

Appendix E Air Ventilation Assessment – Expert Evaluation

Issue No. : 1
Issue Date : Oct 2023
Project No. : 2127



**AIR VENTILATION ASSESSMENT
- EXPERT EVALUATION**

FOR

**APPLICATION FOR
AMENDMENT OF PLAN UNDER
SECTION 12A FOR THE TOWN
PLANNING ORDINANCE (CAP.
131) FOR MIXED USE
DEVELOPMENT AT LOTS 796
AND 1008RP IN D.D. 77 AND
ADJOINING GOVERNMENT
LAND IN PING CHE, TA KWU
LING, NEW TERRITORIES**

Prepared by

Allied Environmental Consultants Limited

COMMERCIAL-IN-CONFIDENCE

Allied Environmental Consultants Limited

Member of AEC Group (HKEX Stock Code: 8320.HK)

27/F, Overseas Trust Bank Building, 160 Gloucester Road, Wan Chai, Hong Kong

www.asecg.com T: +852 2815 7028 F: +852 2815 5399

沛然環境評估工程顧問有限公司

沛然環保集團成員 (港交所股份代號: 8320.HK)

香港灣仔告士打道 160 號海外信託銀行大廈 27 樓

Document Verification



Project Title APPLICATION FOR
AMENDMENT OF PLAN
UNDER SECTION 12A FOR
THE TOWN PLANNING
ORDINANCE (CAP. 131) FOR
MIXED USE DEVELOPMENT
AT LOTS 796 AND 1008RP IN
D.D. 77 AND ADJOINING
GOVERNMENT LAND IN PING
CHE, TA KWU LING, NEW
TERRITORIES

Project No.
2127

Document Title AIR VENTILATION ASSESSMENT - EXPERT EVALUATION

Issue No.	Issue Date	Description	Prepared by	Checked by	Approved by
1	Oct 2023	1st Submission	Various	Cathy Man	Grace Kwok

Allied Environmental Consultants Limited

Member of AEC Group (HKEX Stock Code: 8320.HK)

27/F, Overseas Trust Bank Building, 160 Gloucester Road, Wan Chai, Hong Kong

www.asecg.com T: +852 2815 7028 F: +852 2815 5399

沛然環境評估工程顧問有限公司

沛然環保集團成員 (港交所股份代號: 8320.HK)

香港灣仔告士打道 160 號海外信託銀行大廈 27 樓

Table of Contents

1. INTRODUCTION	5
2. OBJECTIVES	5
3. ASSESSMENT METHODOLOGY	6
3.1. WIND AVAILABILITY DATA.....	6
4. PROJECT DESCRIPTION.....	11
4.1. SITE LOCATION AND PROPOSED DEVELOPMENT	11
4.2. SURROUNDING ENVIRONMENT AND WIND CHARACTERISTICS.....	12
5. BASELINE SCHEME AND PROPOSED SCHEME	17
5.2. GOOD DESIGN FEATURES UNDER BOTH SCHEME	19
5.3. FURTHER ENHANCEMENT FEATURES UNDER PROPOSED SCHEME	21
6. EXPERT EVALUATION	28
6.1. E, ESE AND SE WIND.....	28
6.2. ENE WIND.....	30
7. CONCLUSION.....	32

List of Tables

Table 3-1 Wind Data Summary	10
Table 5-1 Building Heights of Baseline Scheme and Proposed Scheme	17

List of Figures

Figure 3.1 Location of Hong Kong Observatory Weather Station	6
Figure 3.2 Annual Wind Rose of Ta Kwu Ling Weather Station between 1986-2020	7
Figure 3.3 Wind Rose at Grid (077, 087)	9
Figure 4.1 Project Site Location	12
Figure 4.2 Existing Surrounding Developments	13
Figure 4.3 Prevailing Wind Environment in the Project Site.....	15

Figure 4.4 Topography Around the Project Site	16
Figure 5.1 Ground Floor Layout Plan	19
Figure 5.2 Cross section of Layout	19
Figure 5.3 Layout Plan.....	20
Figure 5.4 Layout of Building Orientation.....	21
Figure 5.5 Comparison of Building Gap between Baseline and Proposed Development.....	23
Figure 5.6 Terraced Podium Design under Proposed Scheme	24
Figure 5.7 Comparison of Podium height between Baseline and Proposed Development.....	25
Figure 5.8 Comparison of Clubhouse Layout Plan	26
Figure 5.9 Section Layout of Sky Garden	27
Figure 6.1 E, ESE and SE Wind (Baseline Schedule)	29
Figure 6.2 E, ESE and SE Wind (Proposed Schedule)	29
Figure 6.3 ENE Wind (Baseline Schedule)	31
Figure 6.4 ENE Wind (Proposed Schedule)	31

List of Appendices

Appendix A	Layout Plan of Baseline Scheme
Appendix B	Layout Plan and Section Drawing of Proposed Scheme

1. INTRODUCTION

1.1.1. Allied Environmental Consultants (“AEC”) has been appointed to conduct an Air Ventilation Assessment – Expert Evaluation (“AVA-EE”) to support of a Section 12A application for the mixed use development at LOT 796 & 1008RP at D.D. 77 and adjoining government land in Ping Che, Ta Kwu Ling, New Territories (hereinafter referred to as “Application Site”).

2. OBJECTIVES

2.1.1. The main objectives of the study are to conduct a qualitative review and to evaluate potential air ventilation impact on the pedestrian wind environment within and in the vicinity of the Application Site using the methodology framework set out by relevant environmental standards, guidelines and technical circulars.

2.1.2. The methodology framework of this study is set out in the Technical Circular No. 1/06 and its Annex A - Technical Guide for Air Ventilation Assessment for Development in Hong Kong. The Technical Circular is jointly issued by Housing, Planning and Lands Bureau (HPLB) and Environment, Transport and Work Bureau (ETWB) in July 2006 (Technical Guide).

2.1.3. The scope of this study shall cover the following:

- To identify any potentially affected areas due to the proposed building design including building heights, layout and deposition;
- To provide recommendations for alleviating the potential air ventilation impact identified;
- To identify any major wind corridors which should be preserved or reserved; and
- To identify good design features.

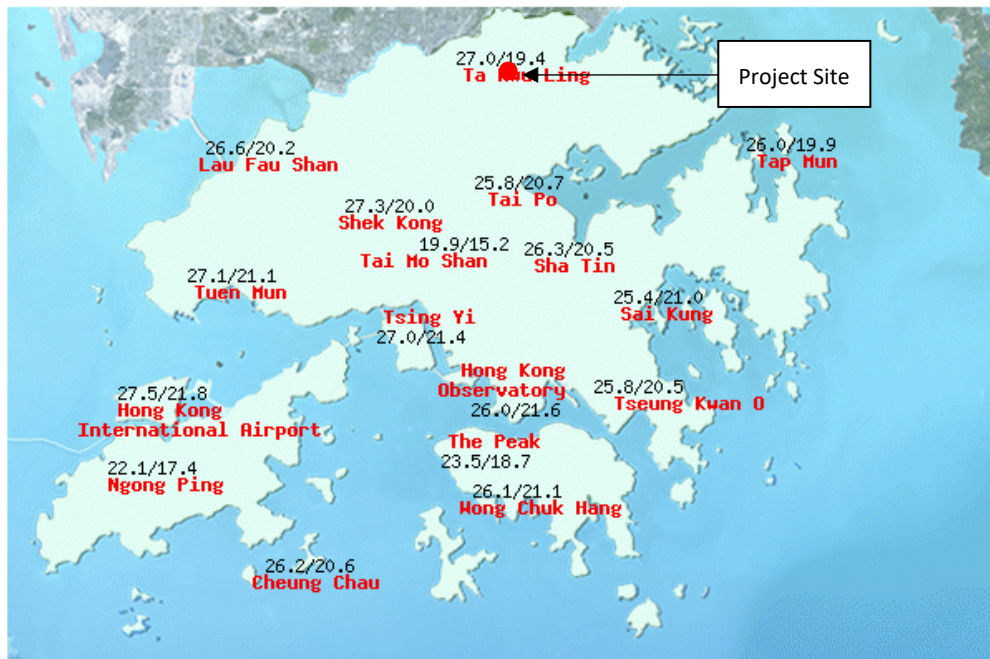
3. ASSESSMENT METHODOLOGY

3.1. WIND AVAILABILITY DATA

Hong Kong Observatory

3.1.1. The Hong Kong Observatory records the metrological data in Hong Kong. Among all the weather stations in Hong Kong, the nearest weather station to the Application Site is Ta Kwu Ling Weather Station. Thus, the wind data from Ta Kwu Ling Weather Station shall be used for the discussion on overall wind environment in the region.

3.1.2. According to the wind availability data from Ta Kwu Ling Weather Station from 1986-2020, the annual wind rose revealed winds flowing from N, E and ESE while summer wind rose revealed winds flowing from E, ESE and SSW.



Regional Climate of Hong Kong
Annual Mean Daily Maximum/Minimum Air Temperature (deg. C)

