DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

3. **EVALUATION OF AIR VENTILATION PERFORMANCE**

3.1 **Important Areas**

- 3.1.1 Important surrounding areas that the public would often access have been identified as following:
 - Sheung Yue River Riverside
 - Hang Tau Road
 - Kam Hang Road
 - Kam Ka Street
 - Site A of Y/NE-KTS/14
 - Site of Y/NE-KTS/17
 - Valias I and II
 - Kwu Tung Road
- 3.1.2 Location of those listed areas frequently accessed by public is also shown in Figure 1.

3.2 **Assessment Methodology**

- 3.2.1 Section 2 describes the wind availability at the Subject Site and the prevailing wind flows during annual and summer conditions. It is noted that the annual prevailing wind directions for the district are from NNE, E and ESE. The summer prevailing wind directions would be from E, SE, SSW and SW.
- 3.2.2 The ventilation performance of the proposed development at Application Site on the nearby areas frequently accessed by public will be evaluated by comparing with the existing land condition with respect to the identified dominant wind directions, i.e. NNE, E, ESE, SE, SSW and SW.

3.3 Wind Flow from NNE Direction

- 3.3.1 Figure 7 illustrates the wind flow of the Baseline Scheme and the Proposed Scheme under NNE wind direction.
- 3.3.2 According to the Initial Study of Air Ventilation Assessment for Application No. Y/NE-KTS/15, no high-rise development is located in the upwind area of the Application Site. Some mid-rise buildings, ranging from 40 to 60 mPD, are located in the planned Business and Technology Park. However, due to their considerable distance, these buildings do not obstruct the NNE wind or diminish the wind performance in the downwind area, including the Application Site. Consequently, the NNE wind primarily flows along Kwu Tung Road to reach the Application Site.
- 3.3.3 Given the position and alignment of the Application Site, the NNE wind would flow along two sides of the Site, i.e. Sheung Yue River and Hang Tau Road. As the building height and footprint of the Baseline Scheme and the Proposed Scheme are similar, the wind performance of the surrounding area including downwind side will be comparable under the two schemes.
- 3.3.4 The two building separations are perpendicular to the NNE wind, thus, it could not benefit the surrounding under NNE direction, as concluded in the Initial Study. Additionally, the variation in the building separations between the two schemes will not affect the downwind area.



3.4 Wind Flow from E Direction

- 3.4.1 **Figure 8** illustrates the wind flow of the Baseline Scheme and the Proposed Scheme under E wind direction.
- 3.4.2 According to the Initial Study of previous Planning Application Y/NE-KTS/15, the E wind direction flows along the nearby road such as Fanling Highway from east to west direction. The developments in the upwind areas are mostly low-rise buildings with building height lower than 24 mPD. The upcoming E wind could skim over the low rises to access the Application Site. However, the presence of the site of Y/NE-KTS/17, which has a maximum building height of 72 mPD, may partially reduce the wind availability to the Application Site, but this impact will be limited to a small northern portion, i.e. T5-T6 of the Baseline Scheme and T1 of the Proposed Scheme.
- 3.4.3 According to the vector plots of the Initial Study, E wind is channelled along Sheung Yue River to the west of the Application Site. On the other hand, the towers of the Baseline Scheme would benefit Hang Tau Road due to the downwash effect. The 25m and 15m building separations facilitate the wind penetration within the site but does not extend benefits further downwind area.
- 3.4.4 Consequently, given the similar building heights and footprints, the wind flow along Sheung Yue River and Hang Tau Road would be comparable under both schemes. The wider building separation in the southern section as well as the increased number of empty bays in the Proposed Scheme may provide some improvement in wind performance, but this effect is likely to be confined to the site itself. Both design schemes are not expected to have any adverse impact on areas further downwind, such as Valais II.

3.5 Wind Flow from ESE Direction

- 3.5.1 **Figure 9** illustrates the wind flow of the Baseline Scheme and the Proposed Scheme under ESE wind direction.
- 3.5.2 According to the Initial Study of previous Planning Application Y/NE-KTS/15, similar to E wind, the ESE wind direction flows along the nearby road such as Fanling Highway and Kam Hang Road from east to west direction. The developments in the upwind areas are mostly low-rise buildings with building height lower than 24 mPD. The upcoming ESE wind could skim over the low rises to access the Application Site. However, the presence of the site of Y/NE-KTS/17, which has a maximum building height of 72 mPD, may partially reduce the wind availability to the Application Site, but this impact will be limited to a small northern portion, i.e. T5-T6 of the Baseline Scheme and T1 of the Proposed Scheme.
- 3.5.3 According to the vector plots of the Initial Study, the 15m building separation at the southern portion of the Application Site allows wind penetration and benefits the southern part of Sheung Yue River. Compared to the Baseline Scheme, this building separation has been increased from 15m to 20m, which would provide a slight improvement to the southern part of Sheung Yue River.
- 3.5.4 Given the similar building heights and footprints of the two design schemes, it is anticipated that the wind performance at the downwind area, such as Valais II and Kwu Tung Road will be comparable under the Baseline Scheme and Proposed Scheme.

3.6 Wind Flow from SE Direction

3.6.1 **Figure 10** illustrates the wind flow of the Baseline Scheme and the Proposed Scheme under SE wind direction.



- 3.6.2 According to the Initial Study of previous Planning Application Y/NE-KTS/15, SE wind direction flows along the nearby road such as Kam Hang Road from east to west direction. The developments in the upwind areas are mostly low-rise buildings with building height lower than 24 mPD. The upcoming SE wind could skim over the low rises to access the Application Site. However, the presence of the site of Y/NE-KTS/17, which has a maximum building height of 72 mPD, may partially reduce the wind availability to the Application Site, but this impact will be limited to a small northern portion, i.e. T5-T6 of the Baseline Scheme and T1 of the Proposed Scheme.
- 3.6.3 According to the vector plots from the Initial Study, both building separations allow for wind penetration, benefiting the nearby area. Compared to the Baseline Scheme, the building separation in the southern portion has increased from 15m to 20m, along with the additional empty bays, which is expected to slightly improve conditions along Sheung Yue River to the west of the Application Site. However, the wake area at downwind locations, such as Valais II, is expected to remain similar due to the comparable building heights and footprints in both the Baseline and Proposed Schemes.

