

**S12A AMENDMENT OF PLAN APPLICATION
APPROVED KAM TIN NORTH OZP NO. S/YL-KTN/11**

Rezoning from “Residential (Group C) 2” and “Open Space” zones to “Residential (Group C) 4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

AND

Rezoning from “Residential (Group C) 2” to “Open Space” zone at Lot Nos. 121, 137, 138, 139 S.A and 139 RP (part) in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

SUPPORTING PLANNING STATEMENT

November 2025

Applicants:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Consultancy Team:

**KTA Planning Ltd.
CTA Consultants Ltd.
Mott MacDonalds Hong Kong Ltd.
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Scenic Landscape Studio Ltd.
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Greg Wong & Associates Ltd.**



Executive Summary

This Planning Application is prepared and submitted on behalf of **Kimpton Investments Limited, Pacific Top Development Limited** and **Worldchamp Investments Limited** (the “Applicants”) to seek approval from the Town Planning Board (“TPB”/the “Board”) under section 12A of the Town Planning Ordinance for:

- (1) rezoning of the Site from “Residential (Group C) 2” (“R(C)2”) and “Open Space” (“O”) to “Residential (Group C) 4” (“R(C)4”) under the approved Kam Tin North Outline Zoning Plan (“OZP”) No. S/YL-KTN/11, to enable the proposed residential development (“Proposed Development”) at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 1” / “Development Site”); and
- (2) rezoning of the Site from “R(C)2” to “O” under the same approved OZP at Lot Nos. 121, 137, 138, 139 S.A and 139 RP (part) in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 2”).

With the unique site characteristics and changing strategic planning circumstances of the Kam Tin area from rural to suburban township, it is proposed to rezone the Development Site (Site 1), with a total site area of about **8,580m²**, for residential development. Site 1 involves about 8,496m² of land zoned “O” and 84m² of land zoned “R(C)2” under the prevailing OZP. With a maximum plot ratio (“PR”) of 1.0, the indicative development scheme yields a total domestic Gross Floor Area (“GFA”) of not more than 8,580m², providing about a total of 240 residential units. It comprises a total of 6 nos. of residential towers with 6 storeys above ground (including G/F for entrance lobby / car park / E&M facilities). The clubhouse is not more than one-storey high above ground; sewage treatment plant (STP) involves one storey above ground and one-storey tank below ground; the stormwater storage tank (SST) involves one storey below ground. With site formation level at 10.4mPD, the referencing building height is about 28.9mPD.

Meanwhile, the Applicants also propose rezoning of a site (namely “Site 2”) from “R(C)2” to “O”, which is located to the immediate west of the prevailing “O” zone that the Development Site falls within. Site 2 has an area of about **12,303m²**. As a result, there will be a **net increase in about 0.38 ha** in total area of “Open Space” zone under the prevailing Kam Tin North OZP.

The proposal is fully justified based on the following reasons:

- The Proposed Rezoning is In-line with Government’s policies on increasing housing land supply;
- The Sites are highly suitable for residential development and public open space respectively, in view of land use compatibility, accessibility, as well as coherence and tranquility of the open space to be maintained.

- The existing local access falling within an area currently zoned “R(C)2” zone, which is frequently used by the nearby villagers and residents will be retained in the proposed “Open Space” zone in Site 2;
- The Proposed Development will unleash the development potential of the “Open Space” Zone which has been long designated without any development program in the Application Site;
- The Development Proposal has devised an appropriate development intensity in the Proposed “R(C)4” Zone;
- The Proposed Scheme has incorporated various urban design merits;
- The Proposed Development is readily implementable; and
- Various technical assessments have been carried out and the findings concluded that the Proposal is technically feasible.

In light of the above, support on this Planning Application from the members of the TPB is respectfully requested.

行政摘要 (內文如有差異，應以英文版本為準)

本規劃申請書是代表金濤投資有限公司(Kimpton Investments Limited)、恒泰發展有限公司(Pacific Top Development Limited)及集威投資有限公司(Worldchamp Investments Limited)(下稱「申請人」)根據城市規劃條例第 12A 條，向城市規劃委員會(下稱「城規會」)申請修訂錦田北分區計劃大綱核准圖編號 S/YL-KTN/11(下稱「核准圖」)，將：

- (一)、位於新界丈量約份第 110 約地段第 519 號餘段(部分)及第 520 號餘段和毗連政府土地的用地(下稱「地盤一」)，由「住宅(丙類)2」地帶及「休憩用地」地帶改劃為「住宅(丙類)4」地帶，以作住宅發展用途；
- (二)、位於丈量約份第 110 約地段第 121 號、第 137 號、第 138 號及第 139 號(部分)及毗連政府土地的用地(下稱「地盤二」)，由「住宅(丙類)2」地帶改劃為「休憩用地」地帶。

考慮到申請地點的錦田地區逐漸由鄉郊轉型為郊區鄉鎮，申請人致力將地盤一內面積約 8,580 平方米的用地改劃作住宅發展，當中「休憩用地」地帶面積佔約 8,496 平方米，而「住宅(丙類)2」地帶約 84 平方米。此擬議發展的最高地積比率為 1.0，住用樓面面積不多於 8,580 平方米，提供約 240 個住宅單位。發展項目包括 6 座 6 層高的住宅樓宇(包括 1 層地下住宅大堂/停車場/機電設施)。住客會所不高於地面 1 層；和污水處理廠包括地面一層及地底一層的儲水池；而蓄洪池則位於地下一層。地盤的平整水平為主水平基準上 10.4 米，建築物的高度為主水平基準上約 28.9 米。

此外，申請人提出將現時位於地盤一所屬的「休憩用地」地帶以西的地盤二，由「住宅(丙類)2」地帶改劃為「休憩用地」地帶，而地盤二的面積佔約 12,303 平方米。因此，擬議發展將為錦田北分區計劃大綱核准圖的「休憩用地」地帶總面積帶來約 0.38 公頃的淨增長。

擬議發展計劃理據如下：

- 擬議改劃方案與政府現時推行的積極增加房屋土地供應的政策相符合；
- 申請地點交通方便，適合分別用作住宅發展及休憩用地用途，擬議用途亦與鄰近土地用途協調，而當中就地盤二擬議改劃作「休憩用地」地帶，可維持休憩用地的完整性及寧靜環境；
- 因應地盤二擬議由「住宅(丙類)2」地帶改劃作「休憩用地」地帶，位處地盤二之內而鄰近村民及居民常用的行人通道得以保留；
- 擬建發展將釋放位處申請地點內尚未落實的「休憩用地」地帶的發展潛力；
- 擬議方案在擬議的「住宅(丙類)4」地帶制定了合適的發展密度；
- 建議發展將採納多項設計優點以與周邊環境融合，同時改善錦田鄉郊環境；
- 擬議發展可以迅速落實發展；及
- 申請人已進行了各種技術評估，結果均證明該發展方案是技術上可行的。

根據以上各點，申請人懇請是次的修訂圖則申請能獲得城規會支持。

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S12A AMENDMENT OF PLAN APPLICATION
Approved Kam Tin North OZP No. S/YL-KTN/11

Rezoning from “Residential (Group C) 2” and “Open Space” zones to “Residential (Group C) 4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Shek Kong, Yuen Long, N.T.

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Supporting Planning Statement

1. INTRODUCTION

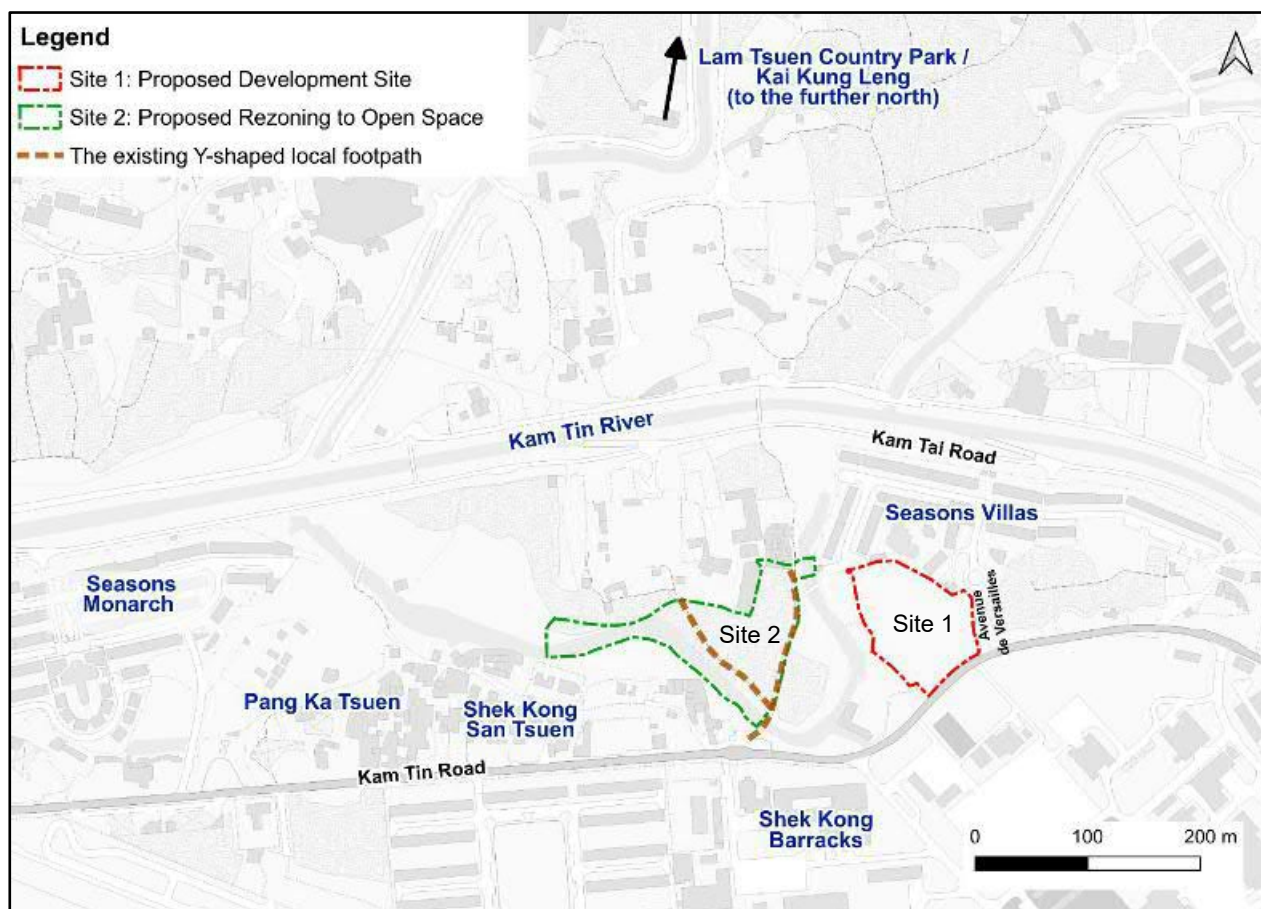
1.1 Purpose

1.1.1 This Amendment of Plan Application is prepared and submitted on behalf of Kimpton Investments Limited, Pacific Top Development Limited and Worldchamp Investments Limited (the “Applicants”) to seek approval from the Town Planning Board (“TPB”/the “Board”) under section 12A of the Town Planning Ordinance for (1) rezoning of an area from “Residential (Group C) 2” (“R(C)2”) and “Open Space” (“O”) to “Residential (Group C) 4” (“R(C)4”) under the approved Kam Tin North Outline Zoning Plan (“OZP”) No. S/YL-KTN/11, to enable the proposed residential development (“Proposed Development”) at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 1” / “Development Site”); and (2) rezoning of an area from “R(C)2” to “O” under the approved OZP at Lot Nos. 121, 137, 138, 139 S.A and 139 RP (part) in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 2”) (**Figure 1.1** refers). “Site 1” and “Site 2” altogether form the Application Site. This Supporting Planning Statement is to provide the TPB with the necessary information to facilitate consideration of this Planning Application.

1.2 Report Structure

1.2.1 Following this introductory section, the Application Site and the related statutory and non-statutory Planning Context will be set out in Section 2. Discussions of “R(C)” and “O” zones are outlined in Section 3. The Indicative Development Scheme for the Proposed Development will be described in Section 4. Section 5 will outline the proposed zoning amendment while the planning merits and justifications for the Proposed Development will be stated in Section 6. Section 7 concludes and summarizes this Supporting Planning Statement.

Figure 1.1: Site Location Plan



2. SITE AND PLANNING CONTEXT

2.1 Site Location and Surrounding Condition

- 2.1.1 The Application Site is located in Kam Tin North. The Application Site abuts Kam Tin Road to its immediate south. Two low-rise, low-density residential developments in the same “R(C)2” zone that Site 2 falls within, namely Seasons Villas and Seasons Monarch, are located to the immediate north-east and further west. Rural settlements including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site. The areas to the immediate southwest of Site 1 is an open storage site. Shek Kong Barracks is located to the south of the Site across Kam Tin Road (**Figure 1.1** refers).
- 2.1.2 Site 1 sits on a gently sloping land with gradient gradually descending from the southeast at about +13.50mPD towards the northwest at about +8.10mPD in general. Site 1 is currently sparsely vegetated. Site 2 involves vegetated land gradient gradually descending from the north at about +8.30mPD to the lowest point at the west at about +7.0mPD. The watercourse runs from the south towards the west. Site 2 also involves a “Y-shaped” local footpath, which connects the pavement along Kam Tin Road to the south via a local footbridge across the watercourse with the rural settlements to the north of Site 2 (**Figure 2.1** refers).



Existing View of Site 1 from Kam Tin Road



Existing vegetation at Site 1



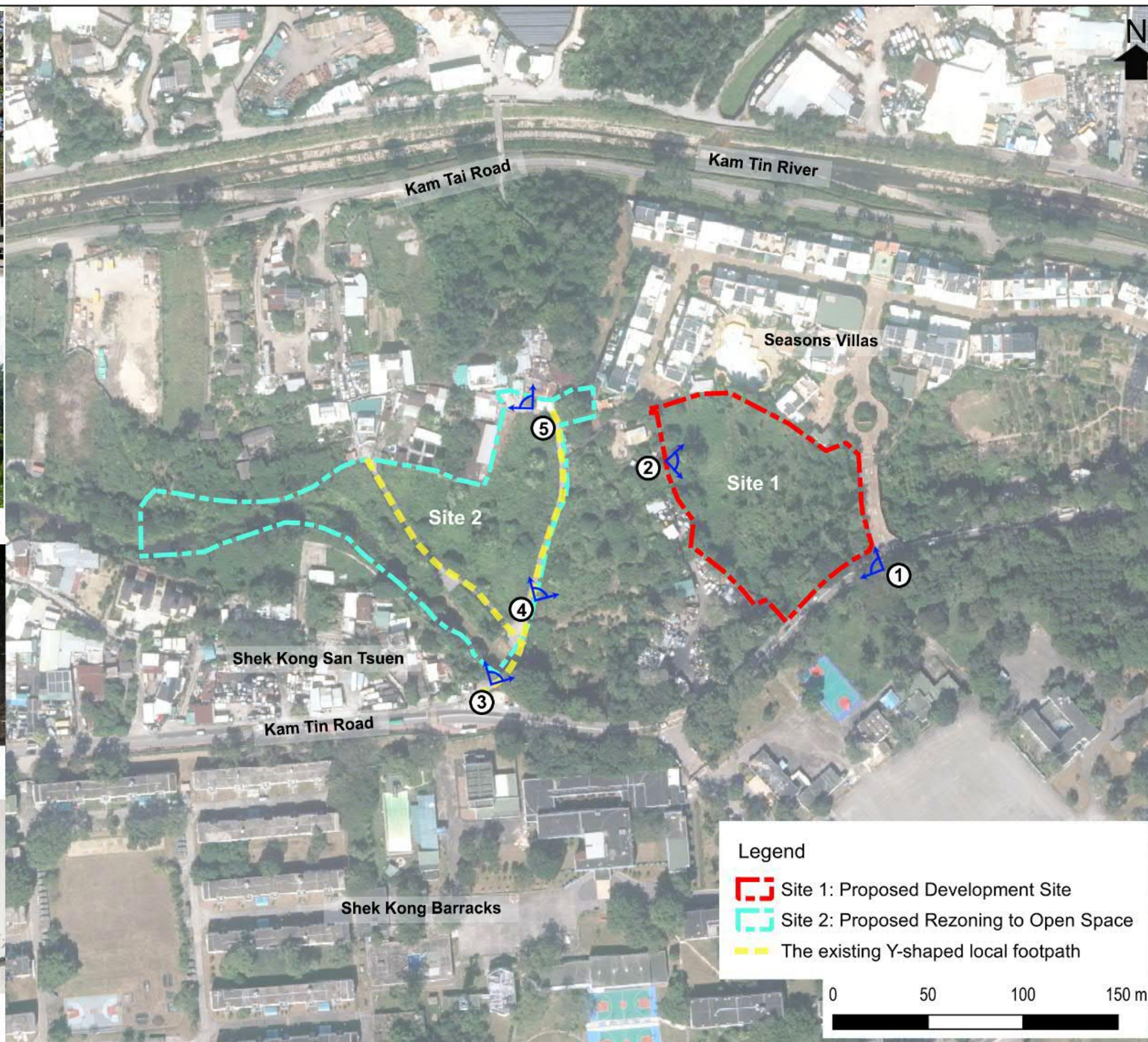
Existing entrance of local access in Site 2 connecting the local village / rural settlements with Kam Tin Road



Existing Y-shaped local footpath in Site 2



Domestic rural settlements to the north of Site 2



2.2 Land Status

2.2.1 The Site is composed of various Lots in DD 110 and adjoining Government Land (**Figure 2.2** refers). It has a total site area of about 20,883m², including Site 1 (about 8,580m²) and Site 2 (about 12,303m²). In Site 1, there is about 572m² of Government land involved, which mainly refers to the strip of Government land between Lot 519 RP (part) in D.D. 110 and the northern footpath along Kam Tin Road, which is deemed necessary for the Development Site to have street frontage and run in/out connecting Kam Tin Road. The distribution of private land and Government land is listed in **Table 2.1** while the ownership pattern of the private lots is listed in **Table 2.2**.

Table 2.1: Land Status

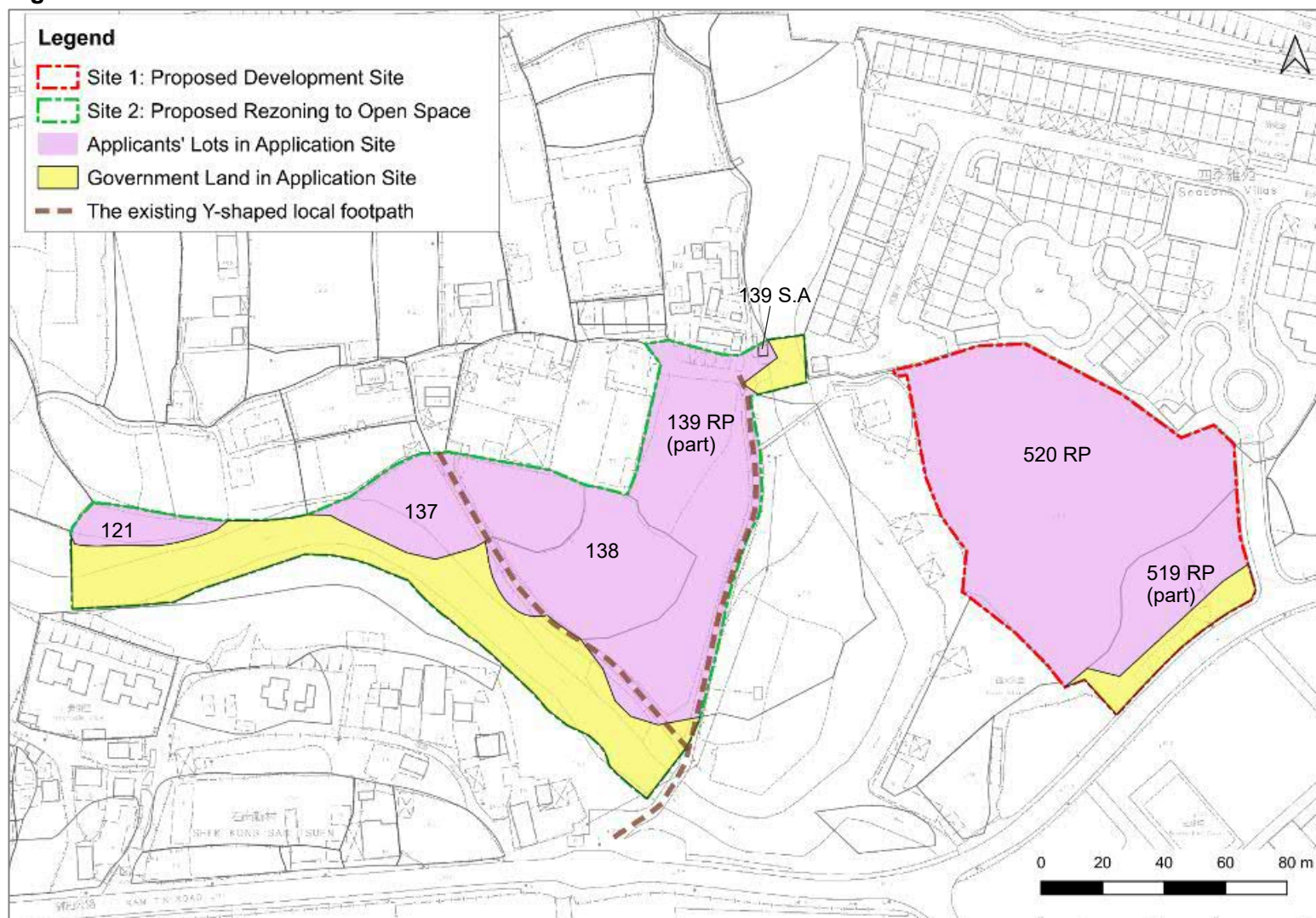
Area in Prevailing Zonings (m ²) (approx.)	Private Lot (m ²) (approx.)	G. Land (m ²) (approx.)	Total (m ²) (approx.)
Site 1: Development Site (Proposed Rezoning to “R(C)4”)			
R(C)2	84	0	84
O	7,924	572	8,496
Total	8,008 (93.3%)	572 (6.7%)	8,580 (100%)
Site 2: Open Space (Proposed Rezoning to “O”)			
R(C)2	8,255 (67.1%)	4,048 (32.9%)	12,303 (100%)
OVERALL			
OVERALL	16,263 (77.9%)	4,620 (22.1%)	20,883 (100%)

Note: The area of the private land is based on measurement in GIS only; the accurate area is subject to land survey when setting out the site boundary.

Table 2.2: Ownership of the Private Lots Involved

Private Lot in D.D. 110	Owner
Site 1: Development Site (Proposed Rezoning to “R(C)4”)	
Lot 519 RP (part)	Pacific Top Development Limited
Lot 520 RP	Pacific Top Development Limited
Site 2: Open Space Zone (Proposed Rezoning to “O”)	
Lot 121	Kimpton Investments Limited
Lot 137	Worldchamp Investments Limited
Lot 138	Worldchamp Investments Limited
Lot 139 S.A	Worldchamp Investments Limited
Lot 139 RP (part)	Worldchamp Investments Limited

Figure 2.2: Land Status Plan



2.3 Surrounding Context

2.3.1 The Site is located in an area with mixed land uses including village settlements, low-rise residential development, temporary workshops and open storages (**Figure 2.3** refers). Details of surrounding land uses are as follows:

- In a wider context, the Application Site lies at the bottom of a valley surrounded by slopes of the summit of Kai Kung Leng, Lam Tsuen Country Park to the further north.
- Predominantly low-rise settlements are found in Cheung Kong Tsuen, Tai Kong Po and Tsat Sing Kong at the foothill of Kai Kung Leng, in the north across Kam Tai Road and Kam Tin River.
- There are low-rise, low-density residential developments, namely Seasons Villas and Seasons Monarch, located to the immediate north-east of the Application Site (to the immediate north of Site 1) and further west to the Application Site.
- Low-rise rural settlements in Shek Kong San Tsuen and Pang Ka Tsuen are found to the west of the Site.
- Kam Tin River runs in parallel to Kam Tai Road to the north.
- Kam Tin Road is located to the south, with the proposed vehicular access of the Development Site (Site 1) immediately abutting Kam Tin Road. Shek Kong Barracks (with blocks of building heights ranging from about +15mPD to +39mPD) are located to the south of the Application Site across Kam Tin Road.
- The existing open storage site of vehicle components at the immediately south-west of Site 1 sits on a piece of paved land.
- Some land parcels in Kam Tin South located to the further south-west of the Application Site have been reserved for various residential developments (with rezoning yet to be initiated) with plot ratio ranging from 0.8 to 3 under Government's Land Use Review for Kam Tin South and Pat Heung.
- The existing Kam Sheung Road Station and Pat Heung Maintenance Centre located about 1.5km and 2km south-west of the Application Site respectively have been planned for high-rise residential/commercial developments with maximum building heights ranging from +69mPD to +109mPD.

Shek Kong Barracks

- 2.3.2 Shek Kong Barracks with Shek Kong Airfield is located to the south of the Development Site. Developments in close proximity to Shek Kong Airfield is subject to building height restriction of about +69mPD, as referred to the Plan of the Shek Kong Airfield Height Restriction No. YLM6917a. Developments in the Area would also be subject to occasional aircraft noise from aircraft operations at the Shek Kong Airfield (Para. 5.5 of Explanatory Statement of the approved KTN OZP refers).



Seasons Villas in "R(C)" zone



Open Storage site along Kam Tin Road



Shek Kong Barracks KONG A LENG



Shek Kong San Tsuen



Pang Ka Tsuen



Seasons Monarch in "R(C)2" zone



Kam Tin River



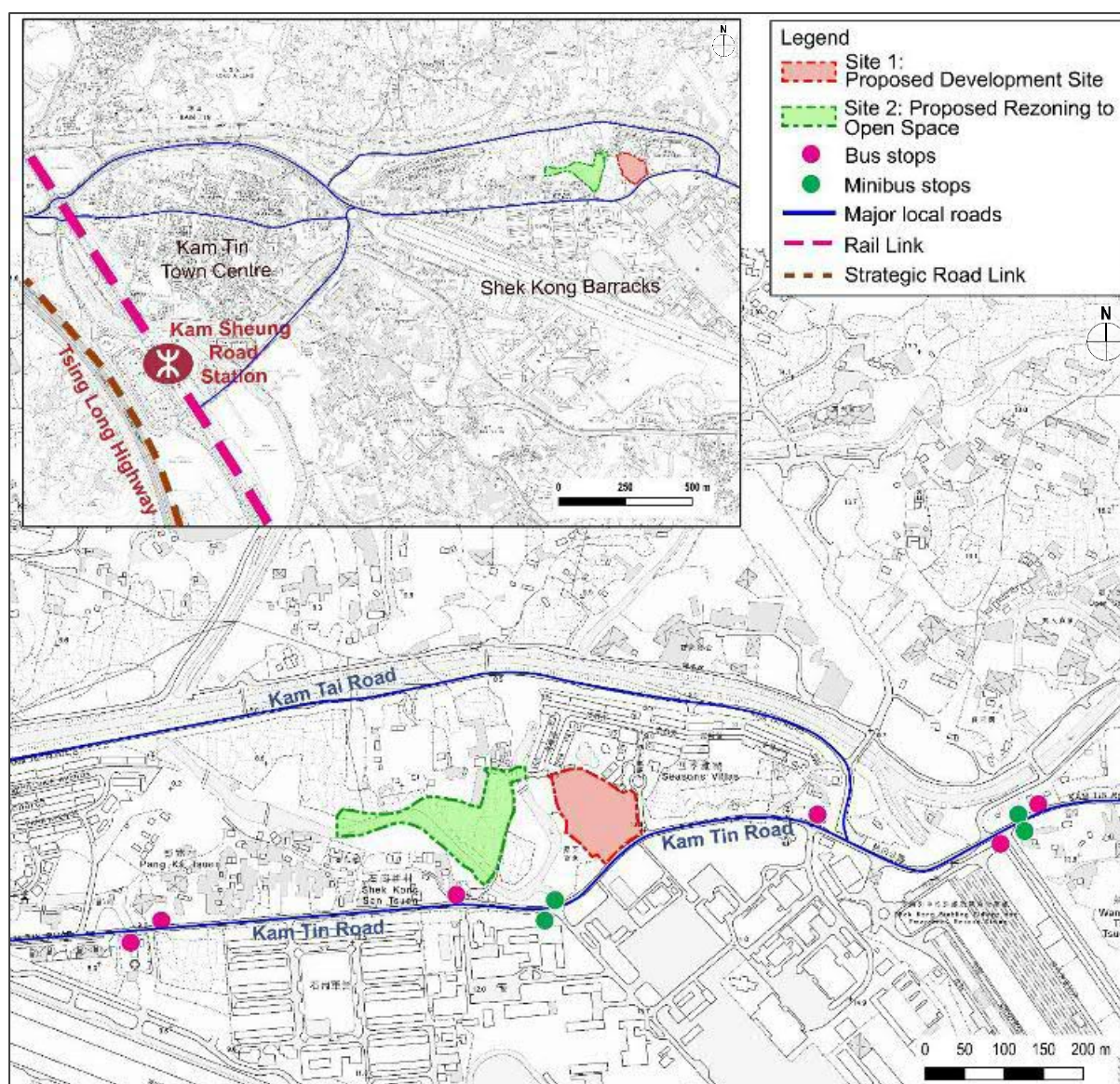
Cheung Kong Tsuen



2.4 Accessibility

2.4.1 As shown in **Figure 2.4**, both Site 1 and Site 2 are accessible via Kam Tin Road. Both sites are served by various franchised buses and minibuses which provide feeder public transport services to Kam Sheung Road MTR Station, Yuen Long Town Centre and Sheung Shui Town Centre. Bus/minibus stops along Kam Tin Road are within short walking distance from the Site. On a regional scale, the Site being in Kam Tin North, is strategically located in proximity to Kam Tin Town Centre and connected with the urban areas by strategic rail (i.e. West Rail Line) and road (i.e. Tsing Long Highway) link.

Figure 2.4: Local Accessibility of the Application Site (Site 1 and Site 2)



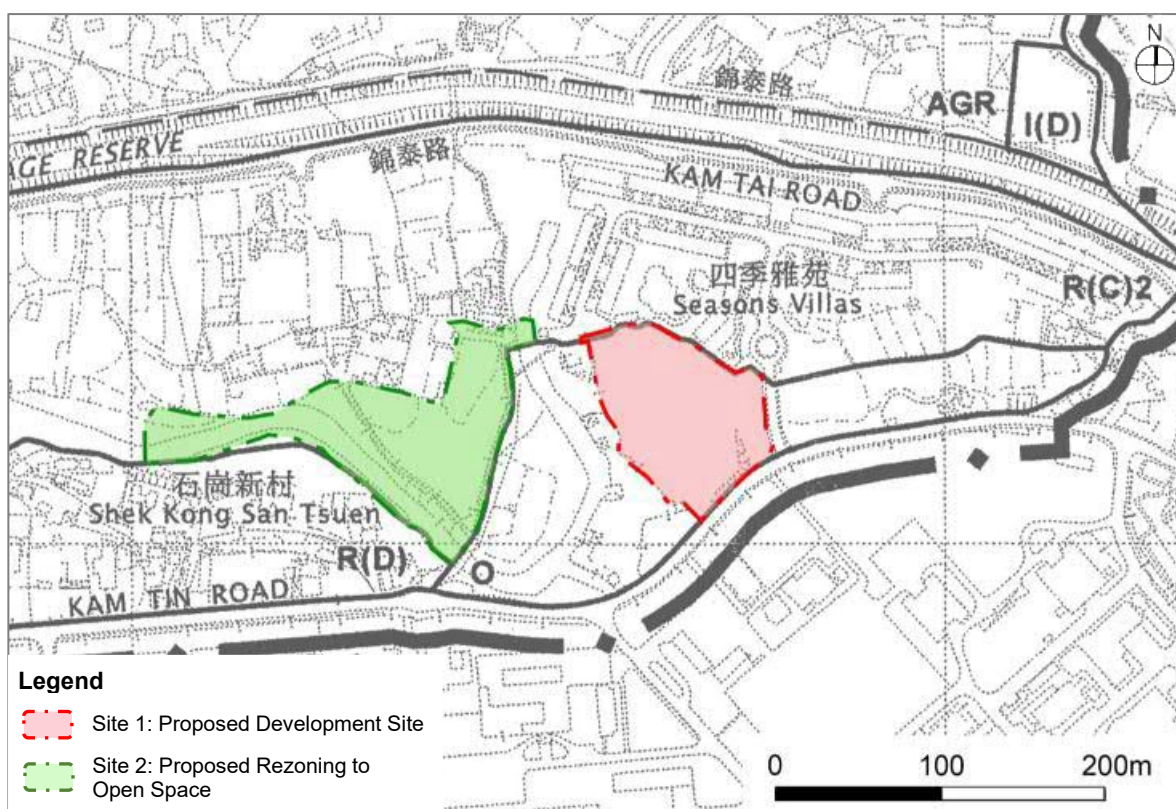
2.5 Zoning History

- 2.5.1 The Site was first zoned “Unspecified Use” on the Draft Kam Tin North Interim Development Permission Area (“DPA”) Plan No. IDPA/YL-KTN/1 gazetted on 5 October 1990. It was later re-zoned to “Residential (Group C) 2” (“R(C)”2) and “Open Space” (“O”) zone on the Draft Kam Tin North OZP No. S/YL-KTN/1 gazetted on 17 June 1994. Since then, the zoning of the Site remains unchanged.

2.6 Statutory Planning Context

- 2.6.1 Site 1 falls primarily within an area zoned “Open Space” (“O”) with a minor portion of it in the north falling within the “Residential (Group C) 2” (“R(C)”2) zone, while Site 2 falls entirely within an area zoned “R(C)”2 on the prevailing approved OZP No. S/YL-KTN/11 (**Figure 2.5** refers).
- 2.6.2 The planning intention of the “R(C)”2 zone, according to the Notes of the Approved OZP, is intended primarily for *“low-rise, low-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board”*. The Remarks of the Statutory Notes of the “R(C)”2 zone also specify that *“no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 0.4 and a maximum building height of 3 storeys (9m) including car park”*.
- 2.6.3 In addition, the planning intention of the subject “O” zone is intended primarily *“for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public”*.

Figure 2.5: Zoning Context Plan



(Extracted from Approved OZP No. S/YL-KTN/11)

2.7 Site Boundary Setting-out

- 2.7.1 For Site 1 proposed for residential development, it covers entirely Lot 520 RP and Lot 519 RP (part) in D.D. 110 bounded by Avenue de Versailles to the east. Site 1 also covers the strip of Government land to the southeast of Lot 519 RP (part) in D.D. 110 bounded by Kam Tin Road to allow for street frontage and run in/out connecting to Kam Tin Road. This strip of Government land largely encroaches onto Kam Tin Road widening planned by Highways Department (HyD)¹. Should this S12A be approved and the strip of Government land be granted to the Applicants, the Applicants are willing to reserve and surrender the part of land for Kam Tin Road widening upon request by the Government in the future.
- 2.7.2 For Site 2 proposed for rezoning to “Open Space” zone, it mainly covers the private lots owned by the Applicants, which are currently zoned “R(C)2”, including Lot Nos. 121, 137, 138, 139 S.A and 139 RP (part) in D.D. 110, as well as the adjoining Government land bounded by the “Residential (Group D)” zone and the subject site of the approved S16 Planning Application No. A/YL-KTN/761 to the south.

¹ The actual program for the road widening of Kam Tin Road by Highways Department is yet to be confirmed.

2.7.3 Considerations of site boundary setting-out are illustrated in **Figures 2.6 and 2.6a** below.

Figure 2.6: Considerations of Site Boundary Setting-out

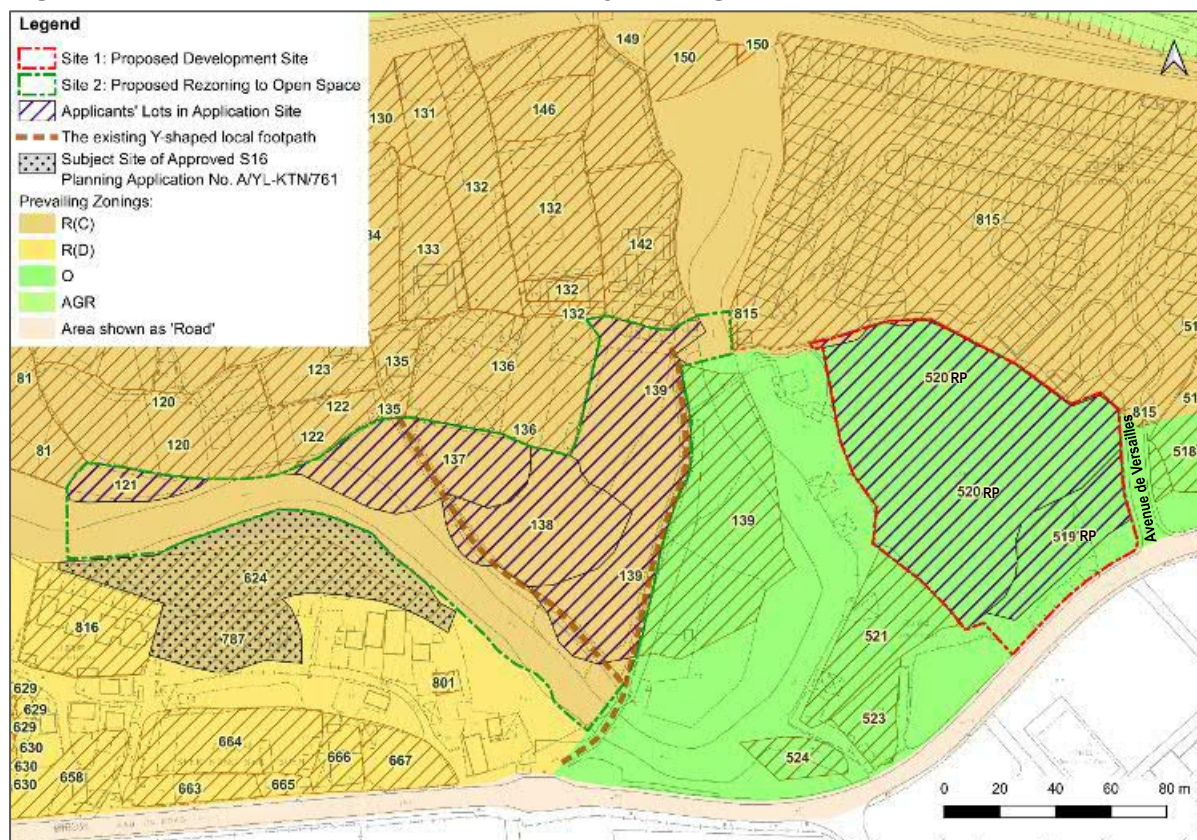


Figure 2.6a: Road Widening Scheme of Kam Tin Road by Highways Department



(extracted from Figure 2.2 of TIA in Appendix 6)

2.8 Government's Policies to Increase Housing Supply

2.8.1 The Government has put strong emphasis on increasing supply of housing land since ten more years ago to resolve the housing and land shortage problems in Hong Kong, even though the market value of private residential properties is dropping in the recent years. Some of the major policies to increase housing land supply are highlighted as follows:

Long Term Housing Strategy

2.8.2 The Long Term Housing Strategy ("LTHS") was first released by the Transport and Housing Bureau on 16 December 2014 to address the structural issues pertaining to Hong Kong's housing problem, and is being updated annually to make timely adjustments accordingly. With reference to the latest Annual Progress Report released in November 2024, the Government will put forward the following three directions:

- (a) To continue adopting the "supply-led" and "flexible" principles to increase housing supply;
- (b) To enhance the housing ladder to promote home ownership among young people; and
- (c) To safeguard the rational use of public rental housing (PRH) resources and encourage PRH tenants to move up the housing ladder.

2.8.3 Based on the latest Annual Progress Report of LTHS, the total housing supply target for the ten-year period from 2025-26 to 2034-35 is around 440,000 units, including public and **private housing supply target** of 308,000 units and **132,000 units** respectively. The public/private split for the supply of new housing units would maintain at 70:30. The Government will make available land capable of providing around **80,000** private housing units through land sale and railway property developments in the coming five years.

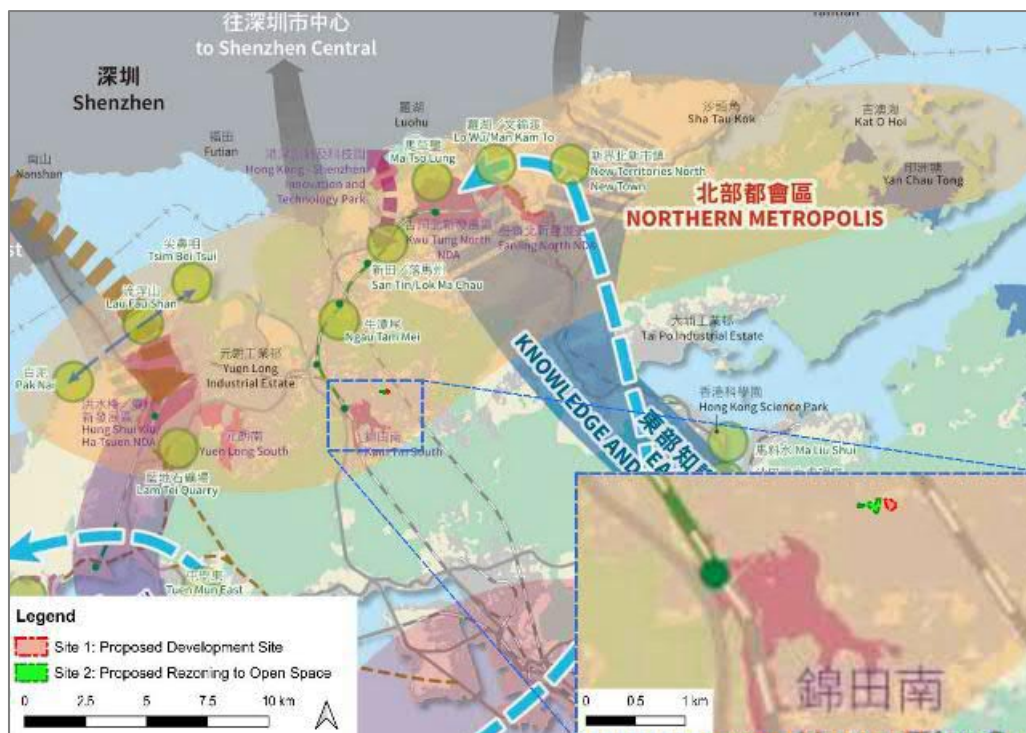
Task Force on Land Supply

2.8.4 The Government endorsed the final report completed by the Task Force on Land Supply (the "Task Force") by end of 2018 with recommendations to the overall land supply strategy and prioritizing different land supply options for the Government. **"Unleashing development potential of private agricultural land" in the NT is one of the three short-to-medium term supply options suggested by the Task Force after wide consultations with the public.** In this regard, the Applicants' intention in rezoning the inactive and privately own agricultural land within the Site for residential uses echoes with the policy directive of delivering housing supply in short to medium term.

The Northern Metropolis Development Strategy

- 2.8.5 The *Northern Metropolis Development Strategy* (“the Development Strategy”) is formulated on the basis of the HK 2030+, which is unveiled in the Policy Address 2021, to meet the medium to long term land demand. The Northern Metropolis encompasses an area of about 30,000 hectares, covering two district administration areas: Yuen Long and North Districts, which include the new towns in Yuen Long, Tin Shui Wai, Fanling / Sheung Shui, various NDAs and development nodes in different planning and construction stages as well as their neighbouring rural areas. The Northern Metropolis is aimed to provide multi-functional land uses with highly concentrated residential and working population to drive the economic development in Hong Kong for the next 20 years, which would be the major source of housing supply in the period of 10 to 15 years after 2031-32. The extent of the Northern Metropolis would marginally cover the areas of Kam Tin North including the Application Site (**Figure 2.7** refers).

Figure 2.7: The Application Site within the Northern Metropolis

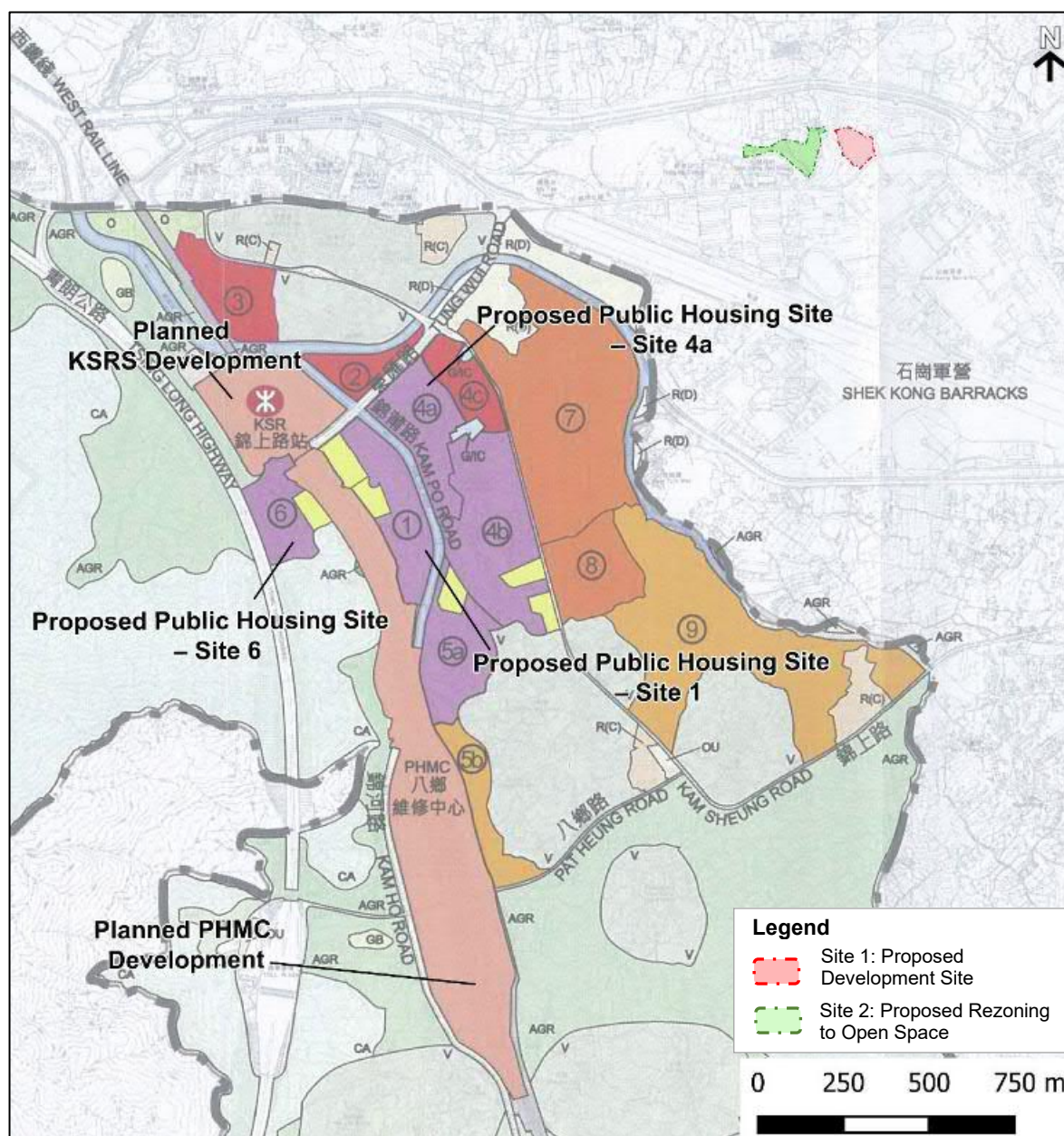


2.9 Land Use Review of Kam Tin South and Pat Heung

- 2.9.1 As announced in the 2013 Policy Address, the Government would increase the supply of housing land in short to medium term by taking forward the planning for residential development at West Rail Line (“WRL”) Kam Sheung Road Station (“KSRS”) and Pat Heung Maintenance Centre (“PHMC”) as well as conducting engineering studies to identify potential land for both public and private housing development in the adjoining Kam Tin South area.

- 2.9.2 In March 2014, Planning Department and the Mass Transit Railway Corporation Limited have jointly completed a land use review (“LUR”) for Kam Tin South and Pat Heung Area with the aim to identify suitable sites within the study area of about 785 hectares, which falls within the boundary of the Kam Tin South OZP. As illustrated in **Figure 2.8** and **Table 2.3**, a total of 14 potential development sites with a total area of about 152 hectares had been identified in Kam Tin South area for both private and public housing developments. The Application Site is located at about 1.3km north-east to these potential development sites in the LUR.
- 2.9.3 According to the LUR, the Kam Tin South area will be developed into a suburban township, where potential housing developments are planned within walking distance from the KSRS. The development intensity of the 14 nos. of potential development sites has paid due consideration to the building height restrictions of the Shek Kong Airfield. The KSRS and PHMC sites and the adjoining public housing sites are allocated with the maximum plot ratio (PR) of 3.0 and maximum building heights (BHs) ranging from 69mPD to 109mPD where appropriate. For private housing sites further away from the railway station, a lower PR and BHs have been designated.

Figure 2.8: Potential Development Sites identified in the Land Use Review for Kam Tin South and Pat Heung



- 2.9.4 The KSRS and PHMC sites (with a total area of about 41 hectares) are reserved for private residential/commercial developments. Five sites (with a total area of 40 hectares) adjacent to the KSRS are designated for medium-density public housing development. The rest of the potential housing sites (about 71 hectares) are designated for private residential use. As shown in **Table 2.3**, upon full development, the total of 14 sites (illustrated in **Figure 2.8** above) would produce over 35,400 flats for a total population of over 90,000. Various GIC and commercial facilities would be provided appropriately to serve the future population intake.
- 2.9.5 5 out of 14 sites identified in the LUR (i.e. KSRS site, PHMC site and Public Housing Sites 1, 4a and 6) were rezoned in 2015 and 2017 for residential and related uses, including “Residential (Group A)” (R(A)) and “Other Specific Uses” (“OU”) annotated “Railway Station and Public Transport Interchange with Commercial/Residential Development”, and “Railway Station and Public Transport Interchange with Commercial/Residential Development)” subject to a plot ratio restriction of 3 and building height restrictions ranging from 69mPD to 109mPD. The remaining 9 sites (i.e. Sites 2, 3, 7, 4b, 4c, 5a, 5b, 8 and 9) with rezoning yet to be initiated for residential uses with target PR ranges from 0.8 to 3 are currently zoned “AGR”, “CDA”, “R(C)”, “R(D)” and “OU(Rural Use)” on the Approved OZP.

Table 2.3: Potential Development Sites identified in the Land Use Review for Kam Tin South and Pat Heung

Site	Location	Prevailing Zoning under OZP [Development restriction]	Proposed Zoning under the Land Use Review [Development restriction]	Planned/ Target PR ^[1]	Expected Completion	No. of Units (about)
Potential Development Sites with Rezoning Completed/ at Advance Stage						
1	KSRS	“OU(Railway Station and Public Transport Interchange with Commercial/Residential Development)” [Dom GFA: 186,234m ² ; Non-dom GFA: 53,535m ² ; BH: 69mPD]		3.0	2024-2025 ^[2]	2,692 ^[3]
2	PHMC	“OU(Railway Station and Public Transport Interchange with Commercial/Residential Development)” [Dom GFA: 422,340m ² ; Non-dom GFA: 3,000m ² ; BH: 109mPD for Area (a)]		3.0	No available information	6,060 ^[3]
3	Public housing development at Site 1	“R(A)” [PR: 3.0; BH: 69mPD]		3.0	2026/27 to 2027/28 ^[4]	4,100 ^[4]
4	Public housing development at Site 4a	“R(A)” [PR: 3.0; BH: 69mPD]		3.0	2027/28 to 2030/31 ^[4]	3,800 ^[4]
5	Public housing development at Site 6	“R(A)” [PR: 3.0; BH: 69mPD]		3.0	2026/27 to 2027/28 ^[4]	1,700 ^[4]
Potential Development Sites with Rezoning to be Initiated						
6	Private housing development at Site 2	“CDA” [PR: 0.4 BH: 3 storeys (9m)]	N/A	2.1	N/A	452 ^[1]
7	Private housing development at Site 3	“R(C)” [PR: 0.8, SC: 40%; BH: 4 storeys (12m)]	N/A	2.1	N/A	1,106 ^[1]
8	Private housing development at Site 7	“R(D)” [PR: 0.2 BH: 2 storeys (6m)]	N/A	1.5	N/A	3,018 ^[1]
9	Public housing development at Site 4b	OU(Rural Use) [PR: 0.4 BH: 3 storeys (9m)]	N/A	3.0	N/A	5,700 ^[1]
10	Private housing development at Site 4c	OU(Rural Use) [PR: 0.4 BH: 3 storeys (9m)]	N/A	2.1	N/A	626 ^[1]

Site	Location	Prevailing Zoning under OZP [Development restriction]	Proposed Zoning under the Land Use Review [Development restriction]	Planned/ Target PR ^[1]	Expected Completion	No. of Units (about)
11	Public housing development at Site 5a	Agriculture [nil]	N/A	3.0	N/A	3,300 ^[1]
12	Private housing development at Site 5b	Agriculture [nil]	N/A	0.8	N/A	289 ^[1]
13	Private housing development at Site 8	Agriculture [nil]	N/A	1.5	N/A	882 ^[1]
14	Private housing development at Site 9	Agriculture [nil]	N/A	0.8	N/A	1,676 ^[1]
						Total No. of Units: 35,401
Remarks: [1] TPB Paper No. 9590 refers. [2] Legislative Council Paper No. PWSC(2018-19)17 refers. [3] RNTPC Paper No. 6/15 refers. [4] Traffic Impact assessment Report of Sites 1, 4a and 6 and the approved Planning Briefs refer.						

3. REVIEW OF THE “RESIDENTIAL (GROUP C)” AND “OPEN SPACE” ZONES

3.1 Development Potential of “R(C)” zones in Rural Context

Permissible Plot Ratio and Building Height Restrictions

- 3.1.1 The planning intention of “R(C)” zone is “*primarily for low-rise, low-density residential developments*”. Areas zoned “R(C)” and its sub-zones falling within rural OZPs constitute a total of about **464.91 ha** of rural land in North East New Territories, Yuen Long, Tuen Mun, Sai Kung and parts of Lantau Island². Upon preliminary review of the statutory notes, the “R(C)” zones in the rural OZPs are generally subject to a plot ratio of 0.4 and a building height of 3 storeys including carport (9m). **Some rural “R(C)” zones are permissible for developments with plot ratios widely ranging from 0.2 to 1.58; and subject to maximum number of storeys of 2 to 7 (excluding basement levels) and various building height restrictions ranging from 6m to 24.5m or as high as 55mPD³.**

3.2 Open Space Provision in the Yuen Long Area

Sufficient Planned Open Space Provision in Yuen Long Area in 2023

- 3.2.1 According to the Hong Kong Planning Standards and Guidelines (HKPSG), a minimum of 1m² per person, each for district open space and local open space, should be provided. **According to latest available information in August 2023⁴, there are 15.43ha and 78.61ha of surplus district open space and surplus local open space respectively in the Yuen Long District.**

- 3.2.2 The open space provision covered by Kam Tin North OZP has been reviewed. It is revealed that there would be a deficit of about 3.94 ha of district open space but a surplus of about 1.07 ha of local open space in Kam Tin North, where the Application Site is located.

Insufficient Planned Open Space Provision in Kam Tin North Area since Late 2022

- 3.2.3 In Dec 2022, PlanD proposed to amend the Kam Tin North OZP to enable public housing development in Sha Po near Fung Kat Heung, providing a total of about 16,300 housing units for a design population of about 46,000 persons. Taking into

² The “R(C)” zones on the approved Discovery Bay Outline Zoning Plan No. S/I-DB/6 are excluded, as the area specific planning and development background different from other rural OZPs. There are “R(C)” zones on this OZP subject to building height restriction of 25 storeys and 132mPD as the highest.

³ There are three areas zoned “R(C)1” and “R(C)2” on the approved Tung Chung Valley Outline Zoning Plan No. S/I-TCV/2 subject to a relatively high building height restriction of 30mPD, 45mPD and 55mPD. The areas have current site formation levels of about +20mPD to +39mPD.

⁴ With reference to *Annex VIII – Provision of Major Community Facilities and Open Space in Yuen Long District Council Area* of TPB Paper No. 10916 – Consideration of Representations No. TPB/R/S/YL-KTN/10 – R1 to R5 and Comments No. TPB/R/S/YL-KTN/10 – C1 to C2 for Consideration by the TPB on 1.9.2023.

account the additional planned population yet with no initiative of designating additional land to be zoned “O”, the provision of local open space in the planning scheme area of Kam Tin North would see a surplus from previous +5 ha to +1.07ha, which has reduced by 3.93ha; while the district open space provision would result in a deficit, down to 3.94ha. According to the relevant TPB Paper of OZP amendment, there will be at least some 5.25 ha of local open space within the planned public housing development zoned “R(A)” in Sha Po, aimed for serving the future residents of the public housing development. **Table 3.1** below shows the comparison of the planned provision of open space on the approved OZP and the previous OZP.

- 3.2.4 In view of the occurrence of the deficit in district open space in Kam Tin North, the Applicants have reviewed the indicative development scheme to explore means to compensate or, at the very least, not to contribute to the further loss of the open space area resulting from the proposed development, by proposing a swapping of the area of Site 1 (for residential development) in exchange for future provision of open space area in Site 2.

Table 3.1: Comparison of the Planned Provision of Open Space on the Approved OZP and the Previous OZP

Planning Scheme Area	District Open Space (Surplus/Deficit)		Local Open Space (Surplus/Deficit)	
	Previous OZP (S/YL-KTN/9)	Approved OZP (S/YL-KTN/11)	Previous OZP (S/YL-KTN/9)	Approved OZP (S/YL-KTN/11)
Kam Tin North	+1ha	-3.94ha	+5ha	+1.07ha

3.3 Status of Private Land zoned “Open Space” in Yuen Long Rural Areas

Considerable Amount of Private Land zoned “Open Space”

- 3.3.1 Amongst all the areas in “O” zones covered by Yuen Long rural OZPs (of total area of about 50.93ha), the total amount of private land accounts to about 21.37ha (about 42%). The proportion of private land in area zoned “O” in the respective planning scheme areas in Yuen Long rural areas ranges from 10% to as much as 72%. In the prevailing Kam Tin North OZP where the Application Site falls within, there is about 2.89ha of private land zoned “O” taking up about 65% of the land area in the respective “O” zones (**Table 3.2** below refers).

Table 3.2: Area and Proportion of Private Lots in Respective “O” Zones in Rural Yuen Long Areas

Planning Scheme Area	Area zoned “O”	Area of Private land zoned “O”	Proportion of Private Land in Respective “O” Zone
Kam Tin North	4.45ha	2.89ha	65%
Kam Tin South	3.20ha	0.33ha	10%
Shek Kong	0.63ha	0.41ha	66%
Mai Po & Fairview Park	6.35ha	4.54ha	72%
Ping Shan	3.46ha	0.90ha	26%
Tai Tong	7.86ha	1.83ha	23%
Tong Yan San Tsuen	16.24ha	10.48ha	65%
Nam Sang Wai	8.75ha	Negligible (<0.005ha)	Negligible
Ngau Tam Mei	Nil	Nil	Nil
Pat Heung	Nil	Nil	Nil
Ha Tsuen Fringe	Nil	Nil	Nil
Lau Fau Shan & Tsim Bei Tsui	Nil	Nil	Nil
Sheung Pak Nai & Ha Pak Nai	Nil	Nil	Nil
Total	50.93ha	21.37ha	42%

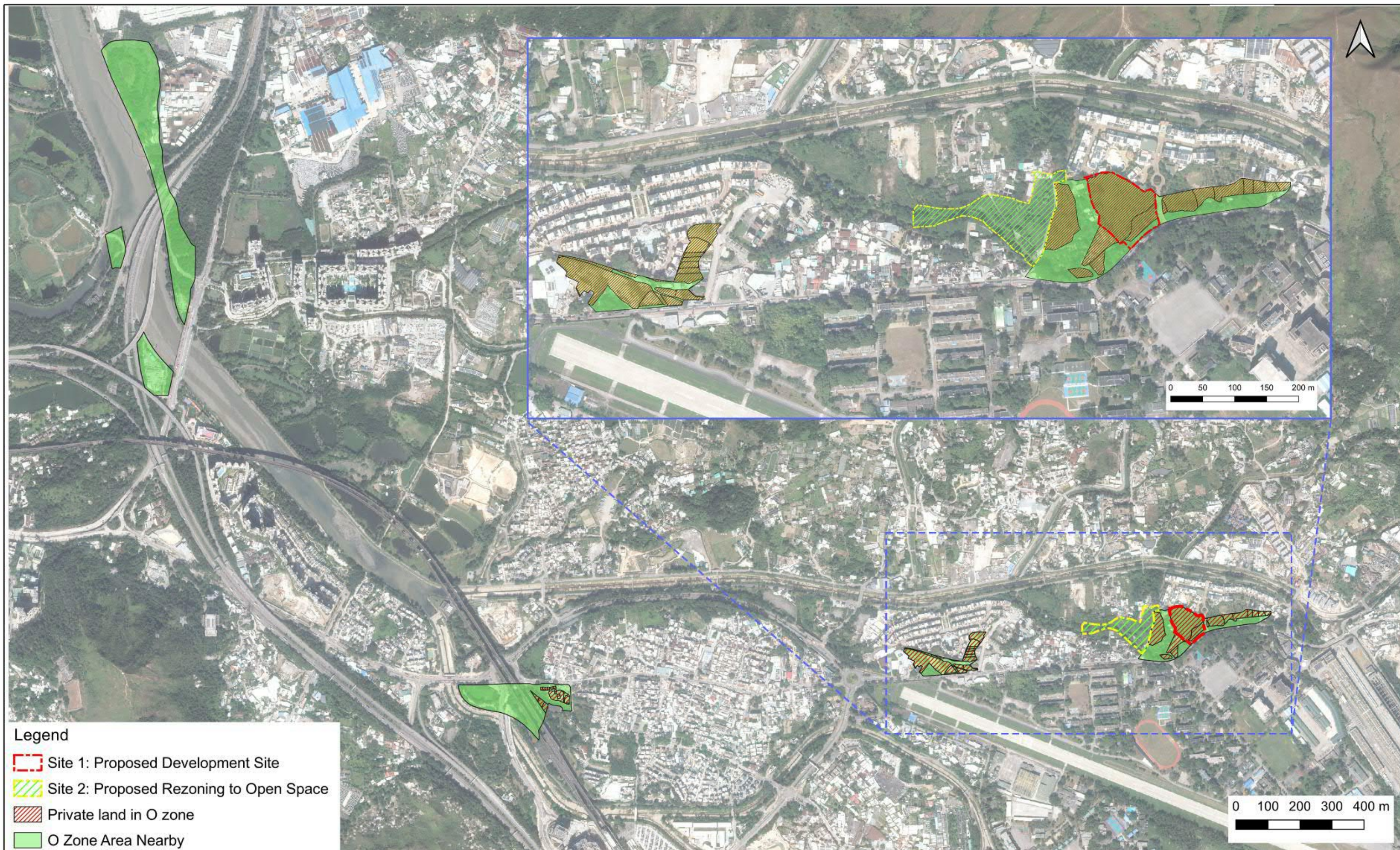
No Signs of Implementation of Open Space in Private Lots Zoned “Open Space”

- 3.3.2 The review of survey sheets and the review of latest aerial photographs from Lands Department reveals that the private land zoned “O” in Yuen Long rural areas is mostly occupied by land parcels intermingled with temporary structures, vacant paved land, vegetation, fallow agricultural land and open storage sites, similar to the current condition of the land zoned “O” included in the Application Site (**Figure 3.1** refers). As observed from available aerial photographs, there appears no signs of provision of outdoor open-air open space for recreational uses in the private lots zoned “O” in Yuen Long.

Unrealised Development Potential of Private Lots in the “Open Space” Zone in Kam Tin North and the Application Site

- 3.3.3 The 2.9ha of private land zoned “O” in the prevailing Kam Tin North OZP is occupied by two areas abutting Kam Tin Road to the south of the Seasons Villas and Seasons Monarch respectively. The two areas have been zoned “O” since the gazettal of the first Kam Tin North OZP in June 1994 (**Figure 3.1** refers). However, there has been no implementation programme for a long period (i.e. 31

years) for the provision of open space in the subject “O” zones, let alone any open space development on the private land in these two “O” zones. Having regard to the non-implementation of the private land zoned “O” and to echo with Government’s policy initiatives of optimising land resources, the Applicants considered it is timely to unleash the full development potential of the “O” zone in the Application Site by proposing compatible and gainful uses such as the proposed residential use.



PLANNING LIMITED
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Private Land within "Open Space" Zones Nearby

S12A Amendment of Plan Application –
Various Lots in D.D. 110 and
Adjoining Government Land,
Shek Kong, Yuen Long, N.T.

Source: Google World Image;
OZP Nos. S/YL-KTN/11, S/YL-KTS/15 and S/YL-NSW/10
from OZP Portal; iC1000 from CSDI

Figure 3.1

Planning Statement

Date: 17 July 2025

4. THE INDICATIVE DEVELOPMENT PROPOSAL

4.1 Indicative Development Proposal

Residential Development

- 4.1.1 An Indicative Master Layout Plan ("MLP") (**Appendix 1** refers) illustrates the Proposed Development at Site 1 with a total site area of about 8,580m². With a maximum PR of 1.0, the indicative development scheme yields a total domestic Gross Floor Area ("GFA") of not more than 8,580m², providing about a total of 240 residential units. It comprises a total of 6 nos. of residential towers with 6 storeys above ground (including G/F for entrance lobby / car park / E&M facilities). With site formation level at 10.4mPD, the referencing building height is about 28.9mPD.
- 4.1.2 The 1-storey clubhouse with green roof is located in the central portion; the sewage treatment plant (STP) involves 1 storey above ground and the underground storage tank; while the stormwater storage tank (SST) involves one storey below ground (tentatively below Tower 3 and Tower 4). Carparking spaces and L/UL bays are provided on the ground level, minimising the need for extensive excavation.
- 4.1.3 The site formation level is set at 10.4mPD. As the spot level of the run in/out on Kam Tin Road is at about 13mPD, it takes about 20.8m for the internal access ramping down to 10.4mPD with a gradient of 1:8. Further lowering the site level would require longer ramp, affecting the arrangement of internal transport facilities. Therefore, the proposed site formation level at 10.4mPD is considered appropriate.
- 4.1.4 The purpose of this Indicative MLP is to demonstrate the development intensity of the rezoning proposal is appropriate and feasible. A set of architectural drawings (**Appendix 1**) including the indicative MLP, G/F plan and Section Plan is devised for reference only and is subject to detailed design at later stage. Development schedule of the Proposed Development is provided in **Table 4.1**.

Table 4.1: Key Development Parameters

Key Parameters		
Development Site Area ⁽¹⁾	About 8,580 m ²	
Max. Plot Ratio (domestic only)	1	
Max. GFA (domestic)	About 8,580 m ²	
Proposed Max. Building Height (BH)	Residential Towers	6 storeys above Ground (Reference BH at about 28.9mPD)
	Clubhouse	1 storey above Ground
	Sewage Treatment Plant (STP)	1 storey above Ground, with the tank underground
	Stormwater Storage Tank (SST)	underground
No. of blocks	Residential Towers: 6 Clubhouse: 1 STP: 1	
Site Coverage	Not more than 56%	
No. of units	240	
Average unit size	About 35.8 m ² in GFA	
Anticipated Population	648 ⁽²⁾	
Private Communal Open Space	Not less than 648 m ² (1 m ² per person)	
Greenery provision	Not less than 20% of development site area	
Target complete year	Year 2031	

Note

(1): The area of the private land is based on measurement in GIS only; the accurate area is subject to land survey when setting out the site boundary.

(2): Average household size of 2.7 is adopted, by making reference to the territorial average household size in the 2021 Population Census.

Open Space Portion

4.1.5 This Application also involves rezoning of a site (Site 2) from “R(C)2” to “O” zone, which is located to the immediate west of the prevailing “O” zone that the Development Site falls within. Site 2 has an area of about 12,303m². As a result, there will be a net increase in about 3,807m² in total area of “Open Space” zone⁵ under the prevailing Kam Tin North OZP.

4.1.6 Site 2 involves private land area of about 8,255m², which is all owned by the Applicants. Implementation of Site 2 will be detached from the development of Site 1 and will not form part of the private residential development of Site 1 nor

⁵ Net increase area zoned “O” = 12,303m² – 8,496m² (area currently zoned “O” in Site 1) = 3,807m².

condition or requirement in the land exchange application of Site 1. Upon approval of the rezoning request including, the rezoning of Site 2 from “R(C)2” to “O” zone, the Applicants are prepared to keep their private land in Site 2 as status quo until the Government has a program to resume the land in Site 2 for implementation of the public open space.

4.2 Sensible Design Measures

4.2.1 In view of the sub-urban township location of the Application Site, the Applicants have made tremendous efforts to incorporate various sensible design measures aiming to enhance the existing built environment while respecting the existing building height in the vicinity. The sensible design measures included are as follows:

a. **Appropriate Building Height**

The building height of the Proposed Development has been carefully devised to create a harmonious built form of the adjacent suburban township. The building height is at maximum 6-storey above ground (28.9mPD). The Proposed Development is in general visually compatible with surrounding private residential developments (about +16 to +18mPD), village clusters (about +13 to 15mPD), and blocks in the Shek Kong Barracks (about +15 to +39mPD), which could enhance the visual interest of the Proposed Development.

b. **Maintaining Building Setback from Shek Kong Barracks**

There is at least 19m setback distance of the nearest blocks (i.e. T1 and T6) from the southern site boundary of Site 1 / about 28m from the site boundary of Shek Kong Barracks. This could maintain minimal visual impact to the Barracks.

c. **Podium Free Design**

The towers sit on ground level with car parking spaces and L/UL bays either outdoor or below towers. The clubhouse with green roof is located in the central portion. This would create a comfortable living environment internally as well as reducing the bulkiness as viewed from the outside.

d. **Central Courtyard Design**

As the clubhouse with green roof is located in the central portion, it creates greenery in the central part; providing visual relief to the future residents surrounding it. It also provides adequate central separation amongst the three clusters of towers.

e. **Outdoor Communal Open Space and Landscaped Area in the North**

The area in the northern portion (i.e. to the north of T3 and T4) is reserved mainly for communal open space and landscaped area for the future residents. Although there would be underground SST, the Ground level provide opportunities for tree planting (in raised planter) and recreational use. It also acts as a buffer between the blocks of the Proposed Development and Seasons Villas to the north.

f. **Setback from Site Boundary with Periphery Tree Planting**

It is aimed to maintain at least 5m setback from site boundaries of each side,

which provides space for periphery tree planting to soften the edge of the development site.

g. **Building Gaps allowing Wind Penetration**

The six blocks are situated in three main clusters, maintaining at least 15m separation between each of the clusters. There is also at least 5m building setback from site boundary of each side. As revealed from Air Ventilation Assessment – Expert Evaluation (AVA-EE) in **Appendix 5**, the building gaps and building setback could facilitate wind permeability. The building height is 6-storey only so that the wind flowing atop the towers can still reach further downwind pedestrian area. Therefore, it is concluded that the Proposed Development with the design measures is unlikely to impose significant adverse impact on the surrounding sites from air ventilation perspective.

4.3 Landscape Considerations

4.3.1 The proposed building disposition and orientation is designed to maximise the area for landscape and greening for the enjoyment of the future residents. Where possible a landscape buffer will be formed around the perimeter of the Development Site allowing for the planting of trees and shrubs. This will help integrate the proposals into their future landscape context and minimise the impacts on surrounding communities while enhancing the overall landscape quality of the area. Please refer to **Figure 4.1** Landscape Master Plan for the Proposed Development and the details on the landscape design are presented in the Landscape Proposal in **Appendix 2**.

Incorporation of Boundary Landscape Treatment and Setting Back of the Fence Wall along Kam Tin Road

4.3.2 Where space allows, the landscape buffer will be planted with new tree and shrub planting to help integrate the Proposed Development at Site 1 with its surrounding, provide screening effect in views from the adjacent village areas and maximise areas of visible greenery. Climbing plants are used to soften the form of the proposed wall. There is also landscape setback from Kam Tin Road to enhance appearance of the boundary.

Various Landscape Treatments for Future Residents

4.3.3 The landscape design for the residential development should provide an enjoyable route home, with landscaped main entrance, streetscape for the internal circulation and featuring of the lobby entrances of the towers. The clubhouse, swimming pool terrace and outdoor garden areas provide opportunities for landscape features for the enjoyment of the future residents. Tranquil Trail is also proposed under the dappled shade of the trees within the landscape screen planting (i.e. along the western boundary of the Development Site).

Open space Proposal and Site Coverage of Greenery

4.3.4 Private Open Space of not less than 648 m² will be provided in the northern part as well as at the roof top of the central clubhouse. The provision will adequately satisfy the relevant open space requirements in the HKPSG (i.e. 1m² per person).

4.3.5 The site coverage of greenery provision will be not less than 20% of the area of the Development Site, in accordance with the Buildings Department Practice Notes PNAP APP-152 Sustainable Building Design Guidelines and DEVB Technical Circular (Works) No. 4/2020.

4.4 Vehicular Access Arrangement and Internal Transport Facilities

4.4.1 Vehicular access to the Development Site will be provided from Kam Tin Road (to the south of the Site). Internal transport facilities would be provided at G/F in accordance with the requirements as stipulated in the Hong Kong Planning Standards and Guidelines (“HKPSG”). The Internal transport provision for the Schematic Design is presented in **Table 4.2**.

Table 4.2: Internal Transport Facilities

Type of Facilities	Proposed Provision
Private Carparking Space	Total 79 *
▪ Residents	67
▪ Visitors	12
Motorcycle Parking Spaces	3
Bicycle Parking Space	16
L/UL Bay for Heavy Goods Vehicle	6

* Incl. 2 accessible carparking spaces

4.5 Implementation Programme

4.5.1 Following the approval of this S12A Planning Application by the TPB, appropriate lands procedure and building plan submission will be carried out. It is anticipated that the Proposed Development will be completed in 2031.

Figure 4.1: Landscape Master Plan (extracted from Appendix 2)



5 PROPOSED ZONING AMENDMENTS

5.1 The Rezoning Proposal

- 5.1.1 Site 1 currently falls within area zoned “R(C)2” and “O” on the approved Kam Tin North OZP. The portion of the Site located in the prevailing “R(C)2” zone is subject to a maximum plot ratio of 0.4 and a maximum building height of 3 storeys (9m).
- 5.1.2 Having regard to the latest policy initiatives in increasing housing supply, local planning context in transforming Kam Tin area from a rural to suburban township as well as development compatibility with surrounding developments, this rezoning proposal aims to put forward a site-specific “Residential (Group C) 4” (“R(C)4”) zone for Site 1 to enable the proposed residential development.
- 5.1.3 A max. domestic PR of 1.0 is proposed for the new “R(C)4” zone, which is equivalent to about 8,580m² in GFA. The maximum building height restrictions are proposed to be 6 storeys above ground.
- 5.1.4 For Site 2 currently falling with area zoned “R(C)2” on the approved OZP, it is proposed to rezone the site to “O” zone. This will enable formation of large coherent “O” zone land of about 2.67 ha in area, despite the rezoning of Site 1 into “R(C)4”, resulting in a net increase of total “O” zoned land area of about 0.38 ha in Kam Tin North OZP area.
- 5.1.5 The proposed amendments to the Plan, Statutory Notes and the Remarks of the Notes of the “R(C)” zone on the approved OZP are presented in **Figures 5.1 to Figures 5.3**.

Figure 5.1: Proposed Amendment to the Plan under OZP No. S/YL-KTN/11

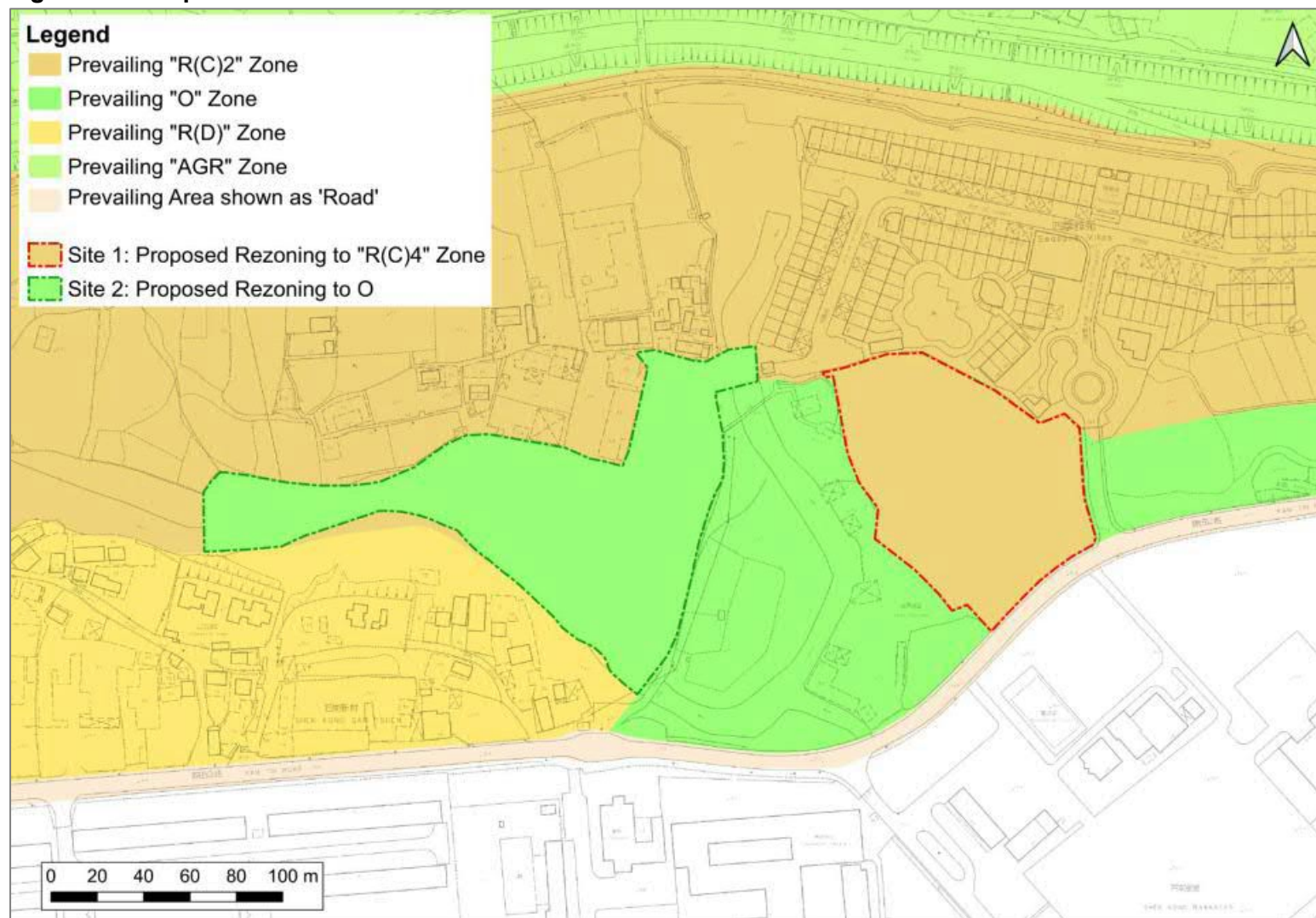


Figure 5.2: Proposed Amendments to the Statutory Notes of the “R(C)” Zone

For illustration only
S/YL-KTN/12

- 11 -

<u>RESIDENTIAL (GROUP C)</u>	
Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Flat Government Use (Police Reporting Centre, Post Office only) House Utility Installation for Private Project	Ambulance Depot Eating Place Educational Institution Government Refuse Collection Point Government Use (not elsewhere specified) Institutional Use (not elsewhere specified) Library Place of Recreation, Sports or Culture Private Club Public Clinic Public Convenience Public Transport Terminus or Station Public Utility Installation Public Vehicle Park (excluding container vehicle) Recyclable Collection Centre Religious Institution Residential Institution Rural Committee/Village Office School Shop and Services Social Welfare Facility Training Centre
<u>Planning Intention</u> This zone is intended primarily for low-rise, low-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board.	

Figure 5.3: Proposed Amendments to the Remarks of the “R(C)” Zone

- 12 -		<u>S/YL-KTN/12</u>
<u>RESIDENTIAL (GROUP C) (cont'd)</u>		
<u>Remarks</u>		
(a)	On land designated “Residential (Group C)1”, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 0.8, a maximum site coverage of 40% and a maximum building height of 4 storeys (12m), or the plot ratio, site coverage and height of the building which was in existence on the date of the first publication in the Gazette of the notice of the interim development permission area plan, whichever is the greater.	
(b)	On land designated “Residential (Group C)2”, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 0.4 and a maximum building height of 3 storeys (9m) including car park, or the plot ratio and height of the building which was in existence on the date of the first publication in the Gazette of the notice of the interim development permission area plan, whichever is the greater.	
(c)	On land designated “Residential (Group C)3”, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 0.5 and a maximum building height of 2 storeys (12m) including car park, or the plot ratio and height of the existing building, whichever is the greater.	
(d)	On land designated “Residential (Group C)4”, no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum domestic plot ratio of 1.0, a maximum building height of 6 storeys including car park (excluding underground utility and basement).	
(e)	Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio, site coverage and/or building height restrictions stated in paragraphs (a), (b), (c) and (d) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.	
(f)	In determining the maximum plot ratio and/or site coverage for the purposes of paragraphs (a), (b), (c) and (d) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room, caretaker’s office, caretaker’s quarters or recreational facilities for the use and benefit of all the owners or occupiers of the domestic building or domestic part of the building, provided such uses and facilities are ancillary and directly related to the development or redevelopment, may be disregarded.	
(g)	Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio / GFA / building height restrictions stated in paragraphs (a) to (f) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Board.	