Figure 3.1 Location of Hong Kong Observatory Weather Station

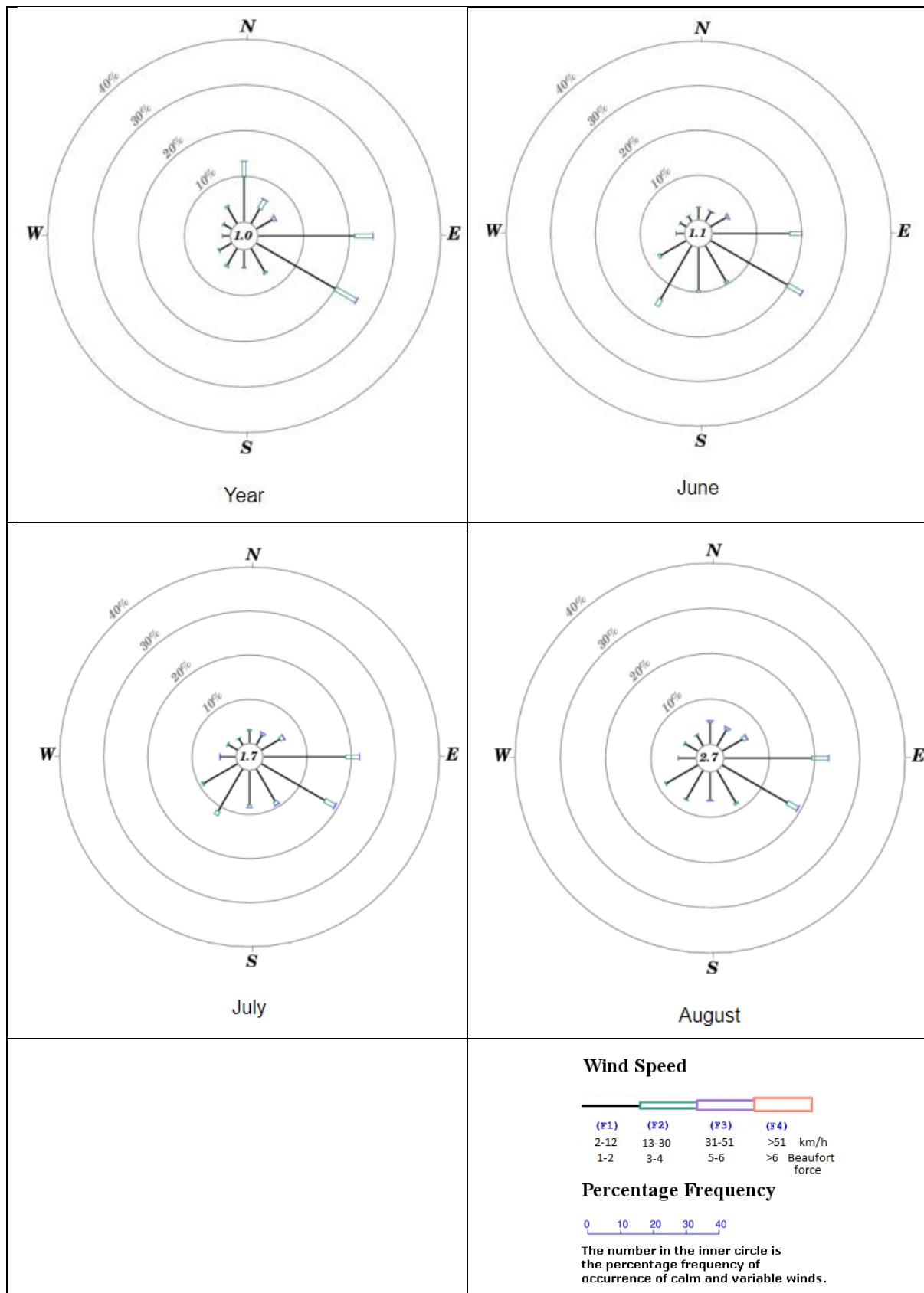


Figure 3.2 Annual Wind Rose of Ta Kwu Ling Weather Station between 1986-2020

Regional Atmospheric Modelling System (RAMS)

- 3.1.3. Wind availability to the Application Site is evaluated with reference to the “Consultancy Study on Establishment of Simulated Site Wind Availability Data for Air Ventilation Assessments in Hong Kong” simulated by the meso-scale model of Regional Atmospheric Modelling System (RAMS) Version 6.0 at the horizontal resolution of 0.5km * 0.5km.
- 3.1.4. The Application Site is located within grid (077, 087) in DD77 lot 796 and 1008RP, Ping Che. Wind availability data at 200m was adopted in this assessment. According to Planning Department’s simulated data, wind roses, wind direction and wind probability data are provided in **Figure 3.3**.

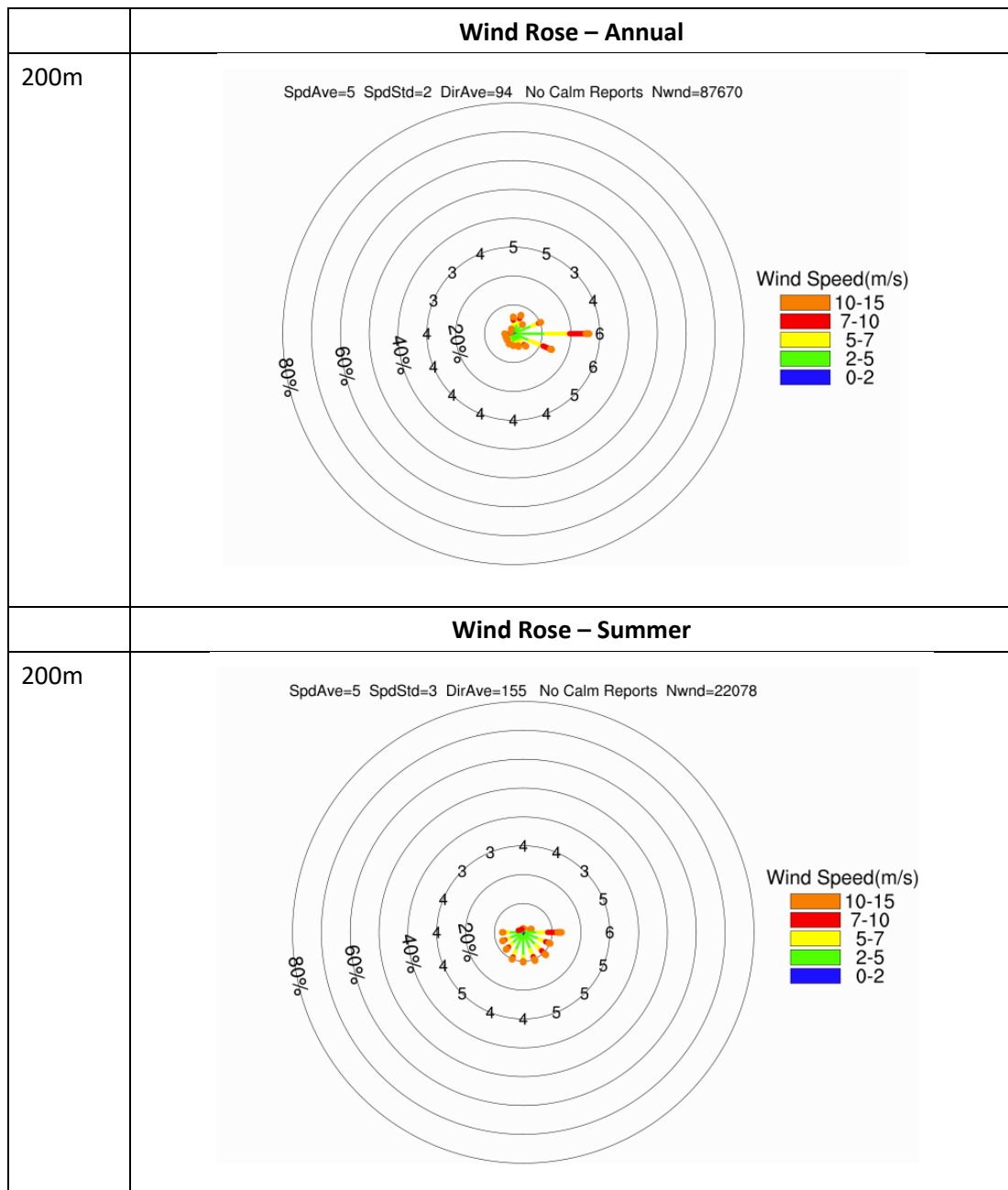


Figure 3.3 Wind Rose at Grid (077, 087)

3.1.5. According to RAMS wind data, annual prevailing winds are the incoming winds flowing from E, ENE and ESE, while summer prevailing winds are flowing from E, SE and SSE directions.

Wind Data from Previous Studies

3.1.6. There are several air ventilation assessments in Ta Kwu Ling area. Their wind availability are

summarized in below:

- Liantang/Heung Yuen Wai Boundary Control Point and Associated Works (AVG/G/40);
and
- Public Housing Development at Queen's Hill Site 1, Fanling (AVG/G/148)

3.1.7. The following air ventilation assessments do not cover the Application Site. The distance of site of assessment AVG/G/40 is 3km from Application Site, while the distance of site of assessment AVG/G/148 is 2km from Application Site. Therefore, the wind data from previous assessment around Application Site are considered not included as reference.

3.1.8. In summary, different wind data reference have been review, **Table 3-1** summarises the identified prevailing wind conditions of Lot 796 and 1008RP, Ping Che. For a comprehensive discussion on air ventilation performance of the Application Site and the wind environment at pedestrian level, RAMS data is more appropriate as it is the most updated. In view of the close proximity of the HKO Tai Po Weather Station to the ApplicationSite, the wind data from HKO Tai Po Weather Station is also adopted in this AVA-EE.

Table 3-1 Wind Data Summary

Sources	Annual Wind	Summer Wind
HKO Ta Kwu Ling Weather Station (1986-2020)	N, E, ESE	E, ESE, SSW
RAMS data (grid 077, 087)	E, ESE, ENE	E, SE, SSE
Summary	<u>E, ESE, ENE</u>	<u>E, SE, SSE, ESE</u>

4. PROJECT DESCRIPTION

4.1. SITE LOCATION AND PROPOSED DEVELOPMENT

- 4.1.1. The Application Site area is approximately 17,822 m². It is bounded by Ping Che Road from the north to northeast, the unnamed village road to the east, village, agricultural land and open storage area at the south and west. The Application Site is currently used as an open storage area.
- 4.1.2. The proposed development will consist of 5 blocks of residential tower ranging from 47 to 48-storey (excluding basement) in height, provided 2,205 residential unit, and 1 block of commercial tower with 35-storey (excluding basement) in height. The plot ratio for domestic use is 5.9 and for non-domestic use is 1.1. The total GFA for domestic use is 105,145 m², and 19,603 m² for non-domestic use. The non-domestic use consisted of retail, office, hotel or service apartment, clubhouse, day care centre for the elderly and child care centre.
- 4.1.3. The Application Site is zoned as "Open Storage" ("OS") on the approved Ping Che and Ta Kwu Ling Outline Zoning Plan ("OZP") No. S/NE-TKL/14. The southern part of the Application Site is zoned as "Agriculture" ("AGR") and a minor portion of the Application Site is shown as "Road". The surrounding areas are the Ping Che New Village and Ta Kwu Ling Rural Centre Government Offices ("G/IC" zone) to the north, the industrial area (Group D) ("I(D)") zone) to the northeast, agriculture land ("AGR" zone) to the south, industrial area and open storage ("OS" zone) to the east. **Figure 4.1** shows the location of the Application Site.

