Appendix 7

Air Ventilation Assessment – Expert Evaluation

Prepared for

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S.12A AMENDMENT OF PLAN APPLICATION ON MAI PO & FAIRVIEW PARK OZP NO. S/YL-MP/8

REZONING FROM "R(D)" TO "R(C)1" ZONE FOR A PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 104 & THE ADJOINING G.L. IN YUEN LONG, N.T.

AIR VENTILATION ASSESSMENT – EXPERT EVALUATION

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1. INTRODUCTION

1.1 Project Background

1.1.1 The Application Site is located at various lots in D.D.104 and adjoining government land near Chuk Yuen Tsuen in Mai Po, Yuen Long. The applicant seeks planning permission for a proposed comprehensive residential development at the Application Site which is zoned "Residential (D)" (R(D)) under Approved Mai Po & Fairview Park Outline Zoning Plan No. S/YL-MP/8 (the OZP).

1.1.2 Ramboll Hong Kong Limited is commissioned by the Applicant to prepare an Air Ventilation Assessment (AVA) Study Report – Expert Evaluation (EE) for the proposed development to support a Section 12A rezoning application from the environmental perspective. Architectural drawings and technical information are provided by the Project team.

1.1.3 A planning application for a proposed comprehensive residential development with a domestic plot ratio (DPR) of about 1.8 and 2,771 dwellings, was previously submitted under the Application No. Y/YL-MP/6. The proposed villa blocks at that time were 3 to 5 storeys high (~+15.3 to +21.9mPD) whereas the apartment blocks varied from 17 to 19 storeys (~+61.0 to +67.3mPD). An AVA-EE report (R8068) (Previous AVA-EE) was submitted in support of the above-mentioned planning application with no further technical comment received.

1.1.4 Since then both the development schedule and DPR have been further reviewed and the current proposed DPR for the Site is slightly reduced from 1.8 to 1.5. Accordingly, the maximum building height proposed is reduced from 19 to 16 storeys and less number of dwellings (2,322 units) is proposed for the Site. The apartment blocks in the inner and eastern parts of the Site are now ranged from 14 to 16 storeys (~+53.55 to +59.85mPD). No villa block is now proposed which is changed to non-domestic blocks on the northern part of the Site with a view to maximize the extent of proposed landscape pond.

1.1.5 It is noteworthy that the proposed minor amendments mostly involve a lower maximum building height and hence the resultant minor reduction in DPR. Only the northern part of villa blocks are planned to change to non-domestic blocks. The block form, building disposition, building orientation and buffer distance of the residential blocks from site boundary line under the Current Scheme remain unchanged for the rest of the parts. This AVA-EE has been prepared as an updated report to support the Current Scheme.

1.2 Objectives

1.2.1 This AVA-EE report has been prepared to evaluate whether the proposed development would have any impact on the overall air ventilation performance in its surrounding area when compared with the building layout plans of a previously approved planning application at the Application Site (Application No. A/YL-MP/205), which will act as the Baseline Scheme.

1.3 Application Site and its Environ

1.3.1 Figure 1.1 shows the location of the Application Site and its environ.

1.3.2 The Application Site with an area of around 6.57 ha is located at the south of the Ngau Tam Mei Main Drainage Channel and to the west of San Tin Highway and Castle Peak Road – Tam Mi Section. It is currently situated within R(D) zone of the OZP. The site is bounded by said drainage channel and Kam Pok Road to its immediate north and west, "Village" ("V") zone including Chuk Yuen Tsuen, and Hang Fook Gardens to its east and

south-east, and vacant land and Drainage Services Department (DSD)'s flood storage pond to its south. Thus, the Application Site is already designated by the government for residential development under the OZP.

1.3.3 Surrounding the Application Site is a number of planned and existing developments. Existing developments include Fairview Park to the west (+9.9 mPD to +15.5 mPD), Chuk Yuen Tsuen (+6.7 mPD to +17.3 mPD) to the east, Hang Fook Gardens (+12 mPD to +14.6 mPD), Sheung Chuk Yuen (+8.3 to +19.9 mPD) and San Wai Tsuen (+7.8 mPD to +22.2 mPD) to the southeast. Then to the south of the Site are Ha San Wai (+7.2 mPD to +12.4 mPD) and Villa Camelia (+13.6 mPD to +15.8 mPD). To the northeast of the Site are Yau Mei San Tsuen (+6.7 mPD to +17.3 mPD) and La Maison Vineyard (+14.5 mPD to +15.6 mPD) and Wai Tsai Tsuen (+11.8 mPD to +30.4 mPD).

1.3.4 For planned developments, to the further north of the Application Site across Ngau Tam Mei Main Drainage Channel is the approved development within "Other Specified Uses" (OU) zone with Application No. A/YL-MP/247. It is planned for comprehensive low-density residential development providing approximately 105 two-storey houses (above a basement carpark) and ancillary facilities with a proposed wetland restoration area to the north of the development. Then to the south is the approved development Application No. A/YL-MP/287. This approved "R(D)" development comprises of 65 houses with a building height maximum of 6.6 m with parking space and clubhouse (+10.4 mPD) for residents. Finally, to the further west and southwest of the Application Site is the approved development within "Recreation" (REC) zone (REC Site) with Application No. Y/YL-MP/3. It proposes to build 106 two-storey domestic houses above a basement carpark and ancillary facilities (i.e. a resident's clubhouse and a swimming pool) with a management office and nursery shelter with a maximum building height of +12 mPD. The concerned REC Site is also the subject of an approved public light housing development by the government under application no. A/YL-MP/341 (up to +16.8mPD). However, it is temporarily use only for a few years and would be removed after that. Given that it is a short-term use, it is not considered further in this study.

1.3.5 Table 1.1 lists the existing and planned developments around the Application Site along with their heights.

Table 1.1 Surrounding Existing and Planned Developments

Name of Development	Building Height (mPD)
Fairview Park	+9.9 to +15.5
Villa Camelia	+13.6 to +15.8
Ha San Wai	+7.2 to +12.4
San Wai Tsuen	+7.8 to +22.2
Sheung Chuk Yuen	+8.3 to +19.9
Hang Fook Gardens	+12 to +14.6
Chuk Yuen Tsuen	+6.7 to +17.3
Yau Mei San Tsuen	+6.7 to +17.3
La Maison Vineyard	+14.5 to +15.6
Wai Tsai Tsuen	+11.8 to +30.4
Planned Development – A/YL-MP/287	+10.4 to ~+12.6
Planned Development – A/YL-MP/247	+13.5 to ~+15.4
Planned Development – Y/YL-MP/3 *	+12

Remark: please refer to Figure 1.1 for the locations.

* Short-term use proposed under application no. A/YL-MP/341, is not considered given the reasons described in Section 1.3.4.

1.4 Baseline Condition – Approved Scheme

1.4.1 The baseline condition (Approved Scheme) used for comparison of air ventilation performance in this AVA-EE consists of the structures located within the Application Site of a previously approved planning application (Application No. A/YL-MP/205). It includes 71 three-storey houses and 1 three-storey clubhouse both with a maximum building height of 6.6m high (~+12 mPD). The approved MLP for the Approved Scheme are shown in Appendix 1.1.

1.4.2 This Approved Scheme is compared with the Proposed Scheme on its air ventilation performance under dominant wind directions in this report.

1.5 Proposed Scheme

1.5.1 Appendix 1.2 shows the building layout of the Proposed Scheme. The proposed development consists of the following:

- Residential towers (T1-T3, T5-T11)
    - 15-storey (T1-T2), 14-storey (T3, T5), and 16-storey (T6-T11) residential towers with building heights of +56.70 mPD, +53.55 mPD, + 59.85 mPD respectively
- 4 clubhouses
    - One clubhouse at the southwestern part of the Application Site near the landscape pond (+10.4 mPD)
    - One clubhouse at the southern part of the Application Site between Residential Towers T3 and T5 (+10.4 mPD)
    - Two clubhouse at the middle of the Application Site between Residential Towers T1 and T9 (+10.4 and +15.40 mPD)
- Four non-domestic blocks:
    - With +15.4 mPD for two commercial buildings (both having a podium (+10.4 mPD)), including one comprising a transport layby and one mainly for commercial uses;
    - One building mainly for commercial & GIC usage (+14.4 mPD); and
    - One building for E&M (+10.40 mPD)
- Landscape area for leisure uses and a landscape pond of about 0.5 ha.

2. SITE WIND AVAILABILITY

2.1 Site Wind Availability Data

2.1.1 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 condition at various levels, i.e. 200 m, 300 m, and 500 m above terrain.

2.1.2 The RAMS data of the grid (X: 055 Y: 077) has been extracted from the Site Wind Availability Data of Planning Department's website.

2.1.3 Based on the wind roses with different heights (200, 300 or 500m) available, the 200 m site wind availability data represents wind data that takes into account the topographical effect around the Application Site. Therefore, a lower level of wind roses at 200 m height is selected to study the prevailing wind condition as it represents the incoming wind to the Application Site and considers the influence on the prevailing winds by the surrounding topography.