6 PLANNING MERITS AND JUSTIFICATIONS

6.1 The Proposed Rezoning is In-line with Government's Policies on Increasing Housing Land Supply

- 6.1.1 The Government has adopted multi-pronged approaches to increasing land supply for housing through land creation strategy by unlocking development potential through transport infrastructure and rezoning sites to untap the development potential of underutilized land. Moreover, reviewing on existing brownfield sites and deserted agricultural land in the New Territories has been identified by the Task Force on Land Supply as one of the key actions in increasing housing land supply. The Site has reasonably good accessibility and the proposed rezoning from "R(C)2" and "O" to "R(C)4" would represent a more efficient use of scarce land resources. It is also in line with Government's earlier rezoning initiatives in 2017 to enable the housing developments at Kam Tin South area as well as in the Northern Metropolis.

6.2 The Sites are Highly Suitable for Residential Development and Public Open Space Respectively

Land Use Compatibility

- 6.2.1 The Application Site is located in Kam Tin area which is planned to be gradually transformed into a suburban township with the implementation of various comprehensive residential/commercial development and public housing developments in the vicinity. Located in close proximity to KSRS and PHMC which are planned for private residential/commercial development, as well as a number of potential development sites for residential developments, the Proposed Development at Site 1 will be compatible with the surrounding land use context, with Site 2 to be realized as public open space by the Government to serve the local communities. The Proposed Development will help to speed up the regeneration of the Kam Tin North rural township with the timely provision of housing supply at a suitable and appropriate location.

Accessibility

- 6.2.2 The Application Site would be accessible from Kam Tin Road and is well-served by various franchised buses and minibuses which provide feeder public transport services to Kam Sheung Road MTR Station, Yuen Long Town Centre and Sheung Shui Town Centre. Bus/minibus stops along Kam Tin Road are within short walking distance from the Site. On a regional scale, the Application Site is strategically located in proximity to Yuen Long Town and connected with the urban areas by strategic rail (i.e. West Rail Line) and road (i.e. Tsing Long Highway) link.

Coherence of "Open Space" Zone

- 6.2.3 Through swapping of the area of Site 1 (for residential development) in exchange for future provision of open space area in Site 2, a complete and coherent "Open Space" zone is formed with the adjoining land currently zoned "O".

- Tranquility of the Open Space Maintained***
- 6.2.4 The private lots in Site 2 are all owned by the Applicants. Upon approval of the rezoning request including, inter alia, the rezoning of Site 2 from “R(C)2” to “O” zone, the Applicants are prepared to keep the private lots in Site 2 as status quo until the Government department has a program to implement the public open space, such that the local context of the area would remain unaffected (i.e. keeping the natural tranquility of the area including the natural watercourse and vegetation); as well as the existing local access frequently used by the local villagers and residents (**Section 6.3** refers).
- 6.3 No Impact on the Existing Local Access**
- 6.3.1 It is understood that the local residents nearby are very concerned about the existing local access of footpath connecting Kam Tin Road to the rural settlements in the north. Under the current proposal, the existing Y-shaped local access falling within Site 2 (proposed for rezoning into “Open Space”) will not be affected by proposed residential development. The existing local access could also form part of the open space to be implemented by the Government later so that the public open space can be accessible from the nearby settlements / residential developments in different directions.
- 6.4 The Proposed Development will Unleash the Development Potential of the Unimplemented “Open Space” Zone in the Application Site**
- 6.4.1 The area in the prevailing “O” zone that the Development Site (Site 1) falls within has been zoned “O” since the gazettal of the first Kam Tin North OZP in June 1994. However, there has been no implementation programme for a long period (i.e. 31 years) for the provision of open space in the concerned subject “O” zone, let alone any planned open space development on the subject private lands zoned “O” within the Site.
- 6.4.2 As reviewed in *Section 3.3*, the area of private land amounts to about 42% of the total area in “O” zones covered by Yuen Long rural OZPs. The figure even reaches about 65% under Kam Tin North OZP. It is observed that the private land zoned “O” in Yuen Long rural areas is mostly occupied by land parcels intermingled with temporary structures, vacant paved land, vegetation, fallow agricultural land and open storage sites, so as the area zoned “O” within the Application Site. Having regard to the non-implementation of the private lots zoned “O” and to echo with Government’s policy initiatives of optimising land resources, the Applicants considered it is timely to unleash the full development potential of the “O” zone in the Application Site by proposing compatible and gainful uses such as the proposed residential use for the area.
- 6.5 The Development Proposal has Devised an Appropriate Development Intensity in the Proposed “R(C)4” Zone**
- 6.5.1 Due consideration has been given to the planning context with the future planned Kam Tin South development, compatibility with the adjacent rural and low-density

residential developments in the adjacent “R(C)2” zone and the incorporation of consolidated private land titles within the Application Site to devise an appropriate development intensity in the proposed “R(C)4” zone.

6.5.2 It is reviewed in *Section 3.1* that some “R(C)” zones in areas covered by rural OZPs are subject to plot ratio ranging from about 0.2 to 1.58 and subject to maximum number of storeys of 2 to 7 (excluding basement levels) and various building height restrictions ranging from 6m to 24.5m or as high as 55mPD. With the unique site characteristics of the Development Site (Site 1), a site-specific zone i.e. “R(C)4” is proposed to cater for the Proposed Development with compatible development intensity at a plot ratio of not more than 1 and max. building height of 6 storeys above ground.

6.5.3 With a view to achieving a compatible development with other existing developments in the adjacent residential developments (about +13 to +15mPD) and existing blocks in Shek Kong Barracks (about +15 to 39mPD) while optimizing the utilization of scarce land resources, the proposed building height in the Proposed Development is at max. 6-storey above ground (about 28.9mPD), such that a coherent and harmonious development pattern can be achieved.

6.6 The Proposed Scheme has Incorporated Various Design Merits

6.6.1 In view of the sub-urban township location of the Development Site, the Applicants have made tremendous efforts to incorporate various sensible design measures in the Proposed Residential Development aiming to enhance the existing built environment while respecting the existing building height in the vicinity. The sensible design measures included (1) adoption of appropriate building height (max. 6 storeys, about 28.9mPD); (2) maintaining building setback from Shek Kong Barracks; (3) podium free design; (4) central courtyard design; (5) outdoor communal open space and landscaped area in the north; (6) building setback from site boundary with periphery tree planting; and (7) building gaps allowing wind penetration (**Section 4.2.1** refers).

6.7 The Proposed Development is Readily Implementable

6.7.1 In Site 1, all private lots involved are owned by the Applicants without other private lots involved, which occupy about 93% of the total site area (**Table 2.1** refers). The remaining area is all Government land (7%). There are also no existing permanent structures in Site 1. This would allow an optimal and readily implementable low-density residential development (at a plot ratio not more than 1) in a tailor-made “R(C)4” zone that would respect the sub-urban setting of Kam Tin area.

6.7.2 In Site 2, all private lots involved are also owned by the Applicants without other private lots involved, which occupy about 67% of the total site area. There are also no existing permanent structures in Site 2⁶. This would allow the Government to

⁶ In Site 2, there are some existing street light poles along the Y-shaped local footpath and some

implement the public open space at the rezoned Site 2 together with the adjoining “O” zoned land when there is a program, or otherwise keeping the area as status quo with the local context being unaffected.

6.8 No Insurmountable Technical Impacts

Trees and Landscape

6.8.1 According to the Tree Preservation Proposal (**Appendix 3** refers), the majority of the existing trees within the Site are largely comprised of common native species. There are no rare or protected tree species, Champion Trees nor Old and Valuable Trees found within the Development Site.

6.8.2 The proposed architectural design has sought to minimise disturbance to the existing landscape and hence the future development context through the retention of as many of the existing trees in-situ as possible. Based on the tree survey, there are in total 100 nos. of existing trees within Site 1. Given the extent of the architectural scheme and the necessary infrastructure to be incorporated, it would be possible to retain some 9 nos. of trees and to fell 65 nos. of trees. For the remaining 26 nos. of trees, they are identified as *Leucaena leucocephala* which is invasive weed tree species and compensation for its removal is not required.

6.8.3 In order to compensate for the 65 nos. of existing trees recommended for felling and to enhance the future landscape character of the Proposed Development, about 65 nos. of new heavy standard trees will be planted to achieve a new tree planting ratio of about 1:1 in terms of tree numbers (total number of new trees to be planted : total number of trees proposed to be felled).

Visual

6.8.4 Based on the appraisal demonstrated in the Visual Impact Assessment (“VIA”) in **Appendix 4**, the visual impact associated with the Proposed Development in the Development Site is considered negligible (at VPs 1, 3 and 4) to slightly adverse (at VPs 2 and 5). With the provision of various sensible design measures including appropriate building height, suitably spaced building layout, building setback from site boundary and adoption of natural color tone in façade treatment, the Proposed Development with max. building height of 28.9mPD at the Development Site is considered acceptable in visual terms.

Air Ventilation

6.8.5 An Air Ventilation Assessment (Expert Evaluation) (“AVA-EE”) has been conducted for the Proposed Development (**Appendix 5** refers). According to the findings of this AVA-EE, the annual wind of the Site is mainly from NE, ENE and E, while the summer wind is mainly coming from the E, S and SSW directions. Comparing the potential air ventilation impacts of the Development Site to the existing site conditions with no structure, good design measures to enhance air ventilation

temporary structures.

performance are proposed, which include keeping not less than 5m building setback from site boundaries in all direction, as well as not less than 15m building separation between building clusters. These will facilitate wind penetration and maintain good air ventilation performance to the surrounding area. With the max. 6-storey BHR, wind flowing atop of the towers can still reach further downwind pedestrian area. Therefore, the Proposed Development with the design measures should not have significant adverse impact on the surrounding environment from air ventilation perspective.

Traffic

- 6.8.6 The Traffic Impact Assessment (“TIA”) (**Appendix 6** refers) has estimated that the Proposed Development would generate (attract) traffic flow of 20(11) pcu/hr in the AM peak and 7(10) pcu/hr in the PM peak. It is anticipated in the traffic forecasts that all seven identified junctions will be operated within capacities in both reference and design scenarios in year 2034 taking into account the Highway Department’s upgrading works of sections of Kam Tin Road (under PWP item No. 6820TH). The traffic generated by the Proposed Development would induce insignificant impact on the surrounding road network. For public transport demand, it is assessed that the demand due to the new population in the Proposed Development could be solved by providing additional max. 1 GMB trip per hour. Therefore, the TIA has concluded that the Proposed Development is considered acceptable from traffic point of view.

Noise

Road Traffic Noise

- 6.8.7 A noise impact assessment (NIA) (**Appendix 7** refers) has been conducted based on the maximum traffic flow data in 15 years after occupation of the Proposed Development (i.e. 2031+15=2046). In order to achieve noise compliance of the stipulated 70dB(A) noise criterion, provision of acoustic window (baffle type) is proposed to mitigate the noise impact from Kam Tin Road.

Fixed Noise

- 6.8.8 In terms of fixed noise sources impact, a number of fixed noise sources have been identified within 300m of the Site, including a number of car repairing workshop and open storage sites. According to the NIA, the predicted noise levels from the identified fixed noise sources are anticipated to be within the stipulated noise limits (i.e. 60dB(A) Leq(30min) during 0700 to 2300 and 50dB(A) Leq(30min) during 2300 to 0700) in the Noise Control Ordinance.

Aircraft and Helicopter Noise

- 6.8.9 The runway of the Shek Kong Airfield is located at more than 300m south of the Proposed Development. The maximum measured helicopter noise level L_{max} 55dB(A) within the Development Site is within the criteria for helicopter noise stated in HKPSG (i.e. 85dB(A) L_{max}). Therefore, adverse impact from helicopter noise to the Proposed Development is not anticipated.

Air Quality

Industrial Emission

- 6.8.10 Air Quality Impact Assessment (AQIA) has been conducted (**Appendix 8** refers). In terms of industrial emission, no industrial chimney was identified within 500m of the Site. Therefore, no adverse air quality impacts due to industrial emission on the Proposed Development are anticipated.

Vehicular Emission

- 6.8.11 Kam Tin Road abutting the Development Site is classified as “Rural Road” according to the Annual Traffic Census 2023 by Transport Department, while the access road leading to Kam Tin Road from Seasons Villas to the east is considered “Rural Road” as advised by the traffic consultant. While there is currently no recommended buffer distance for “Rural Road” in the HKPSG, the required buffer distance of 5m for “Local Distributor” has been referenced. Under the current proposal, the Proposed Development has allowed for a buffer distance of 12m and 7m from Kam Tin Road (with road widening) and from the access road of Seasons Villas respectively. Therefore, adverse air quality impact due to vehicle emission is not anticipated for the Proposed Development.

Mitigation Measures for Construction Work

- 6.8.12 During the construction phase, dust and gaseous would be generated from construction activities such as vehicles movement on haul roads, excavation, loading or unloading stockpile material, stockpiling of material and wind erosion of exposed areas. Appropriate dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation would be implemented during construction stage to reduce the dust emission. Therefore, no adverse air quality impact associated with the Proposed Development during construction phase is anticipated (**Appendix 8** refers).

Water Quality

- 6.8.13 According to the Water Quality Impact Assessment (**Appendix 9** refers), water sensitive receivers (WSRs) within 500m from the Development Site boundary are identified. During construction stage, no direct discharge without treatment of construction site will be allowed. The discharge will be collected and treated through screening facilities before being discharged into the nearby storm drains.

Land Contamination

- 6.8.14 Based on the observation from the site inspection and the review of historical aerial photographs (Land Contamination Assessment in **Appendix 10** refers), the Development Site had been used for agricultural purpose without any potential land contamination activities. It was mainly vacant and vegetated with some shrubs and trees, without any underground facilities and transformers. There were no observed signs of chemical spills / oil stains. No off-site contamination from the surroundings is anticipated. Although there is a vehicle repair workshop to the immediate west, it is entirely on paved area located 2 to 3m away from the

Development Site and is mainly used as storage only, with no potential off-site land contamination affecting the Development Site. Information from Environmental Protection Department (EPD) and Fire Services Department (FSD) indicated that there were no chemical spillage or leakage records at the Site. Therefore, potential contamination and associated impact is not anticipated in the Site.

Waste Management

- 6.8.15 The construction works of the Proposed Development mainly include site excavation, site foundation works and superstructure construction. The estimated quantity of construction and demolition materials generated from the construction of the Proposed Development are assessed in the Waste Management Assessment (WMA) (**Appendix 11** refers). Proper implementation of good construction site practice and mitigation measures will be adopted. As regards the operation phase, the major type of wastes generated from the operation phase is general refuse. With the implementation of appropriate control measures as stated in the WMA, adverse waste management implication is not anticipated during construction and operation phases.

Sewage / Sewerage

- 6.8.16 As shown in the Sewerage Impact Assessment ("SIA") (**Appendix 12** refers), since the Development Site is far away from the existing public sewage network, an on-site sewage treatment plant (about 350m² in area with a daily capacity of 248m³/d) is proposed to provide treatment for sewage generated from the Proposed Development (about 247.5m³/day) and the treated effluent is proposed to be discharged to the stormwater drainage system. The proposed sewage treatment plant will adopt Membrane Bioreactor technology with ultra-filtration to meet EPD's effluent discharge standard.

Drainage

- 6.8.17 According to the Drainage Impact Assessment ("DIA") (**Appendix 13** refers), under the existing condition, the surface runoff running on the existing Development Site is currently discharged to an existing watercourse to the west of the Development Site. The watercourse is then discharged to an engineering channel (Kam Tin River) via a 2-cell box culvert. To avoid impact to the downstream of existing watercourse serving nearby villages, runoff from the Site will be collected and discharged via proposed 750 mm diameter pipes. A storage tank with a size of about 5,000m³ will be provided to temporarily store the additional runoff and the stored runoff will be discharged to a new 750mm outlet pipe connecting to the existing watercourse via a 450mm pipe after the peak of storm. There are no changes or slight improvement in the predicted peak water levels for the 10 years, 50 years and 200 years flood event for the existing watercourse and thus no significant adverse impact from the Proposed Development with the proposed drainage system and storage tank from drainage point of view.

Water Supply

- 6.8.18 As illustrated in the Water Supply Impact Assessment (“WSIA”) (**Appendix 14** refers), the total mean daily fresh water and total flushing water demand for the Proposed Development are estimated to be about 345m³ per day. For supplying water to the Proposed Development, it is proposed to branch off a DN100 fresh water main from the existing DN450 fresh water main at Kam Tin Road.

Geotechnical Aspect

- 6.8.19 Geotechnical Planning Review Report (“GPRR”) (**Appendix 15** refers) has been prepared, which reveals that there are three existing features (slope or retaining wall) within or in close vicinity to Development Site (Site 1), among which only part of slope feature No. 6NE-B/F 17 is encroached by the development site. Slope feature No. 6NE-B/F 17 is maintained by Lands Department and the part encroached by the development site will be excavated. The other two slope feature Nos. 6NE-B/FR 26 and 6NE-B/R 11 to the northeast and east respectively are not encroached by the development site. For details, please refer to the GPRR in **Appendix 15**.

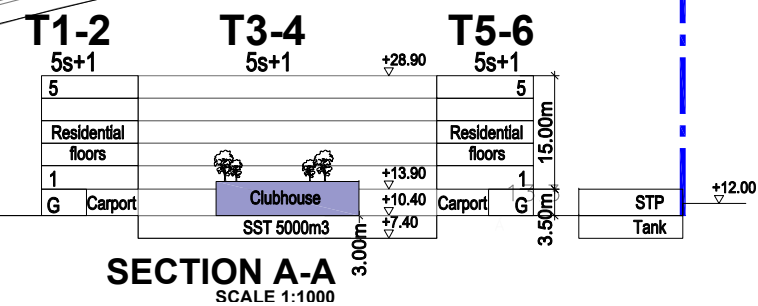
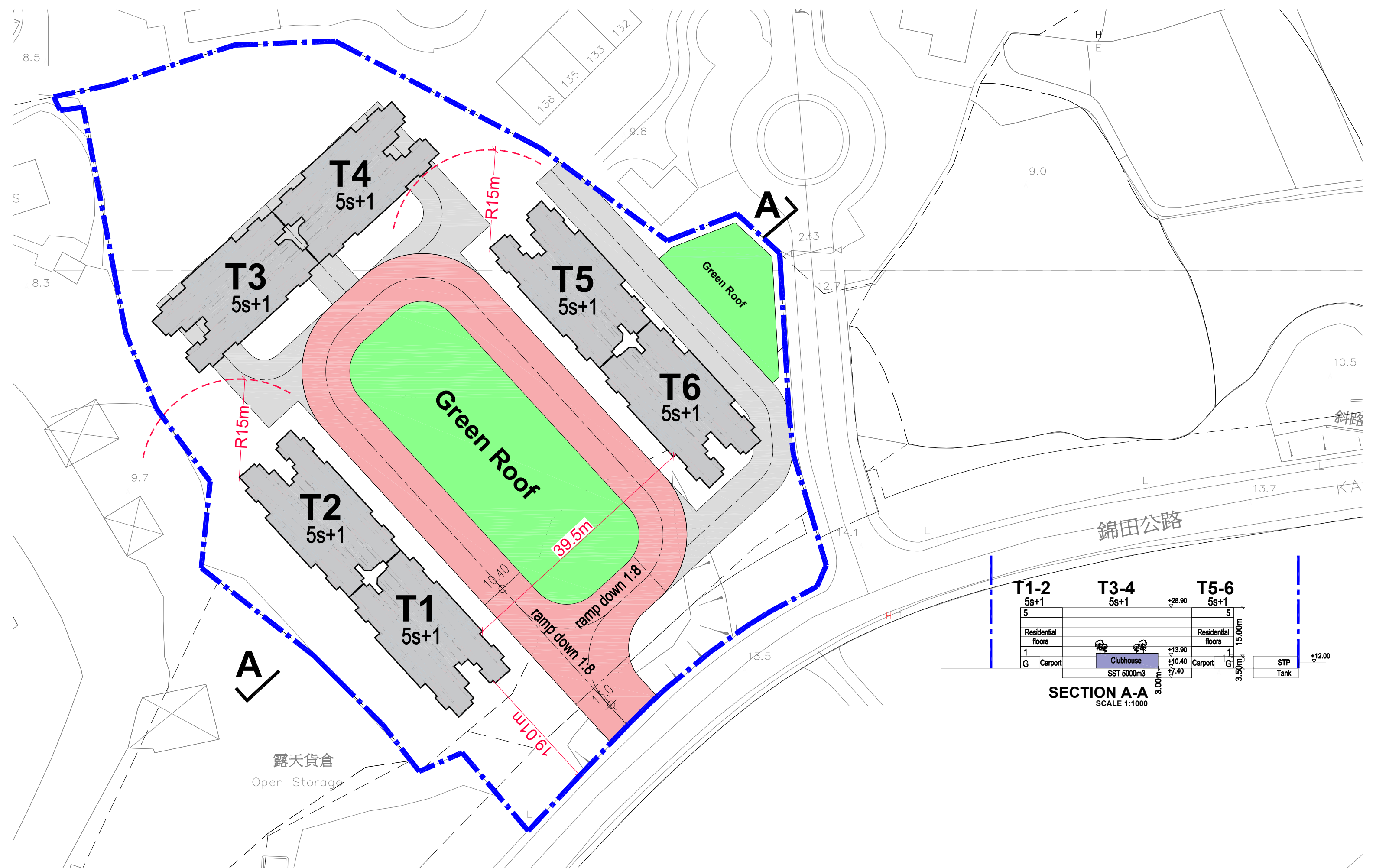
7 SUMMARY AND CONCLUSION

7.1 In light of all the above, members of the TPB are respectfully requested to give favourable consideration to support the proposed amendments to the approved Kam Tin North OZP: (1) rezoning of an area from “R(C)2” and “O” to “R(C)4”, to enable the proposed residential development (“Proposed Development”) at Site 1; and (2) rezoning of an area from “R(C)2” to “O” at Site 2, due to the following reasons:

- The Proposed Rezoning is In-line with Government’s Policies on Increasing Housing Land Supply;
- The Sites are highly suitable for residential development and public open space respectively, in view of land use compatibility, accessibility, as well as coherence and tranquility of the open space to be maintained.
- The existing local access falling within an area currently zoned “R(C)2” zone, which is frequently used by the nearby villagers and residents will be retained in the proposed “O” zone in Site 2;
- The Proposed Development will Unleash the Development Potential of the “Open Space” Zone which has been long designated without any development program in the Application Site;
- The Development Proposal has Devised an Appropriate Development Intensity in the Proposed “R(C)4” Zone;
- The Proposed Scheme has Incorporated Various Urban Design Merits;
- The Proposed Development is Readily Implementable;
- Various technical assessments have been carried out and the findings concluded that the Proposal is technically feasible.

Appendix 1

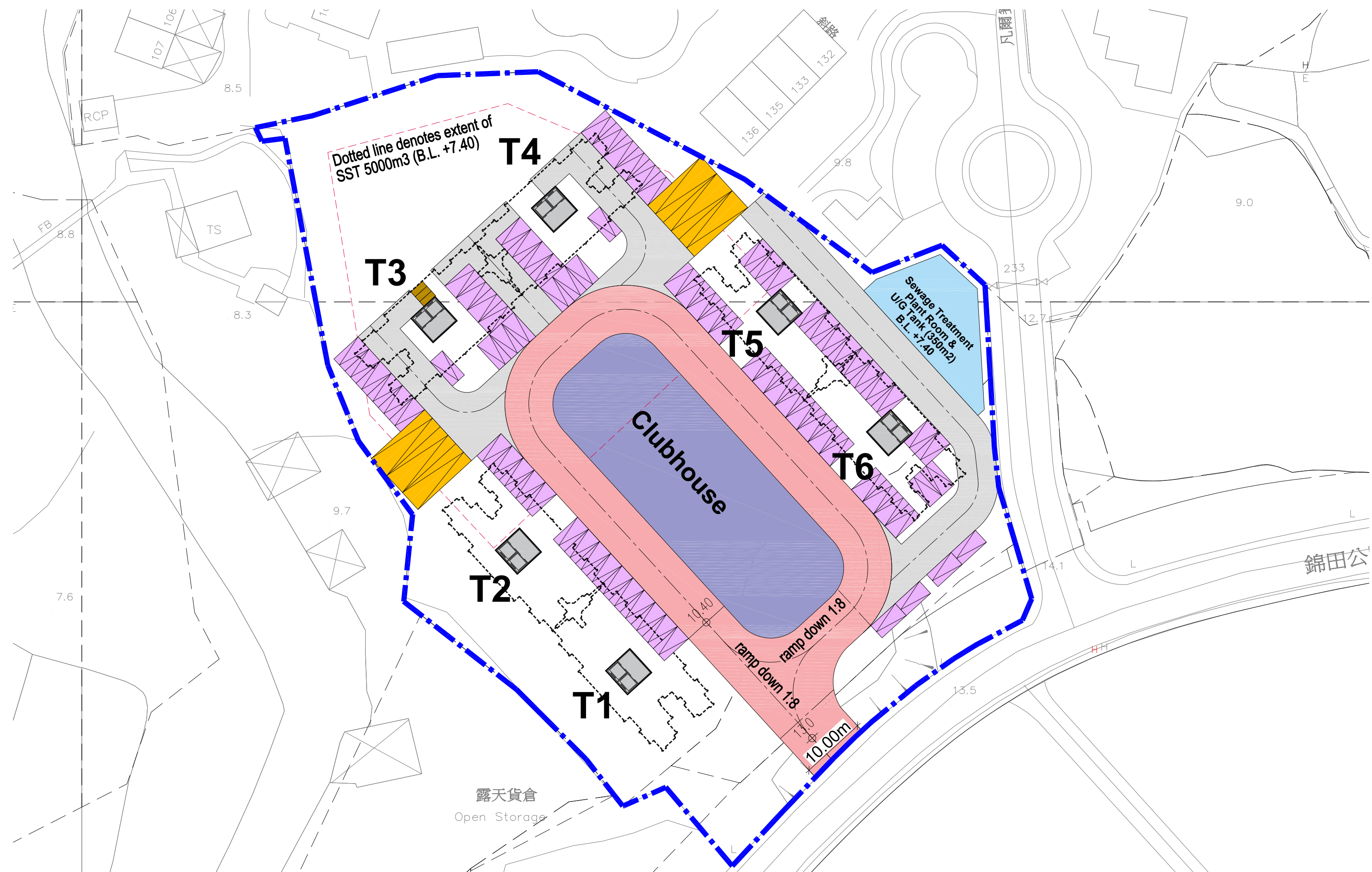
Architectural Drawings



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

MASTER LAYOUT PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

GROUND FLOOR PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a

Appendix 2

Landscape Proposal

**Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development
at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining
Government land, Shek Kong, Yuen Long, N.T.**

Landscape Proposal

6th November 2025

Prepared By:

SCENIC Landscape Studio Limited



Project Title	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.
Report Title	Landscape Proposal

Revision	Date	Complied by:	Checked by:	Approved by:	Description
-	20250423	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
A	20250424	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
B	20250430	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
C	20250502	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
D	20250506	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
E	20250715	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
F	20251106	Jackson Zhou	Fiona Yu	Chris Foot	Final to Client

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1.0 Introduction

- 1.1 SCENIC Landscape Studio Limited have been commissioned to prepare a landscape proposal to seek approval from the Town Planning Board ("TPB"/the "Board") under section 12A of the Town Planning Ordinance for rezoning of the Site from "Residential (Group C)2" ("R(C)2") and "Open Space" ("O") to "Residential (Group C)4" ("R(C)4") under the approved Kam Tin North Outline Zoning Plan ("OZP") No. S/YL-KTN/11, to enable the proposed residential development ("Proposed Development") at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long.
- 1.2 This report seeks to present the landscape design proposal. It will outline the landscape design objectives and landscape treatment for each component of the proposed Development Site. This report has been prepared in accordance with Buildings Department, Lands Department and Planning Department Joint Practice Note No. 3 concerning the Re-engineering of Approval Process for Land and Building Developments and adheres to the requirements of Buildings Department Practice Notes PNAP APP-152 Sustainable Building Design Guidelines for the calculation of the green coverage.
- 1.3 The Landscape Proposal is presented as **Figures 4.1**; and series of sections through the landscape as **Figures 5.1 to 5.3**.

2.0 Existing Site Description

- 2.1 The Development Site is located in Kam Tin North. The Site abuts Kam Tin Road to its immediate south. Two low-rise, low-density residential developments in the same "R(C)2" zone, namely Seasons Villas and Seasons Monarch, are located to the immediate north-east and further west. Villages including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site. The areas to the immediate west and south-west are occupied by temporary structures, open storage sites and vacant vegetated land zoned "O". Shek Kong Barracks is located to the further south of the Site across Kam Tin Road.
- 2.2 The Development Site sits on a gently sloping land with gradient gradually descending from the south at +13.5mPD towards the north at +8.1mPD in general. The Site is currently sparsely vegetated.
- 2.3 A total of 96 nos. trees were identified within the Development Site boundary and another 4 nos. located immediately beyond the boundary. These are largely located in the central portion and along its southern periphery. The most numerous of the existing trees are *Macaranga tanarius* var. *tomentosa*, *Leucaena leucocephala* and *Bombax ceiba*. Other species include *Albizia lebbbeck*, *Bauhinia purpurea*, *Celtis sinensis*, *Dimocarpus longan*, *Delonix regia*, *Ficus hispida*, *Ficus religiosa*, *Ficus variegata*, *Litchi chinensis*, *Melia azedarach* and *Morus alba*.

3.0 Project Description

- 3.1 The Proposed Development has total site area of about 8,580 m² providing about a total of 240 residential units. It comprises a total of 6 nos. of residential towers with 6 storeys above ground (including G/F for entrance lobby / car park / E&M facilities). With site formation level at +10.4mPD, the referencing building height is about +28.9 mPD.
- 3.2 The 1-storey clubhouse with green roof is located in the central portion; the sewage treatment plant (STP) involves 1 storey above ground and the basement for the tank; while

the stormwater storage tank (SST) involves one storey below ground (tentatively below Tower 3 and Tower 4).

4.0 Landscape Design Proposal

- 4.1 The concept underpinning the landscape proposal for the Proposed Scheme presented as **Figure 4.1** is to integrate the proposals within their future landscape and visual context; provide a synthesis between the proposed architecture and its landscape setting and provide high quality open space in association with the development.
- 4.2 The landscape design proposal is described in terms of the main design objectives, followed by a description of the key landscape components, and finally the landscape elements including the proposed hard and soft landscape, which form the palette of materials.

5.0 Landscape Design Objectives

- 5.1 The design objectives for the Landscape Proposal are to:
- Create a distinctive landscape which responds to the existing context, the architectural scheme proposals and the future residents to create a sense of community;
 - Integrate the proposed development from a landscape and visual perspective with the existing and planned landscape context;
 - Provide visual integration in views of the proposed building mass from the surrounding areas and provide vegetation screening and softening of the built form in closer low-level views;
 - Provide a quality, sustainable and accessible living environment for the enjoyment of the residents and visitors;
 - Provide recreational spaces for the future residents; and
 - Maximise opportunities for greening measures utilising tree and shrub planting and lawn and climbing plants within the new landscape.

6.0 Open Space Proposals

- 6.1 The Proposed Scheme has sought to provide adequate open space (1m² per person based on the predicted future population) in accordance with the requirements of the Hong Kong Planning Standards and Guidelines (HKPSG). The design of the open space is based on the objective of providing high quality passive recreational facilities and features that will satisfy the needs of the future residents. The provision of open space is shown on **Figure 6.1**.
- 6.2 The Proposed Scheme will include about 830 m² of uncovered open space in total for residents' use. Since the current planned total resident population of the project is approximately 648 persons, the proposal adequately satisfies the requirements for 1 m² per person based on the predicted future population in accordance with the HKPSG.
- 6.3 All of the open space within the Development Site boundary would be constructed, managed and maintained by the land owners after the completion of Defect Liability Period and Establishment Period.

7.0 Site Coverage of Greenery

- 7.1 The site coverage of greenery for the residential development in Development Site will not

be less than 20% in accordance with Buildings Department Practice Notes PNAP APP-152 Sustainable Building Design Guidelines and DEVB Technical Circular (Works) No. 4/2020. This includes a minimum of 15% at the Primary Zone (within 15m of mean street level). The calculation of area is based on the uncovered areas of tree and shrub, lawn and groundcover planting; and an area of vertical greening. The Site coverage of Greenery for the proposed development is shown on **Figure 7.1**.

- 7.2 The total site area of the Development Site is 8,580 m² and so with a green coverage around 1,888 m² it will be no less than 22%.

8.0 Landscape Design Components

- 8.1 The following description seeks to establish some general principles of the landscape design. **Figure 4.1** shows the Landscape Proposal whilst sections in **Figures 5.1** to **5.3** shows the character and structure of the landscape.

Residential Development

- 8.2 The landscape seeks to create an attractive external environment for the development, coordinating paving and planting design for residential entrances and open spaces with internal streetscape design to provide a unified contemporary appearance within a tranquil setting in the immediate area context. The design aims to create a vibrant internal landscape area with attractive extensive and intimate spaces to highlight arrival and leisure landscapes.

The Boundary Landscape

Landscape Screen Planting

- 8.3 The width and character of the landscape buffer has been designed according to its location. Where space allows these landscape screen or buffer areas will be planted with new tree and shrub planting and will function to help integrate the development with its surroundings, maximising the screening effect for the Proposed Scheme in views from adjacent village areas and maximise areas of visible greenery. Climbing plants are also used to soften the form of the proposed wall. The location of the planting buffer is shown on **Figure 4.1 Landscape Master Plan**, and the landscape screen planting is shown on Section A-A (**Figure 5.1**) and in greater detail in section A1-A1' (**Figure 5.1**), A2-A2' & A3-A3' (**Figure 5.2**) and B-B' (**Figure 5.3**).

Landscape Setback

- 8.4 The design of the proposed boundary landscape in the southern portion adjacent to Kam Tin Road includes a setback for Highways Department's future widening of the road. The fence wall is also set back to enhance the appearance of the boundary and partially obscure views of the fence wall structure. There is no new tree planting within this setback area. The landscape setbacks are indicated on **Figure 4.1 Landscape Proposal**, and section C-C' (**Figure 5.4**).
- 8.5 The landscape boundary treatment adjacent to Kam Tin Road includes some preserved trees and it is proposed the area be planted with shrubs. The landscape boundary is shown in **Figure 4.1 Landscape Master Plan**.

The Arrival and Circulation Landscape

- 8.6 The landscape design for residential projects should provide an enjoyable route home, which can be termed the Arrival Landscape. This is a sequence of experiences as one moves through composed moments in the landscape, which include the follow key areas:

Main Entrance

- 8.7 The access into the site located in the south east corner adjacent to Kam Tin Road. The entrance is designed to define the address of the development and establishes its character and quality at the point of entry. It will be designed to provide an attractive entry threshold experience, incorporating feature walls and accent planting. **Figure 4.1** shows the location of the entrance and Section C-C' (**Figure 5.4**).

Streetscape Promenade / Turnabouts

- 8.8 The Internal street / EVA including the proposed streetscape promenade and turnabouts is likely to be relatively lightly trafficked on a day-to-day basis and as such can be considered as shared surfaces including facilities for pedestrians and cyclists. The routes will feature decorative paving and will be planted where space allows with street trees and animated with attractive lighting, incidental seating spaces and visual features in order to enhance the internal street experience. **Figures 4.1** illustrates the landscape character of the streetscape areas.

Lobby Entrances

- 8.9 Each lobby entrance which addresses the street will be demarcated with feature paving and framed with pots / planting to help highlight the interior / exterior threshold and help create a sense of arrival to individual blocks. **Figures 4.1** shows the location of the lobby entrances.

The Leisure Landscape

- 8.10 The landscape should also function as a leisure experience for the residents, with things to see and do in the outdoor home environment that provide for social interaction and bring people closer to nature. The development proposal provides opportunities for specific open space areas largely in the central portion of the development which are fully connected by the framework of pedestrian circulation. Key aspects of the spatial planning and features of the proposed leisure landscape are described as follows:

Clubhouse and Swimming Pool Terrace

- 8.11 The Clubhouse and Swimming Pool Terrace is a core feature of the leisure landscape provision. This landscape has an outdoor swimming pool and decks associated with the facilities which provide recreation opportunities for residents. The pool is designed to provide for both formal lapping and informal leisure swimming experiences. The planting at the edge of the deck serves to enclose the pool license area, creates a human scale, provides for the privacy of bathers and also serves to soften the form of the architectural design. The decks and its associated landscapes will be designed to enhance the relationship between the internal and external clubhouse spaces with visual access between the two. **Figures 4.1** show the character of the swimming pool terrace.

Community Garden

- 8.12 This area of a lawn located on the roof of the Sewage Treatment Plant and provides seating deck and lawn for the enjoyment of the future residents. The garden is enclosed to the north, east and south by the at-grade tree planting of the landscape screen planting. **Figure 4.1** shows the location of the Community Garden and section **A3-A3'** (**Figure 5.2**) shows its open character.

Pocket Gardens

- 8.13 The Pocket Gardens provide flexible spaces for the relaxation of residents and informal seating. The surrounding tree and shrub planting partially screen views of the residential developments beyond while establishing human scale for the space and providing for the thermal comfort of residents. **Figure 4.1** shows the location of the Pocket Gardens.

BBQ and Entertainment Deck

- 8.14 Utilising a central deck this space provides shaded seating and facilities such as an outdoor BBQ for use by future residents. **Figure 4.1** and section **B-B'** (**Figure 5.3**) shows the location and character of the BBQ and Entertainment Deck.

Children's Play Area

- 8.15 The Children's Play Area is located at the north western portion of the Development Site will provide a range of play equipment for various age groups. These facilities are set within a landscape framework of trees and shrubs, whilst ample seating and gathering areas are provided in order to encourage a lively, participatory atmosphere. A pavilion structure will provide shaded seating for adult supervision of the children at play. **Figure 4.1** shows the location of the Children's Play Area.

Grand Lawn

- 8.16 The Grand Lawn is located in the northern portion of the Development Site. This area of lawn provides flexible space for the relaxation of residents, impromptu family occasions including picnics and community events. The surrounding tree and shrub planting partially screens views of the residential developments beyond while establishing human scale for the space. **Figures 4.1** show the character of the Grand Lawn area.

Tranquil Trail

- 8.17 The Tranquil Trail provides a picturesque footpath under the dappled shade of the trees within the landscape screen planting. **Figure 4.1** shows its proposed location and Section A1 -A1' (**Figure 5.1**) its proposed character.

9.0 Landscape Design Elements

Soft Landscape Design Approach

- 9.1 The basis for the proposed planting scheme would be to provide a green and comfortable environment for the future resident's recreational needs. Shade trees with a dense canopy and flowering shrubs in addition to the use of hard landscape treatments would be used to emphasise, where possible, the character of each of the landscape spaces described above. The spaces will be characterised by the use of tree, shrub and groundcover species selected to provide a lush, landscaped area whilst responding to the character of the architecture that embraces it.
- 9.2 These soft landscape measures will ensure that the harsh lines of the built form are visually softened in views from the neighbouring areas. The tree planting is designed to create a sense of enclosure, provide a human scale and enhance thermal comfort. Large sized trees will be used to achieve this objective at an early stage.
- 9.3 The planting design will contribute to the overall character of the proposed development providing colour throughout the year with seasonal variations providing an evolving tableau. This will be achieved through the selection of species with an interesting form, colour and texture of their foliage and through the use of flowering species to provide an architectural highlight.

- 9.4 The species listed in Table 9.1 will form the basis of the planting design proposals (planting list subject to landscape design proposals).

Table 9.1: Planting Species for Amenity Planting Areas

Botanical Name	Size (mm) (Height x Spread)	Spacing (mm)
Tree Species		
<i>Alstonia scholaris</i>	Heavy standard	As shown (min 4000 centres)
<i>Bauhinia x blakeana</i>	Heavy standard	
<i>Bischofia javanica</i>	Heavy standard	
<i>Celtis sinensis</i>	Heavy standard	
<i>Chukrasia tabularis</i>	Heavy standard	
<i>Cinnamomum burmannii</i>	Heavy standard	
<i>Cratoxylum cochinchinense</i>	Heavy standard	
<i>Crateva unilocularis</i>	Heavy standard	
<i>Elaeocarpus hainanensis</i>	Heavy standard	
<i>Jacaranda mimosifolia</i>	Heavy standard	
<i>Liquidambar formosana</i>	Heavy standard	
<i>Litsea glutinosa</i>	Heavy standard	
<i>Mallotus paniculatus</i>	Heavy standard	
<i>Michelia chapensis</i>	Heavy standard	
<i>Melia azadarach</i>	Heavy standard	
<i>Plumeria rubra</i> 'Acutifolia'	Heavy standard	
<i>Sapium sebiferum</i>	Heavy standard	
<i>Schefflera heptaphylla</i>	Heavy standard	
<i>Spathodea campanulata</i>	Heavy standard	
<i>Syzygium levinei</i>	Heavy standard	
<i>Tabebuia rosea</i>	Heavy standard	
<i>Terminalia mantaly</i>	Heavy standard	
<i>Washingtonia robusta</i>	Heavy standard	
Large Specimen Shrub Species		
<i>Acacia podalyriifolia</i>	1500 (h) x 1000 (s)	As shown
<i>Ficus microcarpa</i> var. <i>crassifolia</i>	1500 (h) x 1000 (s)	
<i>Hibiscus rosa-sinensis</i>	1500 (h) x 1000 (s)	
<i>Lagerstroemia indica</i>	1500 (h) x 1000 (s)	
<i>Osmanthus fragrans</i>	1500 (h) x 1000 (s)	
Shrub Species		
<i>Bougainvillea</i> sp. 'Mary Palmer'	600 x 300	350
<i>Cordyline terminalis</i>	300 x 250	300
<i>Duranta repens</i> 'Golden Leaves'	300 x 250	300
<i>Ficus microcarpa</i> 'Golden Leaves'	300 x 250	300
<i>Hibiscus rosa sinensis</i>	300 x 250	300
<i>Ixora coccinea</i> 'Sunkist'	300 x 250	300
<i>Pittosporum tobira</i>	300 x 250	300
<i>Rhaphis excelsa</i>	300 x 250	300
<i>Rhododendron mucronatum</i>	300 x 250	300
<i>Rhododendron pulchrum</i>	300 x 250	300

Botanical Name	Size (mm) (Height x Spread)	Spacing (mm)
<i>Rhododendron simsii</i>	300 x 250	300
<i>Schefflera arboricola</i>	300 x 250	300
<i>Strelitzia reginae</i>	300 x 250	300
Groundcover Species		
<i>Asparagus densiflorus 'Sprengerii'</i>	150 x 150	200
<i>Cuphea hyssopifolia</i>	250 x 300	350
<i>Hymenocallis americana</i>	300 x 200	250
<i>Iris</i> spp.	150 x 150	200
<i>Lantana montevidensis</i>	150 x 150	200
<i>Nephrolepis exaltata</i>	150 x 150	200
<i>Ophiopogon japonicus</i>	150 x 150	200
<i>Philodendron selloum</i>	300 x 200	250
<i>Phyllanthus myrtifolius</i>	250 x 300	350
Bamboo		
<i>Bambusa textilis</i>	2000-3000 Ht.	250
<i>Pseudosasa japonica</i>	1000-2000 Ht.	250
Climbing Plants		
<i>Ficus pumila</i>	At least 3 shoots per plant. Each shoot at least 1000 mm in length.	250
<i>Lonicera japonica</i>		
<i>Parthenocissus tricuspidata</i>		
<i>Philodendron cordatum</i>		
<i>Quisqualis indica</i>		
Lawn		
<i>Axonopus compressus</i>	Turves	m ²

Note: The plant species listed above provide an indication of the future character of the proposed landscape areas however the design will be subject to review during the detailed design stage of the project.

Soil Depth for Planting Areas

- 9.5 In order to ensure that the planting proposals are feasible, it is proposed that an adequate planting medium be incorporated into the design of the soft landscape areas. All planting areas allow a minimum soil depth excluding the drainage layer of 1200mm facilitating the planting of trees whilst shrub and green roof / lawn areas will incorporate a minimum soil depth of 600mm and 300mm respectively excluding the requirements for drainage. The configuration of the typical planting beds both at-grade and above the structural slab are shown on **Figure 9.1**.

Irrigation and Drainage

- 9.6 The proposed irrigation system will utilise a manual system with lockable water points at 40m centres throughout the entire site. The proposed source of water supply will be subject to final approval from the Water Supplies Department. Sub-soil drainage shall be provided for all planting areas with a cellular drainage system such as "Mira-drain" or an approved equivalent.

Feature Paving

- 9.7 The paving will be an important element of the landscape design both in terms of its aesthetic appearance and in terms of producing a hardwearing landscape for usage by the future users. The design of the proposed paving will highlight entrance areas and major pedestrian routes through the site providing a hierarchy for pedestrian movement and help to define the spatial configuration of the landscape. It would be constructed of quality materials in feature patterns creating a distinct identity for each of the key landscape zones responding to the architectural design and function of each. Colour changes within the patterns would be used to break the linearity of the spaces and establish a theme across the development.
- 9.8 The use of a similar material palette for the vehicular and pedestrian areas is designed to blur the distinction between the two and create the appearance of a shared surface.
- 9.9 Non-slip paving materials will be utilised throughout the site and the proposed finishes and materials are summarized below:
- Internal access roads, EVA and pedestrian pavements: Subtle shades of natural granite and concrete pavers designed to create a distinct identity at the threshold of the development and subtle transition with the adjacent pedestrian pavement.
 - Main Gardens: Combination of natural granite and concrete paving, recycled plastic decking using both formal paving and naturalistic paving for the horizontal surfaces building on the design theme for the architectural and landscape schemes.
 - Natural granite and recycled plastic composite timber decking for the swimming pool area.
- 9.10 Wherever possible all landscape areas will cater for multiple use needs including people with impaired ability and access for the disabled in accordance with Building Department's Design Manual on 'Barrier Free Access (DMBFA), 2008'.
- 9.11 The landscape design considers the requirements of Chapter 6 of the DMBFA for the use of elderly residents whereby the landscape has been designed without steps, thresholds, small ramps or kerbs, wherever possible. Where changes in level are unavoidable handrails or grab bars will be provided. Steps and staircases should be designed with wider treads and lower risers. Floor surfaces will comply with Division 4. Slip-resistant floor finishes and avoids the use of shiny and reflective floors such as marble, glazed tiles and the like. Open jointed pavers or aeration paver blocks with uneven or very rough surface will be avoided at external open spaces.

Planter Walls

- 9.12 Where possible planters will be at-grade however where raised planters are required the planter walls and coping will be clad with various finishes including a combination of light and mid grey and rustic yellow natural granite; and textured paint.

Lighting

- 9.13 The lighting design concept for the landscaped areas should be designed to contribute to the quality of the development in nocturnal views providing an aesthetically pleasing landscape through the highlighting of landscape elements. All of the landscape areas will be provided with sufficient illumination to meet the required lighting standards, particularly for the entrance areas and pedestrian access paths. The lighting concept will include four types of lighting which are as follows:

- Amenity lighting highlighting feature trees, walls, sculptures and planting through the use of spotlights and up-lighting;
- Area lighting involving the use of low-level lighting sources such as lighting bollards and recessed wall lights for sitting areas and main landscape spaces designed to avoid glare / light spillage to adjacent properties;
- General safety lighting with the minimum lux level which will last between midnight and early morning; and;
- Sufficient lighting to meet the lux requirements for the pool license areas.

Site Furniture

- 9.14 The landscape design would include the provision of site furniture including seating, which in addition to its functional attributes would also contribute to the perceived quality of the landscape.

Safety Requirements

- 9.15 All outdoor facilities will be designed, constructed and operated in full compliance with relevant safety standards and guidelines.

10.0 Landscape Management and Maintenance

- 10.1 Upon completion of the construction works, a 12-month Defects Liability Period (DLP) will be implemented applying to the hard landscape whereby the specialist contractor will be responsible for the maintenance during this first year.
- 10.2 Similarly the softworks contractor will be responsible for a 12-month Establishment Period (EP) for the planting after practical completion. This allows time for the proper establishment of the plants and the replacement of any losses.
- 10.3 At the end of the 12-month DLP / EP, subject to the location of the landscape will be managed and maintained by the land owner and/or the management company for the development. This includes general tree care and proper tree maintenance in accordance with relevant guidelines promulgated by DEVB.

Rezoning from "Residential (Group C)2" and "Open Space" zones to
"Residential (Group C)4" zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Landscape Proposal

Landscape Figures

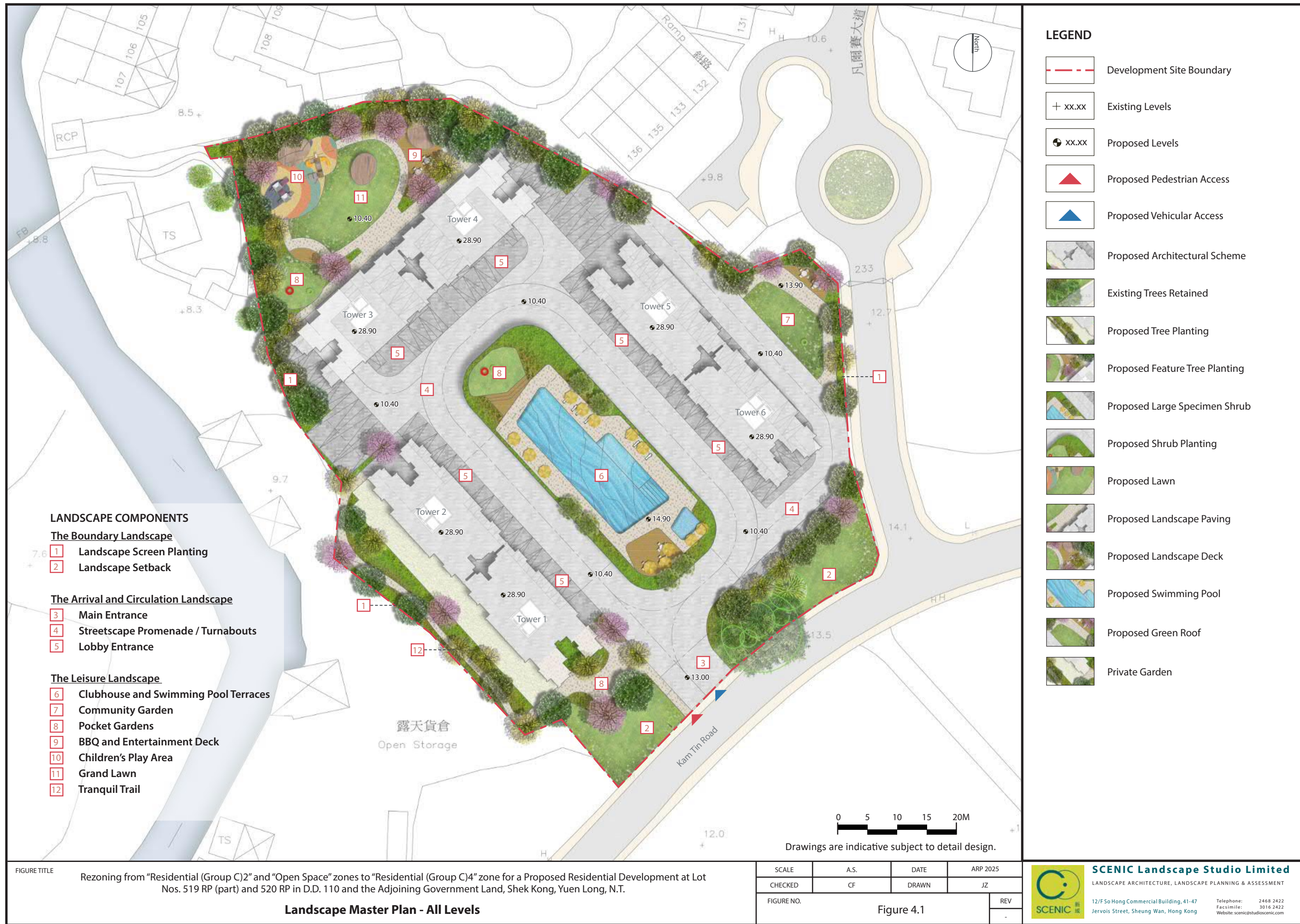


FIGURE TITLE Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Landscape Master Plan - All Levels

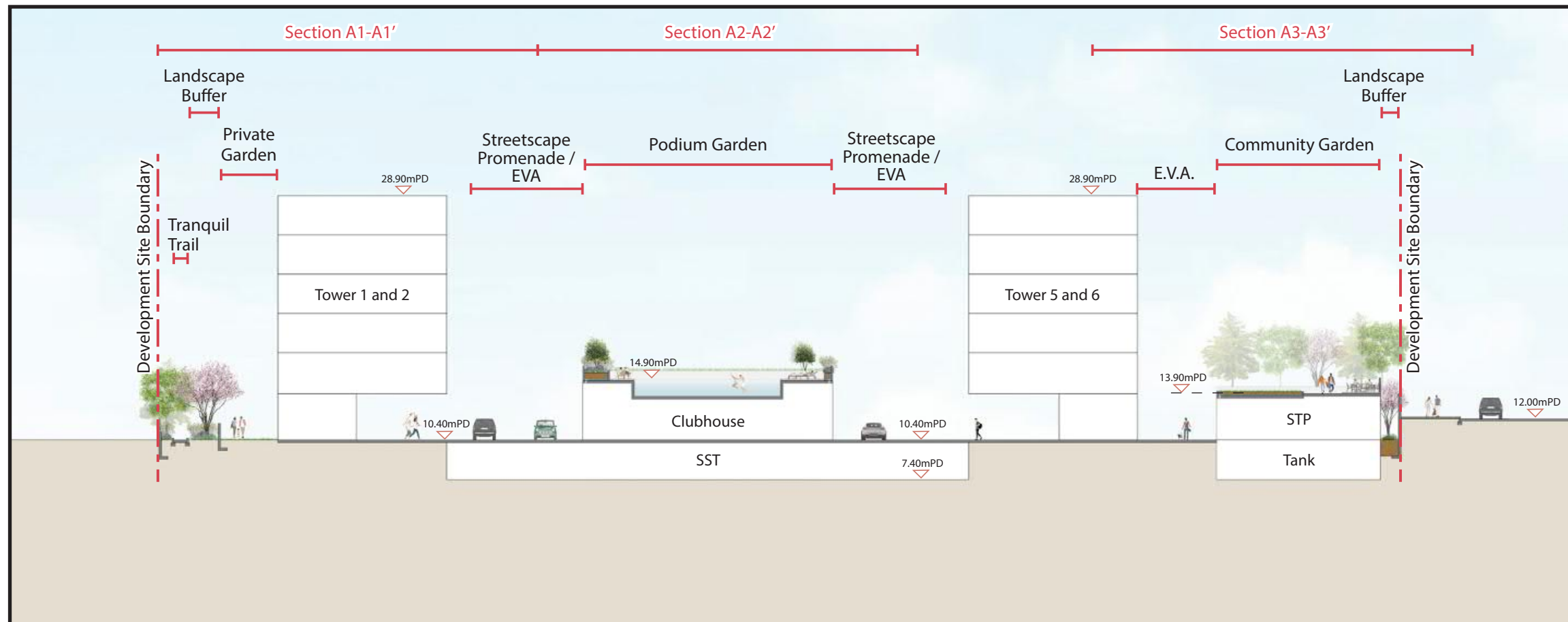
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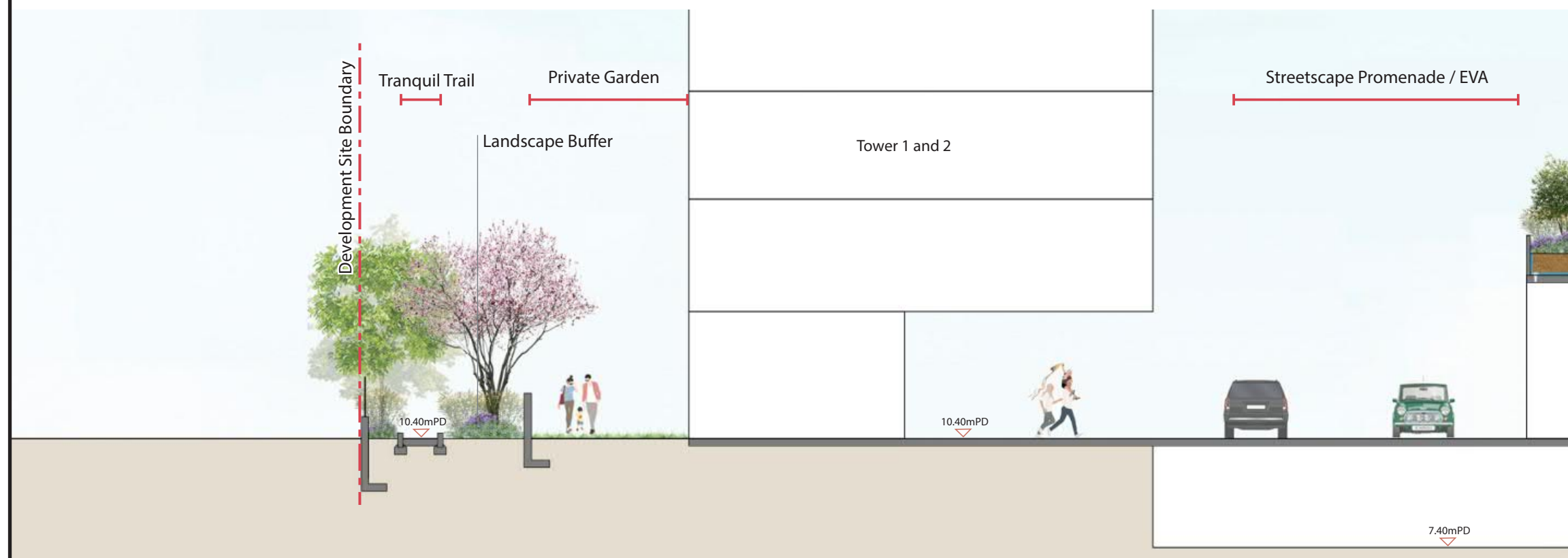
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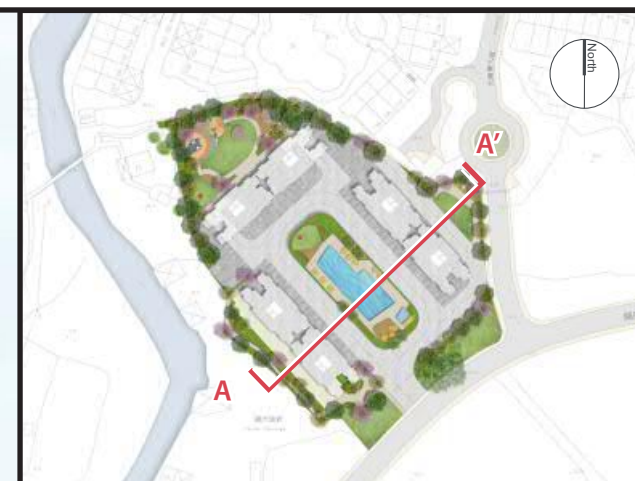
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Section A-A'



Section A1-A1'



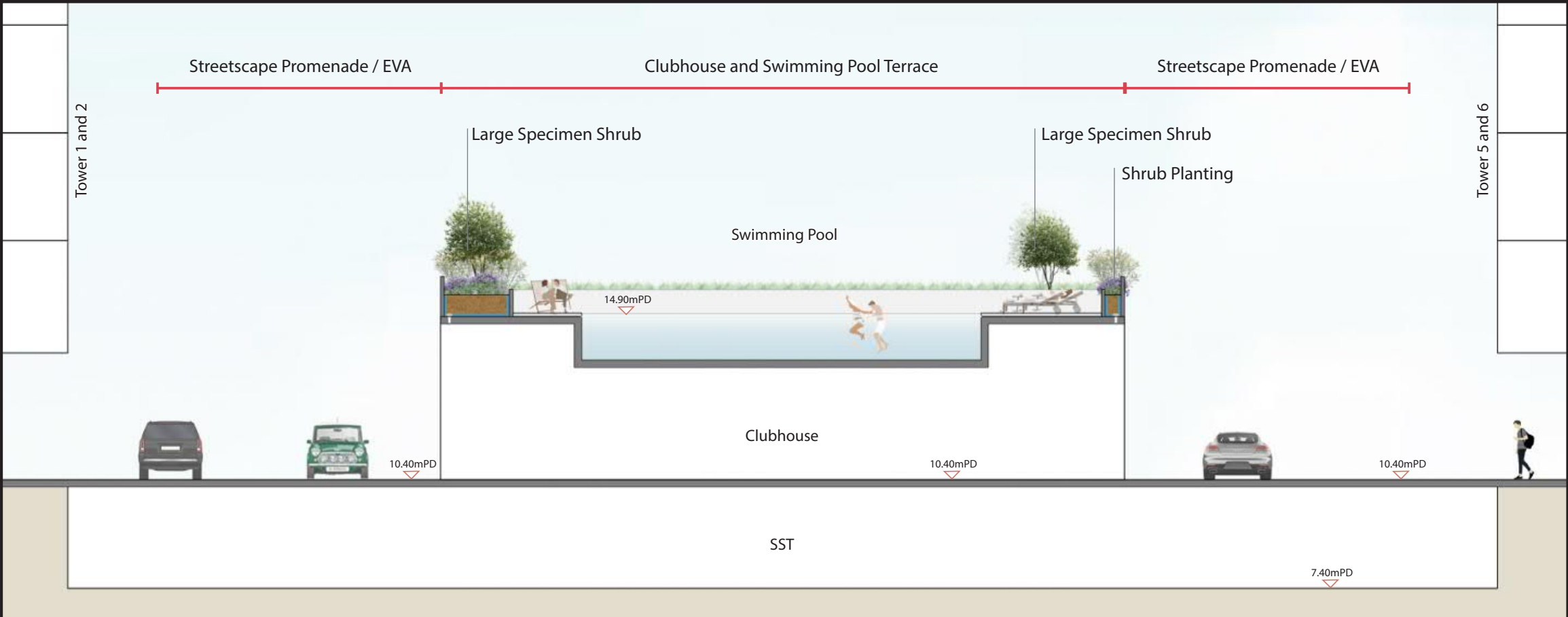
-  Section Line
-  Development Site Boundary
-  Typical Levels
-  Proposed Fence Wall
-  Proposed Tree Planting
-  Proposed Shrub Planting
-  Proposed Large Specimen Shrub

FIGURE TITLE Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

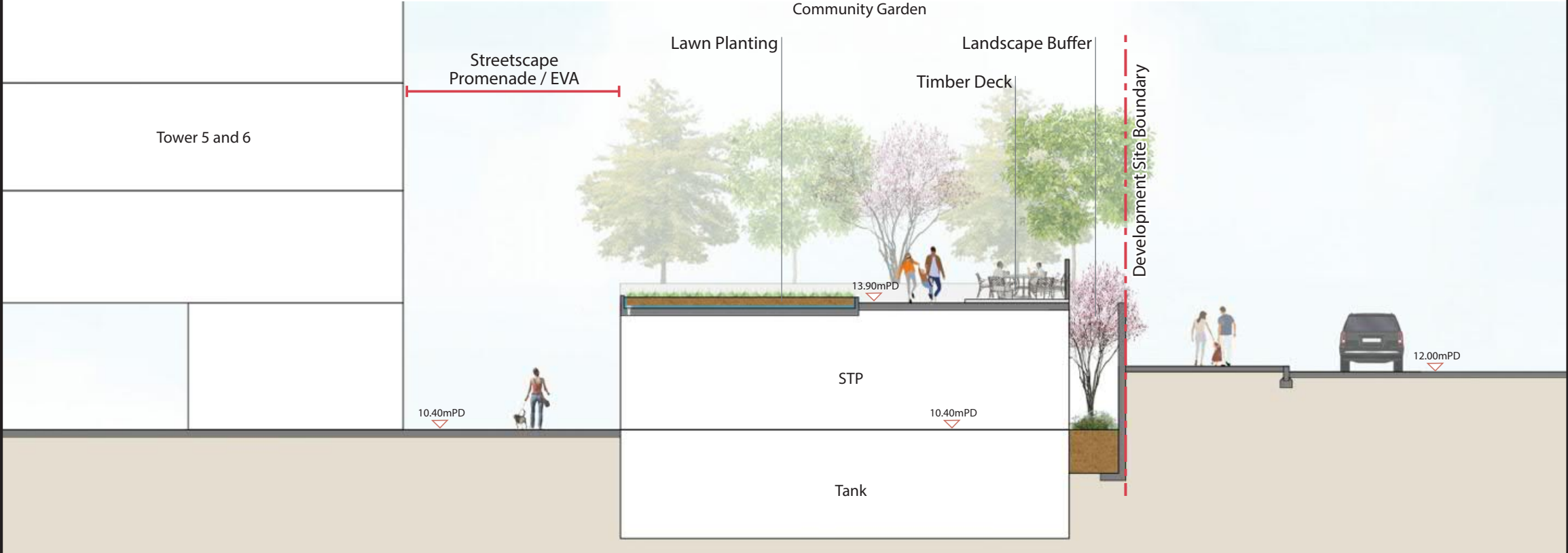
Landscape Section A-A' & A1-A1'

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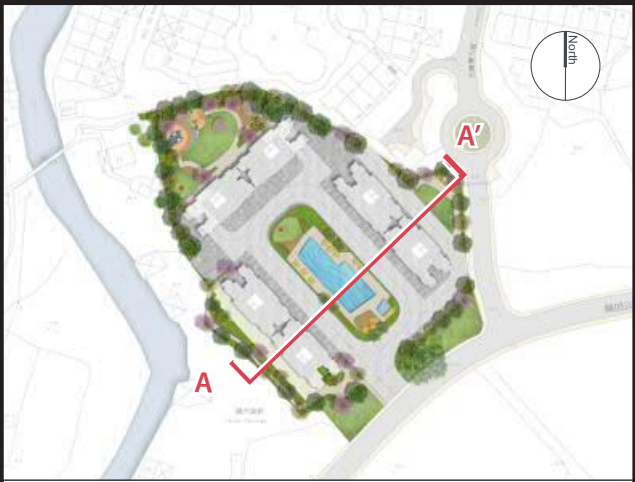
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Section A2-A2'



Section A3-A3'



- Section Line
- Development Site Boundary
- Typical Levels
- Proposed Fence Wall
- Proposed Tree Planting
- Proposed Shrub Planting
- Proposed Large Specimen Shrub

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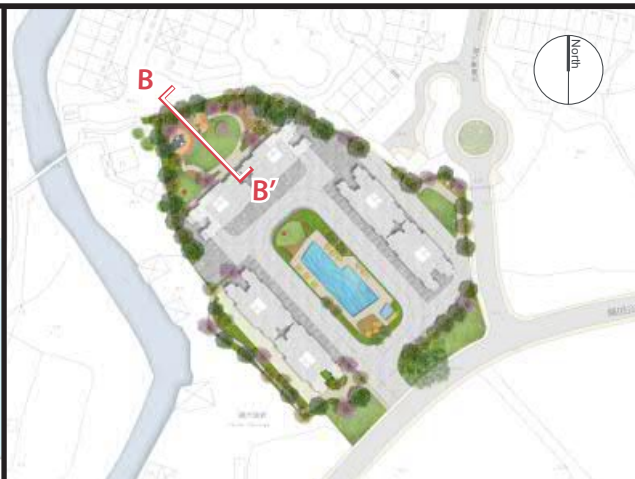
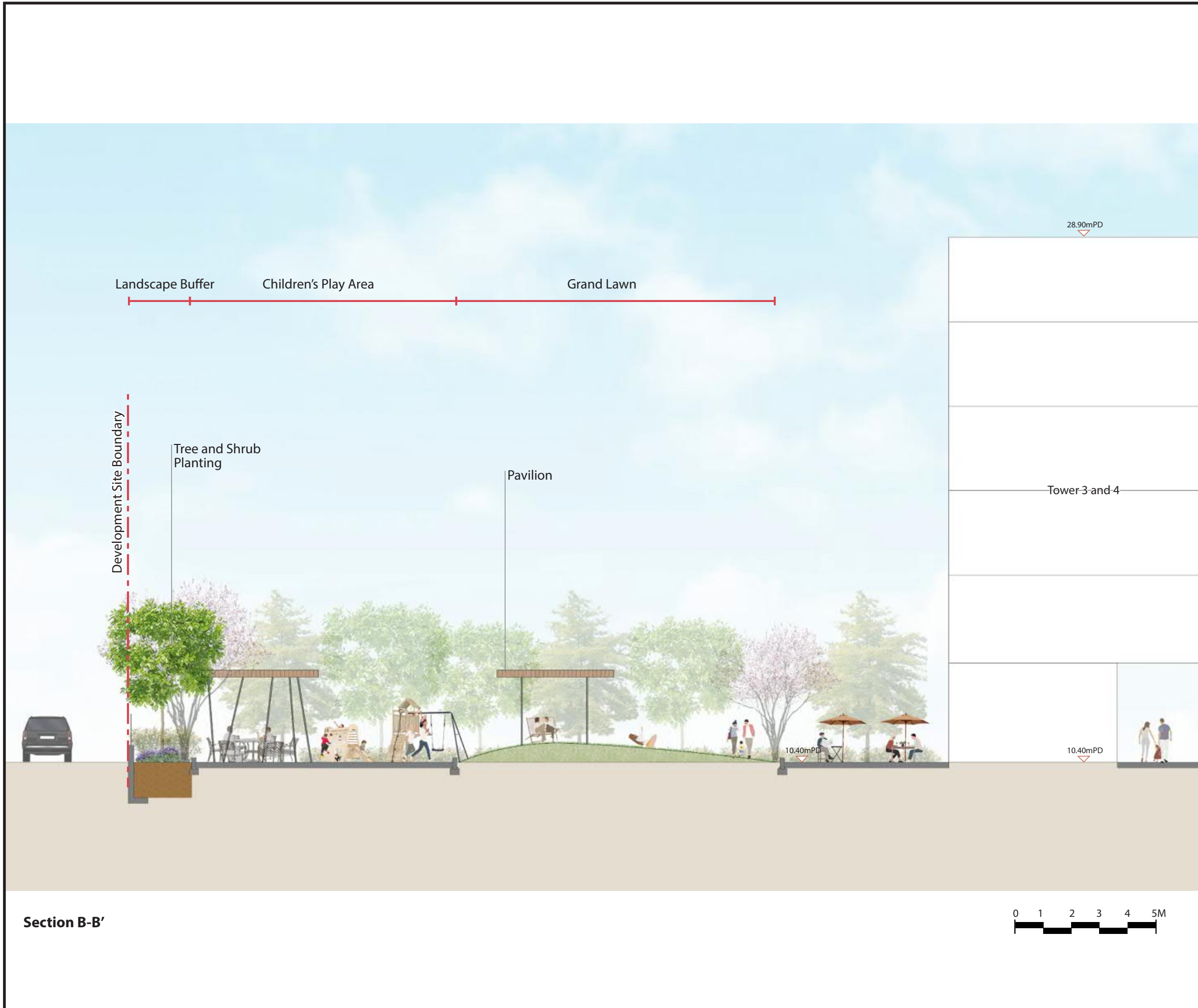
Landscape Section A2-A2' & A3-A3'

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-  Section Line
-  Development Site Boundary
-  Typical Levels
-  Proposed Fence Wall
-  Proposed Tree Planting
-  Proposed Shrub Planting
-  Proposed Large Specimen Shrub

FIGURE TITLE
Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

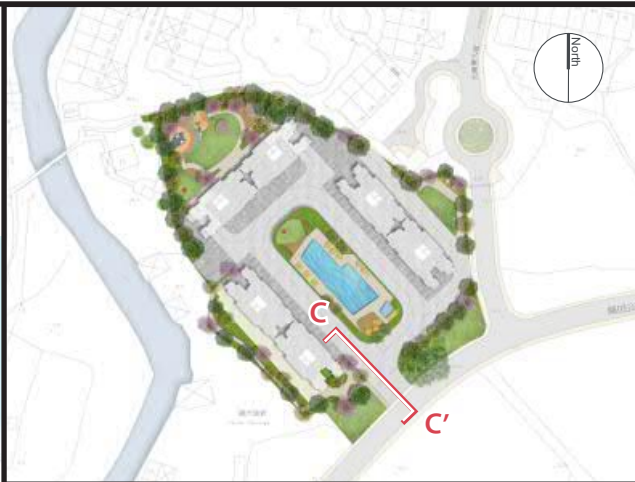
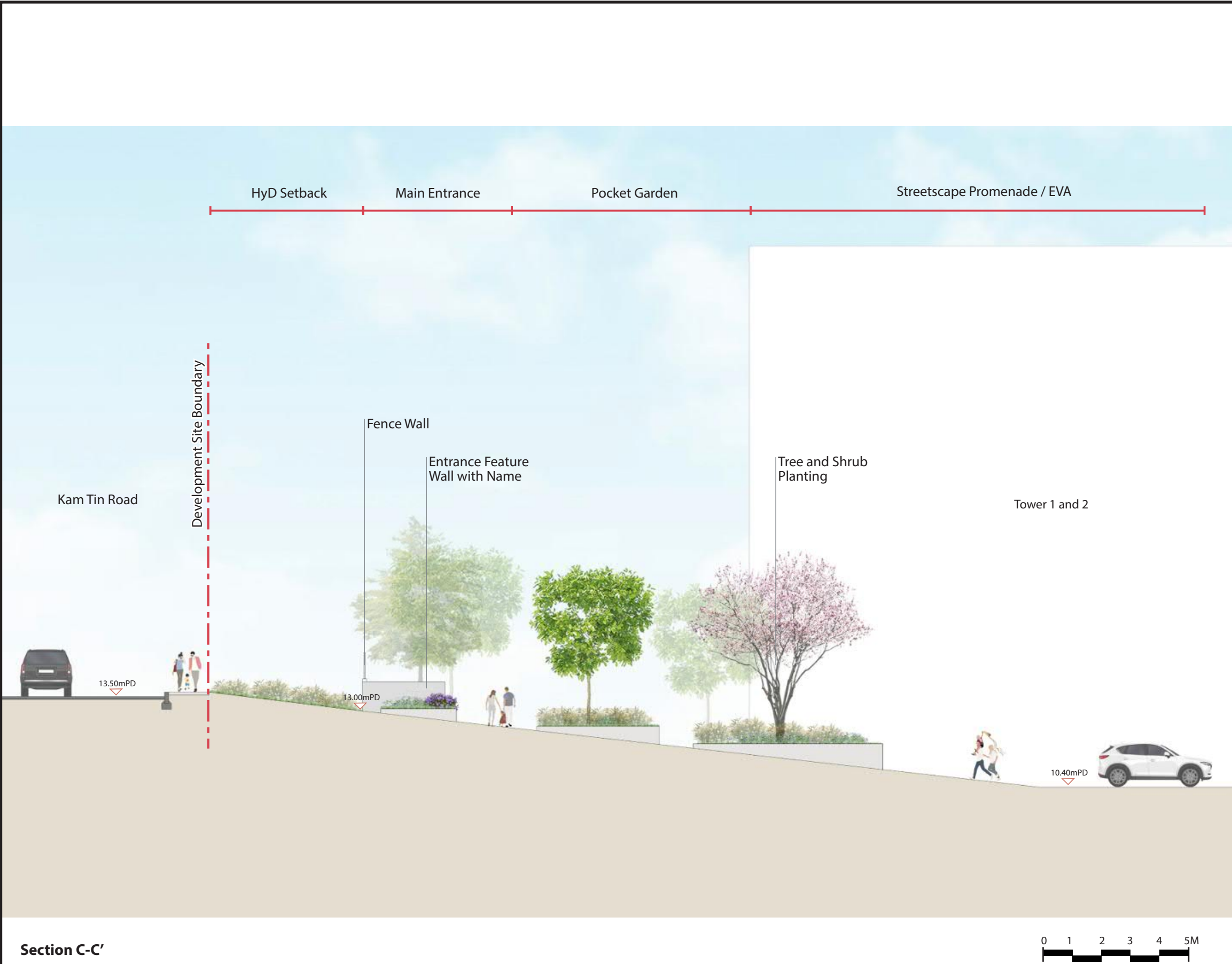
Landscape Section B-B'

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- Section Line
- Development Site Boundary
- Typical Levels
- Proposed Fence Wall
- Proposed Tree Planting
- Proposed Shrub Planting

Section C-C'

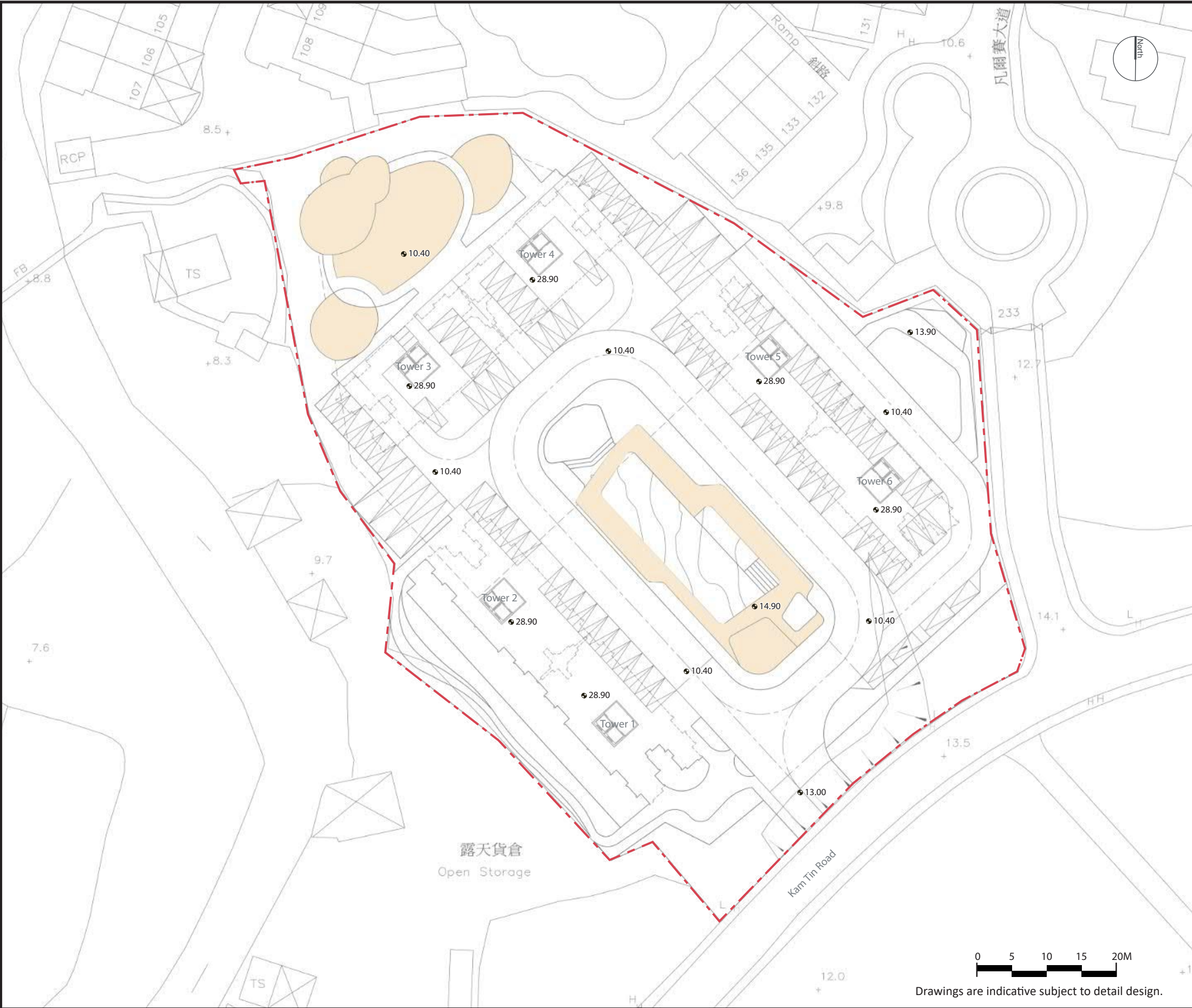
FIGURE TITLE Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Landscape Section C-C'

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LEGEND

Development Site Boundary

Private Open Space (Passive Use)

Private Open Space		
G/F Landscape Area		
OS01	Open Space (Passive Use)	830m ²
Total Open Space:		830 m ²

FIGURE TITLE
Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Open Space - All Levels

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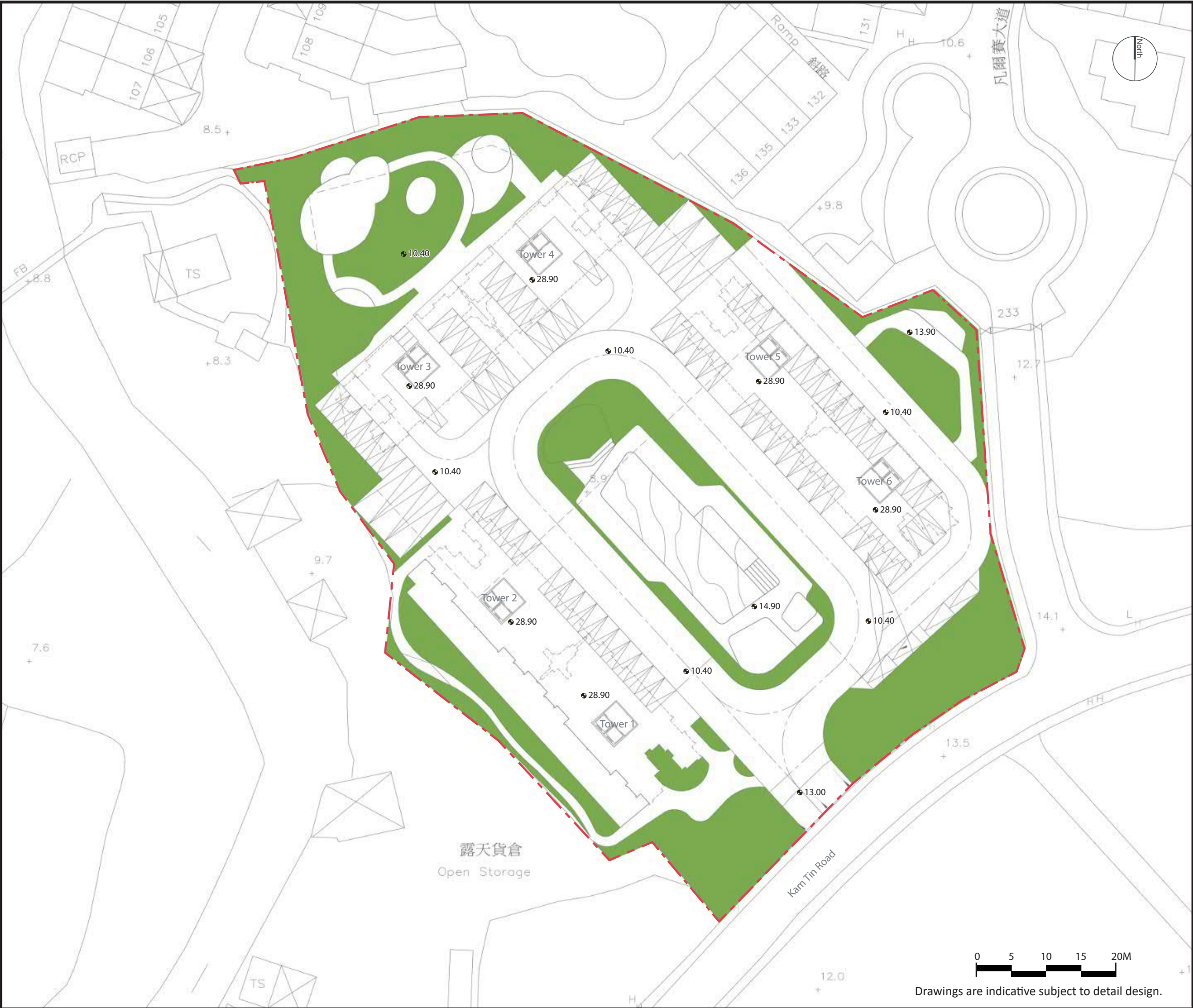


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LEGEND

Development Site Boundary

Uncovered Greenery at Primary Zone

Green Coverage				
Landscape Area				
GA01	Soft Landscape (tree and shrub planting)	1,888m ²	Uncovered	Primary Zone
Total Green Coverage:			1,888m ² (22%)	

FIGURE TITLE
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Green Coverage - All Levels

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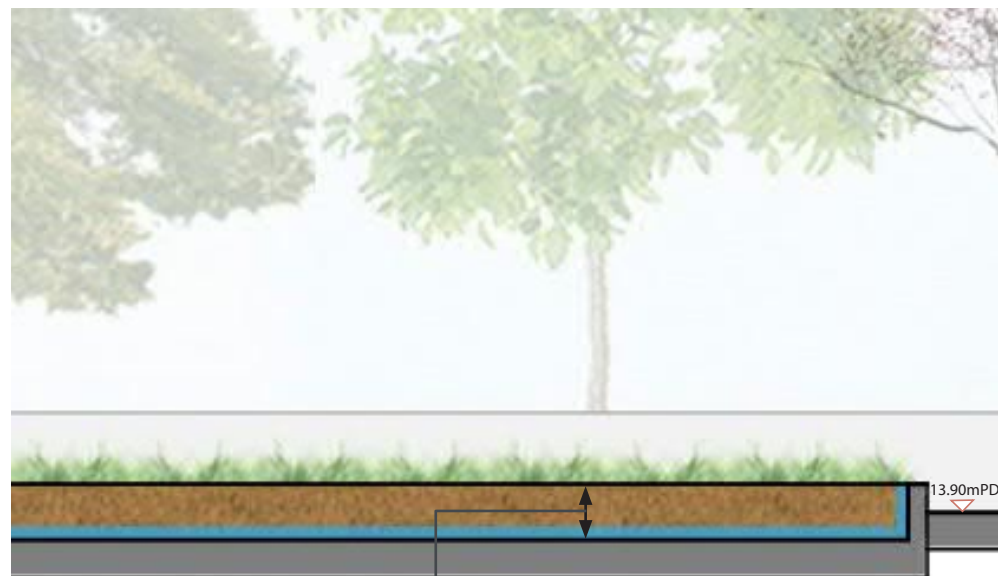


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300mm minimum soil depth for lawn

A. Section showing the proposed shrub and lawn planting (on structure)

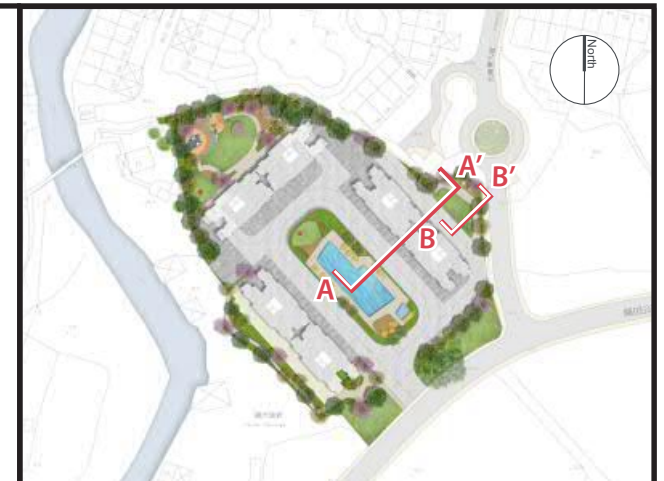
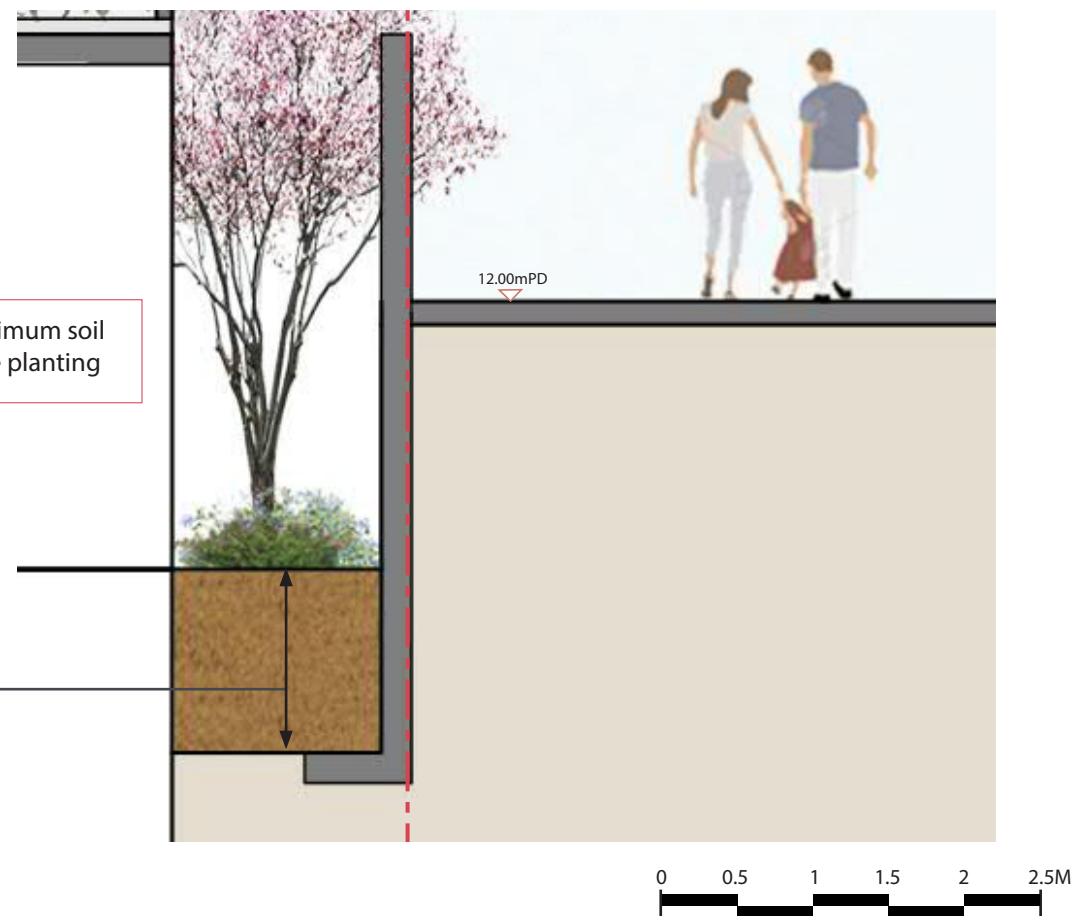


600mm minimum soil depth for shrub planting



1200mm minimum soil depth for tree planting

B. Section showing the proposed tree and shrub planting (at-grade)



LEGEND

- Section Line
- Typical Levels
- Soil Mix
- Planter Drainage Outlet to Engineering's Details
- Drainage Cell / Screed Laid to Falls
- Gravel Covered with Geotextile at Drain Outlet

Note:

- All soil depths stated exclude drainage layer.
- Yellow and light grey granite finishes for the planter walls and coping.