3.7 Wind Flow from SSW and SW Directions

- 3.7.1 **Figure 11** illustrates the wind flow of the Baseline Scheme and the Proposed Scheme under SSW and SW wind direction.
- 3.7.2 According to the Initial Study of previous Planning Application Y/NE-KTS/15, only temporary structures are located in the windward area under SSW and SW winds. The upcoming wind could fly over them and reach the Application Site. Given the position and alignment of the Application Site, the vector plots show the SSW and SW winds would flow along two sides of the Site, i.e. Sheung Yue River and Hang Tau Road. As the building height and footprint of the Baseline Scheme and the Proposed Scheme are similar, it is anticipated that the wind performance of the surrounding area including downwind side such as the planned Business and Technology Park under SSW wind and Site A of Y/NE-KTS/14, the site of Y/NE-KTS/17 under SW wind will be comparable under the two schemes.
- 3.7.3 The building separations in both the Baseline and Proposed Schemes are perpendicular to the SSW and SW directions. As a result, they do not benefit the surrounding areas under SSW and SW winds, as concluded in the Initial Study. Therefore, the differences in building separations between the two schemes will not impact the downwind area.



4. **CONCLUSION**

- 4.1.1 The Proposed Scheme located in D.D. 92 has been evaluated with reference to the approved scheme under application no. Y/NE-KTS/15.
- 4.1.2 As discussed in Section 2, NNE, E and ESE winds are the most dominant annual winds, while the major summer prevailing winds come from SE, SW and SSW winds. The identified air path of the study area would be along Fanling Highway to the north side and Sheung Yue River in N-S axis to the west of the Application Site.
- 4.1.3 In Section 3, the ventilation performance of the proposed development has been evaluated and compared with the approved scheme with respect to the identified dominant wind directions, i.e. NNE, E, ESE, SE, SSW and SW under both annual and summer conditions.
- 4.1.4 Since the Application Site does not fall within any identified air paths nearby as well as there are planned high-rise development developments at upwind areas under some wind directions, such as E and ESE winds, the overall ventilation performance of the surrounding areas would not be significantly affected by the proposed development at the Application Site.
- 4.1.5 The changes in the Proposed Scheme compared to the Baseline Scheme are minimal, as the building disposition remains largely the same with only minor layout adjustments. The Proposed Scheme has 3 clusters of residential towers with maximum building height of 70mPD, as opposed to the varied heights ranging from 67.75m to 70mPD in the Baseline Scheme. The building separations at the northern and southern portions have been maintained, with the latter widened by 5m. This separation can help facilitate wind penetration under specific wind directions, such as ESE and SE winds.
- 4.1.6 Overall, the Proposed Scheme would not have any significant impact on the surrounding area when compared to the Baseline Scheme. The Proposed Development would therefore be acceptable in air ventilation terms.