2.1.4 According to the wind roses at 200 m altitude, the annual prevailing wind directions of the Application Site are NNE, NE and E while the summer prevailing wind directions for the Application Site are E, S, SSW.

2.1.5 Figure 2.1 shows the relevant wind rose diagrams representing the frequency and wind speed distribution at 200 m height during the annual and summer conditions. The wind frequency data under the annual and summer conditions at 200 m altitude are shown in Table 2.1 below.

Table 2.1 Summary of RAMS Data and Wind Direction

Wind Direction	% of Annual Occurrence	% of Summer Occurrence
0° (N)	2.7%	1.5%
22.5° (NNE)	**12.8%**	2.0%
45° (NE)	**12.3%**	2.1%
67.5° (ENE)	9.0%	3.6%
90° (E)	**19.0%**	**10.3%**
112.5° (ESE)	7.0%	6.5%
135° (SE)	4.0%	5.8%
157.5° (SSE)	5.0%	8.9%
180° (S)	9.4%	**20.3%**
202.5° (SSW)	6.5%	**15.3%**
225° (SW)	3.4%	8.5%
247.5° (WSW)	2.3%	4.9%
270° (W)	2.7%	5.5%
292.5° (WNW)	1.6%	2.6%
315° (NW)	1.1%	1.3%
337.5° (NNW)	1.1%	1.0%

Note: Bold characters highlighted in grey represent the selected prevailing wind directions for evaluation

2.2 Topography and Building Morphology

Topography

2.2.1 The Application Site is located near Chuk Yuen Tsuen in Mai Po, Yuen Long, the area within the Application Site Boundary is flat and has low ground elevation (average of about +3 mPD). The terrain in the vicinity of the Application Site is also relatively flat and have low elevation level ranging from +2.6 mPD to +5.6 mPD.

2.2.2 Around 2 km to the southeast of the Application Site is a hilly terrain with elevations up to +200 mPD. However, due to its large distance away from the Site, it is not expected to affect the wind availability of the Site. Overall, the topography is not expected to have significant influence on Site wind availability.

Existing Building Morphology

2.2.3 Based on findings from the site survey, published information in the Statutory Planning Portal under the Town Planning Board regarding planned / committed developments, the Application Site as well as its adjacent areas are already designated by the government for residential development. Please refer to Figure 1.1. There are a number of existing and planned low rise buildings surrounding the Application Site. The wind flow pattern at the Application Site may potentially be influenced by this surrounding-built environment even without the proposed development at the Application Site.

2.2.4 Potential building blockage effect due to the surrounding existing developments is considered. Southern winds would be partially blocked by the existing buildings in Villa Camelia and Ha San Wai while NNE and NE wind would be somewhat obstructed by the existing village houses structures in Yau Mei San Tsuen and La Maison Vineyard. While E wind would be somewhat obstructed by nearby village houses at Chuk Yuen Tsuen. This is not expected to be significant because the structures are relatively low-rise and cannot effectively block the incoming wind flow.

2.2.5 The building height information of identified existing developments was extracted from Geo-Reference Database (BG1000) provided by Survey and Mapping Office/ Lands Department.

Building Morphology – Planned Developments

2.2.6 There are three large-scale approved planned developments around the Application Site, these are the planned development of Y/YL-MP/3 to the west of the Application Site, A/YL-MP/247 to the north of the Application Site and A/YL-MP/287 to the south of the Application Site. Their site boundary can be seen in Figure 1.1. As discussed in Section 1.3.4, the land under application no. Y/YL-MP/3 is also the subject of an approved public light housing development by the government under application no. A/YL-MP/341 at adjacent "REC" zone. Since it is temporarily use for a few years and would be removed after that, it is not considered further in this study.

2.2.7 Planned development A/YL-MP/247 consists of approximately 105 two-storey houses (above a basement carpark) and ancillary facilities with a proposed wetland restoration area to the north of the development. Planned development A/YL-MP/287 contains 65 two-storey houses with parking space and clubhouse for residents, and the planned development Y/YL-MP/3 proposes 106 nos. of 2-storey domestic houses above a basement carpark and ancillary facilities. The building heights of the three planned developments were taken from the maximum building height stated in their respective approved planning applications. Table 2.2 highlights the surrounding building heights.

2.2.8 A/YL-MP/247 would block a small amount of annual NNE wind from reaching the Site while A/YL-MP/287 would block a portion of summer SSW wind but the effect on surrounding wind availability is not expected to be significant due to the relatively low-rise nature of the planned structures at these locations.

2.2.9 Y/YL-MP/3 would also block W wind from reaching the Site but considering that existing Fairview Park is already to the west of this planned development and has a higher building height than this approved planning application, wind blockage from Y/YL-MP/3 is considered insignificant. Hence, taking into consideration the various planned developments, the potential air ventilation blockage cause by these structures to the dominant annual and summer wind directions is considered to be low.

Table 2.2 Surrounding Development

Name of Development	Building Height (mPD)	Location from Application Site
Fairview Park	+9.9 to +15.5	W
Villa Camelia	+13.6 to +15.8	S
Ha San Wai	+7.2 to +12.4	S
San Wai Tsuen	+7.8 to +22.2	SE
Sheung Chuk Yuen	+8.3 to +19.9	SE
Hang Fook Gardens	+12 to +14.6	SE
Chuk Yuen Tsuen	+6.7 to +17.3	E
Yau Mei San Tsuen	+6.7 to +17.3	NE
La Maison Vineyard	+14.5 to +15.6	NE
Wai Tsai Tsuen	+11.8 to +30.4	NE
Planned Development – A/YL-MP/287	+10.4 to ~+12.6	S
Planned Development – A/YL-MP/247	+13.5 to ~+15.4	N
Planned Development – Y/YL-MP/3	+12	W

2.3 Summary of Existing Site Wind Availability

2.3.1 According to the wind availability data, the annual wind directions of the area are mainly from easterlies. From Table 2.1 above, the wind probability from the E direction is 19.0%, which is considered to be the dominant wind direction for the area. NNE (12.8 %) and NE (12.3%) wind are also dominant prevailing wind directions apart from the E wind.

2.3.2 Existing and planned developments around the Application Site are low-rise in nature and poses minor blockage to the incoming winds. Incoming winds can still generally skim over and pass through the existing and planned structures to reach the Application Site and downstream areas.

2.3.3 Under annual wind conditions, some portion of the NNE winds would be blocked by the planned A/YL-MP/247. NE wind would also be blocked by existing Yau Mei San Tsuen and La Maison Vineyard before reaching the Application Site. However, a large portion these winds can pass through the developments because it either passes through the edges of the development (NNE) or the buildings are low-rise and sparse (NE).

2.3.4 For summer winds, the wind probability of the three most dominant winds are S (20.3 %), SSW (15.3%) and E (10.3%). Summer wind blockage is also considered minor due to the low building heights of the surrounding developments. Therefore, while dominant winds are partially blocked by existing and planned developments before reaching the Application Site, overall wind flow is not expected to be affected significantly by other structures around the Application Site.

3. EXPERT EVALUATION OF AIR VENTILATION PERFORMANCE OF THE PROPOSED DEVELOPMENT

3.1 Evaluation of the Approved Scheme of Application Site

3.1.1 It shall be noted that the Application Site is already designated by the government for residential development under the OZP. Certain obstruction to wind flow and Wind availability to surrounding areas due to the Application Site, is already expected under the land use planning view point. As mentioned in Section 1.4.1, the Application Site is also the subject of a previously approved planning application (Approved Scheme), which includes 71 three-storey houses and 1 three-storey clubhouse both with a maximum building height of 6.6m high above ground level (~+12 mPD). Under the Approved Scheme there is no specific air corridor allowed in that scheme however, the wind may still be able to skim over the proposed low-rise houses.

3.1.2 The current proposed development consists of 10 residential towers with building heights ranging from +53.55 to + 59.85 mPD. This may potentially obstruct wind flow and affect wind availability in the surrounding areas. However, the proposed development has duly accounted possible wind flow from dominant wind directions with various design measures incorporated into the current design in terms of air ventilation, which are further discussed in following paragraphs.

3.2 Evaluation of Merit/Demerit of Design Features of the Proposed Development

3.2.1 The Current Scheme has no change whatsoever to the site layout, site area, building setback from site boundary line, building separation, as well as disposition of proposed buildings since last application. The proposed 14- to 16-storey apartment blocks are still located in the inner and eastern parts of the Application Site and away from the site boundary to minimize potential air ventilation impacts to surrounding areas. Stepped building design has been incorporated in Current Scheme where building height gradually increases from west to east direction, whereas the separation distance between buildings and site boundary has also been provided. The following good design features beneficial to air ventilation have been maintained, such as inclusion of building setback, wind corridors of not less than 15 m and building gaps as well as stepped building design are incorporated. The details of the design measures in the site layout for enhancing the air ventilation of the proposed development and the surrounding areas are summarised below.