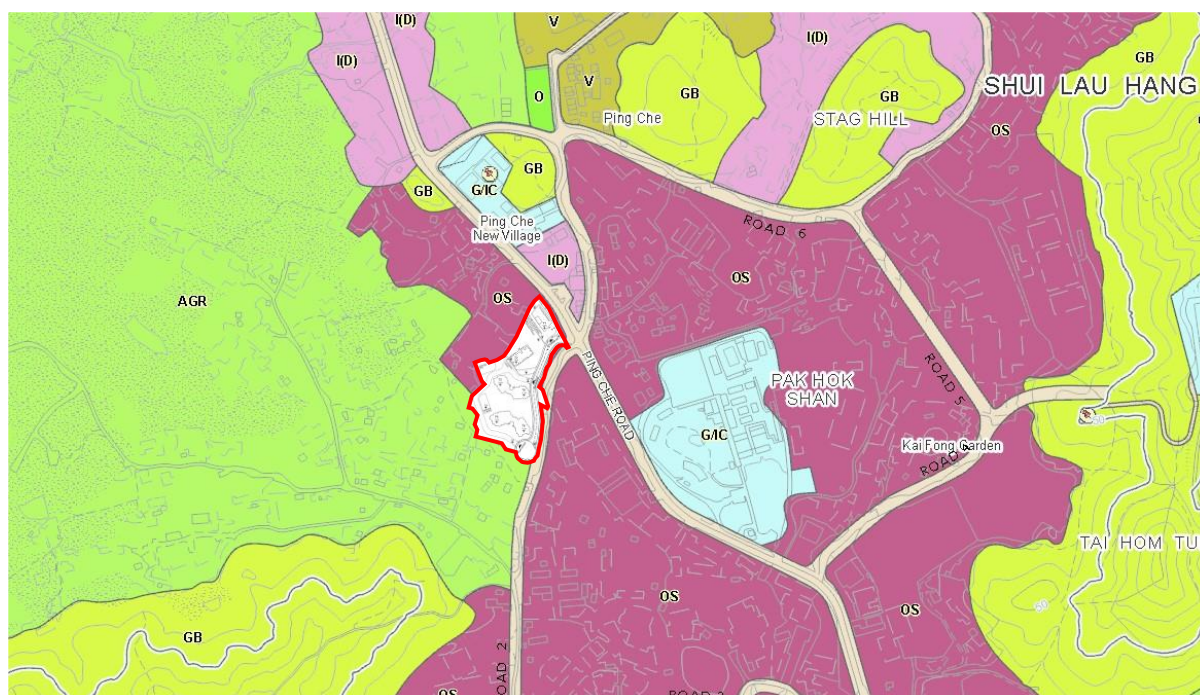


Figure 4.1 Application Site Location

4.2. SURROUNDING ENVIRONMENT AND WIND CHARACTERISTICS

Urban Morphology

- 4.2.1. As mentioned in Section 4.1, the Application Site is surrounded by “OS”, “G/IC”, “I(D)” and “AGR” zone with different building heights. The Application Site is located in a rural area, the surrounding buildings are low-rise with a relatively low building height. As the buildings are scattered around and not densely surrounding the Application Site, it is mainly an open area and open storage area. The morphology is mostly flat at the ground level.
- 4.2.2. Noted that the Application Site is located within the proposed tentative boundary of New Territories North New Town which the EIA study for such is under preparation during the course of the study for this application. However, the exact programme and development details for its implementation are yet to be confirmed.
- 4.2.3. Based on the EIA Project Profile and Study brief for Development of New Territories North New Town and Man Kam To (NTN Development) (ESB-341/2021), the NTN remaining phase development is proposed for housing, economic and employment-generating developments. As referred to the Project Profile, the broad land use concepts identified for the NTN development would be further reviewed, such as commercial, residential, industrial estate,

science park, logistic industries, etc.

- 4.2.4. Since the implementation details of NTN Development is yet to be confirmed, the urban morphology cannot be identified at this stage. The assessment will evaluate the scenario without NTN development in place for completeness and aims to demonstrate that there is feasible solution to meet relevant standards.

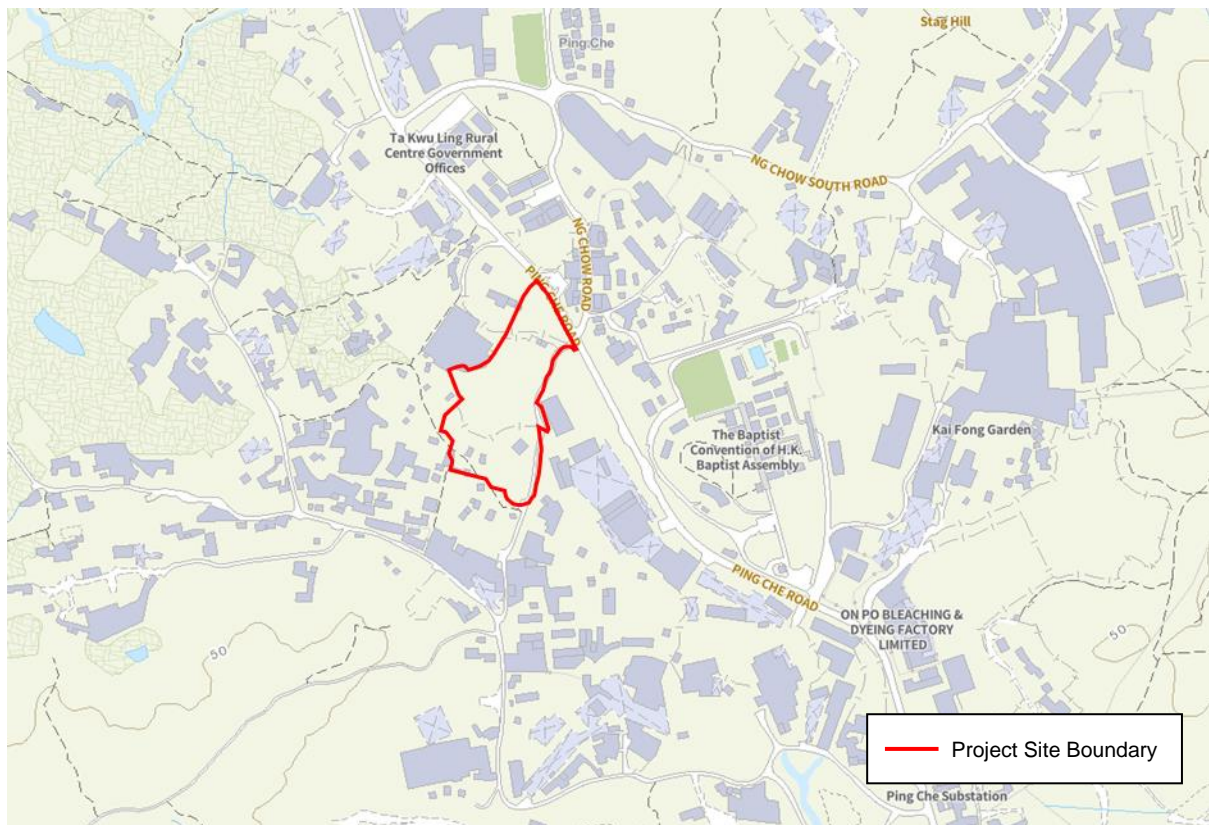


Figure 4.2 Existing Surrounding Developments

Current Site Wind Environment

- 4.2.5. Refer to Section 3.1.8, the wind availability in the Application Site mainly come from E, ESE, ENE in annual condition while winds from E, SE, SSE, ESE are available in summer condition.
- 4.2.6. The Application Site is currently used as open storage area at the ground level, the major wind path will be the Ping Che Road long the northeast side and the unnamed village road along the southeast area of the Application Site. The ESE and SE wind flow through the Application Site and further to the downwind area such as Ping Che New Village. The ENE wind also flow through the Application Site and reaching the agriculture land and open space at downwind area.

Road/ Street Pattern

- 4.2.7. Road network facilitates wind penetration to the Application Site and the surrounding areas. The annual E and ESE wind would be facilitated by the major air path of Ping Che Road and the air path between tower, the annual ENE wind would be facilitated by the village road and penetrate surrounding the site. The summer E, ESE and SE wind would be enhanced by the major air path of Ping Che Road and the air path between the towers. The major air paths around the Application Site are illustrated in **Figure 4.3**.

Open Space

- 4.2.8. There is an open storage area and an open greenery located at the north of the Application Site. Locating at the downwind area of the Application Site under ESE and SE wind. The open areas are expected to receive sufficient downwind wind.
- 4.2.9. The open space located at the west of the Application Site are mostly greenery and open storage. These areas located at the downwind area and expected to receive sufficient downwind wind under E wind.

Topography

- 4.2.10. The topography of the Application Site is relatively hilly (with ground level of around 14 to 16 mPD) and surrounded by the Pak Hok Shan at the east, Tai Po Tin Tsuen at the north, Ha Shan Kai Wat at the west and Hung Leng Tsuen at the south. The topography descends from the high level at the northeast of the Application Site from Cheung Shan, and at the southwest from Cat Hill, making the Application Site located at relatively low ground between two hill. The topography around the Application Site is illustrated in **Figure 4.4**.
- 4.2.11. For the wind coming from the northeast, the wind characteristics will be affected by the hills.

Turbulence and re-circulation of wind when it moves downhill towards the Application Site is expected. Therefore, wind arriving at the Application Site from the northeast will be slightly weakened by the obstruction of the hills.