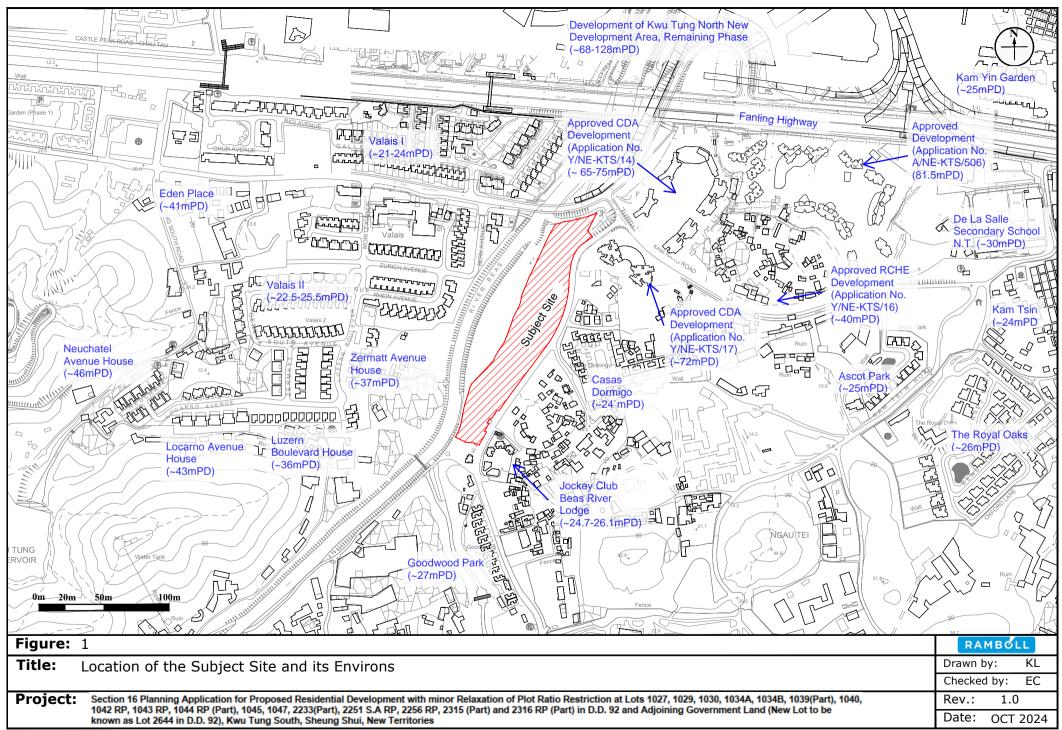


AVA Report

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

Figures







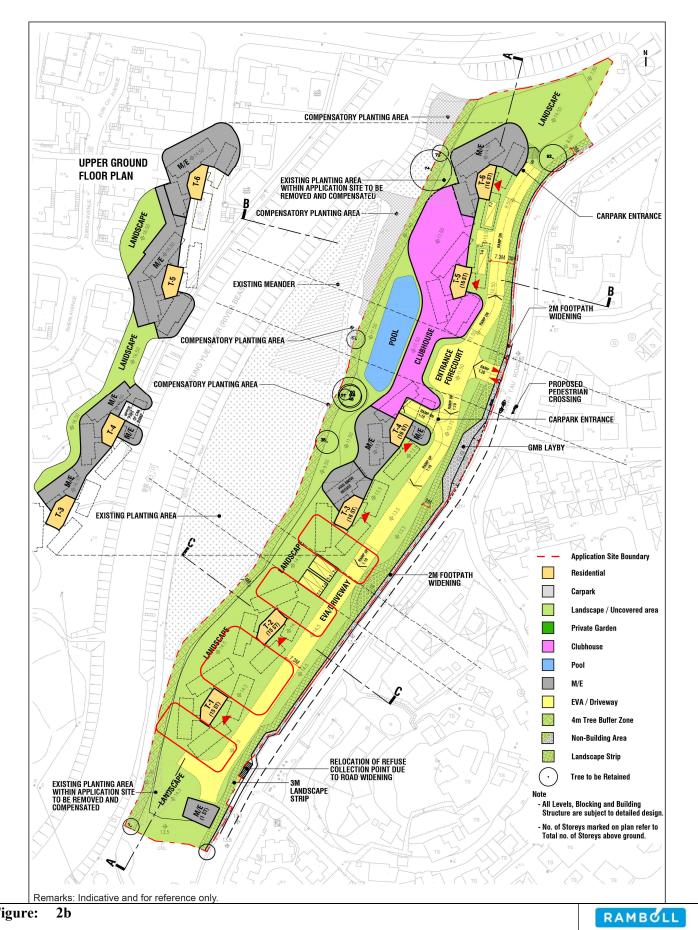


Figure:	2b	RAMBOLL
Title:	Title: Empty Bay in the Baseline Scheme	
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with Minor Relaxation	Rev.: 1.2
	of Plot Restriction at Lots 1027, 1029, 1030, 1034A, 1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233 (Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories	Date: Feb 2025

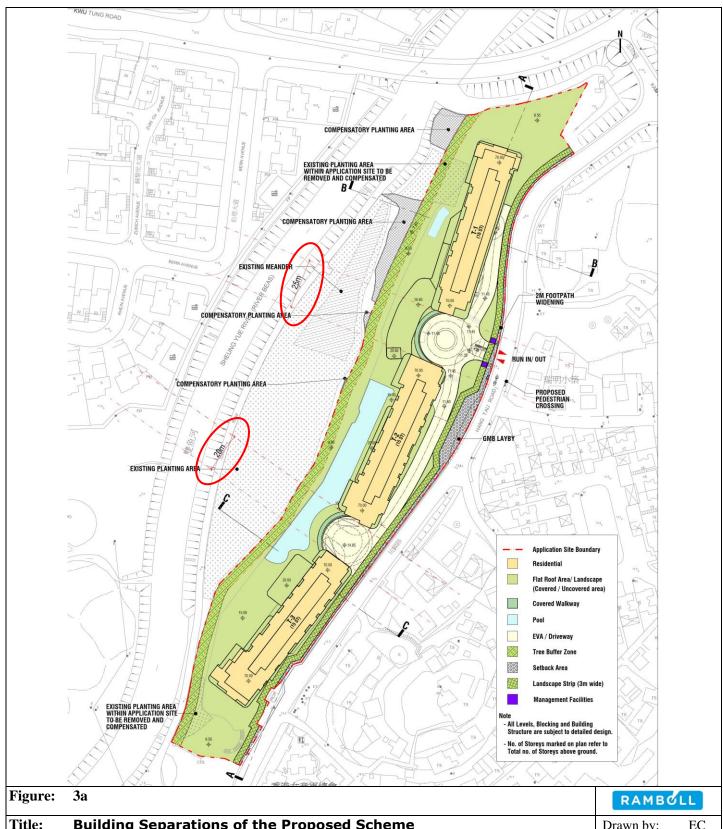
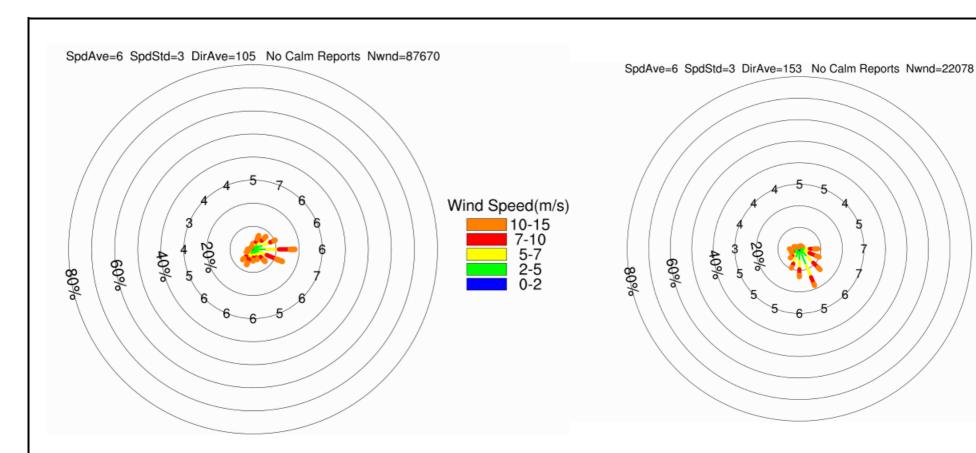


Figure:	3a	RAMBOLL
Title:	Building Separations of the Proposed Scheme	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with Minor Relaxation	Rev.: 1.2
	of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A, 1034B, 1039 (Part), 1040, 1042 RP,	
	1043 RP, 1044 RP (Part), 1045, 1047, 2233 (Part), 2251 S.A RP, 2256 RP, 2315 (Part) and	Date: Aug 2025
	2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644	Date. Aug 2023
	in D.D. 92), Kwu Tung South, Sheung Shui, New Territories	



Figure:	3b	RAMBOLL
Title:	Empty Bay on G/F in the Proposed Scheme	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development at Lots 1027, 1029,	Rev.: 1.2
	1030, 1034A, 1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233 (Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui. New Territories	Date: Aug 2025



Summer Condition (200m)

Wind Speed(m/s)

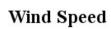
10-15

7-10

5-7 2-5 0-2

Figure:	4	RAM	BCLL
		Drawn by:	KL
Title:	Windrose Diagram (at 200m) extracted from RAMS	Checked by:	EC
Project:	Section 16 Planning Application for Proposed Residential Development with minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A, 1034B, 1039(Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories	Rev.:	1.0
		Date:	OCT 2024

Annual Condition (200m)



(F1)	(F2)	(F3)	(F4)
2-12	13-30	31-51	>51 km/h
1-2	3-4	5-6	>6 Beaufort

Percentage Frequency



The number in the inner circle is the percentage frequency of occurrence of calm and variable winds.