- Optimal building disposition favour annual and summer dominant winds by placing structures facing diagonally to incoming winds, reducing wind blockage by the structure and create wind corridors that passes through the Application Site to downstream areas.
- Building setback of at least 5 m from site boundary ensures wind flow pass the outer boundaries of the Application Site to downstream areas.
- Proposed landscape area & landscape pond near site boundary to allow further setback and wind to pass through the Application Site
- Maximized building gaps between paired towers with not less than 15m building gaps allowed for wind flow in between the residential towers and prevent the formation of a "wind wall". Building gaps are incorporated.
- Stepped building design incorporated into design proposed along northwestern site boundary line and adjacent to Ngau Tam Mei Drainage Channel, in which

building height then gradually decreases from east to west direction towards Ngau Tam Mei Drainage Channel.

3.2.2 Figure 3.1 and Figure 3.2 illustrate the prevailing wind from both annual and summer wind directions for the existing situation respectively (Approved Scheme, baseline condition). Figure 3.3 and Figure 3.4 illustrate the prevailing wind from both annual and summer wind directions with the proposed development (Proposed Scheme).

Building Setback

3.2.3 A building setback of at least 5 m from the entirety of the Application Site boundary is proposed to minimize air ventilation impact brought by the development to downstream areas. Further building setback is also incorporated along the south-eastern site boundary. By decreasing the area of proposed buildings facing perpendicular to the incoming wind, more free space is created allowing for wind to flow freely to downstream areas.

3.2.4 In addition, landscape pond (~0.5 ha) as well as landscape area are also proposed near western site boundary lines to create more separation distance.

Building Gaps

3.2.5 There is a significant building gaps (not less than 15 m) between each pair of residential towers to prevent forming a continuous line of buildings that acts as a "wall" which would block incoming winds. The building separation facilitates southeastern and SSW-NNE aligned winds as well as certain E wind coming into the Application Site and reaching Fairview Park.

Wind Corridors - Building Disposition and Development Permeability

3.2.6 The placement of residential towers and access roads creates SW-NE aligned wind corridors and open space that favours the said dominant winds. The buildings are placed in such a way that it faces SW/NE wind diagonally and reduce the area of the building that is obstructing the wind.

Stepped Building Design

3.2.7 Stepped building design has been incorporated. The proposed residential towers (14 storeys to 16 storeys) are located in the middle of the Application Site and away from site boundary as far as possible in order to minimize potential air ventilation impacts to surrounding areas, while landscape pond and non-domestic blocks (1 to 3 storeys) are proposed near the western site boundary so that building height gradually increases towards east to incorporate a stepped building design.

3.3 Directional Analysis of the Development

3.3.1 As discussed in Section 2.1, it is identified that the dominant annual wind conditions are from NNE, NE and E directions while the dominant summer wind condition are from E, S, SSW directions. The proposed development will be evaluated against the dominant wind directions identified in both conditions and compared with the performance of the Approved Scheme.

NE and NNE wind

3.3.2 NE wind flows over the open space around Yau Mei San Tsuen and La Maison Vineyard and San Tin Highway while NNE wind flows over vacant land between Yau Mei San Tsuen and planned development under planning application no. A/YL-MP/247 to reach the Application Site. Between the two areas and the Application Site is an area with

almost no structures and so both NE and NNE wind flow to the Application Site is uninterrupted.

3.3.3 For the Approved Scheme, NE and NNE winds can generally flow pass the Application Site via the low-rise building structures as well as along the outer edges of the Application Site and to the downstream areas.

3.3.4 Compared with the Approved Scheme, with the proposed setback from the site boundary line under the Proposed Scheme, the current design can allow NE and NNE winds to flow along the outer edges of the Application Site next to both Kam Pok Road and Ha Chuk Yuen Road to downstream locations. With the stepping design, wind can also skim over the Application Site via the low rise non-domestic structures alongside Kam Pok Road. The potential blockage of winds by the mid-rise residential blocks could be mitigated by the proposed wind corridors (i.e. the open space in the middle of the residential blocks) as the wind can flow through the NE-SW aligned wind corridors within the Application Site to downstream areas. Furthermore, the taller buildings at the Application Site in the Proposed Scheme would be able to capture high-level wind and create downwash to benefit air flow at pedestrian level.

3.3.5 Therefore, the wind availability under the Proposed Scheme is expected to be only slightly worse than the Approved Scheme. Under NE and NNE wind conditions, similar air ventilation performance is anticipated between the two schemes.

E Wind

3.3.6 Under E wind condition, the wind is able to flow freely to over the flat vacant land to the north of Chuk Yuen Tsuen to the Application Site, then via the existing air corridor at Ngau Tam Mei Drainage Channel to reach downstream areas.

3.3.7 E wind can pass the Application Site to the planned developments and the existing Fairview Park on the outer edges of the Application Site under both schemes due to the proposed building setback. Furthermore, in the Proposed Scheme, the combined usage of building gaps and wind corridor can also facilitate E wind to pass through the site. With the proposed setback of residential blocks and provision of internal driveway to the easternmost of the Application Site, some E wind can make use of the internal access road network within the Application Site to reach downstream areas, which serves as a wind corridor.

3.3.8 Under the Approved Scheme, E winds can flow over the Application Site via the low-rise building structures. Similarly, under the Proposed Scheme, wind can skim over the Application Site via the low rise non-domestic structures alongside Kam Pok Road which is aligned with the existing air corridor at Ngau Tam Mei Drainage Channel. With the wind corridor created along the internal access road and the proposed building setback as mentioned above, the proposed development is expected to have comparable performance with the Approved Scheme under E wind condition.

S Wind

3.3.9 Under S wind condition, the wind is able to flow between the structures of Ha San Wai and Villa Camelia to the Application Site. Some of the S wind would be blocked by the buildings in these two areas.

3.3.10 Comparing the two schemes, S wind would flow through the outer edges of the Application Site under both schemes. For the Approved Scheme, wind can flow pass the Application Site, whereas for the Proposed Scheme, the proposed building gaps and wind corridor provided between T11 and the adjacent low-rise non-domestic block would allow S wind to pass through to downstream areas. In addition, the Proposed Scheme has a large landscape pond with building setback provided in the western part

of the Application Site, which promotes S wind to flow freely over the Application Site to downstream locations. In brief, as the Proposed Scheme has incorporated wind corridors, building setback, building gaps, and landscape pond to benefit the air ventilation, it is considered that the Proposed Scheme would have comparable air ventilation performance with the Approved Scheme.

SSW Wind

3.3.11 For SSW wind, Yau Pok Road, Kam Pok Road and the Ngau Tam Mei Drainage Channel in between these two roads act as an existing air corridor in the area for SSW wind to reach the Application Site and beyond.

3.3.12 Under the Approved Scheme, wind can flow pass the Application Site via the low rise structures, whereas under the Proposed Scheme, some SSW winds can make use of the SW-NE aligned wind corridor (i.e. the open space in the middle of the proposed development between residential blocks) to flow to downstream areas and flow over the low-rise non-domestic blocks. In addition, with the proposed setback from the site boundary line and landscape pond under the Proposed Scheme which is aligned with the existing air corridor at Ngau Tam Mei Drainage Channel and Ha Chuk Yuen Road, it can allow SSW wind to flow along the outer edges of the Application Site to reach downstream areas. Thus, SSW wind would also flow through via the setback and proposed landscape pond under the Proposed Scheme. Hence, air ventilation performance of the Proposed Scheme under SSW wind is expected to be comparable with the Approved Scheme.

3.4 Summary of Relative Air Ventilation Performance

3.4.1 The air ventilation performance of the Approved Scheme and the Proposed Scheme has been appraised. The current proposed development has provided various air pathways from disposition of structures, provision of open area, building setback, and building gaps to benefit the air ventilation. The proposed residential towers are located in the middle of the Application Site and away from site boundary as far as possible in order to minimize potential air ventilation impacts to surrounding areas, while lower non-domestic blocks are proposed near the site boundary and incorporated with stepped building design. Considering the two schemes, overall the air ventilation performance of Proposed Scheme is comparable to the Approved Scheme. It can be concluded the proposed development is considered unlikely to impose significant impacts on the surrounding areas from an air ventilation perspective.

4. CONCLUSION

4.1.1 A qualitative assessment of the wind performance of the proposed development in Mai Po has been done.

4.1.2 According to the findings of this AVA-EE, annual prevailing wind comes from NNE, NE and E direction and summer prevailing wind comes from E, S, SSW directions. Taking into consideration of the existing topography, the location of the existing built areas, planned developments and provision of mitigation measures, it is considered that the proposed scheme would not have significant adverse air ventilation impact on the surrounding environment.

4.1.3 The proposed development has incorporated mitigation measures such as optimal dispositions of proposed structures, building gaps, building setback from site boundary and wind corridors to enhance air ventilation quality. Stepped building design is also incorporated. A landscape pond with building setback is also proposed in the western part of the proposed development. With these design measures incorporated into the proposed development, the proposed development is unlikely to impose significant adverse air ventilation impacts on the surrounding environment.