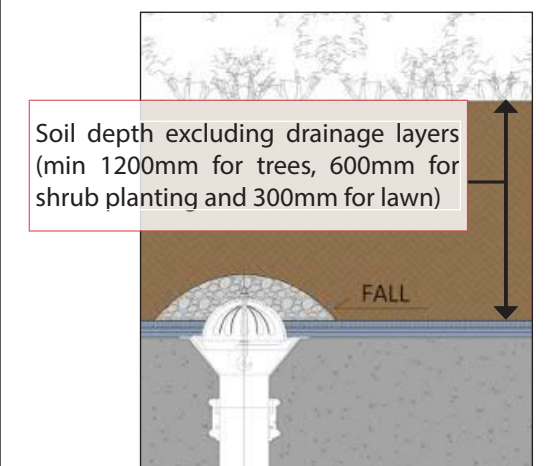


Diagram showing the Drainage outlet detail

FIGURE TITLE Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Typical Section showing Planter Soil Depth and Drainage Arrangement

SCALE	A.S.	DATE	APR 2025
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FIGURE NO.	Figure 9.1		REV
			-

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Appendix 3

Tree Preservation Proposal

**Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development
at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining
Government land, Shek Kong, Yuen Long, N.T.**

Tree Preservation Proposal

6th November 2025

Prepared By:

SCENIC Landscape Studio Limited



Project Title	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.
Report Title	Tree Preservation Proposal

Revision	Date	Complied by:	Checked by:	Approved by:	Description
-	20250424	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
A	20250430	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
B	20250502	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
C	20250506	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
D	20250715	Jackson Zhou	Fiona Yu	Chris Foot	Draft to Client
E	20251106	Jackson Zhou	Fiona Yu	Chris Foot	Final to Client

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1.0 Introduction

- 1.1 SCENIC Landscape Studio Limited have been commissioned to undertake the Tree Preservation Proposal to seek approval from the Town Planning Board ("TPB"/the "Board") under section 12A of the Town Planning Ordinance for rezoning of the Site from "Residential (Group C)2" ("R(C)2") and "Open Space" ("O") to "Residential (Group C)4" ("R(C)4") under the approved Kam Tin North Outline Zoning Plan ("OZP") No. S/YL-KTN/11, to enable the proposed residential development ("Proposed Development") at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long.
- 1.2 The Tree Preservation Proposal outlines the approach and findings of the tree survey and describes the type, number and condition of the existing trees found within the site. The proposal also identifies the trees found to be in conflict with the Proposed Development and makes recommendations for their proposed treatment and provides detailed compensatory planting proposals to compensate for the loss of these trees.
- 1.3 This tree preservation proposal has been prepared in broad accordance with Lands Administration Office Practice Note Number 2/2020 "Tree Preservation in Private Development". The survey approach is presented as **Annex I – Tree Survey Methodology**. The tree survey was undertaken in March 2025.

2.0 Existing Site Description

- 2.1 The Development Site, with a total site area of approximately 8,580 m², is located in Kam Tin North. The Site abuts Kam Tin Road to its immediate south.
- 2.2 Two low-rise, low-density residential developments in the same "R(C)2" zone, namely Seasons Villas and Seasons Monarch, are located to the immediate north-east and further west. Villages including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site. The areas to the immediate west and southwest are occupied by temporary structures, open storage sites and vacant vegetated land zoned "O". Shek Kong Barracks is located to the further south of the Site across Kam Tin Road.
- 2.3 The Development Site involves vegetated land gradient gradually descending from the south at about +13.5mPD towards the north at +8.1mPD in general.
- 2.4 The site and the area immediately adjacent to it contain approximately 100 nos. trees. A total of 96 trees were identified within the Development Site boundary. A number of 4 trees located outside the site boundary are included in the survey due to their proximity to it (and hence the future development) and the spread of their crowns and root balls into the Development Site.

3.0 Project Description

- 3.1 The Proposed Development has total site area of about 8,580 m² providing about a total of 240 residential units. It comprises a total of 6 nos. of residential towers with 6 storeys above ground (including G/F for entrance lobby / car park / E&M facilities). With site formation level at +10.4mPD, the referencing building height is about +28.9mPD.
- 3.2 The 1-storey clubhouse with green roof is located in the central portion; the sewage treatment plant (STP) involves 1 storey above ground and the basement for the tank; while the stormwater storage tank (SST) involves one storey below ground (tentatively below Tower 3 and Tower 4).

4.0 Existing Vegetation

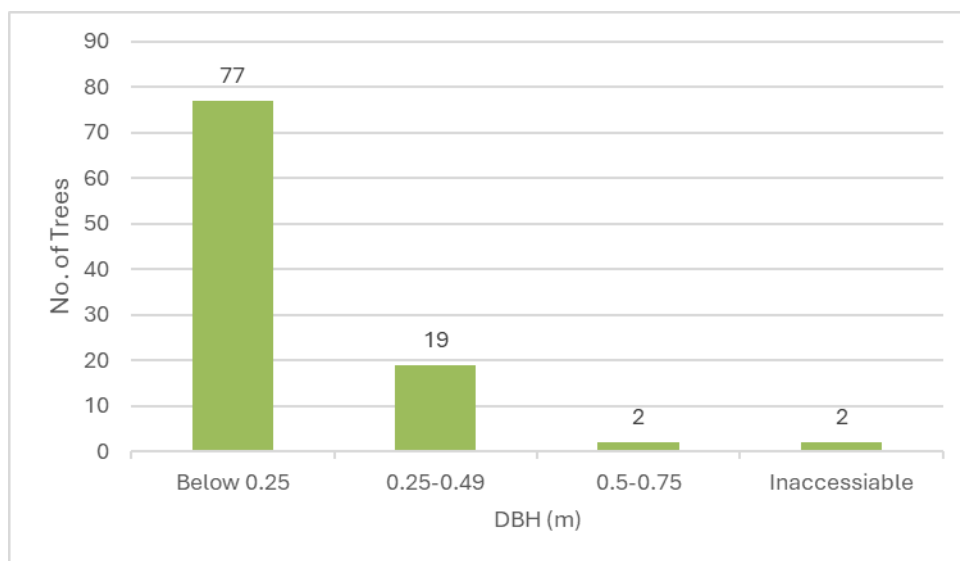
- 4.1 A total of 96 nos. trees were identified within the Development Site boundary and a further 4 nos trees outside the boundary. As shown on **Annex II – Tree Location Plan** the tree growth is scattered throughout the site. A number of the trees included in the survey are located outside of the site boundary however their branches and rooting structures extend into the site and so they have been considered as part of the assessment.
- 4.2 The existing tree locations are illustrated on **Annex II – Tree Location Plan** and **Annex III - Tree Assessment Schedule** provides an identification of numbers of tree species, an assessment of their condition and recommendations for the treatment of the trees and **Annex IV – Tree Photographic Record** provides a visual reference for the assessment.
- 4.3 **Table 4.1** below lists the tree species surveyed and their relative abundance and describes their conservation value (native or exotic).

Table 4.1 Existing Tree Species Summary

Botanical Name	Chinese Name	No. of Trees within Development Site	No. of Trees within Survey Area	Native (N) Exotic (E)	Status in Hong Kong
<i>Albizia lebbbeck</i>	大葉合歡	8	8	E	Common
<i>Bauhinia purpurea</i>	紅花羊蹄甲	3	3	E	Common
<i>Bombax ceiba</i>	木棉	21	21	E	Common
<i>Celtis sinensis</i>	朴樹	4	4	N	Common
<i>Delonix regia</i>	鳳凰木	1	1	E	Common
<i>Ficus hispida</i>	對葉榕	1	1	N	Common
<i>Ficus religiosa</i>	菩提樹	1	1	N	Common
<i>Ficus variegata</i>	青果榕	3	3	N	Common
<i>Leucaena leucocephala</i>	銀合歡	25	26	E	Common
<i>Litchi chinensis</i>	荔枝	0	3	E	Common
<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	27	27	N	Common
<i>Melia azedarach</i>	苦楝	1	1	N	Common
<i>Morus alba</i>	桑	1	1	N	Common
Total		96	100		

- 4.4 The most numerous of the existing trees are *Macaranga tanarius* var. *tomentosa* (27 nos.), *Leucaena leucocephala* (26 nos.) and *Bombax ceiba* (21 nos.). Other species include *Albizia lebbbeck*, *Bauhinia purpurea*, *Celtis sinensis*, *Dimocarpus longan*, *Delonix regia*, *Ficus hispida*, *Ficus religiosa*, *Ficus variegata*, *Litchi chinensis*, *Melia azedarach* and *Morus alba* are generally present in quantities of less than 8 nos. The photographs in **Annex IV** clearly shows the condition of the surveyed existing trees.
- 4.5 The average trunk diameter at breast height (DBH) is 0.22m. The average tree height is 6.78m and the average crown spread is 3.9m. **Table 4.2** Existing Tree Size Distribution, shows a large proportion of existing trees have a relatively small trunk DBH below 0.5m.

Table 4.2 Existing Tree Size Distribution



4.6 **Table 4.3** shows that a high percentage of trees exhibit an average to poor existing form and condition and have a low amenity value. This assessment and photographic record show that a considerable number of the trees are growing in close proximity to one another or a building resulting in leaning main stem and asymmetrical canopies. The value of many of these trees lies in their effect as group and not as individual specimens.

Table 4.3 Summary of Existing Tree Condition

Assessment Criteria	Status of Trees	% Trees
Form	Good	0%
	Average	15%
	Poor	85%
Existing Health Condition	Good	0%
	Average	75%
	Poor	21%
	Dead	4%
Structural Condition	Good	0%
	Average	52%
	Poor	48%
Amenity Value	Excellent	0%
	High	0%
	Medium	49%
	Low	51%

4.7 The Development Site contains no rare or protected tree species (based on Forests and Countryside Ordinance, Cap. 96) or Champion Trees (identified in the book 'Champion Trees in Urban Hong Kong').

- 4.8 There are no trees within the Development Site registered as Old and Valuable Trees (DEVB TC(W) No. 5/2020 Registration of Old and Valuable Trees (OVT) and Guidelines for their Preservation).
- 4.9 The site does not contain a "Tree of Particular Interest" (TPI) in accordance with para. 2.6.1 of the Guidelines for Tree Risk Assessment and Management Arrangement promulgated by DEVB.

5.0 Recommendations

- 5.1 The Proposed Scheme fully utilises the Development Site in order to create a high-quality living environment for the future residents whilst also responding to the existing landscapes and developments neighbouring the site. Given the cover of existing trees there is likely to be some impact however this has been avoided wherever possible. **Table 5.1** provides a summary of the recommendations for the treatment of the existing trees.

Table 5.1 Summary of Tree Recommendations

Recommendation	Number of Trees	% Trees
Trees to be retained	9	9%
Trees to be transplanted	0	0%
Trees to be felled	65	65%
Weed tree species to be removed	26*	26%
Total number of trees	100	100%

Note: *26 nos *Leucaena leucocephala* are also recommended for removal however this is considered to be an invasive weed species and so compensation for its removal is not required

- 5.2 The recommendations for the treatment of each of the trees is contained within **Annex III - Tree Assessment Schedule** and shown on **Annex V - Tree Recommendation Plan**.

Preservation of Existing Trees

- 5.3 The proposed architectural design has sought to minimise disturbance to the existing landscape and hence the future development context through the retention of as many of the existing trees in-situ as possible. These retained trees are usually in clusters, not only serve to create the landscape setting for the development but also screen low-level views particularly from the south which is facing Kam Tin Road. They also provide a greater sense of visual integration from the adjacent developments and create a mature landscape setting for the proposed development.
- 5.4 Given the extent the architectural scheme and the necessary infrastructure to be incorporated, it would be possible to retain some 9 nos trees which is equivalent to 9%.

Transplantation of the Existing Trees

- 5.5 In terms of assessing the feasibility of tree transplantation a number of factors have been considered as described in the **Annex I - Tree Survey Methodology**. Given these factors and the actual site conditions, unfortunately none of the trees are proposed to be transplanted.

Tree Felling Proposal

- 5.6 Despite the careful architectural design 65 nos. (65%) in total of the existing trees will be affected by the Proposed Scheme and these trees are recommended for felling. The tree felling recommendation is based on a range of factors including their species, form, condition, proximity to other trees, predicted survival rate and their lack of contribution to the future landscape character and amenity of the development as mentioned under section 5.5. A further 26 nos *Leucaena leucocephala* are also recommended for removal however this is considered to be an invasive weed species and so compensation for its removal is not required
- 5.7 Despite the predicted loss of these existing trees, the proposed landscape area at-grade and on the podiums will allow the introduction of high-quality replacement trees. These will compensate for the predicted tree loss and contribute to the enhancement of the landscape and visual amenity of the site and its environs. The new tree planting proposals are described in section 6.0.
- 5.8 The recommendations for tree retention, transplantation and felling are provided in **Annex III - Tree Assessment Schedule** and their proposed status recorded on tree photographs is presented as **Annex IV – Photographic Records of Existing Trees**. Their proposed status recorded on plans is presented on **Annex V – Tree Recommendation Plan**.

6.0 Preliminary New Tree Planting Proposal

- 6.1 The loss of existing trees will be compensated where possible through the planting of new trees. The planting proposals have sought to:
- Provide physical and visual integration with the surrounding landscape;
 - Create a planting structure with high amenity value which serves to integrate the Proposed Scheme at pedestrian level views;
 - Enhance the landscape character and visual amenity of the local area;
 - Provide appropriately located tree shade for the comfort of future users;
 - Provide compensation for the proposed felling of trees required to accommodate the new development; and
 - Maximise opportunities for tree planting.
- 6.2 The new tree planting plans are presented as **Annex VI – New Tree Planting Plan**.
- 6.3 The planting proposals have sought to compensate for the loss of existing trees but also enhance the future landscape character of the Proposed Development. The current scheme has achieved a new tree planting ratio of no less than 1:1 in terms of tree numbers.
- 6.4 **Table 6.1** below provides a summary of the new tree planting ratios in terms of number.

Table 6.1: New Tree Planting Ratios

New Tree Planting Metrics	Statistic / Ratio	Tree Size
Number of felled trees	65 (+26 <i>Leucaena leucocephala</i> *)	
Number of new trees	No less than 65	Actual number of new trees 65nos.
New Tree Planting Ratio (by number) (Number of newly planted trees : number of trees felled)	65 : 65 (1 : 1)	

New Tree Planting Metrics	Statistic / Ratio	Tree Size

Note: * *Leucaena leucocephala* is considered to be an invasive weed species and so compensation for its removal is not required.

- 6.5 The new trees will form part of the overall landscape design proposal which will be developed during the detailed design stage of the project. A summary of the preliminary new tree planting proposals is provided in **table 6.2** below.

Table 6.2: Preliminary New Tree Planting Proposals

Botanical Name	Chinese Name	Native / Exotic	Size (mm) (Spread x Height)	Spacing / Planting Centres (mm)
<i>Alstonia scholaris</i>	糖膠樹 (黑板樹)	Exotic	Heavy standard	3000
<i>Bauhinia x blakeana</i>	洋紫荊	Native	Heavy standard	3000
<i>Bischofia javanica</i>	秋楓	Exotic	Heavy standard	3000
<i>Celtis sinensis</i>	朴樹	Native	Heavy standard	3000
<i>Chukrasia tabularis</i>	麻楝	Exotic	Heavy standard	3000
<i>Cinnamomum burmannii</i>	陰香	Native	Heavy standard	3000
<i>Cratogeomys cochinchinense</i>	黃牛木	Native	Heavy standard	3000
<i>Crateva unilocularis</i>	樹頭菜	Exotic	Heavy standard	3000
<i>Elaeocarpus hainanensis</i>	水石榕	Exotic	Heavy standard	3000
<i>Jacaranda mimosifolia</i>	藍花楹	Exotic	Heavy standard	3000
<i>Liquidambar formosana</i>	楓香	Native	Heavy standard	3000
<i>Litsea glutinosa</i>	潺槁樹	Native	Heavy standard	3000
<i>Mallotus paniculatus</i>	白楸	Native	Heavy standard	3000
<i>Michelia chapensis</i>	樂昌含笑	Native	Heavy standard	3000
<i>Melia azadarach</i>	楝 (苦楝、森樹)	Exotic	Heavy standard	3000
<i>Plumeria rubra 'Acutifolia'</i>	黃雞蛋花	Exotic	Heavy standard	3000
<i>Sapium sebiferum</i>	烏柏	Native	Heavy standard	3000
<i>Schefflera heptaphylla</i>	鵝掌柴 (鴨腳木)	Native	Heavy standard	3000
<i>Spathodea campanulata</i>	火焰樹 (火焰木)	Exotic	Heavy standard	3000
<i>Syzygium levinei</i>	山蒲桃	Native	Heavy standard	3000
<i>Tabebuia rosea</i>	紅花風鈴木	Exotic	Heavy standard	3000
<i>Terminalia mantaly</i>	細葉欖仁	Exotic	Heavy standard	3000
<i>Washingtonia robusta</i>	大絲葵	Exotic	Heavy standard	2500

- 6.6 Heavy standard sized trees are defined as follows:

Heavy Standard:

- A sturdy, straight stem with stem height from the root collar to the lowest branch between 1800 mm and 2400 mm above the soil level;
- Total height above soil level between 3500 mm and 5000mm;
- Stem diameter measured at a point 1300mm above the root collar shall be over 75 mm to 145mm;
- A well-balanced branching head, or a well-defined straight and upright leader with branches growing out from the stem with good symmetry, and a minimum length of 800mm;

- A live-crown ratio will range between 40-60%;
- A rootball not less than 750 mm in diameter and 400 mm in depth;
- Grown in a container not less than 750 mm in diameter and 600 mm deep; and
- Free from any kind of pest, fungi, disease and parasitic plants.

6.7 The height of all trees shall be measured above root collar, and the diameter of all stems to be measured at a height of 1300mm above ground level.

7.0 Relevant Recognised Standards for Tree Preservation and Protection

7.1 The tree preservation, protection and transplanting proposals will be undertaken in accordance with the following:

- BS 3998: 2010 Recommendations for Tree Work;
- BS 4043: 1989 Recommendations for transplanting root-balled trees;
- BS 4428 1989 Code of practice for general landscape operations (excluding hard surfaces);
- BS 5837: 2012 Trees in relation to Construction;
- ArchSD General Specification, Section 25 (2022 edition); and
- Handbook on Tree Management prepared by the Greening, Landscape and Tree Management Section of Development Bureau
(<https://www.greening.gov.hk/en/tree-care/information-about-tree-maintenance-for-private-pro/handbook-on-tree-management/index.html>)

8.0 Conclusion

8.1 The tree survey identified some 96 nos. trees within the Development Site boundary and 4 nos. trees beyond the boundary. These are common native or exotic amenity or fruit tree species. The Development Site contains no rare or protected tree species (based on Forests and Countryside Ordinance, Cap. 96). There are no trees within the Development Site registered as Old and Valuable Trees (DEVB TC(W) No. 5/2020 Registration of Old and Valuable Trees (OVT), and Guidelines for their Preservation). The site does not contain a "Tree of Particular Interest" (TPI) in accordance with para. 2.6.1 of the Guidelines for Tree Risk Assessment and Management Arrangement promulgated by DEVB.

8.2 The proposals have sought to minimise impacts on the existing trees as far as possible with 9 nos. (9%) of the trees within the Development Site being retained in-situ. However, owing to the proposed site formation works associated with the proposed development scheme some 65 nos. (65%) of the existing trees shall be removed. A further 26 nos. *Leucaena leucocephala* are also recommended for removal. As these trees are assessed as not being suitable for transplanting, they are recommended for felling. The majority of these trees which are recommended for felling have a poor form, an average to poor health condition and structural condition and a low amenity value. All the affected trees also have a low suitability for transplantation.

8.3 New tree planting proposal shall compensate for the 65 nos. trees affected by the proposal with the planting of a minimum. 65 nos. of good quality heavy standard trees, representing a replanting ratio of 1 : 1 (new trees planted : trees felled) inside the Development Site.

Rezoning from “Residential (Group C)2” and “Open Space” zones to
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Tree Preservation Proposal

Annexes

Rezoning from “Residential (Group C)2” and “Open Space” zones to
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Tree Preservation Proposal

Annex I

Tree Survey Methodology

Tree Survey Methodology

1.0 Tree Survey

1.1 Definitions

- 1.1.1 Scope of Survey: To survey all 'trees' within the Development Site Boundary and the intermediate adjacent area where trees are possibly be affected by proposed road widening works.
- 1.1.2 Tree: A woody plant with a stem diameter over 95mm measured at a point 1300mm above the root collar (DBH).
- 1.1.3 DBH: Diameter at Breast Height as defined in the Practice Note Issue No. 2/2006 issued by AFCD.

1.2 Site Survey

- 1.2.1 The tree locations were recorded by visual assessment and subject to verification by topographic surveyor. Measurements of tree size (DBH, Height and Crown Spread) were primarily measured by Tree Surveyor. Photographs to show the whole tree, tree trunk, tree base are taken for each tree during the tree assessment survey. Topographic plans are attached in Annex II for reference.

1.3 Basic Tree Information in Tree Schedule

- 1.3.1 The tree survey schedule includes the following information for each tree or group of trees surveyed:
- 1.3.2 **Tree Number** - Each tree is allocated a tree number and clearly marked on site with an identity label showing the tree number and its position plotted on topographic Tree Location Plan(s) (Annex III). The numbering is to follow a logical sequence in numerical order say from north to south.
- 1.3.3 **Species Name (Botanical Name)** - All trees are identified by species, or in some cases by genus if full identification is not possible. Species names currently adopted by AFCD take precedence over other scientific publications.
- 1.3.4 **Jurisdiction** - Authority providing expert advice in vetting of Tree Removal Application for particular trees.
- 1.3.5 **Tree Dimensions** - The following dimensions are to be recorded for each tree:
- Overall **Height** (in metres);
 - **Trunk DBH** (in metres / millimetres; refer to schedule);
 - Overall **Crown Spread** (in metres);
 - **Height at the base of the tree**: In metres above principal datum (mPD); and
 - **Location**: On a slope or flat ground
- 1.3.6 Measurements of tree dimension and location are recorded by topographical surveyor

1.4 Photographic Record

- 1.4.1 Photographs to show the whole tree, tree trunk, tree base are taken for each tree during the tree assessment survey. Four photographs per A4 sheet.

1.5 Tree Health and Condition

1.5.1 Factors considered include both functional health and structural stability, which is evaluated with reference to the following criteria:

Foliage Condition

- Insect and fungal infections. Colour and small size indicating possible damage to roots;
- Crown density and foliage colour in consideration of normal species performance, seasonal and climatic effect;
- Evidence of insect, bacterial or fungal infections;
- Mechanical damage (e.g. typhoons, insect consumption and vandalism).

Branch Condition

- Poor shoot growth and die-back in the crown are often symptoms of root problems caused by a change in the water table level or soil compaction resulting from site development work.
- Dead or crossing branches.
- Heavy horizontal branches [which] may make the tree unstable" (Ref. R.Webb).
- The presence of broken damaged or cut branches to be noted as a possible site for infections, calluses may protect the wounds.
- Damaged branches which make the tree unbalanced or unstable;
- Location of decay and/or voids in the branches.
- Whether the tree is "an edge tree exposed as a result of the removal of adjacent trees [which] often has an unbalanced crown and may be hazardous" (Ref R.Webb).

Trunk Condition

- Tightly forked trunks which may be a source of weakness in the tree and in high winds can be torn apart.
- Inspect for "cavities or internal rot [which] can be revealed by discoloured bark, moisture seeping through the bark or bracket fungi" (Ref R.Webb).
- Co-dominant stems with included bark.
- Open cavities, cracks and bark damage.

Root Condition

- Damaged surficial roots.
- Ground heave evident in cracks in the soil around root zone.
- Branch die-back.

Miscellaneous

- Occurrence of aggressive climbers or parasitic plants.
- Asymmetrical crowns and leaning due to intense competition between adjacent trees.
- Tangled branches or roots.
- Adjacency of underground structures.

1.5.2 Ratings for tree health and condition:

Definition

- G Trees with a low incidence of less serious defects are graded as good;
- A Trees with a higher incidence of less serious defects are graded as average;
- P Trees with more serious defects are graded as poor; or
- D Trees that are dead or irretrievably unhealthy are graded as dead.

1.6 Tree Form

1.6.1 Assessment of tree form following inspections are classified as follows with reference to the overall tree size, shape and any special features:

G	Good - trees with well-balanced form, upright, evenly branching, well-formed head and generally in accordance with the standard form for its species
A	Average - Trees with less balanced crowns which are mildly distorted due to competition with neighbouring trees or structures, or which have suffered minor damage or which have leaning trunks for example are graded as average
P	Poor - trees with very unbalanced form, distorted crowns, severely leaning, suffering loss of major branches with general damage; unstable and growing close to adjacent trees.

1.6.2 Terms used to describe tree form:

- Forked: a tree with a division in the main stem or having major branches that divide near ground level.
- Topped: a tree that has had its main trunk severed drastically reducing and distorting its crown development.
- Multi-stem: a tree with more than one main stem or trunk

1.7 Tree Condition

1.7.1 Assessment of tree health and condition involves inspections for the above features and classification as follows:

G	Good - trees with a low incidence of the less serious features listed above and a high chance of a fast recovery from such features.
A	Average - trees with a higher incidence of the less serious features and a medium chance of recovery.
P	Poor - trees with more serious health features and with a low chance of recovery, even with remedial measures.
D	Dead - no signs of life or irretrievably unhealthy

1.8 Amenity Value

1.8.1 Amenity value is graded as "Excellent", "High", "Medium" or "Low". The grading indicates the following qualities in trees or groups of trees:

Excellent	Important trees where species may be of fung shui significance which should be retained by adjusting the design layout accordingly
------------------	--

High	Common species and good health, good condition and good form.
Medium	Common species and average health, average condition and average form.
Low	Common species and little or no functional or visual value and poor health, poor condition and poor form.

1.9 Structural Condition

- 1.9.1 Assessment of tree structural condition involves inspections for the overall tree structural system features and classification as follows:

G	Good - trees with good structural system and robust form with low risk of structural failure.
A	Average - trees with overall robust structure despite some minor structural problems and risk of structural failure is medium.
P	Poor - trees with more serious structural problem and with high risk of structural failure.

1.10 Suitability for Transplanting

- 1.10.1 This assessment is based on the health of the tree and the practicalities of transplantation. Some species are much more tolerant of the stress of transplantation than others. The assessment of the survival rate of a species after transplantation is based on the observed performance of that species in previous transplantation programmes. Species with insufficient transplantation data are assumed to have a low survival rate. Grading are given as follows:

High - very likely to survive transplantation;

Medium - likely to survive transplantation;

Low - unlikely to survive due to poor health/species/form or difficult to transplant.

1.11 Conservation Status

- 1.11.1 Assessment of conservation status indicates rarity and protection status under relevant ordinances of a species in Hong Kong. References such as Rare and Precious Plants of Hong Kong, the IUCN Red List of Threatened Species and the Forests and Countryside Ordinance (Cap. 96) may be used.). The categories include very common, common, rare, rare and protected.

1.12 Remarks

- 1.12.1 Notes will be made about the condition of the tree including any defects, whether it is leaning or not, asymmetrical canopies, the presence of cavities, tree form issues such as forked main stem, included bark, decay, growth of sprouts; and/or growth of climbers. The schedule shall also record any trees with high conservation values such as rare or protected species, old and valuable trees

etc.

2.0 Effects of the Development on Existing Trees

2.1 Treatment of Trees

- 2.1.1 First priority to retain trees and then if this is not possible transplant trees to new location. Trees in direct conflict with proposals which are necessary to be felled shall be confirmed on site by the Architect’s / Engineer’s Representative. Existing trees to be retained will be protected during construction.

2.2 Assessment

- 2.2.1 The assessment leading to the recommendation for the treatment of the tree is based on the following:

Retain

- 2.2.2 The preferred option for all trees is to be retained in-situ unless they pose a threat to the public or the trees are nuisance species (e.g. *Leucaena leucocephala*). In case a tree group possesses significant value in the landscape or to the ecosystem, it should be retained as a whole even when the individual components are not outstanding aesthetically.

- 2.2.3 The feasibility of retaining trees has been considered with regard to the following:

- Potential damage to trees as a result of proximity to the works.
- Changes to ground level on a macro scale which affects the ground water table and may cause severe stress.
- Special constructions to maintain the existing ground level are also considered.
- Conflict between tree roots and the proposed works.

Transplant

Statutory Guidelines

- 2.2.4 The recommendation of Transplanting makes reference to paragraph 7[b] of DEVB TC(W) No. 4/2020 which states ‘... This should be considered as far as possible unless the trees affected are of low conservation and amenity value, or have a low chance of surviving or recovering to its normal form after transplanting’.

- 2.2.5 In situations where it is impossible to retain trees then transplanting them is the first consideration. The criteria upon which the assessment of transplanting trees is based includes the following:

- **Variety of species**, rare Hong Kong species are particularly important.
- **Condition of the tree**, especially trees with balanced form, in good health and with high amenity value.
- **Size and maturity**, small and younger trees have a better chance of surviving transplanting while larger, mature trees are difficult to transplant both logistically and in terms of survival rate.
- **Species**, different tree species have differing rates of survival and are better suited to transplanting than others.
- **Access**, large machinery may be required to lift the trees, steep slopes and rocky terrain

therefore make it difficult to access trees.

2.2.6 A recommendation to transplant a tree will be made only when:

- It is impossible to retain the tree in-situ due to the unavoidable proximity of proposed retaining walls, viaducts, roads or other structures, including their foundations, which pose major conflicts with its branches, root system or the tree in its entirety.
- It is impossible to retain the tree in-situ due to changes to surrounding ground levels on a macro scale which affect the ground water table thereby severely stressing the tree or where large areas of proposed cut and fill unavoidably affect the tree.
- Transplantation of the tree is feasible and is positive to the landscape and environment for the public.
- The Overall Value of the tree justifies transplanting.

Fell

Statutory Guidelines

2.2.7 The recommendation for the Felling of trees will only be considered as a last resort under the following circumstances:

- Trees in direct conflict with the proposals; changes of level etc., trees which cannot be transplanted;
- There is no practical alternative and the tree to be felled is neither included in the Register of Old and Valuable Trees under DevB TC(W) No. 5/2020 nor potentially eligible to be registered as such..
- The tree has an unrecoverable health problem and is in poor condition;
- Dead, damaged, hazardous or trees with contagious diseases are also proposed to be felled or
- Trees which are unsuitable for the proposed development. For example poisonous species within a public open space;
- Woodland trees which have had adjacent trees removed and have an unbalanced form or which are at risk of being blown over due to loss of supporting trees are considered for felling; or
- Other justifications provided by the project proponent.

2.2.8 Where it is possible neither to retain trees in-situ nor transplant them to other permanent locations within the site or off-site, felling is recommended. The felling of a tree must be justified by the following criteria:

- No irreplaceable, rare or protected species (under Forestry Regulation Cap.96) is felled.
- The felling would not cause a serious loss of species diversity in the subject area.
- A genuine development or traffic need exists, which cannot be reasonably overcome.
- Adequate compensatory tree planting is to be implemented, or replacement with a new nursery grown specimen of the same species and comparable size is deemed more cost effective than transplanting, particularly in the case of common pioneer or cultivated species (e.g. *Acacia confusa*).
- The tree is not an unusually large or fine example of its species.
- The tree is in poor condition or is unsuitable for transplanting due to its low survival potential.
- The tree is not in the list of Champion Trees (Ref: Jim, C.Y. 1994. Champion Trees in Urban Hong Kong. Urban Council, Hong Kong) nor Unusual Trees (Ref: AFCD's Register of Unusual Trees in Rural Areas), nor registered Old and Valuable Tree.
- The tree is neither a significant landmark tree nor of special fung shui or cultural significance.
- Existing site conditions are such that transplantation would be hazardous to the public.

- The tree is dead, hazardous or diseased.
- A tree that has been rendered unstable because of the removal of neighbouring trees may be considered for felling.
- The tree possesses invasive habits. According to DEVB TCW No. 4/2020 para. 8 this includes *Leucaena leucocephala* is identified as an undesirable species with aggressive growth characteristics which prevent natural succession of indigenous species and so is not controlled by the same preservation requirements as other more valuable tree species. Therefore, this weed species should be replaced with native tree species.

2.3 Tree Photography

2.3.1 With respect to the objectives of photo recording and the possible function of the photographs, shot of each tree follows the standards set out below:

- Where practical (within reasonable distance and within a safe location), the whole form of an individual tree will be shown;
- Where obstacle(s) are present (e.g. structures, other trees / nearby vegetation, dense climbers covering, etc.), the main tree trunk(s) from the base level to at least 3m in height will be shown;
- Picture to show the full extent of the canopy (may include more than one shot) and the base of the tree including the adjacent ground conditions;
- Where special feature(s) at the trunk base present (e.g. exposed roots, special rooting medium, etc.), the photo shot of a tree is taken from the location where such feature as well as the largest possible part of the tree can be displayed.

2.4 References

Ordinances, Circulars and Practice Notes

- Chapter 96. Forest and Countryside Ordinance;
- Chapter 586. Protection of Endangered Species of Animals and Plants Ordinance;
- DEVB TC (W) No. 5/2020, Registration and Preservation of Old and Valuable Trees;
- DEVB (GLTM) 04/2020, Tree Preservation;
- LAO/LandsD Practice Note 2/2020 ‘Tree Preservation and Tree Removal Application for Building Development in Private Projects’;
- AFCD Conservation Practice Note No. 2, Measurement of Diameter at Breast Height (DBH); and
- AFCD Conservation Practice Note No. 3, The Use of Plant Names.

Publications

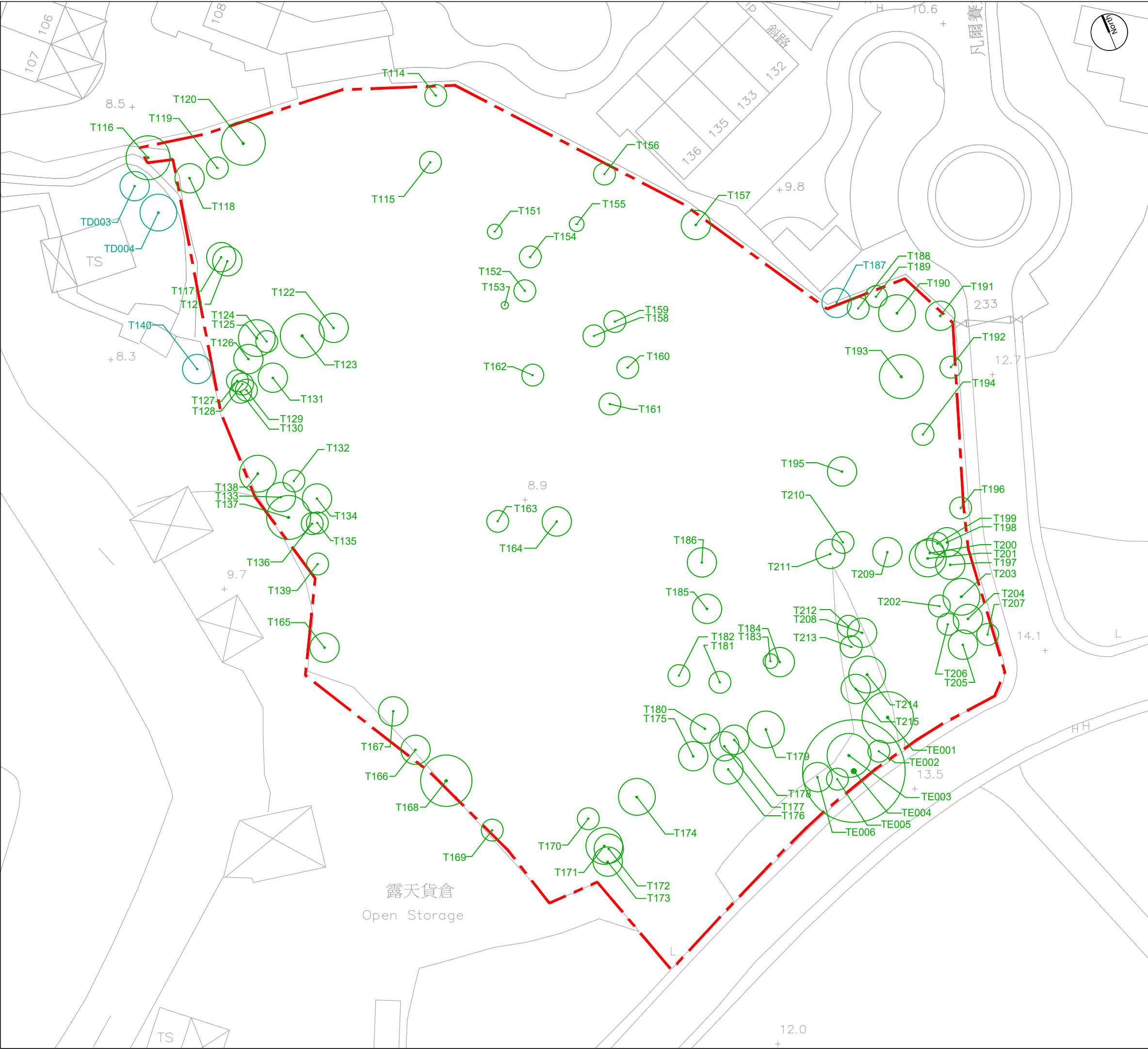
- HU, Q. et al (2003) Rare and Precious Plants of Hong Kong. AFCD, Hong Kong;
- DEVB TC(W) No. 5/2020 – Registration and Preservation of Old and Valuable Trees
<https://www.greening.gov.hk/en/resource-centre/technical-circulars-practice-notes-and-guidelines/index.html>
- Webb, R. (1991). Tree Planting and Maintenance in Hong Kong. Standing Interdepartmental Landscape Technical Group, Hong Kong Government, Hong Kong.

Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex II

Tree Location Plan



SCENIC landscape studio limited

12/F So Hong Commercial Building, 41-47 Jervois Street,
Sheung Wan, Hong Kong Telephone: +852 2468 2422
Email: scenic@studioscenic.com Fax: +852 3016 2422

Legend

- DEVELOPMENT SITE BOUNDARY
- +26.3 EXISTING LEVEL
- ⊙ EXISTING TREES WITHIN DEVELOPMENT SITE BOUNDARY
- ⊙ EXISTING TREES OUTSIDE DEVELOPMENT SITE BOUNDARY

Keyplan

General notes

Rev.	Date	Description	Initial
Revision			

	Name:	Signed:	Date:
Designed by:	CJF		
Drawn by:	JZ		
Checked by:	JBC		
Approved by:	CJF		

Project Title:
Rezoning from "Residential (Group C)2" and "Open Space" zones to
"Residential (Group C)4" zone for a Proposed Residential Development at Lot
Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government Land,
Shek Kong, Yuen Long, N.T.

Drawing Title:
TREE LOCATION PLAN

Drawing Number: CKHP006 - TL001		Revision: -	
Project Number: CKHP006		Scale: 1:500@A3	Date: 15/07/2025

Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex III

Tree Assessment Schedule

Tree Survey Schedule

Address: Shek Kong
Field survey conducted on 15th March 2025
Prepared by Luk Ka Chun (Certified Arborist no. HK-0662A)
To be read in conjunction with drawing numbers: CKHP006 TL001 and TR001

Tree No.	Botanical Name	Chinese Name	Top of Soil (level at base of tree (mPD)	DBH1	DBH2	Survey Size (M)			Form			Health Condition				Amenity Value				Structural Condition			Conservation Status (Protected by Cap. 96, CAP 586 etc / Common)	Suitability for Transplanting				Proposed Treatment			Outside Site	Within Site	Department to provide expert for LandsD	Justification	Remarks	
						DBH (m)*	Height (m)	Spread (m)	G	A	P	G	A	P	D	E	H	M	L	G	A	P		High / Medium / Low	Remarks (Major deremining factors for the low rating)				Retain	Trans						Fell
																									Site Condition	Tree Condition	Tree Size	Tree Species								
T114	<i>Leucaena leucocephala</i>	銀合歡	8.72			0.190	6	3			1			1					1			1	common, nill	Low				1			1		1	LandsD	A,C,D,I	Collapsed, Climber, Broken branches
T115	<i>Leucaena leucocephala</i>	銀合歡	8.60			0.318	6	3			1			1					1			1	common, nill	Low				1			1		1	LandsD	A,C,D,I	Collapsed, Broken branches, Climber
T116	<i>Leucaena leucocephala</i>	銀合歡	8.33			0.254	8	6			1		1						1		1		common, nill	Low				1			1		1	LandsD	A,C,D,I	Leaning, Dead trunk, Climber
T117	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.98			0.222	5	4			1		1					1				1	common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Twisted growth, Broken branches, Epicormic, Wound, Cross branches with T124, Basal wound, Trunk decay
T118	<i>Leucaena leucocephala</i>	銀合歡	8.96			0.159	6	4			1		1						1		1		common, nill	Low				1			1		1	LandsD	A,C,D,I	Leaning, Climbers, Codominant trunks
T119	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.65			0.159	5	3			1		1					1			1		common, nill	Low				1			1		1	LandsD	A,C,D,I	Leaning, Basal wound, Epicormics, Climber
T120	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.58			0.254	7	6			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Basal wound, Epicormics, Climber, Broken branch, Codominant trunks
T121	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.96			0.222	5	4			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Broken branches, Epicormics, Basal wound, Cross branches with T125
T122	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.96			0.254	5	4			1			1				1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Epicormic, Broken branches, Basal wounds, Sparse foliage
T123	<i>Melia azedarach</i>	苦楝	9.03			0.740	10	6		1			1					1			1		common, nill	Low			1			1		1	1	LandsD	A,D	Broken branches, Climber, Hanger
T124	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.87			0.159	5	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Epicormics
T125	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.89			0.222	7	5			1		1					1				1	common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Uproot, Climber, Broken branches, Basal wound, Wound, Epicormic
T126	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.85			0.190	6	4			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Broken branches, Basal wound, Wound, Epicormic
T127	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.08			0.159	6	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Epicormics, Broken branches, Asymmetrical canopy
T128	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.17			0.159	6	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Epicormics, Broken branches, Crook trunk, Asymmetrical canopy
T129	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.24			0.159	5	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Basal wound, Epicormics, Asymmetrical canopy
T130	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.02			0.190	4	3			1			1					1		1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Absence of central leader, Broken branch
T131	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.71			0.222	5	4			1		1					1			1		common, nill	Low		1				1		1	1	LandsD	A,C,D,I	Broken branches, Epicormic, Wound, Multiple trunk, Leaning, Codominant leaders
T132	<i>Leucaena leucocephala</i>	銀合歡	8.59			0.159	5	3			1		1						1		1		common, nill	Low				1			1		1	LandsD	A,C,D,I	Leaning, Climbers, Imbalanced form
T133	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.19			0.190	6	4			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning
T134	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.52			0.190	5	4			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Basal wound, Epicormic, Leaning, Broken branches, Climber, Asymmetrical canopy
T135	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.22			0.159	4	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Epicormic, Broken branches, Asymmetrical canopy, Climber
T136	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.07			0.159	5	3			1		1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning, Dead branches, Climbers, Asymmetrical canopy
T137	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.05			0.318	8	6		1			1					1			1		common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Leaning
T138	<i>Macaranga tanarius</i> var. <i>Tomentosa</i>	血桐	8.26			0.222	7	5			1		1					1				1	common, nill	Low		1		1			1		1	LandsD	A,C,D,I	Collapsed, Leaning, Climber, Epicormic
T139	<i>Ficus hispida</i>	對葉榕	8.04			0.159	3	3			1			1				1			1		common, nill	Low		1				1		1	1	LandsD	A,D	Leaning, Climber, Epicormic, Broken branches
T140	<i>Litchi chinensis</i>	荔枝	8.19			0.190	5	4		1			1					1			1		common, nill	Low		1			1			1		LandsD	A,D	Topped, Epicormics, Wounds\
T151	<i>Ficus religiosa</i>	菩提樹	8.84			0.222	5	2			1			1					1		1		common, nill	Low		1				1		1	1	LandsD	A,D	Leaning, Imbalanced form, Climber
T152	<i>Bauhinia purpurea</i>	紅花羊蹄甲	8.79			0.222	6	3			1				1				1			1	common, nill	Low		1				1		1	1	LandsD	A,D,L	Dead, Collapsed, Broken branches, Epicormic, Climber
T153	<i>Bombax ceiba</i>	木棉	8.82			0.222	8	1			1				1				1			1	common, nill	Low		1				1		1	1	LandsD	A,D,L	Dead, Collapsed
T154	<i>Bauhinia purpurea</i>	紅花羊蹄甲	8.67			0.159	5	3			1		1					1			1		common, nill	Low		1				1		1	1	LandsD	A,D	Leaning, Broken branches, Epicormic, Climber
T155	<i>Bombax ceiba</i>	木棉	8.71			0.222	6	2			1			1					1		1		common, nill	Low		1				1		1	1	LandsD	A,D	Climber, Low live crown ratio
T156	<i>Bombax ceiba</i>	木棉	8.59			0.190	8	3			1			1					1		1		common, nill	Low		1				1		1	1	LandsD	A,D	Climber, Low live crown ratio
T157	<i>Bombax ceiba</i>	木棉	8.54			0.190	8	4		1			1					1			1		common, nill	Medium				1			1		1	LandsD	A,D	Broken branch
T158	<i>Albizia Lebbeck</i>	大葉合歡	8.87			0.159	6	3			1			1					1			1	common, nill	Low		1		1			1		1	LandsD	A,D	Collapsed, Climber
T159	<i>Bauhinia purpurea</i>	紅花羊蹄甲	8.83			0.159	4	3			1			1					1			1	common, nill	Low		1				1		1	1	LandsD	A,D,L	Dead, Leaning, Climber
T160	<i>Bombax ceiba</i>	木棉	9.03			0.222	9	3			1			1					1		1		common, nill	Low		1				1		1	1	LandsD	A,D	Climber, Low live crown ratio
T161	<i>Bombax ceiba</i>	木棉	9.21			0.190	7	3			1			1					1		1		common, nill	Low		1				1		1	1	LandsD	A	Climber, Low live crown ratio
T162	<i>Leucaena leucocephala</i>	銀合歡	8.99			0.159	7	3			1		1						1		1		common, nill	Low				1			1		1	LandsD	A,C,D,I	Leaning, Climber
T163	<i>Ficus variegata</i>	青果榕	9.16			0.190	4	3			1			1				1			1		common, nill	Low		1				1		1	1	LandsD	A	Climber, Epicormics, Absence of leader

Tree No.	Botanical Name	Chinese Name	Top of Soil (level at base of tree (mPD)	DBH1	DBH2	Survey Size (M)			Form			Health Condition				Amenity Value				Structural Condition			Conservation Status (Protected by Cap. 96, CAP 586 etc / Common)	Suitability for Transplanting				Proposed Treatment			Outside Site	Within Site	Department to provide expert for LandsD	Justification	Remarks	
						DBH (m)*	Height (m)	Spread (m)	G	A	P	G	A	P	D	E	H	M	L	G	A	P		High / Medium / Low	Remarks (Major deremining factors for the low rating)				Retain	Trans						Fell
																									Site Condition	Tree Condition	Tree Size	Tree Species								
T166	Macaranga tanarius var. Tomentosa	血桐	9.64			0.222	7	4			1			1				1			1		common, nil	Low							1		1	LandsD	A,C,D,I	Basal cavity, Broken branches, Epicormic, Climber
T167	Morus alba	桑	9.42			0.222	5	4		1				1				1			1		common, nil	Low	1						1		1	LandsD	A	On slope
T168	Bombax ceiba	木棉	10.5			0.380	11	7		1				1				1			1		common, nil	Low	1	1	1				1		1	LandsD	A	Cargos beside
T169	Ficus variegata	青果榕	10.52			0.318	4	3			1				1				1		1		common, nil	Low		1					1		1	LandsD	A,D	Broken branches, dead branch, decay branch, epicormics, dead stub
T170	Bombax ceiba	木棉	10.17			0.222	7	3			1			1				1			1		common, nil	Medium		1					1		1	LandsD	A,D	Asymmetric form, Low live crown ratio, Climber, Broken trunk
T171	Ficus variegata	青果榕	10.22			0.286	9	5		1				1				1			1		common, nil	Low	1		1				1		1	LandsD	A	Climber
T172	Macaranga tanarius var. Tomentosa	血桐	10.16			0.318	7	4			1			1				1			1		common, nil	Low		1					1		1	LandsD	A,C,D	Leaning, Codominant trunk, Included bark
T173	Macaranga tanarius var. Tomentosa	血桐	9.97			0.222	7	4			1			1				1			1		common, nil	Low		1		1			1		1	LandsD	A,C,D	Topped, Broken branches, Epicormic, Multiple trunk
T174	Albizia Lebbeck	大葉合歡	9.99			0.318	10	5		1				1				1			1		common, nil	Low				1			1		1	LandsD	A,D	Leaning, Climber
T175	Albizia Lebbeck	大葉合歡	9.92			0.222	9	4			1			1				1			1		common, nil	Low		1					1		1	LandsD	A,D	Leaning, Climber
T176	Macaranga tanarius var. Tomentosa	血桐	10.01			0.190	6	4			1			1				1			1		common, nil	Low		1		1			1		1	LandsD		Leaning
T177	Celtis sinensis	朴樹	9.87			0.222	8	4			1				1				1			1	common, nil	Low		1					1		1	LandsD	D,L	Dead, Uproot, Leaning, Bending trunk
T178	Leucaena leucocephala	銀合歡	9.97			0.159	5	4			1			1					1		1		common, nil	Low				1			1		1	LandsD		Leaning, Climber
T179	Bombax ceiba	木棉	10.02			0.254	10	5			1			1				1			1		common, nil	Medium		1					1		1	LandsD		Crook trunk, Climber
T180	Leucaena leucocephala	銀合歡	9.76			0.159	6	4			1			1					1		1		common, nil	Low				1			1		1	LandsD	A,D	Leaning, Climber
T181	Albizia Lebbeck	大葉合歡	9.78			0.190	3	3			1			1				1			1		common, nil	Low				1			1		1	LandsD		Broken branch, Climber
T182	Bombax ceiba	木棉	9.75			0.190	6	3			1				1				1		1		common, nil	Low		1					1		1	LandsD	A,D	Leaning, Climber
T183	Bombax ceiba	木棉	9.88			0.159	6	2			1				1			1			1		common, nil	Low		1					1		1	LandsD		Crook leader, Climber
T184	Leucaena leucocephala	銀合歡	9.82			0.159	8	4			1			1					1		1		common, nil	Low				1			1		1	LandsD		Leaning, Crook trunk
T185	Leucaena leucocephala	銀合歡	9.68			0.159	8	4			1			1					1			1	common, nil	Low				1			1		1	LandsD	A,C,D,I	Climber, Leaning, Uproot
T186	Albizia Lebbeck	大葉合歡	9.71			0.222	7	4			1			1				1			1		common, nil	Low				1			1		1	LandsD	A,D	Climber, Imbalanced form
T187	Leucaena leucocephala	銀合歡	9.23			0.222	7	4			1			1					1			1	common, nil	Low				1			1	1		LandsD	A,C,D,I	Collapsed, Climber, In narrow planter
T188	Bombax ceiba	木棉	8.63			0.190	6	3			1				1				1		1		common, nil	Low		1					1		1	LandsD		Topped, Epicormics
T189	Celtis sinensis	朴樹	8.57			0.159	8	3		1				1				1			1		common, nil	Low		1					1		1	LandsD		Climber, Epicormic
T190	Bombax ceiba	木棉	8.66			0.254	8	5			1				1				1		1		common, nil	Low		1					1		1	LandsD		Topped, Epicormics, Climbers
T191	Bombax ceiba	木棉	8.50			0.222	8	4		1				1				1			1		common, nil	Medium				1			1		1	LandsD		Climber
T192	Bombax ceiba	木棉	8.48			0.222	8	3			1				1				1			1	common, nil	Low		1					1		1	LandsD	D,L	Dead, Collapsed
T193	Leucaena leucocephala	銀合歡	9.02			0.381	10	6			1			1					1			1	common, nil	Low				1			1		1	LandsD		Codomaintrunk, Included bark, Climber, Broken branch, Exposed roots, Root plate movement
T194	Albizia Lebbeck	大葉合歡	9.03			0.159	8	3			1			1				1			1		common, nil	Low		1					1		1	LandsD	A,D	Leaning, Climber, Imbalanced form
T195	Leucaena leucocephala	銀合歡	9.25			0.222	7	4			1				1				1			1	common, nil	Low				1			1		1	LandsD	A,C,D,I	Collapsed
T196	Bombax ceiba	木棉	9.59			0.254	9	3			1			1				1			1		common, nil	Medium		1					1		1	LandsD	A	Low live crown ratio,
T197	Leucaena leucocephala	銀合歡	10.50			0.159	9	4			1			1				1			1		common, nil	Low				1			1		1	LandsD	A,D	Included bark, Codominant branches, Leaning, Climber
T198	Leucaena leucocephala	銀合歡	9.85			0.190	8	4			1			1					1		1		common, nil	Low				1			1		1	LandsD	A,C,D,I	Codominant branch, Included bark, Climber
T199	Leucaena leucocephala	銀合歡	10.27			0.159	7	3			1			1					1		1		common, nil	Low				1			1		1	LandsD	A,C,D,I	Leaning, Broken trunk, Climber
T200	Leucaena leucocephala	銀合歡	10.48			0.159	8	4			1			1					1			1	common, nil	Low				1			1		1	LandsD	A,C,D,I	Leaning, Codominant branch, Climber, Uproot
T201	Leucaena leucocephala	銀合歡	10.65			0.286	10	5			1			1					1		1		common, nil	Low				1			1		1	LandsD	A,C,D,I	Leaning, Codominant trunk, Angle iron embedded into trunk, Included bark
T202	Leucaena leucocephala	銀合歡	11.70			0.159	7	3			1			1					1		1		common, nil	Low				1			1					

Tree No.	Botanical Name	Chinese Name	Top of Soil (level at base of tree (mPD)	DBH1	DBH2	Survey Size (M)			Form			Health Condition				Amenity Value				Structural Condition			Conservation Status (Protected by Cap. 96, CAP 586 etc / Common)	Suitability for Transplanting				Proposed Treatment			Outside Site	Within Site	Department to provide expert for LandsD	Justification	Remarks		
						DBH (m)*	Height (m)	Spread (m)	G	A	P	G	A	P	D	E	H	M	L	G	A	P		High / Medium / Low	Remarks (Major deremining factors for the low rating)				Retain	Trans						Fell	
																									Site Condition	Tree Condition	Tree Size	Tree Species									
T213	Bombax ceiba	木棉	10.38			0.190	9	3		1			1					1			1		common, nil	Medium				1			1		1	LandsD		On Slope	
T214	Bombax ceiba	木棉	11.22			0.254	10	5			1		1					1			1		common, nil	Low		1					1		1	LandsD		Crook trunk, Low live crown ratio	
T215	Bombax ceiba	木棉	10.14			0.190	8	4			1			1					1		1		common, nil	Low		1					1		1	LandsD		Climber, Low live crown ratio	
TD003	Litchi chinensis	荔枝	Inaccessible			Inaccessib le	4	4			1		1					1			1		common, nil	Low		1		1	1			1		LandsD	A,D,F	Small specimen, leaning form	
TD004	Litchi chinensis	荔枝	Inaccessible			Inaccessib le	4.5	5			1		1						1		1		common, nil	Low		1		1	1			1		LandsD	A,D,F	Small specimen, leaning form, asymmetrical canopy, some dieback	
TE001	Albizia lebbeck	大葉合歡		0.42	0.26	0.494	10	7		1			1						1		1		common, nil	Low	1		1				1			1	LandsD		Dead stub
TE002	Celtis sinensis	朴樹				0.365	6	3			1		1						1		1		common, nil	Low	1		1						1	LandsD			
TE003	Macaranga tanarius var. Tomentosa	血桐				0.190	5	6			1		1						1		1		common, nil	Low	1			1	1					1	LandsD		
TE004	Delonix regia	鳳凰木		0.51	0.40	0.648	12	14		1			1						1		1		common, nil	Low	1		1							1	LandsD		Codominant trunks
TE005	Macaranga tanarius var. Tomentosa	血桐				0.145	5	3			1		1						1		1		common, nil	Low	1			1	1					1	LandsD		Leaning
TE006	Macaranga tanarius var. Tomentosa	血桐				0.170	5	4			1		1						1		1		common, nil	Low	1			1	1					1	LandsD		Asymmetrical canopy, Leaning
									0	15	85	0	75	21	4	0	0	49	51	0	82	18							9	0	91	4	96				
									0%	15%	85%	0%	75%	21%	4%	0%	0%	49%	51%	0%	82%	18%						9%	0%	91%	4%	96%					
									G	A	P	G	A	P	D	E	H	M	L	G	A	P	Conservation Status							Retain	Trans	Fell	Outside Site	Within Site		Site Total	100

Legend

Tree Condition / Health		Tree Form		Structural Condition		Suitability for Transplantation	
G	Good	G	Good	G	Good	H	High Survival Rate expected after transplantation
A	Average	A	Average	A	Average	M	Medium Survival Rate expected after transplantation
P	Poor	P	Poor	P	Poor	L	Low Survival Rate expected after transplantation
D	Dead						
Amenity Value							
E	Excellent	With cultural significance or high functional value or high visual impact ,or mature and good health, good condition and good form. Common species and good health, good condition and good form. Common species and average health, average condition and average form. Common species and little or no functional or visual value and poor health, poor condition and poor form.					
H	High						
M	Medium						
L	Low						

Justification for Tree Felling	
A	Tree is in direct conflict with the proposed works.
B	Preparation of intact and sufficient-sized root ball not practical due to the topography (e.g. on rock, steep slope, shallow substratum, structures). Close proximity to other trees - roots intertwined.
C	Undesirable species, weedy species without special ecological significance or species creating maintenance problem.
D	Tree with poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits).
E	Lack of access for transplantation machinery or vehicle.
F	Species with low survival rate after transplanting.
G	Tree has structural problem and may create hazard to public during root ball preparation and/or after transplantation, while auxiliary support will not be sufficient / practical.
H	Irrecoverable form after transplanting (e.g. if substantial crown and root pruning are necessary to facilitate the transplanting).
I	Low amenity value.
J	Tree with evidence of over-maturity and onset of senescence.
K	Very large size (unless the feasibility to transplant has been considered financially reasonably and technically feasible).
L	Dead Tree

Tree Trunk Diameter at Breast Height (DBH)
* Diameter of tree trunk measured at breast height (i.e. measured at 1.3m above ground level)
** Diameter at Breast Height (DBH) of multi-stem trees (i.e. trees with multi-stems were all measured separately at 1m above ground level). The collective girth was then calculated using the methodology set out in Nature Conservation Practice Note No. 02/2003, Measurement of Diameter at Breast Height (DBH).

Top of Soil Level at the base of the tree

This figure refers to the soil level at the base of the tree to be maintained following the development of the site as surveyed by the topographic surveyor. The future soil level should not cover the root collar of the tree.

Conservation Status
Conservation status (indicates rarity and protection status under relevant ordinances of a species in Hong Kong. References such as Rare and Precious Plants of Hong Kong, the IUCN Red List of Threatened Species and the Forests and Countryside Ordinance (Cap. 96) are used.) and ETWB TCW No. 29/2004 Registration of Old and Valuable Trees (OVT), and Guidelines for their preservation

Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex IV

Photographic Record of Existing Trees



T114 (*Leucaena leucocephala*)

Photograph showing the overall form of the tree.



T115 (*Leucaena leucocephala*)

Photograph showing the overall form of the tree.



T116 (*Leucaena leucocephala*)

Photograph showing the overall form of the tree.



T117 (*Macaranga tanarius* var. *tomentosa*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T118 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T119 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T120 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T121 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T122 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T123 (*Melia azedarach*)
Photograph showing the overall form of the tree.



T124 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T125 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T126 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T127 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T128 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T129 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T130 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T131 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T132 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T133 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T134 (*Macaranga tanarius* var. *tomentosa*)
 Photograph showing the overall form of the tree.



T135 (*Macaranga tanarius* var. *tomentosa*)
 Photograph showing the overall form of the tree.



T136 (*Macaranga tanarius* var. *tomentosa*)
 Photograph showing the overall form of the tree.



T137 (*Macaranga tanarius* var. *tomentosa*)
 Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T138 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T139 (*Ficus hispida*)
Photograph showing the overall form of the tree.



T140 (*Litchi chinensis*)
Photograph showing the overall form of the tree.



T151 (*Ficus religiosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T152 (*Bauhinia purpurea*)

Photograph showing the overall form of the tree.



T153 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T154 (*Bauhinia purpurea*)

Photograph showing the overall form of the tree.



T155 (*Bombax ceiba*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T156 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T157 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T158 (*Albizia lebbek*)

Photograph showing the overall form of the tree.



T159 (*Bauhinia purpurea*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





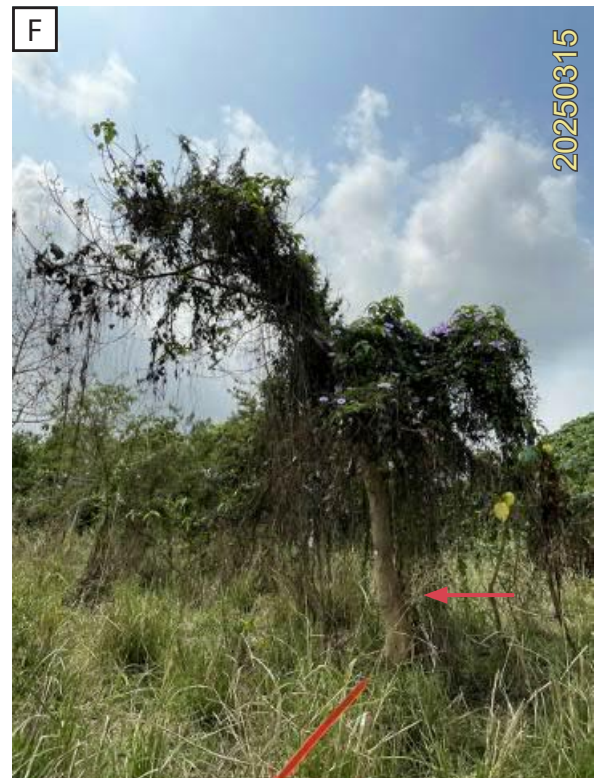
T160 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T161 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T162 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T163 (*Ficus variegata*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T164 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T165 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T166 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T167 (*Morus alba*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T168 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T169 (*Ficus variegata*)
Photograph showing the overall form of the tree.



T170 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T171 (*Ficus variegata*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T172 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T173 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T174 (*Albizia lebbeck*)
Photograph showing the overall form of the tree.



T175 (*Albizia lebbeck*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T176 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T177 (*Celtis sinensis*)
Photograph showing the overall form of the tree.



T178 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T179 (*Bombax ceiba*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T180 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T181 (*Albizia lebbeck*)
Photograph showing the overall form of the tree.



T182 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T183 (*Bombax ceiba*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV A





T184 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T185 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T186 (*Albizia lebbeck*)
Photograph showing the overall form of the tree.



T187 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T188 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T189 (*Celtis sinensis*)

Photograph showing the overall form of the tree.



T190 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T191 (*Bombax ceiba*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T192 (*Bombax ceiba*)

Photograph showing the overall form of the tree.



T193 (*Leucaena leucocephala*)

Photograph showing the overall form of the tree.



T194 (*Albizia lebbek*)

Photograph showing the overall form of the tree.



T195 (*Leucaena leucocephala*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-





T196 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T197 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T198 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T199 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

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CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -

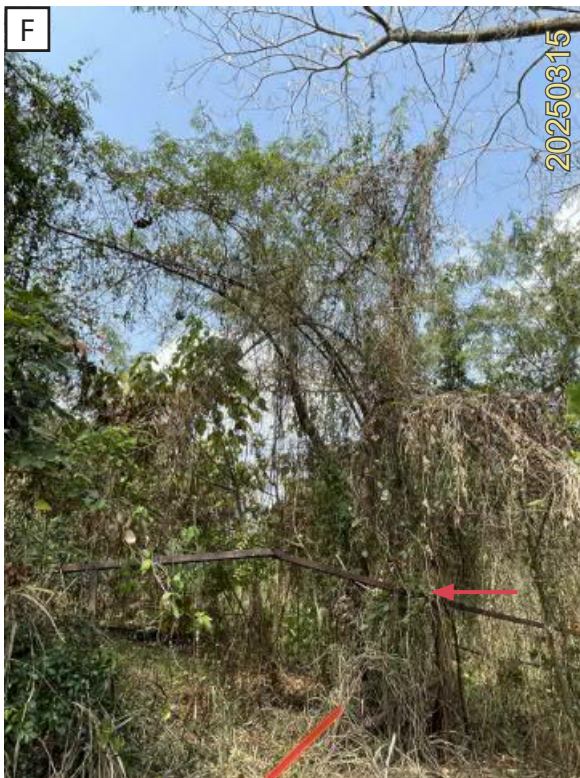




T200 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T201 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T202 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T203 (*Albizia lebbbeck*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T204 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T205 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T206 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T207 (*Bombax ceiba*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T208 (*Celtis sinensis*)
Photograph showing the overall form of the tree.



T209 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.



T210 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T211 (*Leucaena leucocephala*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





T212 (*Macaranga tanarius* var. *tomentosa*)
Photograph showing the overall form of the tree.



T213 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T214 (*Bombax ceiba*)
Photograph showing the overall form of the tree.



T215 (*Bombax ceiba*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV -





TD003 (*Litchi chinensis*)

Photograph showing the overall form of the tree.



TD004 (*Litchi chinensis*)

Photograph showing the overall form of the tree.



TE001 (*Albizia lebbek*)

Photograph showing the overall form of the tree.



TE002 (*Celtis sinensis*)

Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV A





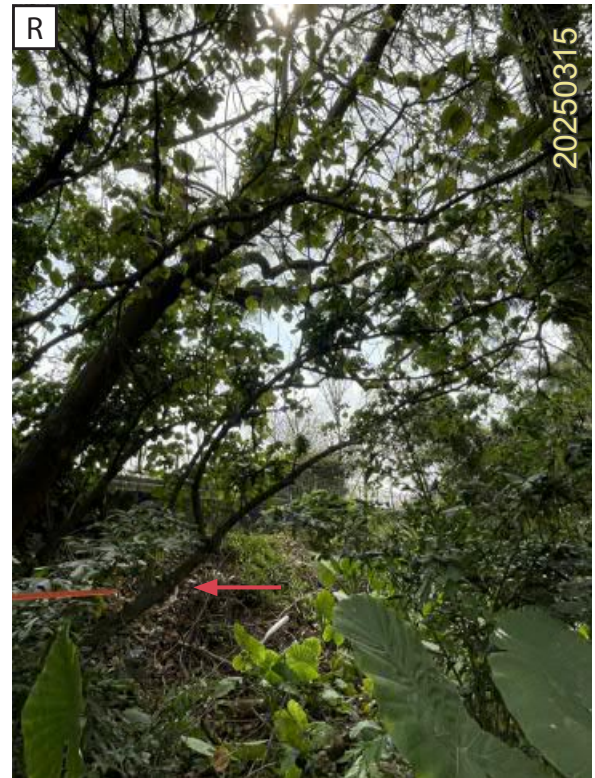
TE003 (*Macaranga tanarius* var. *Tomentosa*)
Photograph showing the overall form of the tree.



TE004 (*Delonix regia*)
Photograph showing the overall form of the tree.



TE005 (*Macaranga tanarius* var. *Tomentosa*)
Photograph showing the overall form of the tree.



TE006 (*Macaranga tanarius* var. *Tomentosa*)
Photograph showing the overall form of the tree.

R-Retain T-Transplant F-Fell D-Dead Tree

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and Adjoining Government Land, Shek Kong, Yuen Long, N.T.

