Appendix F –

Air Ventilation Assessment – Expert Evaluation

Prepared by

Ramboll Hong Kong Limited

SECTION 16 PLANNING APPLICATION FOR PROPOSED COMPREHENSIVE RESIDENTIAL DEVELOPMENT WITH COMMERICAL USES AND SOCIAL WELFARE FACILITY AND MINOR RELAXATION OF MAXIMUM PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN “COMPREHENSIVE DEVELOPMENT AREA (5)” ZONE AT YEUNG UK ROAD / KWU HANG ROAD / WANG WO TSAI STREET, TSUEN WAN

AIR VENTILATION ASSESSMENT – EXPERT EVALUATION

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CHAPTERS

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1. INTRODUCTION

1.1 Project Background

1.1.1 The Application Site is zoned as "Comprehensive Development Area (5)" [CDA (5)] site under Approved Tsuen Wan Outline Zoning Plan (OZP no. S/TW/37). A comprehensive development under application consists of different phases, i.e. Phase 1 in Site A at Lot No. 476 in D.D.443 Jumbo iAdvantage, 145-159 Yeung Uk Road and it will be implemented by the Applicant; while the remaining areas (i.e. Tsuen Wan Town Lot 11 for Phase 2A in Site B, Lot No. 475 in D.D. 443 for Phase 2B in Site C, and Lot No. 461, 469 & 459 in D.D. 443 for Phase 2C-E in Site D-F) will be implemented in later stage by other. This S16 application is submitted to the Town Planning Board for the proposed comprehensive residential development at the Application Site.

1.1.2 This application is submitted to seek permission from the Town Planning Board in support of proposed residential redevelopment and minor relaxation of maximum plot ratio and building height restrictions. The current maximum plot ratio is 5.0 with minimum 4.5 shall be for domestic use under OZP. On the other hand, the maximum building height is 100 mPD. Under this application, one 29-storey residential tower (above 1 level of basement carpark and excluding 3 levels of lobby/ club house/E&M/ social welfare facility) with building height not exceeding 120 mPD to the main roof is proposed in Phase 1. Another 5 residential buildings with a maximum building height at 120 mPD are proposed in the remaining areas.

1.1.3 Ramboll Hong Kong Limited has been commissioned by the project proponent to undertake an Air Ventilation Assessment (AVA) for the Application Sites in support of the S16 application.

1.2 Objectives

1.2.1 This AVA contains a qualitative expert evaluation of the potential ventilation impact of the proposed building design on the future pedestrian wind environment.

1.3 Application Site and its Environs

1.3.1 The Application Site covers an area of about 7,353 m^2 and is currently occupied by Jumbo IAdvantage, Wing Wah Industrial Building, Shui Cheong Industrial Building, Wing Kwai Factory Building, Wing Yu Factory Building, and Sunwise Industrial Building.

1.3.2 The Application Site is bounded by Wang Wo Tsai Street to the north. A 4-storeys transitional housing- Tsuen Fook Kui is located at the west of the Application Site. A public open space and mid-rise Ever Gain Centre are located to the immediate northeast with Wang Wo Tsai Street. High-rise Sheung Chui Court is located further northeast of the site. To the north of the Application Site, there is an approved comprehensive residential development (Application No. A/TW/527) with 5 residential towers at 120 mPD. Furthermore, another approved development (Application No. A/TW/537) with 4 residential towers at 120 mPD is located at the east of the Application Site. High rise residential developments (H Cube and Indi Home) and Richwealth Industrial building are located to the south of Yeung Uk Road. In general, the surrounding area is dominated by industrial and residential developments.

1.3.3 Figure 1 shows the location and the environs of the Application Site.

1.4 Future/ Committed Development

1.4.1 The following future/ committed developments have been considered in this study. Figure 2 illustrates the location and building blocks of these developments which have been included in this expert evaluation.

1. Approved Application Development A/TW/527
2. Approved Application Development A/TW/537

1.5 Existing Condition of the Application Site

1.5.1 In this Study, existing site condition of the Application Site is adopted for the comparison with Proposed Master Layout Plan, i.e., the existing buildings of Jumbo Iadvantage, Wing Wah Industrial Building, Shui Cheong Industrial Building, Wing Kwai Factory Building, Wing Yu Factory Building, and Sunwise Industrial Building (with building height at 37mPD, 50mPD, 40mPD, 45mPD, 29mPD and 101mPD respectively).

1.5.2 Appendix 1 shows the Layout Plan of the Existing Condition.

1.6 Proposed Scheme

1.6.1 Appendix 2 shows the Master Layout Plan (MLP) of the Proposed Scheme.

1.6.2 Jumbo IAdvantage will be redeveloped into residential building in phase 1 by the Applicant. For the remaining buildings of the same CDA zone, i.e., Wing Wah Industrial Building, Shui Cheong Industrial Building, Wing Kwai Factory Building, Wing Yu Factory Building, and Sunwise Industrial Building, they will also be redeveloped in remaining areas for residential use as well, i.e., Phase 2 of the Application Site.

1.6.3 The Proposed Scheme consists of six (6) residential towers with maximum building heights of 120 mPD, which are situated atop a three-storey podium with ~14 mPD heights. The podium is for accommodation for retail, clubhouse and social welfare facilities. A 6m width of building gaps between the towers above the podium at about 14.3mPD, as well as setbacks about 2m to the site boundary, are incorporated into the Proposed Scheme to increase the site permeability. The proposed setback is shown in Appendix 3.

2. SITE WIND AVAILABILITY

2.1 Experimental Wind Data from Previous Studies

2.1.1 There were several completed AVAs studies in Tsuen Wan area and its surroundings completed:

- Experimental Site Wind Availability Study for Tsuen Wan (Existing Configuration), Hong Kong (by Department of Architecture, The Chinese University of Hong Kong, June 2008)
- Expert Evaluation and Advisory Report for An Instructed Project for Tsuen Wan Area (by CO_2nnsulting, January 2012)

2.1.2 It is noted that the expert evaluation for Tsuen Wan was made reference to the experimental wind data in Experimental Site Wind Availability Study for Tsuen Wan, i.e. there was only one set of wind data adopted in the above AVA studies. The findings of the experimental wind data is summarized in below section.

2.1.3 The Application Site is located within the study area of the experimental wind data (as indicated in Figure 4). Figure 5 shows the relevant windrose diagram extracted from the experimental wind data for both summer and annual conditions. The results of the site wind availability at 50 m for the relevant study area shows that the annual prevailing wind is coming from ENE direction (38.8%) with contributions from N (12.5%) while the summer prevailing wind is coming from ENE direction (18.5%) with contributions from SW (14.3%) It concluded that the annual prevailing winds are northeast quadrant in major, while the summer prevailing winds are dominated in southwest quadrant.

2.1.4 Table 2.1 summarized the experimental wind data at 50 m of relevant study area.

Table 2.1 Summary of Experimental Wind Data

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	12.5	2.3
NNE	8.0	2.1
NE	8.4	2.3
ENE	38.8	18.5
E	5.0	7.9
ESE	3.4	6.6
SE	0.0	0.0
SSE	3.1	6.6
S	4.4	10.2
SSW	3.1	8.3
SW	4.4	14.3
WSW	3.1	9.7
W	3.4	9.0
WNW	0.6	1.0
NW	1.8	1.2
NNW	0.0	0.0

2.2 Regional Atmospheric Modelling System (RAMS)

2.2.1 According to the Planning Department's website, a meso-scale Regional Atmospheric Modelling 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.

2.2.2 It is considered an acceptable starting point to use the simulated RAMS data for site wind availability. The use of RAMS data (grid: X:069, Y:053) is preferred over measurement data at Waglan Island as it can reflect the effect of topography to wind availability.

2.2.3 The relevant annual windrose for the concerned district under concern has been extracted from the Planning Department's website for Application Site wind availability data. Figure 6 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 ENE direction (24.5%) with contributions from E (21.4%) while the summer prevailing is coming from SSW direction (15.2%) with contributions from SW (13.7%). It is concluded that annual prevailing winds are in northeast quadrant while summer prevailing wind are in southwest quadrant.

2.2.4 Table 2.2 summarized the simulated wind availability data including probability of occurrence.

Table 2.2 Summary of RAMS Data and Wind Direction

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	1.3	0.6
NNE	2.8	0.8
NE	11.1	1.7
ENE	24.5	6.5
E	21.4	13.4
ESE	6.7	9.7
SE	4.4	7.9
SSE	3.1	6.6
S	3.4	7.1
SSW	6.5	15.2
SW	5.6	13.7
WSW	3.4	6.4
W	2.7	5.4
WNW	1.2	2.2
NW	1.0	1.8
NNW	0.8	0.8

2.3 Hong Kong Observatory (HKO) Weather Data

2.3.1 The nearest wind station of HKO is located at Tsing Yi area. The wind data is collected at the 43 m elevation above the mean sea-level and at the Shell Oil Depot (as shown in Figure 7).

2.3.2 The Shell Oil Depot Weather Station is more exposed to the winds from the western and southern sector. The annual wind rose (1990-2021) and the monthly wind roses

are presented in Figure 8a and Figure 8b respectively. Table 2.3 summarized the dominant prevailing wind directions of the monthly wind rose.

Table 2.3 Monthly Prevailing Wind Direction (Shell Oil Depot Station)

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

2.3.3 The annual and summer prevailing wind is mainly from ESE and SSE direction.

2.3.4 The Shell Oil Depot Weather Station is located between the waterfront and the Cheung Tsing Highway likely influenced by the channelling wind flow (along north to south) at the Ma Wan Channel. In addition, considering the Shell Oil Depot Weather Station is relatively far away from the Application Site (around 4.1 km), it may not be a good reference to represent the site wind availability of the Application Site.