Figures

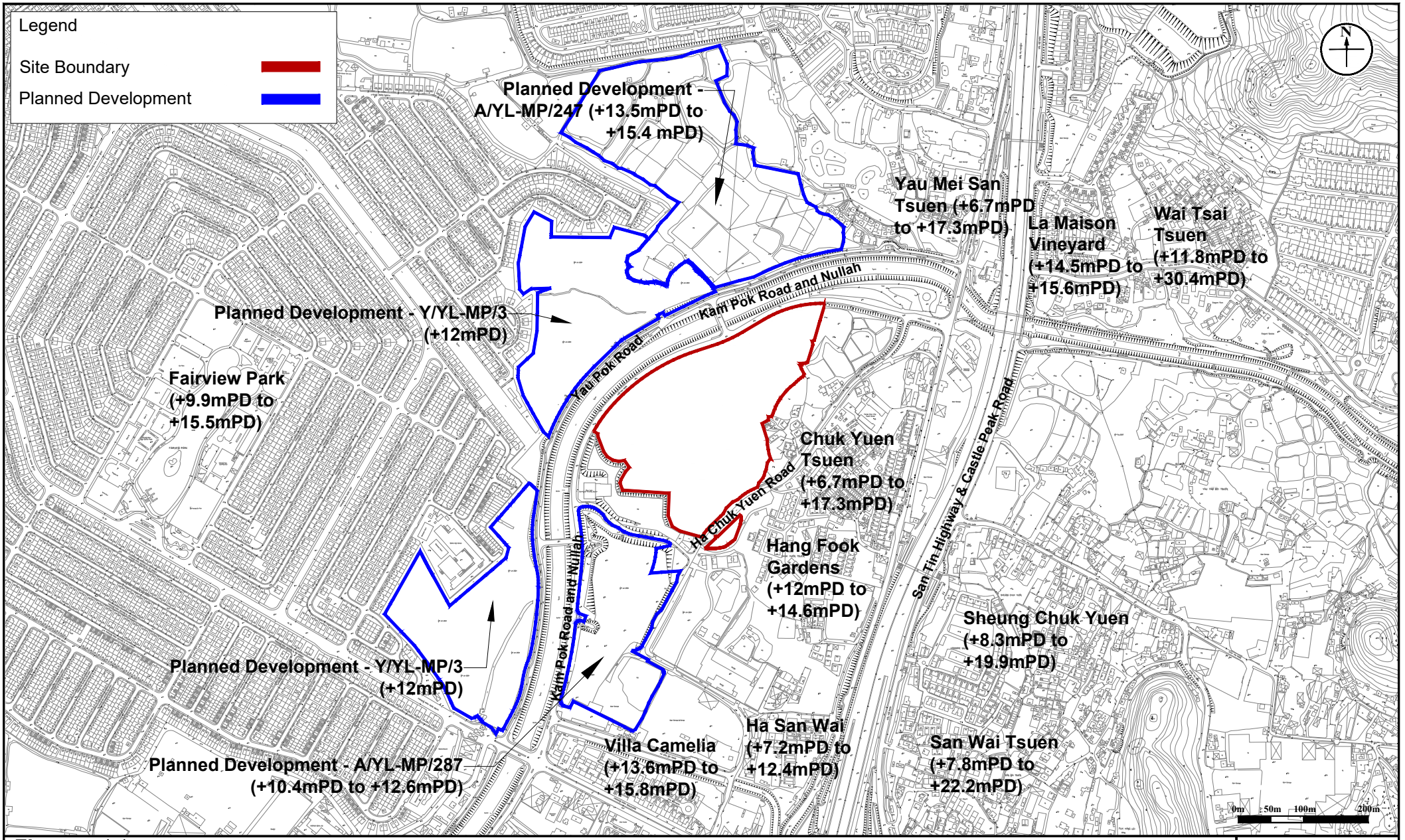


Figure: 1.1

Title: Location of Application Site and its Environ

Project: S.12A Amendment of Plan Application on Mai Po & Fairview Park OZP No. Y/YL-MP/8 - Rezoning from Rezoning from Residential (Group D)" to "Residential (Group C)1" Zone for a Proposed Residential Development at Various Lots in D.D. 104 & the adjoining G.L. in Yuen Long, N.T.

RAMBOLL

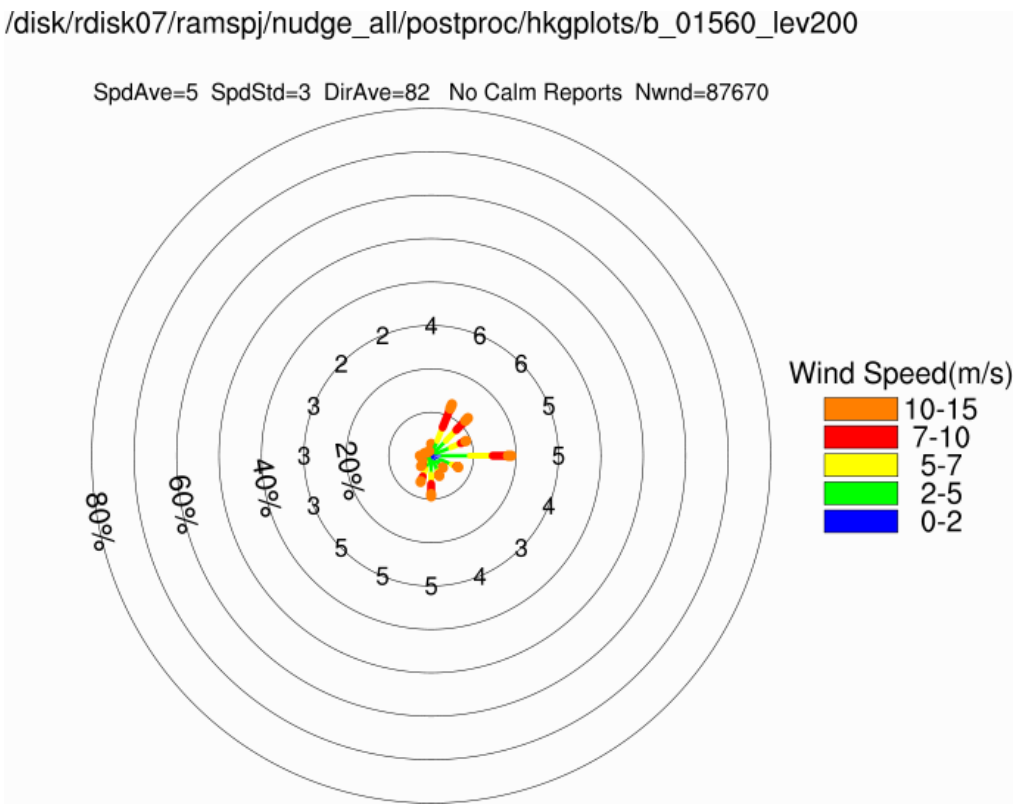
Drawn by: SC

Checked by: HN

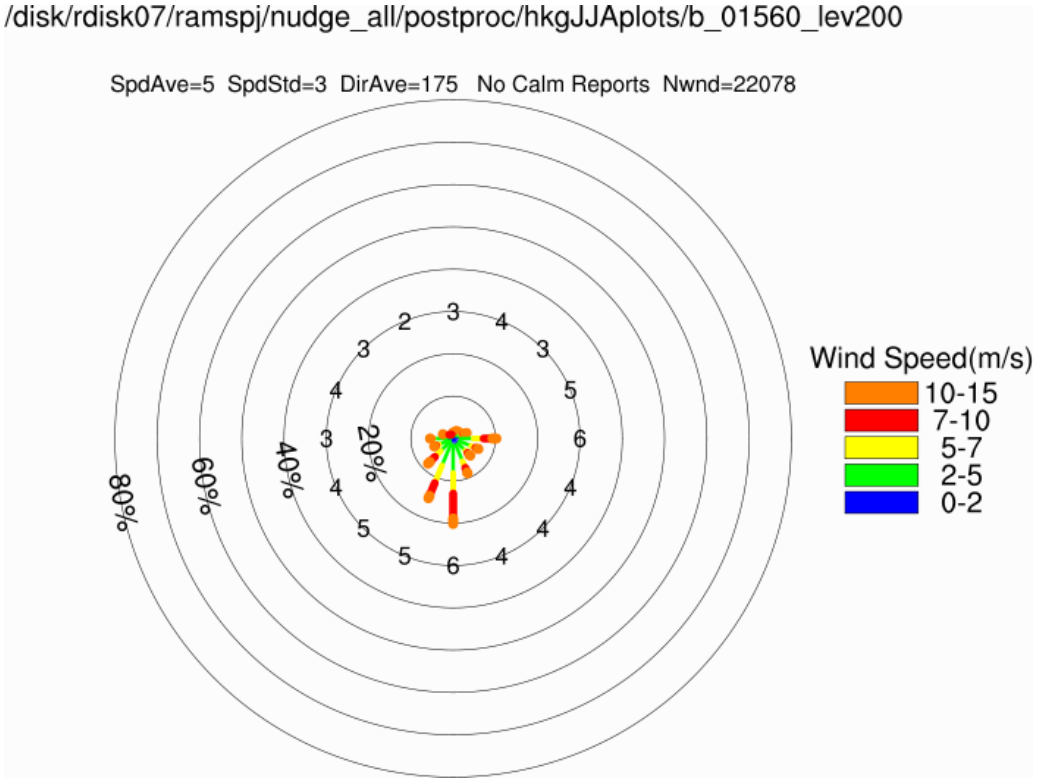
Rev.: 1.0

Date: Feb 2024

Q:\PROJECTS\SHKFVPRDEI01\04 DELIVERABLES\03 AVA EE REPORT\01 FIGURES\R9374 V1.0\SOURCE\FIGURE 1.DWG



Annual Condition



Summer Condition

Figure: 2.1	RAMBOLL
Title: Annual and Summer Wind Roses Representing V∞ of the Area under Concern at 200m above ground (X:055, Y:077)	Drawn by: SC Checked by: HN
Project: S.12A Amendment of Plan Application on Mai Po & Fairview Park OZP No. Y/YL-MP/8 - Rezoning from Rezoning from Residential (Group D)" to "Residential (Group C)1" Zone for a Proposed Residential Development at Various Lots in D.D. 104 & the adjoining G.L. in Yuen Long, N.T.	Rev.: 1.0 Date: Feb 2024