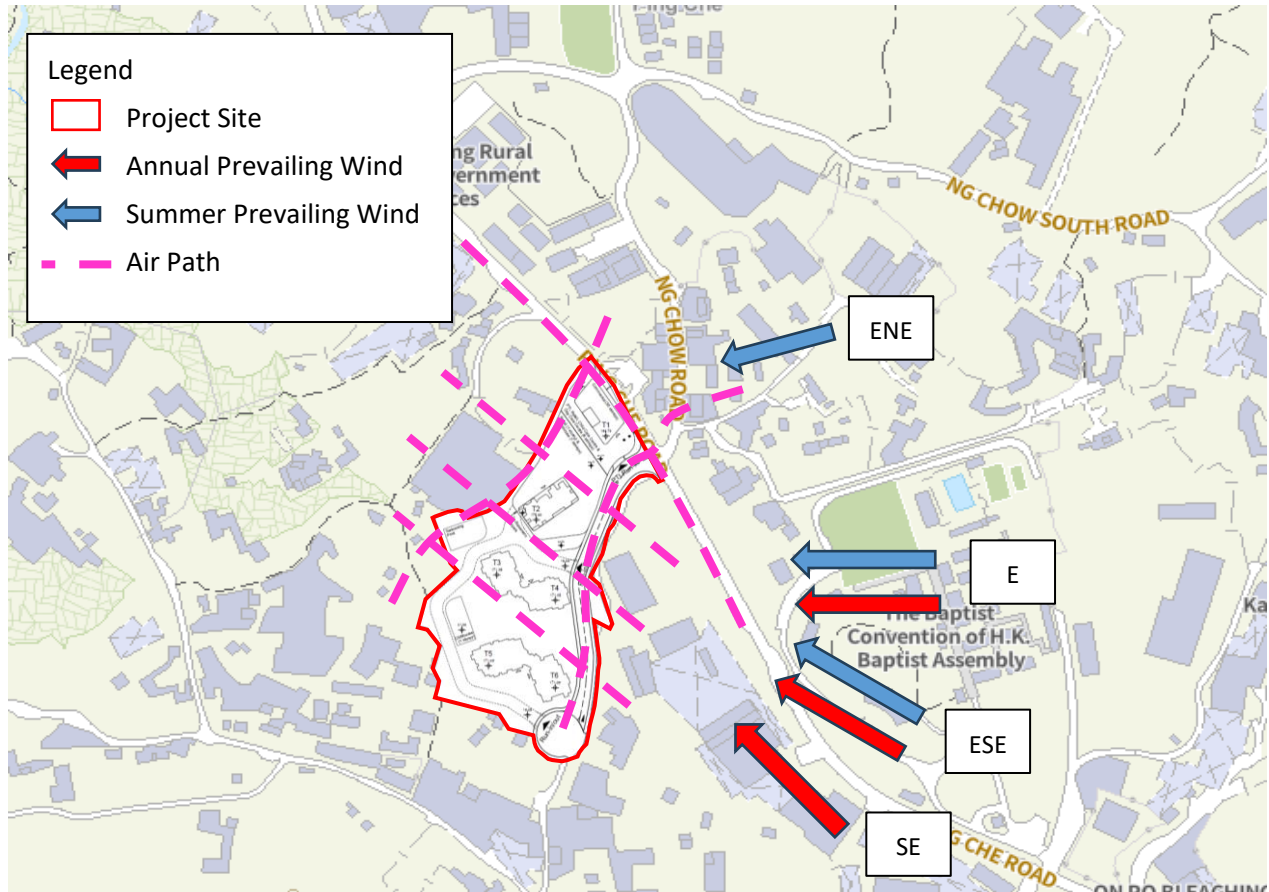


Figure 4.3 Prevailing Wind Environment in the Application Site

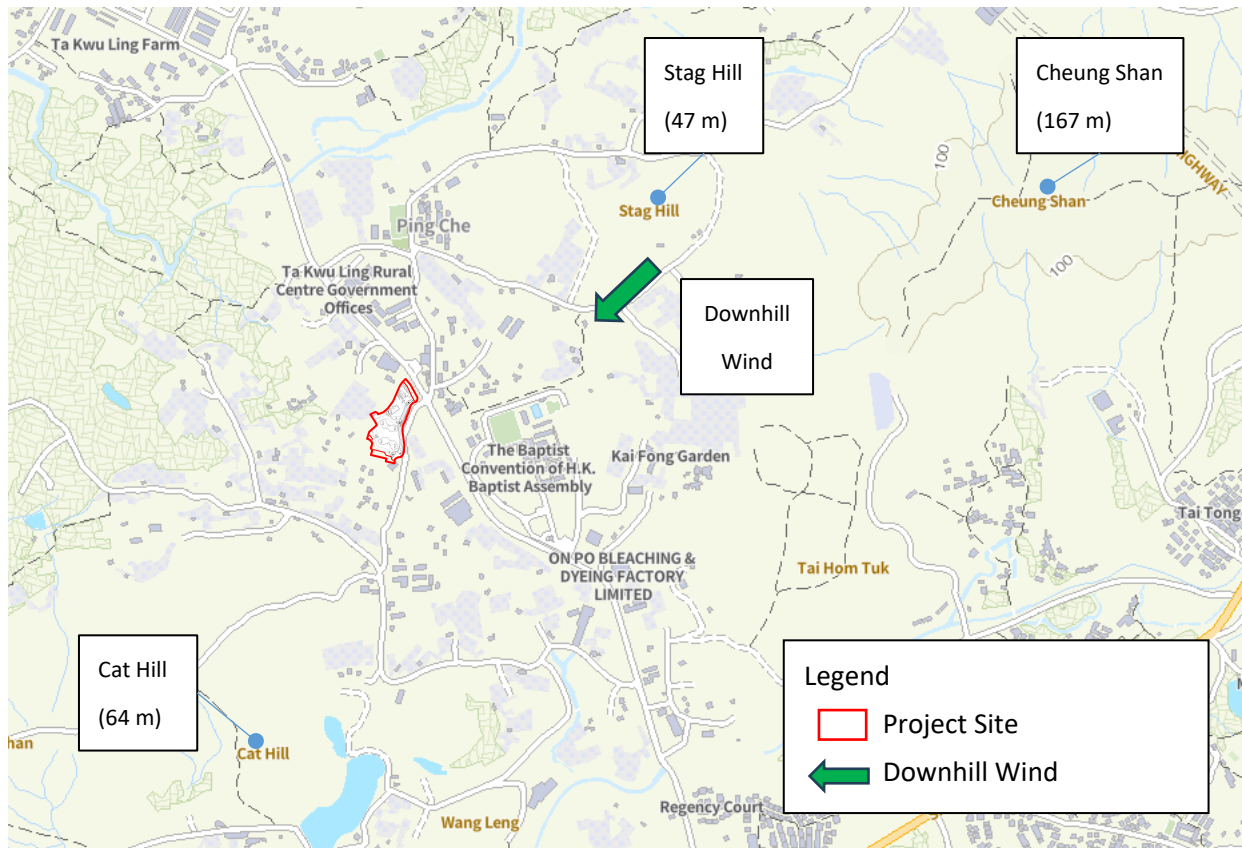


Figure 4.4 Topography Around the Application Site

5. BASELINE SCHEME AND PROPOSED SCHEME

- 5.1.1. The baseline scheme was prepared based on typical architectural layouts generally fulfilling the Building Ordinance. The residential towers (T2 to T6) comprised of residential unit mix and were placed to provide appropriate view and sightline for each unit. Building separations of 14.5m are provided between T2 and T3, T4 and T5 for air ventilation. The towers are grouped to the east facing the proposed access road, basic prescribed windows were also provided. To synergise with the future potential railway station and reduce potential noise impact, Tower 1 (Commercial block) is placed near Ping Che Road with building separation of 14m between T1 and T2.
- 5.1.2. Meanwhile, the Proposed Scheme comprised of 1 block of 48-storey residential tower with the maximum height of approximately 175mPD, another 4 blocks of 47-storey residential tower with the maximum height of approximately 172mPD, 1 commercial block with the maximum height of approximately 170mPD located near Ping Che Road, the building separation between the tower are ranged from 17m to 32m. the Proposed Scheme also consists of a one-storey clubhouse, and a swimming pool is provided. Similar to the Baseline Scheme, it consists of retail, office, child care centre, and elderly day care centre.
- 5.1.3. The major design parameters and layout plans between baseline scheme and proposed scheme are summarised in **Table 5-1**. Layout plan and section drawing of both schemes are shown **Appendix A** and **Appendix B** respectively.

Table 5-1 Building Heights of Baseline Scheme and Proposed Scheme

	Baseline Scheme	Proposed Scheme
No. of Blocks	5 Blocks	6 Blocks
Building Height	T1: 169.70mPD T2: 175.00mPD T3: 175.00mPD T4: 171.85mPD T5: 171.85mPD	T1: 169.70mPD T2: 175.00mPD T3: 171.85mPD T4: 171.85mPD T5: 171.83mPD T6: 171.83mPD
Plot Ratio	7	7
Estimated No. of Units	2,205 units	2,205 units

- 5.1.4. All the good design features proposed for Baseline Scheme will be kept under Proposed

Project No. 2127

AIR VENTILATION ASSESSMENT - EXPERT EVALUATION for APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A FOR THE TOWN PLANNING ORDINANCE (CAP. 131) FOR MIXED USE DEVELOPMENT AT LOTS 796 AND 1008RP IN D.D. 77 AND ADJOINING GOVERNMENT LAND IN PING CHE, TA KWU LING, NEW TERRITORIES

Scheme, and enhancement features will be incorporated in the Proposed Scheme upon the consideration of Application Site and design constraint criterion. These good design features are discussed in the following sections.

5.2. GOOD DESIGN FEATURES UNDER BOTH SCHEME

Permeable Design at Ground Floor

5.2.1. Under both schemes, the permeable design of PTT which is 7.5m tall with opening on 3 sides is adopted. The not enclosed ground level is expected to facilitate the east and southeast wind systems towards the downwind regions.

5.2.2. The design of PTT is similar in both schemes. **Figure 5.1** and **Figure 5.2** shows the layout of ground level PTT and the opening is indicated under both schemes.

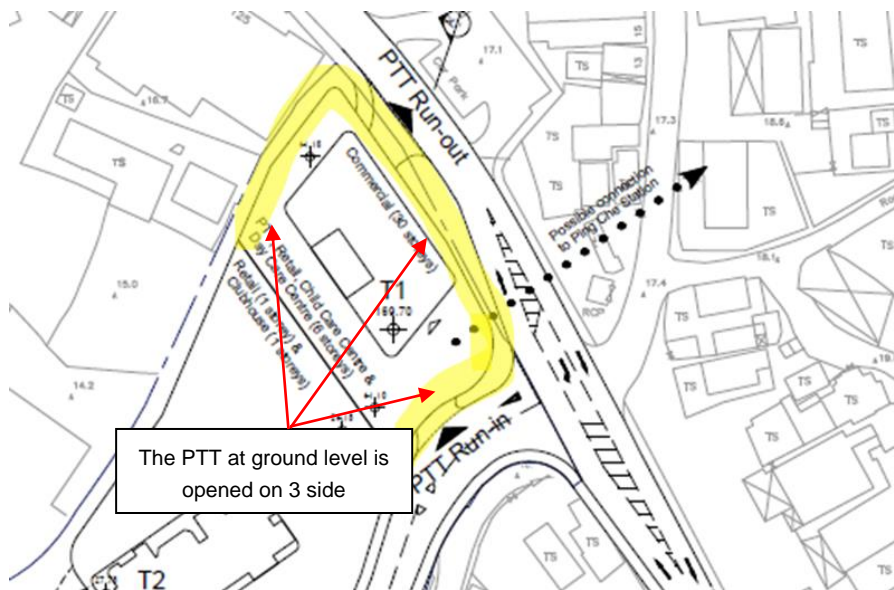


Figure 5.1 Ground Floor Layout Plan

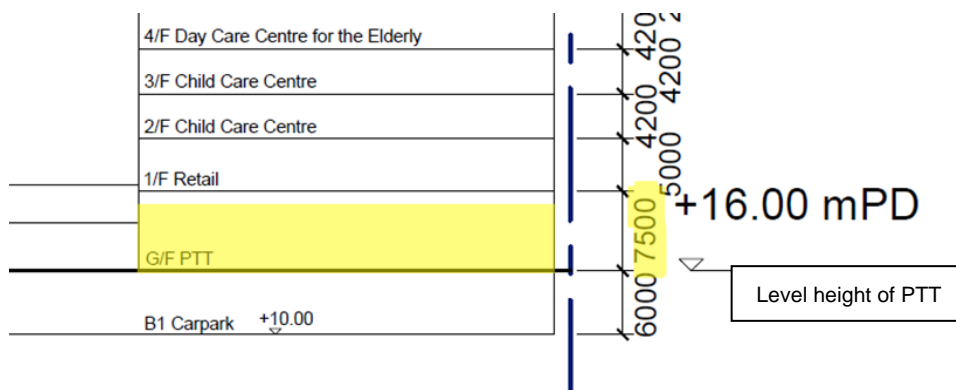


Figure 5.2 Cross section of Layout

Chamfered Design at Building Corner

5.2.3. Chamfered building corners would be adopted for the commercial building block and the podium in both baseline and proposed scheme, allowing smoother wind flow around the building structure. There is an air path between the commercial building and residential building, also air path between podium and residential building, which the wind flows from the east and southeast side penetrate the building groups flow to the downwind area. Chamfered building corners allows the building group to attract incoming east and southeast wind into the air path.