2.3.5 Based on three sets of wind data, it is considered that the annual prevailing winds come from N, NE, ENE and E directions. While in summer condition, the prevailing winds mainly come from ENE, E, S, SSW and SW directions.

2.4 Topography and Building Morphology

Topography

2.4.1 The Application Site is located at the inner part of the Tsuen Wan Town Centre where has been fully developed. Medium to high rise buildings are packed and located in the vicinity. In general, the terrain of the Tsuen Wan Town Centre is relatively flat while the outer area of Tsuen Wan is mostly hilly. Tsuen Wan Town Center is adjacent to the foothills of Tai Mo San in the north and adjacent to the waterfront of the Victoria Harbour in the south, with reference to the Expert Evaluation and Advisory Report for An Instructed Project for Tsuen Wan Area (hereafter named as EE for Tsuen Wan Area) prepared for Planning Department.

Building Morphology

2.4.2 As shown in Figure 2 and mentioned in Section 1.2, the Application Site is surrounded by medium to high rise industrial or residential building. Residential buildings (Approved Planning Application No. A/TW/527, Approved Planning Application No. A/TW/537 and Sheung Chui Court with Wang Wo Tsai Street Garden situated in between) are located along the Wang Wo Tsai Street. Furthermore, a 4-storeys transitional housing Tsuen Fook Kui is located at the west of the Application Site. Indi Home and H Cube are two high rise residential buildings located to the southwest of the Application Site to the south of Yeung Uk Road. Industrial building Ever Gain Centre is located to the Northeast of Wang Wo Tsai Street.

2.5 Summary of Existing Site Wind Availability

2.5.1 Table 2.4 shows the summary of the prevailing wind directions extracted from different wind data sources. As mentioned in section 2.3.4, the HKO weather station

is located far from the Application Site and the surrounding topographical characteristics is quite different. The HKO data is therefore excluded from the consideration of the prevailing wind direction of the Application Site.

Table 2.4 Summary of the prevailing wind directions from different data sources

	Shell Oil Depot Weather Station (not used in this study)	Experimental Wind Data (50m)	RAMS (200m)
Annual Condition	ESE	ENE, N, NE	ENE, E, NE
Summer Condition	SSE	ENE, SW, S	SSW, SW, E

2.5.2 Based on the summary of data from Experimental wind data and RAMS (sort by percentage in Table 2.4), the annual prevailing winds are mainly from the northeast quadrants. The N, ENE, and E winds are the most dominant three annual winds. On the other hand, the major summer prevailing winds come from the northeast and southwest quadrants, i.e., ENE, SSW, and SW winds.

2.5.3 Based on three sets of wind data, it is considered that the annual prevailing winds come from N, NE, ENE and E directions. While in summer condition, the prevailing winds mainly come from ENE, E, S, SSW and SW directions. Figure 9 indicates the Application Site, the surrounding developments and the likely pedestrian wind flow under annual and summer conditions.

2.5.4 In considering the building morphology of the study area and the prevailing wind direction in both annual and summer period, it is considered that the air path of the study area would follow the Sha Tsui Road, Yeung Uk Road and Luen Yan Street. *(Reference to Figure 8 Existing / Committed Scenario in Tsuen Wan Town Centre of the EE for Tsuen Wan Area- PlanD Report Ref. J9008-06/- R04)*

2.5.5 For the wind flow in the area immediate next to the Application Site, other than the wind flowing along Sha Tsui Road and Luen Yan Street, part of the wind would flow along Wang Wo Tsai Street. In addition, a portion of wind will also flow along the Tsuen Wing Street and the public open space which connect the Sha Tsui Road and Wang Wo Tsai Street.

2.5.6 Figure 10 shows the air paths of the existing condition in the study area.

3. EVALUATION OF AIR VENTILATION PERFORMANCE

3.1 Important Pedestrian Areas

3.1.1 The nearby important pedestrian areas that the public would often access identified as the following:

- Wang Wo Tsai Street Garden
- Sha Tsui Road
- Luen Yan Street
- Wang Wo Tsai Street
- Yeung Uk Road

3.1.2 Location of those listed important pedestrian areas is shown in Figure 2.

3.2 Existing Air Path within the Application Site

3.2.1 Under the existing condition, industrial buildings are located within the whole Application Site, i.e. there are no identified air paths passing through the Application Site.

3.3 Assessment Methodology

3.3.1 Section 2 describes the wind availability at the Proposed Development and the prevailing wind flows during annual and summer conditions. It is noted that the prevailing wind directions for the district are from N, NE, ENE, E, S, SW and SSW.

3.3.2 The ventilation performance of the Application Site (the Proposed Scheme) will be evaluated and compared with the Existing Condition with respect to the identified dominant wind directions, i.e., N, NE, ENE, E, S, SW and SSW. The impact of the Proposed Development to the nearby important pedestrian areas will be discussed.

3.4 Wind Flow N and NE Directions

3.4.1 Figure 11 illustrates the wind flow of the Proposed Scheme and Existing Condition under N and NE direction.

3.4.2 The building clusters to the north of the Sha Tsui Road obstruct the northerly quarter wind to reach the Application Site. Portion of the N and NE wind is expected to flow:

- from the Kwan Mun Hau Street to Luen Yan Street and Kwu Hang Road (to the west of the Application Site);
- the public lane with ~7m width between the buildings inside the comprehensive residential development (Application No. A/TW/527);
- along Texaco Road from north to south; and
- Wang Wo Tsai Street Garden from north to south

3.4.3 It is noticed that the wind flow at all locations mentioned in Section 3.4.2 are unaffected in both Proposed Scheme and Existing Condition. Therefore, the overall ventilation performance would be similar in both schemes for the above identified locations.

3.4.4 Although the Proposed Scheme may induce a wake area in the immediate downwind area compared to the Existing Condition due to the building height, the Proposed Scheme will include residential buildings at the Application Site with building

separations approximately 6m wide between the building blocks above the podium at about 14.3mPD, unlike the existing industrial buildings, allowing wind to penetrate through the building separations and the podium into the downwind area.

3.4.5 Moreover, the wind flowing along the public lane, which is approximately 7m wide inside Application No. A/TW/527, could continue its flow across the Application Site and reach the downstream area of Yeung Uk Road.

3.4.6 On the other hand, the wind flow at all locations (i.e., along Luen Yan Street, Public Lane with ~7m width between the buildings inside Application No. A/TW/527, Kwu Hang Road, Wang Wo Tsai Street Garden, and Texaco Road) remains unaffected in both the Proposed Scheme and Existing Condition. Therefore, it is expected that there will not be a significant adverse impact on the important downstream pedestrian areas and the wake area, even with the higher building height at the Application Site under the Proposed Scheme.

3.5 Wind Flow from the ENE and E Directions

3.5.1 Figure 12 illustrates the wind flow of the Proposed Scheme and Existing Condition under ENE and E directions.

3.5.2 The building clusters to the northeast and east of the Application Site obstruct the ENE and E winds towards the Application Site. Portion of the ENE and E wind is expected to flow:

- along Sha Tsui Road
- along Yeung Uk Road; and
- along Wang Wo Tsai Street.

3.5.3 Compared with the Proposed Scheme and Existing Condition, the Proposed Scheme may induce a wake area in the immediate downwind area due to the building height. Nevertheless, it is noted that the wind flow at all locations (i.e., along Sha Tsui Road, Yeung Uk Road, and Wang Wo Tsai Street) remains unaffected in both the Proposed Scheme and Existing Condition. Therefore, it is considered that the air ventilation impacts from the Proposed Development would be insignificant.

3.5.4 In the Existing Condition, there is no building setback are provided from the buildings. While in the Proposed Scheme, the podium of the Proposed Development will be voluntarily set back by about 2m from Yeung Uk Road (for Sites A to C) and Wang Wo Tsai Street (for Sites D to F) to the Site boundaries (with landscape provision) (See Appendix 3). It would facilitate more portion of ENE and E wind flow along Wang Wo Tsai Street/ Yueng Uk Road toward west when compared to the Existing Condition. With the abovementioned design features, the overall ventilation performance at the pedestrian level at the nearby area would not be significantly worsen under the Proposed Scheme. Therefore, it is considered that the air ventilation impacts from the proposed development would be insignificant.

3.6 Wind Flow from the SW and SSW Directions

3.6.1 Figure 13 illustrates the wind flow of the Proposed Scheme and Existing Condition under SW and SSW directions.

3.6.2 The building clusters to the south of the Yeung Uk Road obstruct the SW and SSW winds to reach the Application Site. The SW and SSW winds are expected to flow along Luen Yan Street to Kwan Mun Hau Street as well as along Texaco Road.

3.6.3 It is noticed that the air paths along Luen Yan Street as well as Texaco Road are unaffected in both Proposed Scheme and Existing Condition. Therefore, the overall ventilation performance would be similar in both schemes.

3.6.4 There are existing compact high-rise buildings at the upwind area which have blocked the upcoming SW and SSW wind. It is expected that the potential blockage impact due to the building height would be comparable between the two schemes. Therefore, the increase in building height in Proposed Scheme would not affect the important pedestrian areas to surrounding significantly.

3.7 Wind Flow from the S Direction

3.7.1 Figure 14 illustrates the wind flow of the Proposed Scheme and Existing Condition under S direction.

3.7.2 The building clusters to the south of the Yeung Uk Road obstruct the S winds to reach the Application Site under the Existing Condition and the Proposed Scheme. The S winds are expected to flow along Texaco Road.

3.7.3 There are existing compact high-rise buildings at the upwind area which have blocked the upcoming S wind. It is expected that the potential additional blockage impact due to the building height under the Proposed Scheme would be comparable. Therefore, it is considered that the air ventilation impacts arising from the proposed development would be insignificant.