Tree Photographic Record

SCALE	N.T.S.	DATE	APR 2025
CHECKED	CJF	DRAWN	JZ
FIGURE NO.	CKHP006 - TSR		REV
			-

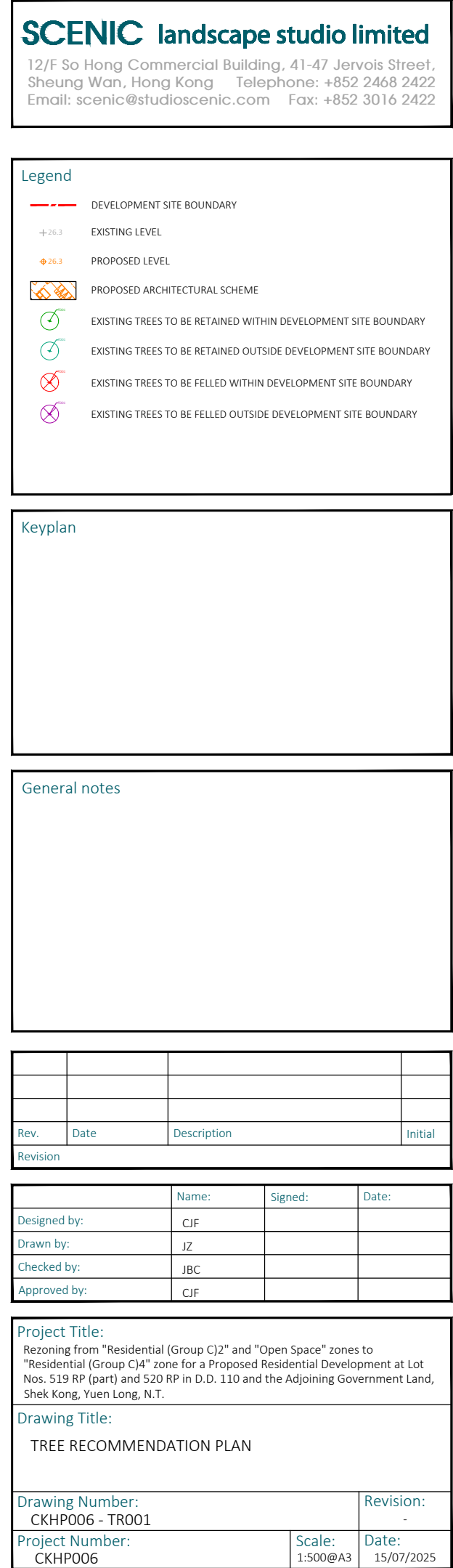


Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex V

Tree Recommendation Plan

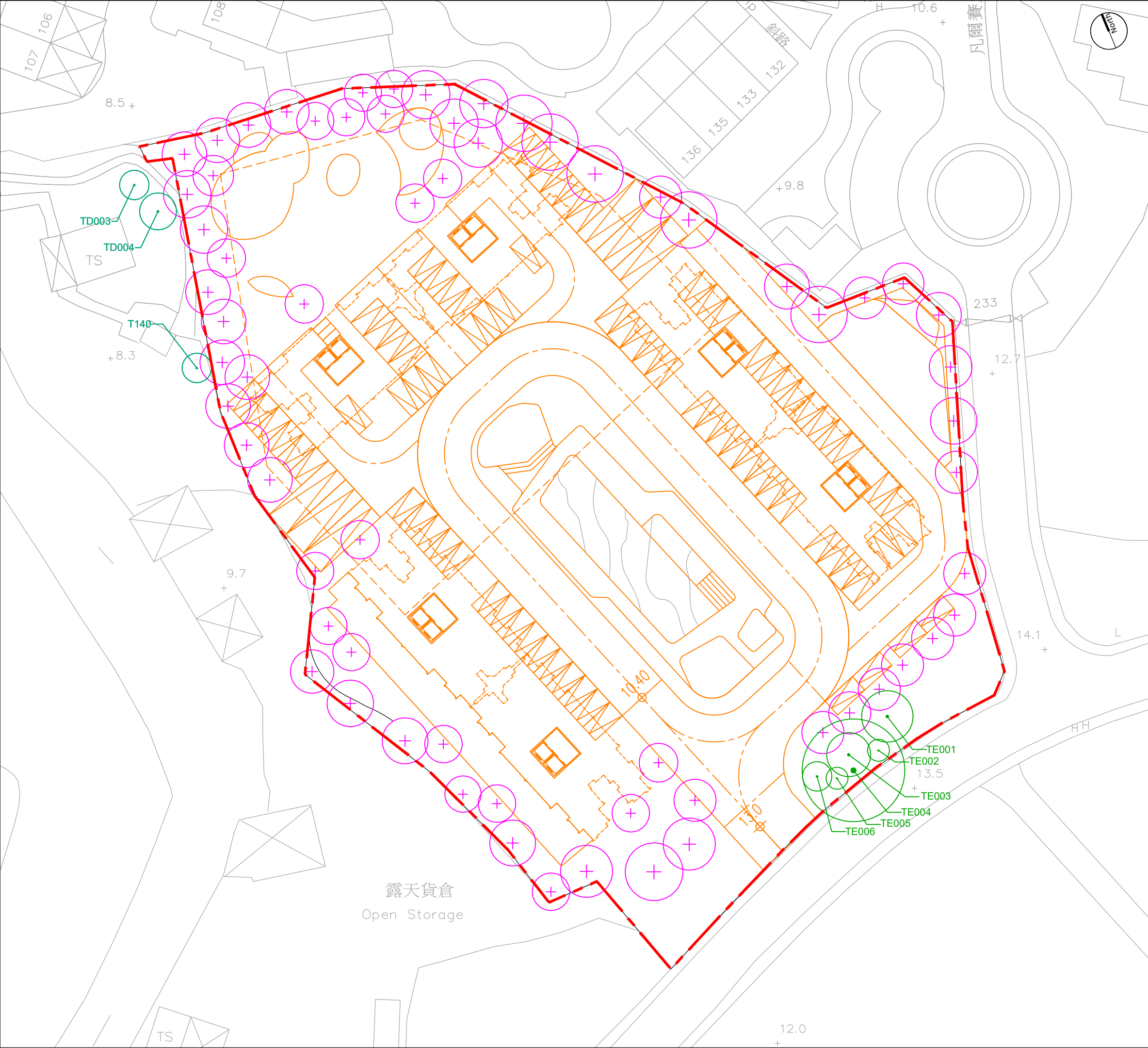


Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex VI

New Tree Planting Plan



SCENIC landscape studio limited

12/F So Hong Commercial Building, 41-47 Jervois Street, Sheung Wan, Hong Kong Telephone: +852 2468 2422 Email: scenic@studioscenic.com Fax: +852 3016 2422

Legend

- DEVELOPMENT SITE BOUNDARY
- +26.3 EXISTING LEVEL
- +26.3 PROPOSED LEVEL
- PROPOSED ARCHITECTURAL SCHEME
- EXISTING TREES TO BE RETAINED WITHIN DEVELOPMENT SITE BOUNDARY
- EXISTING TREES TO BE RETAINED OUTSIDE DEVELOPMENT SITE BOUNDARY
- PROPOSED COMPENSATORY TREES

Keyplan

General notes

Rev.	Date	Description	Initial

Revision

	Name:	Signed:	Date:
Designed by:	CJF		
Drawn by:	JZ		
Checked by:	JBC		
Approved by:	CJF		

Project Title:
Proposed Rezoning of the Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" at Various Lots in DD 110 and Adjoining Government Land, Kam Tin Road, Shek Kong, Yuen Long

Drawing Title:
NEW TREE PLANTING PLAN

Drawing Number: CKHP006 - TC001	Revision: -
Project Number: CKHP006	Scale: 1:500@A3
	Date: 15/07/2025

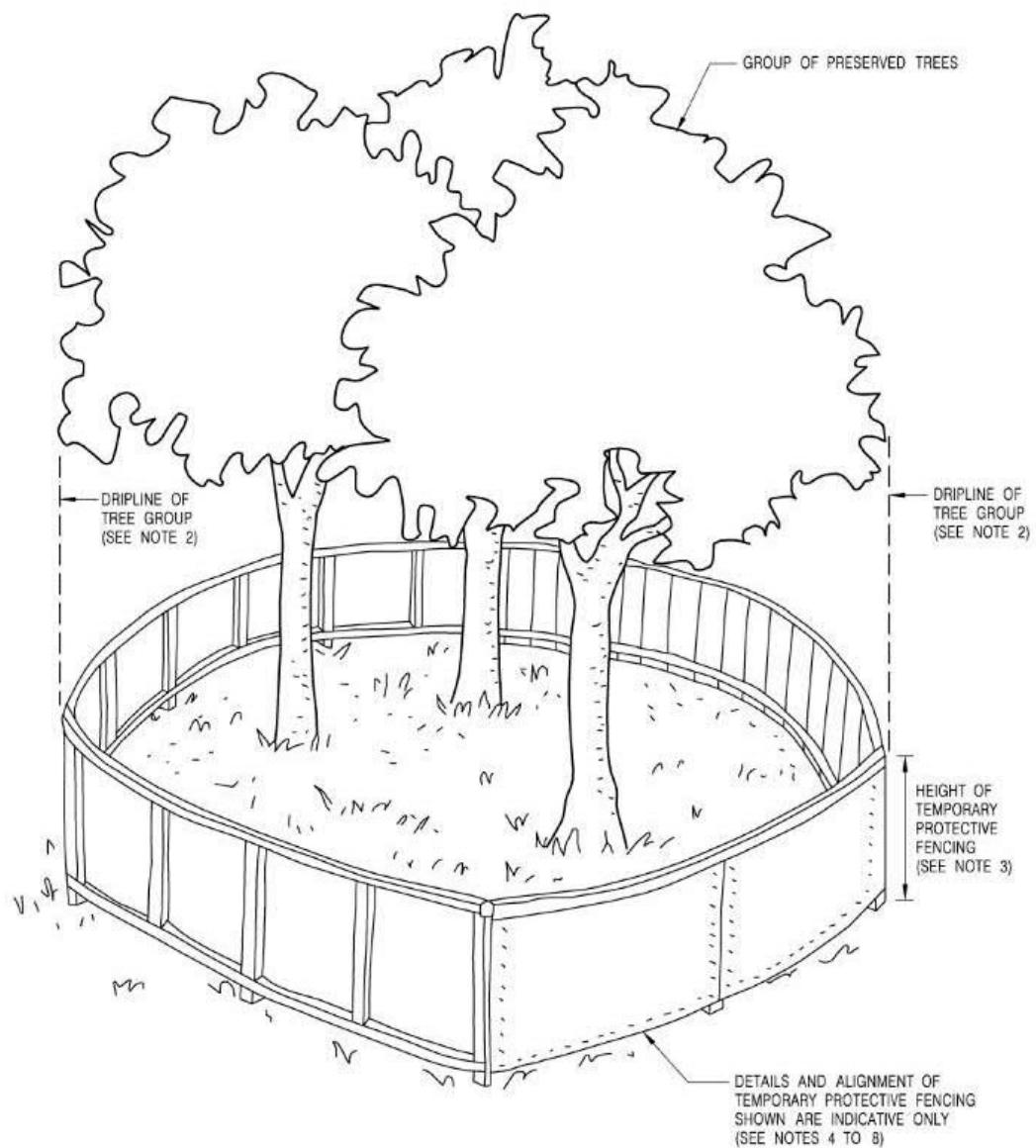
Rezoning from “Residential (Group C)2” and “Open Space” zones to
“Residential (Group C)4” zone for a Proposed Residential Development at
Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land,
Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal

Annex VII

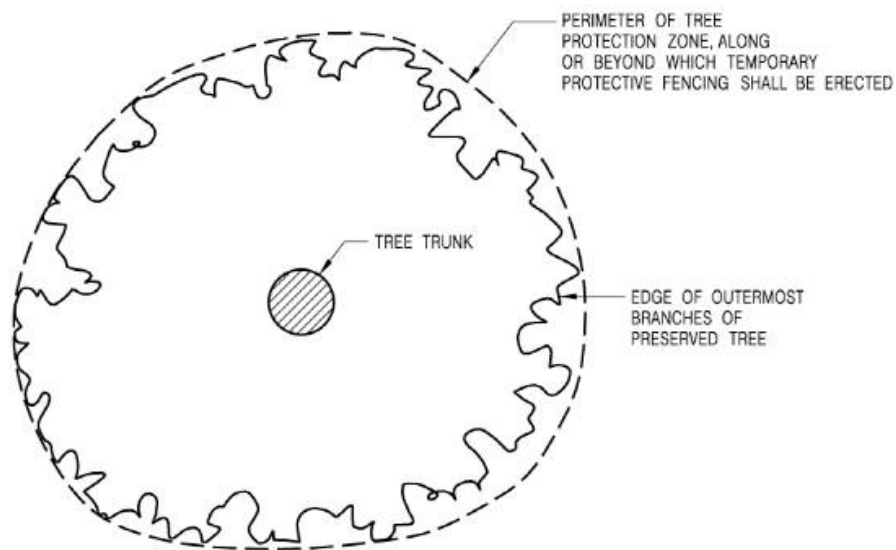
Tree Protection Measures

Tree Protection Measures

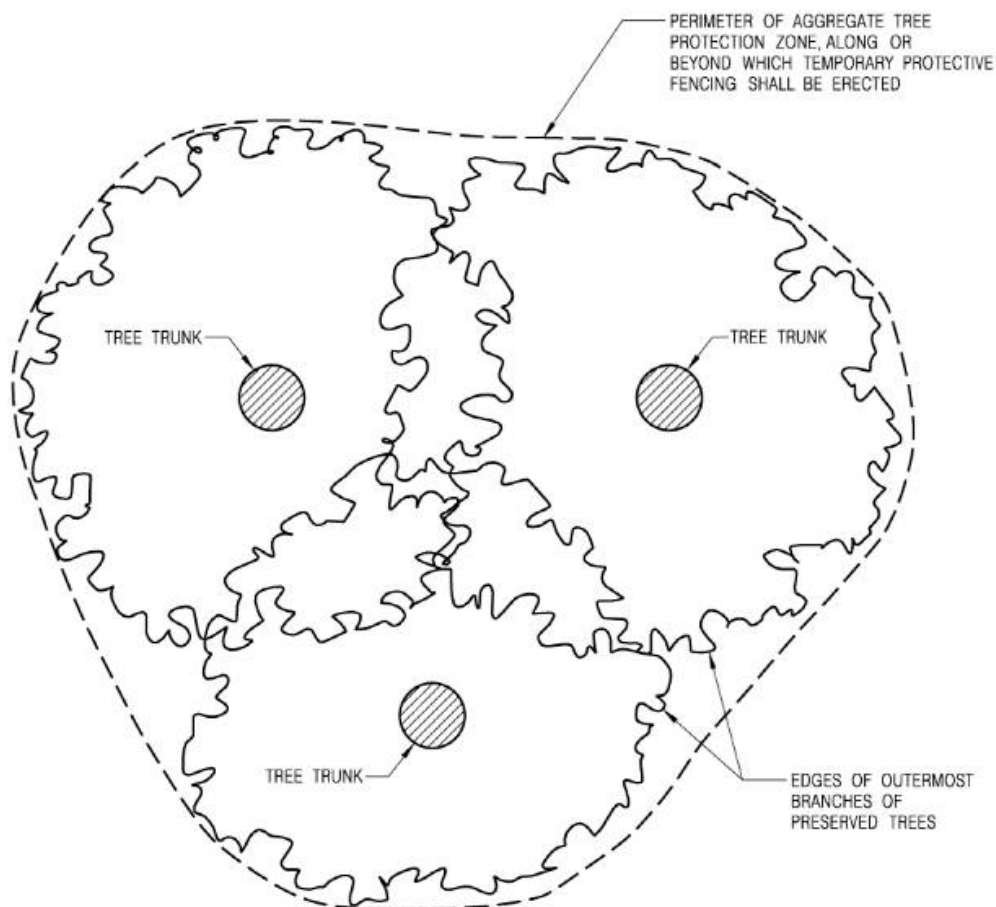


PERSPECTIVE – GROUP OF TREES

(DIAGRAMMATIC)



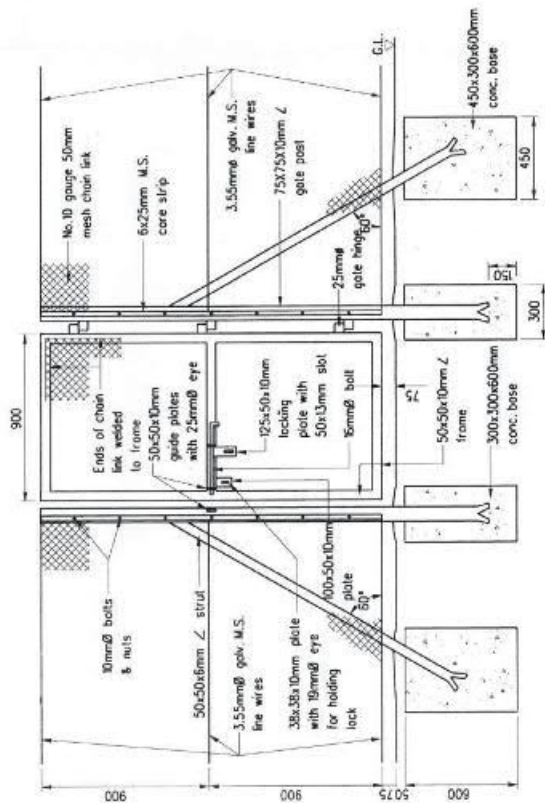
PLAN - INDIVIDUAL TREE
 (DIAGRAMMATIC)



PLAN - GROUP OF TREES
 (DIAGRAMMATIC)

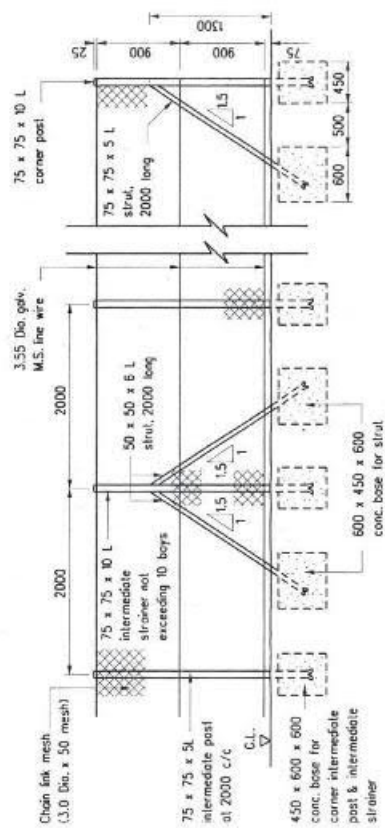
Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Tree Preservation Proposal



PEDESTRIAN GATE
(NTS)

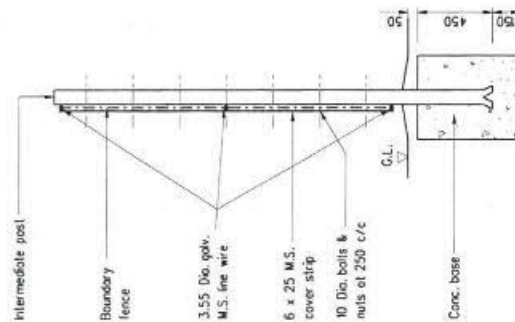
Note: One pedestrian gate in each enclosure.



ELEVATION OF INTERMEDIATE POST
INTERMEDIATE STRAINER & CORNER POST
(NTS)

Notes :

1. Dimensions are in millimetres.
2. All welds to be ground smooth.
3. Steel to be grade 43 BS 4360.
4. All site welds to be treated with two coats of zinc rich paint before application of paint system.
5. Steelwork for fencing including wires to be hot dip galvanized to BS 729 to a coating thickness at least 500 g/m².
6. Chain link mesh to be zinc coated type GLS80 of BS1722 Part 1.
7. Concrete to be grade 30/20.
8. Where the concrete footing is located in block paved footpath, the footing should be lowered to allow for the paving blocks and the sand course.



INTERMEDIATE POST
(NTS)

Appendix 4

Visual Impact Assessment

**S12A AMENDMENT OF PLAN APPLICATION
APPROVED KAM TIN NORTH OZP NO. S/YL-KTN/11**

Rezoning from “Residential (Group C) 2” and “Open Space” zones to “Residential (Group C) 4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

VISUAL IMPACT ASSESSMENT

October 2025

Applicants:

Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited

Prepared by:

KTA Planning Limited



PLANNING LIMITED
規 劃 顧 問 有 限 公 司

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Rezoning from “Residential (Group C) 2” and “Open Space” zones to “Residential (Group C) 4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Shek Kong, Yuen Long, N.T.

Visual Impact Assessment

1. INTRODUCTION

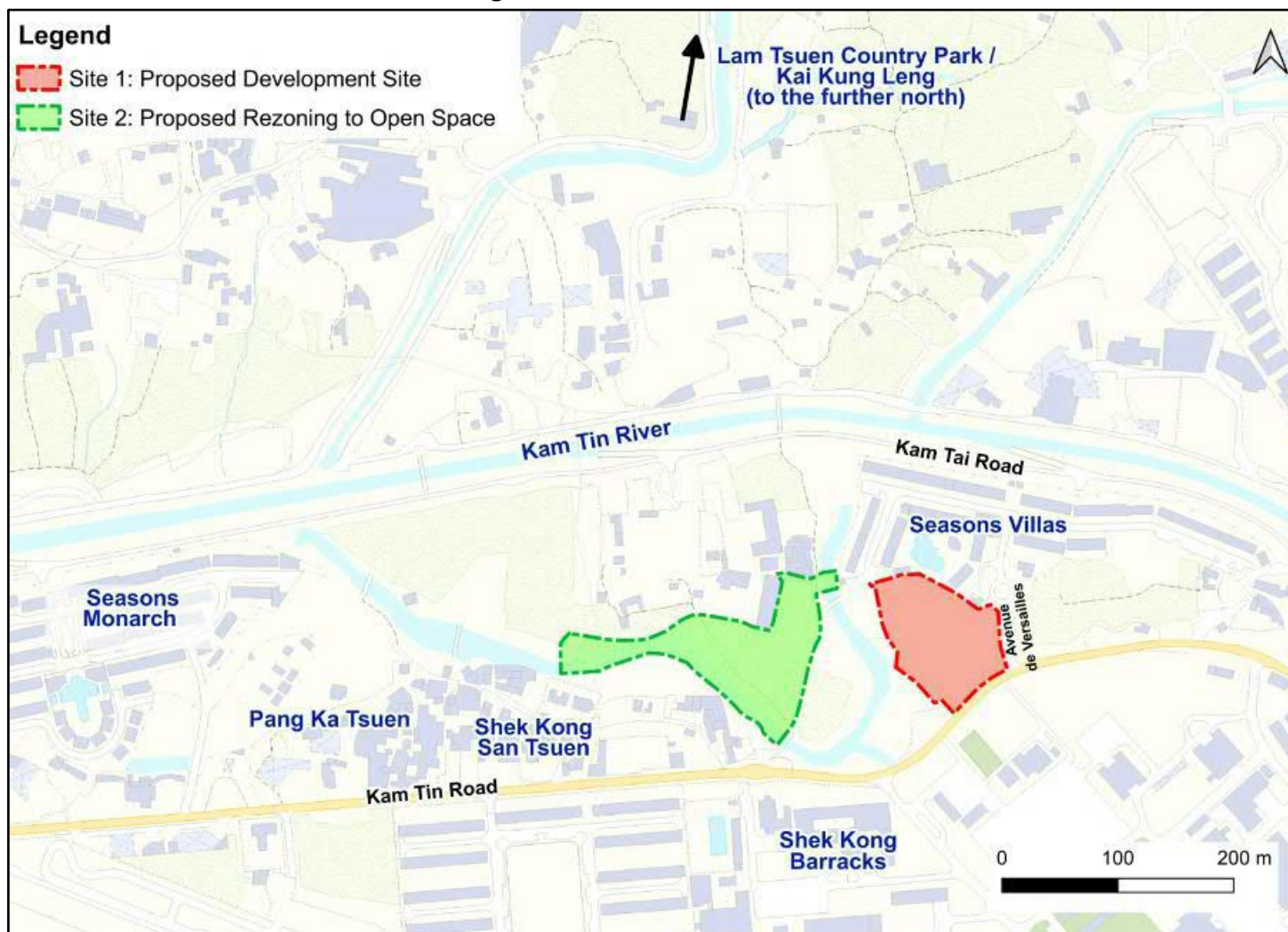
1.1 Purpose

- 1.1.1 This Amendment of Plan Application is prepared and submitted on behalf of Kimpton Investments Limited, Pacific Top Development Limited and Worldchamp Investments Limited (the “Applicants”) to seek approval from the Town Planning Board (“TPB”/the “Board”) under section 12A of the Town Planning Ordinance for (1) rezoning of an area from “Residential (Group C) 2” (“R(C)2”) and “Open Space” (“O”) to “Residential (Group C) 4” (“R(C)4”) under the approved Kam Tin North Outline Zoning Plan (“OZP”) No. S/YL-KTN/11, to enable the proposed residential development (“Proposed Development”) at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 1” / “Development Site”); and (2) rezoning of an area from “R(C)2” to “O” under the approved OZP at Lot Nos. 121, 137, 138 and 139 (part) in D.D. 110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long (“Site 2”) (**Figure 1.1** refers). “Site 1” and “Site 2” altogether form the Application Site.
- 1.1.2 This Visual Impact Assessment (“VIA”) is mainly to assess the visual impact due to proposed residential development at Site 1 only, in support of the S.12A Amendment of Plan Application. Site 2 is proposed to allow for the provision of public open space use, which will be implemented by the Government.

1.2 Report Structure

- 1.2.1 This VIA evaluates, in accordance with the “Town Planning Board Guidelines on Submission of Visual Impact Assessment for Planning Applications to TPB” (“TPB PG-NO.41”), the anticipated visual impacts of the Proposed Development on public viewers relevant to the Development Site and concludes with recommendation on mitigation measures, if necessary.
- 1.2.2 Following this introductory section, the methodology adopted in this assessment will be set out in Section 2. The baseline review of the assessment area is included in Section 3. Section 4 includes the Indicative Master Layout Plan (“MLP”) and discussion on the design merits. Visual envelope, visually sensitive receivers and their representative viewpoints will be identified and analysed in Section 5, followed by assessment of the visual impacts, if any in Section 6. Section 7 concludes this Visual Impact Assessment.

Figure 1.1 Site Location Plan



2. METHODOLOGY

2.1 Visual Impact Assessment Approach

- 2.1.1 This VIA aims at evaluating the visual impact of the Proposed Development at Site 1 only, with a maximum building height (“BH”) at 6 storeys, (at max. +28.9mPD under the indicative Master Layout Plan (MLP)) on public visually sensitive receivers (“VSRs”).
- 2.1.2 According to TPB PG-No. 41, the overall visual impact shall be assessed based on:
- i) the sensitivity of the key public viewers;
 - ii) visual resources and visual amenities likely to be affected;
 - iii) the magnitude, extent and duration of impact and any resultant improvement or degradation in the visual quality and character of the surrounding area; and
 - iv) the planning intention and known planned developments of the area. Visual Impacts could be either beneficial or adverse.
- 2.1.3 Visual sensitivity of public viewers/VSRs is determined taking into account the activity of the VSR, the duration and distance over which the Proposed Development would remain visual, and the public perception of the value attached to the view being assessed. It is typically qualitatively graded from high to low.
- 2.1.4 Visual changes could be positive or negative and they are not necessarily mutually exclusive. In considering the effect of visual changes, it covers the following four aspects:
- the total effect on the **Visual Composition** of the surrounding context;
 - the degree of **Visual Obstruction** to key public viewing points;
 - the visual **Effect on Public Viewers/VSRs**; and
 - the **Effect on Visual Resources**.
- 2.1.5 The magnitude of visual changes will be qualitative graded as Substantial, Moderate, Slight or Negligible.
- 2.1.6 The VIA will be undertaken in the following steps:
- A baseline review will be conducted to capture the existing visual elements in the surroundings and the planning context of the Site.
 - The Indicative MLP for the Proposed Development at the Development Site will be briefly presented.
 - The Visual Envelope (“VE”) will be determined based on the size and distance of the Proposed Development and appropriate public viewpoints

("VPs") will be identified to represent the view from public VSRs will be identified.

- Each VP and potential visual impact of the Proposed Development on the VSRs will be analysed based on the photomontages prepared from the selected VPs.
- The overall visual impact will be assessed and conclusion on the visual acceptability of the Proposed Development will be made.

3. BASELINE REVIEW

3.1 Site Location and Surrounding Land Use Pattern

3.1.1 The Development Site (Site 1), with a total site area of approximately 8,580m², is located in Kam Tin North. The Site abuts Kam Tin Road to its immediate south and Kam Tai Road is located to its further north. Two low-rise, low-density residential developments in the same “R(C)2” zone, namely Seasons Villas and Seasons Monarch, are located to the immediate north-east and further west. Rural settlements including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site. The areas to the immediate southwest of Site 1 is an open storage site. Shek Kong Barracks is located to the south of the Site across Kam Tin Road (**Figure 1.1** refers).

3.1.2 Site 1 sits on a gently sloping land with gradient gradually descending from the southeast at about +13.50mPD towards the northwest at about +8.10mPD in general. Site 1 is currently sparsely vegetated (**Figure 3.1** refers).

3.2 Existing Visual Elements in the Surrounding Context

3.2.1 The visual outlook of the area is shaped by a combined composition of all the visual elements which come into sight of the viewers. Site 1 is located in a sub-urban setting with predominantly low-lying flat land in its immediate surroundings. Site 1 is primarily intermingled with clusters of low-rise, low density residential developments, village houses, temporary structures, vehicle recycling workshops and vacant land in the adjacent areas at the foothill of Lam Tsuen Country Park.

3.2.2 Key visual elements in the surrounding context of Site 1 are included in **Figure 3.2** and summarised below:

Positive attributes

- In a wider context, Site 1 lies at the bottom of a valley surrounded by slopes of the summit of Kai Kung Leng, Lam Tsuen Country Park to the further north. The mountain ranges provide extensive green backdrop, which contributes to the visual openness of the Site.
- To the further north, there are predominantly low-rise settlements in Cheung Kong Tsuen, Tai Kong Po and Tsat Sing Kong at the foothill of Kai Kung Leng. These low-rise settlements enhance visual permeability and visual transition between the Development Site and the mountain range of Kai Kung Leng to the north.

- To the west of Site 1 where Site 2 is situated, the area is mainly occupied by vegetation, abandoned farmland and watercourse. Upon approval for rezoning Site 2 to “Open Space” zone, this area would offer a more coherent open space as visual relief.
- There are low-rise and low-density residential developments, namely Seasons Villas and Seasons Monarch, located to the immediate northeast and further west of Site 1, which offer visual linkages to the existing residential neighbourhood.
- Low-rise domestic settlements in Shek Kong San Tsuen and Pang Ka Tsuen to the west of Site 1 offer visual relief in the vicinity.
- Kam Tin River, which runs in parallel to Kam Tai Road and Kam Tin Road, serves as the major visual vista to offer visual linkage nearby.

Negative attributes

- Kam Tin Road to the south that the proposed vehicular access of Site 1 immediately abuts is a heavily trafficked road in the local offering limited visual interest to the Site.
- The existing open storage site of vehicle components at the immediately southwest sits on a piece of paved land, which provides little visual interest.
- Shek Kong Barracks are located to the south across Kam Tin Road. There are blocks of building heights ranging from about +15mPD to +39mPD, which offer limited visual interest of the southward view.
- Some land parcels in Kam Tin South located to the further southwest have been reserved for various residential developments (with rezoning for most of them yet to be initiated) with plot ratio ranging from 0.8 to 3 under Government’s Land Use Review (LUR) for Kam Tin South and Pat Heung (**Table 3.1** and **Figure 3.3** refer).
- The existing Kam Sheung Road Station (KSRS) and Pat Heung Maintenance Centre (PHMC) located about 1.5km and 2km south-west of the Site respectively have been planned for high-rise residential/commercial developments with maximum building heights range from +69mPD to +109mPD (**Table 3.2** and **Figure 3.3** refer).

3.2.3 The existing visual quality of Site 1 can be regarded as fair to good. The Site is situated in a predominantly sub-urban area with low-rise domestic settlements and institutional developments, with planned high-rise developments near KSRS. Extensive green backdrop formed by a continuous

mountain range offering visual openness to its further north in a wider context. However, the tall building cluster in Shek Kong Barracks, the existing open storage site and temporary structures to the south-east of the Site as well as the heavily trafficked Kam Tin Road to the immediate south may degrade the visual quality of the immediate surroundings.

- 3.2.4 The existing KSRS and PHMC located in Kam Tin South to the further south-west of Site with planned high-rise residential/commercial development would become key visual elements in the surrounding area. The planned residential developments (with plot ratio ranging from 0.8 to 3) to the further south-west of the Site would alter the suburban townscape of Kam Tin area.



Existing View of Site 1 from Kam Tin Road



Existing vegetation at Site 1



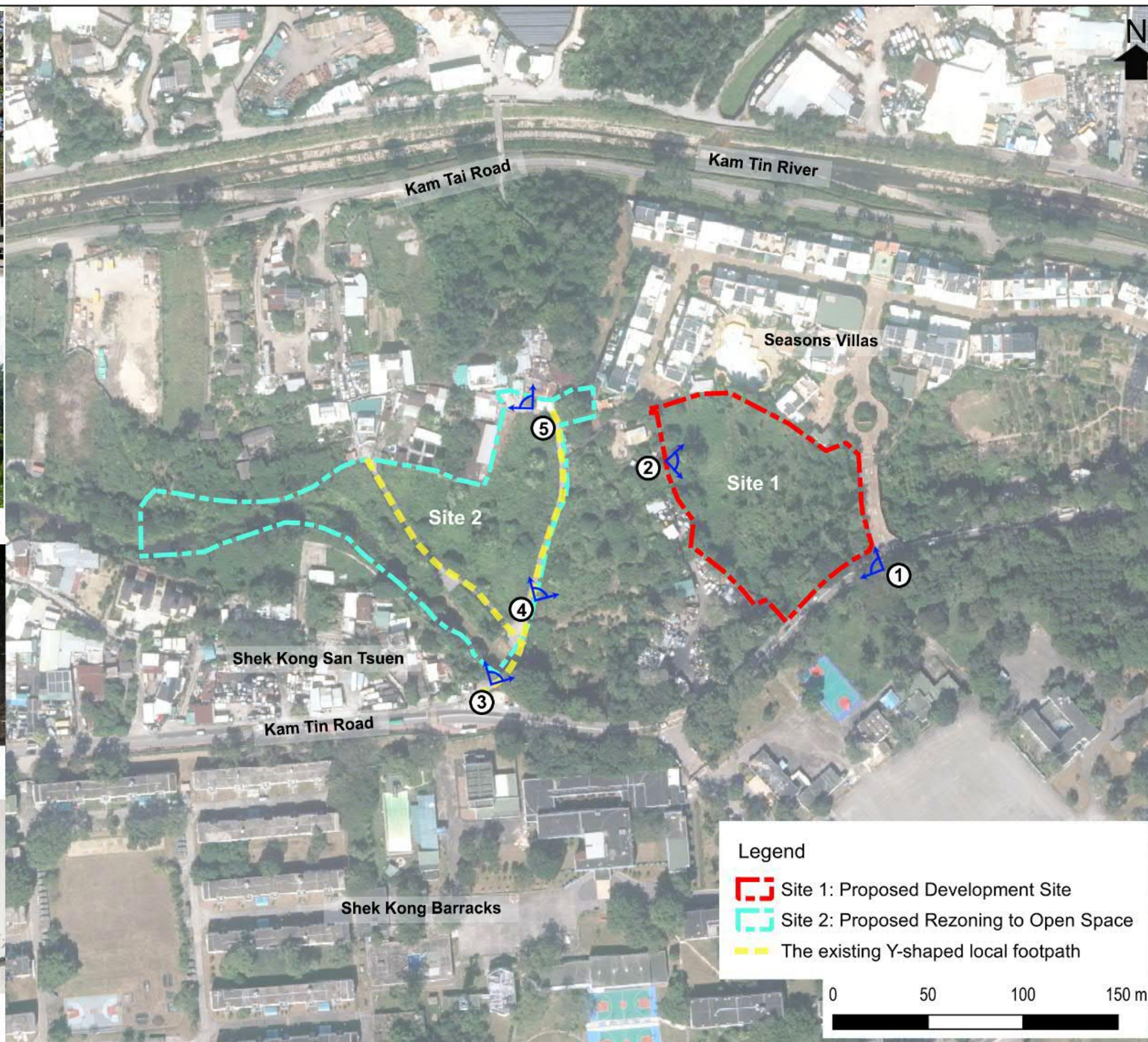
Existing entrance of local access in Site 2 connecting the local village / rural settlements with Kam Tin Road



Existing Y-shaped local footpath in Site 2



Domestic rural settlements to the north of Site 2



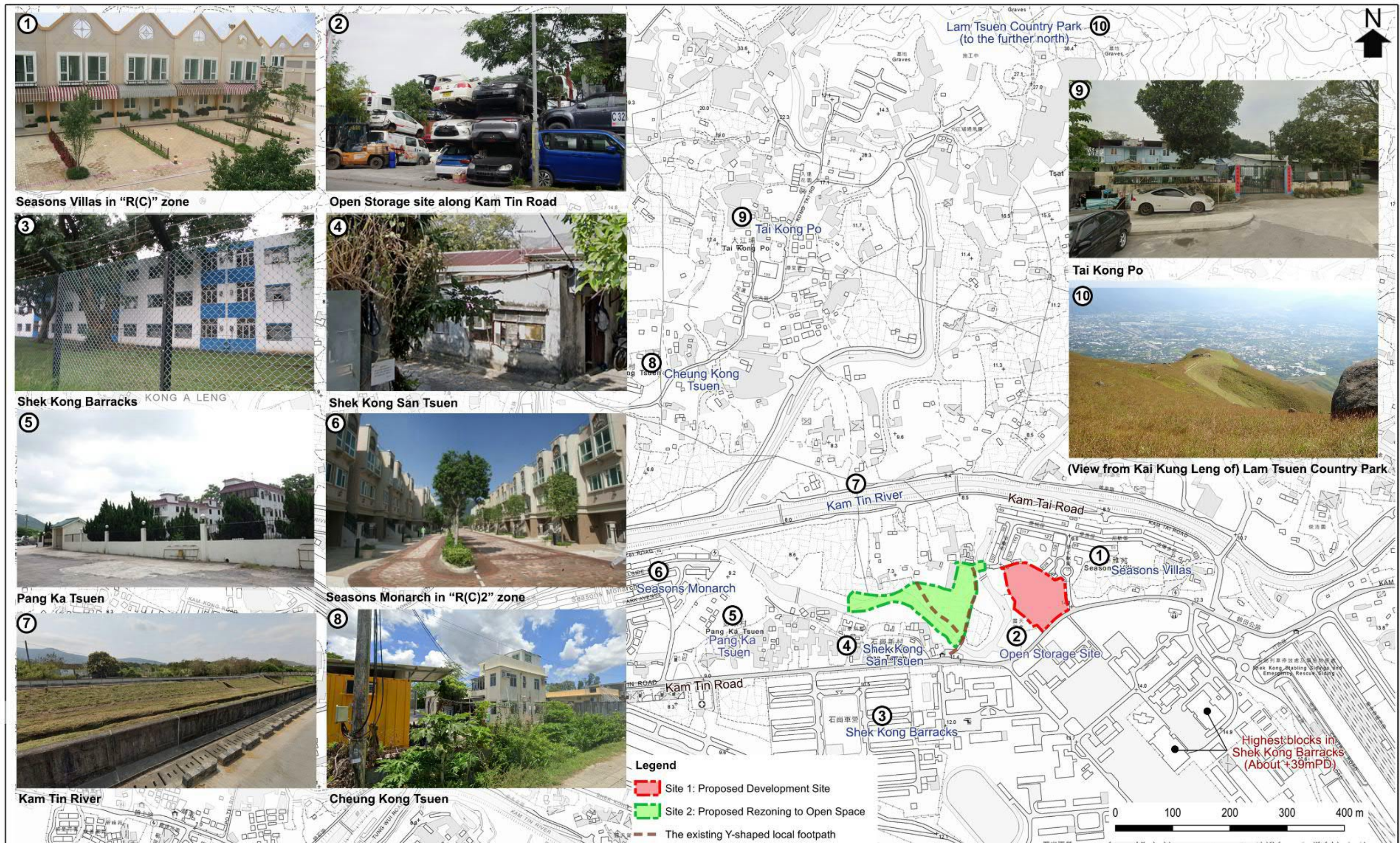


Table 3.1 Potential Development Sites identified in the Land Use Review for Kam Tin South and Pat Heung

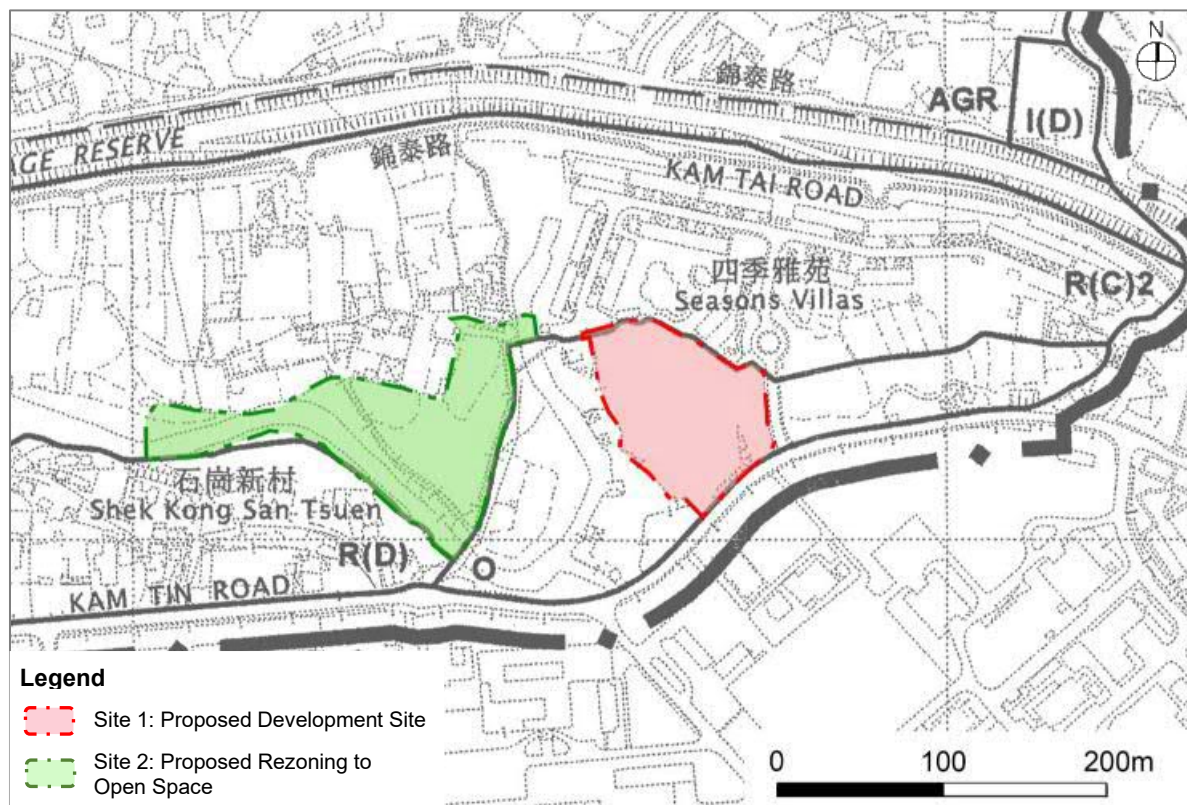
Site	Location	Prevailing Zoning under OZP [Development restriction]	Proposed Zoning under the Land Use Review [Development restriction]	Planned/ Target PR ^[1]	Expected Completion	No. of Units (about)
Potential Development Sites with Rezoning Completed/ Advance Status						
1	KSRS	“OU(Railway Station and Public Transport Interchange with Commercial/Residential Development)” [D GFA: 186,234 m ² ; ND GFA: 53,535 m ² ; BHR: 69mPD]		3.0	2024-2025 ^[2]	2,692 ^[3]
2	PHMC	“OU(Railway Station and Public Transport Interchange with Commercial/Residential Development)” [D GFA: 422,340 m ² ; ND GFA: 3,000 m ² ; BHR: 109mPD for Area (a)]		3.0	No available information	6,060 ^[3]
3	Public housing development at Site 1	“R(A)” [PR: 3.0; BHR: 69mPD]		3.0	2025-2026 ^[2]	4,100 ^[4]
4	Public housing development at Site 4a	“R(A)” [PR: 3.0; BHR: 69mPD]		3.0	2025-2026 ^[2]	3,800 ^[4]
5	Public housing development at Site 6	“R(A)” [PR: 3.0; BHR: 69mPD]		3.0	2025-2026 ^[2]	1,700 ^[4]
Potential Development Sites with Rezoning to be Initiated						
6	Private housing development at Site 2	“CDA” [PR: 0.4 BHR: 3 storeys (9m)]	N/A	2.1	N/A	452 ^[1]
7	Private housing development at Site 3	“R(C)” [PR: 0.8, SC: 40%; BHR: 4 storeys (12m)]	N/A	2.1	N/A	1,106 ^[1]
8	Private housing development at Site 7	“R(D)” [PR: 0.2 BHR: 2 storeys (6m)]	N/A	1.5	N/A	3,018 ^[1]
9	Public housing development at Site 4b	OU(Rural Use) [PR: 0.4 BHR: 3 storeys (9m)]	N/A	3.0	N/A	5,700 ^[1]
10	Private housing development at Site 4c	OU(Rural Use) [PR: 0.4 BHR: 3 storeys (9m)]	N/A	2.1	N/A	626 ^[1]

11	Public housing development at Site 5a	Agriculture [nil]	N/A	3.0	N/A	3,300 ^[1]
12	Private housing development at Site 5b	Agriculture [nil]	N/A	0.8	N/A	289 ^[1]
13	Private housing development at Site 8	Agriculture [nil]	N/A	1.5	N/A	882 ^[1]
14	Private housing development at Site 9	Agriculture [nil]	N/A	0.8	N/A	1,676 ^[1]
						Total No. of Units: 35,401
Remarks: [1] TPB Paper No. 9590 refers. [2] Legislative Council Paper No. PWSC(2018-19)17 refers. [3] RNTPC Paper No. 6/15 refers. [4] Traffic Impact assessment Report of Sites 1, 4a and 6 refers.						

3.3 Statutory Zoning Requirement

- 3.3.1 Site 1 falls primarily within an area zoned “Open Space” (“O”) with a minor portion of it in the north falling within the “Residential (Group C) 2” (“R(C)2”) zone, while Site 2 falls entirely within an area zoned “R(C)2” on the prevailing approved OZP No. S/YL-KTN/11 (**Figure 3.4** refers).
- 3.3.2 The planning intention of the “R(C)2” zone, according to the Notes of the Approved OZP, is intended primarily for “*low-rise, low-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Town Planning Board*”. The Remarks of the Statutory Notes of the “R(C)2” zone also specify that “*no new development, or addition, alteration and/or modification to or redevelopment of an existing building shall result in a total development and/or redevelopment in excess of a maximum plot ratio of 0.4 and a maximum building height of 3 storeys (9m) including car park*”.
- 3.3.3 In addition, the planning intention of the subject “O” zone is intended primarily “*for the provision of outdoor open-air public space for active and/or passive recreational uses serving the needs of local residents as well as the general public*”.

Figure 3.4: Zoning Context Plan



(Extracted from Approved OZP No. S/YL-KTN/11)

4. THE PROPOSED DEVELOPMENT

4.1 The Indicative Development Scheme

- 4.1.1 An Indicative Master Layout Plan ("MLP") is prepared to illustrate the Proposed Development at Site 1 with a total site area of about 8,580m². With a maximum PR of 1.0, the indicative development yields a total domestic Gross Floor Area ("GFA") of not more than 8,580m², providing about a total of 240 residential units. It comprises a total of 6 nos. of residential towers with 6 storeys above ground (including G/F for entrance lobby / car park / E&M facilities). With site formation level at 10.4mPD, the referencing building height is about 28.9mPD.
- 4.1.2 The 1-storey clubhouse with green roof is located in the central portion; the sewage treatment plant (STP) involves 1 storey above ground and the underground storage tank; while the stormwater storage tank (SST) involves one storey below ground (tentatively below Tower 3 and Tower 4). Carparking spaces and L/UL bays are provided on the ground level, minimising the need for extensive excavation.
- 4.1.3 The indicative MLP, G/F plan and Section Plan are provided in **Appendix 1** of the Planning Statement, while the development schedule of the Proposed Development is provided in **Table 4.1** below.

Table 4.1 Key Development Parameters

Key Parameters		
Development Site Area ⁽¹⁾	About 8,580 m ²	
Max. Plot Ratio (domestic only)	1	
Max. GFA (domestic)	About 8,580 m ²	
Proposed Max. Building Height (BH)	Residential Towers	6 storeys above Ground (Reference BH at about 28.9mPD)
	Clubhouse	1 storey above Ground
	Sewage Treatment Plant (STP)	1 storey above Ground, with the tank underground
	Stormwater Storage Tank (SST)	underground
No. of blocks	Residential Towers: 6 Clubhouse: 1 STP: 1	
Site Coverage	Not more than 56%	
No. of units	240	
Average unit size	About 35.8 m ² in GFA	
Anticipated Population	648 ⁽²⁾	
Private Communal Open Space	Not less than 648 m ² (1 m ² per person)	
Greenery provision	Not less than 20% of development site area	
Target complete year	Year 2031	

Note

(1): The area of the private land is based on measurement in GIS only; the accurate area is subject to land survey when setting out the site boundary.

(2): Average household size of 2.7 is adopted, by making reference to the territorial average household size in the 2021 Population Census.

Open Space Portion

4.1.4 This Application also involves proposed rezoning of a site (Site 2) from “R(C)2” to “O” zone, which is located to the immediate west of the prevailing “O” zone that the Development Site falls within. Site 2 has an area of about 12,303m². As a result, there will be a net increase in about 3,807m² in total area of “Open Space” zone¹ under the prevailing Kam Tin North OZP.

4.1.5 Site 2 involves private land area of about 8,255m², which is all owned by the Applicants. Upon approval, the Applicants are prepared to surrender the private land in Site 2 for Government’s implementation of the Public Open Space.

¹ Net increase area zoned “O” = 12,303m² – 8,496m² (area currently zoned “O” in Site 1) = 3,807m².

4.2 Sensible Design Measures

4.2.1 In view of the sub-urban township location of the Development Site, the Applicants have made tremendous efforts to incorporate various sensible design measures aiming to enhance the existing built environment while respecting the existing building height in the vicinity. The sensible design measures included are as follows:

a. **Appropriate Building Height**

The building height of the Proposed Development has been carefully devised to create a harmonious built form of the adjacent suburban township. The building height is at maximum 6-storey above ground (28.9mPD). The Proposed Development is in general visually compatible with surrounding private residential developments (about +16 to +18mPD), village clusters (about +13 to 15mPD), and blocks in the Shek Kong Barracks (about +15 to +39mPD), which could enhance the visual interest of the Proposed Development.

b. **Maintaining Building Setback from Shek Kong Barracks**

There is at least 19m setback distance of the nearest blocks (i.e. T1 and T6) from the southern site boundary of Site 1 / about 28m from the site boundary of Shek Kong Barracks. This could maintain minimal visual impact to the Barracks.

c. **Podium Free Design**

The towers sit on ground level with car parking spaces and L/UL bays either outdoor or below towers. The clubhouse with green roof is located in the central portion. This would create a comfortable living environment internally as well as reducing the bulkiness as viewed from the outside.

d. **Central Courtyard Design**

As the clubhouse with green roof is located in the central portion, it creates greenery in the central part; providing visual relief to the future residents surrounding it. It also provides adequate central separation amongst the three clusters of towers.

e. **Outdoor Communal Open Space and Landscaped Area in the North**

The area in the northern portion (i.e. to the north of T3 and T4) is reserved mainly for communal open space and landscaped area for the future residents. Although there would be underground SST, the Ground level provide opportunities for tree planting (in raised planter) and recreational use. It also acts as a buffer between the blocks of the Proposed Development and Seasons Villas to the north.

f. **Setback from Site Boundary with Periphery Tree Planting**

It is aimed to maintain at least 5m setback from site boundaries of each

side, which provides space for periphery tree planting to soften the edge of the development site.

g. **Building Gaps allowing Wind Penetration**

The six blocks are situated in three main clusters, maintaining at least 15m separation between each of the clusters. There is also at least 5m building setback from site boundary of each side. As revealed from Air Ventilation Assessment – Expert Evaluation (AVA-EE) in **Appendix 5** of the Planning Statement, the building gaps and building setback could facilitate wind permeability. The building height is 6-storey only so that the wind flowing atop the towers can still reach further downwind pedestrian area. Therefore, it is concluded that the Proposed Development with the design measures is unlikely to impose significant adverse impact on the surrounding sites from air ventilation perspective.

5. IDENTIFICATION OF VISUAL ELEMENTS AND PRELIMINARY ANALYSIS

5.1 Identification of Visual Envelope and Visual Sensitive Receivers

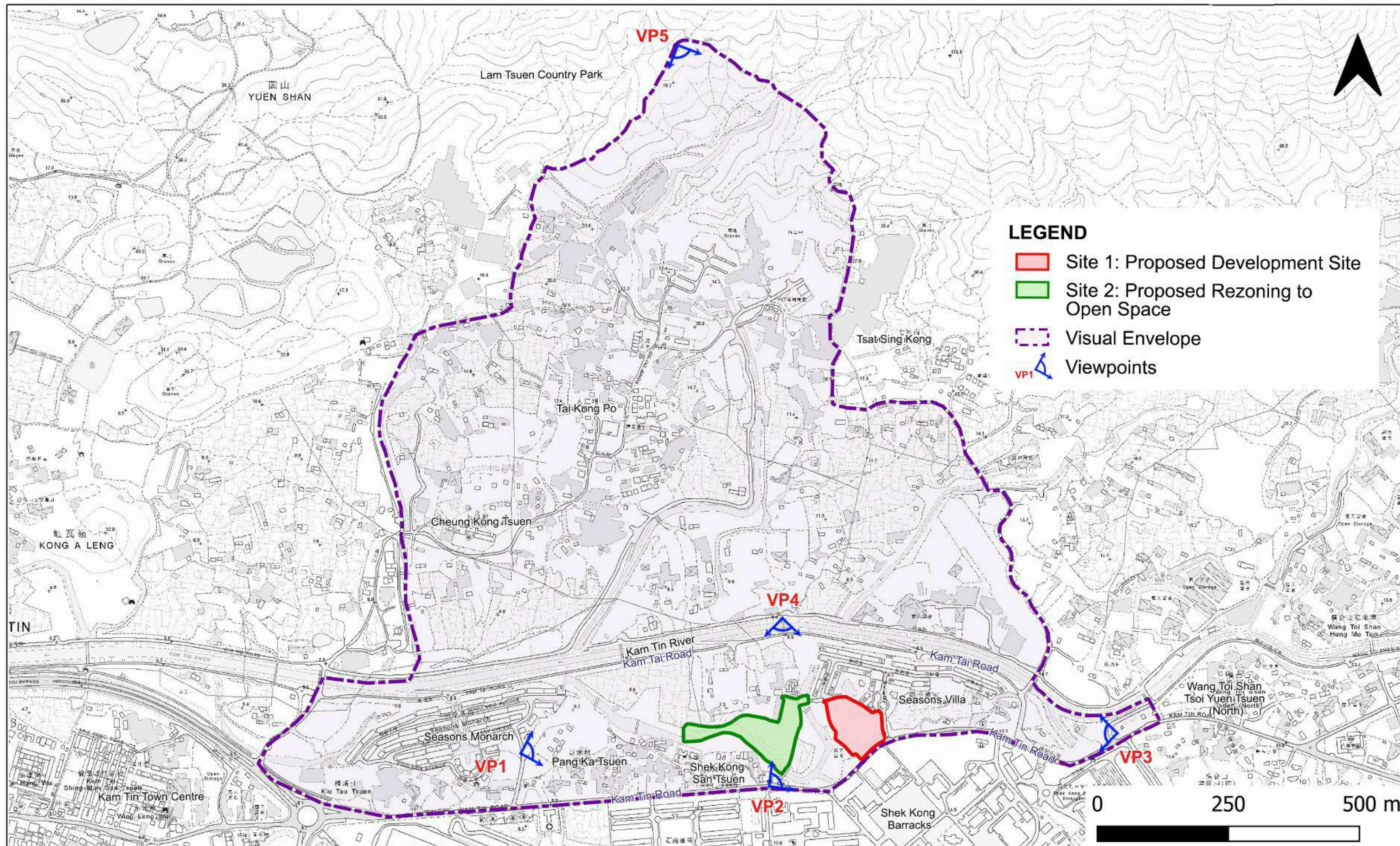
5.1.1 As prescribed in the TPB PG-NO. 41, the viewers will tend to see the building as part of a group rather than as a single building when the viewing distance equals to three times the height of the building from the Site. (i.e. the 3H zone). Since the actual maximum building height of the Proposed Development will be about 20m, the assessment area covers a radial area of about 60m from the façade of the Proposed Development.

5.1.2 As the Development Site (Site 1) is surrounded by low-rise domestic developments and temporary structures in the surroundings with a mountain backdrop in the further north, the VSRs to the west, east, and further north of Site 1 across Kam Tin River, may have exposed views of the Proposed Development. Having regard to the aforementioned actual building height of the Proposed Development and its potential visibility from the selected viewing points, the VE of the Proposed Development with pronouncedly visible or partially visible views from key sensitive viewers is presented in **Figure 5.1**, which is at a much wider extent from the 3H zone.

5.1.3 Since protecting private view is not the purview of the TPB, this VIA focuses primarily on public VSR only and no private VSR, such as residents of private development and users of developments with restricted/exclusive accesses will be identified. In the suburban setting, VPs are mainly defined by existing low-rise developments and existing vegetation as these elements may have partially hidden the Proposed Development when viewing from distant.

5.2 Selection of Representative Viewpoints

5.2.1 To ascertain the visual impact of the Proposed Development, the visual analysis has been conducted based on the existing site context. Representative VPs within the VE were selected for assessing the visual impact to the VSRs. Selected VPs shall cover public views from easily accessible and popular area from different directions. When selecting VPs, priority shall be given to major public open space, public focal points, existing/future pedestrian nodes, key pedestrian/vehicular corridor, and existing major vistas will be considered as major visual sensitive viewpoints. In this VIA, five VPs are selected for further assessment on the visual impact of the Proposed Development, which are summarized in **Table 5.1** and shown in **Figure 5.1**.



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Visual Envelope and Location of Visual Sensitive Viewpoints

S12A Amendment of Plan Application -
Various Lots in D.D. 110 and
Adjoining Government Land, Shek Kong,
Yuen Long, N.T.

Source: Survey Sheets Nos. 6-NE-A & B

Figure 5.1

Visual Impact Assessment

Date: 17 July 2025

Table 5.1 Selected Visually Sensitive Viewpoints

Viewpoint ID	Description
Local Viewpoints (4 nos.)	
VP1	Access Road leading to Seasons Monarch and Pang Ka Tsuen
VP2	Bus Stop at Kam Tin Road
VP3	Sitting-out Area near Shek Kong Vegetable Marketing Co-operative Society
VP4	Footbridge across Kam Tin River
Distant Viewpoint (1 no.)	
VP5	Hiking Trail towards Kai Kung Leng at Lam Tsuen Country Park

VP1 – Access Road leading to Seasons Monarch and Pang Ka Tsuen

- 5.2.2 This VP is taken at a road which branches off from Kam Tin Road at a level of about +8.5mPD, which is a frequent passageway leading to Seasons Monarch and Pang Ka Tsuen. It is close to the “O” zone to the immediate south of Seasons Monarch, which has not been implemented as an open space. VP1 is taken on the curb of the road opposite to the existing graves in Pang Ka Tsuen and is about 600m west of Site 1. It mainly captures the view of the existing graves, tree plantings, the village houses in Pang Ka Tsuen and the adjacent petrol filling station in the foreground, and the open sky view with a glimpse of the mountain range of Lam Tsuen Country Park in the background. This VP represents the view of the pedestrians and drivers traveling along the road between the nearby residential developments (i.e. Seasons Monarch and Pang Ka Tsuen) and Kam Tin Road to the west of the Site.

VP2 – Bus Stop at Kam Tin Road

- 5.2.3 Kam Tin Road is a single dual lane road and one of the major transport arteries in Kam Tin North. This section of Kam Tin Road runs from an east-west direction. VP2 is taken at a bus stop at a level of about +11.4mPD, which is about 165m southwest of Site 1. It captures the view of the existing roadside tree plantings along Kam Tin Road in the foreground. Partial sky view and the mountain range of Lam Tsuen Country Park (Tai To Yan) are visible in the background. This VP represents the view of the pedestrians, drivers, and passengers waiting for bus services along Kam Tin Road.

VP3 – Sitting-out Area near Shek Kong Vegetable Marketing Co-operative Society

- 5.2.4 This VP is taken from the existing sitting facilities near Shek Kong Vegetable Marketing Co-operative Society at the junction of Kam Tin Road and Wang Toi Shan Shan Tsuen Road at +13mPD from about 450m east of Site 1. The VP is selected to assess the potential visual impact on the VSRs including the users of the sitting facilities who engage in passive recreational activities, and the pedestrians and drivers traveling along the junction of Kam Tin Road and Wang Toi Shan Shan Tsuen Road to the east of Site 1. The view of this VP is comprised of the open sky view, existing vegetation and low-rise domestic settlements in Wang Toi Shan Tsoi Yuen Tsuen (North) in the foreground, partial views of the blocks in Shek Kong Barracks, the structures along Kam Tin River and the foothill of Kai Kung Leng in the background.

VP4 – Footbridge across Kam Tin River

- 5.2.5 Kam Tin River, which runs parallel along the Development Site to the north, is a major visual vista in providing visual linkage to the Site. This VP is taken from a footbridge across Kam Tin River (about 190m to the north of the Site) at Kam Tai Road at formation level of about +8.5mPD. This VP is selected to assess the potential visual impact on the VSRs including the pedestrians engaging in various leisure recreational activities such as walking and jogging along the Kam Tin River as well as the drivers traveling along Kam Tai Road. VP4 captures the existing shrubs and tree plantings along Kam Tin River and the houses of Seasons Villas in the foreground. Partial view of the mountain range of Lin Fa Shan is also visible.

VP 5 – Hiking Trail towards Kai Kung Leng at Lam Tsuen Country Park

- 5.2.6 This VP is taken from the hiking trail in Lam Tsuen Country Park at about +100mPD with an approximately 1.28km viewing distance from the north of the Site. This section of hiking trail is a route for hikers hiking from Kam Tin North towards the peak of Kai Kung Leng. This VP is selected to assess the potential visual impact on the VSRs including hikers and the public engaging in various leisure recreational activities such as walking and jogging along the trail as well as the grave sweepers. VP5 captures the existing grass, shrubs and trees along the hiking trail in the foreground and a panoramic view of the existing low-rise domestic settlements, village clusters and temporary structures in the foothill of Kai Kung Leng and the Kam Tin area. The continuous mountain range of Lin Fa Shan are visible. There is also a slight glimpse of the existing high-rise residential developments in Yuen Long at the background.

5.3 Preliminary Analysis

- 5.3.1 The VIA evaluates the degree of visual impact of the Proposed Development that will be created to its surroundings and VSRs, especially at the VPs identified. **Table 5.2** outlines the details of the VPs and provides with preliminary analysis including the nature of the VSRs, the quality of existing view, the frequency of use and popularity of the spot.
- 5.3.2 The visual impacts of the public VSRs from the selected five VPs will be assessed in detail in **Section 6**.

Table 5.2 Identified Visually Sensitive Viewpoints with Preliminary Analysis

Viewpoints (VPs)	Distance/ Direction	Level of the VP in mPD (Approx.)	Visually Sensitive Receivers	Popularity by Public	Nature of VP	Visual Sensitivity ²	Visual Quality ³
Local Viewpoints							
VP1 – Access Road leading to Seasons Monarch and Pang Ka Tsuen	Approx. 600m/ west	+8.5	Pedestrians/Drivers	Frequent	Transient	Low to Medium	Fair
VP2 – Bus Stop at Kam Tin Road	Approx. 165m/ southwest	+11.4	Pedestrians/ Passengers/ Drivers	Frequent	Transient	Low	Good
VP3 – Sitting-out Area near Shek Kong Vegetable Marketing Co-operative Society	Approx. 450m/ east	+13	Users of the sitting facilities/ Pedestrians/Drivers	Occasional	Transient/ Passive Recreation	Medium	Fair
VP4 – Footbridge across Kam Tin River	Approx. 190m/ north	+8.5	Pedestrians/Drivers	Occasional	Transient/ Passive Recreation	Low to Medium	Good
Distant Viewpoint							
VP5 – Hiking Trail towards Kai Kung Leng at Lam Tsuen Country Park	Approx. 1.28km/ north	+100	Hikers and general public	Occasional	Active and Passive Recreation	Medium to High	Good

² Visual sensitivity is determined by the types of activities the VSRs are engaging in and the duration and distance over which the Proposed Developments would remain visible. For example, people engaging in active recreational activities such as playing basketball or football at the VP are less sensitive to visual change than passive recreational activities.

³ Visual quality is assessed based on the openness and permeability of the view as well as the visibility of visual resources including prominent ridgelines, the harbour, natural coastlines, open sea horizon, skyline, scenic areas, valued landscape, special landmark, heritage features to be preserved.

6. ASSESSMENT OF VISUAL IMPACTS

6.1 General

- 6.1.1 Since the primarily objective of this VIA is for evaluating the visual impact of the Proposed Development in support of the S12A Amendment of Plan Application, the assessment will assess the potential visual impact of the overall bulk devised under Indicative MLP to the identified VSRs. The relevant appraisals in relation to visual composition, visual obstruction and effects on public viewers and effects on visual resources are focused on the changes to be brought by the Proposed Development.

6.2 VP1 – Access Road leading to Seasons Monarch and Pang Ka Tsuen (Figure 6.1 refers)

Visual Composition

6.2.1 This VP is taken at the road leading to the residential developments in Seasons Monarch and Pang Ka Tsuen to the west of the Development Site. As shown in the photomontages in **Figure 6.1**, the existing visual composition comprises the village houses at Pang Ka Tsuen, the tree plantings surrounding the graves and adjacent the petrol filling station in the foreground and the open sky view with a glimpse of the mountain range of Lam Tsuen Country Park in the background. At a viewing distance of about 600m, the middle and lower portions of the Proposed Development will be screened off by the existing village houses and vegetation surrounding the graves in the foreground. The Proposed Development will slightly alter the visual composition of this VP upon completion by extending the existing sub-urban townscape view to the further back of this VP.

Visual Obstruction

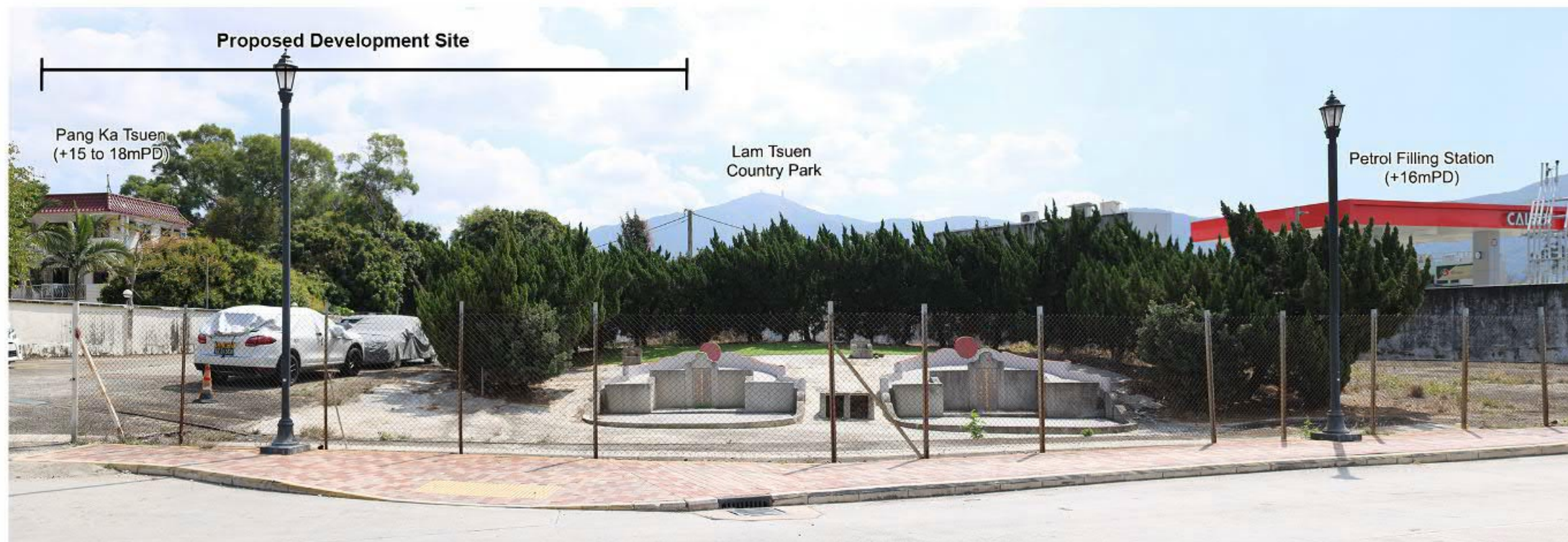
6.2.2 From **Figure 6.1**, it is illustrated that the major portions of the Proposed Development will be screened off by the existing vegetation surrounding the graves near Pang Ka Tsuen. The Proposed Development will not lead to visual obstruction to the view of the existing open skyline and existing green backdrop at Lam Tsuen Country Park in the background. The impact brought by the Proposed Development to the visual openness experienced by the VSRs at VP1 will be negligible.

Effect on Public Viewers

6.2.3 The key VSRs at this VP will be mainly the pedestrians and drivers traveling along the road leading to residential developments in Seasons Monarch and Pang Ka Tsuen and their visual sensitivity will be low to medium. The view of middle and lower portions of the Proposed Development will be filtered by the vegetation at the foreground. While the upper portion of the Proposed Development is still visible at this VP, it would visually blend in with the existing low-rise domestic settlements in Pang Ka Tsuen in the suburban townscape setting. Hence, the effect of the Proposed Development on the visual changes from the VSRs would be **negligible**.

Effect on Visual Resources

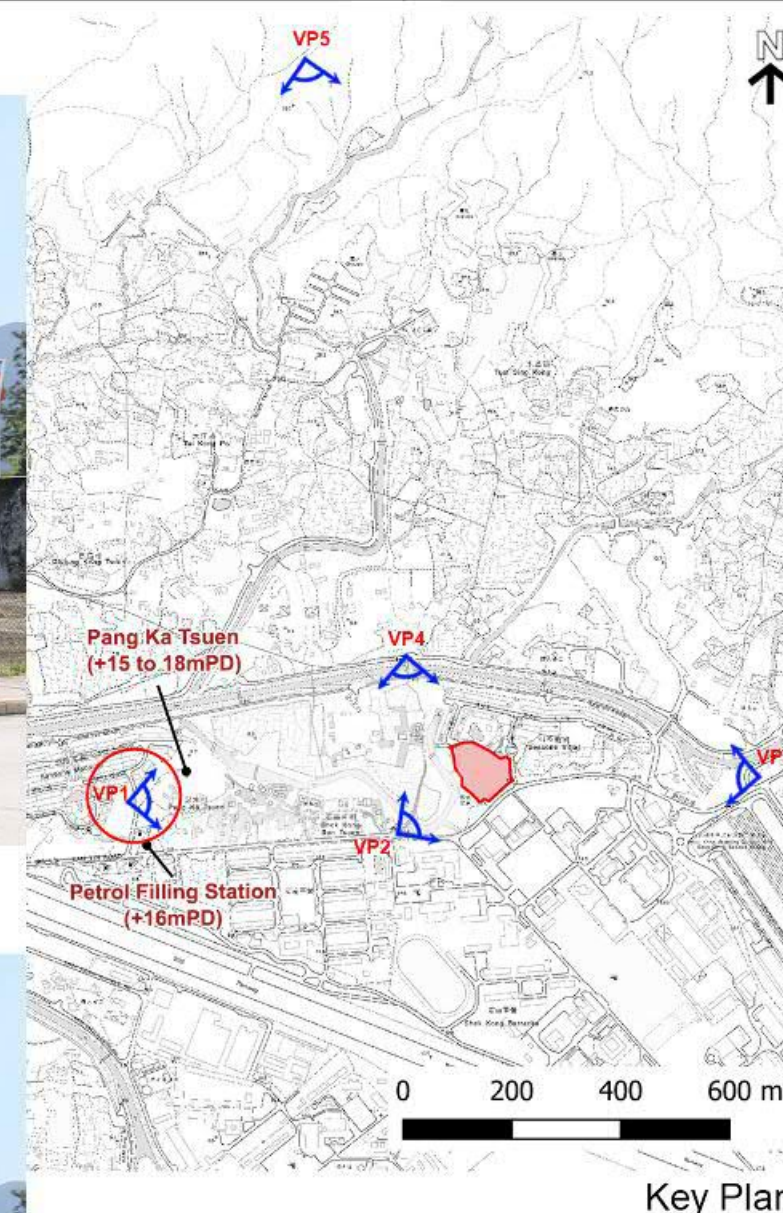
6.2.4 From this VP, the Proposed Development would be mostly screened off by the existing vegetation surrounding the graves near Pang Ka Tsuen. The Proposed Development would also blend with well with the townscape view comprising of existing low-rise suburban settlements. The impact of the Proposed Development on the visual resources of the surrounding area is therefore negligible.



Existing Condition



With Proposed Development



Key Plan



Photomontage Viewing from Access Road leading to Seasons Monarch and Pang Ka Tsuen (VP1)

S12A Amendment of Plan Application -
Various Lots in D.D. 110 and
Adjoining Government Land, Shek Kong,
Yuen Long, N.T.

Figure 6.1

Visual Impact Assessment

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6.3 VP2 – Bus Stop at Kam Tin Road (*Figure 6.2 refers*)

Visual Composition

- 6.3.1 As shown in the photomontages in **Figure 6.2**, the existing visual composition comprises the existing roadside tree plantings on the northern side of Kam Tin Road. Partial sky view and the mountain range of Lam Tsuen Country Park (Tai To Yan) are also visible in the background. The proposed development appears to be behind the large trees and is partially visible on the right hand side. The skyline backdrop on the right of the view is partially occupied by the proposed development, while the existing distant mountain backdrop and skyline will not be affected by the proposed residential towers. While the towers appear to be at similar height with the large tree in the foreground, the Proposed Development is considered visually compatible with the surrounding sub-urban developments as it will not affect the visual composition for this VP.

Visual Obstruction

- 6.3.2 As shown in **Figure 6.2**, with a close viewing distance to Site 1 from this VP, the Proposed Development appears to have obstructed partially the skyline to the right of the large tree. The visual linkage from this VP towards the mountain range of Lam Tsuen Country Park will remain unchanged. Hence, it is considered that the Proposed Development will induce slight to moderate degree of visual obstruction to the existing skyline and visual openness at VP2.

Effect on Public Viewers

- 6.3.3 As the VSRs of VP2 will mainly be pedestrians, drivers and passengers waiting for bus services along Kam Tin Road, which are transient in nature and thus their visual sensitivity will be low. The existing tree plantings along Kam Tin Road in the foreground will not be affected by the Proposed Development (not within Site 1). The façade treatment and façade colour scheme in natural tone would help provide visual relief. To some extent, the Proposed Development would also visually blend in with the existing low-rise domestic settlements in Seasons Villas by extending the suburban townscape along Kam Tin River. With the trees along Kam Tin Road having a dominant presence in the foreground, the Proposed Development (located about 165m to the northeast of VP2) is considered to have minor impact to the visual openness at this VP. The effect of the Proposed Development on the visual changes from the VSRs would be **slight**.

Effect on Visual Resources

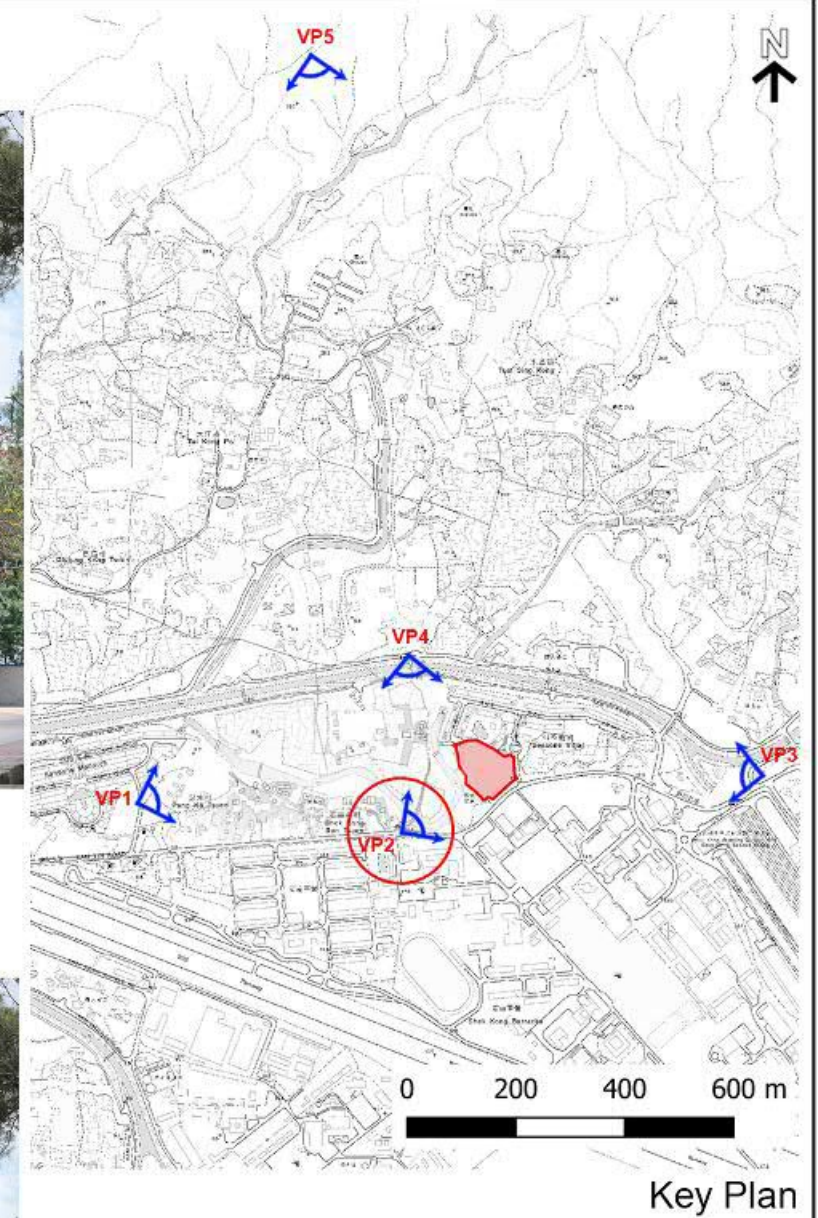
- 6.3.4 The carefully thought-out building design of the Proposed Development in terms of maximum building height (+28.9mPD) and setback from Kam Tin Road would provide further visual relief. Therefore, while the Proposed Development will inevitably become a visually dominating element at VP2, it would not induce significantly adverse impact to the visual character or quality of the suburban landscape view at this VP.



Existing Condition



With Proposed Development



Key Plan

6.4 VP3 – Sitting facilities near Shek Kong Vegetable Marketing Co-operative Society (Figure 6.3 refers)

Visual Composition

- 6.4.1 As shown in **Figure 6.3**, the existing visual composition at VP3 comprises of the existing vegetation and low-rise domestic settlements along the edge of Wang Toi Shan Tsoi Yuen Tsuen (North), structures in the Shek Kong Barracks and domestic developments and tree plantings along Kam Tin River. When viewing from the sitting facilities at this VP, there is a slight glimpse of the upper portions of the Proposed Development. The majority of the Proposed Development will be screened off by the existing vegetation and the low-rise domestic settlements in the foreground. Hence, the Proposed Development will only result in slight change to the overall visual composition to this VP.

Visual Obstruction

- 6.4.2 From this VP, the existing view is dominated by existing vegetation along the edge of the Wang Toi Shan Tsoi Yuen Tsuen (North) and Kam Tin River as well the adjacent low-rise domestic settlements, which are the prominent visual resources at this VP. As shown in **Figure 6.3**, only the upper portion of some the proposed residential towers would be visible. The visual impact of the Proposed Development on the existing skyline and visual openness of VP3 is negligible.

Effect on Public Viewers

- 6.4.3 As the VSRs at VP3 are mainly the users of the sitting facilities engaging in passive recreation activities and the pedestrians and drivers traveling along the junction of Kam Tin Road and Wang Toi Shan Shan Tsuen Road, their visual sensitivity will be medium to high. It is illustrated in **Figure 6.3** that a major portion of the Proposed Development, with a viewing distance of about 450m from the VP, will be screened off by the existing trees along the edge of the Wang Toi Shan Tsoi Yuen Tsuen (North). The Proposed Development would blend in well with the surrounding existing rural townscape although the highest floors above the trees in the foreground would be seen and minor loss of open skyview in some degree is resulted in. Hence, the effect of the Proposed Development on the visual changes from the VSRs would be **slight**.

Effect on Visual Resources

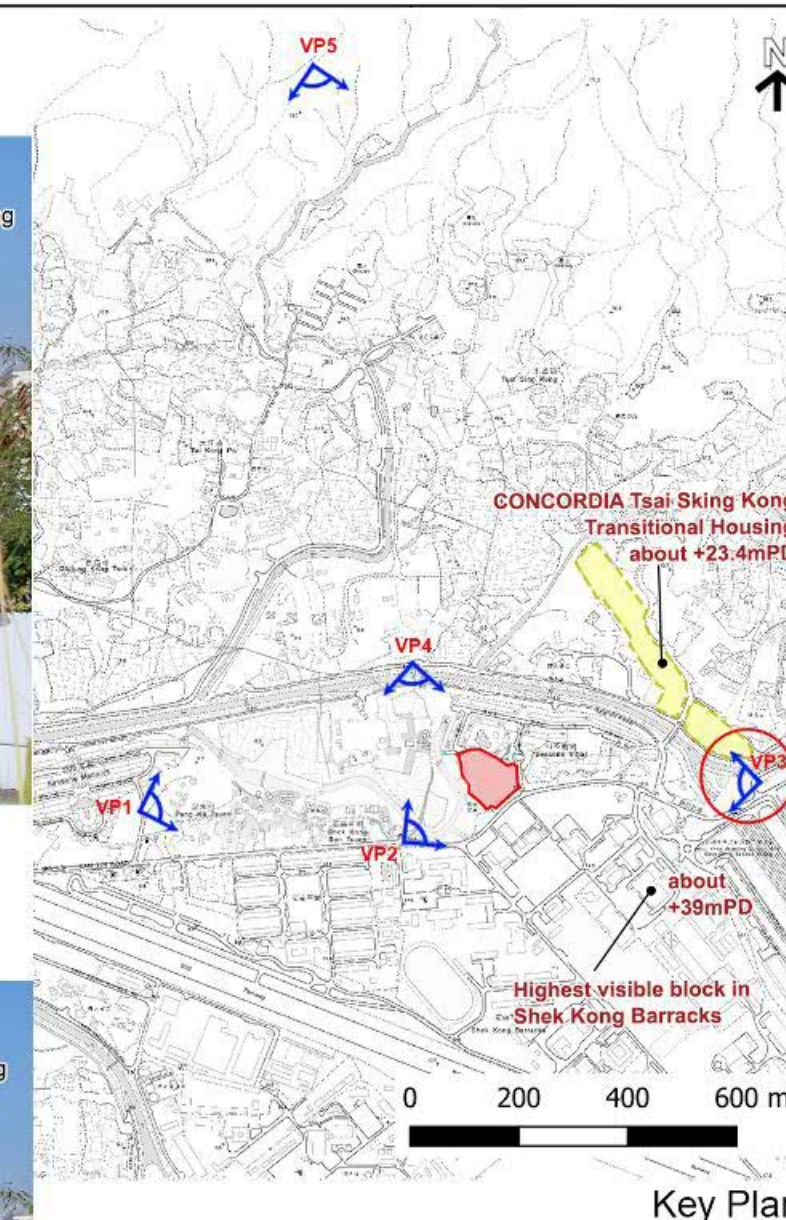
- 6.4.4 The visual resources such as skyline and mountain backdrop will not be affected by the Proposed Development. The impact of the Proposed Development on the condition, quality and character of the visual resources in the surrounding rural area at this VP is therefore negligible.



Existing Condition



With Proposed Development



Key Plan



Photomontage Viewing from
Sitting-out Area near Shek Kong Vegetable Marketing Co-operative Society
(VP3)

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Various Lots in D.D. 110 and
Adjoining Government Land, Shek Kong,
Yuen Long, N.T.

Figure 6.3

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6.5 VP4 – Footbridge across Kam Tin River (*Figure 6.4 refers*)

Visual Composition

- 6.5.1 This VP is taken on the northern bank of the Kam Tin River to the north of the Development Site at a viewing distance of about 190m. The existing visual composition comprises the existing shrubs and tree plantings along Kam Tin River and the houses of Seasons Villas in the foreground and distant view of the mountain range of Lin Fa Shan. The Proposed Development will be largely screened off by the existing vegetation and houses along Kam Tin Road in the foreground (**Figure 6.4** refers). The Proposed Development will have no effect onto the visual composition by extending the suburban townscape at this VP.

Visual Obstruction

- 6.5.2 As shown in **Figure 6.4**, the Proposed Development is mainly screened off by the existing trees in the foreground. The view to the skyline and certain degree of visual permeability is maintained at this VP. Visual obstruction due to Proposed Development is considered negligible at this VP.

Effect on Public Viewers

- 6.5.3 The VSRs of VP4 are mainly the pedestrians engaging in passive recreation activities and the drivers traveling along Kam Tai Road. Their sensitivity will be low to medium. As shown in **Figure 6.4**, the Proposed Development is mainly screened off by the existing trees in the foreground. The effect of the Proposed Development on the visual changes from the VSRs would be **negligible**.

Effect on Visual Resources

- 6.5.4 From this VP, the Proposed Development would be mainly screened off by the existing trees in the foreground. The visual resources including the skyline and mountain backdrop in the distance are not affected. The impact of the Proposed Development on the visual resources of the surrounding area is therefore negligible.



Existing Condition



With Proposed Development



Key Plan



Photomontage Viewing from
Footbridge across Kam Tin River (VP4)

S12A Amendment of Plan Application -
Various Lots in D.D. 110 and
Adjoining Government Land, Shek Kong,
Yuen Long, N.T.

Figure 6.4

Visual Impact Assessment

Date: 17 July 2025

6.6 VP5 – Hiking Trail towards Kai Kung Leng at Lam Tsuen Country Park (Figure 6.5 refers)

Visual Composition

- 6.6.1 As shown in **Figure 6.5**, the existing visual composition at this VP comprises the existing grass, shrubs and tree plantings along the hiking trail in the foreground, low-rise domestic settlements, village clusters and temporary structures at the foothill of Kai Kung Leng and the Kam Tin area, as well as the existing green backdrop of the Lin Fa Shan. With the planned residential/commercial development at KSRS almost completed, the visual character of the surrounding area will gradually transform from a rural to a suburban townscape setting at this VP (**Figure 6.5** refers). In the long term, the planned residential developments (with plot ratio ranging from 0.8 to 3) in the vicinity of the KSRS and PHMC would dominate the suburban townscape of Kam Tin area. In this regard, the Proposed Development is considered compatible with the future visual composition characterised by a suburban townscape setting at VP5.