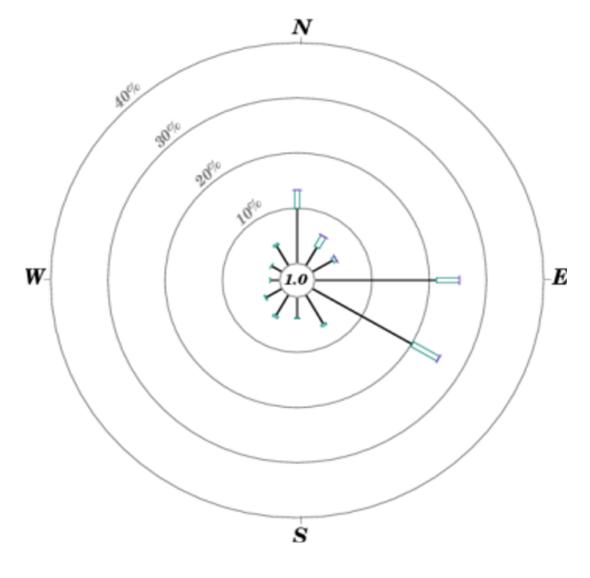
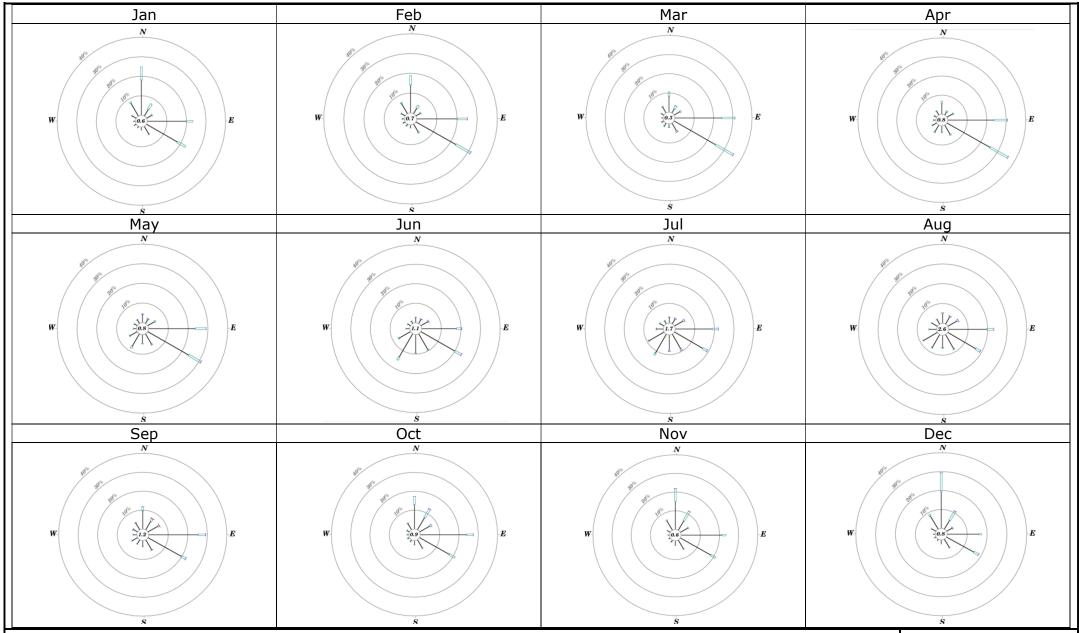


Figure:	5a	RAMBOLL	
Title:	Fitle: Windrose Diagram (1986-2023) of Ta Kwu Ling Wind Station (Annual)		KL
Title.	White ose Diagram (1900 2020) of the 12We Enig White Selection (Chinedel)	Checked by:	EC
Project:	5 Section to Finding Application for Froposed Residential Development with million Relaxation of Flot Ratio Restriction at Lots 1027, 1029, 103945, 103945, 103947 at 1,5		1.0
	1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories	Date:	OCT 2024



RAMBOLL 5b Figure:

Title: Windrose Diagram (1986-2023) of Ta Kwu Ling Wind Station (Monthly)

Project

Section 16 Planning Application for Proposed Residential Development with Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029 1030, 1034A, 1034B, 1039(Part), 1040, 1042 RP, 1044 RP (Part), 1045, 1047, 2233 (Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories

Drawn by: KL EC

Checked by: 1.0 Rev.:

OCT 2024 Date:

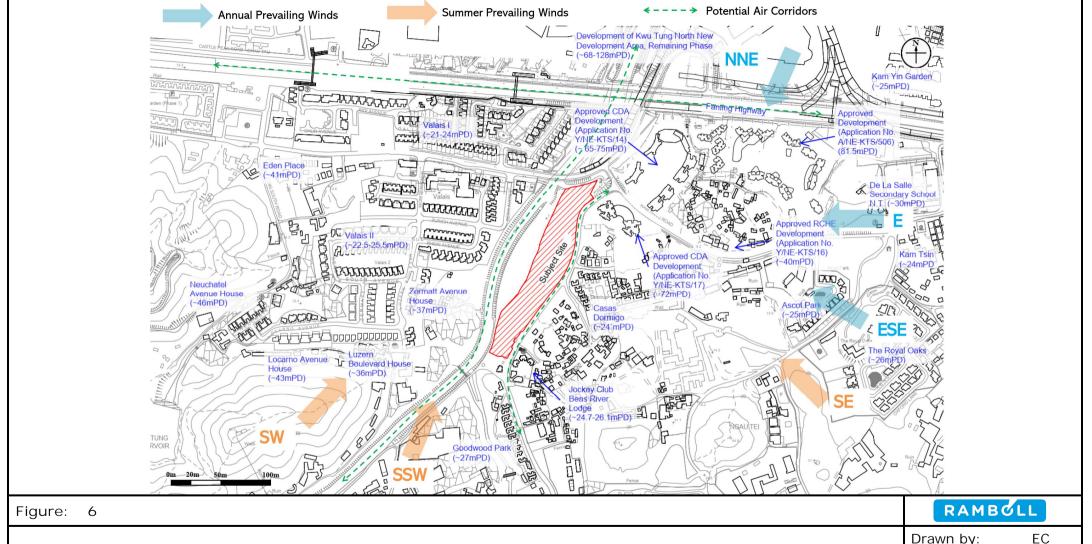


Figure: 6

RAMBULL

Potential Wind Flow under Existing Condition

Project: Section 16 Planning Application for Proposed Residential Development with Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029 1030, 1034A, 1034B, 1039(Part), 1040, 1042 by:

TC

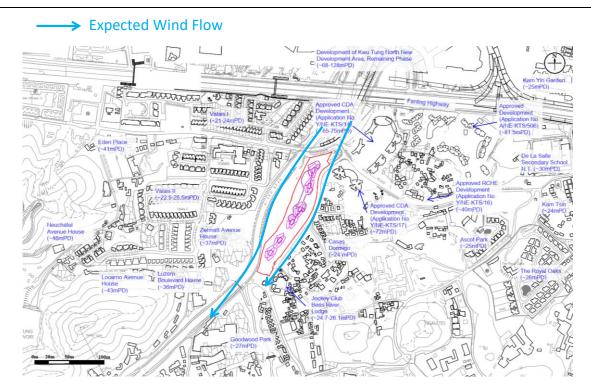
RP, 1044 RP (Part), 1045, 1047, 2233(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories

RAMBUL

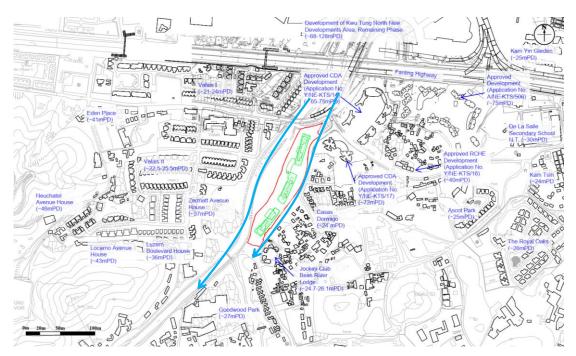
Checked by:

TC

Date: Nov 2024

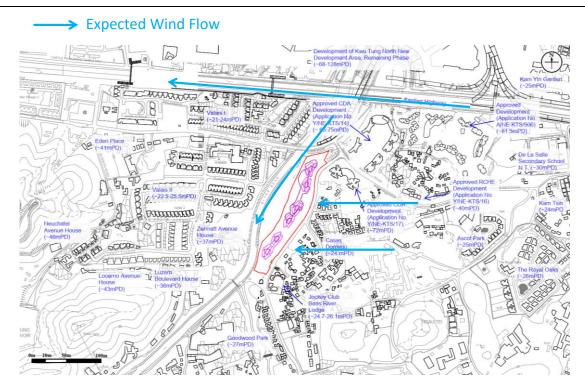


Baseline Scheme

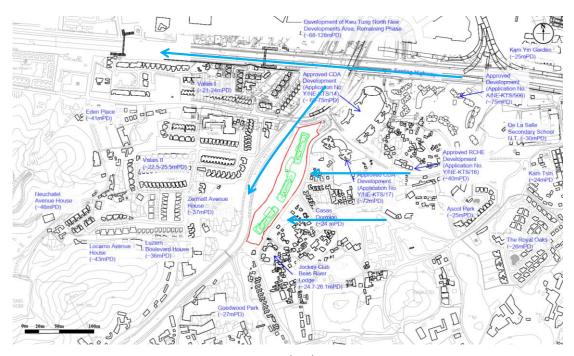


Proposed Scheme

Figure:	7	RAMBOLL
Title:	Illustration of Wind Flow from NNE Wind Direction	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with	Rev.: 1.2
	Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A,	
	1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233	
	(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and	Date: Oct 2024
	Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu	
	Tung South, Sheung Shui, New Territories	

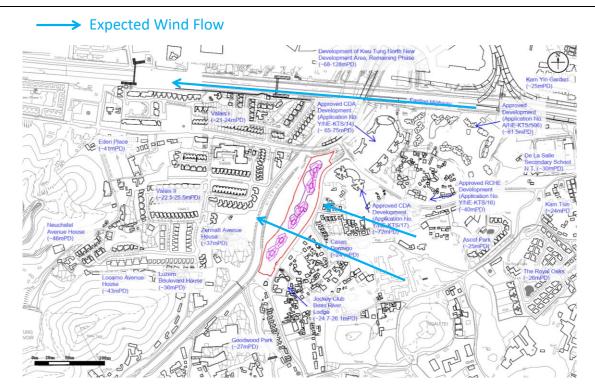


Baseline Scheme

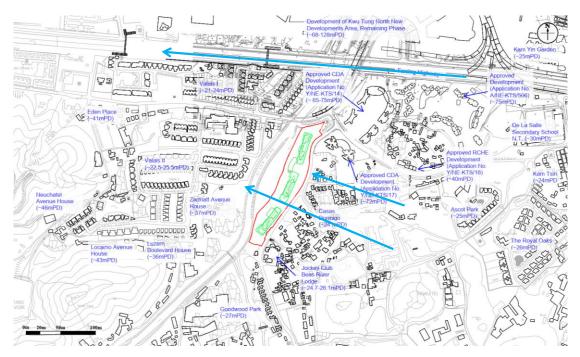


Proposed Scheme

Figure:	8	RAMBOLL
Title:	Illustration of Wind Flow from E Wind Direction	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with	Rev.: 1.2
	Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A,	
	1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233	
	(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and	Date: Oct 2024
	Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu	
	Tung South, Sheung Shui, New Territories	

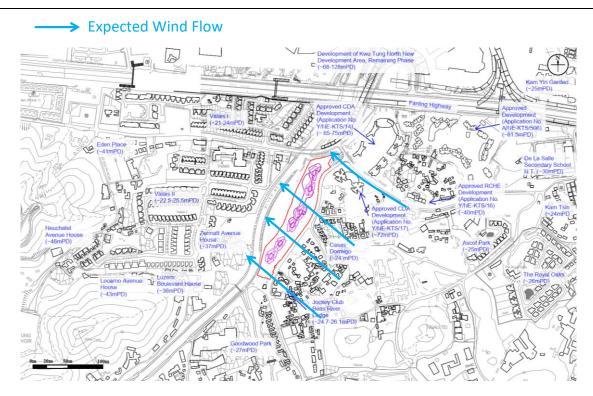


Baseline Scheme

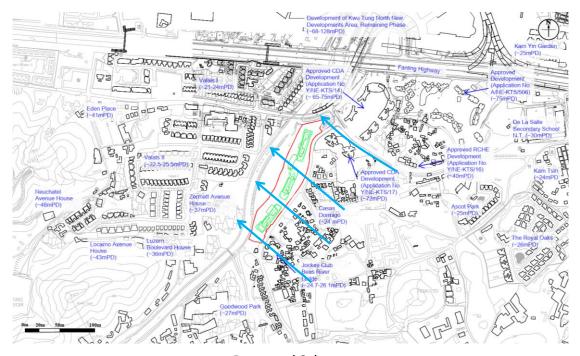


Proposed Scheme

Figure:	9	RAMBOLL
Title:	Illustration of Wind Flow from ESE Wind Direction	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with	Rev.: 1.2
	Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A,	
	1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233	
	(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and	Date: Oct 2024
	Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu	
	Tung South, Sheung Shui, New Territories	