4. CONCLUSION

4.1.1 The Proposed Scheme at the Application Site has been evaluated from an air ventilation standpoint.

4.1.2 As discussed in Section 2, the N, NE, ENE, and E winds are the most dominant annual winds. The major summer prevailing winds come from the east and southerly quadrants, i.e., ENE, E, S, SW, and SSW winds. Wind in the study area would flow along Sha Tsui Road, Yeung Uk Road, Luen Yan Street, Wang Wo Tsai Street, Texaco Road and the open space between the Application Site and Sheung Chui Court.

4.1.3 In Section 3, the ventilation performance of the Proposed Scheme has been evaluated and compared with the Existing Condition with respect to the identified dominant wind directions, i.e., N, NE, ENE, E, S, SW and SSW.

4.1.4 Since both the Proposed Scheme and Existing Condition do not affect all identified air paths in the nearby area, the overall ventilation performance would be similar in both schemes. In addition, with the presence of compact middle to high rise existing buildings in upwind directions, the increase in building height would not induce significant impact to the leeward side.

4.1.5 Although the Proposed Scheme may induce a wake area in the immediate downwind area compared to the Existing Condition due to the building height, with 6m wide between the building blocks above the podium at about 14.3mPD and about 2m setback, it is concluded that the Proposed Scheme would not induce significant adverse impact to the nearby important pedestrian area when compared to the Existing Condition and the proposed development would be acceptable in air ventilation terms.

Figure: 1	RAMBOLL
Title: Location of Application Site and Its Environs	Drawn by: KK
	Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses and Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.0
	Date: Aug 2024

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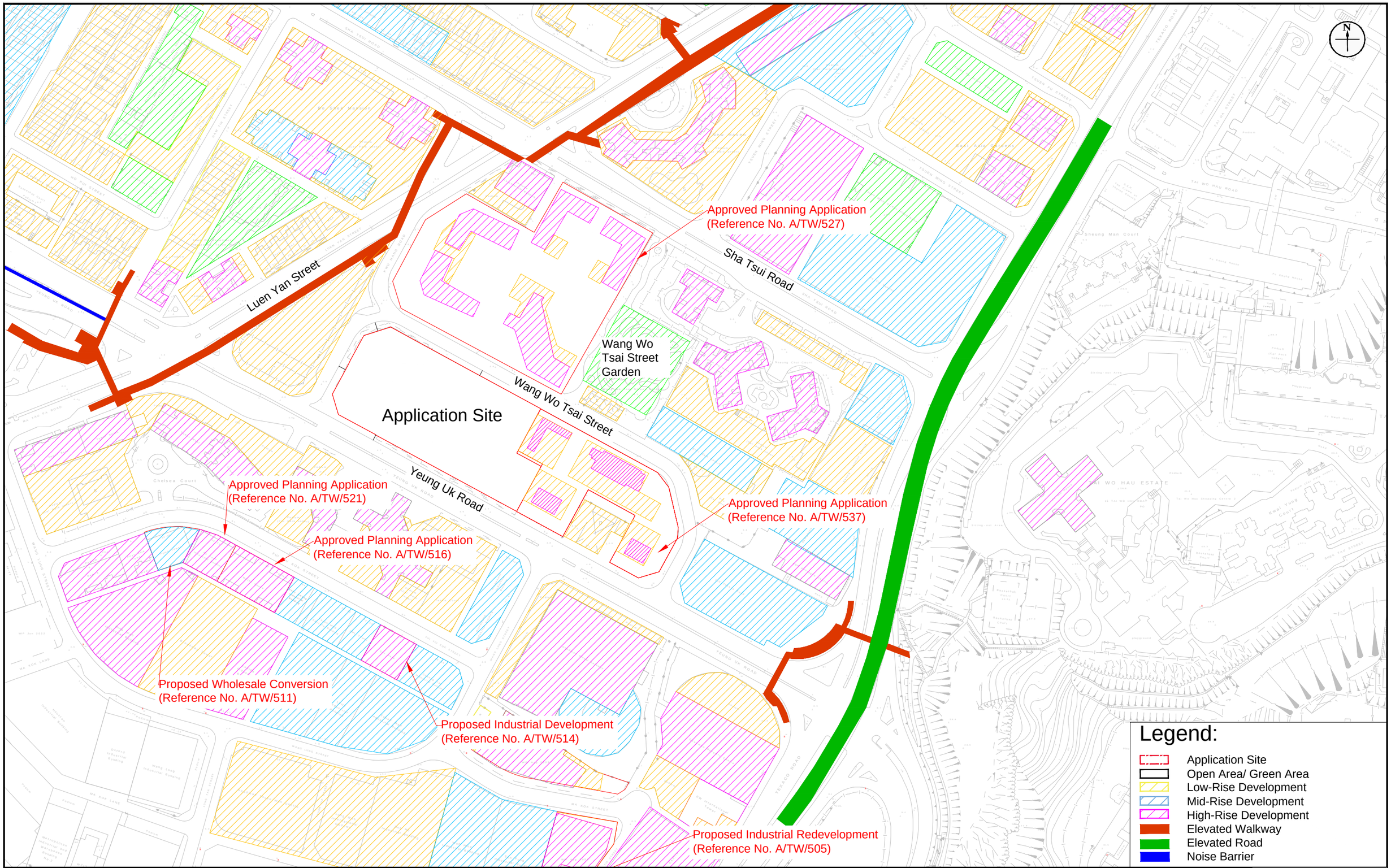

Figure: 2

Title: Building Height of Existing Development within the Surrounding Area

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RAMBOLL

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Checked by:	TC
Rev.:	1.0
Date:	Aug 2024

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Figure: 3a

Title: Layout Plan in the Baseline Scheme with Existing Building

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Figure: 3b

Title: Layout Plan in the Proposed Scheme

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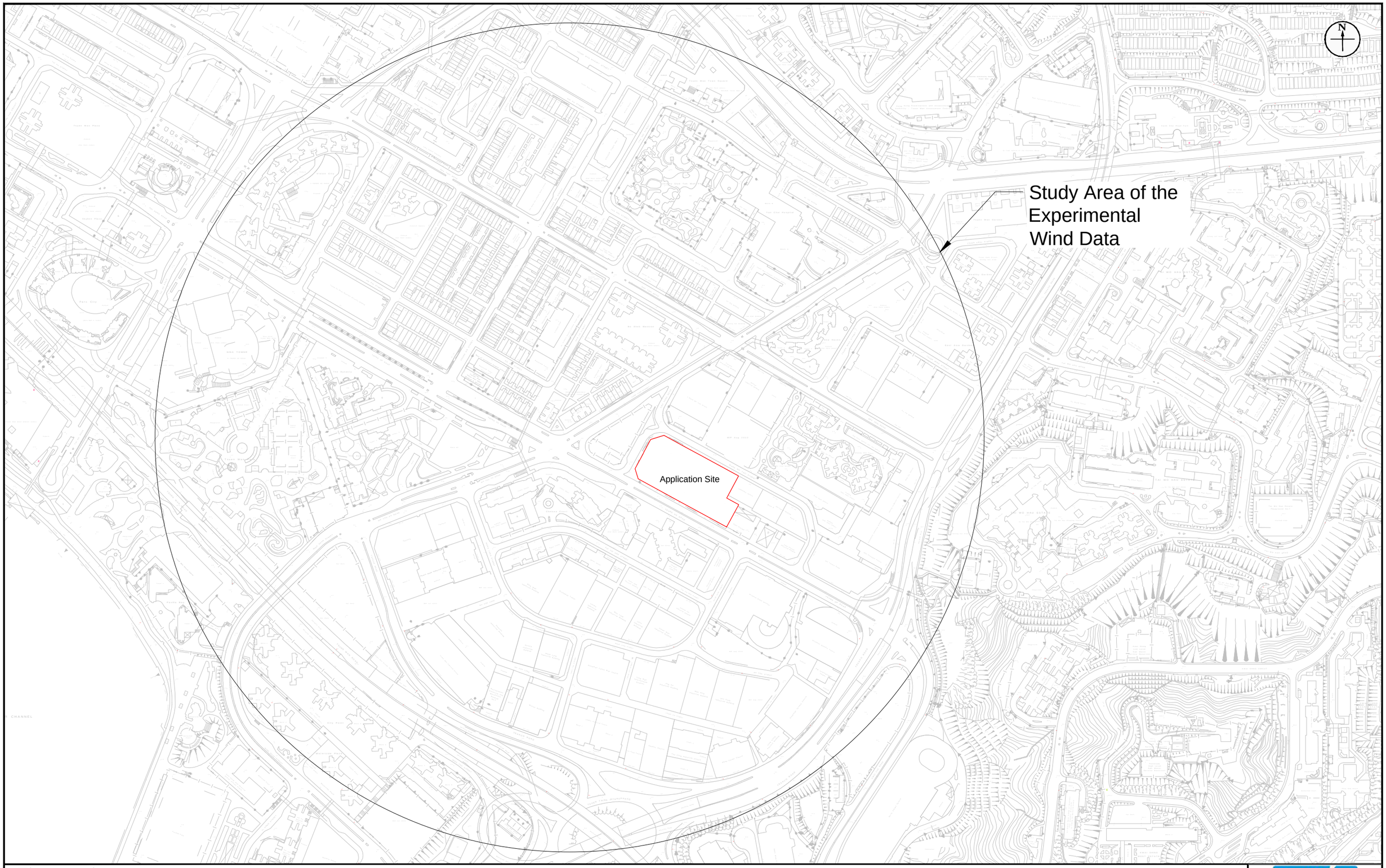