5.2.4. The design of Baseline Scheme and Proposed Scheme are illustrated in **Figure 5.3**.

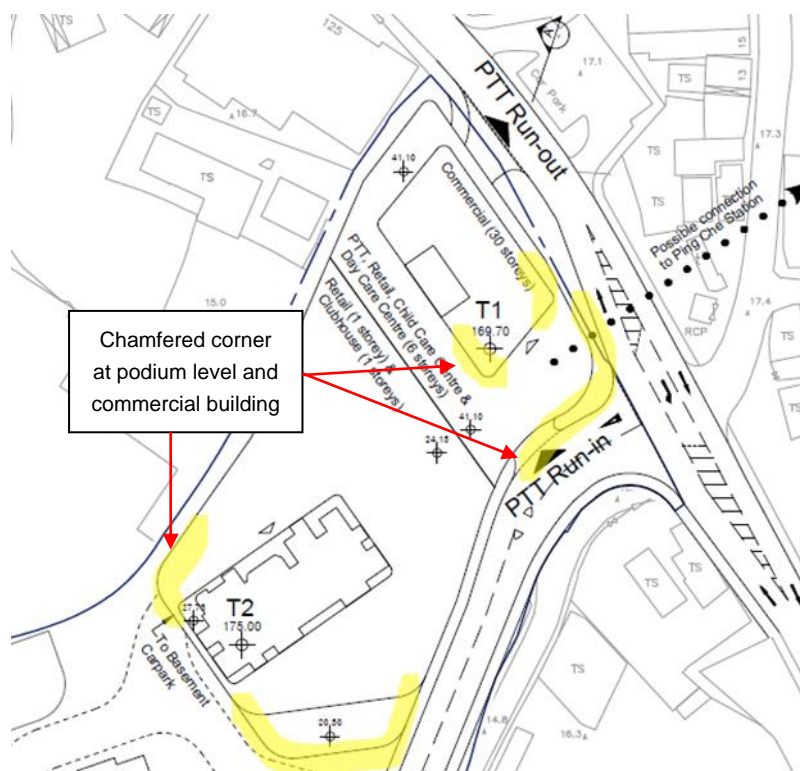


Figure 5.3 Layout Plan

5.3. FURTHER ENHANCEMENT FEATURES UNDER PROPOSED SCHEME

Building Orientation Align with Wind Direction

5.3.1. Under the proposed scheme, the N-E axis of tower blocks is aligned with the prevailing wind direction from east and northeast. There is not more than one turning point of the wind flow direction after implemented this orientation parallel to wind flow. The building orientation provides air path to enhance the wind penetration through the gap between blocks.

5.3.2. The layout design is illustrated in Figure 5.4.

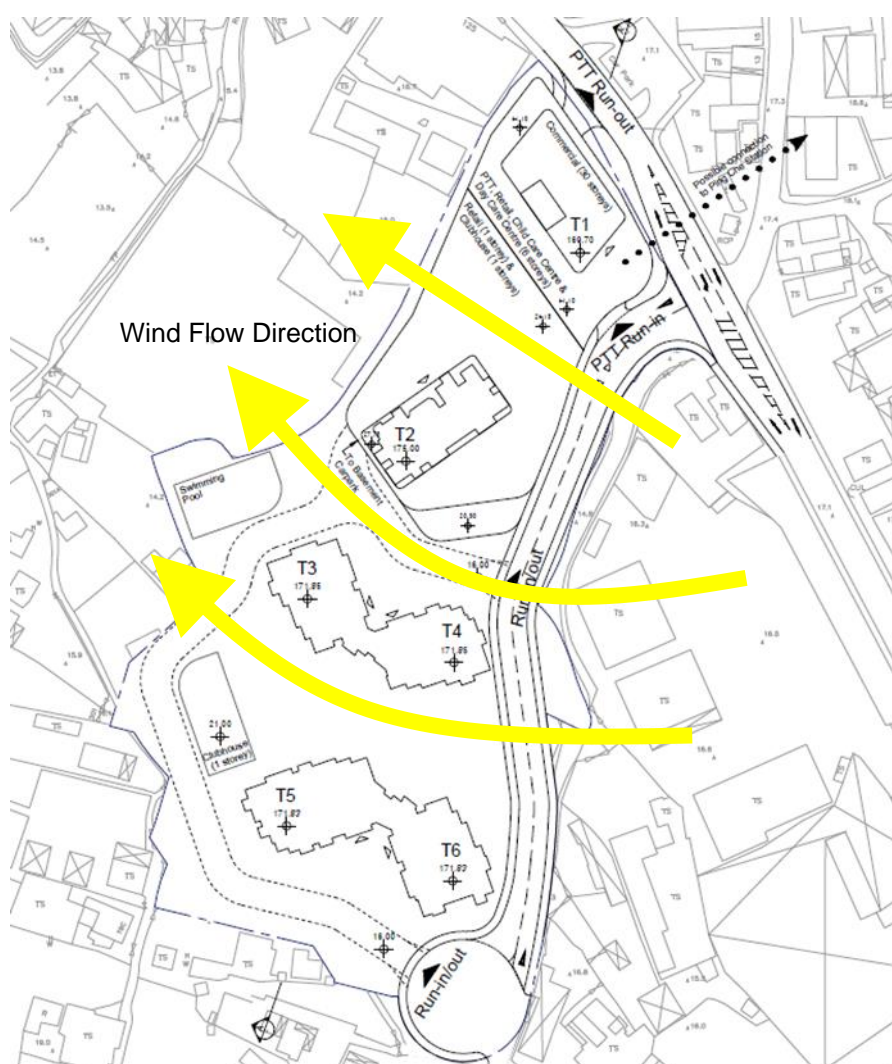


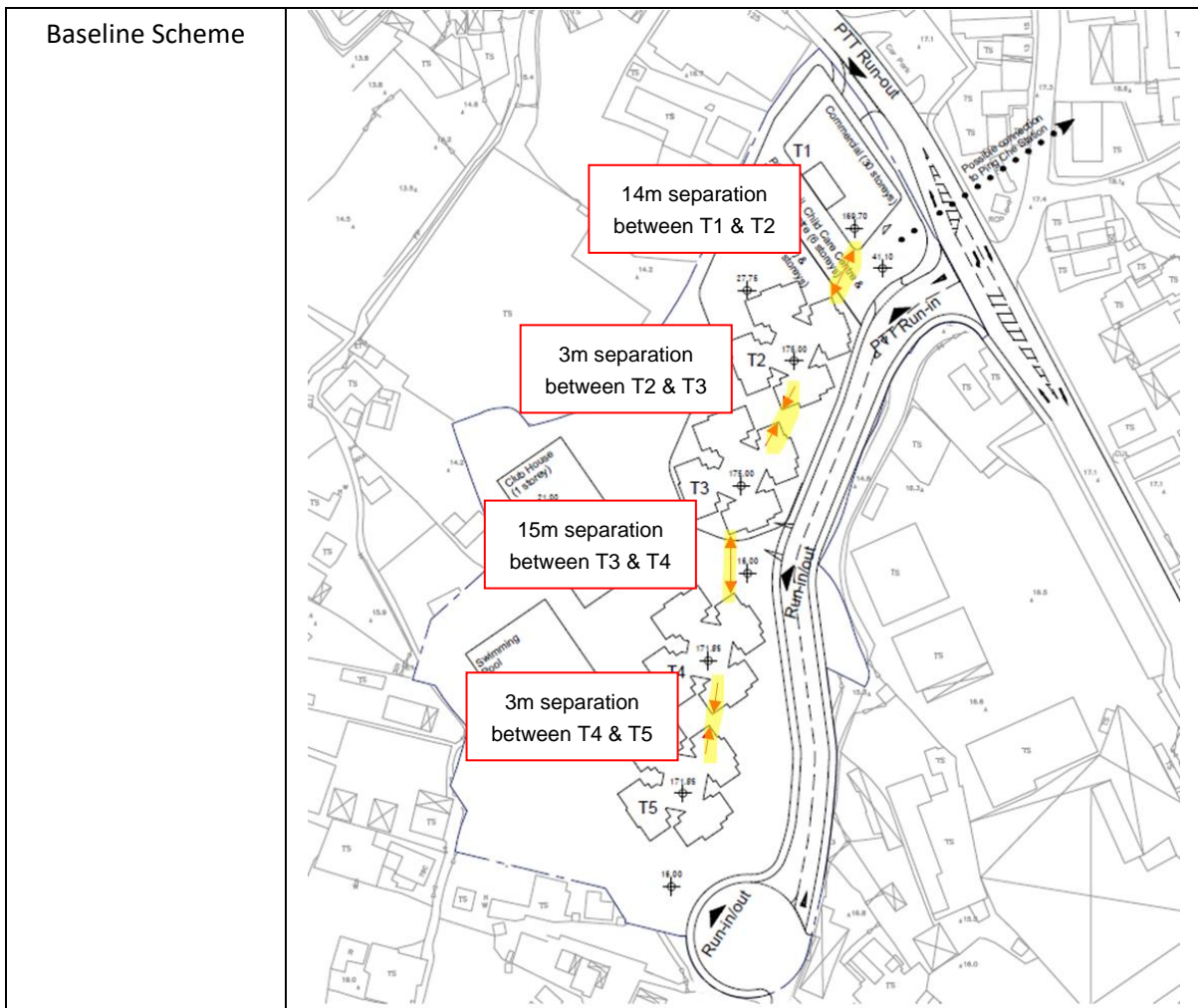
Figure 5.4 Layout of Building Orientation

Building Separation

5.3.3. Under the proposed scheme, the gap between commercial building and residence tower T2,

gap between tower T2 and tower T3 & T4, and the gap between tower T3 & T4 and tower T5 & T6 is increased compared to the gap under baseline scheme. The gap distance from range of 3m to 15m in baseline scheme, increased to range of 17m to 32m in proposed scheme. The gap distance facilitates more east and southeast wind flow between the buildings towards the downwind area.