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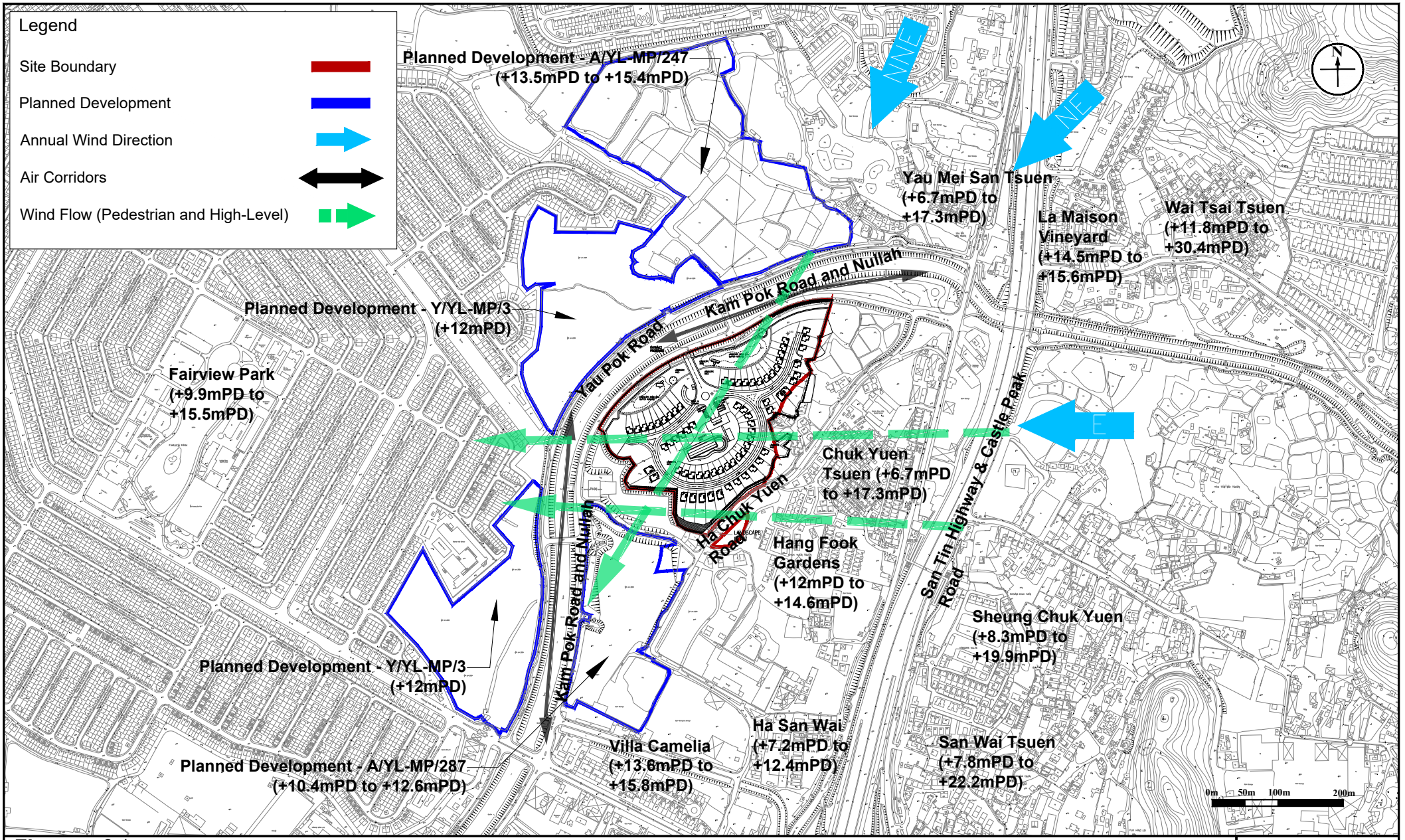

Figure: 3.1

Title: Illustration of Annual Wind Flow under the Approved Scheme

Project: S.12A Planning Application on the Approved Mai Po & Fairview Park OZP No. S/YL-MP/6 - Rezoning from "R(D)" to "R(C)1" Zone for a Proposed Residential Development at Various Lots at D.D. 104 & the Adjoining G.L. in Yuen Long, NT

RAMBOLL

Drawn by: SC

Checked by: HN

Rev.: 2.2

Date: Nov 2024

Q:\PROJECTS\SHKFVPRDEI01\04 DELIVERABLES\03 AVA EE REPORT\01 FIGURES\R9374 V2.2\FIGURE 3.1.DWG

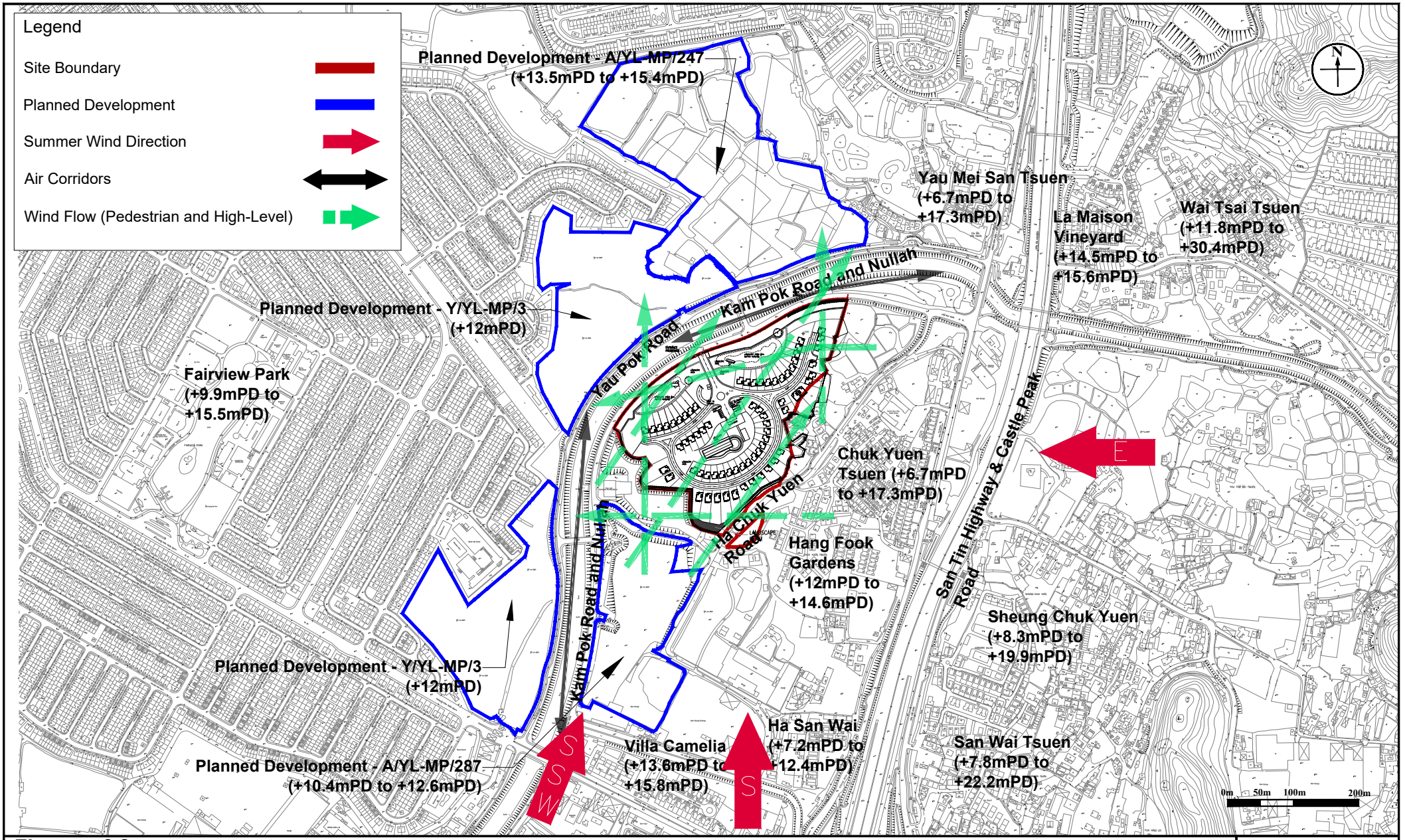

Figure: 3.2

Title: Illustration of Summer Wind Flow under the Approved Scheme

Project: S.12A Planning Application on the Approved Mai Po & Fairview Park OZP No. S/YL-MP/6 - Rezoning from "R(D)" to "R(C)1" Zone for a Proposed Residential Development at Various Lots at D.D. 104 & the Adjoining G.L. in Yuen Long, NT