Figure: 4

Title: Study Area of the Experimental Wind Data

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Date:	Aug 2024

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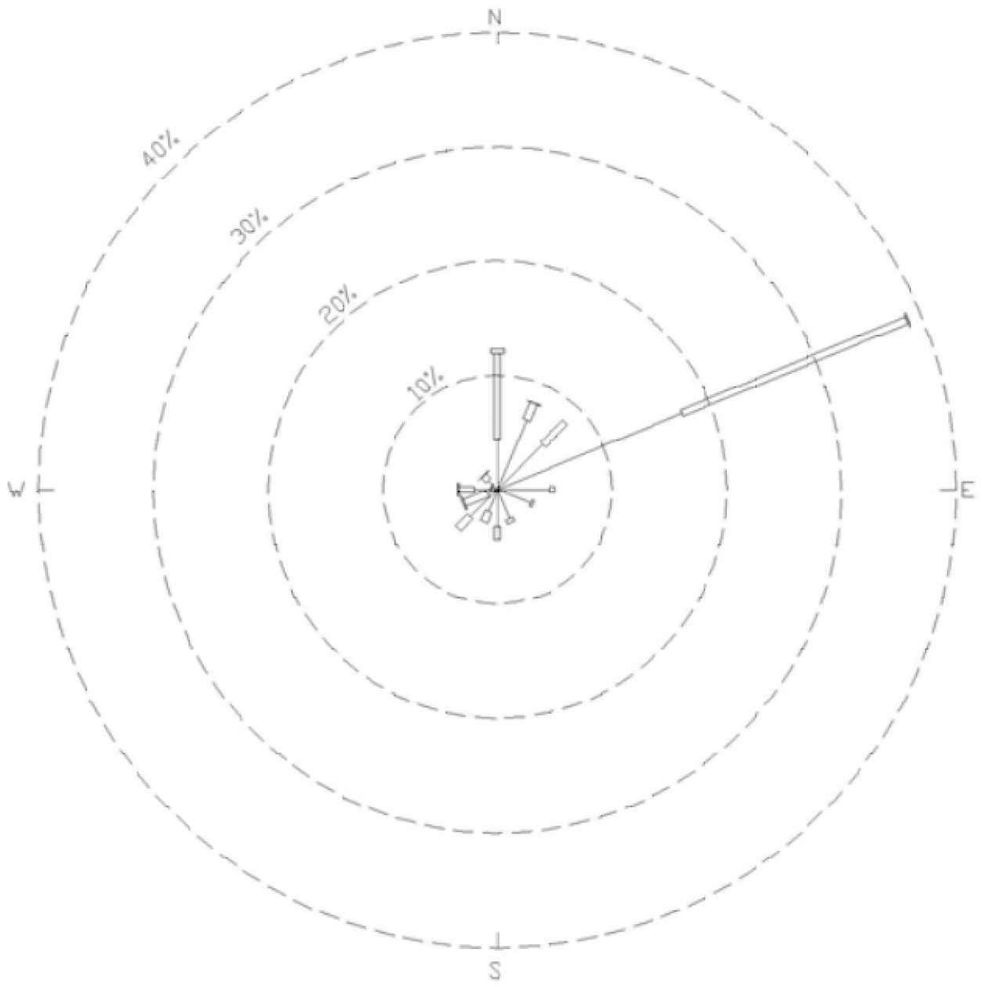
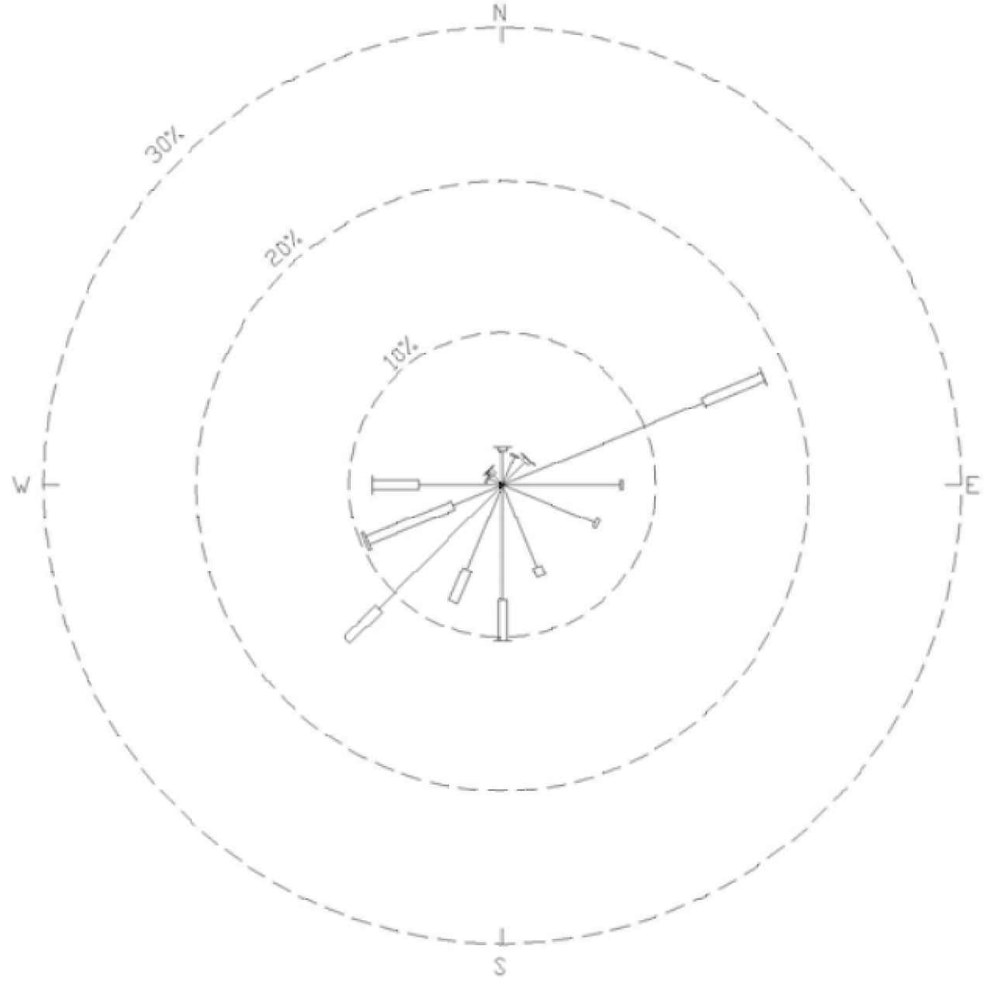


Annual Condition



Summer Condition

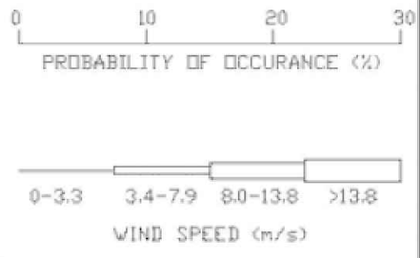


Figure:	5	RAMBOLL
Title:	Windrose Diagram of the Experimental Wind Data for Tsuen Wan Area	Drawn by: KK Checked by: TC
Project:	Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in “Comprehensive Development Area (5)” Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.0 Date: Aug 2024

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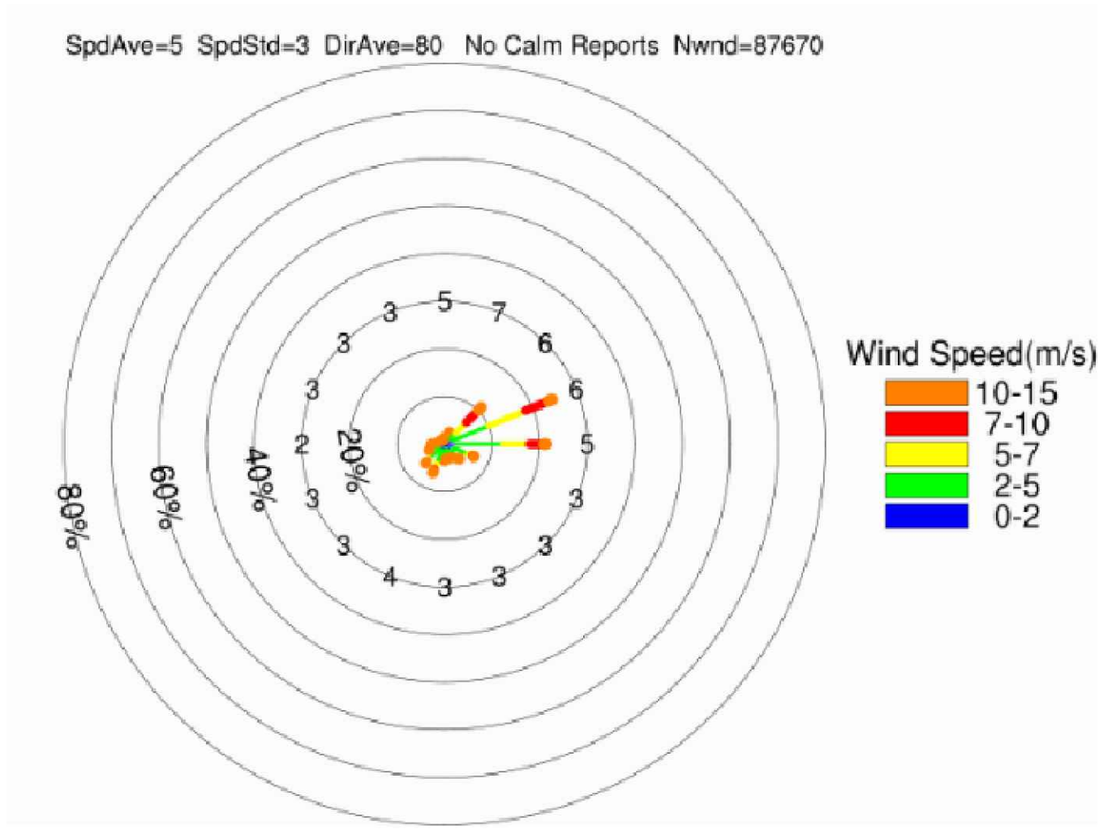
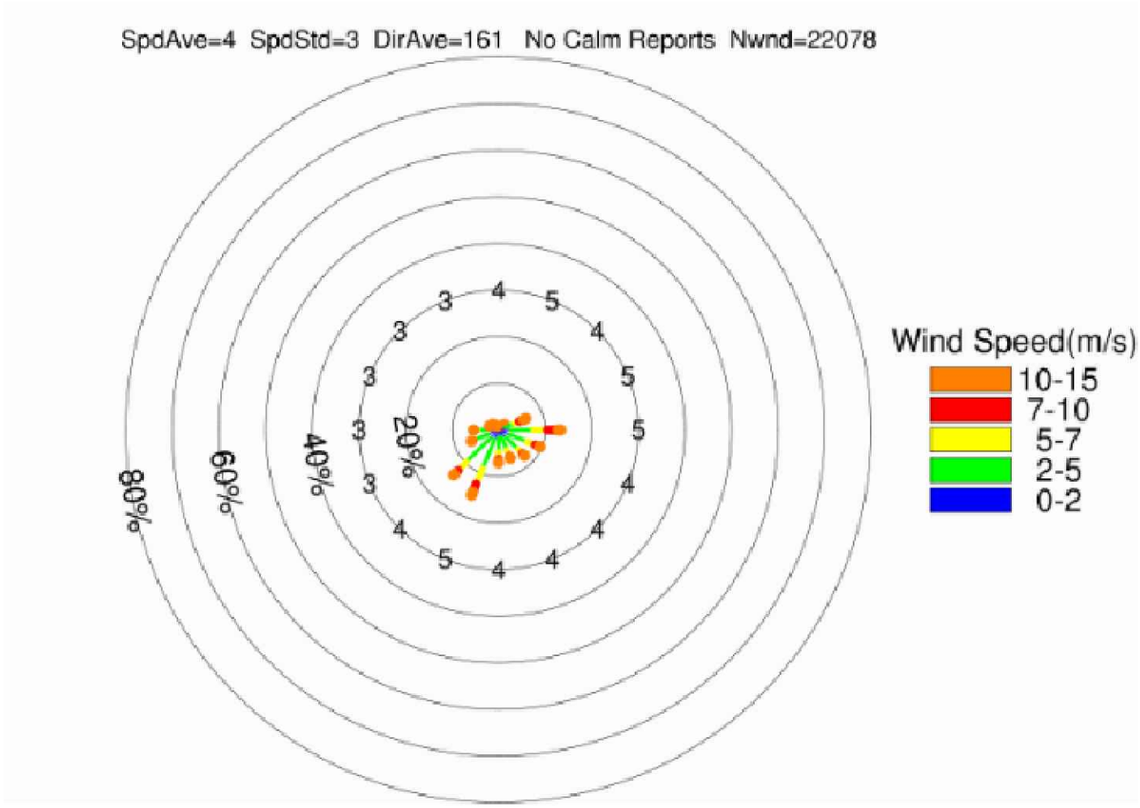