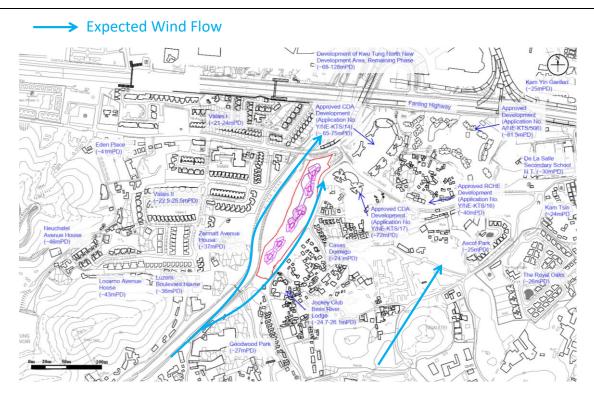


Baseline Scheme

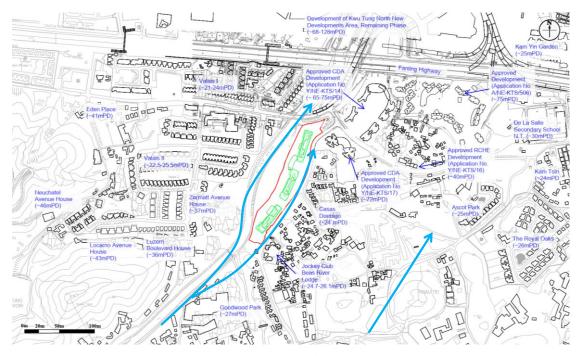


Proposed Scheme

Figure:	10	RAMBOLL
Title:	Illustration of Wind Flow from SE Wind Direction	Drawn by: EC Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A, 1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233 (Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu Tung South, Sheung Shui, New Territories	Rev.: 1.2 Date: Oct 2024



Baseline Scheme



Proposed Scheme

Figure:	11	RAMBOLL
Title:	Illustration of Wind Flow from SSW and SW Wind Directions	Drawn by: EC
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Residential Development with	Rev.: 1.2
	Minor Relaxation of Plot Ratio Restriction at Lots 1027, 1029, 1030, 1034A,	
	1034B, 1039 (Part), 1040, 1042 RP, 1043 RP, 1044 RP (Part), 1045, 1047, 2233	
	(Part), 2251 S.A RP, 2256 RP, 2315 (Part) and 2316 RP (Part) in D.D. 92 and	Date: Oct 2024
	Adjoining Government Land (New Lot to be known as Lot 2644 in D.D. 92), Kwu	
	Tung South, Sheung Shui, New Territories	