RAMBOLL

Drawn by: SC

Checked by: HN

Rev.: 2.2

Date: Nov 2024

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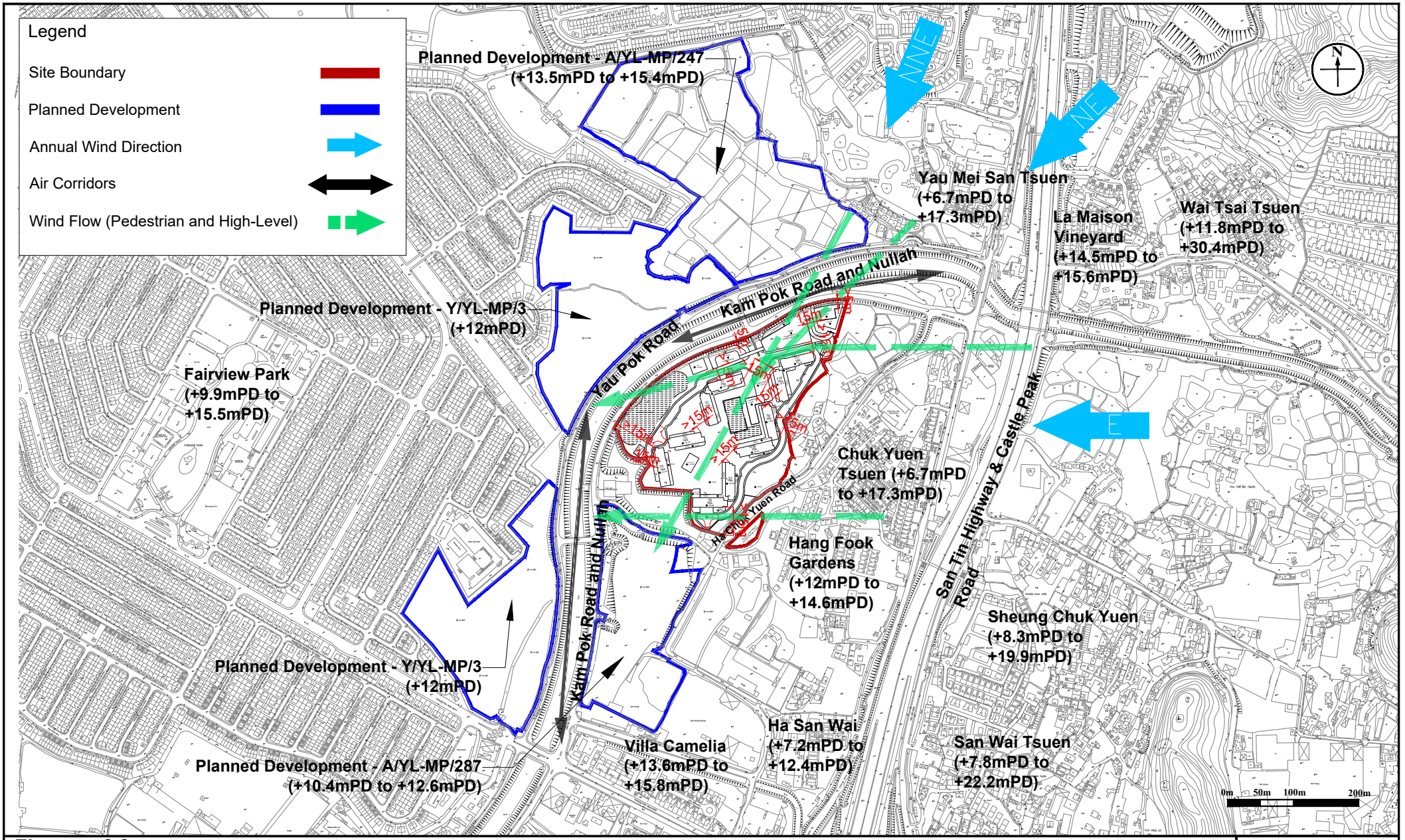


Figure: 3.3

Title: Illustration of Annual Wind Flow for Proposed Scheme

Project: S.12A Planning Application on the Approved Mai Po & Fairview Park OZP No. S/YL-MP/6 - Rezoning from "R(D)" to "R(C)1" Zone for a Proposed Residential Development at Various Lots at D.D. 104 & the Adjoining G.L. in Yuen Long, NT

RAMBOLL

Drawn by: SC

Checked by: HN

Rev.: 2.3

Date: Feb 2025

Q:\PROJECTS\SHKFVPRDEI01\04 DELIVERABLES\03 AVA EE REPORT\01 FIGURES\R9374 V2.3\FIGURE 3.3.DWG

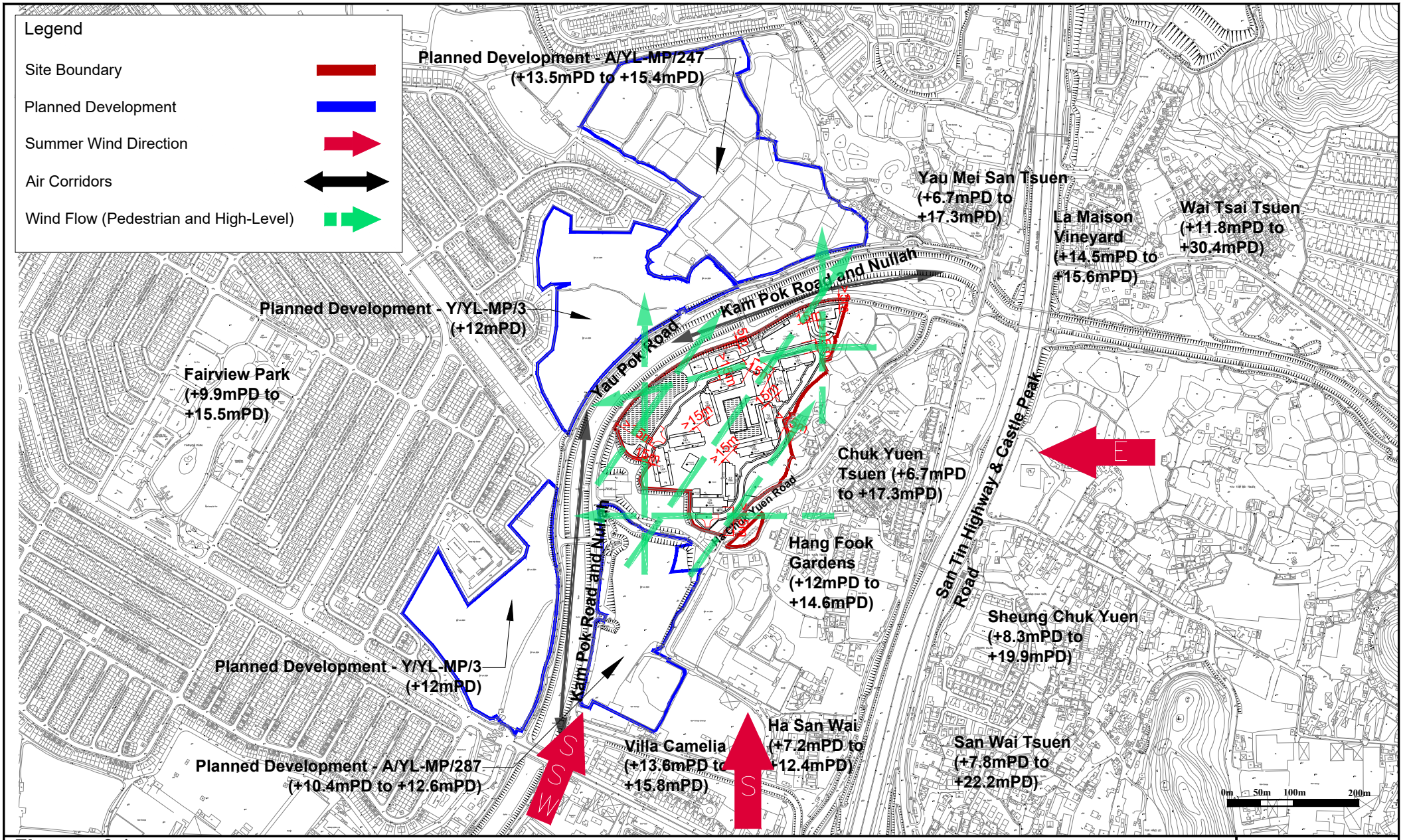


Figure: 3.4

Title: Illustration of Summer Wind Flow for Proposed Scheme

Project: S.12A Planning Application on the Approved Mai Po & Fairview Park OZP No. S/YL-MP/6 - Rezoning from "R(D)" to "R(C)1" Zone for a Proposed Residential Development at Various Lots at D.D. 104 & the Adjoining G.L. in Yuen Long, NT