Annual Condition



Summer Condition

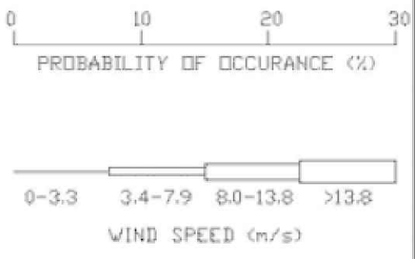


Figure:	6	RAMBOLL
Title:	Windrose Diagram (at 200m) extracted from RAMS (X:069, Y:053)	Drawn by: KK
		Checked by: TC
Project:	Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.0
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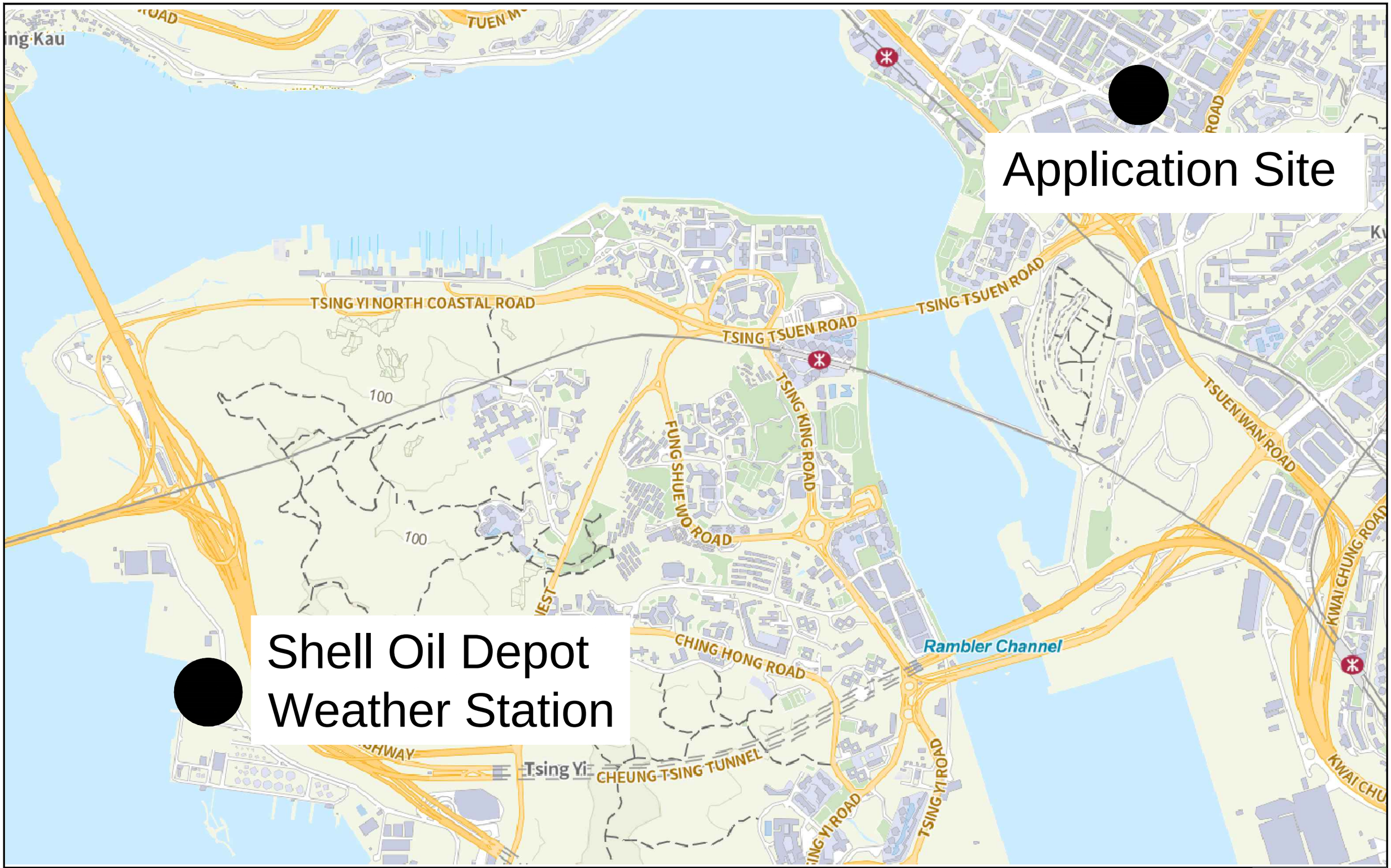

Figure: 7	RAMBOLL
Title: Location of Shell Oil Depot Weather Station	Drawn by: KK Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.0 Date: Aug 2024

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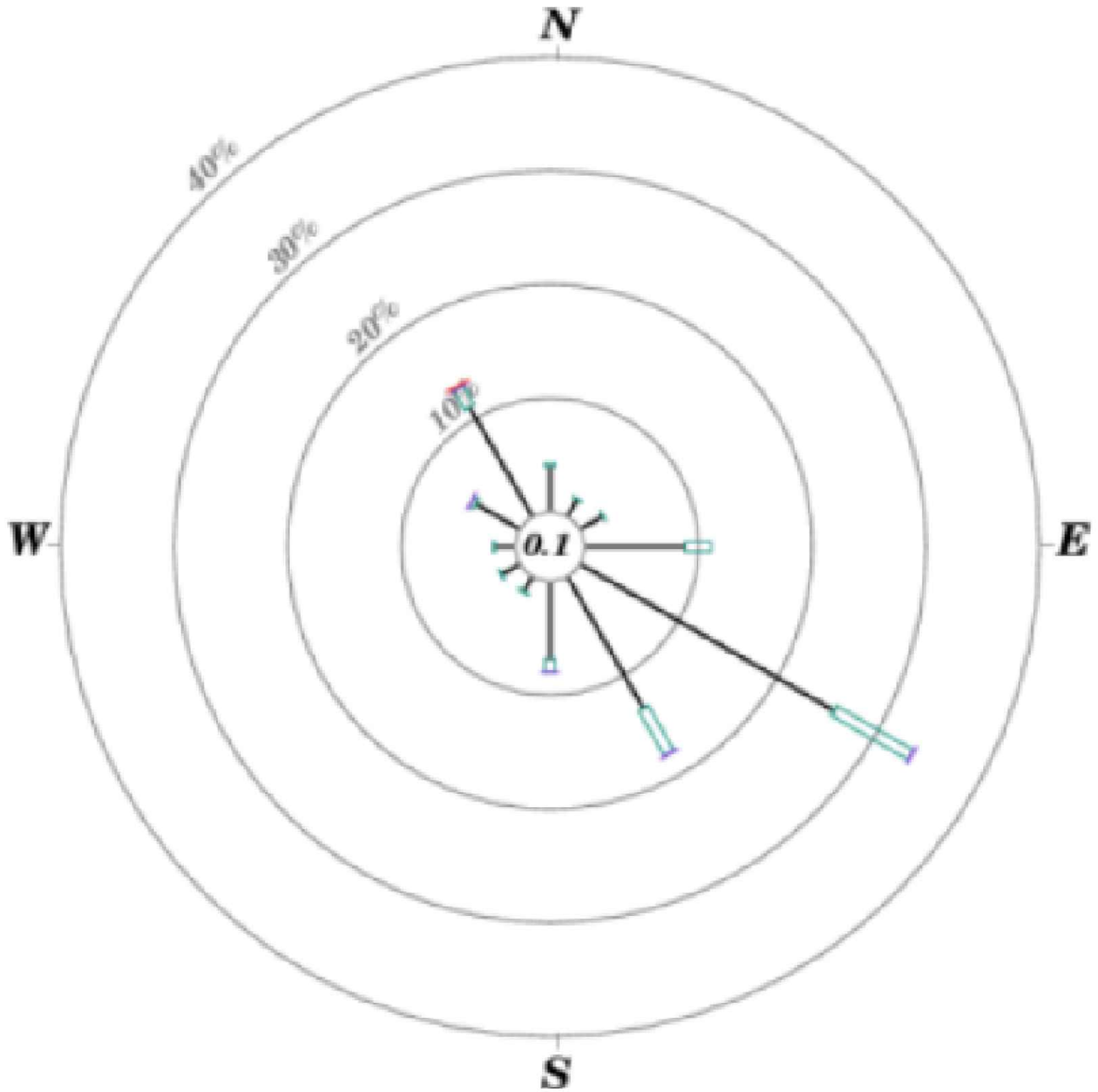
Wind Speed