Visual Obstruction

- 6.6.2 The visual resources at this VP5 are comprised of the existing visual components of rural and suburban character, including hillside vegetation, and areas intermingled with low-rise domestic settlements, village clusters and temporary structures in the foreground. Distant view to the existing green backdrop, roads, rail tracks and high-rise residential developments atop KSRS are visible in the background.
- 6.6.3 With or without the Proposed Development, the green backdrop will be partially obstructed by the aforementioned planned development at KSRS in the adjacent areas in the background. As shown in **Figure 6.5**, upon the completion of the planned development at KSRS, the Proposed Development would be visible being in front of Shek Kong Barracks, yet at a relatively less prominent scale as compared with the planned developments at KSRS. The building height of the Proposed Development appears to be comparable with the blocks in Shek Kong Barracks at the back. The Proposed Development would merely screen off some vegetation behind it while without affecting the mountain range backdrop. Hence, the blockage of the view induced by the Proposed Development alone would only slightly affect the visual openness experienced by the VSRs.

Effect on Public Viewers

- 6.6.4 The VSRs of VP5 are mainly the hikers and the general public engaging in various types of active and passive recreational activities and their sensitivity will be medium to high. They will have an exposed view of the Proposed Development and the planned high-rise residential developments in the Kam Tin South area characterised by a typical suburban residential townscape.

- 6.6.5 As illustrated in the photomontage in **Figure 6.5**, no matter with or without the Proposed Development, VSRs at this VP will be exposed to noticeable visual impact brought about by the planned high-rise residential developments in Kam Tin South. The Proposed Development, when viewing at a far distance of 1.15km at VP5, would not appear visually intrusive taking into account the planned high-rise residential developments in Kam Tin South. The effect on the visual changes from the VSRs due to the Proposed Development is therefore considered **slight**.

Effect on Visual Resources

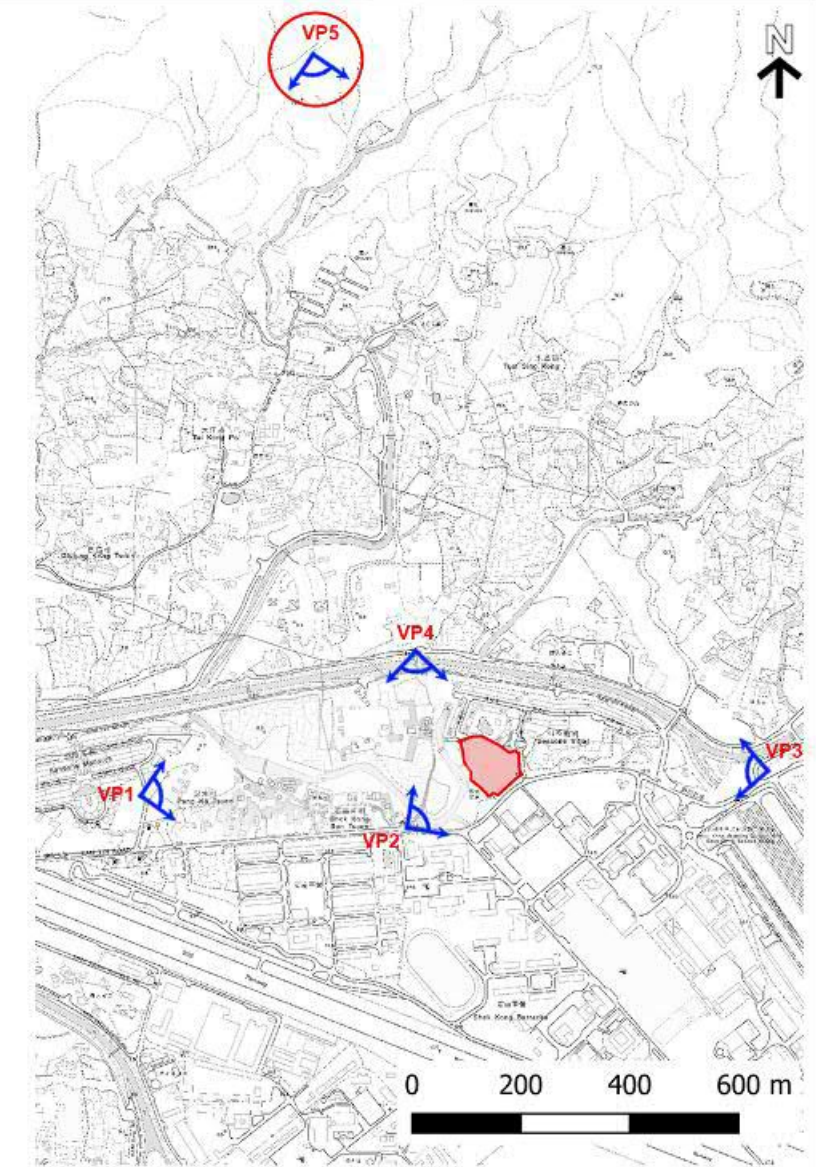
- 6.6.6 The Proposed Development would form part of visual extension of the future suburban townscape of Kam Tin area in harmony with surrounding planned high-rise developments. Thus, it would not significantly affect the visual character or quality of the suburban landscape view.



Existing Condition



With Proposed Development



7. CONCLUSION

- 7.1 Based on the appraisal on visual impact relating to visual composition, visual obstruction, effect on public viewers and effect on visual resources, **Table 7.1** below presents the overall visual impact associated with the Proposed Development to the identified VSRs represented in each VP. The visual impact associated with the Proposed Development is considered negligible (at VPs 1 and 4) to slightly adverse (at VPs 2, 3 and 5).

Table 7.1 Summary of Assessment of Visual Impact at the Viewpoints

Viewpoint	Location	Visual Impact due to Proposed Developments
Local Viewpoints		
VP1	Road leading to Seasons Monarch and Pang Ka Tsuen	Negligible
VP2	Bus Stop at Kam Tin Road	Slightly Adverse
VP3	Sitting facilities near Shek Kong Vegetable Marketing Co-operative Society	Slightly Adverse
VP4	Footbridge across Kam Tin River	Negligible
Distant Viewpoint		
VP5	Hiking Trail towards Kai Kung Leng at Lam Tsuen Country Park	Slightly Adverse

- 7.2 The Proposed Development comprises 6 nos. of residential towers with 6 storeys and 2 nos. of 1-storey structures (residential clubhouse and sewage treatment plant) at site formation levels of about +10.4mPD. Under the Indicative MLP, the proposed BH is about 28.9mPD. In the future, the Proposed Development will be located at proximity to the cluster of planned developments in Kam Tin South comprising high-rise developments at KSRS (with maximum building height of +69mPD) and PHMC (with maximum building height of +109mPD), and the public housing developments at Site nos. 1, 4a, and 6 (with maximum building height of +69mPD) identified in the LUR.
- 7.3 As shown in the photomontages in **Figures 6.1 & 6.4**, the Proposed Development would incur negligible visual impacts at VP1 and VP4 (with viewing distances of about 190m to 600m from the Site) as it would be completely/ mostly screened off by the existing developments and vegetation in the vicinity.
- 7.4 At VP1, major portions of the Proposed Development would be screened off by the existing vegetation surrounding the graves near Pang Ka Tsuen, thus

- resulting in no visual obstruction to the view of the existing open skyline and green backdrop at Lam Tsuen Country Park. At VP4, the entire Proposed Development would be entirely screened off by the existing trees in the foreground and thus no adverse visual impact is anticipated.
- 7.5 The Proposed Development would result in slightly adverse impact respectively at the three remaining VPs (i.e. VP2, VP3 and VP5).
- 7.6 The Proposed Development would inevitably become a key visual component at VP2 with a viewing distance of just about 165m from the southwest of Site 1 (**Figure 6.2** refers). While there would be slight visual obstruction to the existing sky view at VP2, the middle and lower portions of the Proposed Development will be screened off by the existing trees along the Kam Tin Road. The Proposed Development with main roof level at 28.9mPD is seen to be at comparable height with the large tree in the foreground. In addition, the carefully thought-out building design of the Proposed Development in terms of variation in building height as well as setback from Kam Tin Road would provide further visual relief. The adoption of natural color tone in building façade would also ease the visual impact due to the building bulk.
- 7.7 At VP3, the view to the major portion of the Proposed Development will be filtered by the existing vegetation and the low-rise domestic settlements at Wang Toi Shan Tsoi Yuen Tsuen (North). Resulting in minor loss of open skyview in some degree and only the highest floors being seen from this VP, the associated visual impact at this VP is considered slightly adverse. The adoption of natural color tone in building façade would ease the visual impact due to the building bulk.
- 7.8 With a viewing distance of about 1.28km from the Proposed Development at VP5 (**Figure 6.5** refers), the Proposed Development would be visible in the suburban context, yet at a relatively less prominent scale as compared with the soon-to-be-completed development at KSRS, as well as other planned developments around KSRS in the long term, which will gradually transform Kam Tin area from a rural to a suburban township. Upon the completion of the adjacent high-rise developments, the Proposed Development will not bring substantial change to the visual character and composition of the area when viewing from the distant VP (i.e. VP5).
- 7.9 In view of the above, with the provision of various sensible design measures including suitably spaced building layout and setback, it is considered that the Proposed Development with BHR of 6 storeys (at about 28.9mPD) at the Development Site (Site 1) is acceptable in visual terms.

- End -

Appendix 5

Air Ventilation Assessment

Prepared by

Ramboll Hong Kong Limited

REZONING FROM "RESIDENTIAL (GROUP C)2" AND "OPEN SPACE" ZONES TO "RESIDENTIAL (GROUP C)4" ZONE FOR A PROPOSED RESIDENTIAL DEVELOPMENT AT LOT NOS. 519 RP (PART) AND 520 RP IN D.D. 110 AND THE ADJOINING GOVERNMENT LAND, SHEK KONG, YUEN LONG, N.T.

AIR VENTILATION ASSESSMENT (EXPERT EVALUATION)

Date **6 November 2025**

Prepared by **Mike Kwan**
Assistant Environmental Consultant

Signed



Approved by **Calvin Chiu**
Technical Director



Signed

Project Reference **CKHSHKKGAI00**

Document No. **R8545_v2.0**

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Figure 6	Illustration of Wind Flow from Summer Wind Directions for Proposed Scheme

APPENDICES

Appendix 1	The Indication Plan of the Proposed Scheme
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1. INTRODUCTION

1.1 Background

- 1.1.1 The Development Site consists of areas zoned "Residential (Group C)" ("R(C)2") (max 3 storeys) and "Open Space" ("O") under Approved Kam Tin North Outline Zoning Plan (No. S/YL-KTN/11). Referring to the latest design, the Proposed Development comprises a total of 6 residential towers grouped in 3 building clusters with 6 storeys aboveground and elevated at +28.9mPD.
- 1.1.2 Ramboll Hong Kong Limited is commissioned by the Applicants to prepare the Air Ventilation Assessment (AVA) Study report – Expert Evaluation (EE) based on this rezoning proposal. Architectural drawings and technical information of the development are provided by the project architect.

1.2 Objective

- 1.2.1 This AVA-EE report has been prepared to evaluate if the Proposed Development would have any impact on the overall air ventilation performance of the assessment area by comparing the Proposed Development with prevailing condition.

1.3 Development Site and its Environs

- 1.3.1 The Development Site is currently sparsely vegetated without any permanent building structure.
- 1.3.2 The Development Site is bounded by Kam Tin Road on southern side. It is surrounded by Seasons Villas (+16mPD) on northern side, Shek Kong San Tsuen (+15mPD) on western side, and Shek Kong Barracks (+15 to 39mPD) on southern side.
- 1.3.3 The surrounding is dominated by existing residential development and low-rise temporary structures. **Figure 1** shows the location of the Development Site and its environs.

1.4 Baseline Scheme

- 1.4.1 The Baseline Scheme refers to the existing site condition. The Development Site is currently vacant land with sparse vegetation and no permanent structures.

1.5 Proposed Scheme

- 1.5.1 The current scheme is substantially revised when compared to last planning submission (Application No. Y/YL-KTN/4). Only a small portion of lot on eastern side of the last planning submission will be developed and proposed as "Residential (Group C)4" ("R(C)4") zone. All 6 towers are of 5+1 storeys. They are grouped as 3 building clusters where building separation of 15m will be provided between building clusters.
- 1.5.2 The Indicative Block Plan of the Proposed Scheme and sections are shown in **Appendix 1**.

2. SITE WIND AVAILABILITY DATA

2.1 Site Wind Availability Data From RAMS

- 2.1.1 According to the Planning Department's website, a meso-scale Regional Atmospheric Modeling System (RAMS) was used to produce a simulated 10-year wind climate at the horizontal resolution of 0.5 km x 0.5 km covering the whole territory of Hong Kong. The simulated wind data represents the annual, winter and summer wind 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: 061, Y: 069) 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 200m site wind availability data represents wind data that takes into account the topographical effect around the Development 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 Development 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, annual prevailing wind directions for the Development Site are NE, ENE and E whereas summer prevailing wind directions are E, S and SSW. **Figure 2a** shows the relevant wind roses diagrams representing the frequency and wind speed distribution at 200m height in annual and summer conditions. The wind frequency data is provided in **Table 2.1** below.

Table 2.1 Summary of RAMS Data and Wind Direction at 200m

Wind Direction	Probability for Annual Condition (%)	Probability for Summer Condition (%)
N	1.9%	1.1%
NNE	5.7%	1.2%
NE	12.4%	1.8%
ENE	12.4%	3.6%
E	26.7%	13.8%
ESE	7.3%	6.3%
SE	4.4%	7.4%
SSE	5.6%	11.5%
S	7.4%	17.4%
SSW	5.7%	14.4%
SW	3.0%	7.8%
WSW	1.7%	4.0%
W	2.0%	4.3%
WNW	1.6%	2.7%
NW	1.3%	1.8%
NNW	1.0%	0.9%

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

2.2 Wind Data from HKO Station

- 2.2.1 According to the wind data of Shek Kong Station, the annual and summer prevailing winds are mainly from E, NE and ENE whereas summer (Jun- August) prevailing wind are from E, S and SSW. **Figure 2b** shows the wind roses for Shek Kong Station (1997 -2023).
- 2.2.2 Based on two sets of wind data, it is considered that the annual prevailing winds come from NE, ENE and E directions. While in summer condition, the prevailing winds mainly come from E, S and SSW directions.

2.3 Topography

- 2.3.1 The Development Site is located in Shek Kong, Yuen Long area. The surrounding is topographically flat generally. Under the annual wind condition, it is expected that annual NE, ENE and E prevailing winds can penetrate the Development Site and reach its downwind areas thus existing site wind availability and immediate surrounding is anticipated to be satisfactory. To the further north side of the Development Site is Lam Tsuen Country Park (3km apart) with higher topography (up to about 500mPD). The influence to the wind flow pattern around the Development Site is minimal due to long separation. For the summer wind, E, S and SSW winds can penetrate the Development Site and reach its downwards areas.

2.4 Building Morphology

- 2.4.1 After checking by the site visit for existing developments and the published information in Statutory Planning Portal under the Town Planning Board regarding planned / committed developments in the model area, the Development Site is surrounded by low-rise developments, e.g. Mountain View (+13mPD), Shek Kong San Tsuen (+15mPD) and Seasons Villas (+16mPD).
- 2.4.2 Under the existing wind condition, the building density of the surrounding is considered low. The surrounding areas are low-rise buildings and some temporary building structures. To the southeast of the Development Site is Shek Kong Barracks (+15mPD to +39mPD). Although there is generally little gap between blocks (houses) in the surroundings, wind flowing over the building blocks and then reaching pedestrian level later is possible. Potential building blockage effect due to the surrounding existing are considered low.
- 2.4.3 The building height information of these identified developments was extracted from Geo-Reference Database (BG1000) provided by Survey and Mapping Office/ Lands Department, and as shown in **Table 2.2** below. As building masses are concentrated to the north, south and west of the Development Site, it is likely that prevailing wind availability from these directions (e.g. NE wind) will be slightly lowered due to the existing building morphology.

Table 2.2 Building Height of Surrounding Development

Name of Development	Maximum Building Height mPD	Location from Development Site
Mountain View	~13	Further West
Shek Kong San Tsuen	~15	West
Seasons Villas	~16	North
Shek Kong Barracks	~15-39	Southeast, South, Southwest

2.5 Summary of Existing Site Wind Availability

- 2.5.1 According to the wind availability data, the annual wind directions of the area include NE, ENE and E.
- 2.5.2 From **Table 2.1** above, the wind probability from the E direction is 26.7% and is considered to be the most dominant annual wind direction for the area. The NE and ENE (both are 12.4%) wind are also dominant annual prevailing wind directions other than the E wind.
- 2.5.3 The existing low-rise buildings, such as Seasons Villas, Shek Kong Barracks, Shek Kong San Tsuen and Mountain View in the surroundings will slightly reduce the wind availability to the Development Site at pedestrian level. It is anticipated that the

surrounding traffic network and open areas would be the main air corridors under the annual condition, including Kam Tai Road and Kam Tin Road.

- 2.5.4 During summer condition, prevailing winds from the E, S and SSW are the dominant wind directions. Similar to annual wind conditions, it is anticipated that the surrounding traffic network and open areas shall be considered as air corridor under S and SSW wind directions. As the presence of the low-rise Shek Kong Barracks, Mountain View and Shek Kong San Tsuen are located at the upwind areas under S and SSW wind direction, S and SSW wind would flow atop these building blocks and reach the Site. Therefore, it should impose only some slight obstruction to wind flow.
- 2.5.5 **Figure 3** and **Figure 4** show the annual and summer prevailing wind directions under the Baseline Scheme.

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

3.1 Important Areas

3.1.1 Important surrounding areas have been identified as the following:

- Open space within Shek Kong Barracks;
- Roads surrounding the Development Site (Kam Tin Road, Kam Tai Road); and
- Nearby residential developments (i.e. Seasons Villas, Shek Kong San Tsuen).

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

3.2.1 Under the Proposed Scheme, various good design feature beneficial to air ventilation such as separation of building from site boundary, optimal building disposition and building separation advantageous to prevailing wind penetration are incorporated.

- A sensible building design is adopted to minimise building footprint at grade and thus minimise possible wind blockage.
- Building separation (not less than 15m) between building cluster is proposed. This separation facilitates wind penetration mainly from annual prevailing NE wind directions to benefit its downwind areas (i.e. Shek Kong San Tsuen). Although the separation is not aligned exactly for some annual and summer prevailing direction, it is anticipated that prevailing ENE/SSW wind is still able to flow through it.
- Building setback (not less than 5m) are proposed from ALL site boundaries of the Development Site to enable wind flow around the building mass of the development and benefit its surrounding areas for all annual and summer prevailing wind directions.

3.2.2 Further discussion of the scheme based on the good design features above is included below.

Air corridors/ Air paths

3.2.3 **Figure 3** and **Figure 4** illustrate the prevailing wind from annual and summer wind directions for the Baseline Scheme. The prevailing wind from annual and summer wind directions are illustrated in **Figure 5** and **Figure 6** for the Proposed Scheme.

3.2.4 Existing major wind corridors nearby the Development Site are Kam Tai Road and Kam Tin Road. The Development Site is well separated from Kam Tai Road and no significant impact on this wind corridor is anticipated. With respect to wind corridor along Kam Tin Road, the Proposed Scheme is designed so that the buildings allow setback from (southeast) boundary immediate to them. Therefore, the impact due to the Proposed Scheme on air flow along wind corridors have been avoided/minimised.

Building Disposition and Setback from Site Boundary

3.2.5 The building separation with not less than 15m in width is proposed between building clusters will facilitate NE wind flow. Furthermore, building setbacks along all site boundaries can facilitate wind flow from all prevailing directions towards the downwind areas and allow wind penetration around or across the Development Site and ameliorate the impact in certain extent.

3.2.6 The building separation (not less than 15m) provided between the building clusters creates air paths for wind penetration. As the building separation is aligned to NE/SW

direction, annual prevailing NE wind will be most benefited. The NE wind would flow through the building separation (not less than 15m) between the building clusters towards the downwind area such as Shek Kong San Tsuen. Annual prevailing ENE and summer prevailing SSW wind will have chance to penetrate through the separation but less effective. Secondly, it is considered that prevailing E wind can be benefited in some extent.

- 3.2.7 The prevailing NE, ENE and E wind can flow along Kam Tin Road towards the downwind area without any significant obstruction due to building setback from southeastern boundary.
- 3.2.8 In addition, proposed setbacks from all site boundaries would facilitate the penetration of wind surrounding the Development Site to reach its downwind areas under all annual and summer prevailing wind directions. It is easy for wind to flow around the Proposed Development especially along the northwestern and southeastern site boundaries.
- 3.2.9 It is anticipated that overall unfavourable impact in terms of wind environment would be minimised due to the provision of building separation and setback.

Building Height

- 3.2.10 The proposed maximum building height of the Proposed Scheme at +28.9mPD is slightly higher than surrounding building context (about 13 to 16mPD on west and north side; about 15 to 39mPD on southeast, south and southwest side) in general.
- 3.2.11 Theoretically, the Proposed Scheme with higher buildings would result in more wind blockage impact and it is relatively more difficult for wind to pass over the buildings and come to the pedestrian level when compared to the Baseline Scheme. Thus, there will be lower wind availability in the downwind areas including Shek Kong San Tsuen and Mountain View (under E wind), Seasons Villas (under SSW wind) in comparison to the Baseline Scheme. Based on the proposed design, it is considered that more wind will tend to flow around or through building separation instead of atop the building mass to downwind area. The impact due to higher building height has been ameliorated.

3.3 Directional Analysis of the development

- 3.3.1 As discussed in **Section 2.1 to 2.3**, winds from NE, ENE and E direction are prevailing annually whereas winds from E, S and SSW are dominant in summer.

NE and ENE Winds

- 3.3.2 Under NE and ENE wind direction, the existing Seasons Villas to the north will slightly block and reduce the wind availability to the Development Site at pedestrian level nearest to it. NE and ENE wind needs to pass atop the development on upwind side to reach downwind area. There will be some additional impact due to the Proposed Scheme for blocking the NE and ENE wind from reaching its downwind areas such as Shek Kong San Tsuen and Shek Kong Barracks due to higher building height.
- 3.3.3 With the provision of building separation (not less than 15m) between the building clusters and building setback (not less than 5m) along northwestern and southeastern site boundaries, NE and ENE wind would be facilitated through the Development Site and reach its downwind area. That is, NE wind and some ENE wind would penetrate through the building separation, and both NE and ENE wind would flow through these building setback areas to reach downwind areas. All in all, the building height of the proposed design is not excessive and it is anticipated that some portion of high-level wind would still flow atop the proposed building blocks in the Proposed Scheme and reach further downwind pedestrian area. Therefore, the unfavourable impact in terms of wind availability on the surrounding areas is expected to be reduced.

E Wind

- 3.3.4 Under E wind condition, the proposed building blocks within the Development Site may obstruct wind flow from reaching downwind areas such as Shek Kong San Tsuen. The proposed building setback along the northern and southern boundaries would facilitate E wind flowing towards the downward areas to mitigate the impact under the Proposed Scheme. The impact on leeward area would be minimised mainly due to building setback along the northern and southern boundaries. Moreover, wind can also flow atop the proposed building blocks and flow downward to further downwind pedestrian area. In addition, the building orientation and disposition in the Proposed Scheme form a U-shape with large opening facing southeast. Some portion of E wind would flow into the central courtyard of the Proposed Scheme from Kam Tin Road. Although the building separations in the Proposed Scheme is not well aligned with the E wind direction, some E wind would circulate and through the central courtyard to reach at least immediate west of the Development Site. Thus, the air ventilation impact to downwind area including Shek Kong San Tsuen shall be mitigated by the proposed building setback and building separation between building clusters.

S Wind

- 3.3.5 The proposed building setback along the eastern and western boundaries would facilitate S wind flowing towards the downward areas to mitigate the impact under the Proposed Scheme. Moreover, wind can also flow atop the proposed building blocks and flow downward to further downwind pedestrian area. Therefore, it is expected the extent of impact in terms of air ventilation to the downwind side would be minimal.
- 3.3.6 As discussed above, the building orientation and disposition in the Proposed Scheme form a U-shape with large opening facing southeast. Under S wind condition, the incoming wind would flow into the central courtyard of the Proposed Scheme and dissipated within the Development Site. Although the building separation between building clusters is not well aligned with S wind, it is anticipated that some wind can flow through the separations and flow to area to the immediate north. Therefore, it is considered that the air ventilation impacts arising from the Proposed Development would be mitigated.

SSW Wind

- 3.3.7 Under SSW wind, while the Proposed Development may obstruct wind flow to its downwind areas, SSW wind can flow through the northwestern and southeastern site boundaries to reach the downwind areas. Although the building separation between the building cluster is not aligned with the incoming SSW wind, some SSW wind would be facilitated through the separation with width of not less than 15m, and slightly enhance the wind environment at the immediate downward areas. Moreover, wind can also flow atop the proposed building blocks and flow downward to further downwind pedestrian area. Therefore, the unfavourable impact in terms of wind availability on the surrounding areas is expected to be reduced.

3.4 Summary of Relative Air Ventilation Performance

- 3.4.1 The air ventilation performance of the Baseline Scheme and the Proposed Scheme has been appraised. Regarding the building shape of the Proposed Scheme, it is considered that it may result in relatively more wind blockage impact to its downwind area, when compared to the Baseline Scheme.
- 3.4.2 However, good design measures have been incorporated. With dedication of not less than 5m building setback from all site boundaries and not less than 15m building separation between building clusters are proposed, the air ventilation performance could be enhanced and potential air ventilation impacts could be minimized. Therefore,

the Proposed Scheme would unlikely impose significant adverse impacts on the surrounding areas from air ventilation perspective.

4. CONCLUSION

- 4.1.1 A qualitative assessment on the air ventilation performance of the Proposed Development has been carried out.
- 4.1.2 According to the findings of this AVA-EE, the annual wind of the study area is mainly from NE, ENE and E. The summer wind is mainly coming from the E, S and SSW directions. After considering the potential air ventilation impacts of the Development Site, the layout of the Proposed Development has incorporated good design measures to enhance its air ventilation performance. Taking into consideration of the existing topography, the location of the existing built areas and provision of mitigation measures, it is considered that the Proposed Development should not have significant adverse impact on the surrounding environment.
- 4.1.3 The dedication of not less than 5m building setback from all site boundaries and not less than 15m building separation between building clusters will facilitate wind penetration and maintain good air ventilation performance to the surrounding area. Moreover, the building height is not excessively high so that wind flowing atop the towers can still reach further downwind pedestrian area. Therefore, the Proposed Scheme with the design measures incorporated is unlikely to impose significant adverse impact on the surrounding sites from air ventilation perspective.

Figures

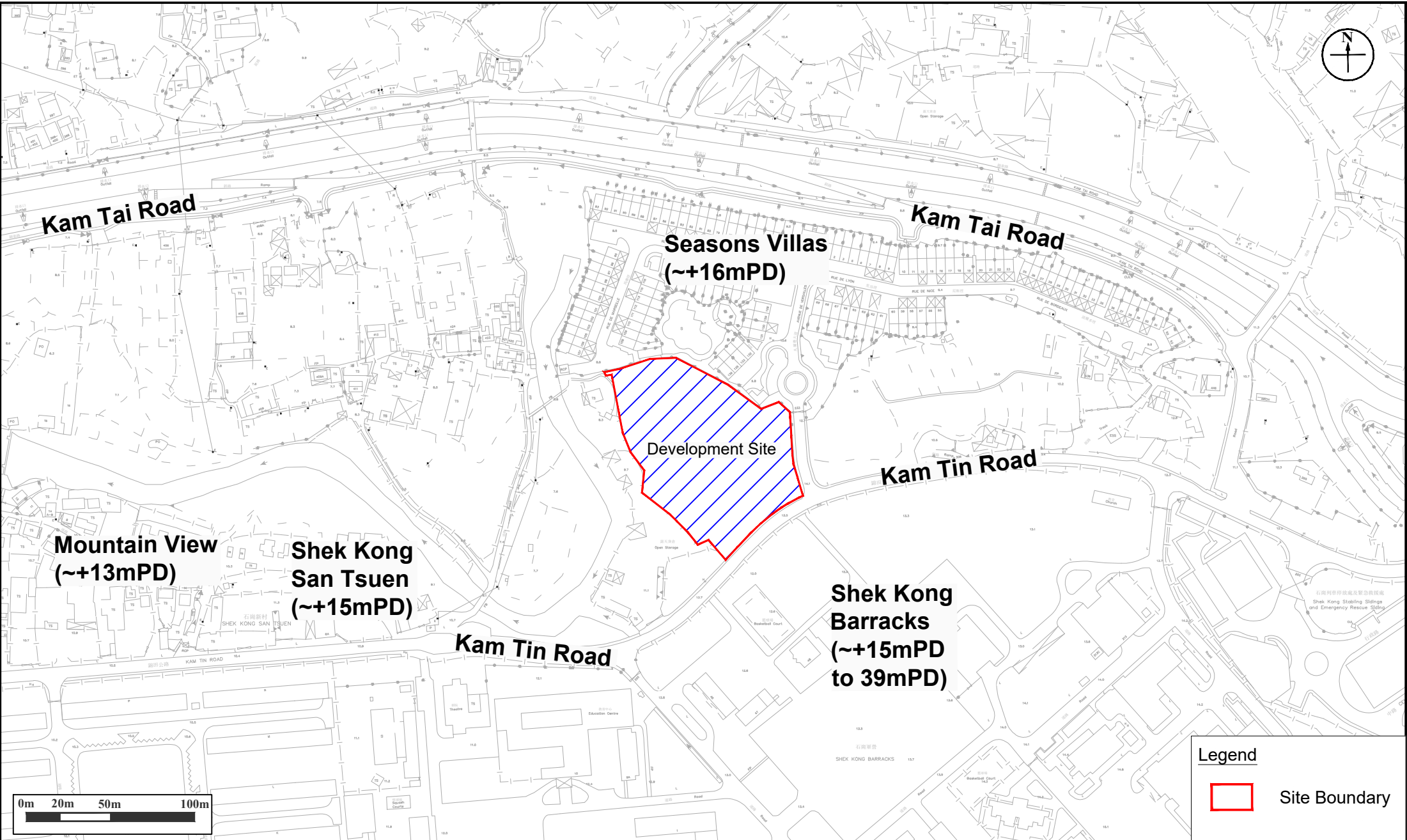


Figure: 1			
Title: Location of the Development Site and Its Environs		Drawn by: MK	
Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.		Checked by: CC	
		Rev.: 2.0	
		Date: Apr 2025	

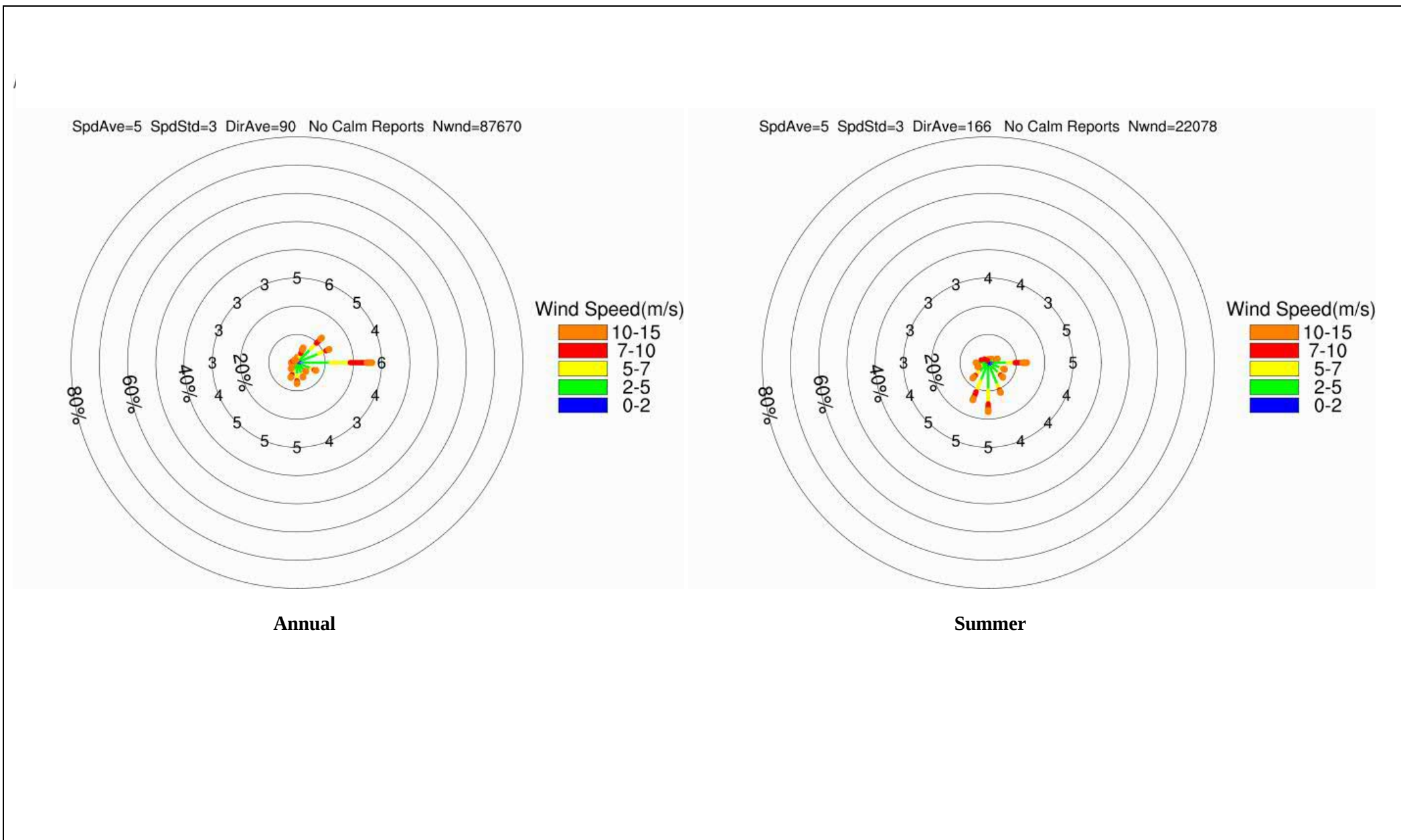


Figure: 2a	RAMBOLL
Title: Windrose Diagram representing V_{∞} of the Area under Concern at 200m above ground (X:061, Y:069)	Drawn by: MK
	Checked by: CC
Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	Rev.: 2.0
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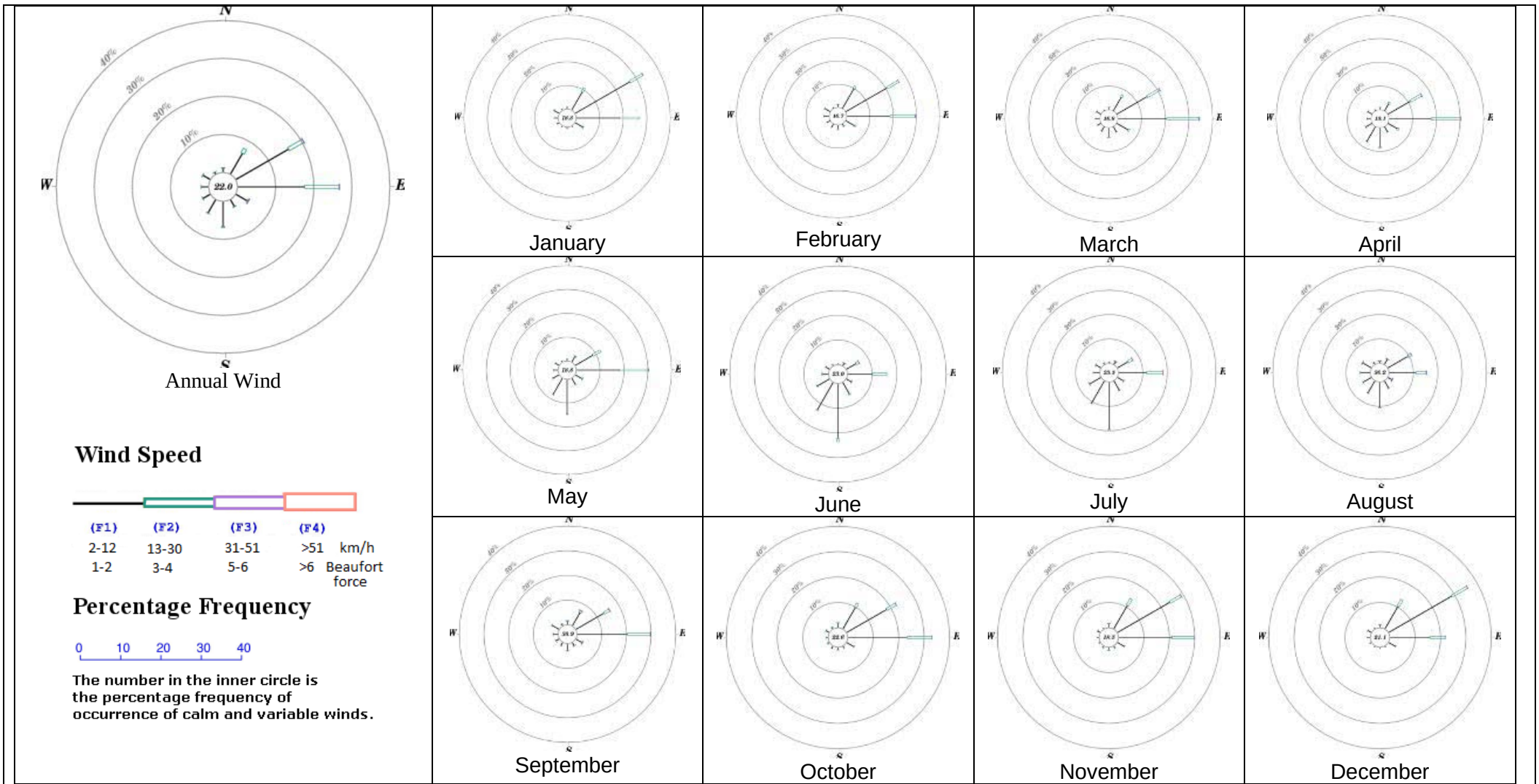


Figure: 2b

Title: Windroses Diagram for Shek Kong, 1997 - 2023

Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

RAMBOLL

Drawn by: MK

Checked by: CC

Rev.: 2.0

Date: Apr 2025

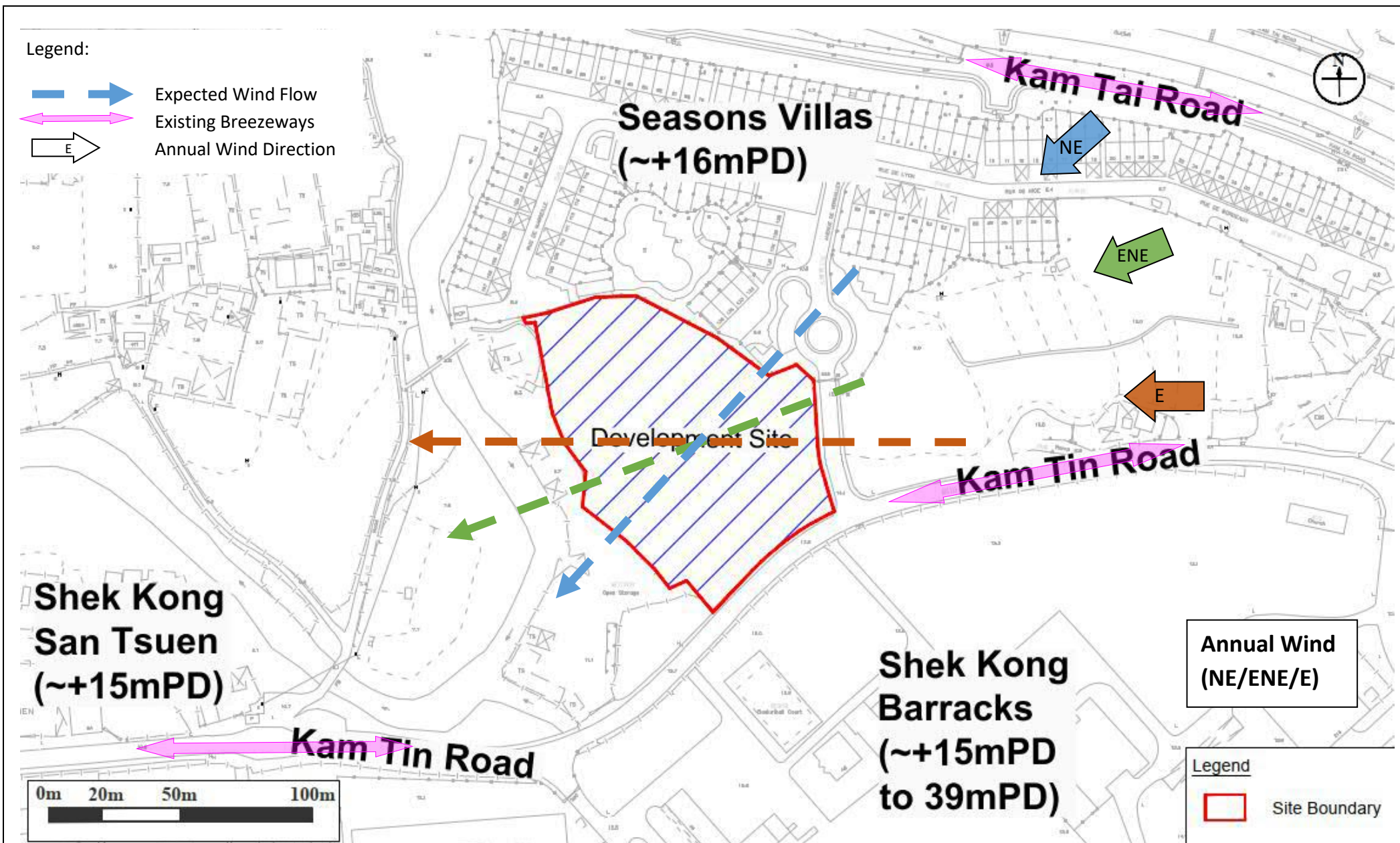


Figure: 3

Title: Illustration of Wind Flow from Annual Wind Directions for Baseline Scheme

Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

RAMBOLL

Drawn by: MK

Checked by: CC

Rev.: 2.0

Date: Apr 2025

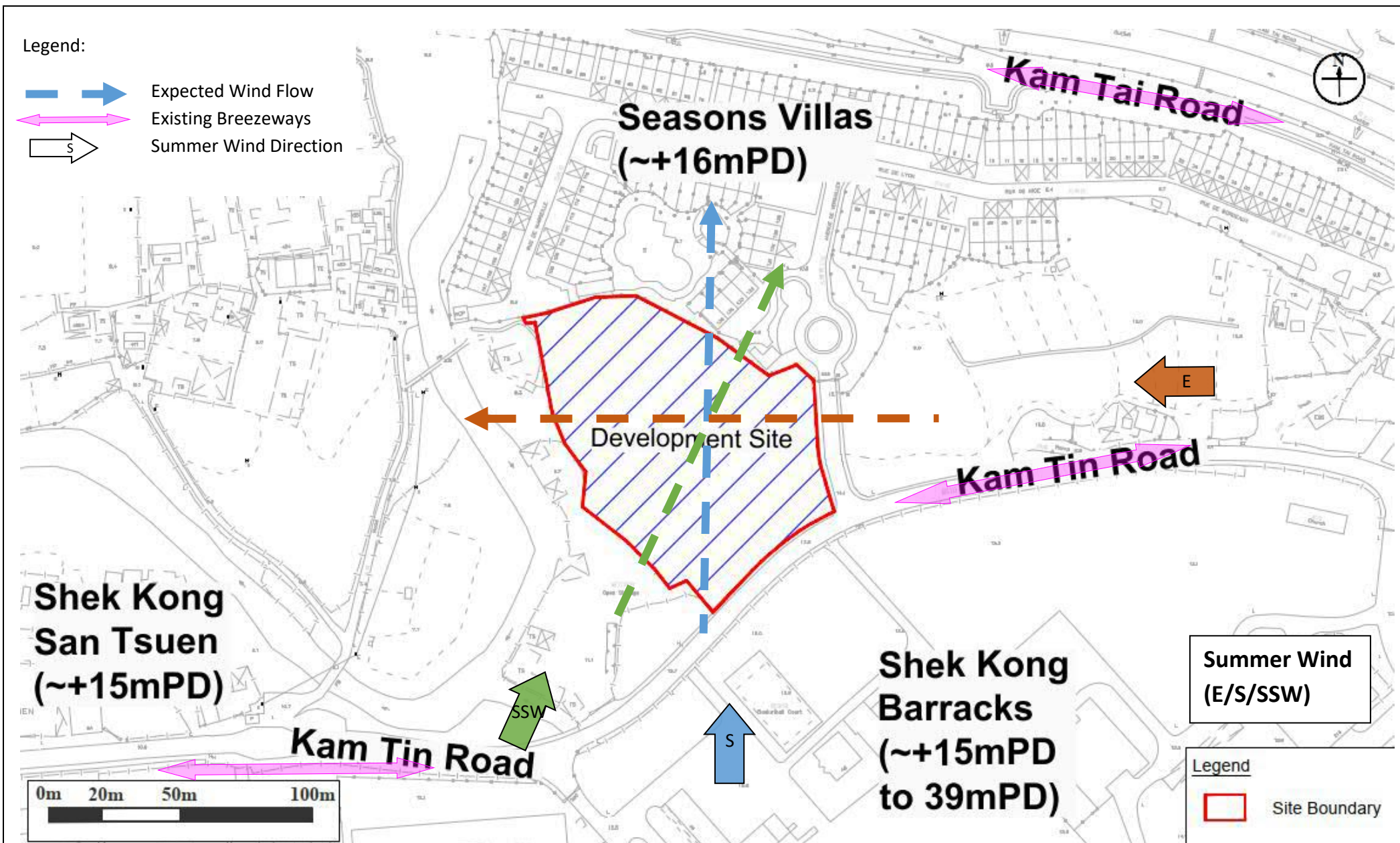


Figure: 4

Title: Illustration of Wind Flow from Summer Wind Directions for Baseline Scheme

Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

RAMBOLL

Drawn by: MK

Checked by: CC

Rev.: 2.0

Date: Apr 2025

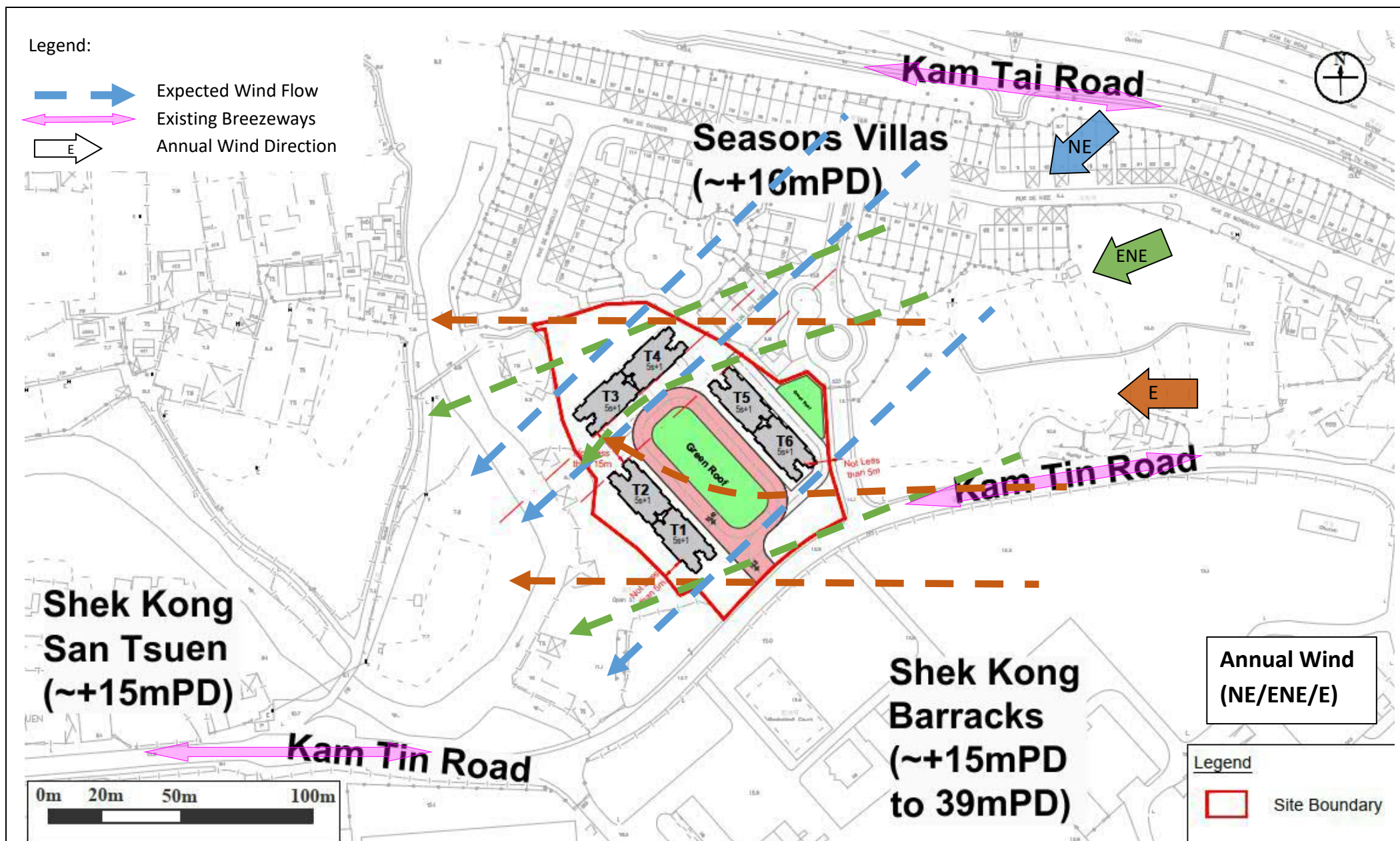


Figure: 5

Title: Illustration of Wind Flow from Annual Wind Directions for Proposed Scheme

Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

RAMBOLL

Drawn by: MK

Checked by: CC

Rev.: 2.0

Date: Apr 2025

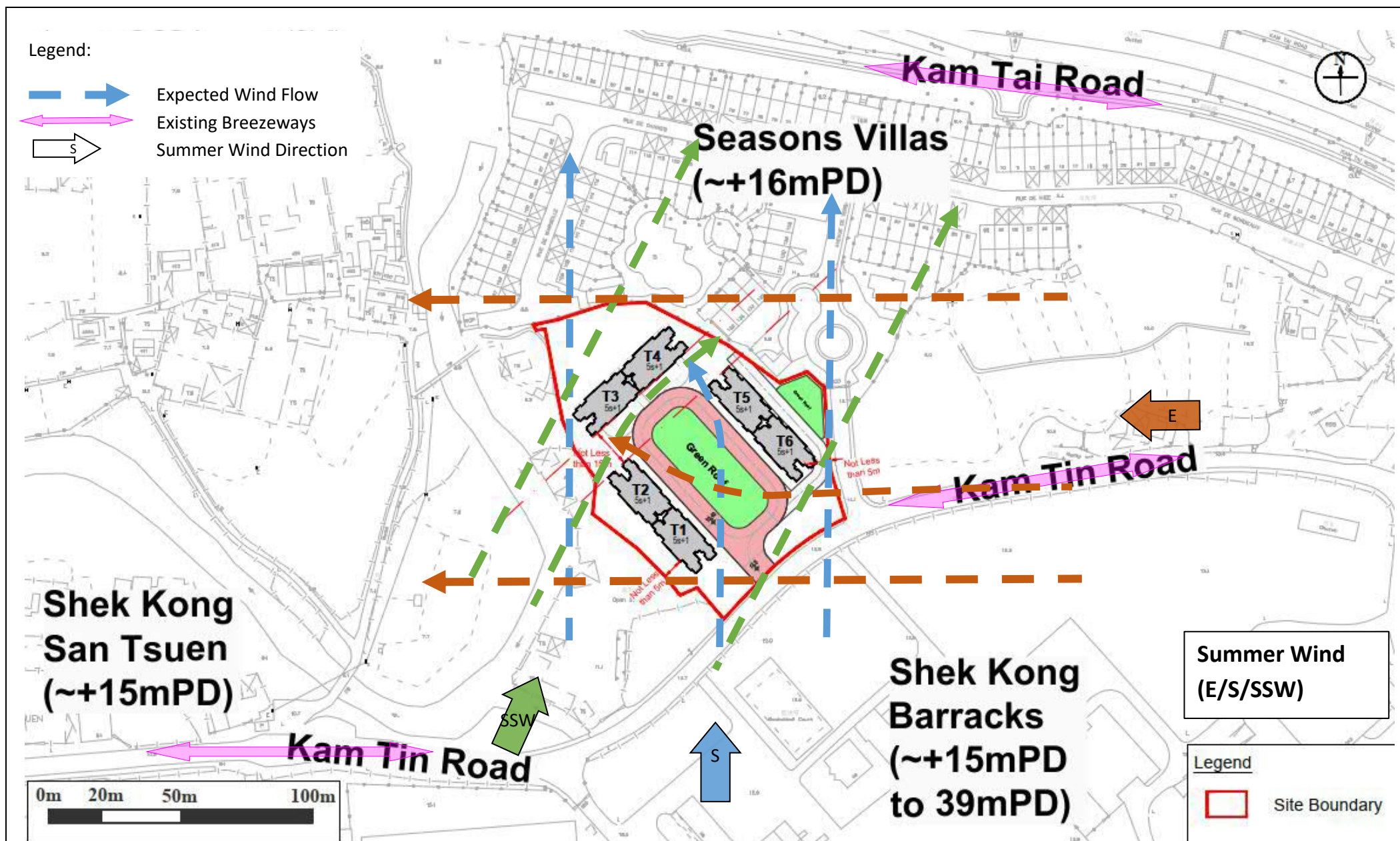
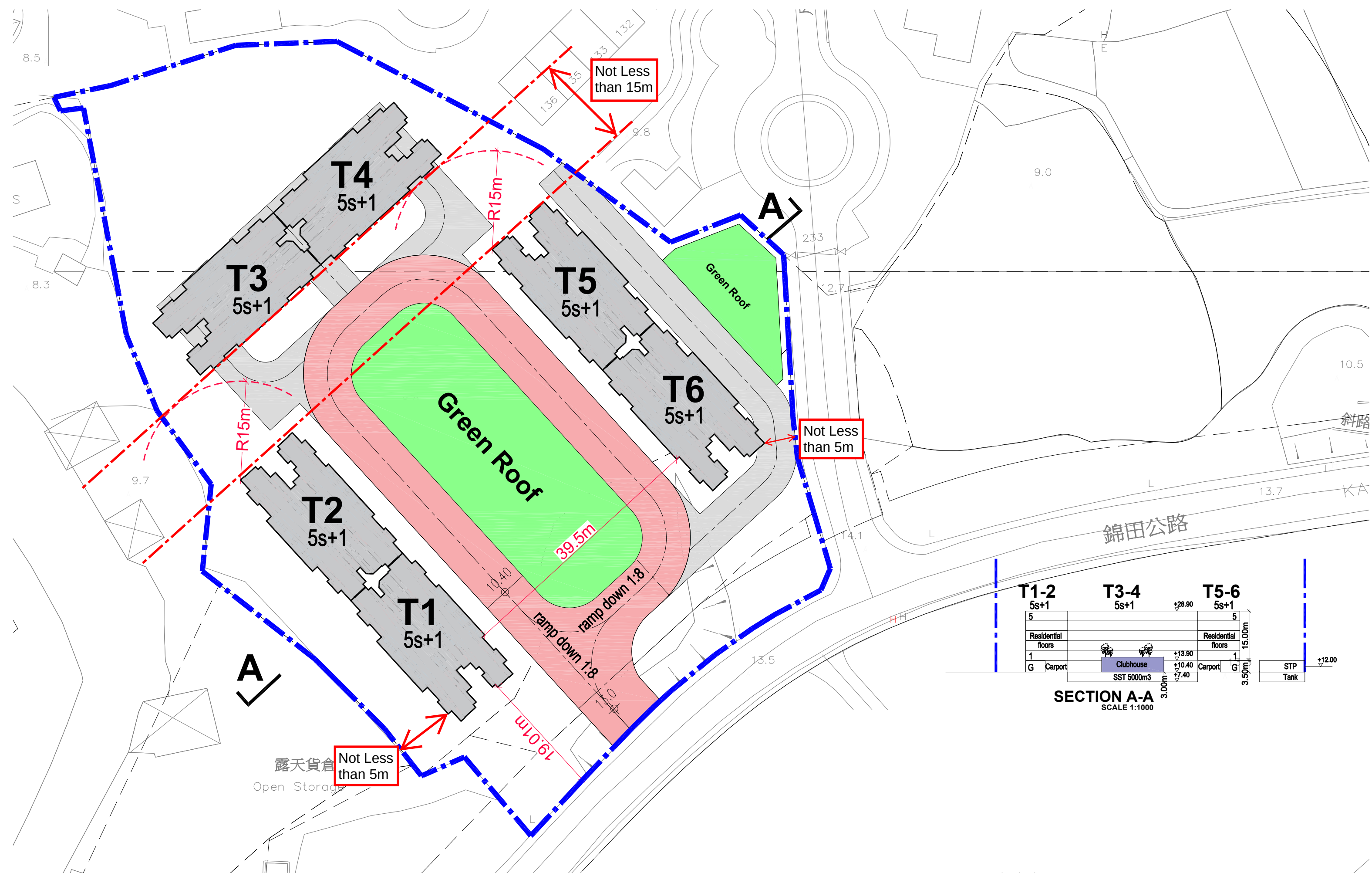


Figure: 6	RAMBOLL
Title: Illustration of Wind Flow from Summer Wind Directions for Proposed Scheme	Drawn by: MK
Project: Rezoning From "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	Checked by: CC
	Rev.: 2.0 Date: Apr 2025

Appendix 1

The Indication Plan of the Proposed Scheme



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

MASTER LAYOUT PLAN

Dwg No: 20250309 - shek kong.dwg
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Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a

Appendix 6

Traffic Impact Assessment

**Rezoning from “Residential (Group C)2” and “Open Space”
zones to “Residential (Group C)4” zone for a
Proposed Residential Development at Lot Nos.
519 RP (part) and 520 RP in D.D. 110 and the
Adjoining Government land, Shek Kong, Yuen Long, N.T.**

Traffic Impact Assessment

Revised Final Report

November 2025



CTA Consultants Limited

志達顧問有限公司

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Appendix I – Kam Tin South Housing Development – Layout Plan

Appendix II – Junction Calculation Sheets



1. INTRODUCTION

1.1 Background

1.1.1 The Development Site is located at DD110, Shek Kong, Kam Tin Road, Yuen Long New Territories. The site location is shown in **Figure 1.1**.

1.1.2 The Applicant intends to rezone the Development Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" to enable the proposed residential development.

1.1.3 In support of the aforesaid application, a traffic impact assessment is required to review and appraise any possible traffic impact induced by the proposed development on the adjacent road network.

1.1.4 CTA Consultants Limited (CTA) was therefore commissioned as the traffic consultant to prepare the Traffic Impact Assessment (TIA) and provide technical justifications in supporting the application from traffic engineering point of view.

1.2 Study Objectives

1.2.1 Main objectives of this study are listed below:

- To assess the existing and proposed traffic arrangement & provision of internal transport facilities at the subject site;
- To assess the existing traffic condition in the vicinity of the proposed development;
- To estimate traffic trips related to the proposed development;
- To carry out forecasts about traffic demand of the adjacent road network in design year;
- To appraise any possible traffic impact induced by the proposed development on the adjacent road network;
- To recommend traffic improvement measures to alleviate any foreseeable traffic problem to the surrounding road network, if any.



2. THE PROPOSED DEVELOPMENT

2.1 Site Location

2.1.1 The Development Site is located in D.D. 110, Kam Tin, Yuen Long, New Territories. The site location is shown in **Figure 1.1**.

2.2 Development Proposal

2.2.1 Parameters of the proposed development are listed in **Table 2.1**.

Table 2.1 Parameters of the Proposed Development

	Development Parameters	
Proposed Use	Residential Use	
Development Site Area	8,580 m ²	
Domestic GFA	8,580 m ²	
No. of Tower	6	
No. of Units	≤ 40 m ²	120
	40 m ² < FS ≤ 70 m ²	120

2.2.2 It is anticipated that the proposed development will be completed in year 2031.

2.2.3 The Master layout plan of the proposed development is shown in **Figures 2.1** and **2.2**. The Ground floor plan is shown in **Figures 2.6** and **2.7**.

2.3 Provision of Internal Transport Facilities

2.3.1 According to the requirements stipulated in the latest Hong Kong Planning Standards and Guidelines (HKPSG), the internal transport facilities provision for the proposed development is summarized in **Table 2.2**.



Table 2.2 Internal Transport Facilities Provision required under the HKPSG

Proposed Development			Parking Requirement					Loading/Unloading Requirement	
			Private Car Parking Space				Motorcycle Parking Space	Bicycle Parking	Loading / Unloading Bay for Goods Vehicles
Private Housing	Resident						1 space per 100-150 flats	1 space for 15 flats with flat size $\leq 70m^2$	Provision of minimum 1 L/UL bay for goods vehicles within the site for every 800 flats or part thereof, subject to a minimum of 1 bay for each housing block or as determined by the Authority
	Flat Size (GFA) (m^2)	No. of Flat	GPS: 1 space per 4-7 flats			GPS x R1 X R2 X R3			
			R1	R2	R3				
	FS ≤ 40	120	0.5	1	1.3	12 to 20			
	40 <FS ≤ 70	120	1.2	1	1.3	27 to 47			
	70 < FS ≤ 100	0	2.4	1	1.3	0			
	100 < FS ≤ 130	0	4.1	1	1.3	0			
	130 < FS ≤ 160	0	5.5	1	1.3	0			
	FS > 160	0	7.0	1	1.3	0			
	Subtotal	240	39 to 67						
Visitor									
No. of Block	Average No. of Unit per Block	> 75 units per block: 5 visitor spaces per block, ≤ 75 units per block: Determined by TD							
6	40	12 ⁽²⁾							
Total			51 to 79 ⁽¹⁾				2 to 3	16	6 HGV

Notes: (1) Including 2 accessible car parking spaces for total 51-150 number of parking spaces

(2) Average about 40 units per block. As discussed with TD in previous planning application

no. Y/YL-KTN/4, 2 visitor spaces per block is adopted.

2.3.2 The details of proposed internal transport facilities of the proposed development complying with the HKPSG requirements are summarized in **Table 2.3**.

Table 2.3 Proposed Internal Transport Facilities of Proposed Development

Type		Proposed Number of Spaces	
Private Housing			
Private Cars	Resident	67	79 ⁽¹⁾
	Visitor	12 ⁽²⁾	
Motorcycles		3	
Bicycle Parking		16	
L/UL for HGV		6	

(1) Including 2 accessible car parking spaces for total 51-150 number of parking spaces.

(2) Average about 40 units per block. As discussed with TD in previous planning application no. Y/YL-KTN/4, 2 visitor spaces per block is adopted.



2.4 Upgrade of Kam Tin Road

2.4.1 Kam Tin Road will be upgraded by Highway Department under PWP item No. 6820TH “Upgrading of Remaining Sections of Kam Tin Road and Lam Kam Road”. The works include:

- (i) upgrading of a section of Kam Tin Road of approximately 1.9 kilometres long between Tung Wui Road and Fan Kam Road to a 10.3 metres wide single two lane carriageway
- (ii) upgrading of a section of Kam Tin Road of approximately 2.1 kilometres long between Fan Kam Road and Lam Kam Road and a section of Lam Kam Road of approximately 1.3 kilometres long between Kam Tin Road and Kadoorie Farm and Botanic Garden to a 7.3 metres wide single two-lane carriageway;

2.4.2 The design of the proposed development and the assessment in this TIA considered this upgrading works.

2.5 Development Access

Without Kam Tin Road Widening

2.5.1 As shown in **Figure 2.1 (SP3)**, since existing Kam Tin Road is narrow, long vehicles would have difficulty turning left from the proposed development and will encroach into the opposite lane. To minimize the impact to the public road, it is proposed all egress vehicles longer than **7m** are only allowed to turn right to westbound. Traffic signs will be erected as shown in **Figures 2.3 and 2.3 (SP)** to restrict the turning movement.

With Kam Tin Road Widening

2.5.2 As shown in **Figure 2.2 (SP3)**, long vehicles would still have difficulty turning left from the proposed development and will encroach into the opposite lane even after Kam Tin Road widening. Therefore, all egress vehicles longer than **7m** are still only allowed to turn right to westbound. Traffic signs will be erected as shown in **Figures 2.4 and 2.4 (SP)** to restrict the turning movement.



- 2.5.3 The existing beam barrier and railings at proposed vehicular access will be removed as shown in **Figures 2.5**. Detailed modifications will be reviewed at the detail design stage.



3. EXISTING TRAFFIC CONDITION

3.1 Existing Road Network

3.1.1 The proposed development locates at Kam Tin Road. Kam Tin Road is a two-lane two-way road and connects to Kam Tin By-pass and Fan Kam Road.

3.2 Critical Junctions

3.2.1 Seven junctions are identified to be critical for the Traffic Impact Assessment due to the proposed development. Relevant details are listed in **Table 3.1** and shown in **Figure 3.1**. Existing junction layouts are tabulated in **Figures 3.2 to 3.8** respectively.

Table 3.1 Identified Critical Junctions

Ref.	Junction	Type	Figure No.
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout	3.2
B	Kam Tin Bypass / Kong Tai Road	Signalized	3.3
C	Kam Tin Road / Kam Tai Road	Priority	3.4
D	Kam Tin Road / Fan Kam Road	Roundabout	3.5
E	Kam Tin Road	Signalized	3.6
F	Kam Tin Road / Tsing Long Highway slip road	Signalized	3.7
G	Kam Tin Road / Kam Tin Bypass	Roundabout	3.8

3.2.2 As mentioned in Section 2.4, Kam Tin Road will be upgraded under HyD PWP item No. 6820TH. Therefore, junctions along Kam Tin Road (Junctions C, D and E) will also be improved. As there is no detail future layout of these junctions can be obtained from public domain, the conceptual future layouts of these junctions are drawn which are based on the existing layouts and gazette layout plans. Also, Junction improvement to Junctions F and G are constructing by CEDD under Contract No. YL/2017/01 (Original Target Completion Date: Mid 2022). The future layouts are shown in **Figures 3.10 to 3.14** respectively.



- 3.2.3 In order to study the existing traffic condition of the above critical junctions, traffic survey in the form of manual-classified count was carried out during the Weekday AM and PM peak periods on 26 February 2025 from 07:30AM to 09:30AM and 17:00PM to 19:00PM respectively. The survey provides most up-to-date details of the traffic condition within the study area under normal operation. Based on the observed traffic flows, it reveals that Weekday AM and PM peak hour occurred from 07:30AM to 08:30AM, 17:00PM to 18:00PM respectively.
- 3.2.4 Observed traffic data indicates that both morning peak hour, evening peak hour and the surveyed traffic flows are shown in **Figure 3.9**.
- 3.2.5 The operational performances of the critical junctions are listed in **Table 3.2** below.

Table 3.2 Operational Performances of Critical Junctions in 2025

Ref.	Junction	Method of Control	Year 2025 RC/DFC ⁽¹⁾	
			AM Peak	PM Peak
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout	0.36	0.34
B	Kam Tin Bypass / Kong Tai Road	Signalized	59%	90%
C	Kam Tin Road / Kam Tai Road	Priority	0.71	0.62
D	Kam Tin Road / Fan Kam Road	Roundabout	0.61	0.65
E	Kam Tin Road	Signalized	60%	70%
F ⁽²⁾	Kam Tin Road / Tsing Long Highway slip road	Signalized	23%	23%
G	Kam Tin Road / Kam Tin Bypass	Roundabout	0.57	0.52

Notes: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

(2) Effect of TTA was considered

- 3.2.6 As Tai Lam Tunnel has been taken over by the government and toll was adjusted, traffic flow of Tai Lam Tunnel is factored up by reference from the ratio of traffic flow in Monthly Traffic and Transport Digest, before and after Tai Lam Tunnel.



Table 3.3 Ratio of Tai Lam Tunnel before and after being Taken over by the Government and Adjustment of Toll

Tai Lam Tunnel	Month	Average Daily Vehicles		
		SB	NB	Total
Before being taken over by the government and adjustment of toll	Feb	20872	18679	39552
After being taken over by the government and adjustment of toll	Aug	28391	27499	55891
Factor		1.36	1.47	1.41

Table 3.4 V/C Ratio of Critical Road Link in Year 2025

Index	Direction	Cap.		Observed Scenario			
		(veh/hr) (C) ⁽¹⁾	(pcu/hr) (C) ⁽¹⁾	Flow (pcu/hr) (V)		V/C	
				AM Peak	PM Peak	AM Peak	PM Peak
L1	EB	2,800	3,415	2160	1935	0.63	0.57
	WB	2,800	3,415	2075	1930	0.61	0.56
L2	EB	2,800	3,415	675	620	0.20	0.18
	WB	2,800	3,415	685	700	0.20	0.21
L3	EB	850	1,035	320	265	0.31	0.25
	WB	850	1,035	260	295	0.25	0.28
L4	EB	850	1,035	870	830	0.84	0.80
	WB	850	1,035	915	860	<u>0.88</u>	0.83
L5	EB	850	1,035	920	820	<u>0.89</u>	0.79
	WB	850	1,035	950	970	<u>0.92</u>	<u>0.94</u>
Tai Lam Tunnel ⁽³⁾	NB	4,700	5,735	1550	3060	0.27	0.53
	SB	4,700	5,735	4320	1625	0.75	0.28

Note:

(1) Index please refer to Figure 3.1

(2) Pcu factor 1.22 obtained from survey is adopted

(3) As Tai Lam Tunnel has been taken over by the government and toll was adjusted, traffic flow of Tai Lam Tunnel is factored up by southbound **1.36**, northbound **1.47**. The factor were reference from the ratio of traffic flow in Monthly Traffic and Transport Digest, before and after Tai Lam Tunnel



3.2.7 The assessment results in **Table 3.2** and **3.4** indicate that all critical junctions and road links are at present operating with ample capacities during the peak hours except Link L4 and L5 above 0.85 but still lower than 1.0, which means there are still have spare capacity.

3.3 Public Transport Services in the Vicinity

3.3.1 Numerous road-based public transport services, for instance, franchised buses and GMB are also provided in vicinity of the proposed development. Details of the current services of franchised buses and GMB routes within the catchment area of 500 meters are listed in **Table 3.5** and shown in **Figure 3.15**.

Table 3.5 Public Transport Services in the Vicinity of the Proposed Development

Service	Route	Origin - Destination	Frequency (mins)
Franchised Bus	54	Yuen Long (West) - Sheung Tsuen (Circular)	20 - 30
	77K	Yuen Long (Fung Cheung Road) – Sheung Shui	15 - 30
		Sheung Shui – Yuen Long (Fung Cheung Road)	12 - 30
		Sheung Shui – Yuen Long (West)	06:55 ⁽¹⁾
		Sheung Shui – Kam Sheung Road Station	07:25 ⁽¹⁾
	251B	Pat Heung Road - Sheung Tsuen (Circular)	20 - 30
	251M	Sheung Tsuen - Tsuen Wan Station	07:00, 08:00, 09:00 ⁽¹⁾
GMB	608	Wang Toi Shan (Pat Heung) – Yuen Long (Fung Cheung Road) (Circular)	10-13
		Wang Toi Shan (Pat Heung) – Kam Sheung Road Station (Circular)	10-13
	608S	CONCORDIA Tsat Sing Kong Public Light Bus Terminus – Kam Sheung Road Station Public Transit Interchange (Circular)	15 – 30
RMB	18	Yuen Long - Sheung Shui	Non-regular
	Tai Po – Yuen Long	Tai Po – Yuen Long	Non-regular

Note:

(1) Peak Hour Services only



4. FUTURE TRAFFIC CONDITION & TRAFFIC IMPACT ASSESSMENT

4.1 Design Year

4.1.1 It is anticipated that the proposed development would be completed in 2031 tentatively with full intended operation. In order to assess the possible traffic impacts to the local road network due to the proposed development, year 2034 (i.e. 3 years after completion) has been adopted as the design year for this study.

4.2 Traffic Forecast

4.2.1 To estimate the reference traffic flow in year 2034 (without the proposed development) in the local road network, an appropriate growth factor has to be identified for the area in the first instance. The following approaches have been adopted to derive the growth factor for the Area of Influence.

Historical Trend

4.2.2 TD has traffic count stations in the vicinity of the proposed development. The past 6 years traffic counts reported in the Annual Traffic Census (ATC) are shown in **Table 4.1**.

Table 4.1 Average Annual Daily Traffic (A.A.D.T.) Data in the Vicinity of the Proposed Development from ATC

ATC Stn.	Road Name	Annual Average Daily Traffic (AADT)						Average Annual Growth Rate
		2018	2019	2020	2021	2022	2023	
5014	Route Twisk (From Chuen Lung to Cheung Pei Shan RA)	6,170	6,420	6,910	6,990	6,660	6,960	2.44%
5029	Tsing Long Highway - Tai Lam Tunnel (From Au Tau INT to Tuen Mun Rd)	61,100	57,450	45,880	44,500	38,840	39,970	-8.14%
5463	Lam Kam Rd (From Kam Sheung Rd to Kadoorie Farm and Botanic Garden)	18,610	19,580	19,660	20,420	20,220	20,900	2.35%
6207	Kam Tin Rd (Kam Sheung Rd western junction to Fan Kam Rd)	20,390	21,300	21,640	20,490	20,520	21,510	1.08%
6212	Fan Kam Rd (From Kam Tin Rd to Fanling Highway)	11,570	11,660	12,250	12,450	12,400	13,890	3.72%
6208	Kam Sheung Rd (From Kam Tin Rd to Kam Tin Rd)	8,120	8,080	9,400	8,960	9,600	10,460	5.20%
Total		125,960	124,490	115,740	113,810	108,240	113,690	-2.03%



- 4.2.3 The Average Annual Daily Traffic (AADT) flows in **Table 4.1** shows the average traffic growth on surrounding roads which decreased at the rate of **-2.03%** per annum.

Planning Data

- 4.2.4 Reference has also been made to the latest 2021-Based Territorial Population Employment Data Matrices (TPEDM) planning data published by the Planning Department for projection of population and employment within the study district. The average annual growth rates in terms of population and employment from 2021 to 2031 are tabulated in **Table 4.2**.

Table 4.2 2021-Based Planning Data from 2021 to 2031

Yuen Long Districts				
Data	Year			Average Annual Growth Rate
	2021	2026	2031	
Population	668,100	685,000	760,600	1.31%
Employment	152,850	238,500	258,200	5.38%
Total	820,950	923,500	1,018,800	2.18%

Adopted Growth Rate

- 4.2.5 A.A.D.T. of ATC indicates that the traffic flow of the local road network has an average annual growth rate of -2.03% from year 2018 to year 2023.
- 4.2.6 Whilst, the planning data indicates that the population and employment of the study area are expected to grow with an average annual growth rate of +2.18%.
- 4.2.7 As a conservative approach, annual growth rate **+2.18%** p.a. has been adopted for projecting traffic forecasts from year 2025 to year 2034. It is deemed sufficient to allow for any unexpected future growth as a result of some changes in land use or development in the study area.



4.3 Reference Traffic Flow in Year 2034

4.3.1 The year 2034 reference traffic flow is estimated by applying the adopted growth rate to the year 2025 observed traffic flow.

Adjacent New Developments

4.3.2 Additional traffic generation and attraction of major committed/planned developments in the vicinity have been estimated and superimposed onto the road network to derive the year 2034 reference traffic flow. The committed/planned developments in the vicinity are summarized **Tables 4.3** and **4.4** and illustrated in **Figure 4.1** and **Appendix I**.

Table 4.3 Development Schedule of Proposed Residential Development at Vicinity

Ref.	Development Site / Planning Application No.	Use	Development Parameters
A	A/YL-KTN/604	Residential	Not more than 3,891 flats
B	A/YL-KTN/663 (Park Yoho Phase 2)	Residential	Not more than 1,154 flats
C	A/YL-KTN/761	Residential	12 houses
D	A/YL-KTN/791	Residential	243 flats 87 houses
E	A/YL-KTN/964	Residential	615 flats
F	Y/YL-SK/1	Residential	850 flats

Note: According to their TIA reports / Planning Statement

Table 4.4 Development Schedules of Developments of Kam Tin South

Development Parameters	Proposed Scheme				
	KSRS	PHMC	Site 1	Site 4a	Site 6
Residential Type	Private	Private	PRH/SSF	PRH/SSF	PRH/SSF
No. of Flats	2,692	6,060	4,100	3,800	1,700
Average Flat Size	69m ²	70m ²	46m ²	46m ²	50m ²
Commercial / Retail GFA	40,000m ²	3,000m ²	4,000m ²	2,900m ²	-
Kindergarten	1	-	1	1	1
School	-	2	-	-	-



Note: According to the TIA report of Sites 1, 4a and 6 in support of Proposed Amendments to the Approved Kam Tin South Outline Zoning Plan No. S/YL-KTS/13 (RNTPC Paper No. 8/17) and the approved Planning Briefs of Site 1, 4a and 6

4.3.3 The adopted estimated trips of the proposed developments in vicinity are listed in below **Table 4.5**.

Table 4.5 Estimated Traffic Generations of Planned Vicinity Development

Developments	AM Peak		PM Peak	
	Gen.	Att.	Gen.	Att.
	Pcu/hr			
A/YL-KTN/604	335	223	149	185
A/YL-KTN/663	83	50	34	43
A/YL-KTN/761	4	2	2	3
A/YL-KTN/791	56	25	17	38
A/YL-KTN/964	63	44	26	29
Y/YL-SK/1	87	60	35	39
KSRS	331	236	220	271
PHMC (via Kam Ho Road Access)	176	117	72	96
PHMC (via Pat Heung Road Access)	383	256	155	208
Site 1	318	266	184	250
Site 4a	239	165	116	156
Site 6	113	102	51	69

Note: According to their TIA reports

4.3.4 The 2034 reference traffic flows are presented in **Figure 4.2**.

$$\begin{array}{l}
 \text{2034 Reference} \\
 \text{Flows (without} \\
 \text{proposed} \\
 \text{development)} \\
 \end{array}
 =
 \begin{array}{l}
 \text{2025} \\
 \text{Observed Flows}
 \end{array}
 \times
 \begin{array}{l}
 \text{Adopted Growth} \\
 \text{Factor} \\
 \text{i.e. +2.18 \% p.a. for} \\
 \text{9 years}
 \end{array}
 +
 \begin{array}{l}
 \text{Traffic Flows of} \\
 \text{Adjacent} \\
 \text{Developments}
 \end{array}$$



4.4 Traffic Trips of the Proposed Development

4.4.1 In order to estimate the traffic generation and attraction of the proposed development, reference has been made to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix D Table 1 of the latest T.P.D.M. published by Transport Department. The adopted trip rates are summarized in below **Table 4.6**.

Table 4.6 Adopted TPDM Trip Rates for the Development

Avg. Flat Size	Adopted Avg. Flat Size of TPDM	TPDM Upper Limit Trip Rates (pcu/flat/hr)			
		AM Peak		PM Peak	
		Gen	Att	Gen	Att
FS ≤ 40m ²	60 m ²	0.1021	0.0709	0.0415	0.0464
40m ² < FS ≤ 70 m ²	70 m ²	0.1117	0.0729	0.0454	0.0551

4.4.2 Based on the adopted trip rate listed in the above **Table 4.6** and the development parameters in **Table 2.1**, the trip generated and attracted by the proposed development are estimated and summarized in the following **Table 4.7**.

Table 4.7 Estimated Traffic Generations and Attractions of Proposed Development

Proposed Development	Average Flat Size (m ²)	Nos. of Flat / GFA	AM Peak Hour		PM Peak Hour	
			Gen.	Att.	Gen.	Att.
			pcu/hr			
Resident	FS ≤ 40m ²	120	12	9	5	6
	40m ² < FS ≤ 70 m ²	120	13	9	5	7
Total			25	18	10	13

4.5 Traffic Forecast for Design Year 2034

4.5.1 The net traffic trips of the proposed development is then superimposed onto the year 2034 reference traffic flow (without the proposed development) as shown in **Figure 4.2** to derive the year 2034 design traffic flow (with the proposed development).

$$\begin{array}{l}
 \text{Year 2034 Design Flow (with the Proposed Development)} \\
 \text{Year 2034 Reference Flow (without the Proposed Development)} \\
 \text{Traffic Trips of the Proposed Development}
 \end{array}
 =
 \begin{array}{l}
 \text{Year 2034 Reference Flow (without the Proposed Development)} \\
 \text{Traffic Trips of the Proposed Development}
 \end{array}
 +
 \begin{array}{l}
 \text{Traffic Trips of the Proposed Development}
 \end{array}$$



4.5.2 The traffic flow during AM and PM peak periods in the design year 2034 (with the proposed development) are shown in **Figure 4.3**. The development trips are shown in **Figure 4.4**.



5. TRAFFIC IMPACT ASSESSMENT

5.1 Operational Assessment

Reference Case in Year 2034

5.1.1 To assess traffic impacts due to the proposed development, operational assessment of the critical junctions identified in Chapter 3 are carried out for both reference (without the proposed development) and design (with the proposed development) scenarios in year 2034. The results are summarized in **Table 5.1**.