RAMBOLL

Drawn by: SC

Checked by: HN

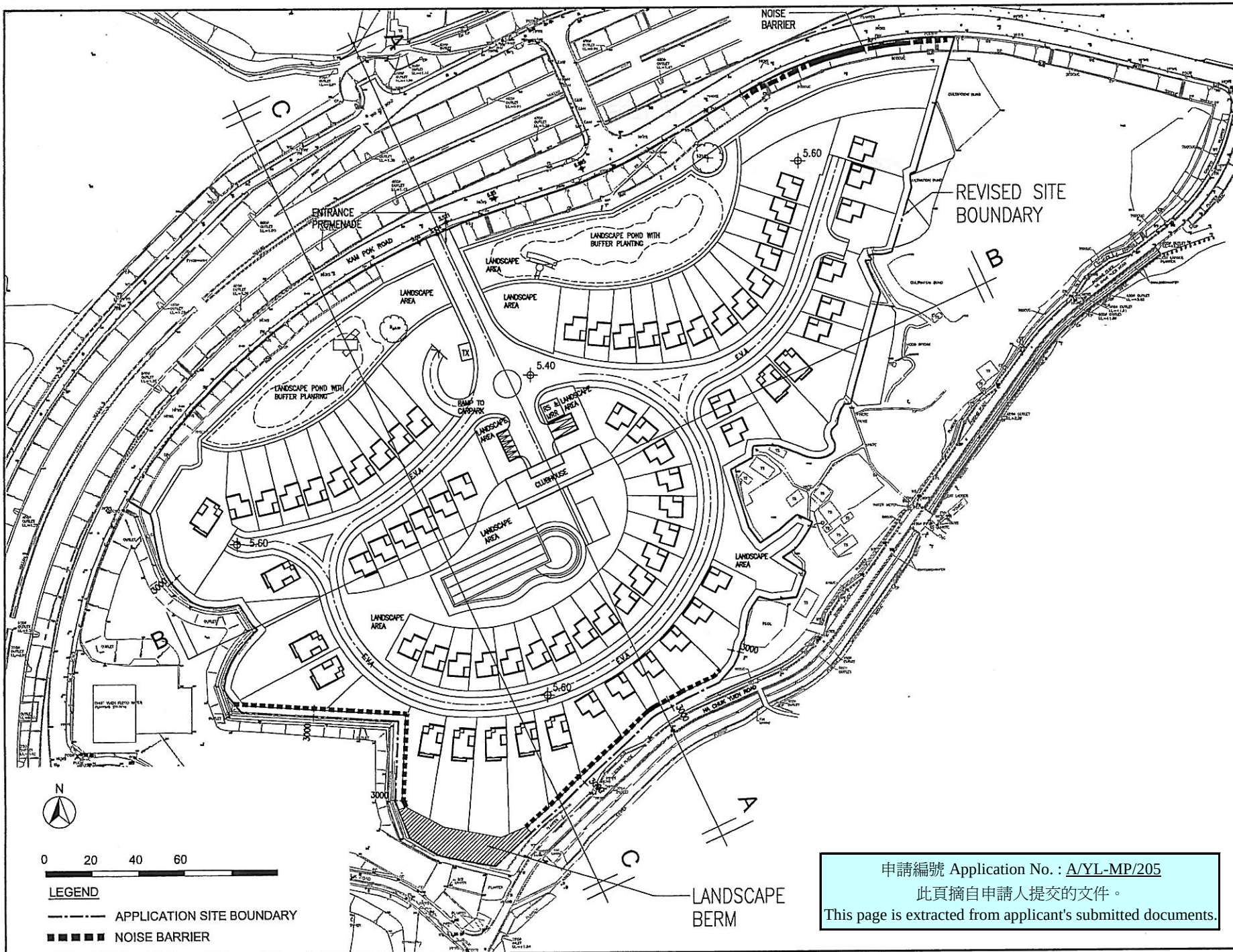
Rev.: 2.3

Date: Feb 2025

Q:\PROJECTS\SHKFVPRDEI01\04 DELIVERABLES\03 AVA EE REPORT\01 FIGURES\R9374 V2.3\FIGURE 3.4.DWG

Appendix 1.1

Master Layout Plan of the Approved Scheme



申請編號 Application No. : A/YL-MP/205
此頁摘自申請人提交的文件。
This page is extracted from applicant's submitted documents.

B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE
A	GENERAL REVISION	05.2012
B	REVISED NOISE BARRIER	02.2013

NOTE:
DETAIL DESIGN INCLUDING BARRIER FREE ACCESS, F.S. REQUIREMENT, BUILDING SERVICES, STRUCTURAL REQUIREMENT, ETC. TO BE DETERMINED IN GBP STAGE.

ARCHI+

ARCHIPLUS INTERNATIONAL LIMITED

PROJECT :
SECTION 16 APPLICATION FOR PROPOSED RESIDENTIAL DEVELOPMENT WITHIN "RESIDENTIAL (GROUP D)" ZONE WITH MINOR RELAXATION OF BUILDING HEIGHT RESTRICTION AT VARIOUS LOTS IN DD 104, NORTH OF FUNG CHUK ROAD, YUEN LONG, N.T.

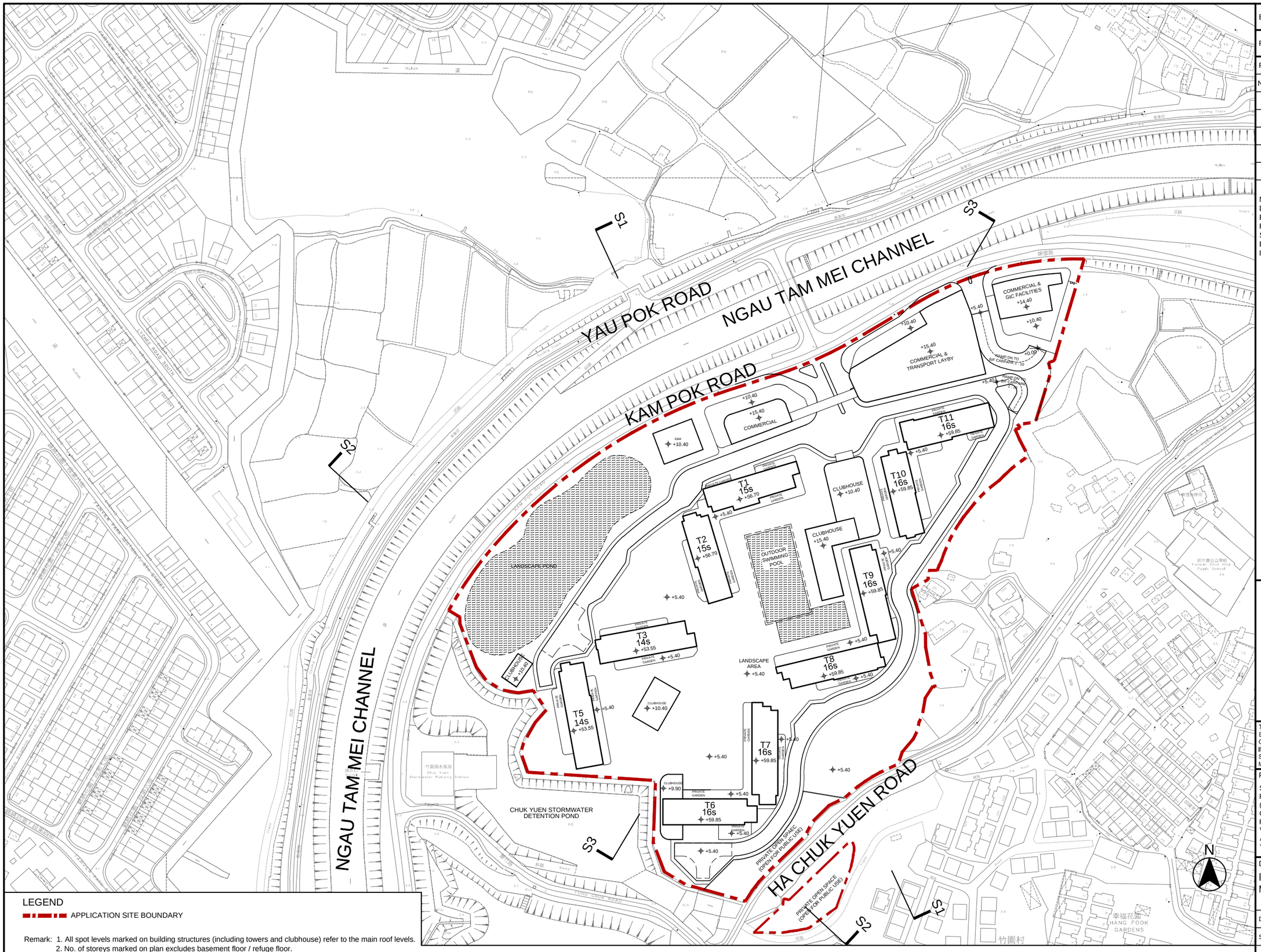
DRAWING TITLE :
MASTER LAYOUTPLAN

DATE: JAN.2012 | PAPER SIZE: A3
SCALE: 1:1500 | DRAWN: JY
PROJECT NO.: 767
DWG. NO.: 767 / S16-A-03

Figure 3.1b Master Layout Plan

Appendix 1.2

Master Layout Plan of the Proposed Scheme



LEGEND

APPLICATION SITE BOUNDARY

Remark: 1. All spot levels marked on building structures (including towers and clubhouse) refer to the main roof levels.
2. No. of storeys marked on plan excludes basement floor / refuge floor.