AVA Report

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

Appendix 1

Master Layout Plan of the Baseline Scheme



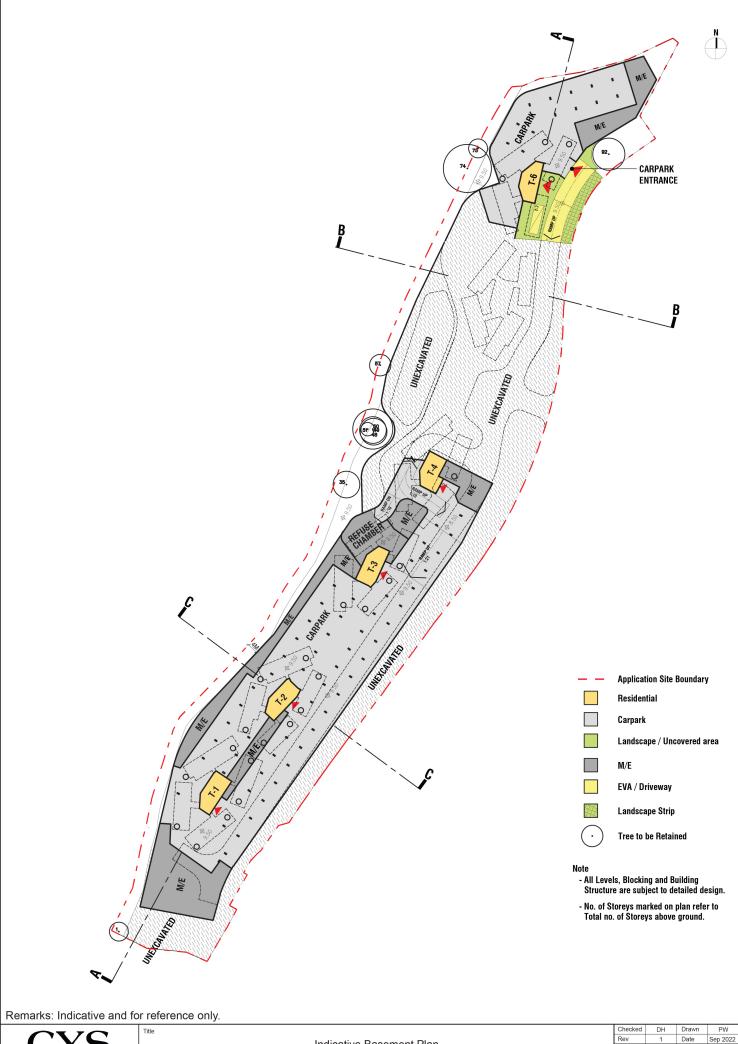


Indicative Master Layout Plan

 Checked
 DH
 Drawn
 PW

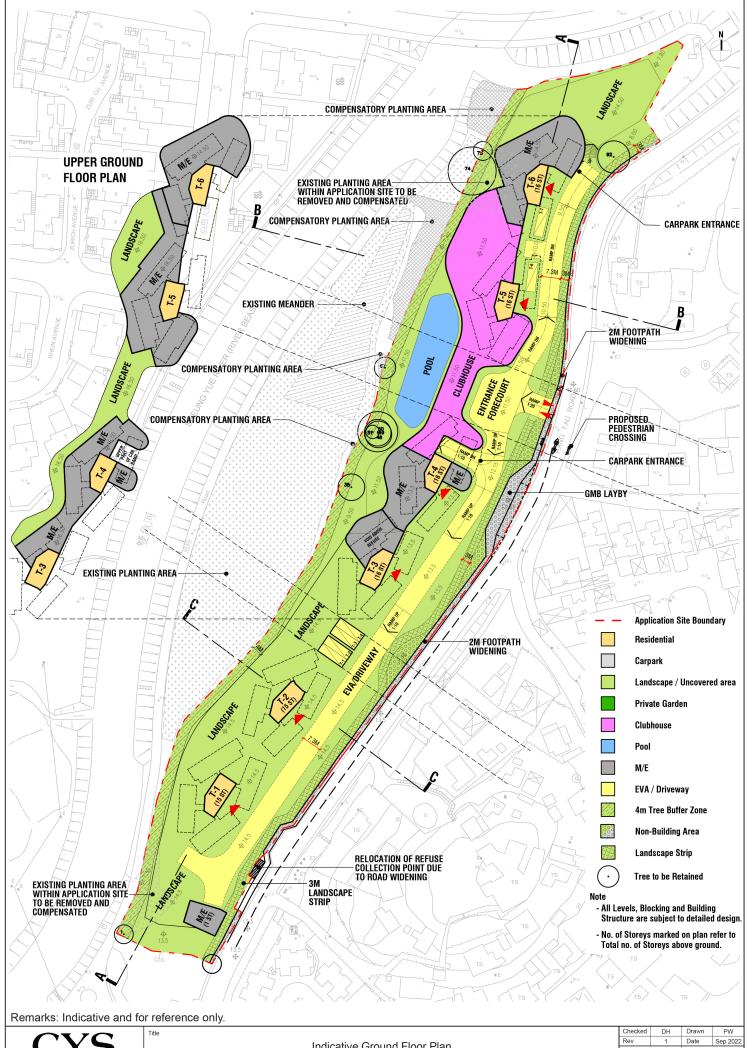
 Rev
 1
 Date
 Sep 2022

 Scale
 Figure
 3.1



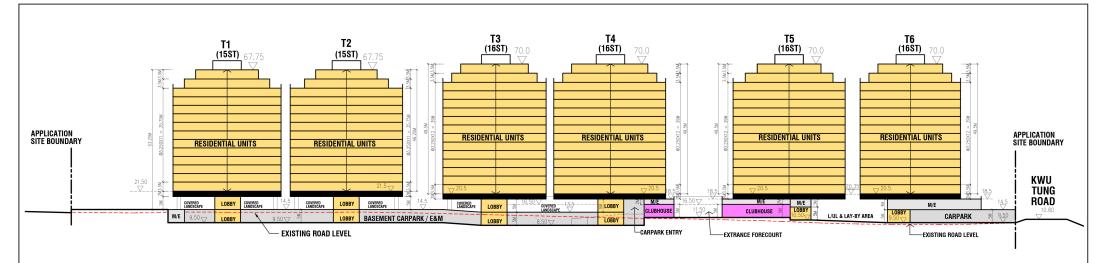
Indicative Basement Plan

Figure 1:1000 3.2

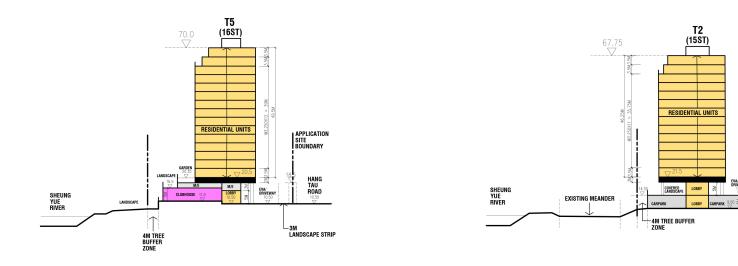


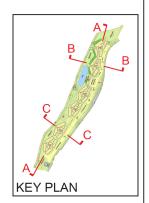
Indicative Ground Floor Plan

Figure 1:1000 3.3



SECTION - A





APPLICATION SITE BOUNDARY

-3M Landscape Strip

SECTION - C

Title

SECTION - B

Remarks: Indicative and for reference only.