Table 5.1 Operational Performance of Critical Junctions for Reference Case in Year 2034

Ref.	Junction	Method of Control		Year 2034 RC/DFC ⁽¹⁾	
				Reference Scenario (Without the Proposed Development)	
				AM Peak	PM Peak
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout		0.49	0.46
B	Kam Tin Bypass / Kong Tai Road	Signalized		31%	55%
C	Kam Tin Road / Kam Tai Road	Priority	w/o PWP	<u>1.08</u>	<u>0.97</u>
			w PWP ⁽²⁾	0.25	0.30
D	Kam Tin Road / Fan Kam Road	Roundabout	w/o PWP	<u>0.90</u>	<u>0.90</u>
			w PWP ⁽²⁾	0.74	0.67
E	Kam Tin Road	Signalized	w/o PWP	20%	28%
			w PWP ⁽²⁾	28%	36%
F ⁽³⁾	Kam Tin Road / Tsing Long Highway slip road	Signalized		30%	24%
G ⁽³⁾	Kam Tin Road / Kam Tin Bypass	Roundabout		0.75	0.60

Notes: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

(2)Based on future PWP 6820's layouts shown in Figures 3.10 to 3.12

(3)Based on future CEDD's layouts shown in Figures 3.13 to 3.14



Table 5.2 V/C Ratio of Critical Road Link for Reference Case in Year 2034

Index	Direction	Cap.		Design Scenario (With the Proposed Development, With Remaining Sites under LUR)			
		(veh/hr) (C) ⁽¹⁾	(pcu/hr) (C) ⁽¹⁾	Flow (pcu/hr) (V)		V/C	
				AM Peak	PM Peak	AM Peak	PM Peak
L1 ⁽²⁾	EB	4,200	5,125	3030	2545	0.59	0.50
	WB	2,800	3,415	2895	2560	0.85	0.75
L2	EB	2,800	3,415	825	765	0.24	0.22
	WB	2,800	3,415	840	860	0.25	0.25
L3	EB	850	1,035	525	390	0.51	0.38
	WB	850	1,035	415	445	0.40	0.43
L4 (w/o PWP)	EB	850	1,035	1200	1090	<u>1.16</u>	<u>1.05</u>
	WB	850	1,035	1220	1145	<u>1.18</u>	<u>1.11</u>
L4 (w PWP)	EB	1,100	1,340	1200	1090	<u>0.90</u>	0.81
	WB	1,100	1,340	1220	1145	<u>0.91</u>	0.85
L5 (w/o PWP)	EB	850	1,035	1250	1070	<u>1.21</u>	<u>1.03</u>
	WB	850	1,035	1245	1265	<u>1.20</u>	<u>1.22</u>
L5 (w PWP)	EB	1,100	1,340	1250	1070	<u>0.93</u>	0.80
	WB	1,100	1,340	1245	1265	<u>0.93</u>	<u>0.94</u>
Tai Lam Tunnel	NB	4,700	5,735	2390	4195	0.42	0.73
	SB	4,700	5,735	5945	2335	<u>1.04</u>	0.41

Note: (1) Index please refer to Figure 3.1

(2) Capacity based on future widening schemes under government projects

Design Case in Year 2034

5.1.2 The operational assessment of the critical junctions for the Design Scenario (with the proposed development) in year 2034 was carried out and the results are summarized in **Table 5.3**.



Table 5.3 Operational Performance of Critical Junctions for Design Case in Year 2034

Ref.	Junction	Method of Control		Year 2034 RC/DFC ⁽¹⁾	
				Design Scenario (With the Proposed Development)	
				AM Peak	PM Peak
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout		0.50	0.46
B	Kam Tin Bypass / Kong Tai Road	Signalized		30%	55%
C	Kam Tin Road / Kam Tai Road	Priority	w/o PWP	1.09	0.98
			w PWP ⁽²⁾	0.25	0.30
D	Kam Tin Road / Fan Kam Road	Roundabout	w/o PWP	0.90	0.90
			w PWP ⁽²⁾	0.75	0.67
E	Kam Tin Road	Signalized	w/o PWP	18%	28%
			w PWP ⁽²⁾	26%	35%
F ⁽³⁾	Kam Tin Road / Tsing Long Highway slip road	Signalized		30%	24%
G ⁽³⁾	Kam Tin Road / Kam Tin Bypass	Roundabout		0.75	0.60

Notes: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

(2) Based on future PWP 6820's layouts shown in Figures 3.10 to 3.12

(3) Based on future CEDD's layouts shown in Figures 3.13 to 3.14

Table 5.4 V/C Ratio of Critical Road Link for Design Case in Year 2034

Index	Direction	Cap.		Design Scenario (With the Proposed Development, With Remaining Sites under LUR)			
				Flow (pcu/hr) (V)		V/C	
		(veh/hr) (C) ⁽¹⁾	(pcu/hr) (C) ⁽¹⁾	AM Peak	PM Peak	AM Peak	PM Peak
L1 ⁽²⁾	EB	4,200	5,125	3035	2550	0.59	0.50
	WB	2,800	3,415	2905	2565	0.85	0.75
L2	EB	2,800	3,415	830	770	0.24	0.23
	WB	2,800	3,415	850	865	0.25	0.25
L3	EB	850	1,035	525	390	0.51	0.38
	WB	850	1,035	415	445	0.40	0.43
L4 (w/o PWP)	EB	850	1,035	1215	1100	1.17	1.06
	WB	850	1,035	1240	1150	1.19	1.11
L4 (w PWP)	EB	1,100	1,340	1215	1100	0.90	0.82
	WB	1,100	1,340	1240	1150	0.92	0.86
L5 (w/o PWP)	EB	850	1,035	1260	1070	1.22	1.03
	WB	850	1,035	1255	1265	1.21	1.22
L5 (w PWP)	EB	1,100	1,340	1260	1070	0.94	0.80
	WB	1,100	1,340	1255	1265	0.94	0.94
Tai Lam Tunnel	NB	4,700	5,735	2395	4200	0.42	0.73
	SB	4,700	5,735	5955	2340	1.04	0.41

Note: (1) Index please refer to Figure 3.1

(2) Capacity based on future widening schemes under government projects



- 5.1.3 The assessment result in **Tables 5.1 to 5.4** reveals that all Junctions and V/C will operate with ample capacities in both reference and design scenarios with planned PWP’s works in year 2034, except Link L4, L5 above 0.85 but still lower than 1.0, which means there are still have spare capacity.
- 5.1.4 It is revealed that these junction/links will already be overloaded even without our development trips. The additional traffic generated by our proposed development is minimal, resulting in only a marginal increase in the DFC or V/C ratio by just 0.01 or no change at all. As such, the proposed development would have an insignificant traffic impact on the road networks, and it could commence even if the planned PWP widening works were to be deferred.
- 5.1.5 It is noted that the traffic generated by the proposed development is very small and would induce insignificant impact on the surrounding road network. Therefore, the application is supported from the traffic points of view.

5.2 Sensitivity Test on Remaining Sites of Land Use Review for Kam Tin and Pat Heung (LUR)

- 5.2.1 There are 9 remaining sites under LUR. They are still in the review stage and therefore have no target year of completion. It is believed that developments at these sites should only be completed after our design year.
- 5.2.2 This sensitivity test is carried out to see the effect if all the remaining sites are being considered.

Table 5.5 Development Parameters of Remaining Sites under LUR

Site No.	Use	Planned/ Target PR ⁽¹⁾	Expected Completion	No. of Units (about) ⁽¹⁾
2	Private Housing	2.1	N/A	452
3	Private Housing	2.1	N/A	1,106
4b	Public Housing	3.0	N/A	5,700
4c	Private Housing	2.1	N/A	626
5a	Public Housing	3.0	N/A	3,300
5b	Private Housing	0.8	N/A	289
7	Private Housing	1.5	N/A	3,018
8	Private Housing	1.5	N/A	882
9	Private Housing	0.8	N/A	1,676

Note: (1) TPB Paper No. 9590 refers.



Table 5.6 Estimated Traffic Generations of Remaining Sites under LUR

Development Site No.	AM Peak		PM Peak	
	Gen.	Att.	Gen.	Att.
	Pcu/hr			
2	41	24	17	22
3	99	57	40	54
4b	355	243	170	229
4c	56	33	23	31
5a	206	141	99	133
5b	26	15	11	14
7	268	156	108	145
8	79	46	32	43
9	149	87	60	81

Note: Assume average 50m² for Public Housing and average 70m² for Private Housing

5.2.3 The traffic generation of the remaining sites under LUR are superimposed to the network and the results are shown below.

Table 5.7 Operational Performance for Reference Case in Year 2034 (With Remaining Sites under LUR)

Ref.	Junction	Method of Control		Year 2034 RC/DFC ⁽¹⁾	
				Reference Scenario (Without the Proposed Development, With Remaining Sites under LUR)	
				AM Peak	PM Peak
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout		0.50	0.47
B	Kam Tin Bypass / Kong Tai Road	Signalized		31%	55%
C	Kam Tin Road / Kam Tai Road	Priority	w/o PWP	<u>1.68</u>	<u>1.01</u>
			w PWP ⁽²⁾	0.26	0.30
D	Kam Tin Road / Fan Kam Road	Roundabout	w/o PWP	<u>0.93</u>	<u>0.93</u>
			w PWP ⁽²⁾	0.76	0.69
E	Kam Tin Road	Signalized	w/o PWP	17%	25%
			w PWP ⁽²⁾	25%	32%
F ⁽³⁾	Kam Tin Road / Tsing Long Highway slip road	Signalized		16%	18%
G ⁽³⁾	Kam Tin Road / Kam Tin Bypass	Roundabout		0.85	0.67

Notes: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

(2) Based on future PWP 6820's layouts shown in Figures 3.10 to 3.12

(3) Based on future CEDD's layouts shown in Figures 3.13 to 3.14



Table 5.8 V/C Ratio of Critical Road Link for Reference Case in Year 2034 (With Remaining Sites under LUR)

Index	Direction	Cap.		Design Scenario (With the Proposed Development, With Remaining Sites under LUR)			
				Flow (pcu/hr) (V)		V/C	
		(veh/hr) (C) ⁽¹⁾	(pcu/hr) (C) ⁽¹⁾	AM Peak	PM Peak	AM Peak	PM Peak
L1 ⁽²⁾	EB	4,200	5,125	3295	2795	0.64	0.55
	WB	2,800	3,415	3325	2745	0.97	0.80
L2	EB	2,800	3,415	825	765	0.24	0.22
	WB	2,800	3,415	840	860	0.25	0.25
L3	EB	850	1,035	525	390	0.51	0.38
	WB	850	1,035	415	445	0.40	0.43
L4 (w/o PWP)	EB	850	1,035	1250	1115	1.21	1.08
	WB	850	1,035	1250	1175	1.21	1.14
L4 (w PWP)	EB	1,100	1,340	1250	1115	0.93	0.83
	WB	1,100	1,340	1250	1175	0.93	0.88
L5 (w/o PWP)	EB	850	1,035	1300	1095	1.25	1.06
	WB	850	1,035	1275	1295	1.23	1.25
L5 (w PWP)	EB	1,100	1,340	1300	1095	0.97	0.82
	WB	1,100	1,340	1275	1295	0.95	0.96
Tai Lam Tunnel	NB	4,700	5,735	2950	4720	0.51	0.82
	SB	4,700	5,735	6840	2725	1.19	0.48

Note: (1) Index please refer to Figure 3.1

(2) Capacity based on future widening schemes under government projects

Table 5.9 Operational Performance for Design Case in Year 2034 (With Remaining Sites under LUR)

Ref.	Junction	Method of Control		Year 2034 RC/DFC ⁽¹⁾	
				Design Scenario (With the Proposed Development, With Remaining Sites under LUR)	
				AM Peak	PM Peak
A	Kam Tin Bypass / Kam Tin Road / Tung Wui Road	Roundabout		0.51	0.47
B	Kam Tin Bypass / Kong Tai Road	Signalized		30%	55%
C	Kam Tin Road / Kam Tai Road	Priority	w/o PWP	2.32	1.02
			w PWP ⁽²⁾	0.26	0.30
D	Kam Tin Road / Fan Kam Road	Roundabout	w/o PWP	0.94	0.93
			w PWP ⁽²⁾	0.77	0.69
E	Kam Tin Road	Signalized	w/o PWP	15%	24%
			w PWP ⁽²⁾	23%	32%
F ⁽³⁾	Kam Tin Road / Tsing Long Highway slip road	Signalized		16%	18%
G ⁽³⁾	Kam Tin Road / Kam Tin Bypass	Roundabout		0.85	0.67



Notes: (1) RC = Reserve Capacity for Signal Junction;
DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout
(2) Based on future PWP 6820's layouts shown in Figures 3.10 to 3.12
(3) Based on future CEDD's layouts shown in Figures 3.13 to 3.14

**Table 5.10 V/C Ratio of Critical Road Link for Design Case in Year 2034
(With Remaining Sites under LUR)**

Index	Direction	Cap.		Design Scenario (With the Proposed Development, With Remaining Sites under LUR)			
		(veh/hr) (C) ⁽¹⁾	(pcu/hr) (C) ⁽¹⁾	Flow (pcu/hr) (V)		V/C	
				AM Peak	PM Peak	AM Peak	PM Peak
L1 ⁽²⁾	EB	4,200	5,125	3300	2800	0.64	0.55
	WB	2,800	3,415	3335	2750	0.98	0.80
L2	EB	2,800	3,415	830	770	0.24	0.23
	WB	2,800	3,415	850	865	0.25	0.25
L3	EB	850	1,035	525	390	0.51	0.38
	WB	850	1,035	415	445	0.40	0.43
L4 (w/o PWP)	EB	850	1,035	1265	1125	1.22	1.08
	WB	850	1,035	1270	1180	1.22	1.14
L4 (w PWP)	EB	1,100	1,340	1265	1125	0.94	0.84
	WB	1,100	1,340	1270	1180	0.95	0.88
L5 (w/o PWP)	EB	850	1,035	1310	1095	1.26	1.06
	WB	850	1,035	1285	1295	1.24	1.25
L5 (w PWP)	EB	1,100	1,340	1310	1095	0.98	0.82
	WB	1,100	1,340	1285	1295	0.96	0.96
Tai Lam Tunnel	NB	4,700	5,735	2955	4725	0.52	0.82
	SB	4,700	5,735	6850	2730	1.19	0.48

Note: (1) Index please refer to Figure 3.1
(2) Capacity based on future widening schemes under government projects

5.2.4 The assessment result in **Tables 5.7 to 5.10** reveals that all Junctions and V/C will operate with ample capacities in both reference and design scenarios with planned PWP's works and with the Remaining Sites under LUR in year 2034, except Link L1, L4, L5, Tai Lam Tunnel above 0.85 but still lower than 1.0, which means there are still have spare capacity.

5.2.5 It is noted that the traffic generated by the proposed development is very small and would induce insignificant impact on the surrounding road network. Therefore, the application is supported from the traffic points of view.



5.3 Mitigation Measure

5.3.1 As the programme of PWP works are still under review, the PWP works maybe delayed and the programme may be mis-match between the development and the public works project.

5.3.2 Except for Junction C (the DFC changes from 1.08 (reference case) to 1.09 (design case)), the rest of the road junction/road links only changes by 0 to 0.01 (DFC or V/C)

5.3.3 For Junction C, an improvement scheme is proposed as shown in **Figure 5.1**. The Applicant considers carrying out the improvement works as per the improvement scheme, in case of programme mis-match between the development and the public works project.

Table 5.11 Operational Performance of Critical Junctions for Design Case in Year 2034

Ref.	Junction	Method of Control	Year 2034 RC/DFC ⁽¹⁾			
			Design Scenario (Without Proposed Improvement)		Design Scenario (With Proposed Improvement)	
			AM Peak	PM Peak	AM Peak	PM Peak
C	Kam Tin Road / Kam Tai Road	Priority	<u>1.09</u>	<u>0.98</u>	0.80	0.35

Notes: (1) RC = Reserve Capacity for Signal Junction;

DFC = Design Ratio of Flow to Capacity for Priority Junction/Roundabout

5.3.4 The assessment results in **Table 5.11** indicate that Junction would be operating with ample capacities with the proposed improvement scheme.

5.3.5 It is noted that widening length of Kam Tin Road is very long and extensive, and may involve land resumption of private land. The scale of the works is beyond the capability of a private sector and it could not be carried out by a private sector. It is revealed that L4 and L5 will already be overloaded even without the development trips of the Proposed Development. The additional traffic generated by the Proposed Development is minimal (maximum 25 pcu/hr, one-way), resulting in only a marginal increase in the DFC or V/C ratio by 0 ~ 0.01. It is considered the impact caused by the Proposed Development is minimal and to be tolerable.



6. PUBLIC TRANSPORT DEMAND

6.1 Survey on Existing Public Transport Service

6.1.1 The proposed development is not close to MTR station and the public transport service is not comprehensive. A public transport survey was carried out at the existing bus/GMB stops on Kam Tin Road as shown in **Figure 3.15**.

6.1.2 The survey was carried out on 26 February 2025 during the morning / evening peak periods. The findings are presented in the **Tables 6.1 to 6.4** below.

Table 6.1 Public Transport Survey at Stop P1 – Eastbound (To Sheung Shui / Tsuen Wan)

P1						
Eastbound (To Sheung Shui / Tsuen Wan)						
		Routes	Observed Trips	Average Occupancy	Spare Capacity (passenger)	
AM Peak (0730-0830)	BUS	54	2	38%	89	329
		77K	3	43%	115	
		251B	2	23%	125	
	GMB	608	17	69%	84	202
		608S	3	38%	30	
	RMB	18	11	50%	88	
		-	7	100%	0	
PM Peak (1700-1800)	BUS	54	3	38%	133	438
		77K	4	49%	125	
		251B	3	25%	180	
	GMB	608	13	94%	12	32
		608S	2	63%	12	
	RMB	18	7	100%	0	
		Tai Po – Yuen Long	8	94%	8	

Notes: (a) Full capacity of 120 passengers with max. 75% for double-decked Franchised Bus is assumed.
(b) Part of the observed GMBs are 19-seater. For conservative, full capacity of 16 passengers for minibus is assumed.



Table 6.2 Summary of Public Transport Survey – Eastbound (To Sheung Shui / Tsuen Wan)

P1			
Eastbound (To Sheung Shui / Tsuen Wan)			
Period	PT	Total Spare Capacity (passenger)	Expected Spare Capacity in 2034 (passenger) ^(a)
AM Peak (0730-0830)	Bus	329	270
	Minibus	202	166
PM Peak (1700-1800)	Bus	438	359
	Minibus	32	26

Notes: (a) 2.18% growth rate adopted in Section 4.2

Table 6.3 Public Transport Survey at Stop B – Westbound (To Yuen Long / Kam Sheung Road)

P2						
Westbound (To Yuen Long / Kam Sheung Road)						
		Routes	Observed Trips	Average Occupancy	Spare Capacity (passenger)	
AM Peak (0730-0830)	BUS	54	2	49%	62	363
		77K	5	53%	132	
		251B	2	27%	115	
		251M	1	30%	54	
	GMB	608	21	113%	-44	-1
		608S	1	119%	-3	
	RMB	18	14	81%	43	
		-	3	94%	3	
PM Peak (1700-1800)	BUS	54	2	19%	134	448
		77K	3	25%	180	
		251B	2	19%	134	
	GMB	608	11	100%	0	33
		608S	3	50%	24	
	RMB	18	9	94%	9	
		Tai Po – Yuen Long	5	100%	0	

Notes: (a) Full capacity of 120 passengers with max. 75% for double-decked Franchised Bus is assumed.
(b) Part of the observed GMBs are 19-seater. For conservative, full capacity of 16 passengers for minibus is assumed.



Table 6.4 Summary of Public Transport Survey – Westbound (To Yuen Long / Kam Sheung Road)

P2			
Westbound (To Yuen Long / Kam Sheung Road)			
Period	PT	Total Spare Capacity (passenger)	Expected Spare Capacity in 2034 (passenger) ^(a)
AM Peak (0730-0830)	Bus	363	298
	Minibus	-1	-1
PM Peak (1700-1800)	Bus	448	367
	Minibus	33	27

Notes: (a) 2.18% growth rate adopted in Section 4.2

6.2 Assessment on Public Transport Demand

6.2.1 Reference is made to the “Travel Characteristics Survey 2011 Report” as published by Transport Department in February 2014 to derive the estimated public transport demand due to the proposed development.

6.2.2 The total trips generated from the proposed development are derived from development parameters and assumptions from the TCS Report 2011. The calculation of total trips during peak hours is summarized in **Table 6.5** below:

Table 6.5 Calculation of Total Passenger Trips from Proposed Development

Item	Proposed Development
Nos. of units	240
Average household size	2.7 ppl/unit*
Total population	= 240 x 2.7 = 648 ppl
Trip Rate per Person	1.83**
Daily trips generated from proposed development	= 648 ppl x 1.83 = 1,186 trips
Peak Hour Factor	12%**
Peak hour trips (Two-ways)	= 1,186 trips x 12% = 142 trips

Notes: * Latest average household size 2.7 in Hong Kong obtains from Census and Statistics Department

**Data extracted from TCS Report 2011



6.2.3 The distribution of trips by transport mode derived from 2021 Population Census is given in below **Table 6.6**. As the nearest MTR station is outside walking distance, no ferry services, and assumes there is no residential coach service from the proposed development, the modal split is therefore re-distributed on a conservative approach, and the model split after re-distribution is also shown in **Table 6.6**.

Table 6.6 Distribution of Transport Modal Split

Year 2021 Census (Yuen Long)													
Yuen Long District	Mass Transit Railway	Bus	On foot only	Private car/ Passenger van	Public light bus	Company bus/ van	Light Rail	Taxi	Residential coach service	Ferry/ Vessel	Others	Total	
Number of Persons	90,523	59,345	16,860	24,012	7,913	6,848	20,458	1,275	2,628	468	4,146	234,476	
Modal Split	39%	25%	7%	10%	3%	3%	9%	1%	1%	0%	2%	100%	
Number of Persons (excluded on foot only)	90,523	59,345	-	24,012	7,913	6,848	20,458	1,275	2,628	468	4,146	217,616	
Modal Split (excluded on foot only)	42%	27%	-	11%	4%	3%	9%	1%	1%	0%	2%	100%	
Adjusted Modal Split for the Development Site	PT	51%	27%	-	-	4%	-	-	-	-	-	82%	100%
	Non-PT	-	-	-	14%	-	-	1%	-	-	3%	18%	
Adjusted Modal Split for the Development Site (MTR services by feeder bus/GMB)	PT	-	71%	-	-	11%	-	-	-	-	-	82%	100%
	Non-PT	-	-	-	14%	-	-	1%	-	-	3%	18%	

Notes: Example for PT:

Example for Non-PT:

Adjusted Modal Split of MTR = 42% + 9% = 51%

%Sum of Remaining Non related Model Split = 3% + 1% + 0% = 4%

%Sum of Remaining related Model Split = 11% + 1% + 2% = 14%

Adjusted Modal Split of PV = 11% + 4% x 11% / 14% = 14%

Example for Further Adjust on PT:

Adjusted Modal Split of Bus = 51% x (27% / (27% + 4%)) + 27% = 71%

6.2.4 Taking into consideration that the majority of residents will go out to work at AM peak and back at PM peak and the critical bus stops would be westbound stop at AM peak and eastbound stop at PM peak.



6.2.5 For conservative approach, assume all residents will go out at AM peak and come back at PM peak and all the 82% public transport passengers will use westbound stop at AM peak and eastbound stop at PM peak in the assessment.

6.2.6 The distribution of proposed development trips are summarized in **Table 6.7**.

Table 6.7 Estimated Passenger Trips using Public Transports at Critical Stop

Period	Stop	Passenger trips
AM Peak	Stop P2 Westbound (To Kam Sheung Road MTR)	= 142 x 82% = 117 ppl
PM Peak	Stop P1 Eastbound (From Kam Sheung Road MTR)	= 142 x 82% = 117 ppl

Table 6.8 Estimated Passenger Trips using Bus and Mini-buses

PT Passenger trips					
Period	Stop P2 Westbound (To Yuen Long / Kam Sheung Road)				
	Total Trips	Bus		Minibus	
		Demand	Spare Capacity ^(b)	Demand	Spare Capacity ^(b)
AM Peak	117	142 x 71% = 101	< 298, OK	142 x 11% = 16	> -1, Not OK
Period	Stop P1 Eastbound (To Sheung Shui / Tsuen Wan)				
	Total Trips	Bus		Minibus	
		Demand	Spare Capacity ^(a)	Demand	Spare Capacity ^(a)
PM Peak	117	142 x 71% = 101	< 359, OK	142 x 11% = 16	< 26, OK

Note: (a) Refer to Table 6.2
(b) Refer to Table 6.4

6.2.7 Based on the assessment results shows in **Table 6.8**, part of the forecast spare capacity are not able to meet the expected public transport demand due to the proposed development in design year 2034. Therefore, it is proposed to increase the no. of PT trips as estimated in **Table 6.9** below.



Table 6.9 Additional Bus and Mini-buses Trips

Period	PT Passenger trips	
	Westbound (To Yuen Long / Kam Sheung Road)	
	Minibus	
	Spaces Required ^(a)	No. of Additional GMB Trips Required
AM Peak	16 – (-1) = 17	17 / 19 = 1

Note: (a) Refer to Table 6.8

(b) 19 seaters GMB are proposed to use

6.2.8 From **Table 6.9**, the demand could be solved by providing additional maximum 1 GMB trip.

6.3 Bus Stop Bay Assessment

6.3.1 At present, there is one bay at the eastbound and westbound bus stop respectively. Kam Tin Road will be widened by Highway Department and the bus stops will be upgraded to standard one bay bus layby.

6.3.2 The queuing situation can be assessed based on a single channel queuing system, thus Poisson distribution and multi-server queuing (M/M/N) theory is used.

6.3.3 The assessment is work out the probability that n bus are in the bus bay.

The formula in deriving the probability is given by:

$$P(n) = \frac{1}{\sum_{n=0}^{N-1} \frac{e^n}{n!} + \frac{e^N}{N! \left(1 - \frac{e}{N}\right)}} \quad \text{for } n = 0$$

$$P(n) = \frac{e^n}{n!} P(0) \quad \text{for } 0 < n \leq N$$

$$P(n) = \frac{e^n}{N^{n-N} N!} P(0) \quad \text{for } n > N$$

where: $P(n)$ = Probability of n buses in the system
 λ = Peak 15-minutes arrival rate



μ	= Servicing rate
n	= Number of bus in the system
N	= Number of bus bay
e	= λ / μ

Peak 15-minutes arrival Rate (λ)

6.3.4 Based on the survey result shown in **Tables 6.1** and **6.3**, the no of bus/GMB arrive/departure to the bus stop is shown in **Table 6.10** below.

Table 6.10 Trip Rates for Bus Stop

Bus Stop			Period	
			AM Peak	PM Peak
Stop P1 Eastbound (To Sheung Shui / Tsuen Wan)	Bus	No of trips (veh/hr)	7	10
	Minibus	No of trips (veh/hr)	38	30
	Total	No of trips (veh/hr)	45	40
Stop P2 Westbound (To Yuen Long / Kam Sheung Road)	Bus	No of trips (veh/hr)	10	7
	Minibus	No of trips (veh/hr)	39	28
	Total	No of trips (veh/hr)	49	35

6.3.5 Based on the data shown in **Table 6.10** above, the maximum peak 15-minutes arrival rate is 13 veh/15min/bay (= 49 x 15 minutes/60 minutes).



6.3.6 As mentioned in **Section 6.3**, 1 no. of GMB trip/hr is proposed to be added. Therefore, the Peak 15-minutes arrival Rate (λ) is 13 veh/15min/bay (= (49+ 1) x 15 minutes/60 minutes).

Servicing Rate (μ)

6.3.7 Based on site observation and internal survey, a bus/GMB will pick-up/drop-off for an average 20 sec = 0.33 min.

6.3.8 For conservative, assume a GMB would occupy a whole bus bay during pick-up/drop-off.

6.3.9 The average servicing rate (μ) is 60 / 0.33 = 180 veh/hr = 45 veh/15min

The probability that n vehicles are in the bus bay is given by:

$$P(n) = \frac{1}{\sum_{n=0}^{N-1} \frac{e^n}{n!} + \frac{e^N}{N! \left(1 - \frac{e}{N}\right)}} \quad \text{for } n = 0$$

$$P(n) = \frac{e^n}{n!} P(0) \quad \text{for } 0 < n \leq N$$

$$P(n) = \frac{e^n}{N^{n-N} N!} P(0) \quad \text{for } n > N$$

where:	$P(n)$	= Probability of n vehicles in the system	
	λ	= Peak 15-minutes arrival rate	= <u>13</u>
	μ	= Servicing rate	= <u>45 veh/15min</u>
	N	= Number of bus bay	= 1
	e	= λ / μ	= <u>0.289</u>
	n	= Number of bus in the system	



6.3.10 Probability of requiring more than 1 bus bay

Table 6.11 Probability of requiring more than 1 bus bay

n	λ	μ	e	N	P(n)
0	13	49	0.265	1	0.734693878
1	13	49	0.265	1	0.194918784
Total					0.929612661

6.3.11 As can be seen, it is anticipated that the probability for more than one bus coming to the bus stop and waiting outside the bus bay is 0.070387339 (= 1 - **0.929612661**), i.e. approximately 3 out of 49 expected vehicles in the peak hour.

6.3.12 Based on the assessment results and the above points of view, it is concluded that one bus bay for one bus stop is considered acceptable and no further lengthening is required.

6.4 Railway Assessment

6.4.1 Railway Assessment is carried out to assess the impact by the proposed development. The existing railway information was obtained from “Reply Serial No. TLB162 of Replies to initial written questions raised by Legislative Council Members in examining the Estimates of Expenditure 2024-2025”. The assessment of Tuen Ma Line is summarized in **Table 6.10** below:

Table 6.11 Railway Assessment

Item	Tuen Ma Line		
	2023	2034	2034
	Existing	Reference (without Proposed development)	Design (with Proposed development)
Carrying Capacity (6 ppsm)	58,800	58,800	58,800
Passenger Throughput	35,700	45,258 ^(b)	45,258+ (142 ^(c) *51% ^(d)) = 45,330
Loading (6 ppsm) [Passenger Throughput / Carrying Capacity]	61% (Tsuen Wan West to Mei Foo)	77.0%	77.1%
Loading (4 ppsm) [Loading (6 ppsm) / 71.2%]	85%	108.1%	108.3%

Notes:



(a) *Source of the data: “Reply Serial No. TLB162 of Replies to initial written questions raised by Legislative Council Members in examining the Estimates of Expenditure 2024-2025”*

(b) *2.18% growth rate adopted in Section 4.2*

(c) *Expected passenger trips from Table 6.5*

(d) *MTR modal Split from Table 6.6*

6.4.2 From the result, it is revealed that the loading (6 ppsm) of Tuen Ma Line would be below 100% but loading (4 ppsm) would be over 100% even without the proposed development. However, the change of loading is very small (+0.1% to +0.2%) with the proposed development and thus the impact by the proposed development is insignificant.

6.5 Conclusion

6.5.1 Based on the surveyed results and the forecast spare capacity for the public transport in 2034, the forecast spare capacity is able to meet the expected public transport demand due to the proposed development by providing additional maximum 1 GMB trip/hr. The impact by the proposed development to Tuen Ma Line is very small and insignificant.



7. PEDESTRIAN ASSESSMENT

7.1 Existing Pedestrian Condition

7.1.1 In order to acquire the existing pedestrian condition around the proposed development, a pedestrian headcount survey was conducted at concerned footpath sections during periods on a typical weekday on 26 February 2025 from 07:30 to 09:30 and 17:00 to 19:00 respectively. The layout of the critical sections of footpath is shown in **Figure 7.1**.

Footpath Assessment

7.1.2 The level-of-services (LOS) for the observed pedestrian flows of the identified critical sections are shown in **Table 7.1**.

Table 7.1 Operational Performance of Critical Footpath in Existing Scenario

Critical Section	Total Footpath Width (m)	Effective Width (m) ⁽¹⁾	Year 2025 Observed Scenario					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
F1	1.50	1.00	40	0.67	A	30	0.50	A
F2	1.50	1.00	30	0.50	A	35	0.58	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from railings or walls each for both sides and 1m from shop frontage).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

7.1.3 The assessment results shown in **Table 7.1** indicate that critical sections are operating within LOS A.

Pedestrian Crossing

7.1.4 The V/C Ratio of the pedestrian at the pedestrian crossing of the identified critical section are shown in **Tables 7.2**.



Table 7.2 V/C Ratio of Critical Crossing in Existing Scenario

Critical Sections	Lateral Width of Ped. Crossing [W] (m)	Year 2025 Observed Scenario											
		AM Peak						PM Peak					
		Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C	Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C
C1	4.00	30	12	60	0.20	1520	0.02	15	12	60	0.20	1520	0.01

Note:

(1) $PC = K \times GTP \times W$

where PC = Pedestrian crossing capacity in pedestrians per hour
GTP = Green time proportion
i.e. (Pedestrian green + flashing green time) / Cycle time
W = Lateral width of pedestrian crossing
K = A constant equivalent to saturation flow for pedestrians (1900 ped/metre/hours)

7.1.5 The assessment results shown in **Tables 7.2** indicate that all critical sections are operating within acceptable criteria ($V/C < 0.85$), and therefore considered acceptable.

7.2 Pedestrian Traffic Forecast

Reference Scenario (Without the Proposed Development)

7.2.1 To assess the future impact due to the proposed development, based on the survey flow and the growth rate of +2.18% adopted in **Chapter 4**, future reference pedestrian flows (without the proposed development) at the critical sections are estimated.

Footpath Assessment

7.2.2 The LOS are assessed and summarized in **Table 7.3** below:



Table 7.3 Operational Performance of Critical Footpath in Reference Scenario (Without the Proposed Development)

Critical Section	Total Footpath Width (m)	Effective Width (m) ⁽¹⁾	Year 2034 Reference Scenario (Without the Proposed Development)					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
F1 (without Widening)	1.5	1.0	50	0.83	A	35	0.58	A
F1 (with Widening)	2.0 ⁽⁴⁾	1.5	50	0.56	A	35	0.39	A
F2 (without Widening)	1.5	1.0	35	0.58	A	40	0.67	A
F2 (with Widening)	2.0 ⁽⁴⁾	1.5	35	0.39	A	40	0.44	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from railings or walls each for both sides and 1m from shop frontage).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

(4) Widening of Kam Tin Road will be carried out by HyD and 2m footpaths will be provided along both sides of the road.

7.2.3 The assessment results shown in **Table 7.3** indicate that critical sections are operating within LOS A.

Pedestrian Crossing

7.2.4 The V/C Ratio of the pedestrian at the pedestrian crossing of the identified critical section are shown in **Tables 7.4**.

Table 7.4 V/C Ratio of Critical Crossing in Reference Scenario (Without the Proposed Development)

Critical Sections	Lateral Width of Ped. Crossing [W] (m)	Year 2034 Reference Scenario (Without the Proposed Development)											
		AM Peak						PM Peak					
		Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C	Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C
C1 (without Widening)	4	35	12	60	0.20	1520	0.02	20	12	60	0.20	1520	0.01
C1 (with Widening)	4	35	11 ⁽²⁾	60	0.18	1395	0.03	20	11 ⁽²⁾	60	0.18	1395	0.01

Note:



$$(1) PC = K \times GTP \times W$$

where PC = Pedestrian crossing capacity in pedestrians per hour
GTP = Green time proportion
i.e. (Pedestrian green + flashing green time) / Cycle time
W = Lateral width of pedestrian crossing
K = A constant equivalent to saturation flow for pedestrians (1900 ped/metre/hours)

(2) Future crossing layout carried out by HyD is used for assessment.

7.2.5 The assessment results shown in **Tables 7.4** indicate that all critical sections are operating within acceptable criteria ($V/C < 0.85$), and therefore considered acceptable.

Design Scenario (With the Proposed Development)

7.2.6 The total trips generated from the proposed development are estimated in **Tables 6.5** of **Chapter 6** above.

Footpath Assessment

7.2.7 The estimated trips are superimposed to the network. The assessment of the design scenario is summarized in **Tables 7.5**.

Table 7.5 Operational Performance of Critical Footpath in Design Scenario (With the Proposed Development)

Critical Section	Total Footpath Width (m)	Effective Width (m) ⁽¹⁾	Year 2034 Design Scenario (With the Proposed Development)					
			AM Peak			PM Peak		
			Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾	Two-way Pedestrian Flow (ped/hr)	Two-way Pedestrian Flow Rate (ped/min/m) ⁽²⁾	LOS ⁽³⁾
F1 (without Widening)	1.5	1.0	190	3.17	A	175	2.92	A
F1 (with Widening)	2.0 ⁽⁴⁾	1.5	190	2.11	A	175	1.94	A
F2 (without Widening)	1.5	1.0	175	2.92	A	180	3.00	A
F2 (with Widening)	2.0 ⁽⁴⁾	1.5	175	1.94	A	180	2.00	A

Notes:

(1) Effective Width = Total Footpath Width – Death Width (0.5m from railings or walls each for both sides and 1m from shop frontage).

(2) Two-way Pedestrian Flow Rate (ped/min/m) = Peak Pedestrian Flow / 60 min / Effective Width.

(3) LOS details extracted from the HCM are tabulated in TPDM Volume 6 Chapter 10 Clause 10.4.2.3.

(4) Widening of Kam Tin Road will be carried out by HyD and 2m footpaths will be provided along both sides of the road.



7.2.8 The assessment results in **Table 7.5** shows that all critical footpaths would operate with LOS A and therefore considered acceptable.

Pedestrian Crossing

7.2.9 As a cautionary crossing was planned to be constructed near the proposed development under HyD’s PWP works as shown in **Figure 7.2**. Part of the pedestrians will be diverted to use this crossing. The V/C Ratio and LOS of the pedestrian at the pedestrian crossing of the identified critical section are shown in **Tables 7.6** and **7.7**.

Table 7.6 V/C Ratio of Critical Crossing in Design Scenario (With the Proposed Development)

Critical Sections	Lateral Width of Ped. Crossing [W] (m)	Year 2034 Design Scenario (With the Proposed Development)											
		AM Peak						PM Peak					
		Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C	Two-way Ped. Flow (ped/hr)	Ped. Green + Flashing Green Time	Cycle time	Green Time Proportion [GTP]	Ped. Crossing Capacity [PC] (ped/hr)	V/C
C1 (without Widening)	4	175	12	60	0.20	1520	0.12	160	11	60	0.18	1395	0.11
C1 (with Widening)	4	105	11 ⁽²⁾	60	0.18	1395	0.08	90	11 ⁽²⁾	60	0.18	1395	0.06

Note:

(1) $PC = K \times GTP \times W$

where PC = Pedestrian crossing capacity in pedestrians per hour

GTP = Green time proportion

i.e. (Pedestrian green + flashing green time) / Cycle time

W = Lateral width of pedestrian crossing

K = A constant equivalent to saturation flow for pedestrians (1900 ped/metre/hours)

(2) Future crossing layout carried out by HyD is used for assessment.



Table 7.7 Operational Performance of Cautionary Crossing in Design Scenario

Critical Sections	Input Parameters		Year 2034 Design Scenario (With HyD's PWP works)	
			AM Peak	PM Peak
C2	S _p	= average pedestrian walking speed (m/s)	1.2	1.2
	t _s	= pedestrian start-up time and end clearance time (s)	3	3
	L	= crosswalk length (m)	4.8	4.8
	v _p	= pedestrian flow rate (p/h)	70	70
		= pedestrian flow rate (p/s)	0.02	0.02
	v	= vehicular flow rate (veh/h)	1035	965
		= vehicular flow rate (veh/s)	0.29	0.27
	W _E	= effective crosswalk (m)	3	3
Step				
1	t _c	= single pedestrian critical gap	7	7
2	N _c	= total number of pedestrian in the crossing platoon (p)	1.3	1.3
3	N _p	= spatial distribution of pedestrian (p)	1	1
4	t _G	= group critical gap (s)	7	7
5	d _p	= average pedestrian delay (s)	15.8	13.8
6	LOS	= Level of Services	<u>C</u>	<u>C</u>

Note: Methodology from HCM Chapter 18

7.2.10 The assessment results shown in **Tables 7.6** and **7.7** indicate that all critical sections are operating within acceptable criteria ($V/C < 0.85$, $LOS \leq C$), and therefore considered acceptable.

7.2.11 As the programme of PWP works are still under review, the PWP works maybe delayed. In case delay occurs, to facilitate residents crossing, the Applicant will provide a pair of dropped kerbs at the same location of planned cautionary crossing at Kam Tin Road as shown in **Figure 7.3**. Details arrangement would be discussed with government departments at detailed design stage.

7.3 Conclusion

7.3.1 Based on the assessment results, the critical footpath and crossing facilities are able to meet the future pedestrian demand due to the proposed development. It is revealed that footpaths and the pedestrian crossing at Kam Tin Road will be upgraded by HyD and thus the future walking condition will be improved.



8. SUMMARY AND CONCLUSION

8.1 Summary

- 8.1.1 The Applicant intends to rezone the Development Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" to enable the proposed residential development.
- 8.1.2 CTA Consultants Limited (CTA), are therefore commissioned as the traffic consultant to prepare the Traffic Impact Assessment (TIA) and provide technical justifications in supporting the application from traffic engineering point of view.
- 8.1.3 To appraise the existing traffic condition, a vehicular survey in the form of manual-classified count was conducted at the surrounding road network of the proposed development. Current operational performance of the critical junctions has been assessed with the observed traffic flow. The results reveal that all critical junctions are at present operating within its capacities, except Link L4, L5 above 0.85 but still lower than 1.0, which means there are still have spare capacity.
- 8.1.4 Assessment of operational performance of the critical junctions indicates that all critical junctions will still operate within their capacities in both reference and design scenarios with planned PWP's works in year 2034, except Link L1, L4, L5, Tai Lam Tunnel above 0.85 but still lower than 1.0, which means there are still have spare capacity.
- 8.1.5 It is revealed that these junction/links will already be overloaded even without our development trips. The additional traffic generated by our proposed development is minimal, resulting in only a marginal increase in the DFC or V/C ratio by just 0.01 or no change at all. As such, the proposed development would have an insignificant traffic impact on the road networks, and it could commence even if the planned PWP widening works were to be deferred.



- 8.1.6 Assessment of public transport indicates that the existing public transport could cater the future public transport demand by providing additional maximum 1 GMB trip/hr. The impact by the proposed development to the loading of railway is very small and insignificant.
- 8.1.7 Assessment of pedestrian indicates that all footpath and pedestrian crossing could cater the future pedestrian demand in both reference and design scenarios in year 2034.
- 8.1.8 The traffic generated by the proposed development is very small and would induce insignificant impact on the surrounding road network. Therefore, the application is supported from the traffic points of view.

8.2 Conclusion

- 8.2.1 In conclusion, this Traffic Impact Assessment (TIA) study demonstrated that the related traffic trips related to the proposed development can be absorbed by the nearby road network and no significant traffic impact will be induced.
- 8.2.2 Therefore, the proposed residential development is reckoned feasible from traffic engineering point of view.

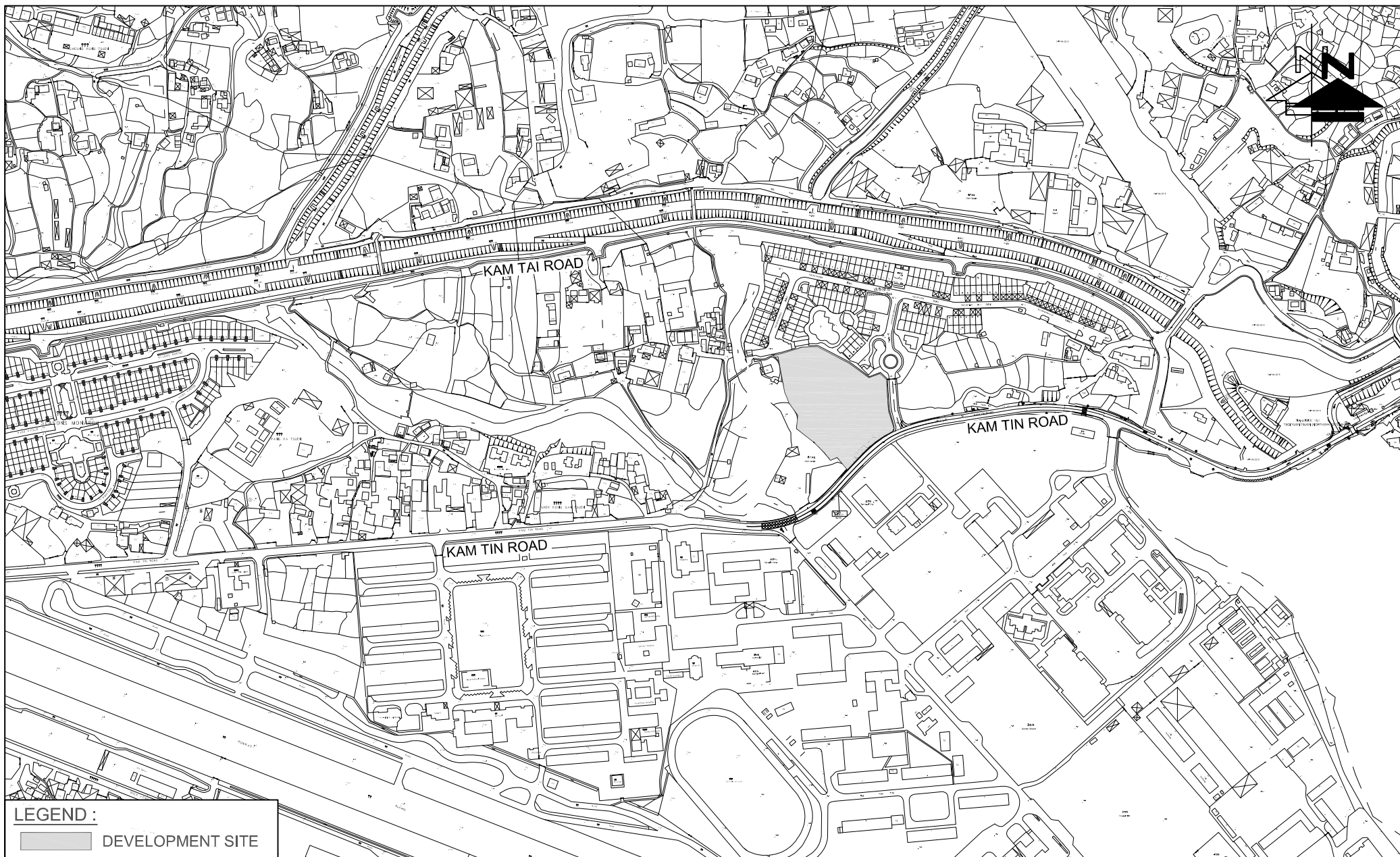


FIGURE NO.: 1.1	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: SITE LOCATION PLAN	
SCALE: 1 : 500 @A4	DATE: 14 JUL 2025	

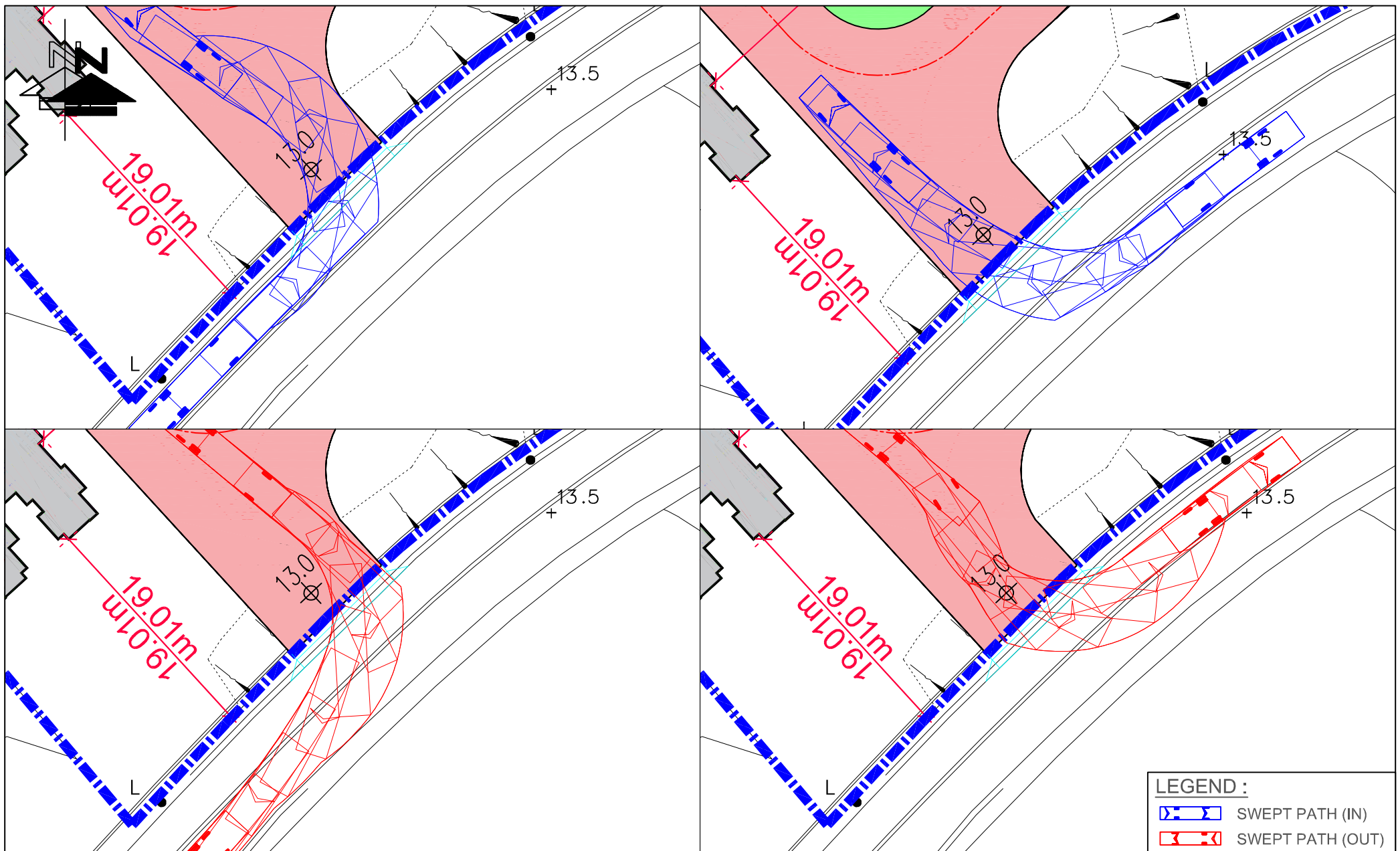


FIGURE NO.: 2.1(SP1)	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF 12M FIRE ENGINE OF MASTER LAYOUT PLAN (WITHOUT KAM TIN ROAD WIDENING)	
SCALE: 1 : 400 @A4	DATE: 14 JUL 2025	

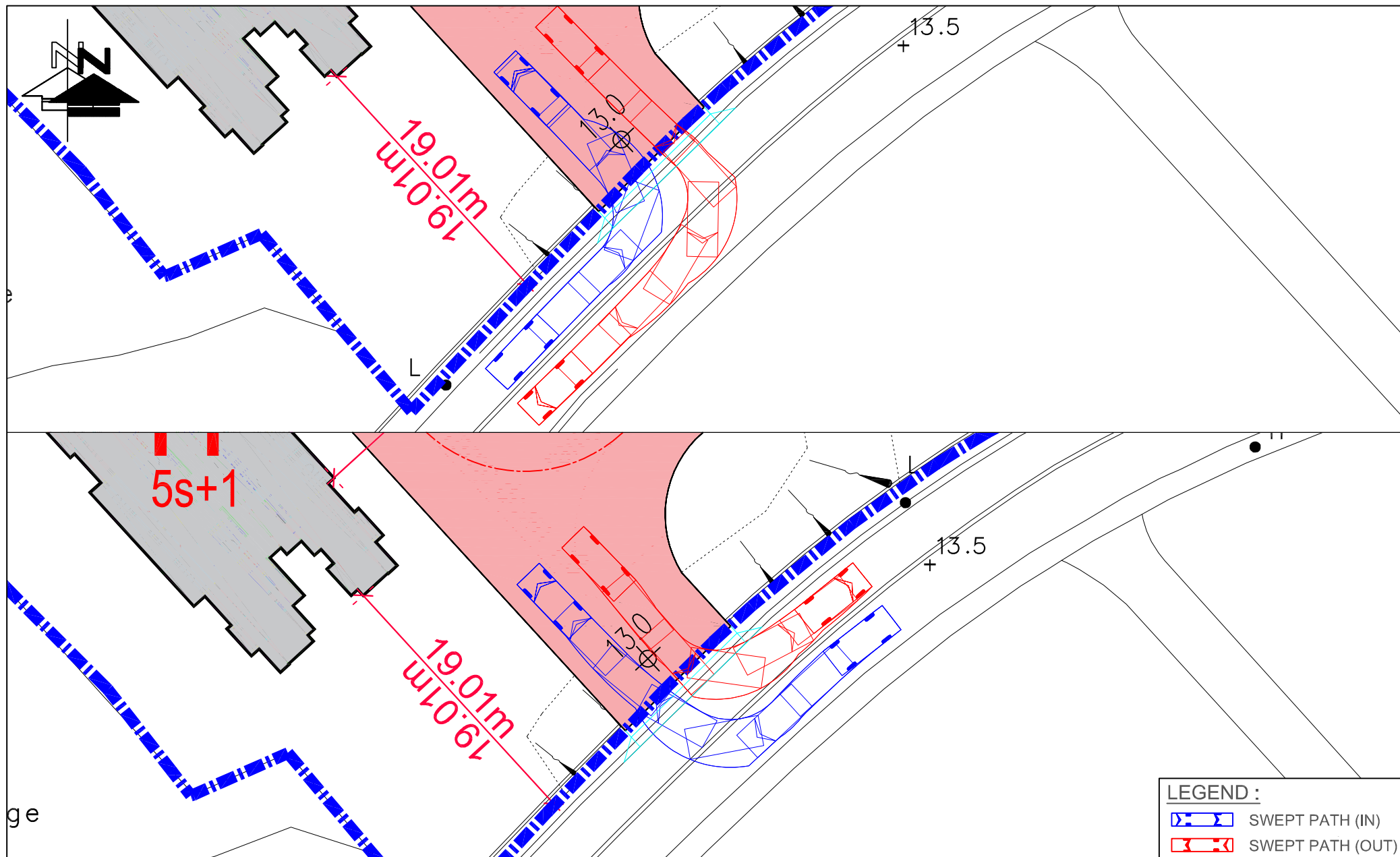
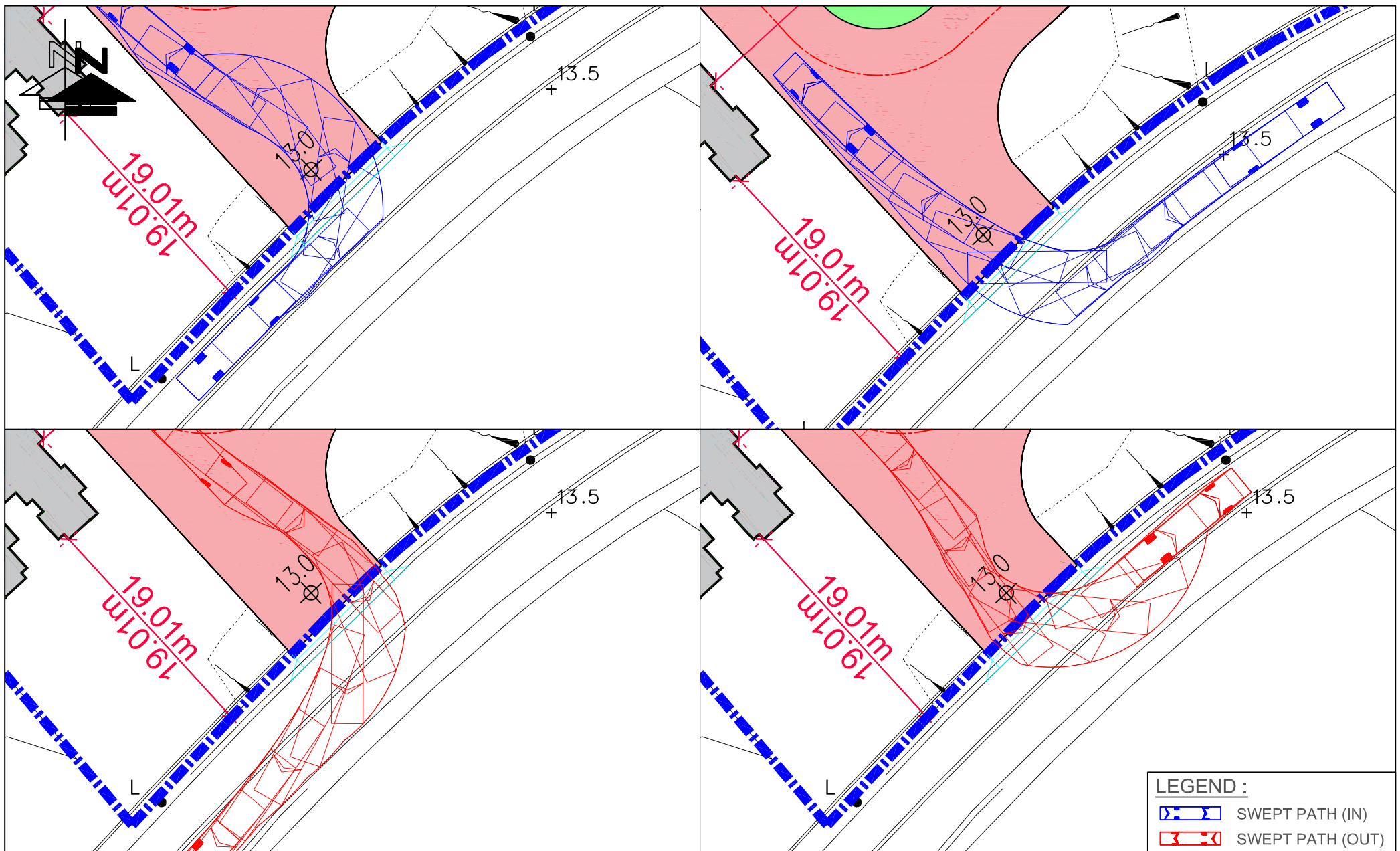


FIGURE NO.: 2.1(SP2)	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF 5M VEHICLE OF MASTER LAYOUT PLAN (WITHOUT KAM TIN ROAD WIDENING)	
SCALE: 1 : 350 @A4	DATE: 14 JUL 2025	



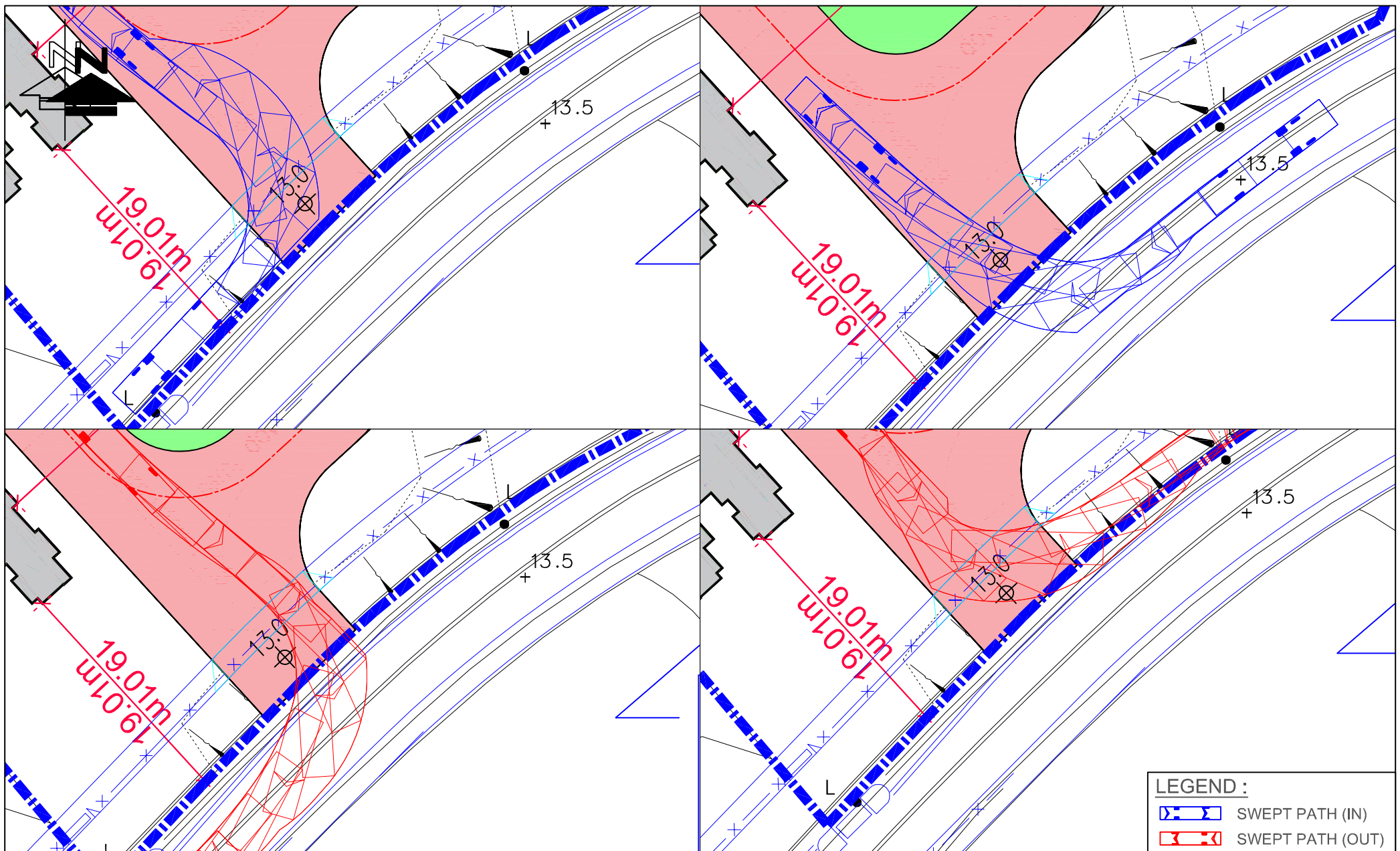


FIGURE NO.: 2.2(SP1)	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: SWEPT PATH ANALYSIS OF 12M FIRE ENGINE OF MASTER LAYOUT PLAN (WITH KAM TIN ROAD WIDENING)	
SCALE: 1 : 400 @A4	DATE: 14 JUL 2025	

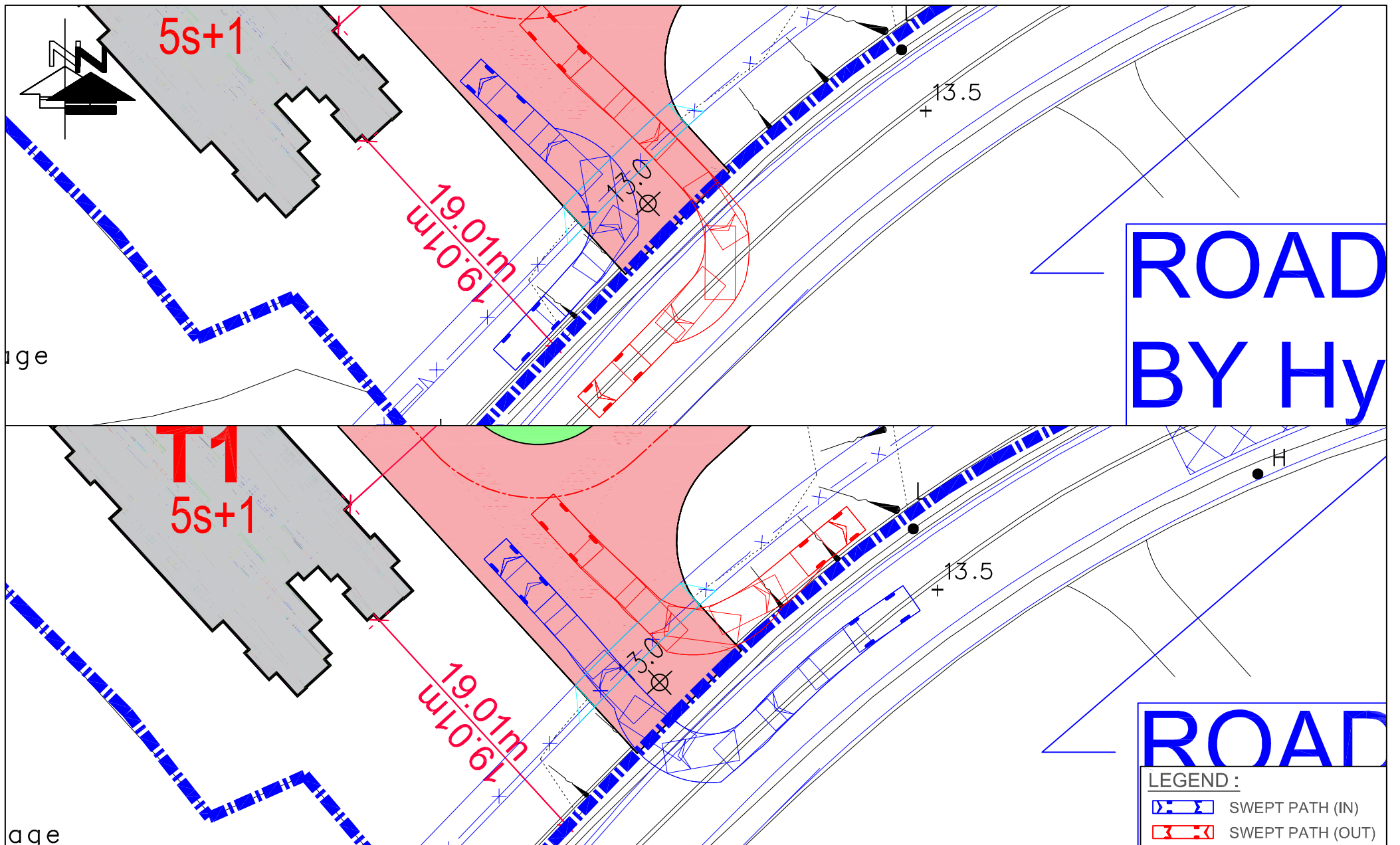
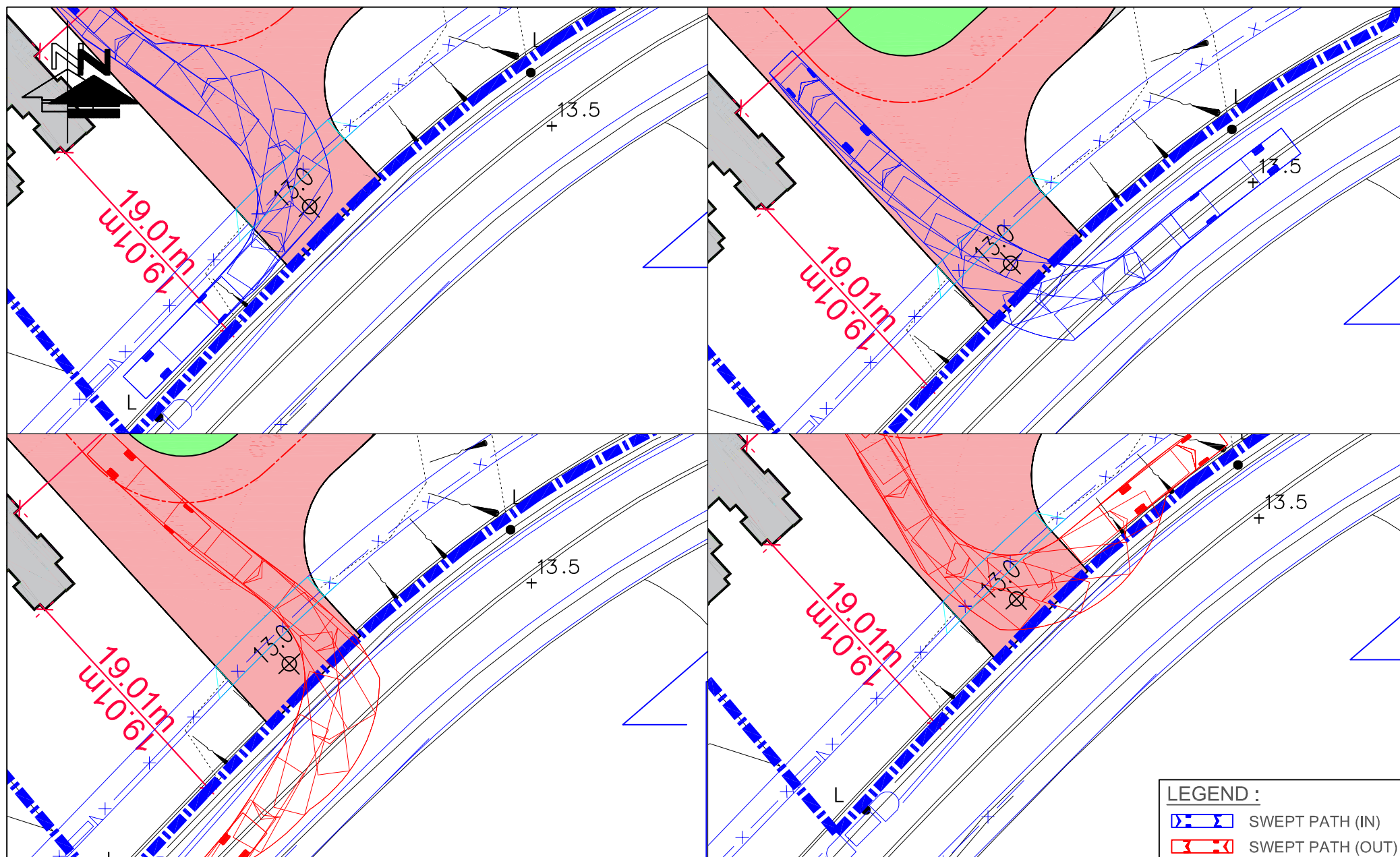


FIGURE NO.: 2.2(SP2)		PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: SWEPT PATH ANALYSIS OF 5M VEHICLE OF MASTER LAYOUT PLAN (WITH KAM TIN ROAD WIDENING)	
SCALE: 1 : 350 @A4	DATE: 14 JUL 2025	 CTA Consultants Limited 志達顧問有限公司	



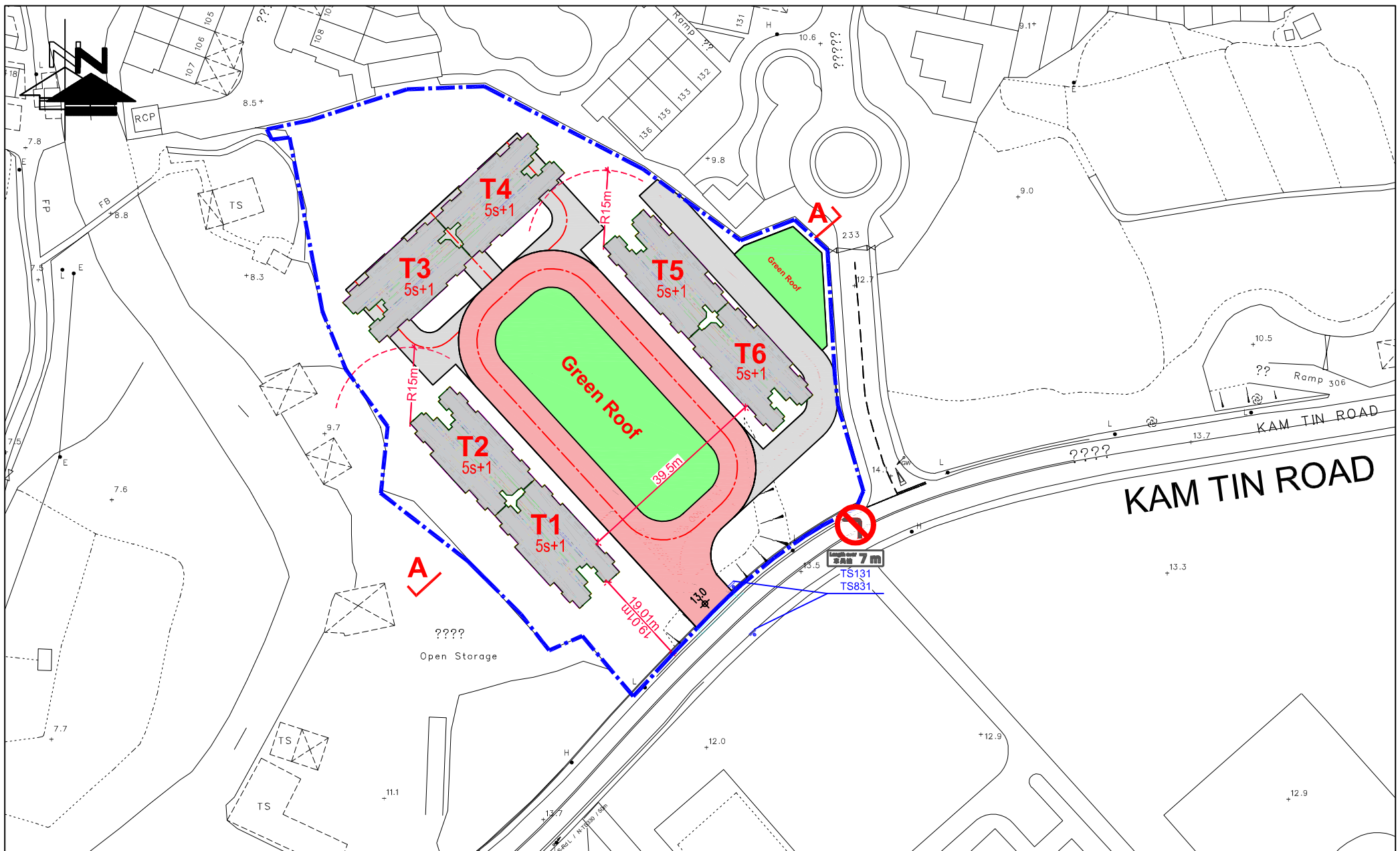


FIGURE NO.: 2.3		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: DEVELOPMENT ACCESS ARRANGEMENT (WITHOUT KAM TIN ROAD WIDENING)	
SCALE: 1 : 1000 @A4	DATE: 14 JUL 2025		

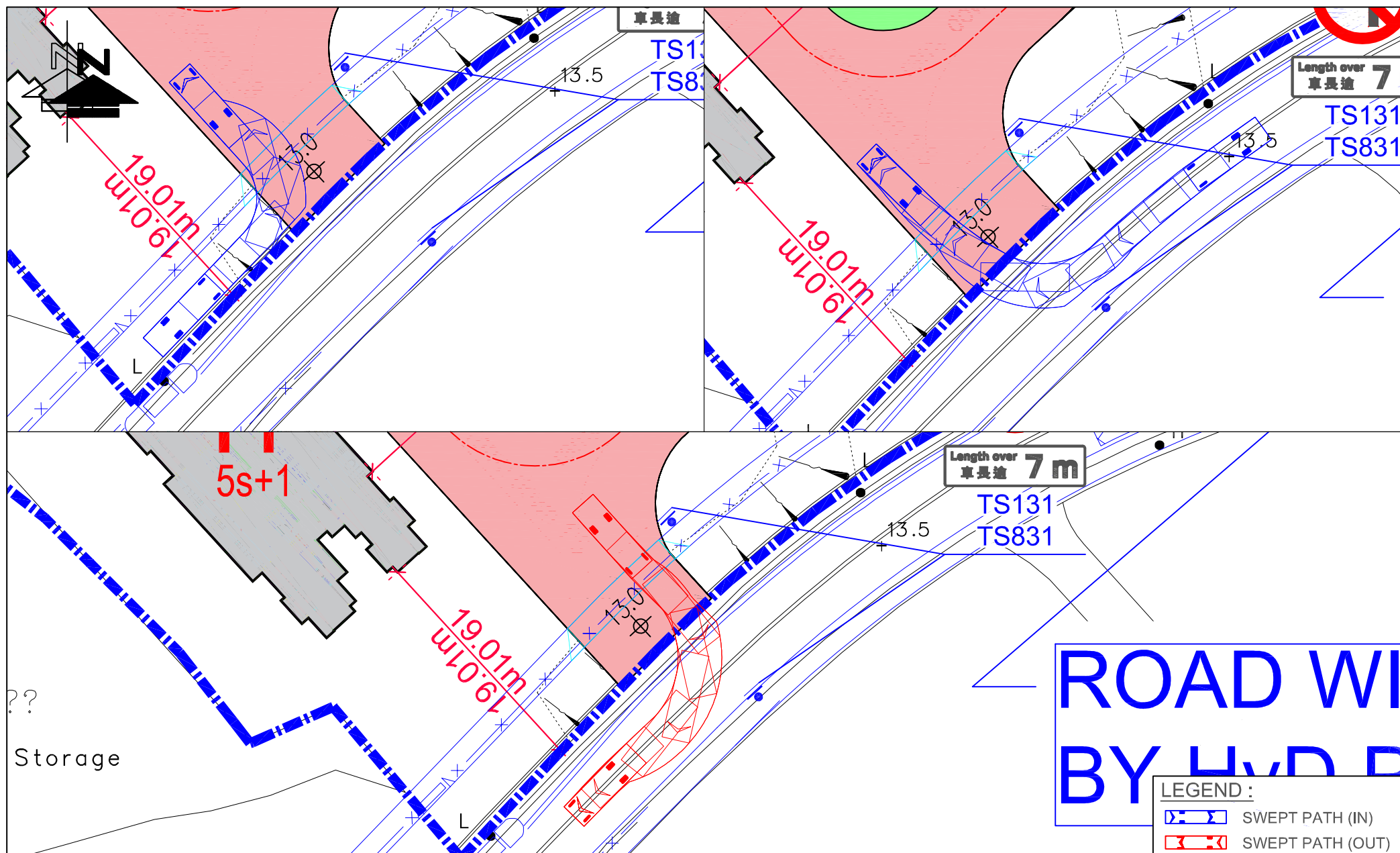


FIGURE NO.: 2.4(SP1)	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: DEVELOPMENT ACCESS ARRANGEMENT (WITH KAM TIN ROAD WIDENING) SWEEP PATH ANALYSIS OF 7M VEHICLES	
SCALE: 1 : 400 @A4	DATE: 14 JUL 2025	

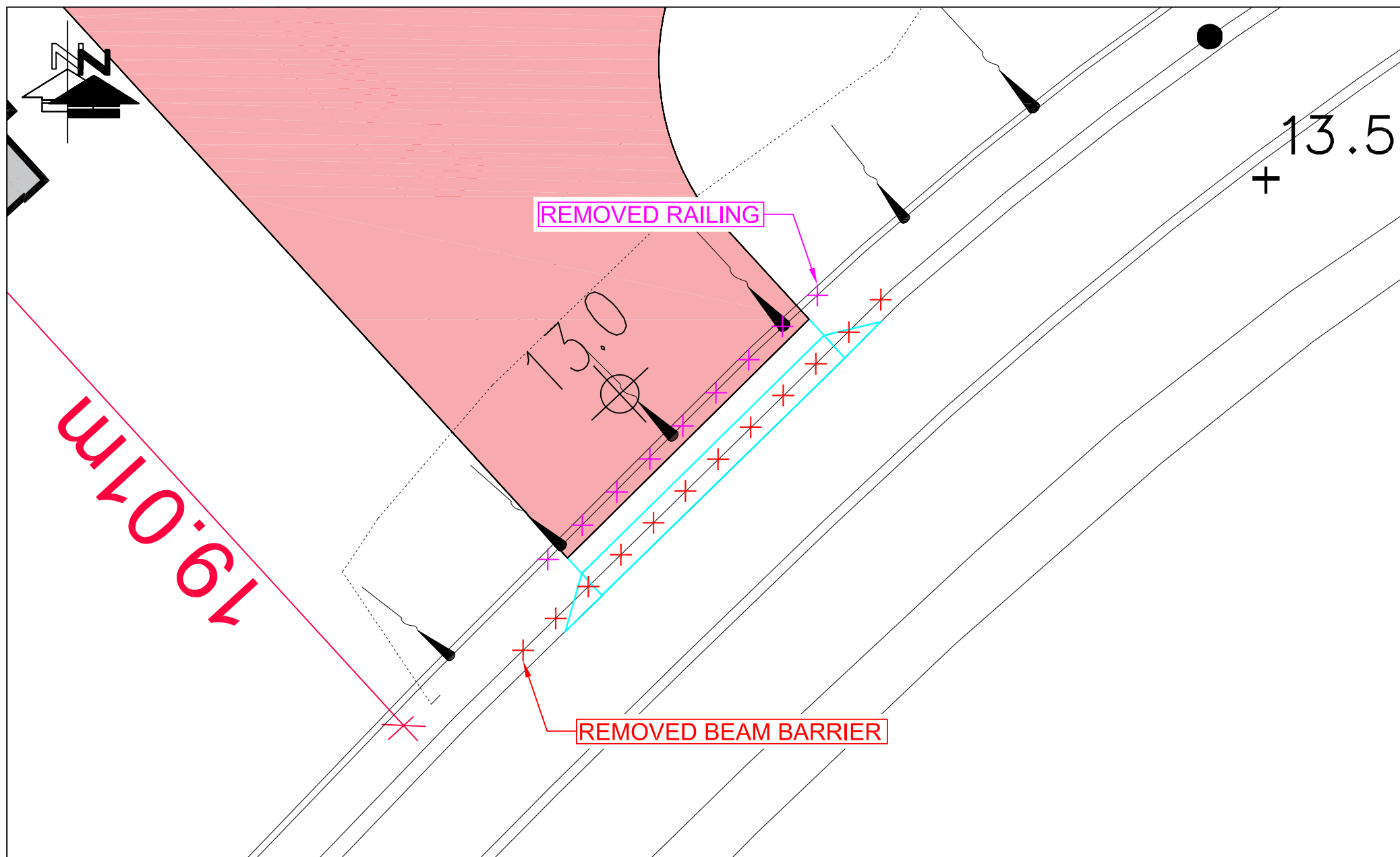


FIGURE NO.: 2.5	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: PROPOSED MODIFICATION OF EXISTING STREET FURNITURE (WITHOUT KAM TIN ROAD WIDENING)	
SCALE: 1 : 150 @A4	DATE: 14 JUL 2025	