5.3.4. The layout and the gap distance of baseline and proposed scheme are illustrated in **Figure 5.5**.



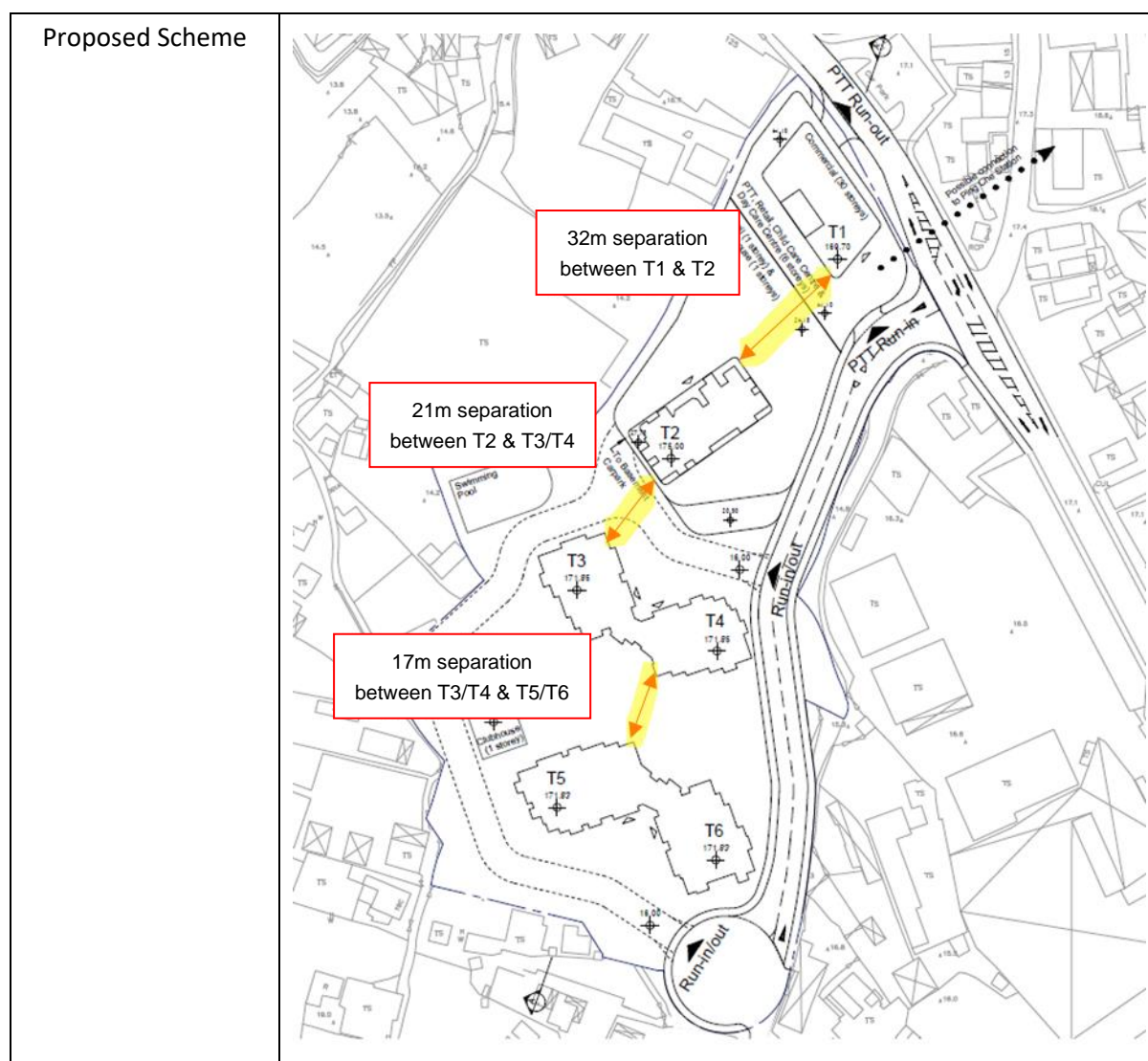


Figure 5.5 Comparison of Building Gap between Baseline and Proposed Development

Terraced Podium Design

5.3.5. Stepping terrace approach is adopted under Proposed Scheme at the podium design of Blocks T1 and T2 minimize building mass. The incoming mid and high-level wind would flow along the stepping terraces and reach the downstream regions. The adverse impact to air ventilation would be minimized.

5.3.6. Under the proposed scheme, there is 3 steps of terrace at the podium design which is from 16mPD to 20.50mPD, followed by step from 20.50mPD to 24.15mPD, then finally from 24.15mPD to 41.10mPD. The proposed terraced podium design is illustrated in **Figure 5.7**.

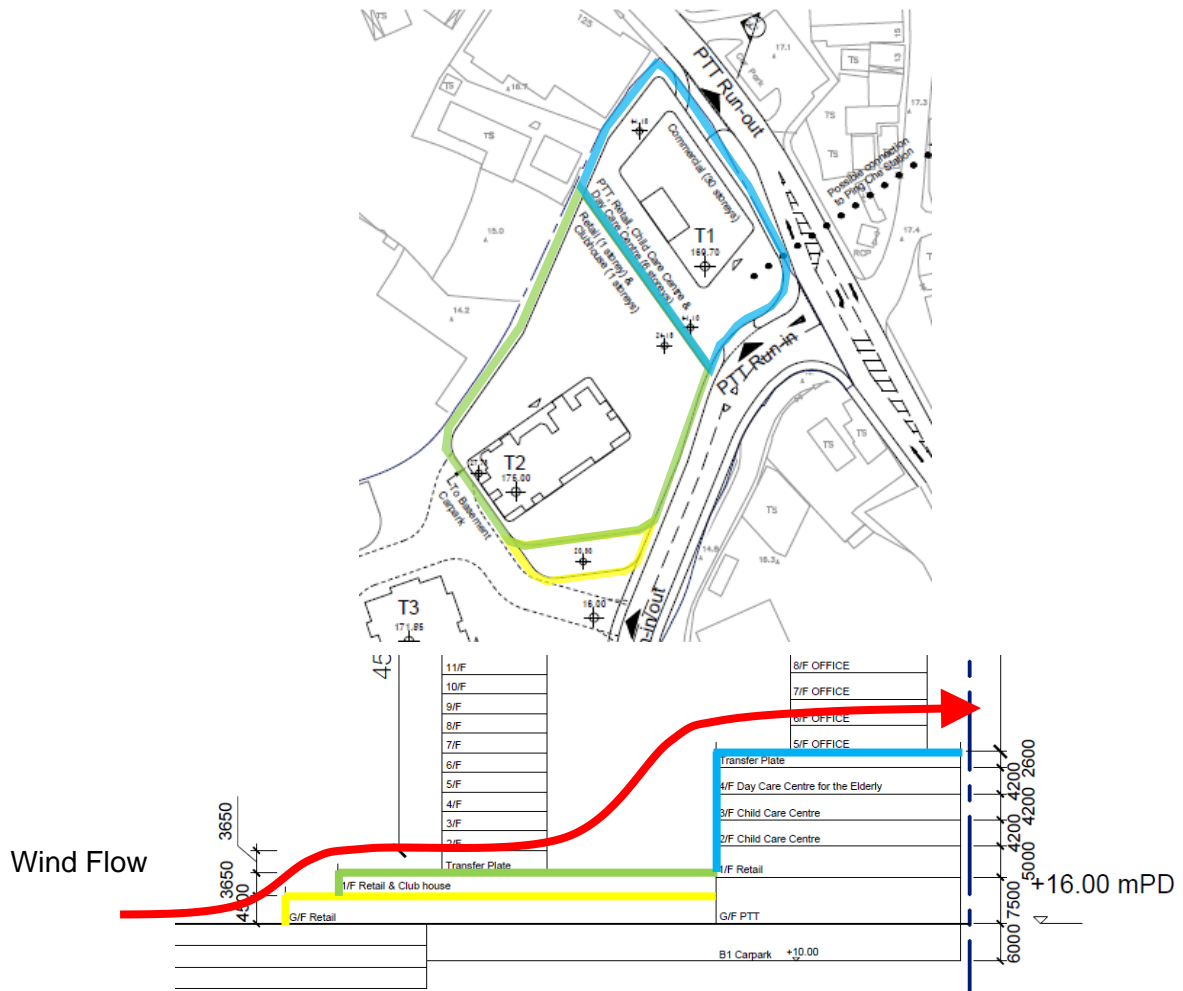


Figure 5.6 Terraced Podium Design under Proposed Scheme

Podium Height Level

- 5.3.7. The proposed scheme consists of podium structure with height of 24.15mPD, compared with the baseline scheme 27.75mPD. The incoming east wind is expected flow over the podium structure and reach the downwind areas.
- 5.3.8. The height of podium and residential block of baseline scheme and proposed scheme are illustrated in **Figure 5.7**.

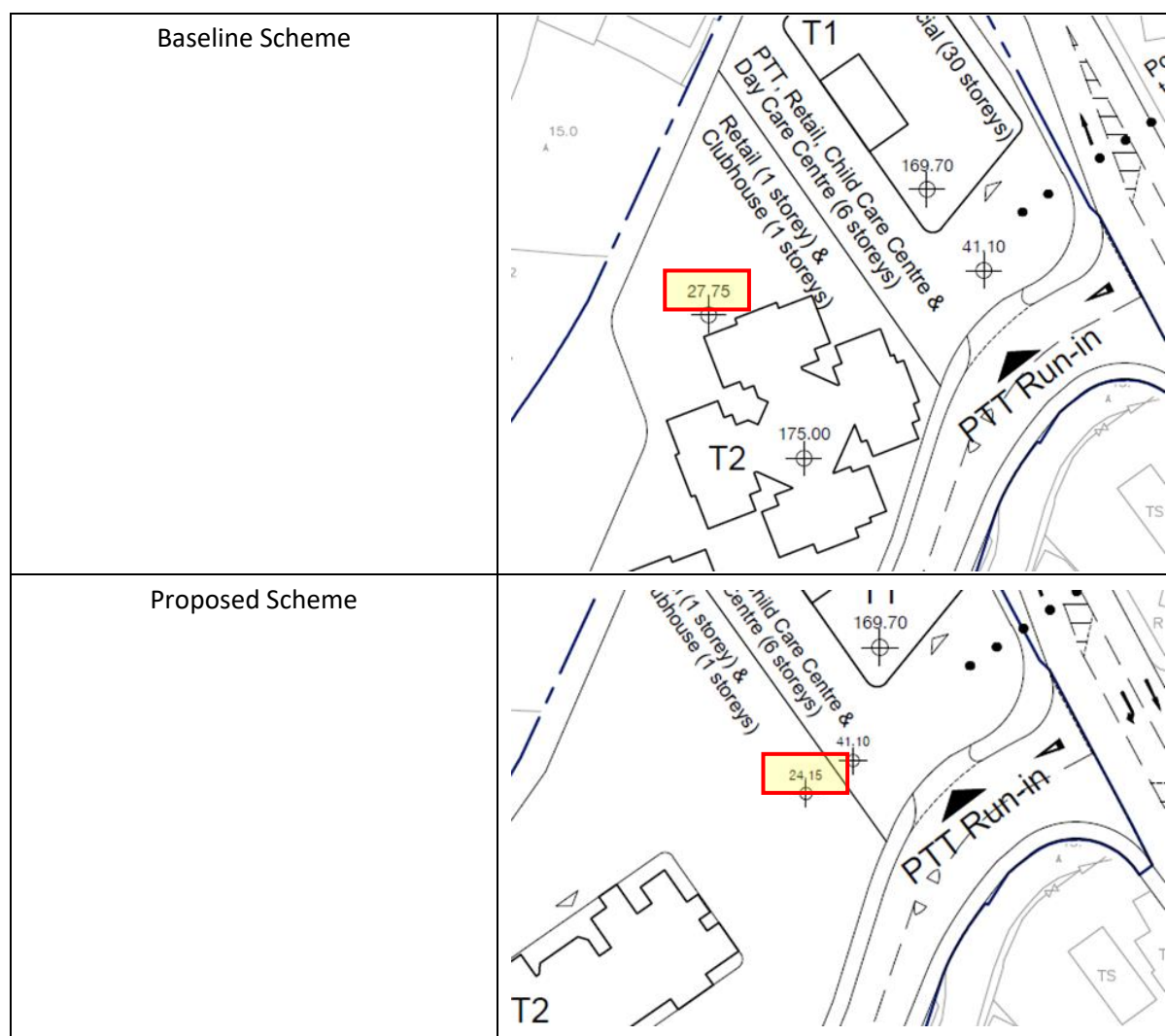


Figure 5.7 Comparison of Podium height between Baseline and Proposed Development

Reduced Ground Coverage of Clubhouse

5.3.9. Under the Proposed Scheme, the area of clubhouse building is reduced from baseline scheme. The small ground coverage is having lesser restriction to wind flow, thus allows more wind flow at ground level. The proposed clubhouse also located at the downwind area of Block T5, allowed enough gap distance between clubhouse and Block T3, allowed the wind flow from east and northeast direction flow through and reach the downwind area.