Indicative Section Plan

Checked	DH	Drawn	PW
Rev	0	Date	Sep 2022
Scale 1:1000		Figure 3	.4

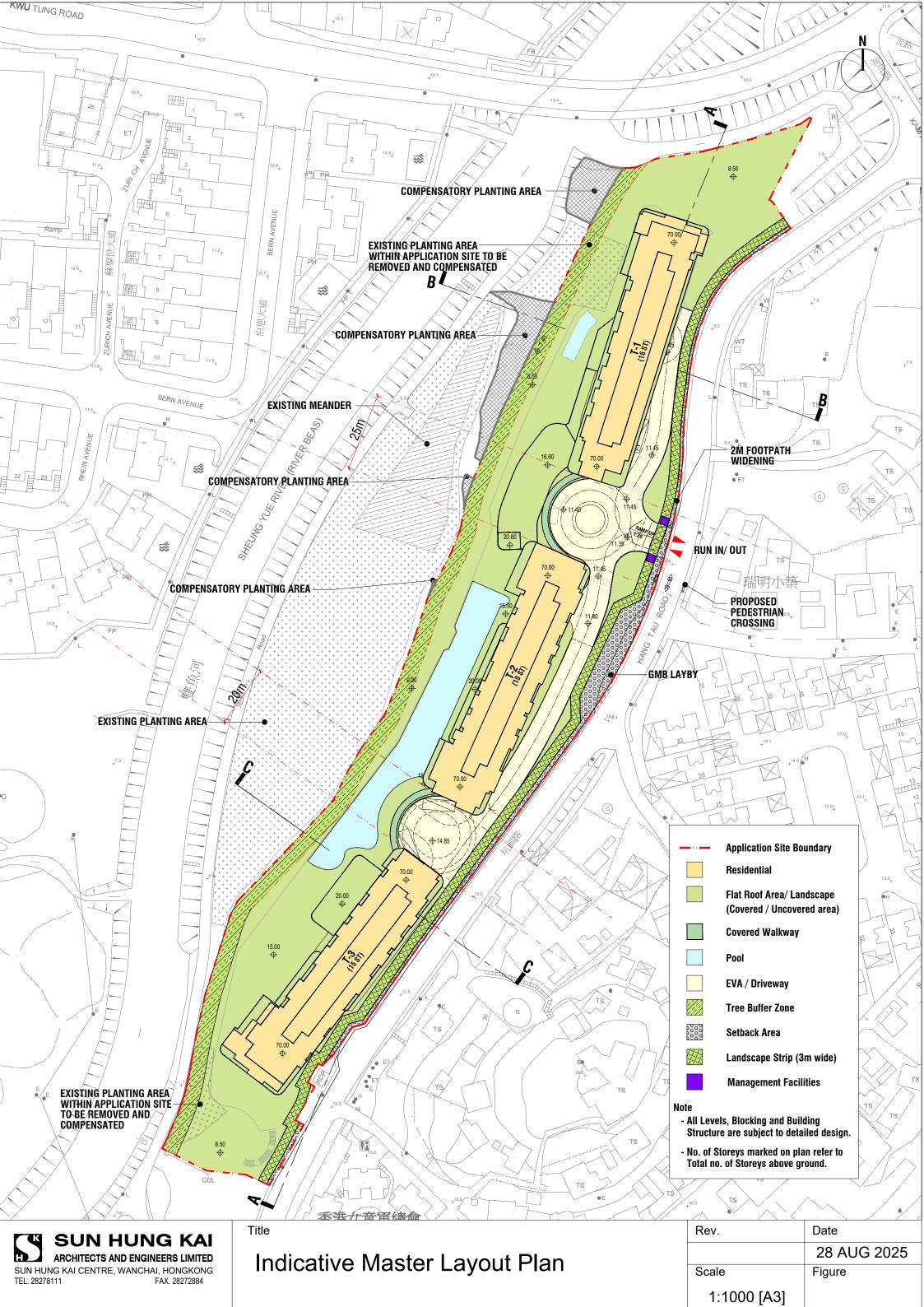
AVA Report

SECTION 16 PLANNING APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITH MINOR RELAXATION OF PLOT RATIO RESTRICTION AT LOTS 1027, 1029, 1030, 1034A, 1034B, 1039 (PART), 1040, 1042 RP, 1043 RP, 1044 RP (PART), 1045, 1047, 2233 (PART), 2251 S.A RP, 2256 RP, 2315 (PART) AND 2316 RP (PART) IN D.D. 92 AND ADJOINING GOVERNMENT LAND (NEW LOT TO BE KNOWN AS LOT 2644 IN D.D. 92), KWU TUNG SOUTH, SHEUNG SHUI, NEW TERRITORIES

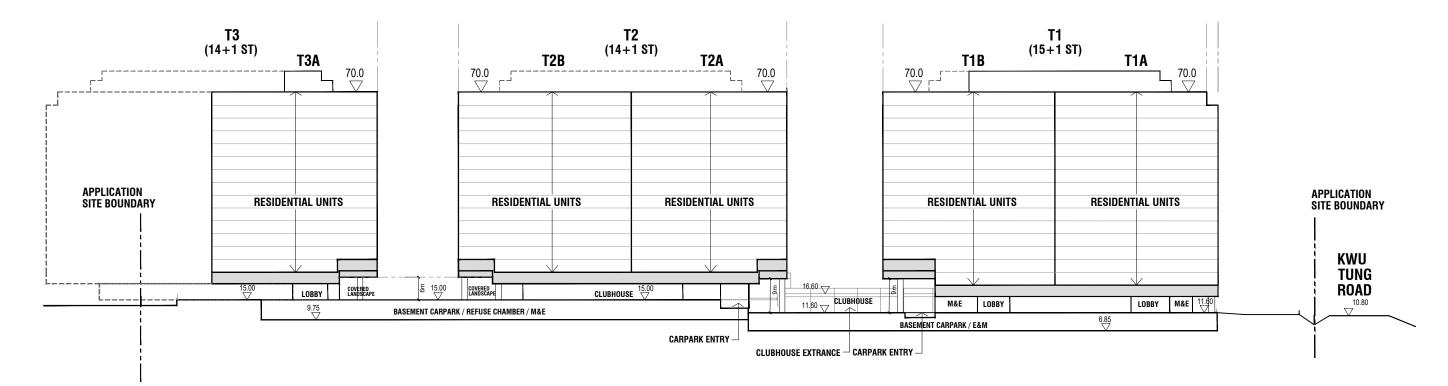
Appendix 2

Master Layout Plan of the Proposed Scheme

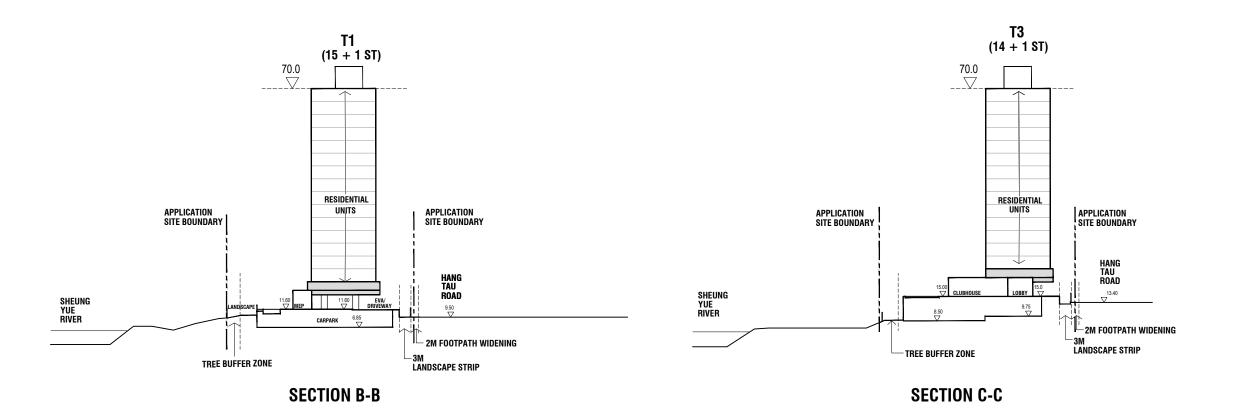








SECTION A-A



Noto

- All Levels, Blocking and Building Structure are subject to detailed design.
- No. of Storeys marked on plan refer to Total no. of Storeys above ground.

		UNG KAI
	ARCHITECTS AND	ENGINEERS LIMITED
SUN HUNG KAI CENTRE, WANCHAI, HONGKONG		
TEL. 2827	'8111	FAX. 28272884

Indicative Sections

Rev.	Date
	28 JULY 2025
Scale	Figure
1:1000 [A3]	A-4