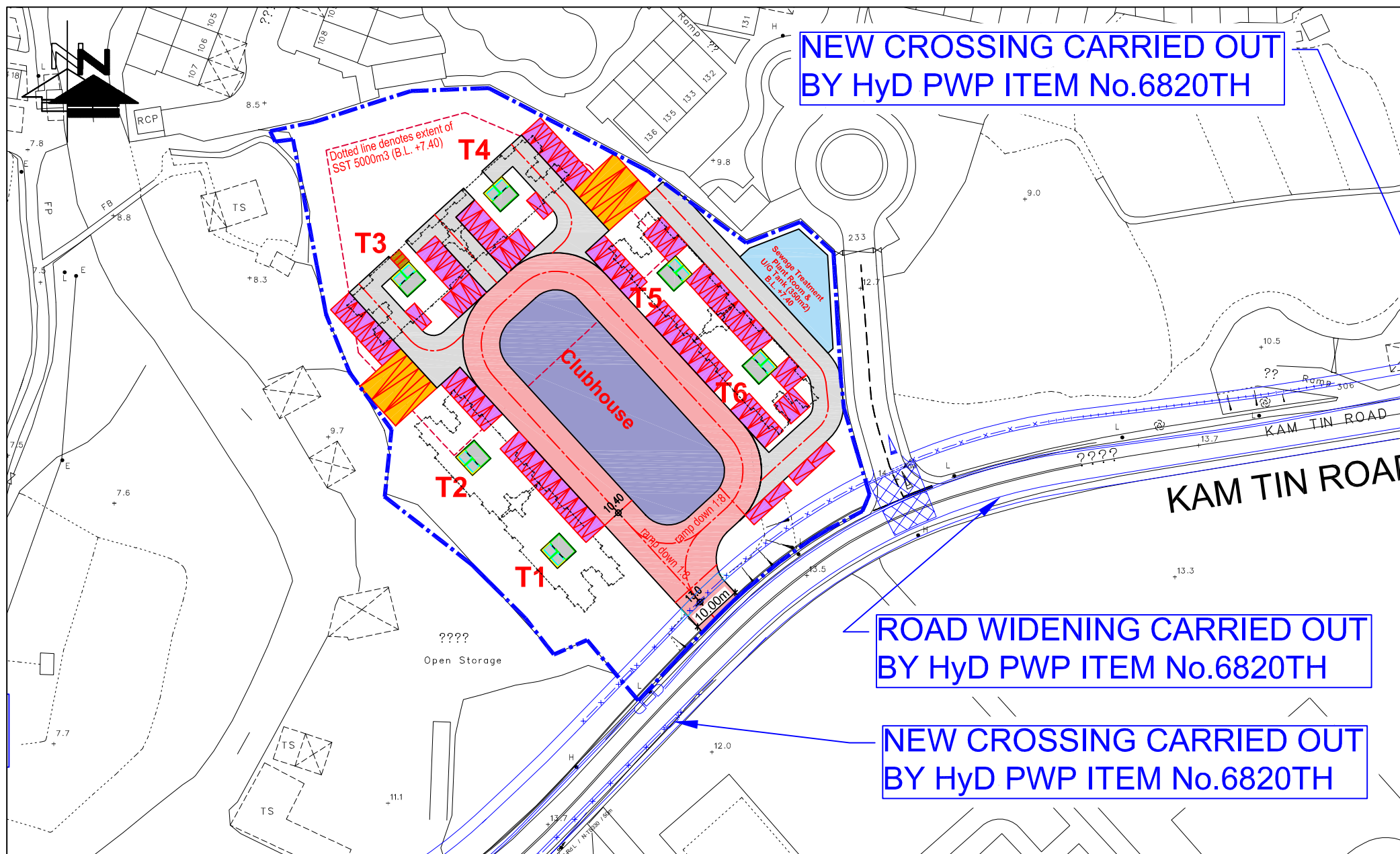
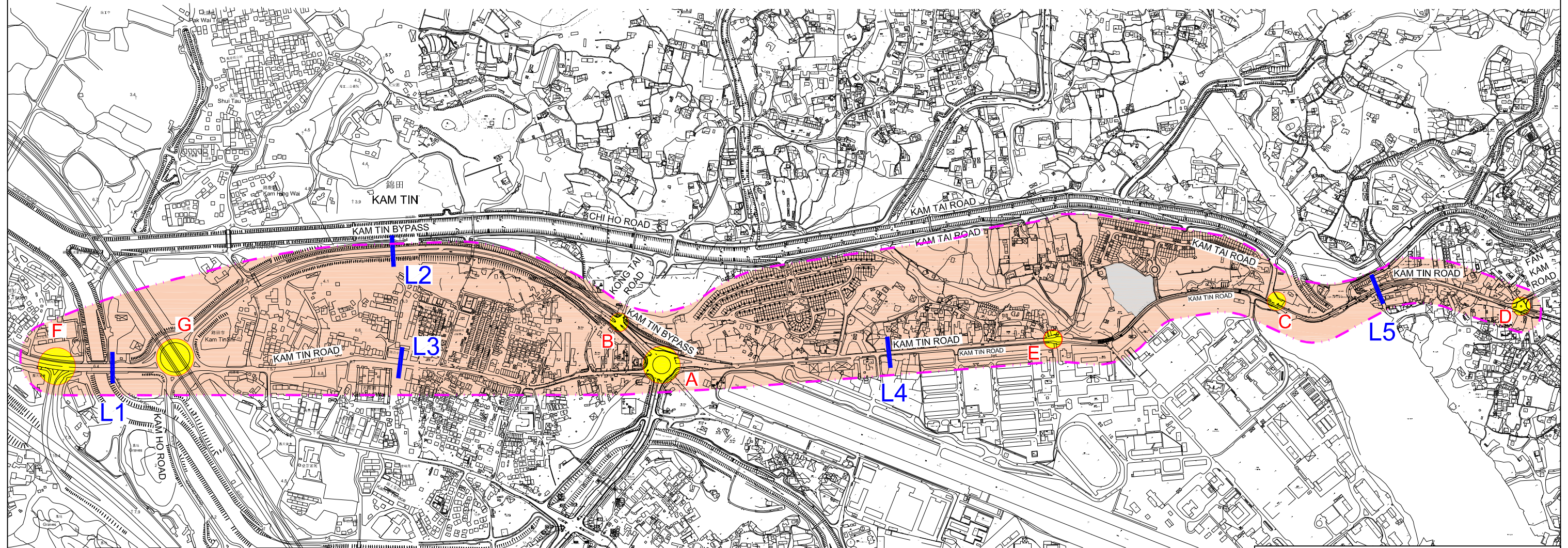
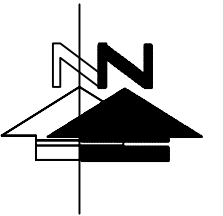


FIGURE NO.: 2.7	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: GROUND FLOOR PLAN (WITH KAM TIN ROAD WIDENING)	
SCALE: 1 : 1000 @A4	DATE: 14 JUL 2025	



LEGEND :

- DEVELOPMENT SITE
- CRITICAL JUNCTION
- AREA OF INFLUENCE
- CRITICAL ROAD LINK

FIGURE NO.:

3.1

PROJECT TITLE:

Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

PROJECT NO.:

25009HK

DRAWING TITLE:

IDENTIFIED CRITICAL JUNCTIONS

SCALE:

1 : 8700 @A3

DATE:

14 JUL 2025

 CTA Consultants Limited
志達顧問有限公司

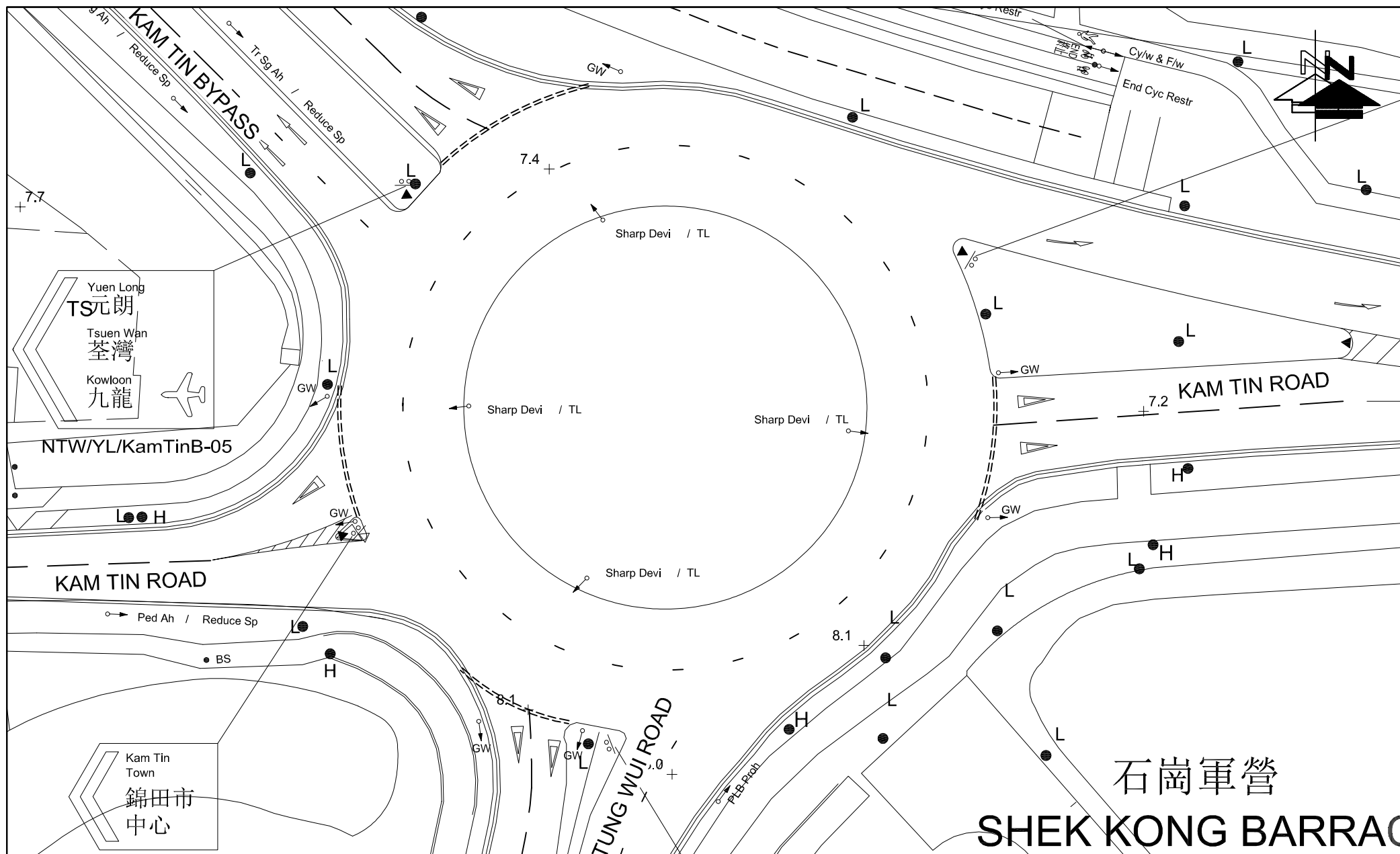


FIGURE NO.: 3.2		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAM TIN BYPASS / KAM TIN ROAD / TUNG WUI ROAD (A)	
SCALE: 1 : 500 @A4	DATE: 01 APR 2025		

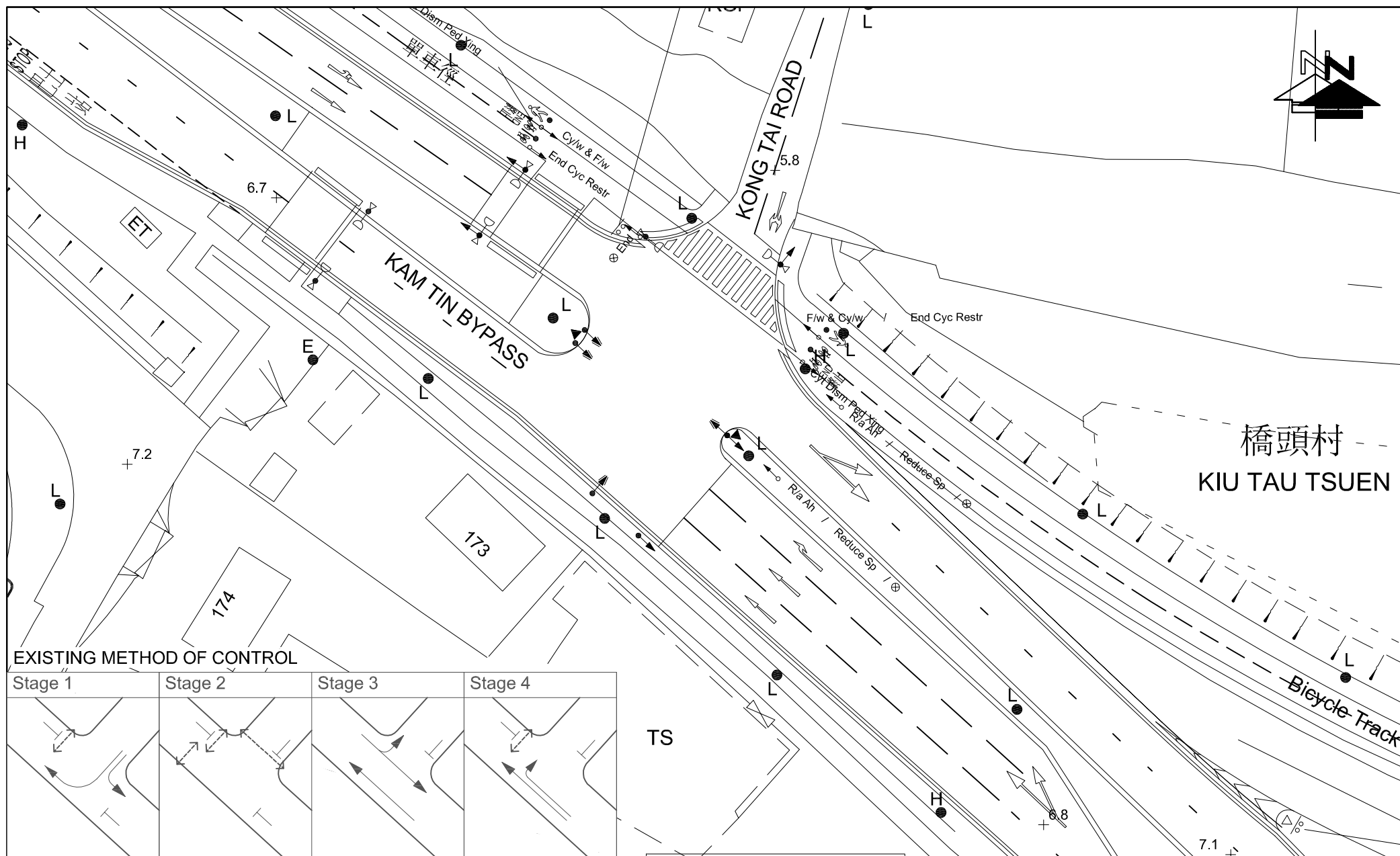


FIGURE NO.: 3.3		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAM TIN BYPASS / KONG TAI ROAD (B)	
SCALE: 1 : 500 @A4	DATE: 01 APR 2025	CTA Consultants Limited 志達顧問有限公司	

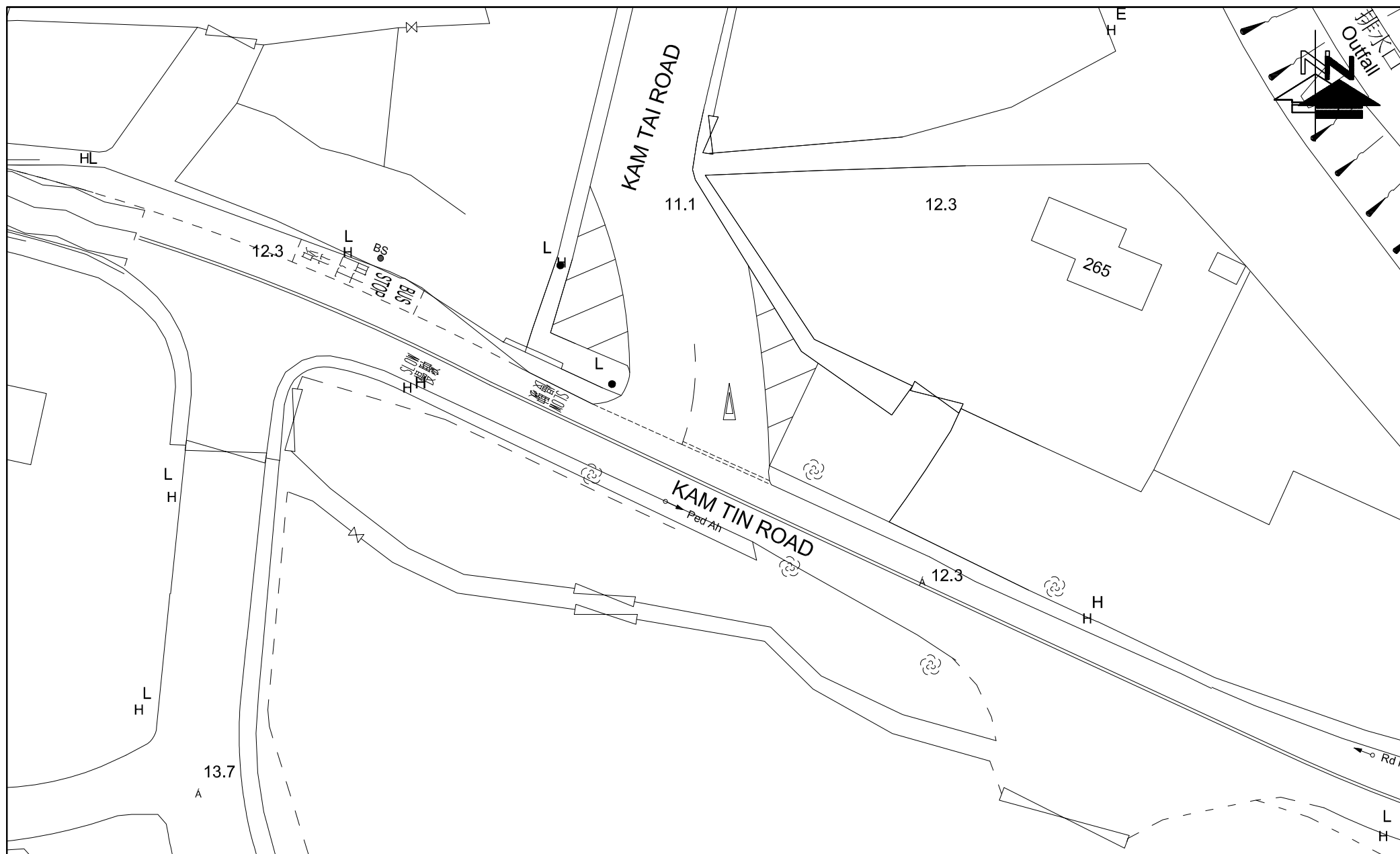


FIGURE NO.: 3.4	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAM TIN ROAD / KAM TAI ROAD (C)	
SCALE: 1 : 500 @A4	DATE: 05 NOV 2025	

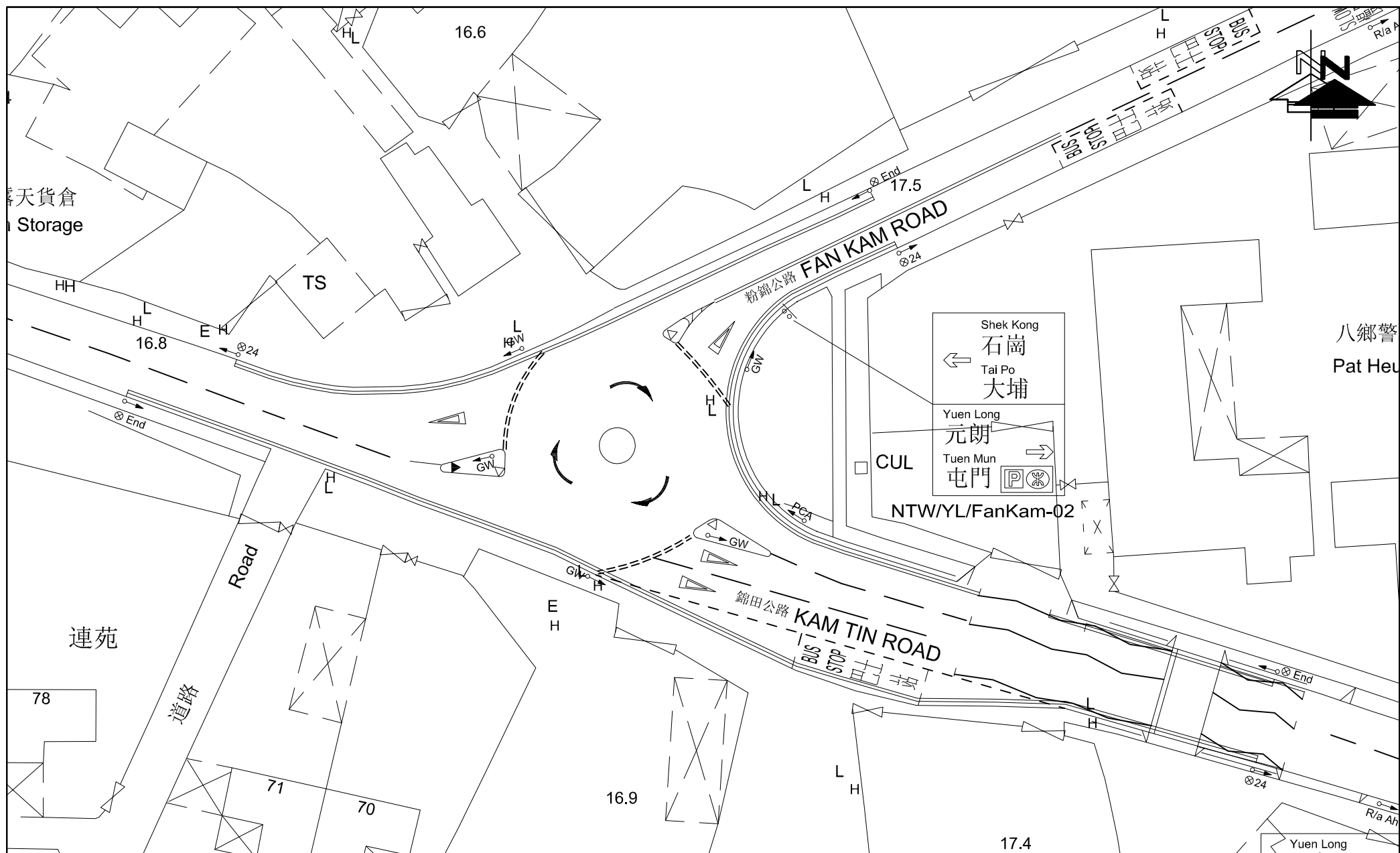
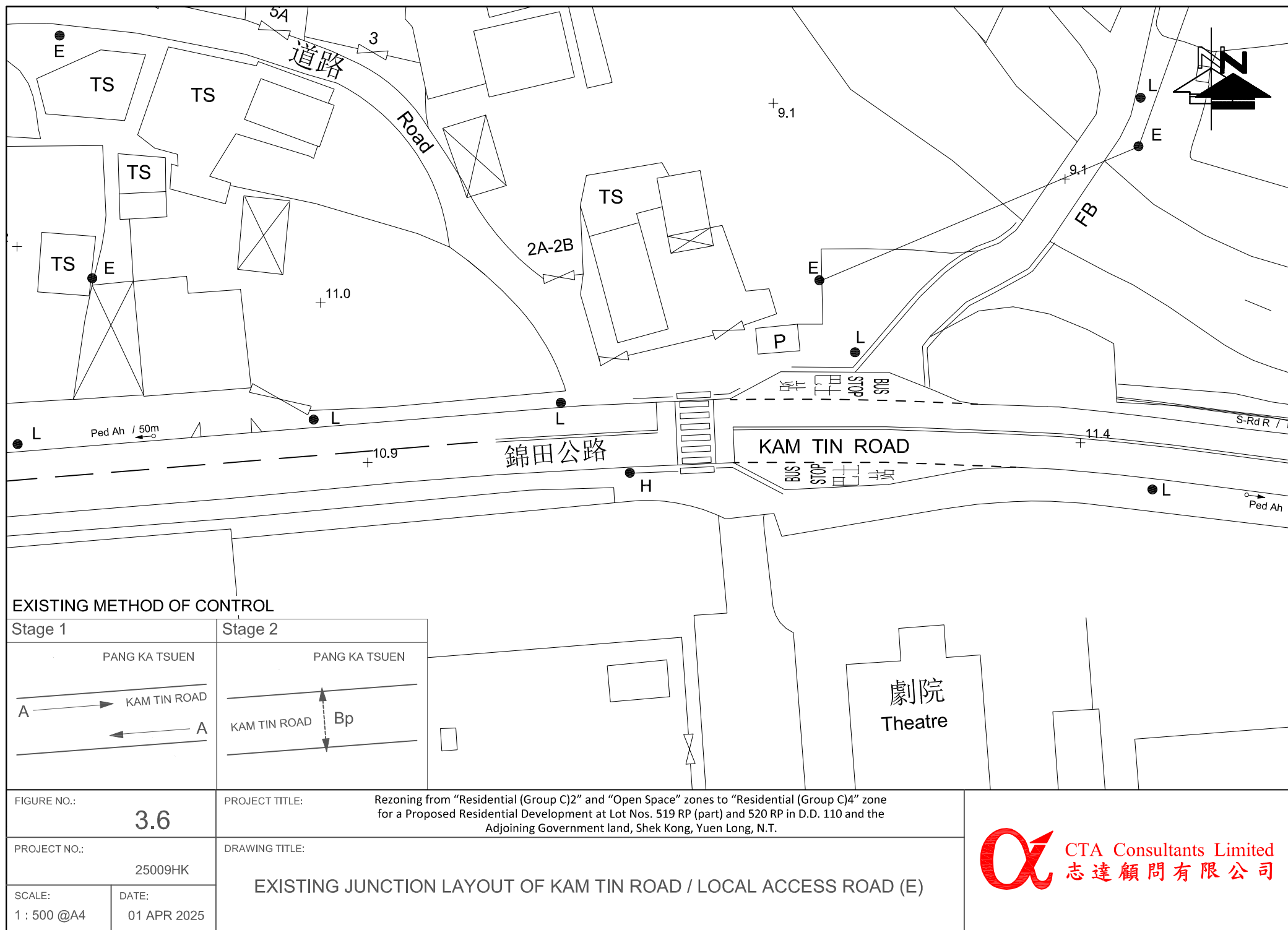


FIGURE NO.: 3.5		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAM TIN ROAD / FAN KAM ROAD (D)	
SCALE: 1 : 500 @A4	DATE: 01 APR 2025		



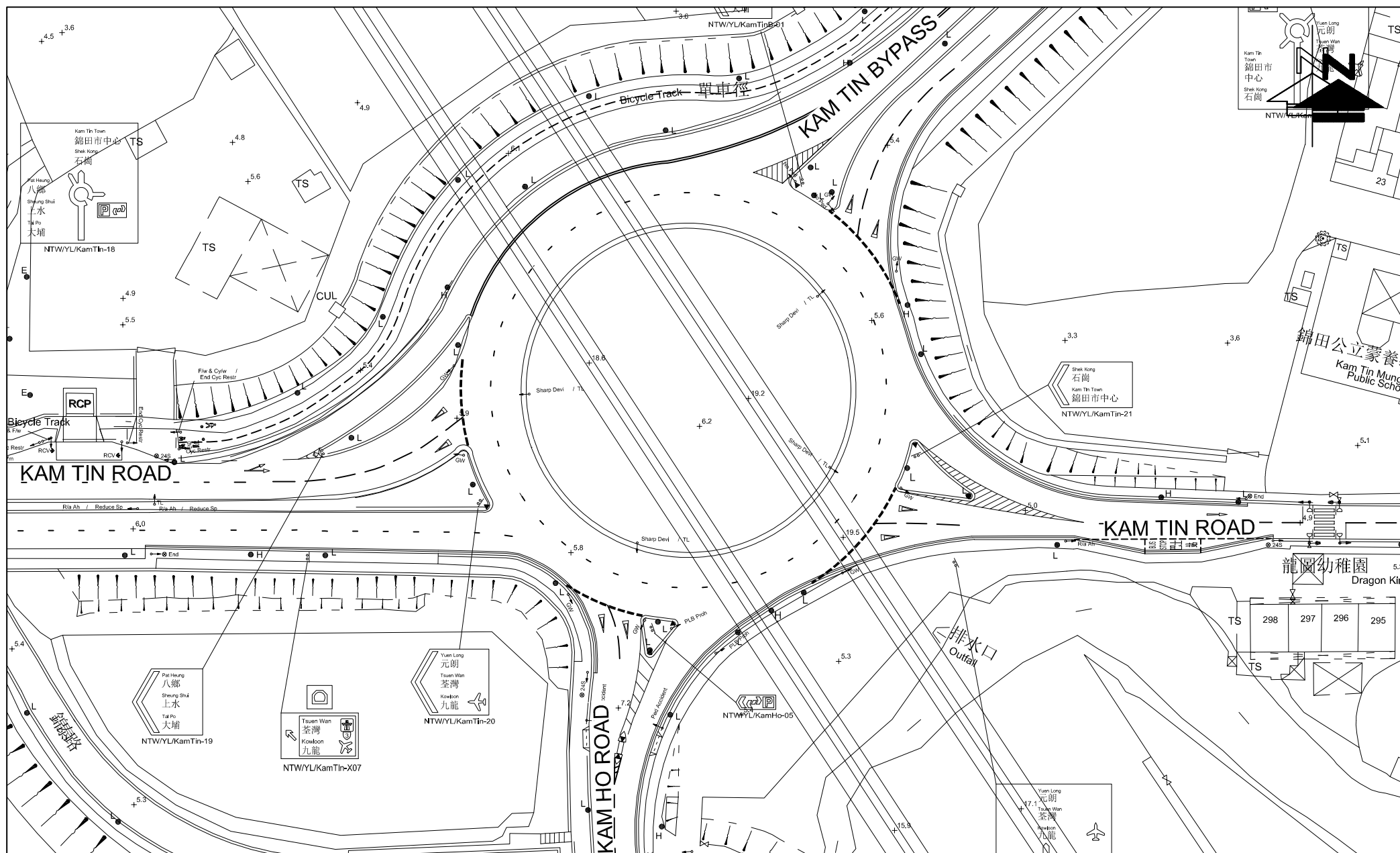
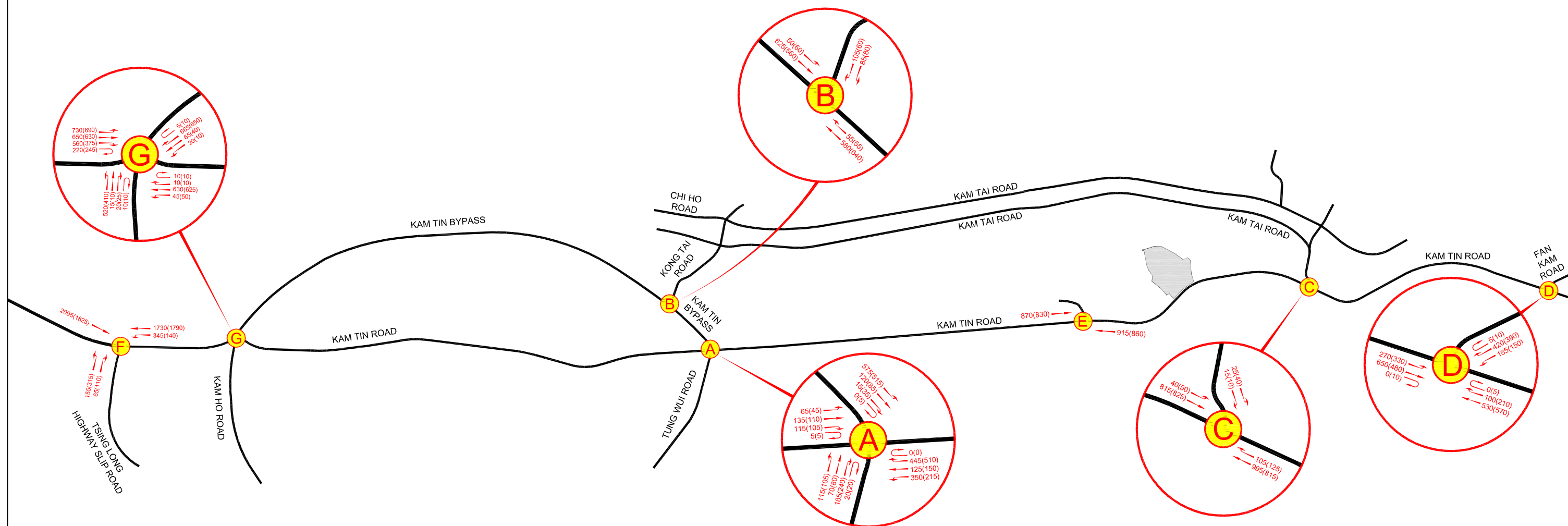
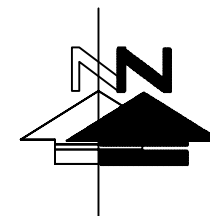


FIGURE NO.: 3.8		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: EXISTING JUNCTION LAYOUT OF KAM TIN ROAD / KAM TIN BYPASS / KAM HO ROAD (G)	
SCALE: 1 : 1000 @A4	DATE: 01 APR 2025		



LEGEND :

- DEVELOPMENT SITE
- 595(540) AM (PM) PEAK HOUR TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.: 3.9		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: 2025 OBSERVED TRAFFIC FLOWS	
SCALE: N. T. S. @A3	DATE: 14 JUL 2025		

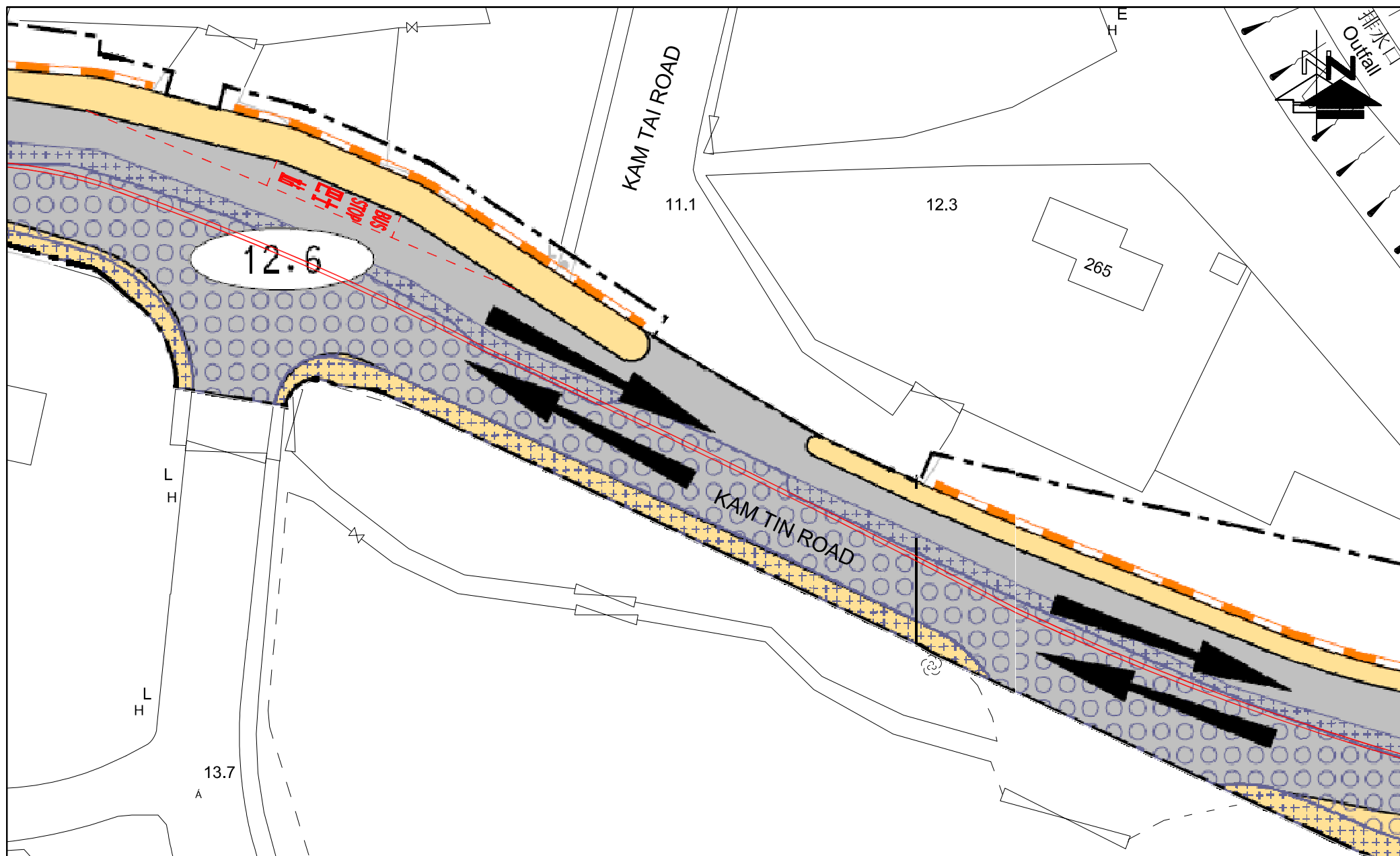


FIGURE NO.: 3.10		PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: CONCEPTUAL JUNCTION IMPROVEMENT LAYOUT OF KAM TIN ROAD / KAM TAI ROAD (C) (CARRIED OUT BY HyD PWP ITEM No.6820TH)	
SCALE: 1 : 500 @A4	DATE: 01 APR 2025		

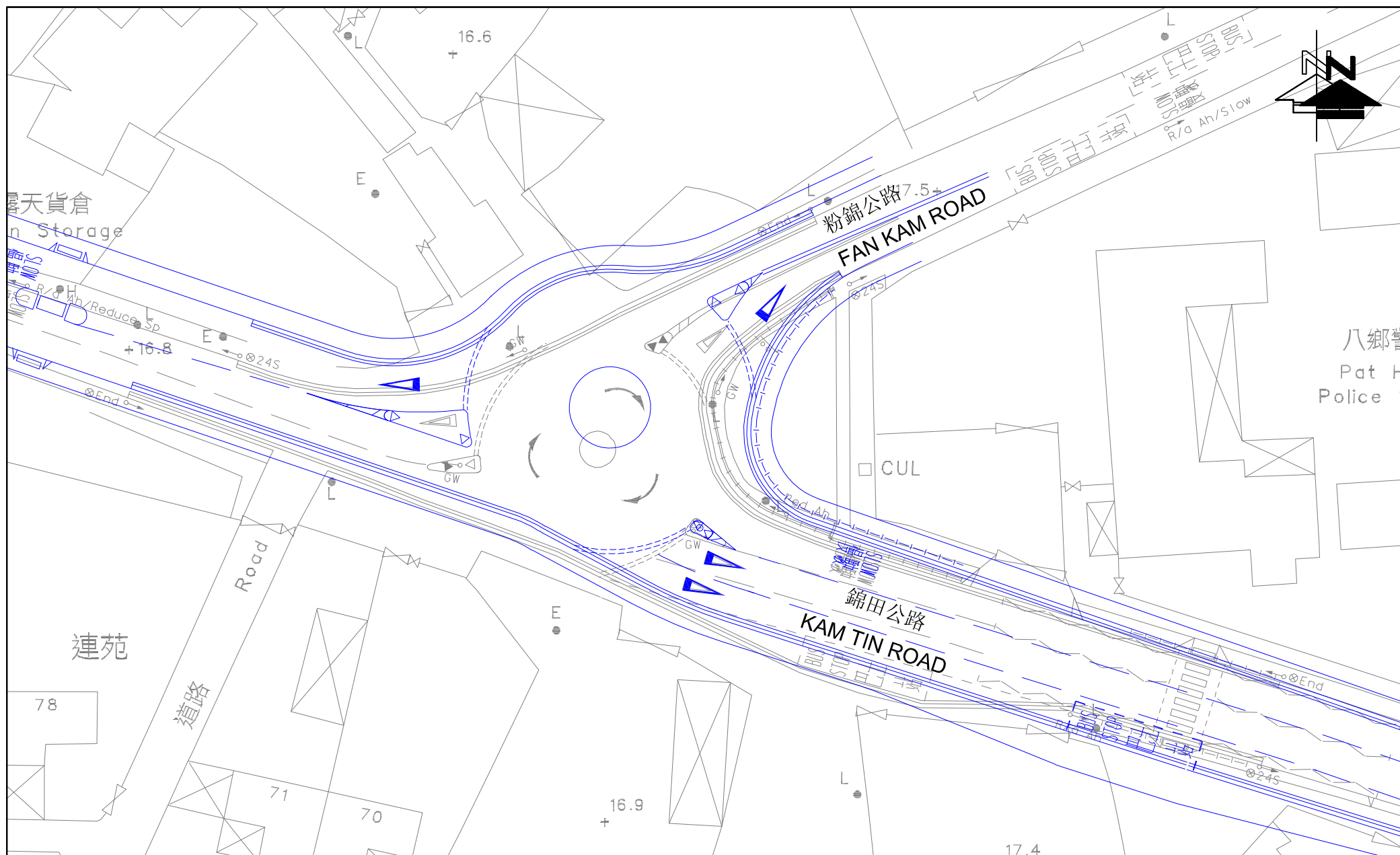


FIGURE NO.: 3.11		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: PROPOSED JUNCTION IMPROVEMENT OF KAM TIN ROAD / FAN KAM ROAD (D) (CARRIED OUT BY HyD UNDER PWP ITEM No.6820TH)	
SCALE: 1 : 500 @A4	DATE: 24 APR 2025		

DATE:
24 APR 2025

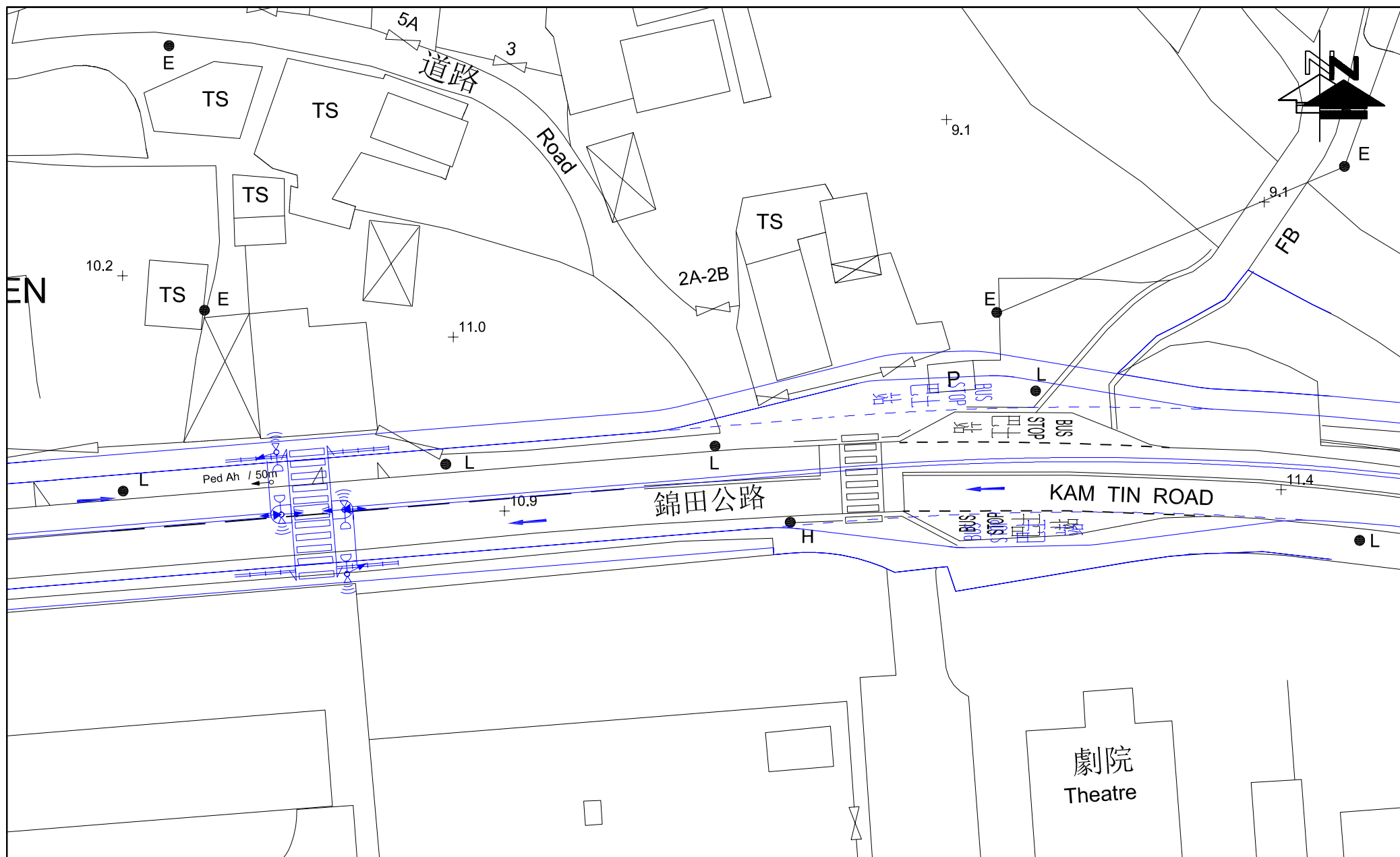


FIGURE NO.: 3.12		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: CONCEPTUAL JUNCTION IMPROVEMENT OF KAM TIN ROAD / LOCAL ACCESS ROAD (E) (CARRIED OUT BY HyD PWP ITEM No.6820TH)	
SCALE: 1 : 500 @A4	DATE: 24 APR 2025		

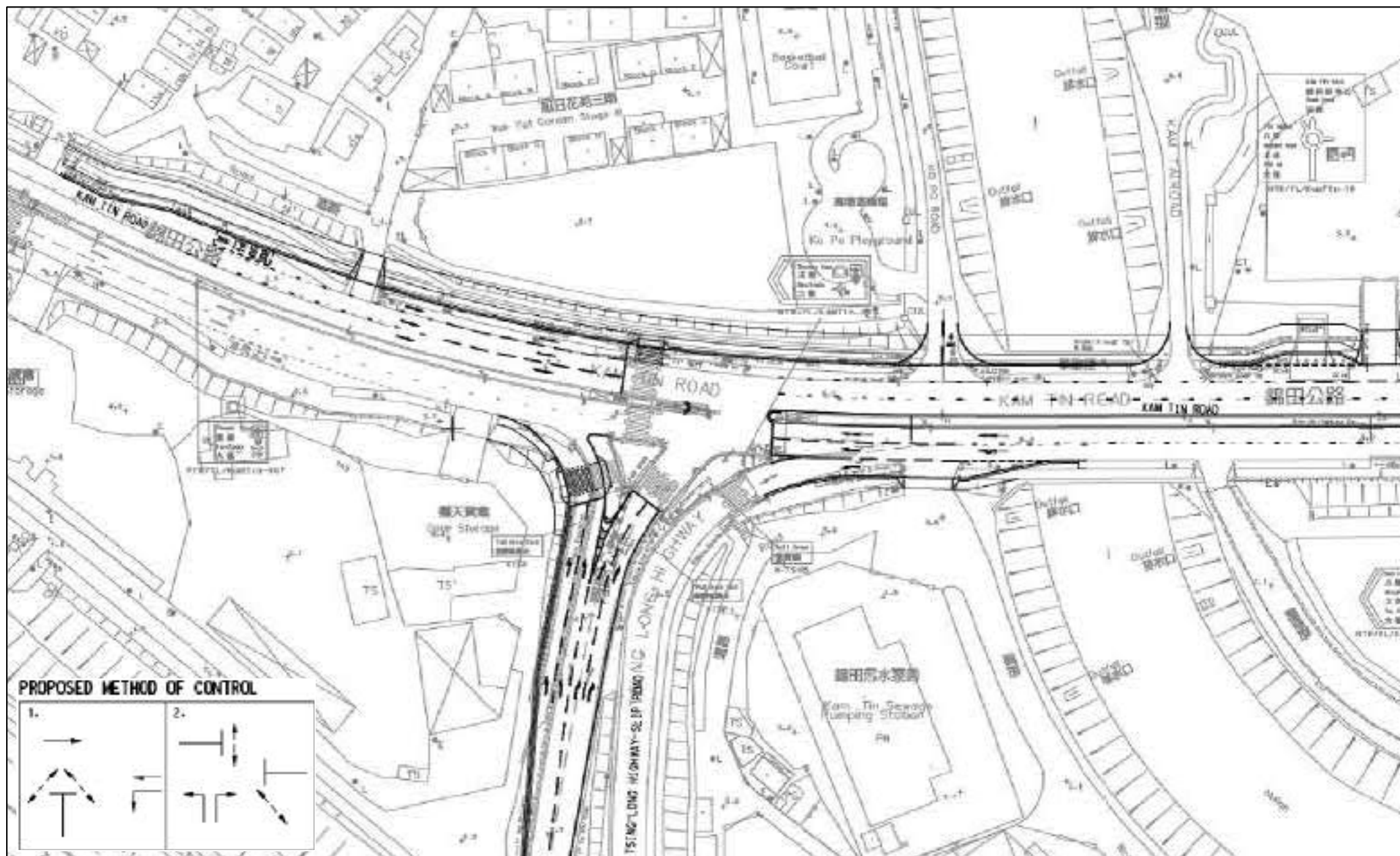
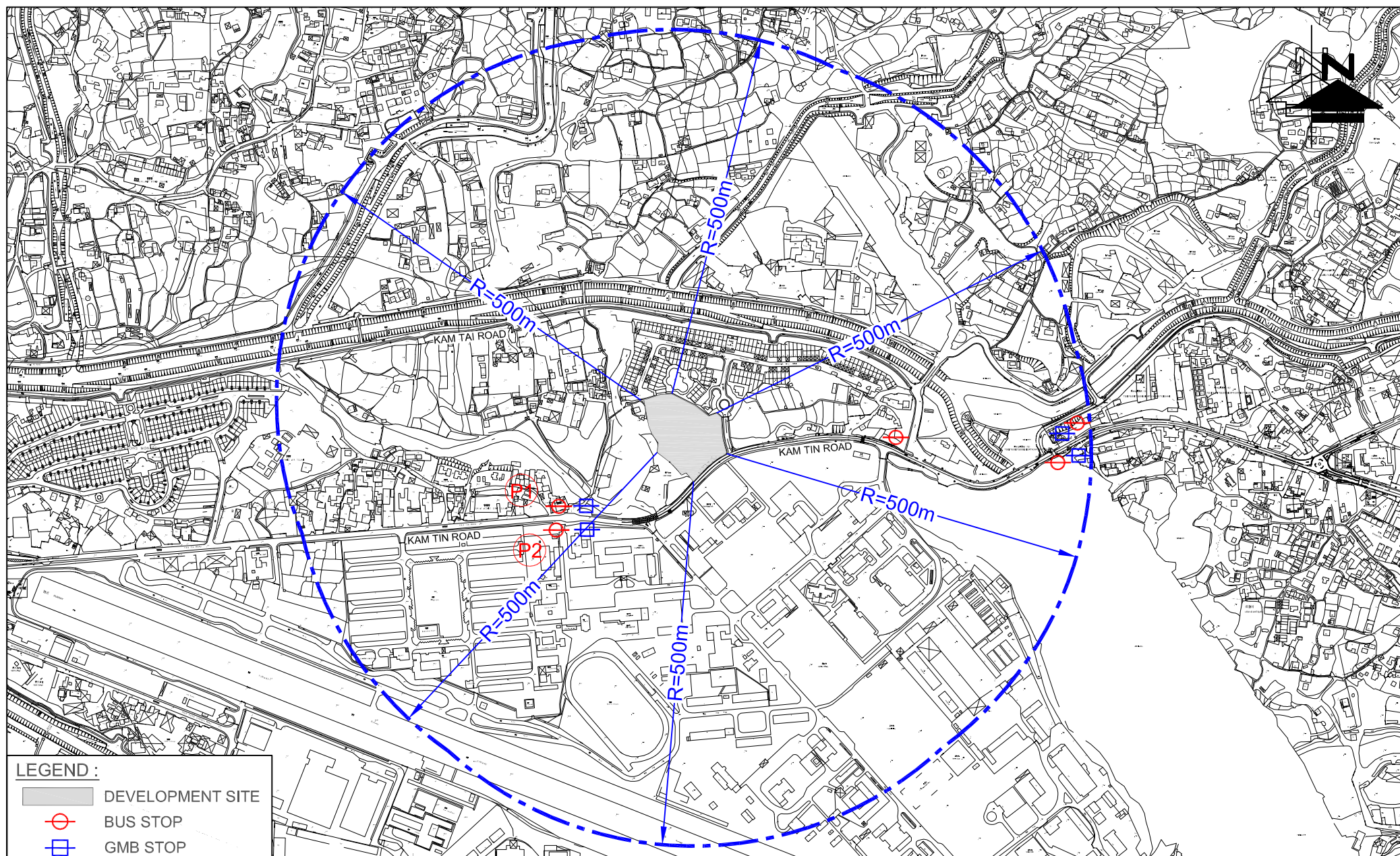


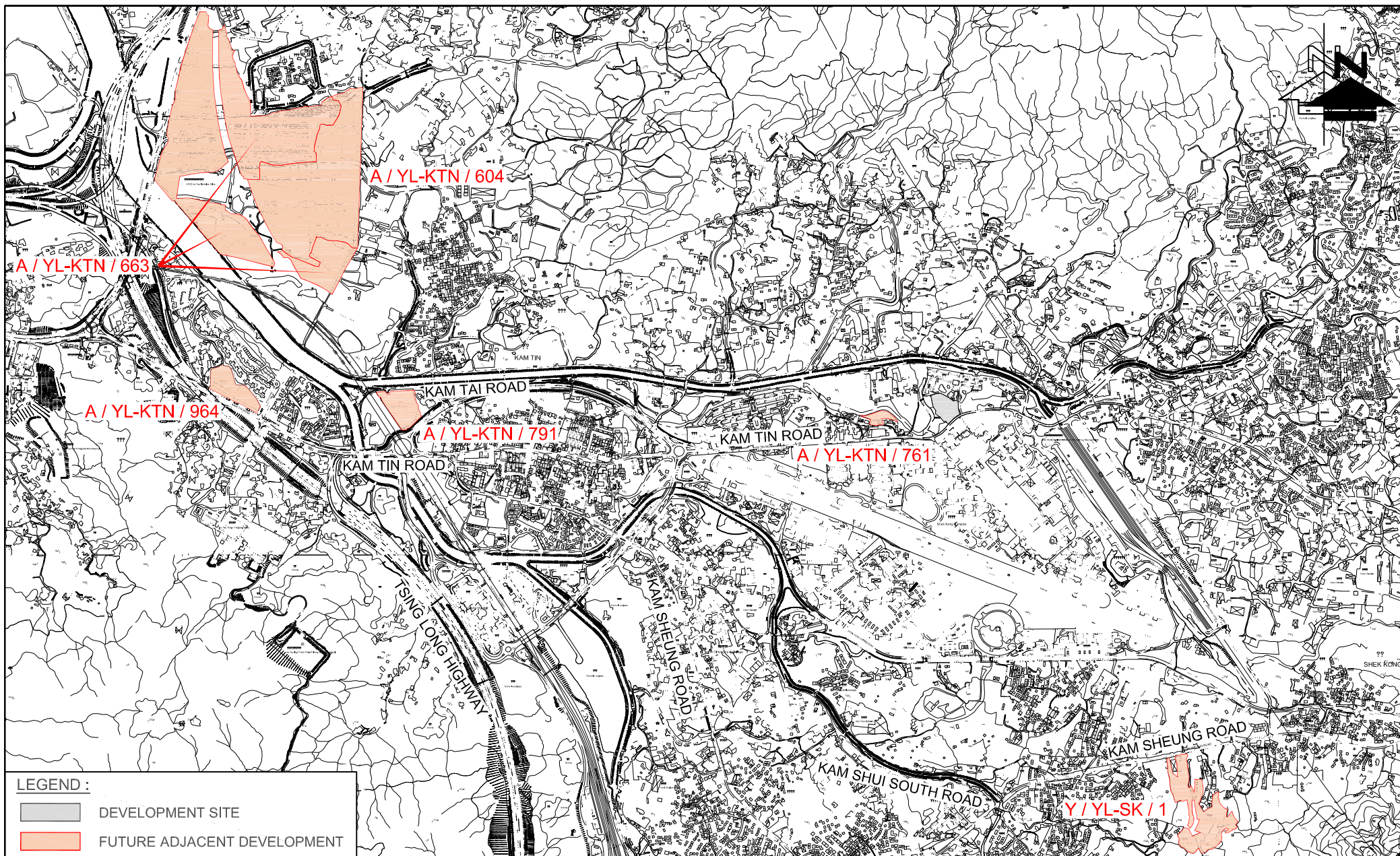


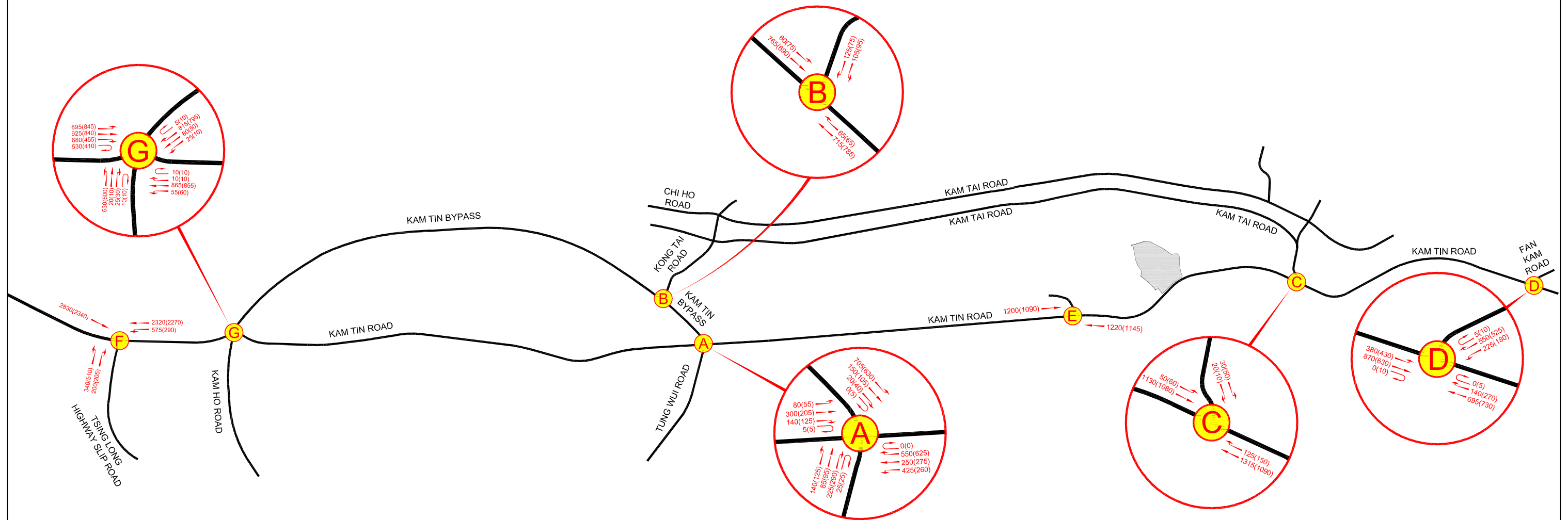
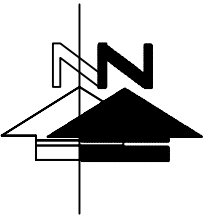
FIGURE NO.: 3.14		PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.		 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: FUTURE JUNCTION LAYOUT OF KAM TIN ROAD / KAM TIN BYPASS / KAM HO ROAD (G) (CARRIED OUT BY CEDD UNDER CONTRACT NO. YL/2017/01)		
SCALE: N.T.S. @A4	DATE: 01 APR 2025			



LEGEND :	
	DEVELOPMENT SITE
	BUS STOP
	GMB STOP

FIGURE NO.: 3.15		PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: PUBLIC TRANSPORT SERVICES IN THE VICINITY	
SCALE: 1 : 7000 @A4	DATE: 14 JUL 2025	 CTA Consultants Limited 志達顧問有限公司	





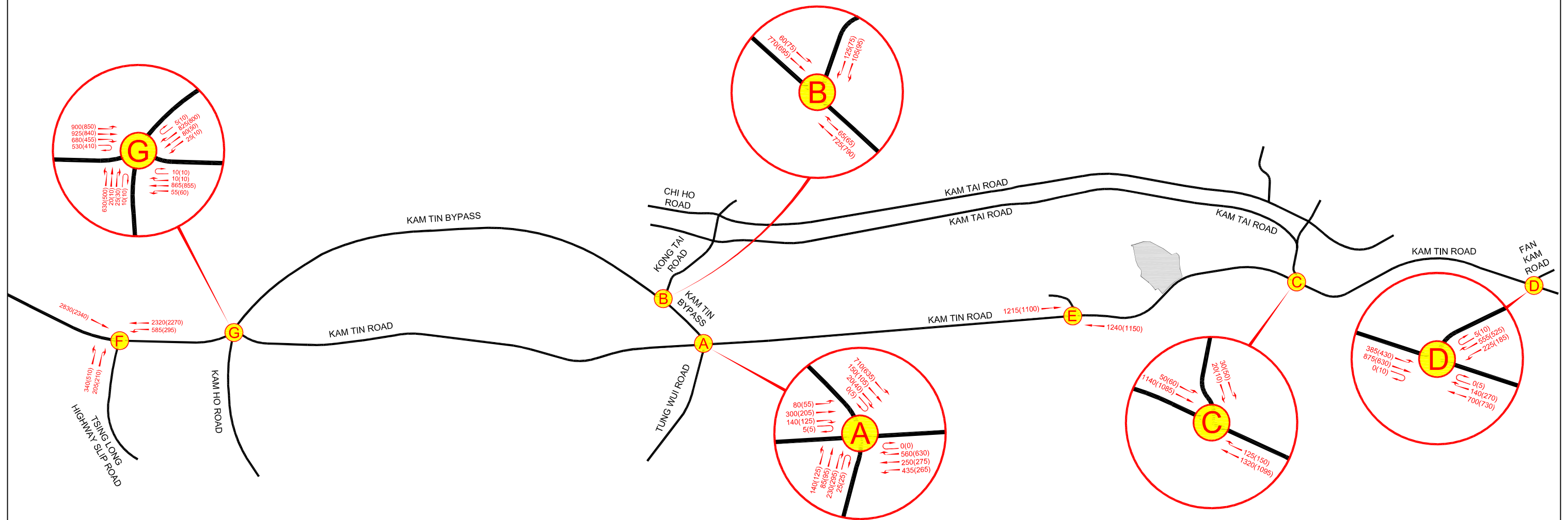
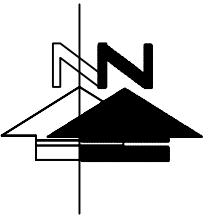
LEGEND :

 DEVELOPMENT SITE

595(540) AM (PM) PEAK HOUR
TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.: 4.2		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: 2034 REFERENCE TRAFFIC FLOWS	
SCALE: N. T. S. @A3	DATE: 14 JUL 2025		

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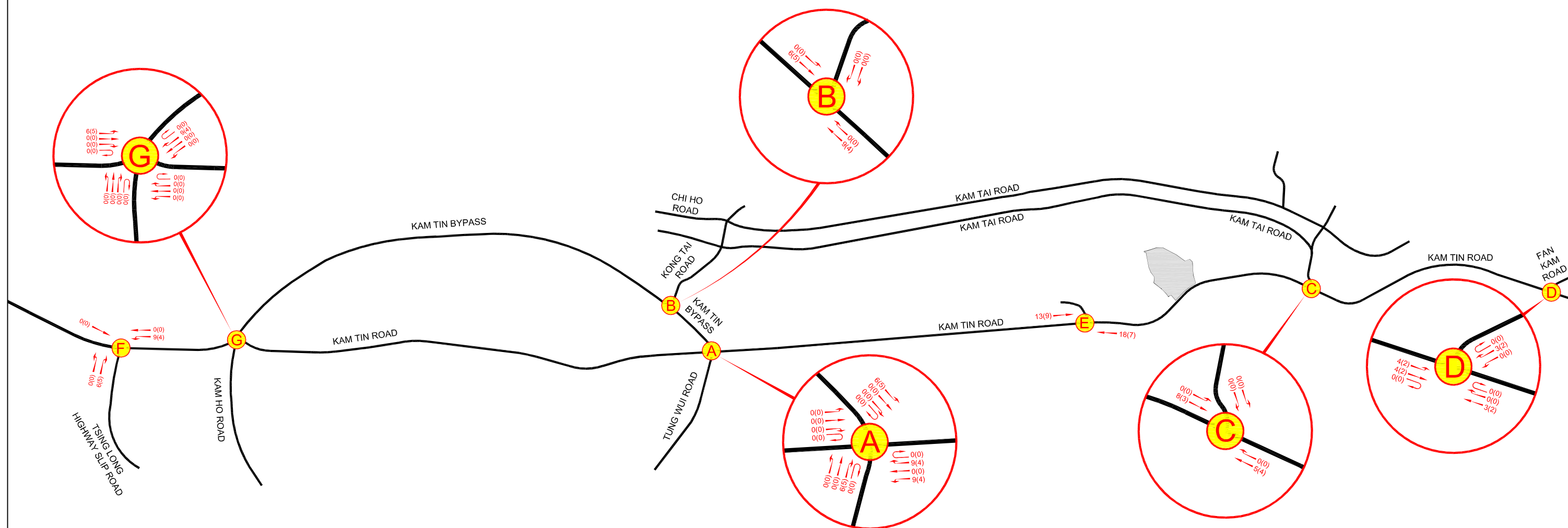
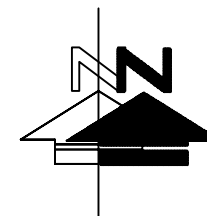
LEGEND :

 DEVELOPMENT SITE

595(540) AM (PM) PEAK HOUR TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.: 4.3		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: 2034 DESIGN TRAFFIC FLOWS	
SCALE: N. T. S. @A3	DATE: 15 JUL 2025		

 **CTA Consultants Limited**
志達顧問有限公司



LEGEND :

	DEVELOPMENT SITE
595(540)	AM (PM) PEAK HOUR TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.:

4.4

PROJECT TITLE:

Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

PROJECT NO.:

25009HK

DRAWING TITLE:

2034 DEVELOPMENT TRAFFIC FLOWS

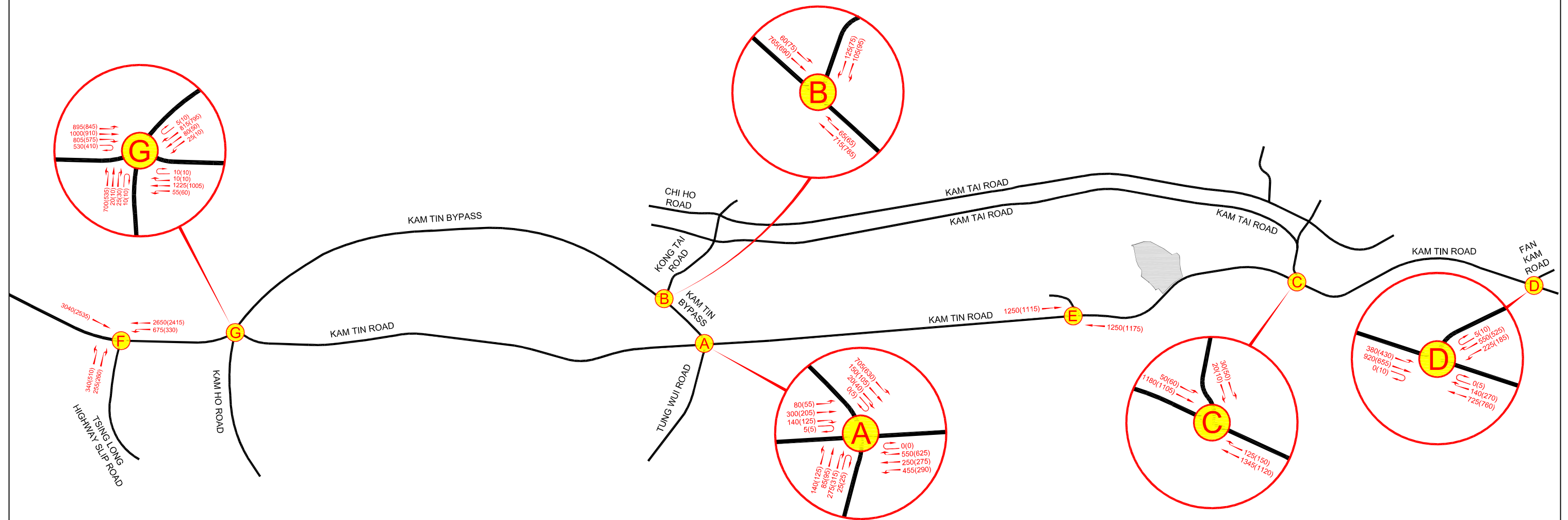
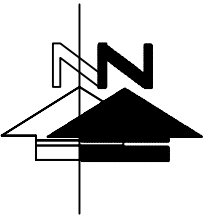
SCALE:

N. T. S. @A3

DATE:

15 JUL 2025

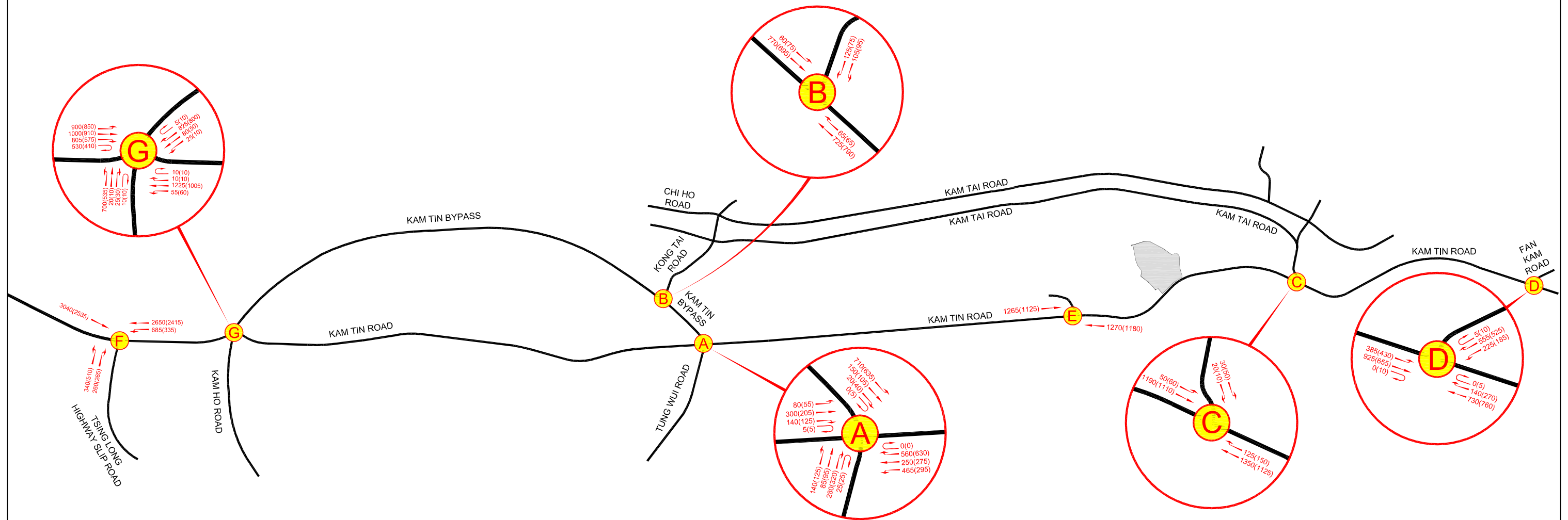
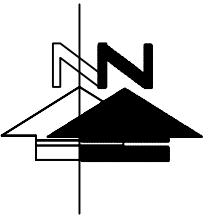
 CTA Consultants Limited
志達顧問有限公司



LEGEND :

-  DEVELOPMENT SITE
- 595(540)** AM (PM) PEAK HOUR TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.: 4.5		PROJECT TITLE: Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	
PROJECT NO.: 25009HK		DRAWING TITLE: 2034 REFERENCE TRAFFIC FLOWS (WITH REMAINING SITES OF LUR)	
SCALE: N. T. S. @A3	DATE: 14 JUL 2025		



LEGEND :

 DEVELOPMENT SITE

595(540) AM (PM) PEAK HOUR
TRAFFIC FLOW (IN PCU / HR)

FIGURE NO.:

4.6

PROJECT TITLE:

Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

PROJECT NO.:

25009HK

DRAWING TITLE:

**2034 DESIGN TRAFFIC FLOWS
(WITH REMAINING SITES OF LUR)**

SCALE:

N. T. S. @A3

DATE:

15 JUL 2025

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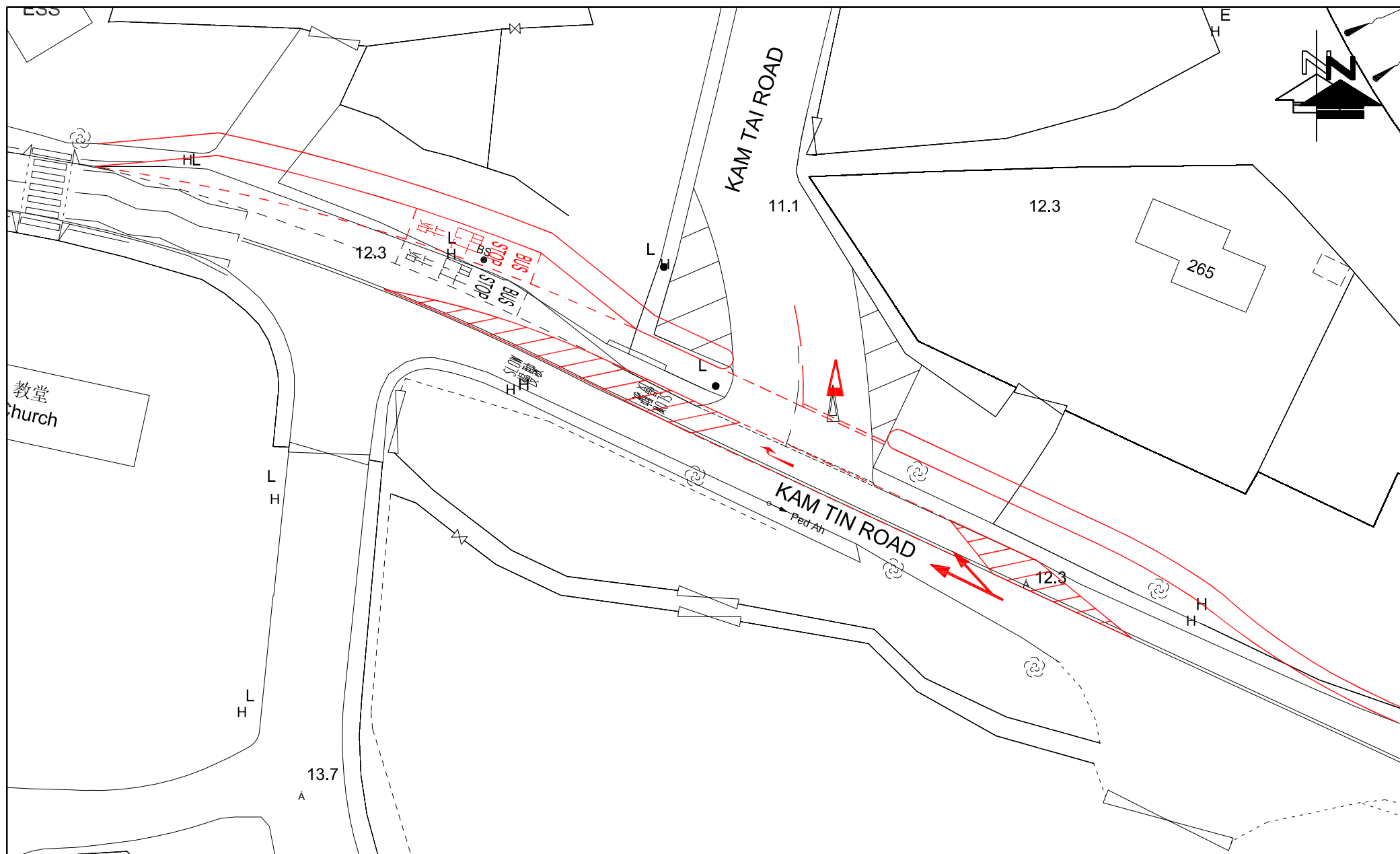


FIGURE NO.: 5.1		PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK		DRAWING TITLE: PROPOSED IMPROVEMENT LAYOUT OF JUNCTION KAM TIN ROAD / KAM TAI ROAD (C)	
SCALE: 1 : 500 @A4	DATE: 06 NOV 2025		

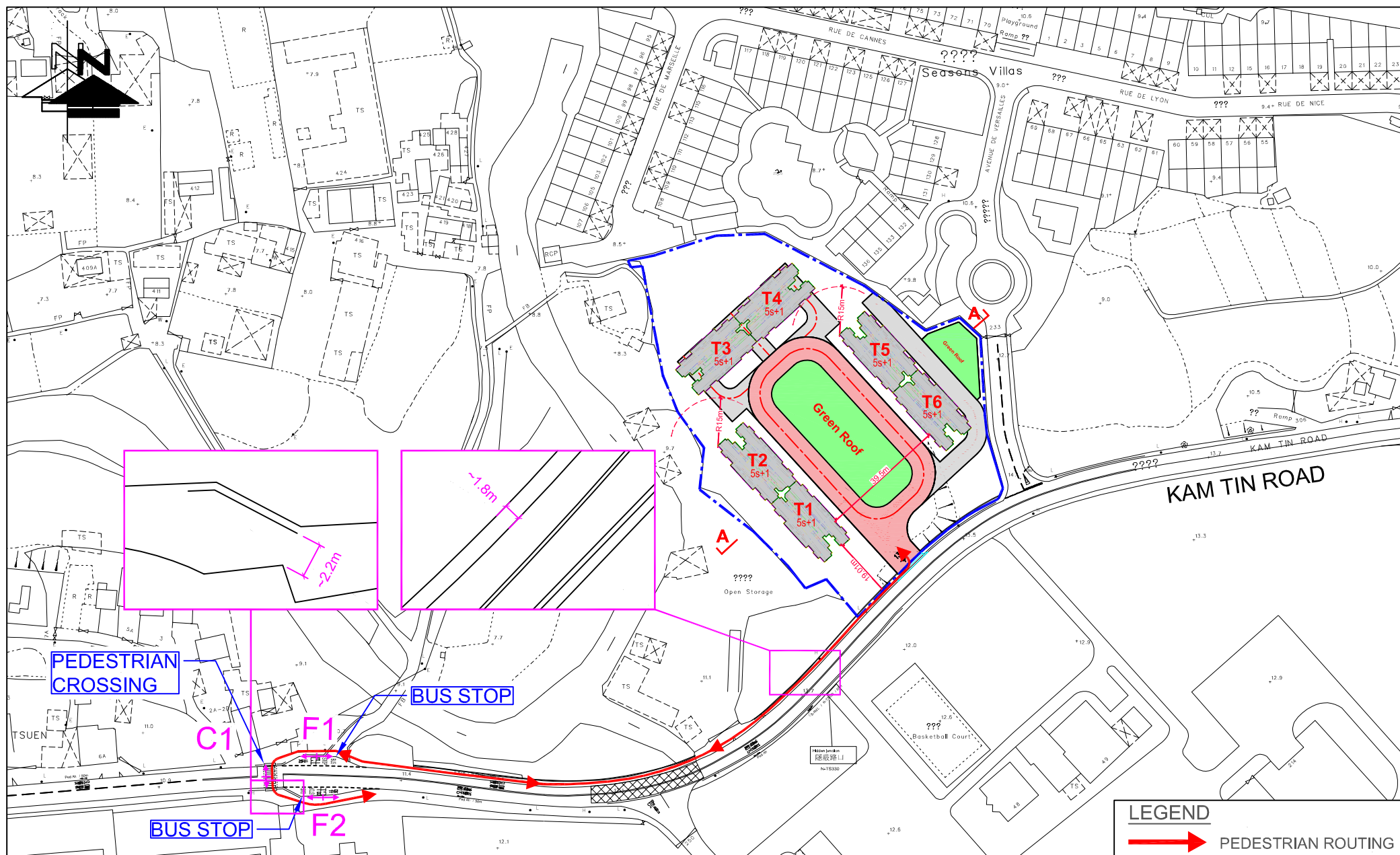


FIGURE NO.: 7.1	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: CRITICAL FOOTPATH AND CROSSING (WITHOUT KAM TIN ROAD WIDENING)	
SCALE: 1 : 1600 @A4	DATE: 14 JUL 2025	