5.3.10. The design of baseline and proposed scheme are illustrated in Figure 5.8.

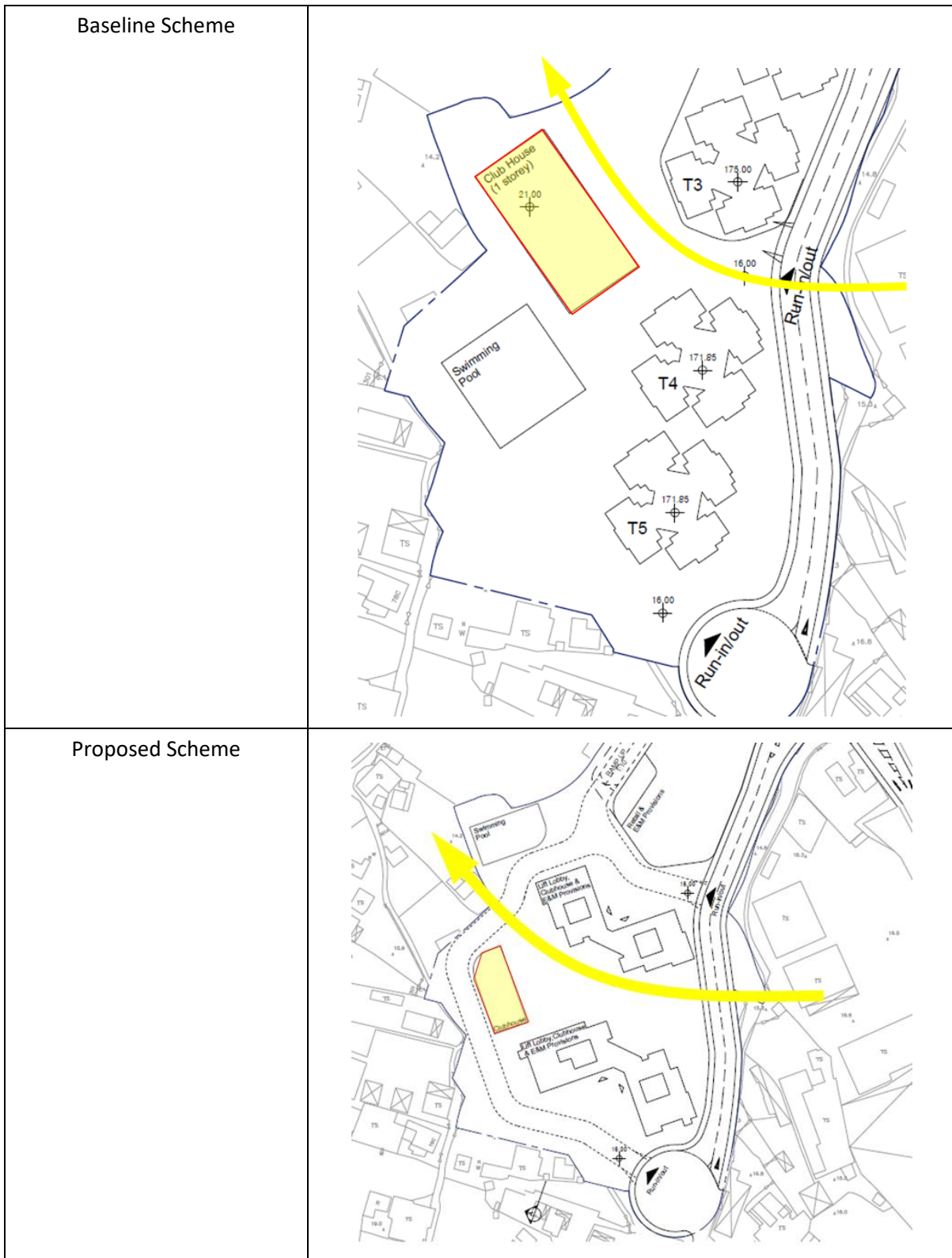


Figure 5.8 Comparison of Clubhouse Layout Plan

Permeable Design at Sky Garden

5.3.11. Under the proposed scheme, there are 3 sky garden design located at 21/F of T2, 20/F of T3 & T4, and 20/F of T5 & T6 respectively. The sky garden provided a vast opening at façade of the building, allows more wind flow through the building at the façade that facing east and southeast direction. Besides that, the sky garden is shaded by the building itself, allows the users of the building enjoy the thermally comfortable environment in the building.

5.3.12. The section layout of the sky garden is illustrated in Figure 5.9.

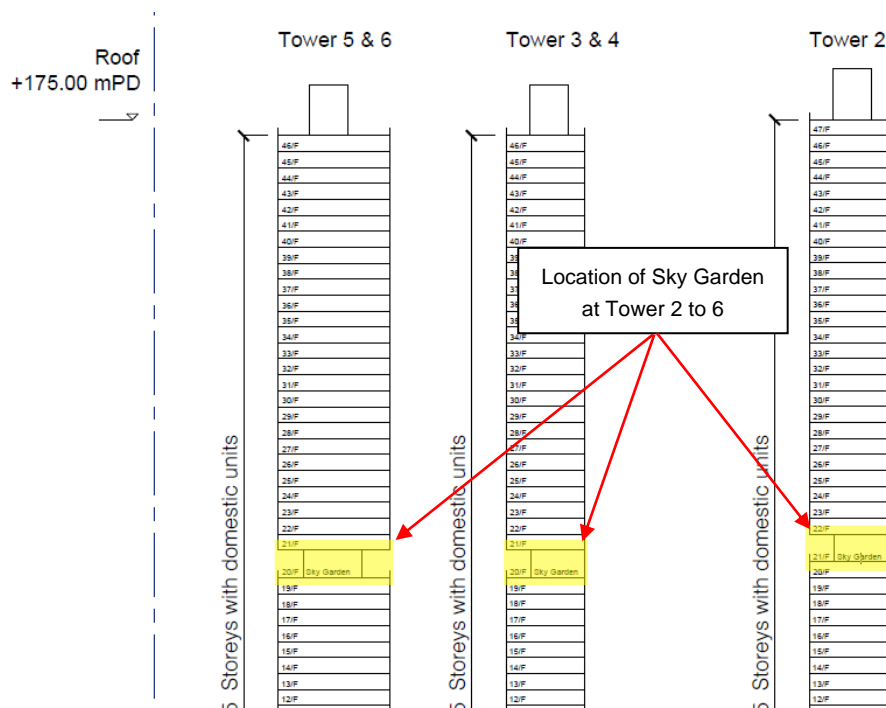


Figure 5.9 Section Layout of Sky Garden

6. EXPERT EVALUATION

6.1. E, ESE AND SE WIND

- 6.1.1. E, ESE and SE wind are the major prevailing wind under annual and summer condition. Under the ESE and SE wind, the major wind path will be flow along the Ping Che Road and flow through the Application Site. The wind flow will reach the Ping Che New Village, as well as the agriculture land and open storage area located at the downwind area. Under the E wind, the wind path will mainly flow through and wakes by the building within Application Site, towards the agriculture and open space located at downwind area.
- 6.1.2. Under the baseline scheme, the low-level wind of E, ESE and SE wind is expected to enter the Application Site as the building surrounding are mostly low in height. It is expected that the wind will flow through the PTT as the ground level PTT having a vast opening at northeast and southeast side facing the wind direction. The chamfered corner of the podium of the proposed development also expected to further enhance the wind flow. However, the building height is expected to slightly reduce the wind, as well as the small gap between building blocks and façade without opened wind path facing the wind direction will further weaken the wind flow.
- 6.1.3. Under the proposed scheme, the low-level wind of E, ESE and SE wind is expected to enter the Application Site as the building surrounding are mostly low in height. Similar to the baseline scheme, the low-level wind is expected to skim through the ground level PTT unobstructed and further enhance by the chamfered corner. In addition, the good design features would facilitate the incoming wind. It is expected the mid-level wind flow via the separation gap between building, and the wind flow in higher level will flow through the sky garden, reaching the downwind area. The building orientation with axis aligning parallel to the ESE and SE wind flow direction, and the terrace podium design will further enhance the wind flow.
- 6.1.4. The E (**blue** arrow), ESE (**brown** arrow) and SE (**green** arrow) wind flow in baseline scheme are illustrated in the **Figure 6.1** and wind flow in proposed scheme are illustrated in the **Figure 6.2**.

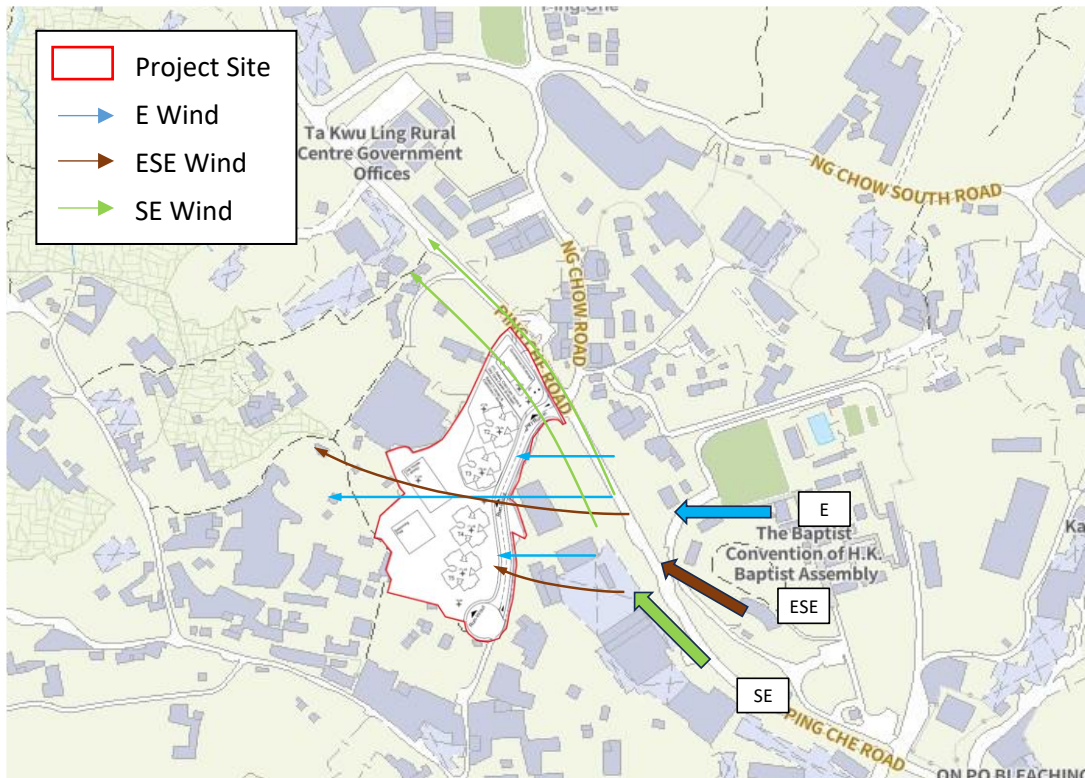


Figure 6.1 E, ESE and SE Wind (Baseline Schedule)