B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE

NOTE:
DETAIL DESIGN INCLUDING BARRIER FREE ACCESS, F.S. REQUIREMENT, STRUCTURAL REQUIREMENT, ETC. TO BE DETERMINED IN GBP STAGE.

ARCHI+
ARCHIPLUS INTERNATIONAL (HK) LIMITED

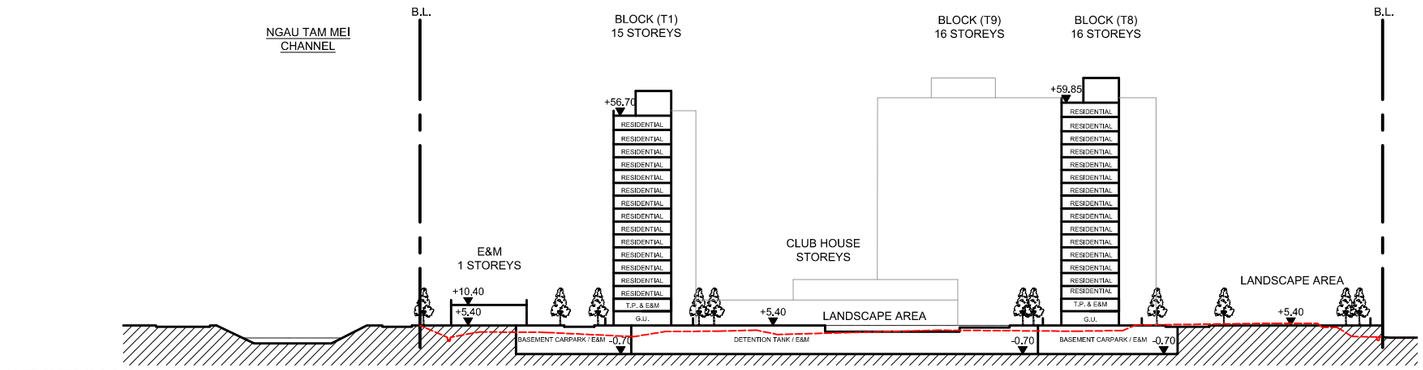
PROJECT :

SECTION 12A PLANNING APPLICATION FOR REZONING FROM "RESIDENTIAL (GROUP D)" TO "RESIDENTIAL (GROUP C) 1" ZONE FOR A PROPOSED RESIDNEITLA DEVELOPMENT AT VARIOUS LOTS IN D.D. 104 AND THE ADJOINING GOVERNMENT LAND IN YUEN LONG, THE NEW TERRITORIES

DRAWING TITLE :

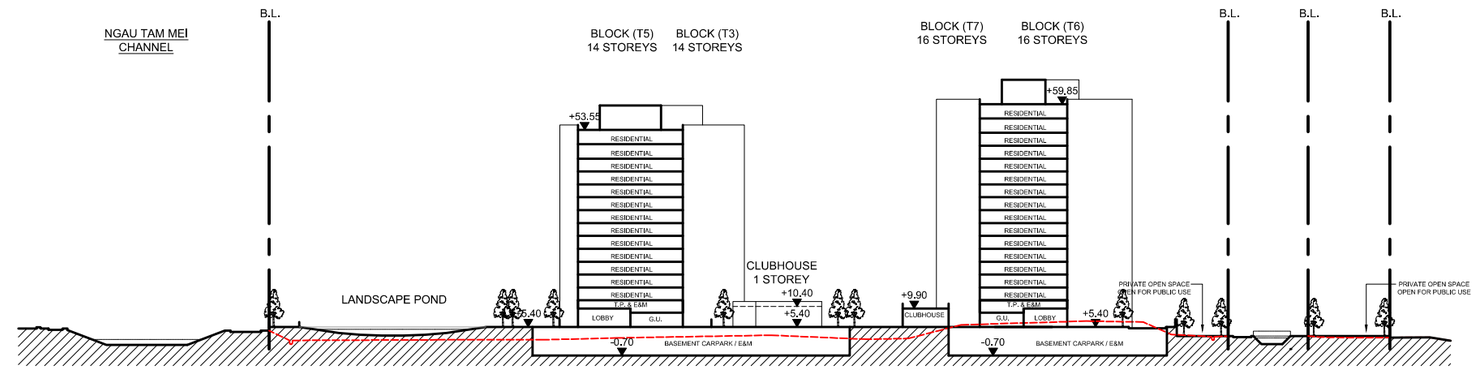
INDICATIVE
MASTER LAYOUT PLAN

DATE :	FEB 2025	PAPER SIZE :	A3
SCALE :	1:2000	DRAWN :	AIL
PROJECT NO. :		767	
DWG. NO. :		(767)S16-A-02	



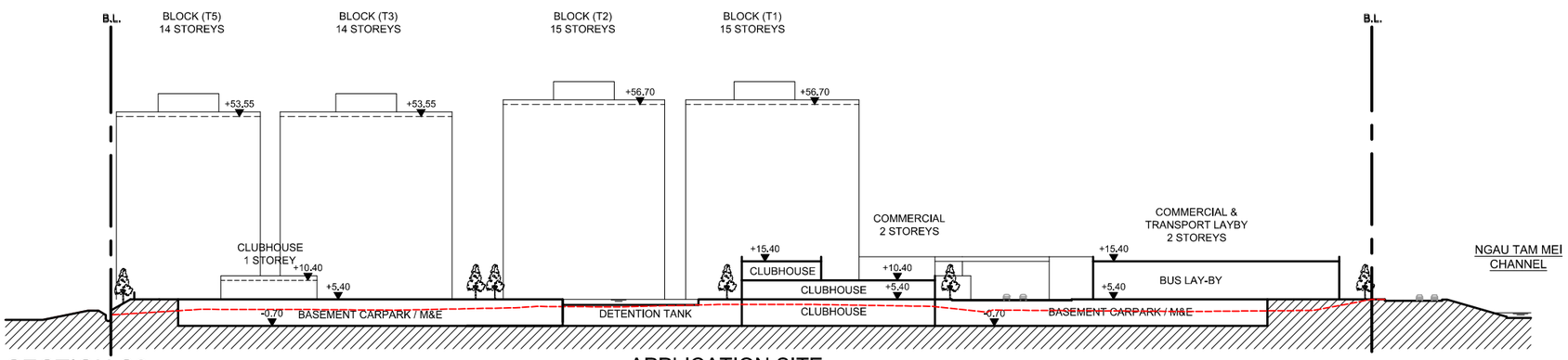
SECTION S1

APPLICATION SITE



SECTION S2

APPLICATION SITE



SECTION S3

APPLICATION SITE

LEGEND

EXISTING SITE LEVEL

Previous Submission Level dated on June 2023

Remark: 1. All spot levels marked on building structures (including towers and clubhouse) refer to the main roof levels.
2. No. of storeys marked on plan excludes basement floor / refuge floor.

0 5 10 25 50 100

B.D. REF. :

F.S.D. REF. :

REVISIONS :

NO.	DESCRIPTION	DATE

NOTE:
DETAIL DESIGN INCLUDING BARRIER FREE ACCESS, F.S. REQUIREMENT, STRUCTURAL REQUIREMENT, ETC. TO BE DETERMINED IN GBP STAGE.

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ARCHIPLUS INTERNATIONAL (HK) LIMITED

PROJECT :

SECTION 12A PLANNING APPLICATION FOR REZONING FROM "RESIDENTIAL (GROUP D)" TO "RESIDENTIAL (GROUP C) 1" ZONE FOR A PROPOSED RESIDNEITA DEVELOPMENT AT VARIOUS LOTS IN D.D. 104 AND THE ADJOINING GOVERNMENT LAND IN YUEN LONG, THE NEW TERRITORIES

DRAWING TITLE :

INDICATIVE SECTIONS

DATE : FEB 2025	PAPER SIZE : A3
SCALE : 1:1500	DRAWN : AIL
PROJECT NO. :	767
DWG. NO. :	(767)S16-S-01