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

Percentage Frequency

0 10 20 30 40

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



Legend

Year

Figure:	8a	RAMBOLL
Title:	Windrose Diagram (1998-2023) of Shell Oil Depot Wind Station (Annual)	Drawn by: KK Checked by: TC
Project:	Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.0 Date: Aug 2024

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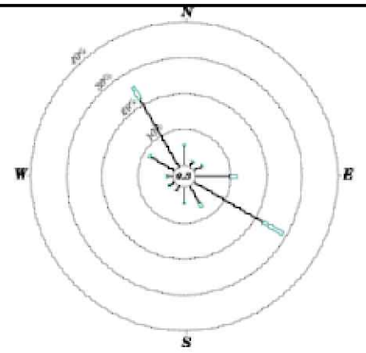
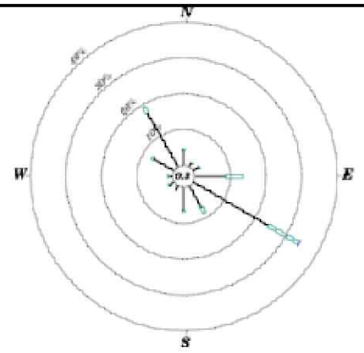
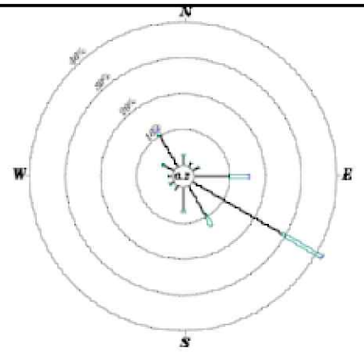
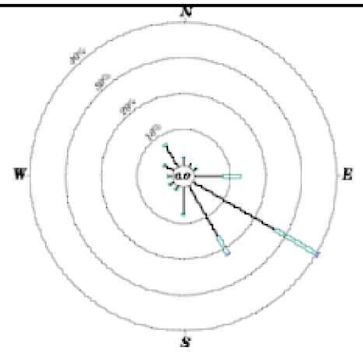
JAN	FEB	MAR	APR
			
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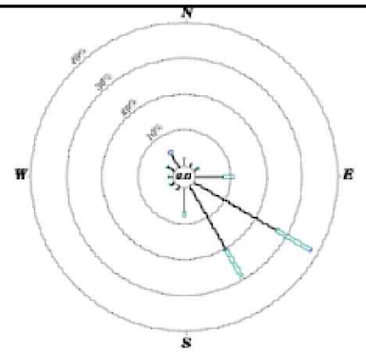	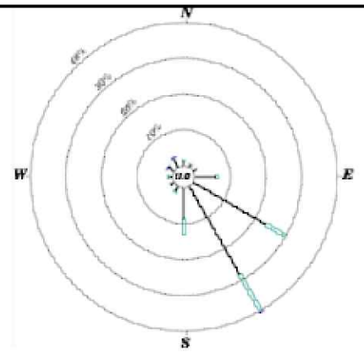	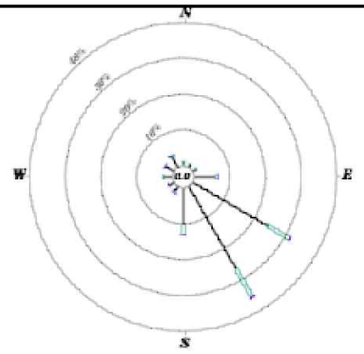	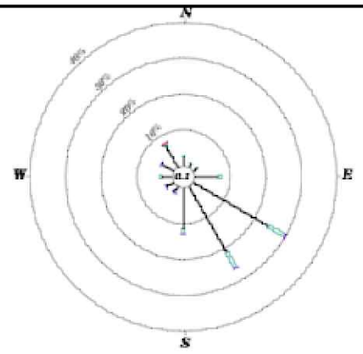
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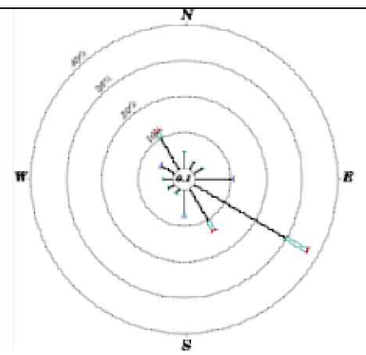	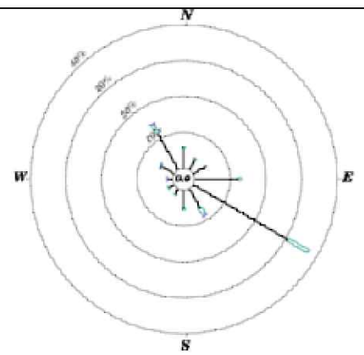	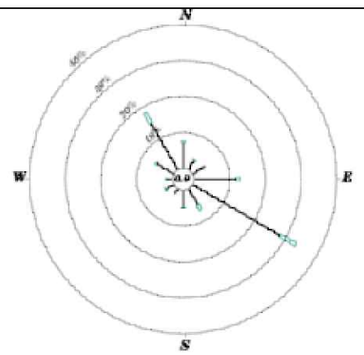	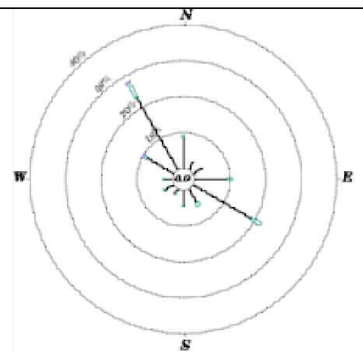

Figure: 8b

Title: Windrose Diagram (1998-2023) of Shell Oil Depot Wind Station (Monthly)

Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in “Comprehensive Development Area (5)” Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan

RAMBOLL

Drawn by:	KK
Checked by:	TC
Rev.:	1.0
Date:	Aug 2024

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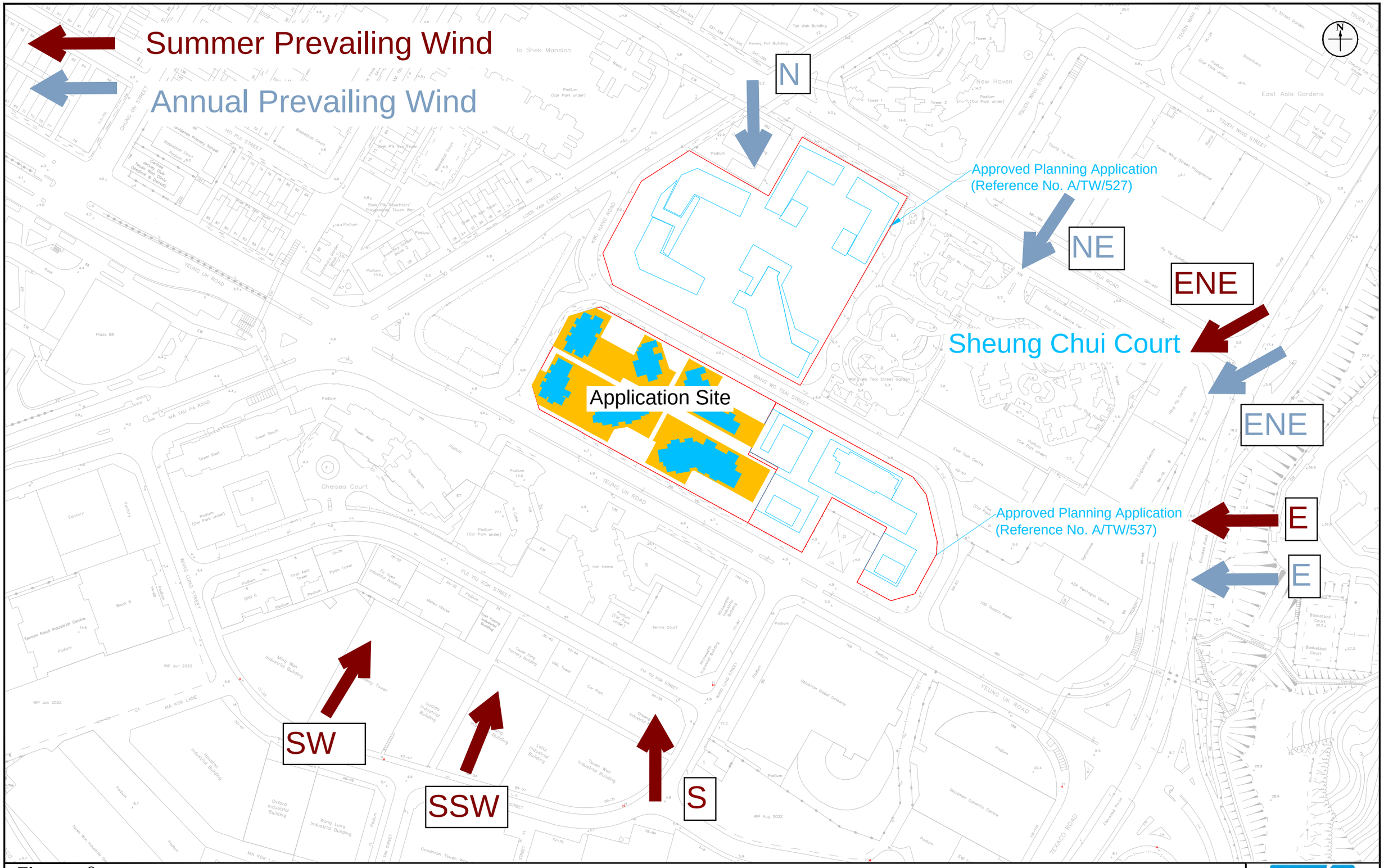