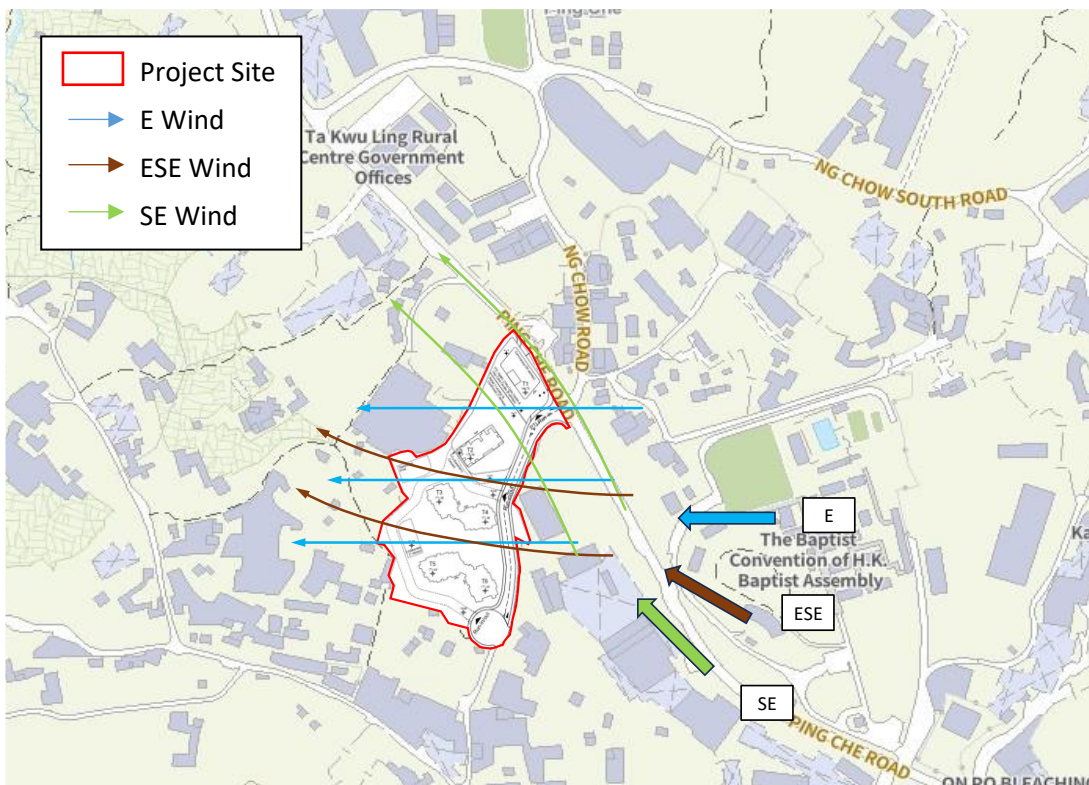


Figure 6.2 E, ESE and SE Wind (Proposed Schedule)

6.2. ENE WIND

- 6.2.1. ENE wind is the 3rd prevailing annual wind. As discussed in the Section 4.2.8 and 4.2.9, the Application Site is relatively flat and surrounded by several hills, The wind coming from ENE direction would be weakened by the hills. However, the ENE wind is still expected to enter the Application Site under annual conditions, skim across the proposed development and finally reach open space and open storage areas located in the downwind area.
- 6.2.2. Under the baseline scheme, the low-level wind of ENE is expected to enter the Application Site as the buildings surrounding are mostly low in height. It is expected that the wind will flow through the PTT as the ground level PTT has a vast opening on the northeast side facing the ENE wind direction. The chamfered corner of the podium of the proposed development is also expected to further enhance the wind flow. However, the building height, building orientation and small gap distance between blocks are expected to affect and reduce the wind flow, as the building is blocking some of the wind.
- 6.2.3. Under the proposed scheme, the low-level wind of ENE is expected to enter the Application Site as the buildings surrounding are mostly low in height. Similar to the baseline scheme, the low-level wind is expected to skim through the ground level PTT unobstructed and further enhanced by the chamfered corner. In addition, the good design features would facilitate the incoming wind. It is expected that higher level ENE wind will flow through the sky garden, reaching the downwind area. Since the separation of buildings provides less than 1 turning point for the wind flow, it is expected to not have an effect on the wind flow from the ENE direction, and reduced clubhouse building area and ground coverage will smoothen the wind flow.
- 6.2.4. The ENE (blue arrow) wind flow in the baseline scheme are illustrated in **Figure 6.3**, and wind flow in the proposed scheme are illustrated in **Figure 6.2**.

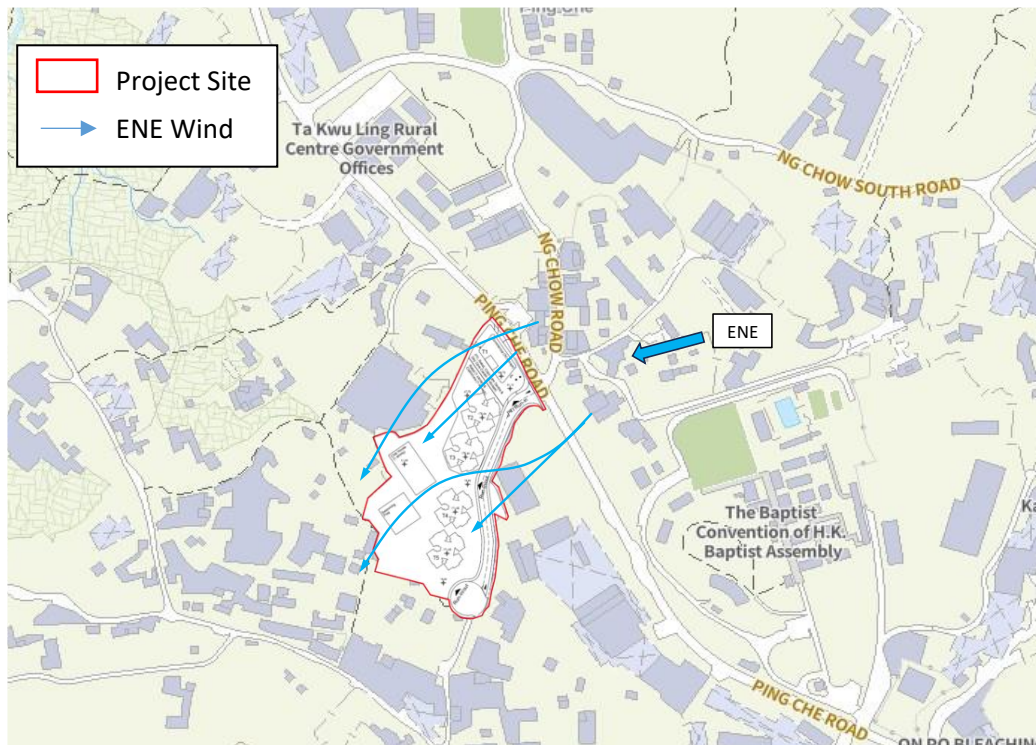


Figure 6.3 ENE Wind (Baseline Schedule)

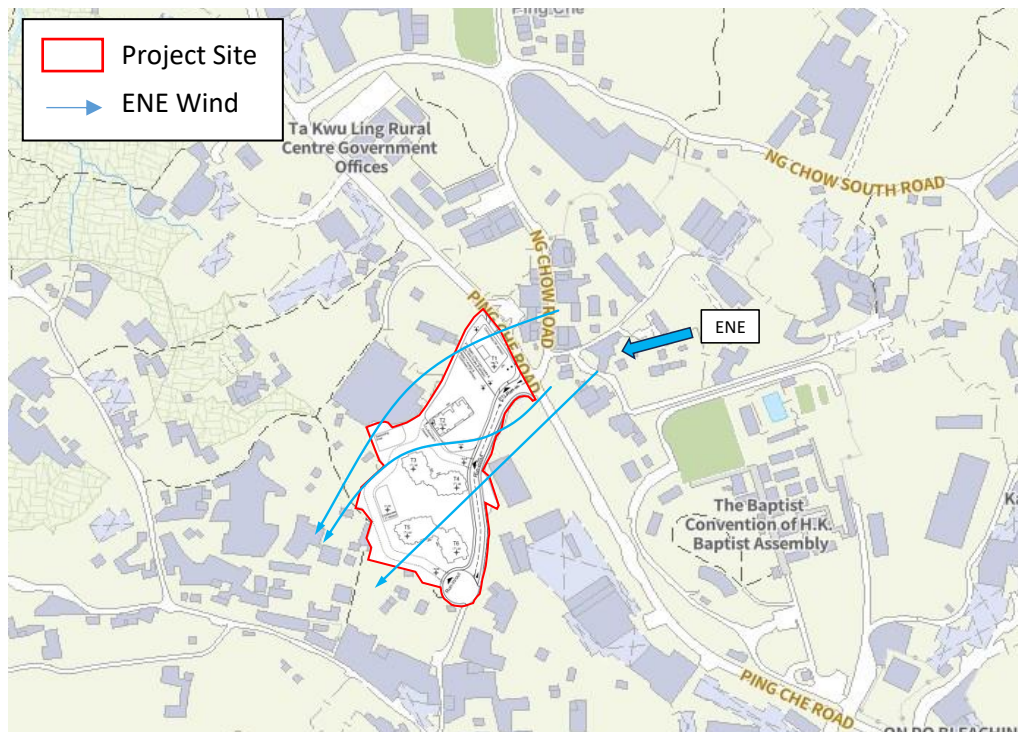


Figure 6.4 ENE Wind (Proposed Schedule)

7. CONCLUSION

- 7.1.1. An AVA-EE study was conducted for the proposed mixed use development at Lot 796 & 1008 RP at D.D. 77 and adjoining government land in Ping Che, Ta Kwu Ling, New Territories to provide qualitative evaluation of wind performance of the proposed development under the Baseline and the Proposed Scheme.
- 7.1.2. There are some good design features are provided in both layout under Baseline Scheme and Proposed scheme, such as the permeable design of the ground level PTT at direction northeast and southeast facing the wind flow direction, and chamfered corner design of the building structure, allows the wind flow through the building unrestricted.
- 7.1.3. The layout under the Proposed scheme would keep the major air path along Ping Che Road and incorporate several good design measures mentioned in the Section 5 of report to facilitate the wind flow and keep it unblock. It includes the orientation of the building blocks align with the direction of the wind flow allows wind to skim through the building, maintained the separation distance between the building is more than 15m and design of sky garden to provide the vast opening on the façade to allow the wind flow unrestricted. The incorporated podium design such as terraced design and lower height the wind flow through the building structure, and the reduced in ground coverage of the clubhouse also lower the blockage to the wind flow.
- 7.1.4. In conclusion, the current proposed scheme has implemented the strategies and good design for design optimization as recommended. The proposed scheme is comparable to the baseline scheme. As such, significant wind deterioration on district level after the construction of proposed development is not anticipated.

Project No. 2127

AIR VENTILATION ASSESSMENT - EXPERT EVALUATION for APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A FOR THE TOWN PLANNING ORDINANCE (CAP. 131) FOR MIXED USE DEVELOPMENT AT LOTS 796 AND 1008RP IN D.D. 77 AND ADJOINING GOVERNMENT LAND IN PING CHE, TA KWU LING, NEW TERRITORIES

Appendix A

Layout Plan of Baseline Scheme



Project No. 2127

AIR VENTILATION ASSESSMENT - EXPERT EVALUATION for APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A FOR THE TOWN PLANNING ORDINANCE (CAP. 131) FOR MIXED USE DEVELOPMENT AT LOTS 796 AND 1008RP IN D.D. 77 AND ADJOINING GOVERNMENT LAND IN PING CHE, TA KWU LING, NEW TERRITORIES

Appendix B

Layout Plan and Section Drawing of Proposed Scheme