Figure: 9	RAMBOLL
Title: Potential Wind Flow under Existing Condition	Drawn by: KK Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.2 Date: Feb 2025

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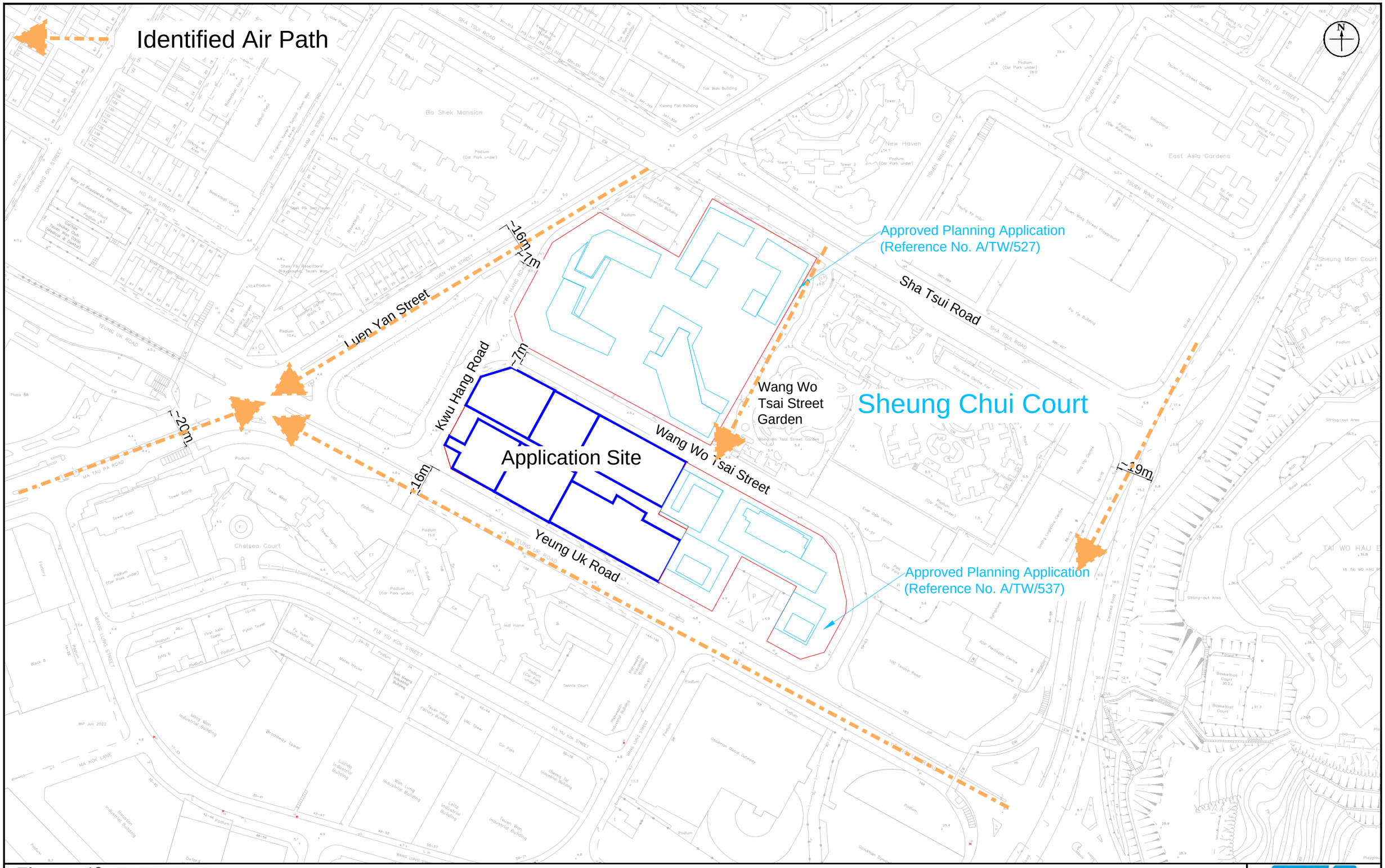

Figure: 10	RAMBOLL
Title: Identified Air Path of the Study Area	Drawn by: KK
	Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses with Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.1
	Date: Dec 2024

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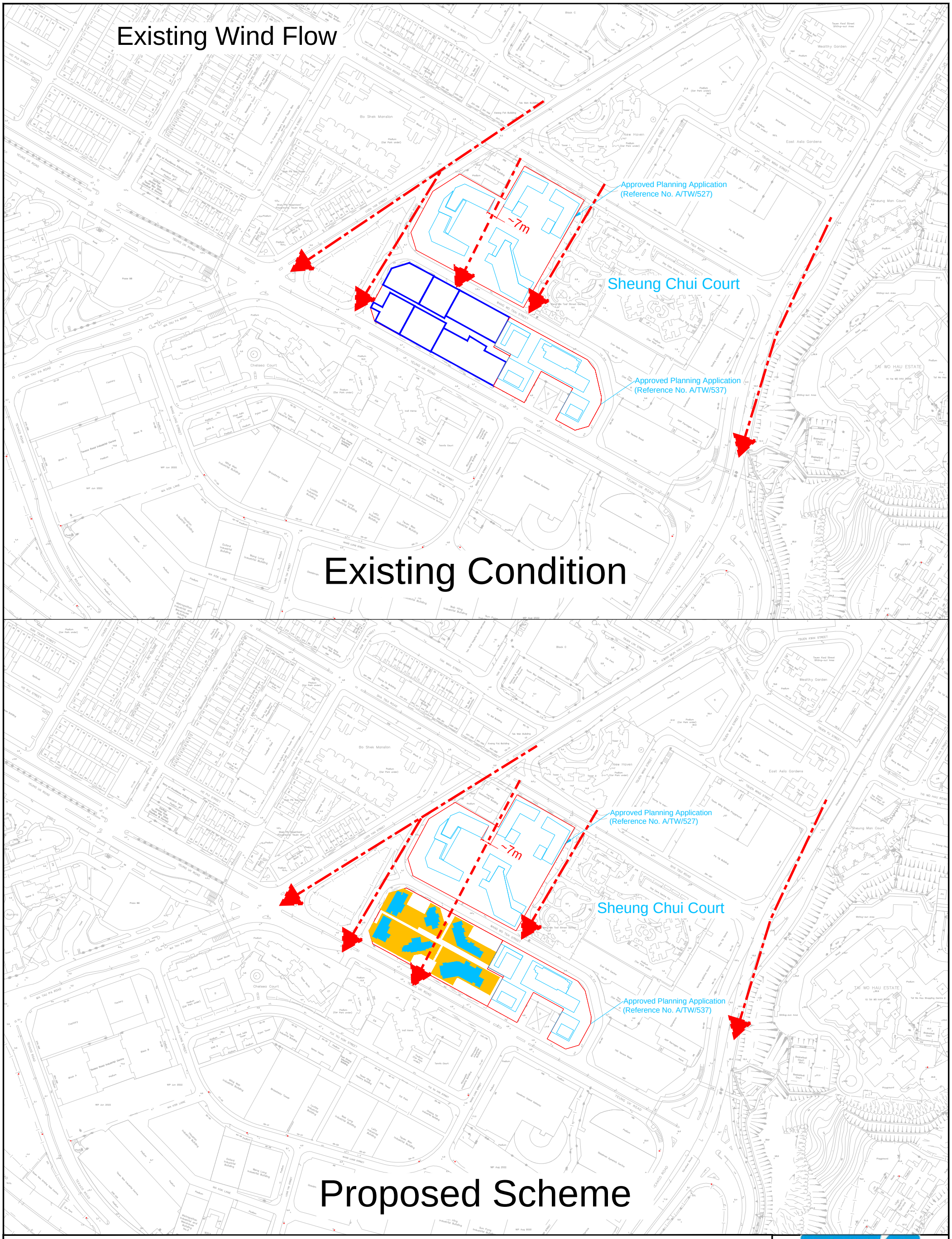
Existing Wind Flow



Existing Condition

Proposed Scheme

Figure: 11	RAMBOLL
Title: Illustration of Wind Flow from N and NE Wind Directions	Drawn by: KK
	Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses and Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone with Social Welfare Facility at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.1
	Date: Dec 2024

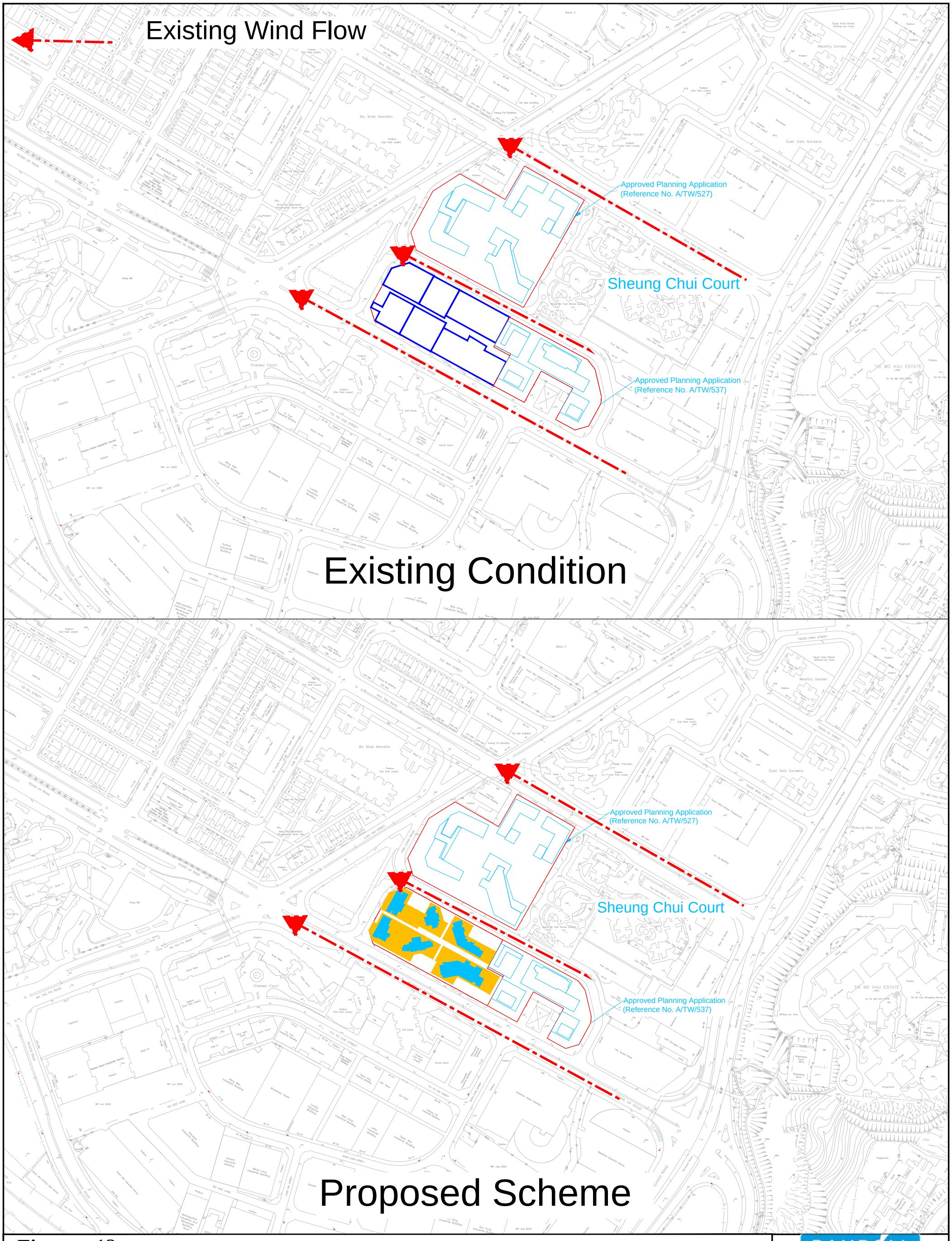


Figure: 12	RAMBOLL
Title: Illustration of Wind Flow from ENE and E Wind Directions	Drawn by: KK
	Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses and Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone with Social Welfare Facility at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.1
	Date: Dec 2024

Existing Wind Flow

Approved Planning Application
(Reference No. A/TW/527)

Sheung Chui Court

Approved Planning Application
(Reference No. A/TW/537)

Existing Condition

Approved Planning Application
(Reference No. A/TW/527)

Sheung Chui Court

Approved Planning Application
(Reference No. A/TW/537)

Proposed Scheme

Figure: 13	RAMBOLL
Title: Illustration of Wind Flow from SW and SSW Wind Directions	Drawn by: KK Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses and Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone with Social Welfare Facility at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.1 Date: Dec 2024

Existing Wind Flow

Approved Planning Application
(Reference No. A/TW/527)

Sheung Chui Court

Approved Planning Application
(Reference No. A/TW/537)

Existing Condition

Approved Planning Application
(Reference No. A/TW/527)

Sheung Chui Court

Approved Planning Application
(Reference No. A/TW/537)

Proposed Scheme

Figure: 14	RAMBOLL
Title: Illustration of Wind Flow from S Wind Direction	Drawn by: KK Checked by: TC
Project: Section 16 Planning Application for Proposed Comprehensive Residential Development with Commercial Uses and Social Welfare Facility and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone with Social Welfare Facility at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan	Rev.: 1.1 Date: Dec 2024

Appendix 1 Layout Plan of the Existing Building

Appendix: 2

Title: Layout Plan in the Baseline Scheme with Existing Building

Project: Section 16 Planning Application for Proposed Comprehensive Residential Development and Minor Relaxation of Maximum Plot Ratio and Building Height Restrictions in "Comprehensive Development Area (5)" Zone with Social Welfare Facility at Yeung Uk Road / Kwu Hang Road / Wang Wo Tsai Street, Tsuen Wan

RAMBOLL

Drawn by:	KK
Checked by:	TC
Rev.:	1.0
Date:	Jun 2024

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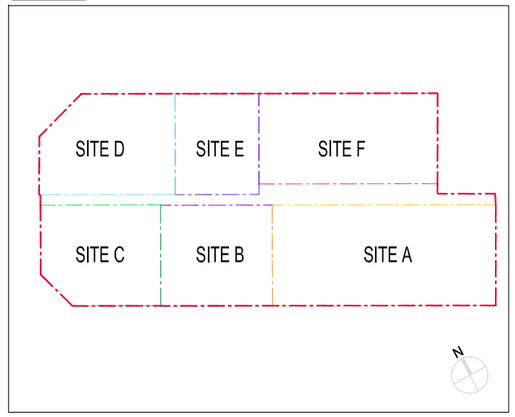
Appendix 2 Master Layout Plan of the Proposed Scheme

KEY PLAN:



LEGEND:

- Boundary of Application Site
- Phase 1 (Site A)
- Phase 2a (Site B)
- Phase 2b (Site C)
- Phase 2c (Site D)
- Phase 2d (Site E)
- Phase 2e (Site F)

- Residential
- Landscape / Uncovered Area
- EVA / Driveway Uncovered Walkway
- Management Facility

WANG WO TSAI STREET

KWU HANG ROAD

YEUNG UK ROAD

PUBLIC LANE

SITE D INDICATIVE LAYOUT

SITE E INDICATIVE LAYOUT

SITE F INDICATIVE LAYOUT

SITE C INDICATIVE LAYOUT

SITE B INDICATIVE LAYOUT

SITE A LAYOUT FOR THIS APPLICATION

TOWER 120.00mPD

LANDSCAPE AREA

PEDESTRIAN ACCESS

VEHICULAR ACCESS

11.05mPD

A I

B –

SUN HUNG KAI
ARCHITECTS AND ENGINEERS LIMITED
SUN HUNG KAI CENTRE, WANCHAI, HONGKONG
TEL. 28278111 FAX. 28272884

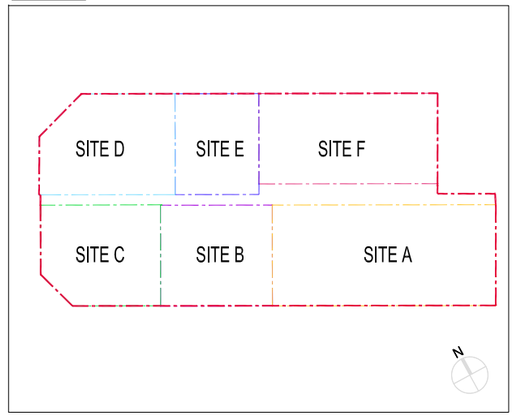
Title

INDICATIVE MASTER LAYOUT PLAN

Rev.	Date
SK01	NOV 2024
Scale	Figure
NA	01

Appendix 3 Proposed Setbacks in the Proposed Scheme

KEY PLAN:



LEGEND:

- Boundary of Application Site
- Phase 1 (Site A)
- Phase 2a (Site B)
- Phase 2b (Site C)
- Phase 2c (Site D)
- Phase 2d (Site E)
- Phase 2e (Site F)

- Residential
- Landscape / Uncovered Area
- EVA / Driveway Uncovered Walkway
- Management Facility

WANG WO TSAI STREET

KWU HANG ROAD

YEUNG UK ROAD

PUBLIC LANE

~6m

about 2m

about 2m

SITE D INDICATIVE LAYOUT

SITE E INDICATIVE LAYOUT

SITE F INDICATIVE LAYOUT

SITE C INDICATIVE LAYOUT

SITE B INDICATIVE LAYOUT

SITE A LAYOUT FOR THIS APPLICATION

TOWER 120.00mPD

LANDSCAPE AREA

PEDESTRIAN ACCESS

VEHICULAR ACCESS

11.05mPD

4.70 4.60 4.65 14.25 14.30 4.80 14.35 21.85 4.85

A — A

B — B

SUN HUNG KAI
ARCHITECTS AND ENGINEERS LIMITED
SUN HUNG KAI CENTRE, WANCHAI, HONGKONG
TEL. 28278111 FAX. 28272884

Title

INDICATIVE MASTER LAYOUT PLAN

Rev.	Date
SK01	NOV 2024
Scale	Figure
NA	01