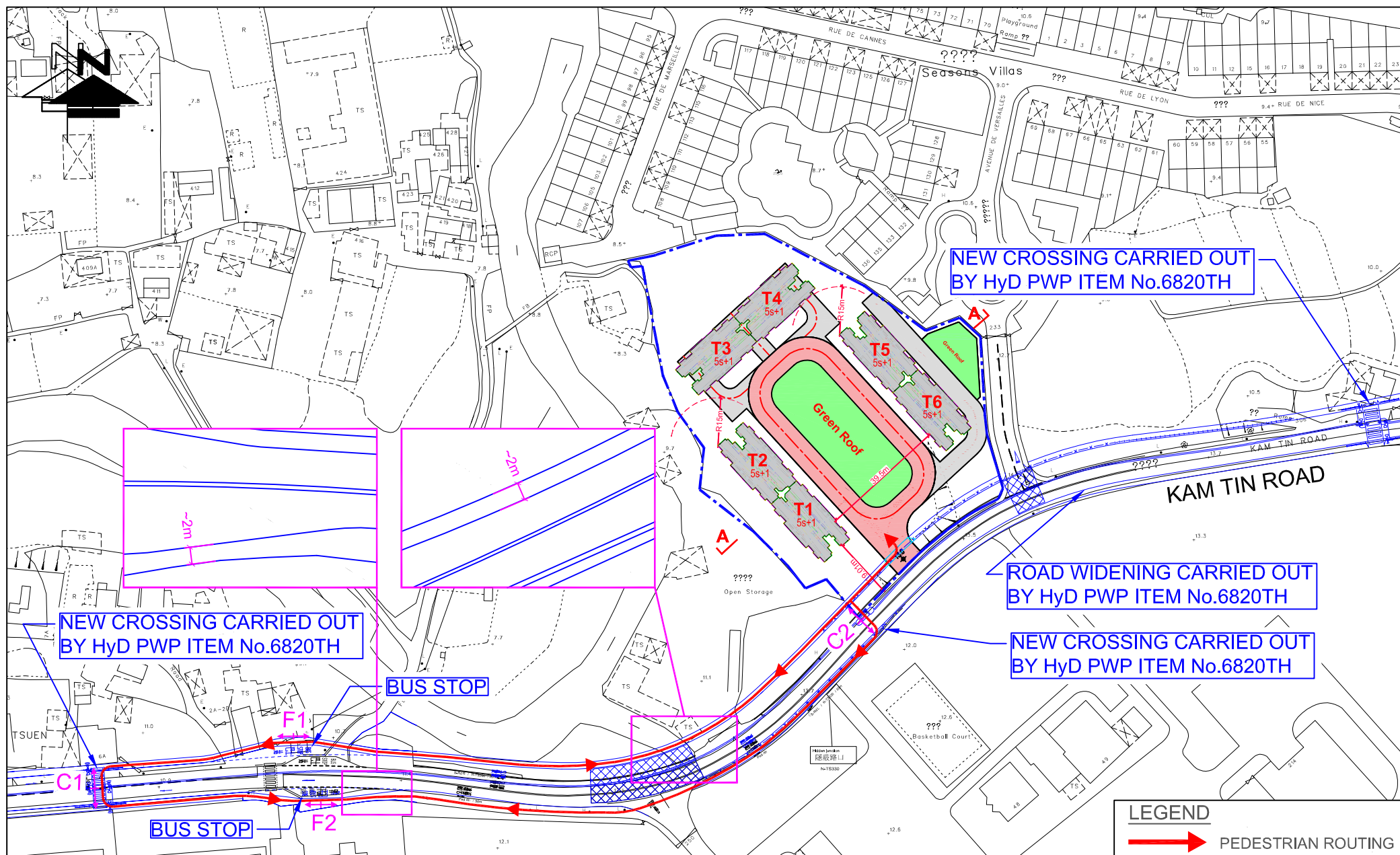


FIGURE NO.: 7.2	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: CRITICAL FOOTPATH AND CROSSING (WITH KAM TIN ROAD WIDENING)	
SCALE: 1 : 1600 @A4	DATE: 14 JUL 2025	

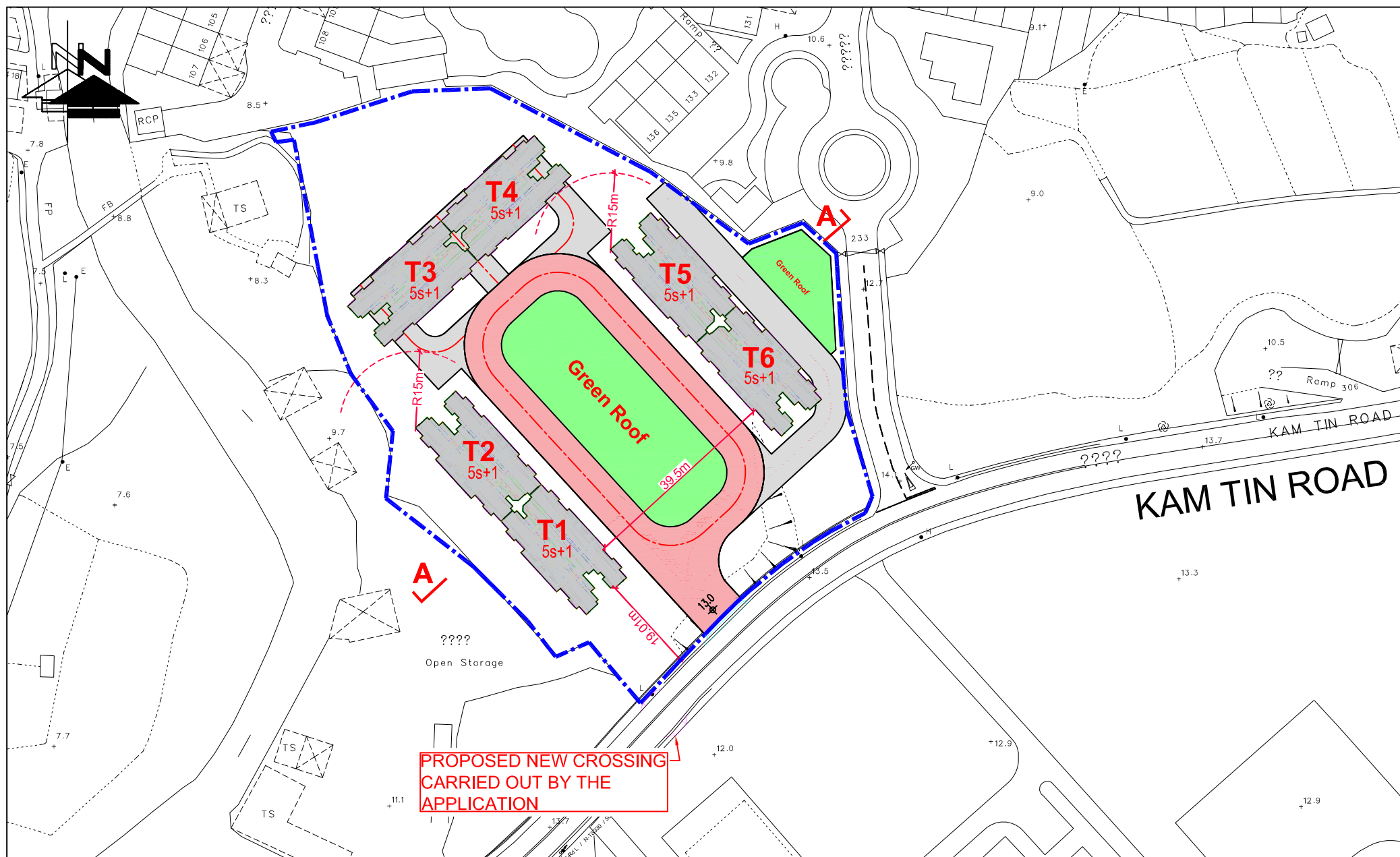
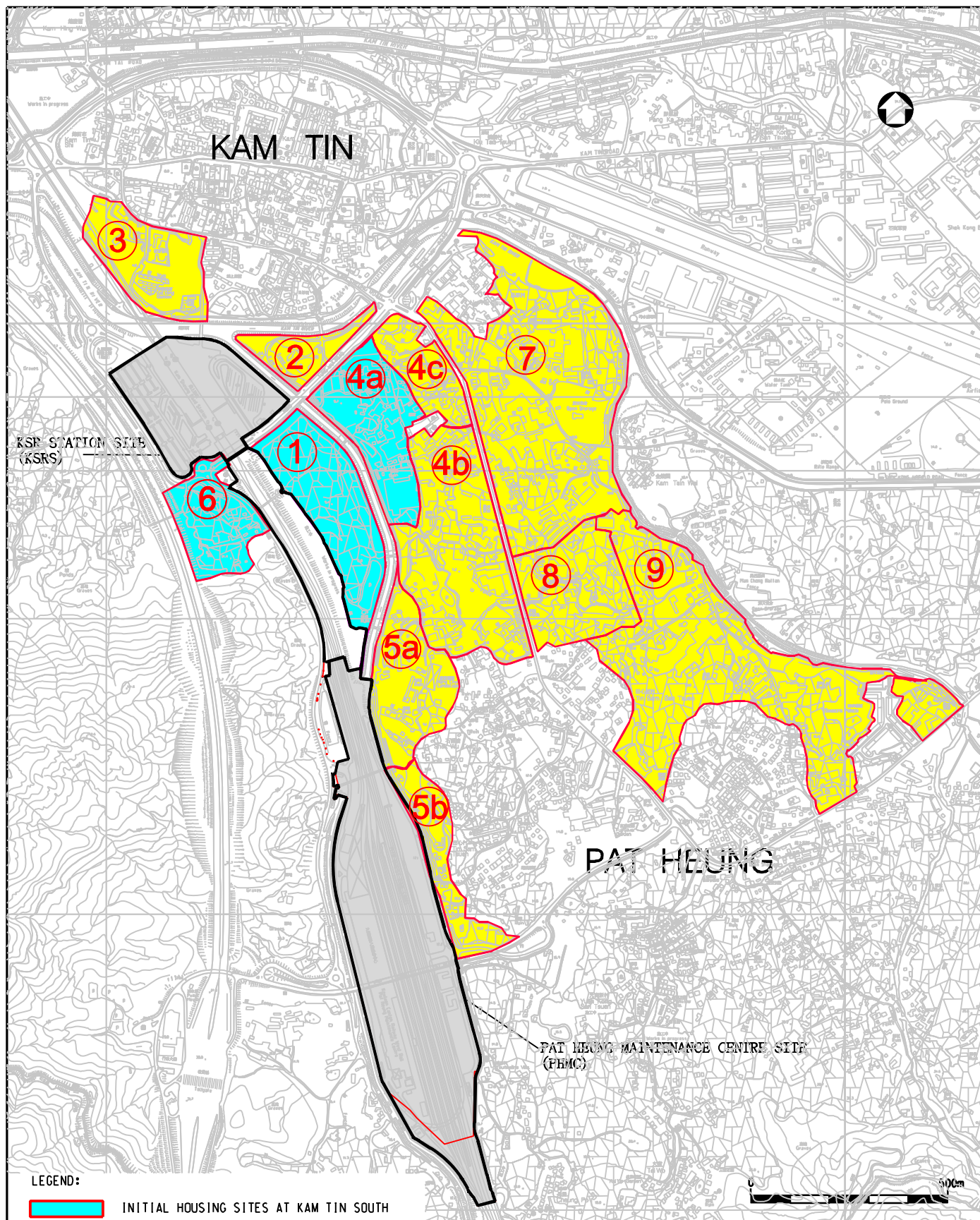


FIGURE NO.: 7.3	PROJECT TITLE: Rezoning from "Residential (Group C)2" and "Open Space" zones to "Residential (Group C)4" zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 25009HK	DRAWING TITLE: PROPOSED PEDESTRIAN CROSSING (PRIOR TO PWP'S WORKS)	
SCALE: 1 : 1000 @A4 DATE: 14 JUL 2025		



Appendix I

Kam Tin South Housing Development – Layout Plan



LEGEND:



INITIAL HOUSING SITES AT KAM TIN SOUTH



REMAINING HOUSING SITES AT KAM TIN SOUTH

A	12.08.2014	TITLE BLOCK UPDATED	SIGNED	SIGNED
編號 no.	日期 date	內容摘要 description	核對 checked	核准 approved

修訂 REVISION

繪圖 drawn	簽署 initial	日期 date	項目編號 item no.	辦事處 office
S M CHU	SIGNED	18.10.13		新界西拓展處 NEW TERRITORIES WEST DEVELOPMENT OFFICE
核對 checked	簽署 initial	日期 date	比例 scale	
H S KO	SIGNED	18.10.13	AS SHOWN	
核准 approved	簽署 initial	日期 date	圖則編號 drawing no.	土木工程拓展署 CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT
K L CHEUNG	SIGNED	18.10.13	NTNZ1855A	

圖則名稱 drawing title
KAM TIN SOUTH HOUSING DEVELOPMENT
-LAYOUT PLAN



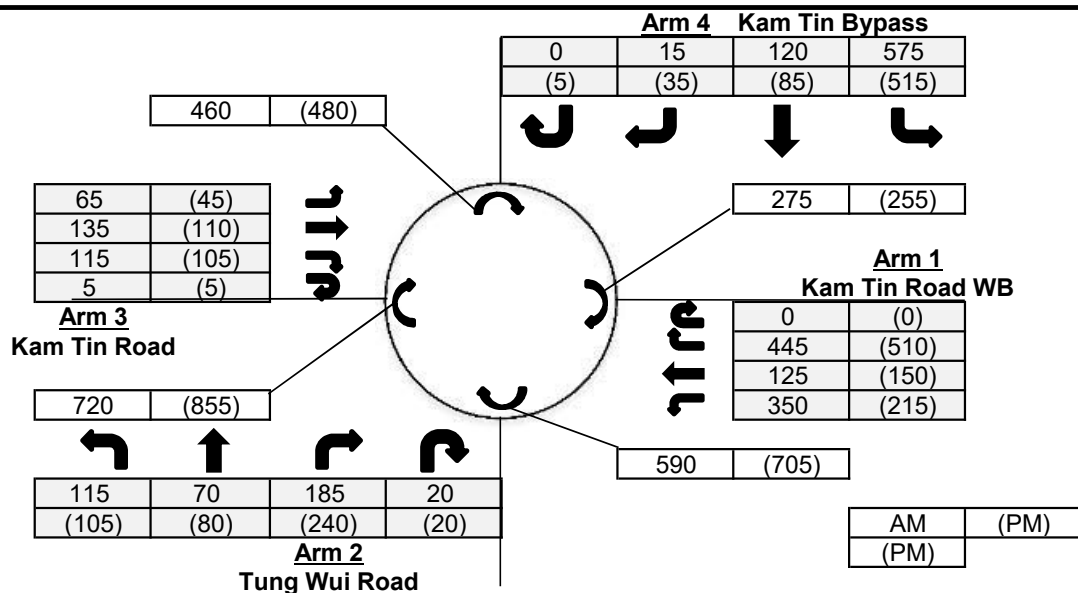
Appendix II

Junction Calculation Sheets

Roundabout Junction Calculation

Junction : (A) Kam Tin Bypass / Kam Tin Road / Tung Wui Road Job No.: 25009HK

Scenario : 2025 Observed Traffic Flows



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.2	3.6	7.3
E	=	Entry width (m)	11.5	10.1	11.8	13.5
L	=	Effective length of flare (m)	12.6	9.4	14	12.5
R	=	Entry radius	26	20	18.4	36
D	=	Inscribed circle diameter (m)	64	64	64	64
A	=	Entry angle (degree)	42	27	45	23
Q	=	Entry flow (pcu/hr)	AM 920	390	320	710
			PM 875	445	265	640
Qc	=	Circulating flow across entry	AM 275	590	720	460
			PM 255	705	855	480

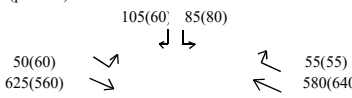
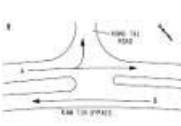
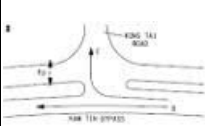
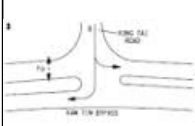
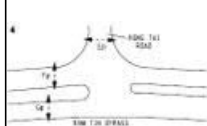
Output Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E - V) / L$	0.53	0.49	0.94	0.79
K	=	$1 - 0.00347 \cdot (A - 30) - 0.978 \cdot (1 / R - 0.05)$	0.97	1.01	0.94	1.05
X2	=	$V + ((E - V) / (1 + 2 \cdot S))$	9.33	8.66	6.45	9.70
M	=	$\exp((D - 60) / 10)$	1.49	1.49	1.49	1.49
F	=	$303 \cdot X2$	2828	2624	1955	2938
Td	=	$1 + (0.5 / (1 + M))$	1.20	1.20	1.20	1.20
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.72	0.69	0.58	0.74
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 2549	2240	1453	2717
			PM 2563	2160	1379	2701
DFC	=	Entry Flow/Capacity = Q / Qe	AM 0.36	0.17	0.22	0.26
			PM 0.34	0.21	0.19	0.24

DFC of Critical Approach = AM 0.36
PM 0.34

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Description: **2025 Observed Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Kam Tin Bypass	W		C	2	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	55	0.029		55	0.029		
	W		B	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	315	0.149		347	0.165		
	W		B	1,2	3.0	0	0	1	0%	0%	1775	3880	1775	1775	3880	3880	265	0.149		293	0.165		
Kam Tin Bypass	E		A	1	3.0	13	0	1	15%	20%	1915	3970	1880	1870	3935	3925	323	0.172	0.172	295	0.158	0.158	
	E		A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	352	0.171		325	0.158		
Kong To Road	S		D	3	3.5	10	12	1	45% / 55%	57% / 43%	1461	1461	1285	1280	1285	1280	190	0.148	0.148	140	0.109	0.109	
Pedestrian crossing			Ep	4					Min. Crossing Time = 12GM + 15FGM = 27s														
			Fp	2,3,4					Min. Crossing Time = 7GM + 7FGM = 14s														
			Gp	4					Min. Crossing Time = 7GM + 7FGM = 14s														
Notes:									Traffic Flow (pcu / hr) 								A.M. Check Phase E_y 0.319 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 59%			P.M. Check Phase E_y 0.267 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 90%			
Stage/Phase Diagram:																							
I/G=3s		I/G=6s + 5s				I/G=5s				I/G=4s (Min. Green Time for E_p =27s)													

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2025 Observed Traffic Flows		

Arm B Kam Tai Road

15	25
(10)	(40)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

40	(50)	105	(125)
815	(825)	995	(815)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	7	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.759
V-rBA	50	
V-IBA	50	
V-rBC	50	
V-rCB	50	
w-BA	4.7	
w-BC	4.7	
w-CB	3.5	

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	995	815	Q-BA	177	196	
q-CB	105	125	Q-BC	531	527	
q-AB	40	50	Q-CB	470	465	
q-AC	815	825	Q-CA	1398	1316	(If C-B blocked C-A)
q-BA	15	10	Q-BAC	304	394	(If Minor Road Share LT&RT)
q-BC	25	40				
f	0.625	0.800				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.22	0.27
	C-A	0.71	0.62
	B-AC	0.13	0.13

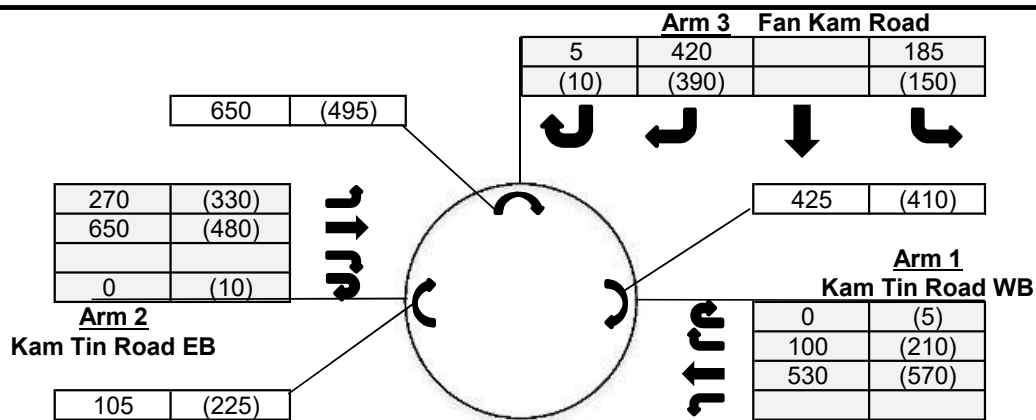
Critical DFC	0.71	0.62
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Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2025 Observed Traffic Flows



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	3	7	3
E	=	Entry width (m)	8	8	5.9
L	=	Effective length of flare (m)	7.8	12	10
R	=	Entry radius	100	33	13.4
D	=	Inscribed circle diameter (m)	20	20	20
A	=	Entry angle (degree)	30	10	15
Q	=	Entry flow (pcu/hr)			
		AM	630	920	610
		PM	785	820	550
Qc	=	Circulating flow across entry			
		AM	425	105	650
		PM	410	225	495

Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	1.03	0.13	0.46
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.04	1.09	1.03
X2	=	$V + ((E-V)/(1+2 \cdot S))$	4.64	7.79	4.50
M	=	$\exp((D-60)/10)$	0.02	0.02	0.02
F	=	$303 \cdot X2$	1406	2360	1365
Td	=	$1 + (0.5/(1+M))$	1.49	1.49	1.49
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.60	0.80	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$			
		AM	1194	2478	1005
		PM	1203	2373	1100
DFC	=	Entry Flow/Capacity = Q/Qe			
		AM	0.53	0.37	0.61
		PM	0.65	0.35	0.50

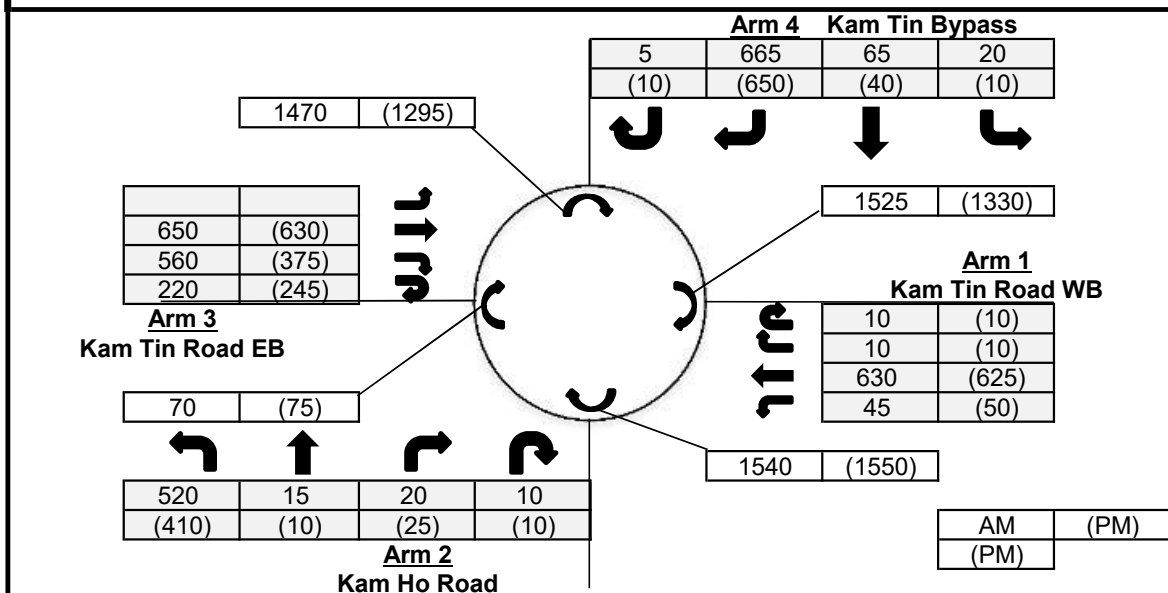
DFC of Critical Approach = AM 0.61
PM 0.65

Junction: (F) Kam Tin Road / Tsing Long Highway Slip Road																				
Description: 2025 Observed Traffic Flows (With TTA)																				
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak				
						Left	Right		A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Kam Tin Road	E	→	1	A	3.65	0	0	1	0%	0%	1980	1980	1012	0.511	0.511	881	0.445			
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	1083	0.511		944	0.445			
Kam Tin Road	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	865	0.405		895	0.419	0.445		
	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	865	0.405		895	0.419			
	W	↙	2	A	5.00	15	0	1	100%	100%	1925	1925	345	0.179		140	0.073			
Tsing Long Highway Slip Road	N	↗	3	B	5.60	25	0	1	100%	100%	2050	2050	155	0.076	0.108	315	0.154	0.183		
	N	→	3	B	3.60	0	30	0	100%	100%	525	525	57	0.108		96	0.183			
	N	↘	3	B	3.50	0	28	0	100%	100%	75	75	8	0.108		14	0.183			
(*revised saturation flow)																				
*Pedestrian Crossing			4p	A	Min. Crossing Time				=	7 Gm + 7 Fm = 14s										
			5p	B	Min. Crossing Time				=	7 Gm + 7 Fm = 14s										
Notes:						Traffic Flow (pcu / hr)						[AM (PM)]			Check Phase			Check Phase		
						2095(1825)→ ↙ ↘ 155(315) 65(110)						← 1730(1790) ↓ 345(140)			εy 0.619			εy 0.628		
															L (sec) 15			L (sec) 15		
															C (sec) 96			C (sec) 106		
															y pract. 0.759			y pract. 0.773		
															R.C. (%) 23%			R.C. (%) 23%		
Stage / Phase Diagrams																				
A				B																
I/G = 7				I/G = 10																

Roundabout Junction Calculation

Junction : (G) Kam Tin Road / Kam Tin Bypass Job No.: 25009HK

Scenario : 2025 Observed Traffic Flows



Input Parameters

Input Parameters			Arm 1	Arm 2	Arm 3	Arm 4	
V	=	Approach half width (m)	3.5	5	7.3	6.5	
E	=	Entry width (m)	12	10	11	11	
L	=	Effective length of flare (m)	13	9.5	13	15	
R	=	Entry radius	100	20	42.5	42.5	
D	=	Inscribed circle diameter (m)	88	88	88	88	
A	=	Entry angle (degree)	23	38	29	39	
Q	=	Entry flow (pcu/hr)	AM	695	565	1430	755
			PM	695	455	1250	710
Qc	=	Circulating flow across entry	AM	1525	1540	70	1470
			PM	1330	1550	75	1295

Output Parameters

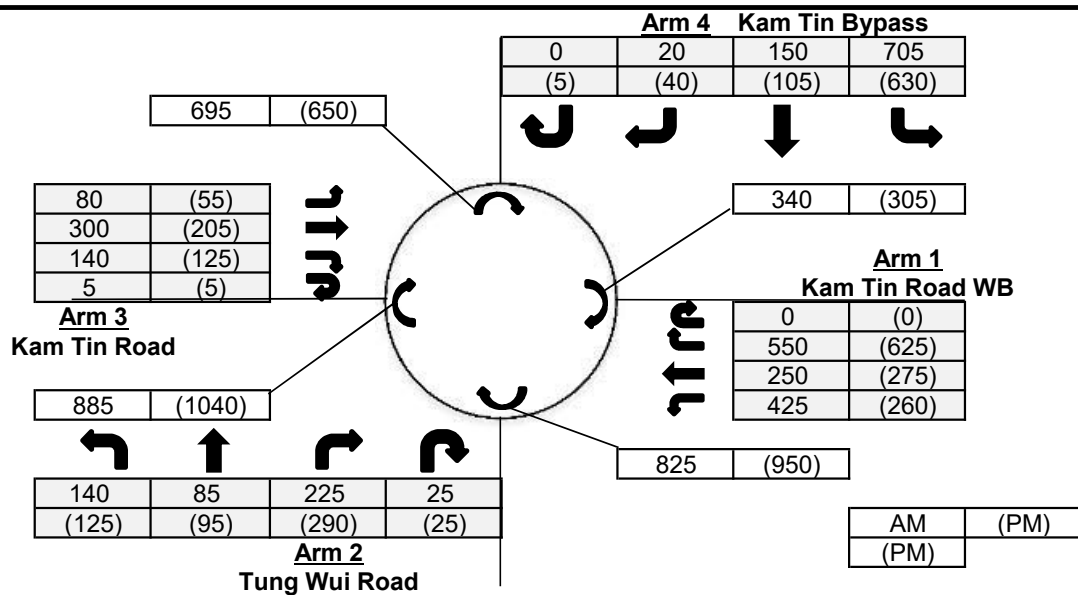
Output Parameters			Arm 1	Arm 2	Arm 3	Arm 4	
S	=	Sharpness of flare = 1.6*(E-V)/L	1.05	0.84	0.46	0.48	
K	=	1-0.00347*(A-30)-0.978*(1/R-0.05)	1.06	0.97	1.03	0.99	
X2	=	V+((E-V)/(1+2*S))	6.25	6.86	9.24	8.80	
M	=	Exp((D-60)/10)	16.44	16.44	16.44	16.44	
F	=	303*X2	1893	2079	2799	2665	
Td	=	1+(0.5/(1+M))	1.03	1.03	1.03	1.03	
Fc	=	0.21*Td*(1+0.2*X2)	0.49	0.51	0.62	0.60	
Qe	=	Capacity = K*(F-Fc*Qc)	AM	1225	1254	2836	1779
			PM	1326	1249	2833	1883
DFC	=	Entry Flow/Capacity = Q/Qe	AM	0.57	0.45	0.50	0.42
			PM	0.52	0.36	0.44	0.38

DFC of Critical Approach = AM 0.57
PM 0.52

Roundabout Junction Calculation

Junction : (A) Kam Tin Bypass / Kam Tin Road / Tung Wui Road Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.2	3.6	7.3
E	=	Entry width (m)	11.5	10.1	11.8	13.5
L	=	Effective length of flare (m)	12.6	9.4	14	12.5
R	=	Entry radius	26	20	18.4	36
D	=	Inscribed circle diameter (m)	64	64	64	64
A	=	Entry angle (degree)	42	27	45	23
Q	=	Entry flow (pcu/hr)	AM 1225	475	525	875
			PM 1160	535	390	780
Qc	=	Circulating flow across entry	AM 340	825	885	695
			PM 305	950	1040	650

Output Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.53	0.49	0.94	0.79
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	0.97	1.01	0.94	1.05
X2	=	$V + ((E-V)/(1+2 \cdot S))$	9.33	8.66	6.45	9.70
M	=	$\exp((D-60)/10)$	1.49	1.49	1.49	1.49
F	=	$303 \cdot X2$	2828	2624	1955	2938
Td	=	$1 + (0.5/(1+M))$	1.20	1.20	1.20	1.20
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.72	0.69	0.58	0.74
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 2504	2077	1363	2534
			PM 2528	1990	1278	2569
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.49	0.23	0.39	0.35
			PM 0.46	0.27	0.31	0.30

DFC of Critical Approach = AM 0.49
PM 0.46

TRAFFIC SIGNALS CALCULATION										Job No: 25009HK										CTA Consultants Ltd.										
Junction: (B) Kam Tin Bypass / Kong Tai Road																														
Description: 2034 Reference Traffic Flows																														
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak										
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y								
Kam Tin Bypass	W	↗	C	2	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	65	0.035		65	0.035									
	W	↖	B	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	388	0.184		426	0.202									
	W	↖	B	1,2	3.0	0	0	1	0%	0%	1775	3880	1775	1775	3880	3880	327	0.184		359	0.202									
Kam Tin Bypass	E	↘	A	1	3.0	13	0	1	15%	21%	1915	3970	1880	1870	3935	3925	394	0.210	0.210	365	0.195	0.195								
	E	↘	A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	431	0.210		400	0.195									
Kong To Road	S	⬇	D	3	3.5	10	12	1	46% / 54%	56% / 44%	1461	1461	1285	1285	1285	1285	230	0.179	0.179	170	0.132	0.132								
Pedestrian crossing	↔	Ep	4						Min. Crossing Time = 12GM + 15FGM = 27s																					
	↔	Fp	2,3,4						Min. Crossing Time = 7GM + 7FGM = 14s																					
	↔	Gp	4						Min. Crossing Time = 7GM + 7FGM = 14s																					
Notes:										Traffic Flow (pcu / hr) 125(75) 105(95) 60(75) 765(690) ↙ ↘ ↗ ↖ 65(65) 715(785) ↗ ↖										A.M. Check Phase Ey 0.389 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 31%					P.M. Check Phase Ey 0.327 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 55%					
Stage/Phase Diagram:																														
I/G=3s		I/G=6s + 5s				I/G=5s				I/G=4s (Min. Green Time for Ep=27s)																				

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Reference Traffic Flows		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

50	(60)	125	(150)
1130	(1080)	1315	(1090)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated	
W	7	D	0.968
W-CR	0	E	1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F	0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y	0.759

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1315	1090	Q-BA	31	71	
q-CB	125	150	Q-BC	440	453	
q-AB	50	60	Q-CB	387	397	
q-AC	1130	1080	Q-CA	1219	1121	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	70	240	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.32	0.38
	C-A	1.08	0.97
	B-AC	0.72	0.25

Critical DFC	1.08	0.97
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CTA Consultants Ltd.

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Reference Traffic Flows (With Planned Improvement)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB

50	(60)
1130	(1080)

Arm C Kam Tin Road WB

125	(150)
1315	(1090)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated	
W	11	D	0.968
W-CR	0	E	1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F	1.029
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y	0.621

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1315	1090	Q-BA	136	169	
q-CB	125	150	Q-BC	500	510	
q-AB	50	60	Q-CB	493	502	
q-AC	1130	1080	Q-CA	N/A	N/A	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	241	382	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.25	0.30
	C-A	N/A	N/A
	B-AC	0.21	0.16

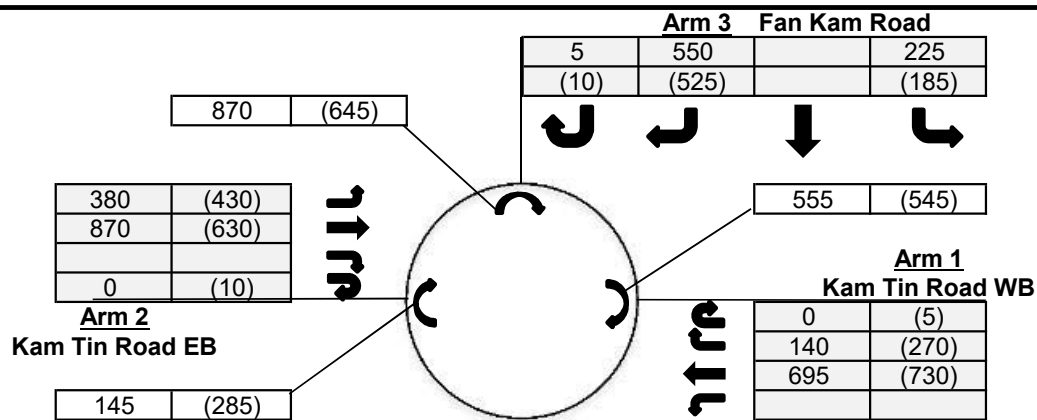
Critical DFC	0.25	0.30
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CTA Consultants Ltd.

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	3	7	3
E	=	Entry width (m)	8	8	5.9
L	=	Effective length of flare (m)	7.8	12	10
R	=	Entry radius	100	33	13.4
D	=	Inscribed circle diameter (m)	20	20	20
A	=	Entry angle (degree)	30	10	15
Q	=	Entry flow (pcu/hr)			
		AM	835	1250	780
		PM	1005	1070	720
Qc	=	Circulating flow across entry			
		AM	555	145	870
		PM	545	285	645

Output Parameters

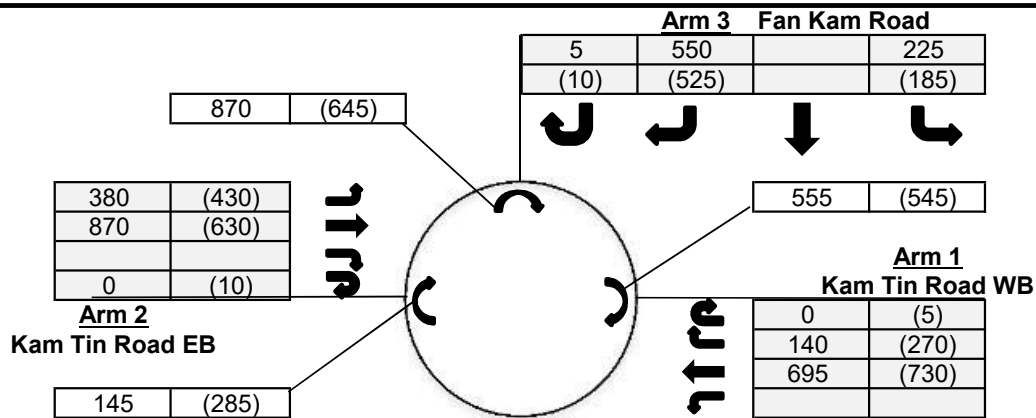
			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6*(E-V)/L$	1.03	0.13	0.46
K	=	$1-0.00347*(A-30)-0.978*(1/R-0.05)$	1.04	1.09	1.03
X2	=	$V+((E-V)/(1+2*S))$	4.64	7.79	4.50
M	=	$\text{Exp}((D-60)/10)$	0.02	0.02	0.02
F	=	$303*X2$	1406	2360	1365
Td	=	$1+(0.5/(1+M))$	1.49	1.49	1.49
Fc	=	$0.21*Td*(1+0.2*X2)$	0.60	0.80	0.60
Qe	=	Capacity = $K*(F-Fc*Qc)$			
		AM	1112	2443	871
		PM	1119	2321	1008
DFC	=	Entry Flow/Capacity = Q/Qe			
		AM	0.75	0.51	0.90
		PM	0.90	0.46	0.71

DFC of Critical Approach = AM 0.90
PM 0.90

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows (With Planned Improvement)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	5	7	3.2
E	=	Entry width (m)	6.5	7.5	6.5
L	=	Effective length of flare (m)	12	3.6	15
R	=	Entry radius	100	15.8	25
D	=	Inscribed circle diameter (m)	28	28	28
A	=	Entry angle (degree)	33	10	20
Q	=	Entry flow (pcu/hr)	AM 835	1250	780
			PM 1005	1070	720
Qc	=	Circulating flow across entry	AM 555	145	870
			PM 545	285	645

Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6*(E-V)/L$	0.20	0.22	0.35
K	=	$1-0.00347*(A-30)-0.978*(1/R-0.05)$	1.03	1.06	1.04
X2	=	$V+((E-V)/(1+2*S))$	6.07	7.35	5.14
M	=	$\text{Exp}((D-60)/10)$	0.04	0.04	0.04
F	=	$303*X2$	1840	2226	1556
Td	=	$1+(0.5/(1+M))$	1.48	1.48	1.48
Fc	=	$0.21*Td*(1+0.2*X2)$	0.69	0.77	0.63
Qe	=	Capacity = $K*(F-Fc*Qc)$	AM 1499	2234	1053
			PM 1507	2120	1201
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.56	0.56	0.74
			PM 0.67	0.50	0.60

DFC of Critical Approach = AM 0.74
PM 0.67

CTA Consultants Ltd.Description: **2034 Reference Traffic Flows**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1220	0.624	0.624	1145	0.586	0.586
Kam Tin Road	E	→	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1200	0.614		1090	0.558	
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 7FGM = 12s																						
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase			P.M. Check Phase		
									1200(1090) → ← 1220(1145)								εy 0.624 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 20%			εy 0.586 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 28%		
Stage/Phase Diagram: 1		2																				
→ ←		├─┤ ↑ └─┘ ↓ ┬─┴─┐																				
I/G = 5s		I/G = 4s + 12s																				

Job No: 25009HK

Junction: (E) Kam Tin Road
Description: 2034 Reference Traffic Flows (With Planned Improvement)

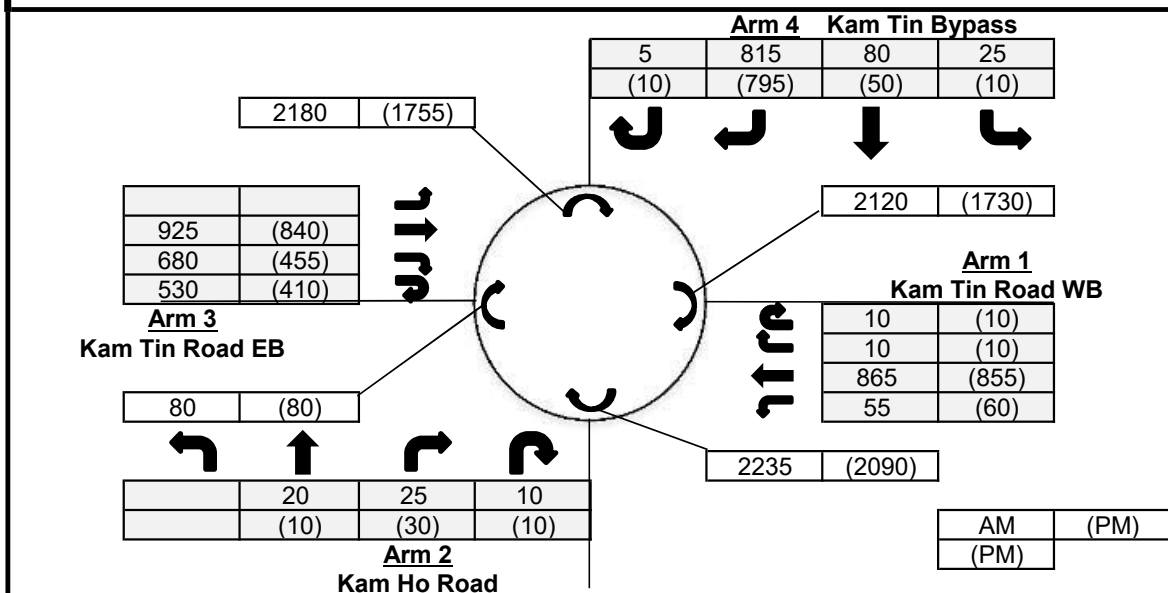
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1220	0.594	0.594	1145	0.557	0.557
Kam Tin Road	E	→	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1200	0.584		1090	0.530	
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 6FGM = 11s																						
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase			P.M. Check Phase		
									1200(1090) → ← 1220(1145)								εy 0.594 L (sec) 19 C (sec) 120 y pract. 0.758 R.C. (%) 28%			εy 0.557 L (sec) 19 C (sec) 120 y pract. 0.758 R.C. (%) 36%		
Stage/Phase Diagram: 1			2																			
→ ←			└─┐ ↑ └─┘																			
I/G = 5s			I/G = 4s + 11s																			

Junction: (F) Kam Tin Road / Tsing Long Highway Slip Road																		
Description: 2034 Reference Traffic Flows (With Planned Improvement)																		
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	E	→	1	A	3.65	0	0	1	0%	0%	1980	1980	901	0.455		745	0.376	
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	965	0.455		798	0.376	
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	965	0.455		798	0.376	
Kam Tin Road	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1160	0.543	0.543	1135	0.532	0.532
	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1160	0.543		1135	0.532	
	W	↙	2	A	5.00	15	0	1	100%	100%	1925	1925	575	0.299		290	0.151	
Tsing Long Highway Slip Road	N	↖	3	B	3.50	20	0	1	100%	100%	1830	1830	163	0.089	0.089	245	0.134	0.134
	N	↖	3	B	3.50	25	0	0	100%	100%	1985	1985	177	0.089		265	0.134	
	N	→	3	B	3.60	0	30	0	100%	100%	2015	2015	100	0.050		103	0.051	
	N	→	3	B	3.50	0	28	0	100%	100%	2000	2000	100	0.050		102	0.051	
*Pedestrian Crossing			4p	A	Min. Crossing Time = 7 Gm + 7 Fm = 14s													
			5p	B	Min. Crossing Time = 7 Gm + 7 Fm = 14s													
Notes:						Traffic Flow (pcu / hr) [AM (PM)]						Check Phase			Check Phase			
						2830(2340)→ ← 340(510) 200(205) → ← 2320(2270) ↓ 575(290)						εy	0.632	εy	0.665			
												L (sec)	10	L (sec)	10			
												C (sec)	120	C (sec)	120			
												y pract.	0.825	y pract.	0.825			
												R.C. (%)	30%	R.C. (%)	24%			
Stage / Phase Diagrams																		
I/G = 5				I/G = 7														

Roundabout Junction Calculation

Junction : (G) Kam Tin Road / Kam Tin Bypass Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows (With Planned Improvement)



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.3	7.3	6.5
E	=	Entry width (m)	13	10	11	11
L	=	Effective length of flare (m)	12	9.5	13	15
R	=	Entry radius	70	20	42.5	42.5
D	=	Inscribed circle diameter (m)	88	88	88	88
A	=	Entry angle (degree)	30	38	29	39
Q	=	Entry flow (pcu/hr)	AM 940	55	2135	925
			PM 935	50	1705	865
Qc	=	Circulating flow across entry	AM 2120	2235	80	2180
			PM 1730	2090	80	1755

Output Parameters

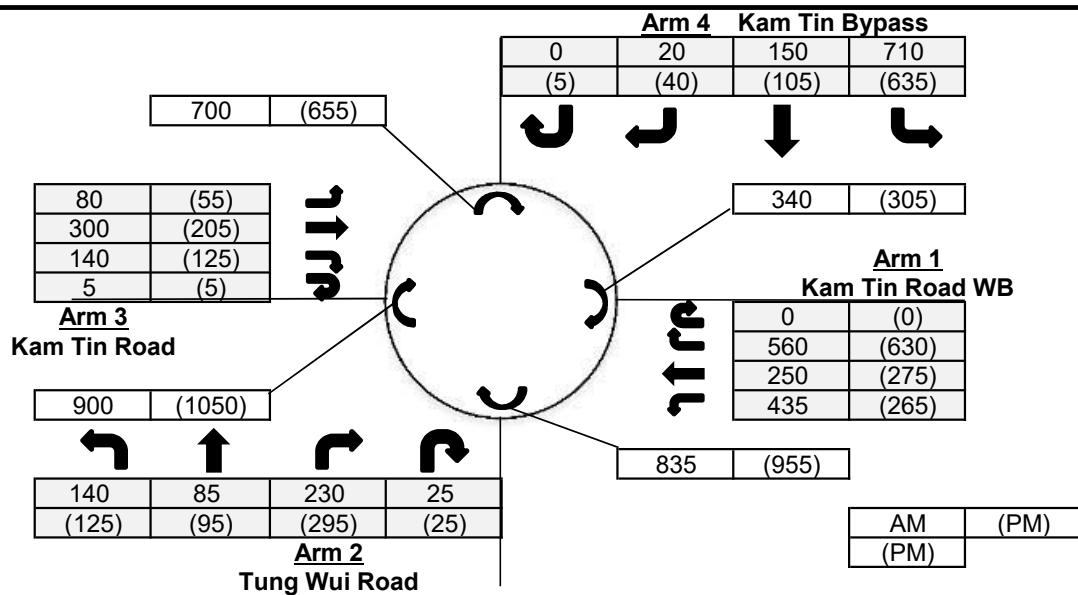
			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E - V) / L$	0.76	0.45	0.46	0.48
K	=	$1 - 0.00347 \cdot (A - 30) - 0.978 \cdot (1 / R - 0.05)$	1.03	0.97	1.03	0.99
X2	=	$V + ((E - V) / (1 + 2 \cdot S))$	9.56	8.71	9.24	8.80
M	=	$\text{Exp}((D - 60) / 10)$	16.44	16.44	16.44	16.44
F	=	$303 \cdot X2$	2897	2640	2799	2665
Td	=	$1 + (0.5 / (1 + M))$	1.03	1.03	1.03	1.03
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.63	0.59	0.62	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1618	1280	2830	1359
			PM 1872	1363	2830	1610
DFC	=	Entry Flow/Capacity = Q / Qe	AM 0.58	0.04	0.75	0.68
			PM 0.50	0.04	0.60	0.54

DFC of Critical Approach = AM 0.75
PM 0.60

Roundabout Junction Calculation

Junction : (A) Kam Tin Bypass / Kam Tin Road / Tung Wui Road Job No.: 25009HK

Scenario : 2034 Design Traffic Flows



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.2	3.6	7.3
E	=	Entry width (m)	11.5	10.1	11.8	13.5
L	=	Effective length of flare (m)	12.6	9.4	14	12.5
R	=	Entry radius	26	20	18.4	36
D	=	Inscribed circle diameter (m)	64	64	64	64
A	=	Entry angle (degree)	42	27	45	23
Q	=	Entry flow (pcu/hr)	AM 1245	480	525	880
			PM 1170	540	390	785
Qc	=	Circulating flow across entry	AM 340	835	900	700
			PM 305	955	1050	655

Output Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.53	0.49	0.94	0.79
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	0.97	1.01	0.94	1.05
X2	=	$V + ((E-V)/(1+2 \cdot S))$	9.33	8.66	6.45	9.70
M	=	$\exp((D-60)/10)$	1.49	1.49	1.49	1.49
F	=	$303 \cdot X2$	2828	2624	1955	2938
Td	=	$1 + (0.5/(1+M))$	1.20	1.20	1.20	1.20
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.72	0.69	0.58	0.74
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 2504	2070	1355	2531
			PM 2528	1986	1273	2565
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.50	0.23	0.39	0.35
			PM 0.46	0.27	0.31	0.31

DFC of Critical Approach = AM 0.50
PM 0.46

CTA Consultants Ltd.

Description: **2034 Design Traffic Flows**

Pedestrian crossing		Ep	4	Min. Crossing Time = 12GM + 15FGM = 27s
		Fp	2,3,4	Min. Crossing Time = 7GM + 7FGM = 14s
		Gp	4	Min. Crossing Time = 7GM + 7FGM = 14s

P.M. Check Phase

ϵ_y	0.329
L (sec)	47
C (sec)	108
y pract.	0.508
R.C. (%)	55%

A schematic diagram of a DNA template. It shows a double-stranded DNA molecule with several labeled regions. On the left strand, there are two segments labeled 'Tg' and 'Gp'. The right strand has a segment labeled 'HMC tail' and another labeled 'GGAG'. A central region between the strands is labeled '30'.

I/G=4s (Min. Green Time for Ep=27s)

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Design Traffic Flows		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB Arm C Kam Tin Road WB

50	(60)	125	(150)
1140	(1085)	1320	(1095)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	7	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.759
V-rBA	50	
V-IBA	50	
V-rBC	50	
V-rCB	50	
w-BA	4.7	
w-BC	4.7	
w-CB	3.5	

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1320	1095	Q-BA	27	69	
q-CB	125	150	Q-BC	437	452	
q-AB	50	60	Q-CB	385	396	
q-AC	1140	1085	Q-CA	1215	1119	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	62	235	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.32	0.38
	C-A	1.09	0.98
	B-AC	0.80	0.26
	Critical DFC	1.09	0.98

CTA Consultants Ltd.

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Design Traffic Flows (With Planned Improvement)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

50	(60)	125	(150)
1140	(1085)	1320	(1095)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated	
W	11	D	0.968
W-CR	0	E	1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F	1.029
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y	0.621

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1320	1095	Q-BA	133	167	
q-CB	125	150	Q-BC	497	509	
q-AB	50	60	Q-CB	490	501	
q-AC	1140	1085	Q-CA	N/A	N/A	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	237	380	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.25	0.30
	C-A	N/A	N/A
	B-AC	0.21	0.16

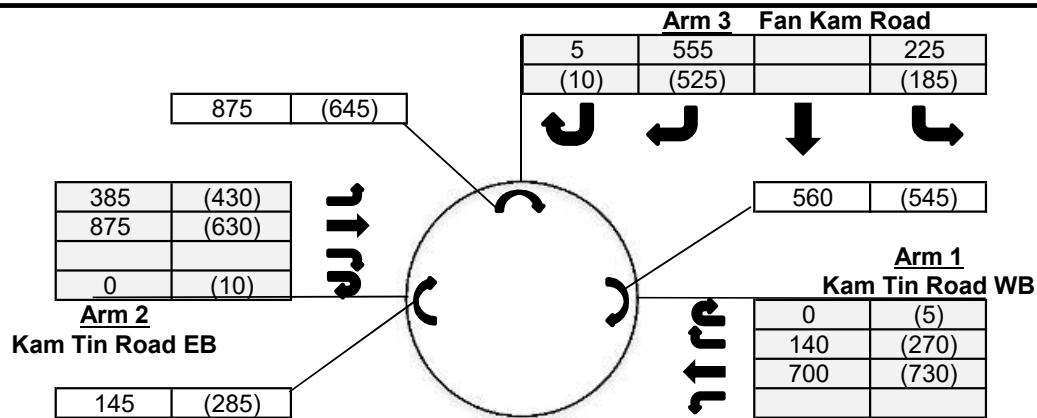
Critical DFC	0.25	0.30
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CTA Consultants Ltd.

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Design Traffic Flows



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	3	7	3
E	=	Entry width (m)	8	8	5.9
L	=	Effective length of flare (m)	7.8	12	10
R	=	Entry radius	100	33	13.4
D	=	Inscribed circle diameter (m)	20	20	20
A	=	Entry angle (degree)	30	10	15
Q	=	Entry flow (pcu/hr)	AM 840	1260	785
			PM 1005	1070	720
Qc	=	Circulating flow across entry	AM 560	145	875
			PM 545	285	645

Output Parameters

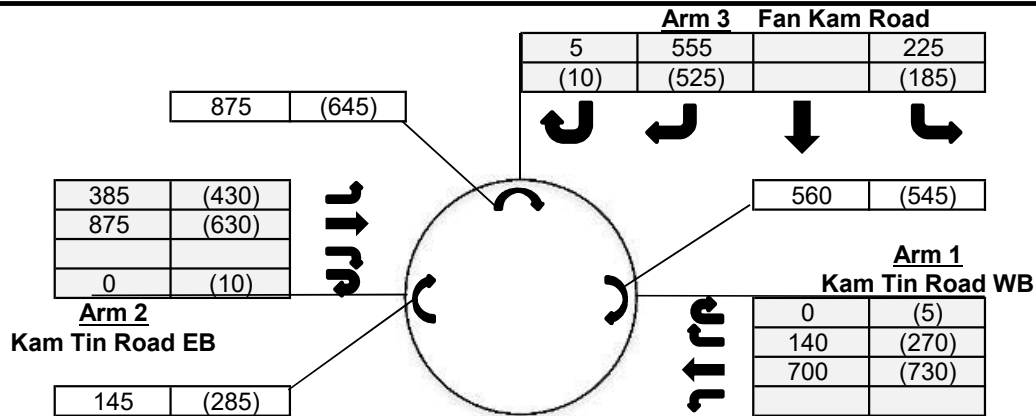
			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	1.03	0.13	0.46
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.04	1.09	1.03
X2	=	$V + ((E-V)/(1+2 \cdot S))$	4.64	7.79	4.50
M	=	$\exp((D-60)/10)$	0.02	0.02	0.02
F	=	$303 \cdot X2$	1406	2360	1365
Td	=	$1 + (0.5/(1+M))$	1.49	1.49	1.49
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.60	0.80	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1109	2443	868
			PM 1119	2321	1008
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.76	0.52	0.90
			PM 0.90	0.46	0.71

DFC of Critical Approach = AM 0.90
PM 0.90

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Design Traffic Flows (With Planned Improvement)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	5	7	3.2
E	=	Entry width (m)	6.5	7.5	6.5
L	=	Effective length of flare (m)	12	3.6	15
R	=	Entry radius	100	15.8	25
D	=	Inscribed circle diameter (m)	28	28	28
A	=	Entry angle (degree)	33	10	20
Q	=	Entry flow (pcu/hr)	AM 840	1260	785
			PM 1005	1070	720
Qc	=	Circulating flow across entry	AM 560	145	875
			PM 545	285	645

Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.20	0.22	0.35
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.03	1.06	1.04
X2	=	$V + ((E-V)/(1+2 \cdot S))$	6.07	7.35	5.14
M	=	$\exp((D-60)/10)$	0.04	0.04	0.04
F	=	$303 \cdot X2$	1840	2226	1556
Td	=	$1 + (0.5/(1+M))$	1.48	1.48	1.48
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.69	0.77	0.63
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1496	2234	1050
			PM 1507	2120	1201
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.56	0.56	0.75
			PM 0.67	0.50	0.60

DFC of Critical Approach = AM 0.75
PM 0.67

Job No: 25009HK

Junction: **(E) Kam Tin Road**
Description: **2034 Design Traffic Flows**

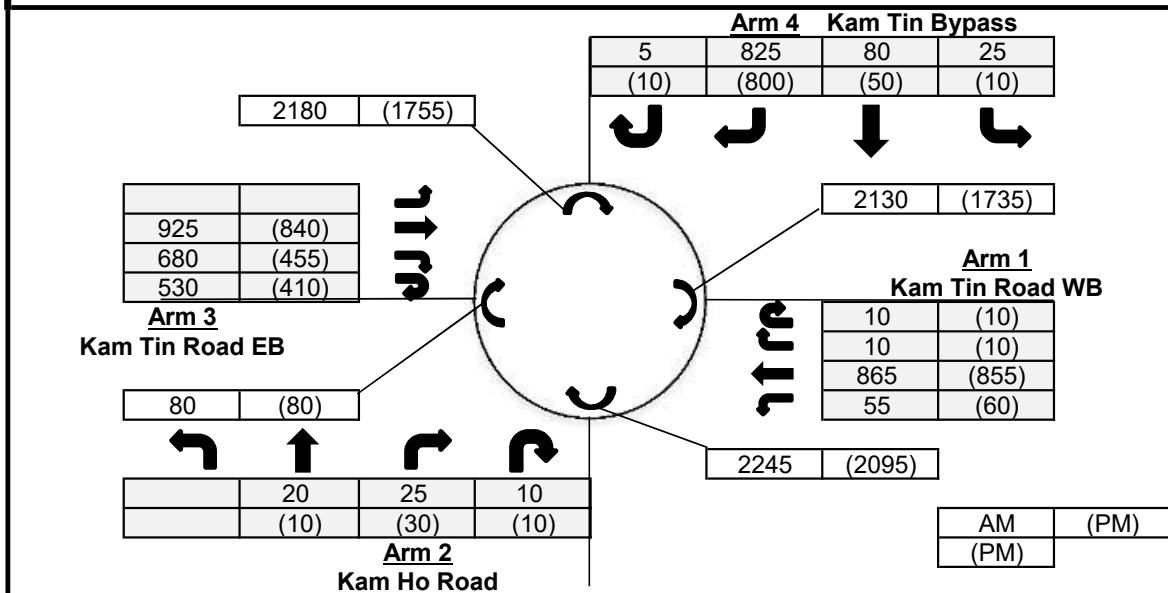
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1240	0.634	0.634	1150	0.588	0.588
Kam Tin Road	E	→	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1215	0.621		1100	0.563	
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 7FGM = 12s																						
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase εy 0.634 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 18%			P.M. Check Phase εy 0.588 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 28%		
Stage/Phase Diagram: 1 → ←		2 — ↑ ↓ —																				
I/G = 5s		I/G = 4s + 12s																				

Junction: (F) Kam Tin Road / Tsing Long Highway Slip Road																		
Description: 2034 Design Traffic Flows (With Planned Improvement)																		
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	E	→	1	A	3.65	0	0	1	0%	0%	1980	1980	901	0.455		745	0.376	
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	965	0.455		798	0.376	
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	965	0.455		798	0.376	
Kam Tin Road	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1160	0.543	0.543	1135	0.532	0.532
	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1160	0.543		1135	0.532	
	W	↙	2	A	5.00	15	0	1	100%	100%	1925	1925	585	0.304		295	0.153	
Tsing Long Highway Slip Road	N	↖	3	B	3.50	20	0	1	100%	100%	1830	1830	163	0.089	0.089	245	0.134	0.134
	N	↖	3	B	3.50	25	0	0	100%	100%	1985	1985	177	0.089		265	0.134	
	N	→	3	B	3.60	0	30	0	100%	100%	2015	2015	103	0.051		105	0.052	
	N	→	3	B	3.50	0	28	0	100%	100%	2000	2000	102	0.051		105	0.052	
*Pedestrian Crossing			4p	A	Min. Crossing Time = 7 Gm + 7 Fm = 14s													
			5p	B	Min. Crossing Time = 7 Gm + 7 Fm = 14s													
Notes:						Traffic Flow (pcu / hr) [AM (PM)]						Check Phase			Check Phase			
						2830(2340)→ ← 340(510) 205(210) → ← 2320(2270) ↓ 585(295)						εy 0.632			εy 0.665			
												L (sec) 10			L (sec) 10			
												C (sec) 120			C (sec) 120			
												y pract. 0.825			y pract. 0.825			
												R.C. (%) 30%			R.C. (%) 24%			
Stage / Phase Diagrams																		
A				B														
I/G = 5				I/G = 7														

Roundabout Junction Calculation

Junction : (G) Kam Tin Road / Kam Tin Bypass Job No.: 25009HK

Scenario : 2034 Design Traffic Flows (With Planned Improvement)



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.3	7.3	6.5
E	=	Entry width (m)	13	10	11	11
L	=	Effective length of flare (m)	12	9.5	13	15
R	=	Entry radius	70	20	42.5	42.5
D	=	Inscribed circle diameter (m)	88	88	88	88
A	=	Entry angle (degree)	30	38	29	39
Q	=	Entry flow (pcu/hr)	AM 940	55	2135	935
			PM 935	50	1705	870
Qc	=	Circulating flow across entry	AM 2130	2245	80	2180
			PM 1735	2095	80	1755

Output Parameters

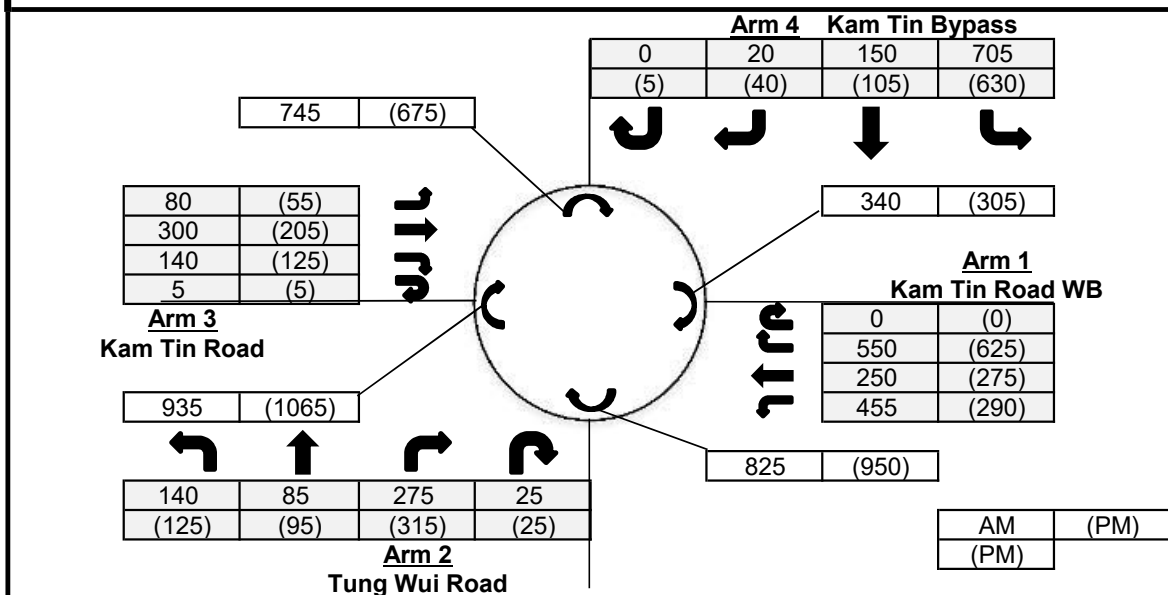
			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E - V) / L$	0.76	0.45	0.46	0.48
K	=	$1 - 0.00347 \cdot (A - 30) - 0.978 \cdot (1 / R - 0.05)$	1.03	0.97	1.03	0.99
X2	=	$V + ((E - V) / (1 + 2 \cdot S))$	9.56	8.71	9.24	8.80
M	=	$\text{Exp}((D - 60) / 10)$	16.44	16.44	16.44	16.44
F	=	$303 \cdot X2$	2897	2640	2799	2665
Td	=	$1 + (0.5 / (1 + M))$	1.03	1.03	1.03	1.03
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.63	0.59	0.62	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1612	1274	2830	1359
			PM 1869	1360	2830	1610
DFC	=	Entry Flow/Capacity = Q / Qe	AM 0.58	0.04	0.75	0.69
			PM 0.50	0.04	0.60	0.54

DFC of Critical Approach = AM 0.75
PM 0.60

Roundabout Junction Calculation

Junction : (A) Kam Tin Bypass / Kam Tin Road / Tung Wui Road Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows (With Remaining Site under LUR)



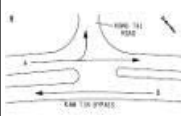
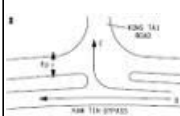
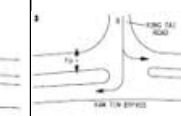
Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.2	3.6	7.3
E	=	Entry width (m)	11.5	10.1	11.8	13.5
L	=	Effective length of flare (m)	12.6	9.4	14	12.5
R	=	Entry radius	26	20	18.4	36
D	=	Inscribed circle diameter (m)	64	64	64	64
A	=	Entry angle (degree)	42	27	45	23
Q	=	Entry flow (pcu/hr)	AM 1255	525	525	875
			PM 1190	560	390	780
Qc	=	Circulating flow across entry	AM 340	825	935	745
			PM 305	950	1065	675

Output Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.53	0.49	0.94	0.79
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	0.97	1.01	0.94	1.05
X2	=	$V + ((E-V)/(1+2 \cdot S))$	9.33	8.66	6.45	9.70
M	=	$\exp((D-60)/10)$	1.49	1.49	1.49	1.49
F	=	$303 \cdot X2$	2828	2624	1955	2938
Td	=	$1 + (0.5/(1+M))$	1.20	1.20	1.20	1.20
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.72	0.69	0.58	0.74
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 2504	2077	1336	2496
			PM 2528	1990	1265	2550
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.50	0.25	0.39	0.35
			PM 0.47	0.28	0.31	0.31

DFC of Critical Approach = AM 0.50
PM 0.47

TRAFFIC SIGNALS CALCULATION										Job No: 25009HK										CTA Consultants Ltd.																			
Junction: (B) Kam Tin Bypass / Kong Tai Road																																							
Description: 2034 Reference Traffic Flows (With Remaining Site under LUR)																																							
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak																			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y																	
Kam Tin Bypass	W	↗	C	2	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	65	0.035		65	0.035																		
	W	↖	B	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	388	0.184		426	0.202																		
	W	↖	B	1,2	3.0	0	0	1	0%	0%	1775	3880	1775	1775	3880	3880	327	0.184		359	0.202																		
Kam Tin Bypass	E	↘	A	1	3.0	13	0	1	15%	21%	1915	3970	1880	1870	3935	3925	394	0.210	0.210	365	0.195	0.195																	
	E	↘	A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	431	0.210		400	0.195																		
Kong To Road	S	⬇	D	3	3.5	10	12	1	46% / 54%	56% / 44%	1461	1461	1285	1285	1285	1285	230	0.179	0.179	170	0.132	0.132																	
Pedestrian crossing	↔	Ep	4	Min. Crossing Time = 12GM + 15FGM = 27s																																			
	↔	Fp	2,3,4	Min. Crossing Time = 7GM + 7FGM = 14s																																			
	↔	Gp	4	Min. Crossing Time = 7GM + 7FGM = 14s																																			
Notes:										Traffic Flow (pcu / hr)										A.M. Check Phase					P.M. Check Phase														
										125(75) 105(95) 60(75) 765(690) 65(65) 715(785)										Ey 0.389 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 31%					Ey 0.327 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 55%														
Stage/Phase Diagram:																																							
																																							
I/G=3s										I/G=6s + 5s										I/G=5s										I/G=4s (Min. Green Time for Ep=27s)									

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Reference Traffic Flows (With Remaining Site under LUR)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	7	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.759
V-rBA	50	
V-IBA	50	
V-rBC	50	
V-rCB	50	
w-BA	4.7	
w-BC	4.7	
w-CB	3.5	

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1345	1120	Q-BA	12	60	
q-CB	125	150	Q-BC	426	446	
q-AB	50	60	Q-CB	375	391	
q-AC	1180	1105	Q-CA	1199	1110	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	30	215	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.33	0.38
	C-A	1.12	1.01
	B-AC	1.68	0.28
	Critical DFC	1.68	1.01

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Reference Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	11	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F 1.029
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.621

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1345	1120	Q-BA	121	159	
q-CB	125	150	Q-BC	488	505	
q-AB	50	60	Q-CB	481	496	
q-AC	1180	1105	Q-CA	N/A	N/A	(If C-B blocked C-A)
q-BA	20	10	Q-BAC	220	371	(If Minor Road Share LT&RT)
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.26	0.30
	C-A	N/A	N/A
	B-AC	0.23	0.16

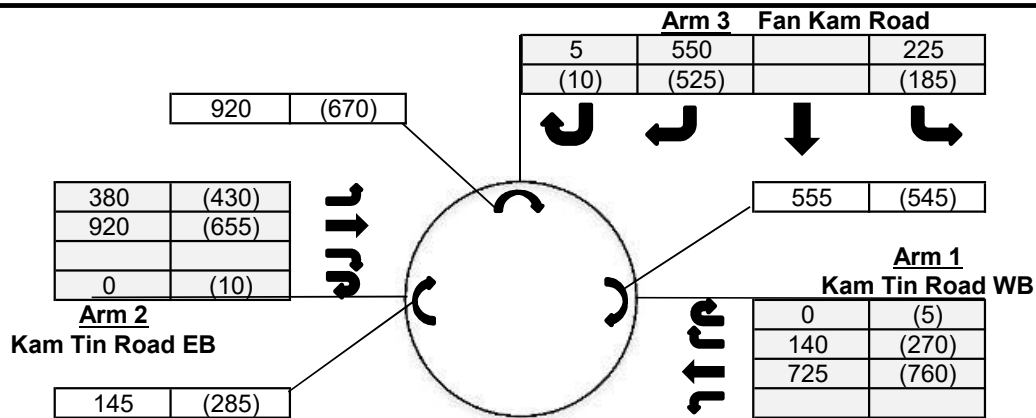
Critical DFC	0.26	0.30
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CTA Consultants Ltd.

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Reference Traffic Flows (With Remaining Site under LUR)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	3	7	3
E	=	Entry width (m)	8	8	5.9
L	=	Effective length of flare (m)	7.8	12	10
R	=	Entry radius	100	33	13.4
D	=	Inscribed circle diameter (m)	20	20	20
A	=	Entry angle (degree)	30	10	15
Q	=	Entry flow (pcu/hr)			
		AM	865	1300	780
		PM	1035	1095	720
Qc	=	Circulating flow across entry			
		AM	555	145	920
		PM	545	285	670

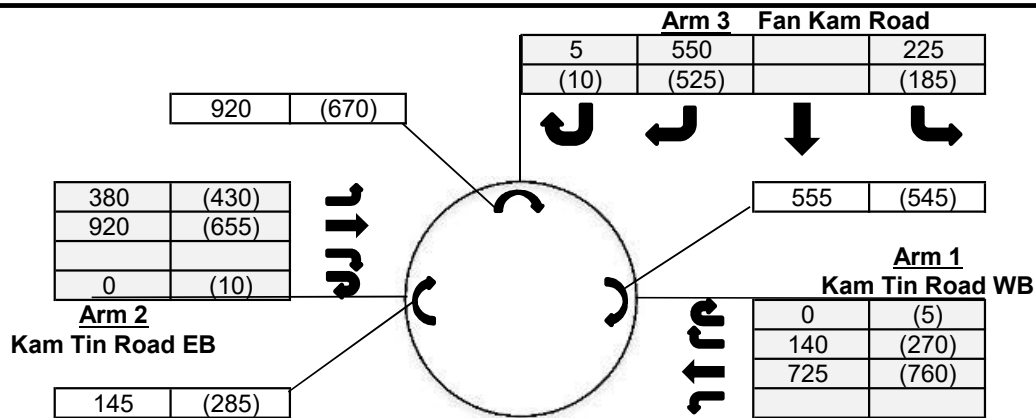
Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6*(E-V)/L$	1.03	0.13	0.46
K	=	$1-0.00347*(A-30)-0.978*(1/R-0.05)$	1.04	1.09	1.03
X2	=	$V+((E-V)/(1+2*S))$	4.64	7.79	4.50
M	=	$\text{Exp}((D-60)/10)$	0.02	0.02	0.02
F	=	$303*X2$	1406	2360	1365
Td	=	$1+(0.5/(1+M))$	1.49	1.49	1.49
Fc	=	$0.21*Td*(1+0.2*X2)$	0.60	0.80	0.60
Qe	=	Capacity = $K*(F-Fc*Qc)$			
		AM	1112	2443	840
		PM	1119	2321	993
DFC	=	Entry Flow/Capacity = Q/Qe			
		AM	0.78	0.53	0.93
		PM	0.93	0.47	0.73

DFC of Critical Approach = AM 0.93
PM 0.93

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK
 Scenario : 2034 Reference Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	5	7	3.2
E	=	Entry width (m)	6.5	7.5	6.5
L	=	Effective length of flare (m)	12	3.6	15
R	=	Entry radius	100	15.8	25
D	=	Inscribed circle diameter (m)	28	28	28
A	=	Entry angle (degree)	33	10	20
Q	=	Entry flow (pcu/hr)	AM 865	1300	780
			PM 1035	1095	720
Qc	=	Circulating flow across entry	AM 555	145	920
			PM 545	285	670

Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.20	0.22	0.35
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R - 0.05)$	1.03	1.06	1.04
X2	=	$V + ((E-V)/(1+2 \cdot S))$	6.07	7.35	5.14
M	=	$\exp((D-60)/10)$	0.04	0.04	0.04
F	=	$303 \cdot X2$	1840	2226	1556
Td	=	$1 + (0.5/(1+M))$	1.48	1.48	1.48
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.69	0.77	0.63
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1499	2234	1020
			PM 1507	2120	1185
DFC	=	Entry Flow/Capacity = Q/Qe	AM 0.58	0.58	0.76
			PM 0.69	0.52	0.61

DFC of Critical Approach = AM 0.76
 PM 0.69

CTA Consultants Ltd.Description: **2034 Reference Traffic Flows (With Remaining Site under LUR)**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1250	0.639	0.639	1175	0.601	0.601
Kam Tin Road	E	→	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1250	0.639		1115	0.570	
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 7FGM = 12s																						
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase			P.M. Check Phase		
									1250(1115) → ← 1250(1175)								εy 0.639 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 17%			εy 0.601 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 25%		
Stage/Phase Diagram:		1 → ←				2 — ↑ ↓ —																
I/G = 5s		I/G = 4s + 12s																				

Job No: 25009HK

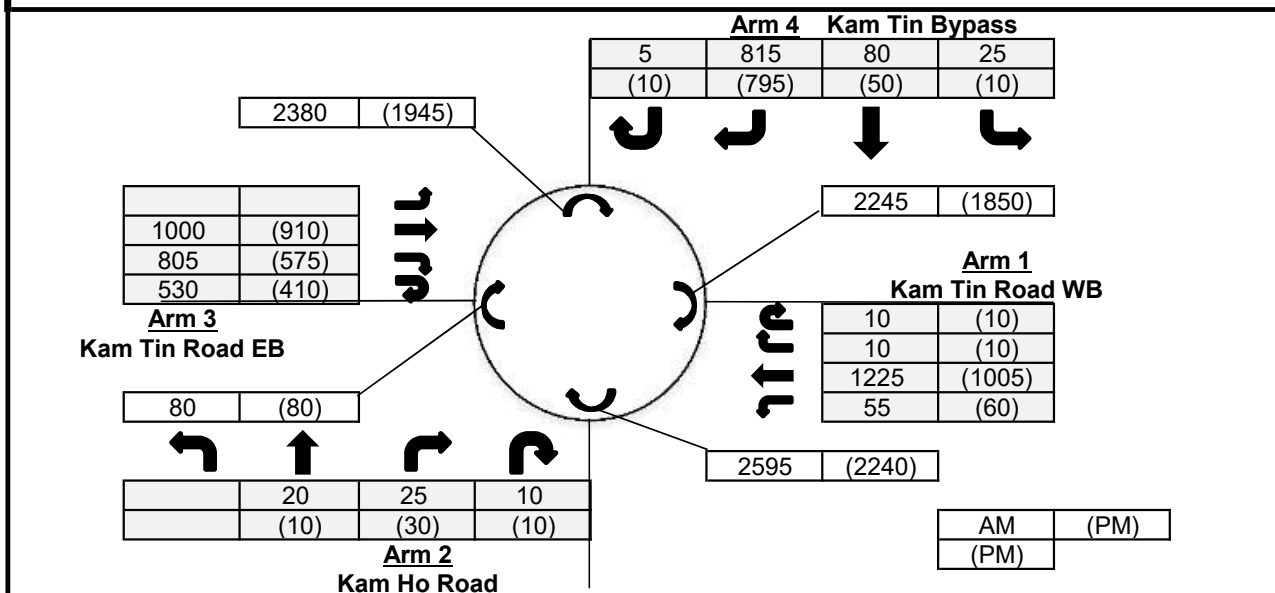
Junction: (E) Kam Tin Road
Description: 2034 Reference Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1250	0.608	0.608	1175	0.572	0.572
Kam Tin Road	E	→	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1250	0.608		1115	0.543	
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 6FGM = 11s																						
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase			P.M. Check Phase		
									1250(1115) → ← 1250(1175)								εy 0.608 L (sec) 19 C (sec) 120 y pract. 0.758 R.C. (%) 25%			εy 0.572 L (sec) 19 C (sec) 120 y pract. 0.758 R.C. (%) 32%		
Stage/Phase Diagram:			1 2																			
→ ←			→ ←																			
I/G = 5s			I/G = 4s + 11s																			

Junction: (F) Kam Tin Road / Tsing Long Highway Slip Road																			
Description: 2034 Reference Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)																			
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Kam Tin Road	E	→	1	A	3.65	0	0	1	0%	0%	1980	1980	968	0.489		807	0.408		
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	1036	0.489		864	0.408		
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	1036	0.489		864	0.408		
Kam Tin Road	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1325	0.621	0.621	1208	0.566		
	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1325	0.621		1208	0.566		
	W	↙	2	A	5.00	15	0	1	100%	100%	1925	1925	675	0.351		330	0.171		
Tsing Long Highway Slip Road	N	↖	3	B	3.50	20	0	1	100%	100%	1830	1830	163	0.089	0.089	245	0.134		
	N	↖	3	B	3.50	25	0	0	100%	100%	1985	1985	177	0.089		265	0.134		
	N	→	3	B	3.60	0	30	0	100%	100%	2015	2015	128	0.064		130	0.065		
	N	→	3	B	3.50	0	28	0	100%	100%	2000	2000	127	0.064		130	0.065		
*Pedestrian Crossing			4p	A	Min. Crossing Time = 7 Gm + 7 Fm = 14s														
			5p	B	Min. Crossing Time = 7 Gm + 7 Fm = 14s														
Notes:						Traffic Flow (pcu / hr) [AM (PM)]						Check Phase			Check Phase				
						3040(2535)→ ↖ ↗ 340(510) 255(260) ← 2650(2415) ↓ 675(330)						εy 0.710			εy 0.699				
												L (sec) 10			L (sec) 10				
												C (sec) 120			C (sec) 120				
												y pract. 0.825			y pract. 0.825				
												R.C. (%) 16%			R.C. (%) 18%				
Stage / Phase Diagrams																			
A				B															
I/G = 5				I/G = 7															

Roundabout Junction Calculation

Junction : (G) Kam Tin Road / Kam Tin Bypass Job No.: 25009HK
 Scenario : 2034 Reference Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)



Input Parameters			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.3	7.3	6.5
E	=	Entry width (m)	13	10	11	11
L	=	Effective length of flare (m)	12	9.5	13	15
R	=	Entry radius	70	20	42.5	42.5
D	=	Inscribed circle diameter (m)	88	88	88	88
A	=	Entry angle (degree)	30	38	29	39
Q	=	Entry flow (pcu/hr)	AM 1300	55	2335	925
			PM 1085	50	1895	865
Qc	=	Circulating flow across entry	AM 2245	2595	80	2380
			PM 1850	2240	80	1945

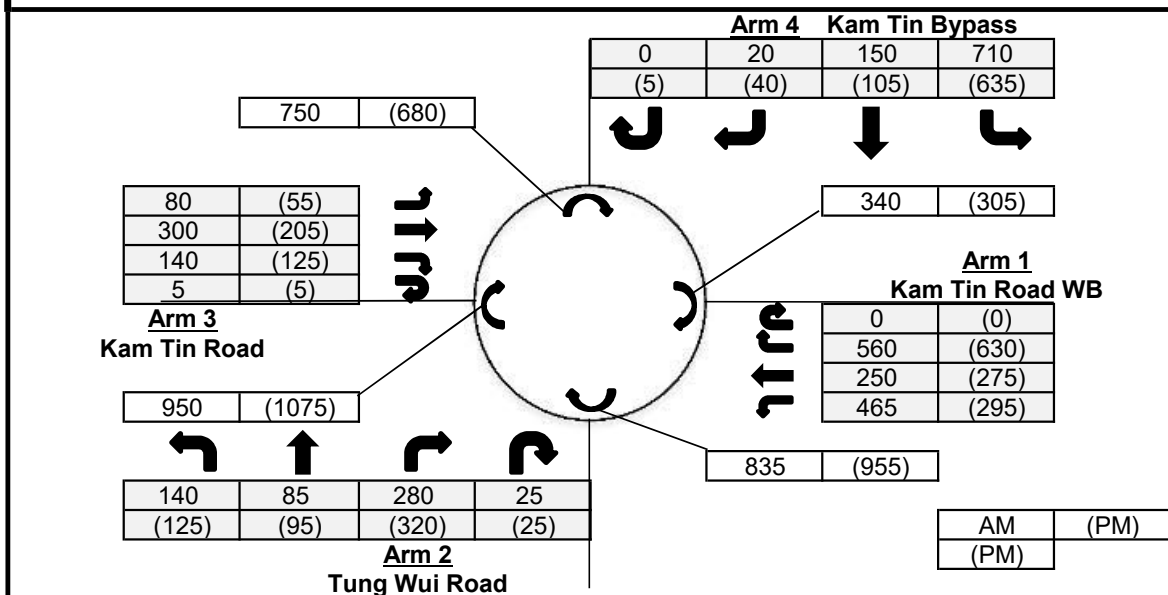
Output Parameters			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E - V) / L$	0.76	0.45	0.46	0.48
K	=	$1 - 0.00347 \cdot (A - 30) - 0.978 \cdot (1 / R - 0.05)$	1.03	0.97	1.03	0.99
X2	=	$V + ((E - V) / (1 + 2 \cdot S))$	9.56	8.71	9.24	8.80
M	=	$\text{Exp}((D - 60) / 10)$	16.44	16.44	16.44	16.44
F	=	$303 \cdot X2$	2897	2640	2799	2665
Td	=	$1 + (0.5 / (1 + M))$	1.03	1.03	1.03	1.03
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.63	0.59	0.62	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM 1537	1072	2830	1240
			PM 1794	1277	2830	1498
DFC	=	Entry Flow/Capacity = Q / Qe	AM 0.85	0.05	0.83	0.75
			PM 0.60	0.04	0.67	0.58

DFC of Critical Approach = AM 0.85
 PM 0.67

Roundabout Junction Calculation

Junction : (A) Kam Tin Bypass / Kam Tin Road / Tung Wui Road Job No.: 25009HK

Scenario : 2034 Design Traffic Flows (With Remaining Site under LUR)



Input Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.2	3.6	7.3
E	=	Entry width (m)	11.5	10.1	11.8	13.5
L	=	Effective length of flare (m)	12.6	9.4	14	12.5
R	=	Entry radius	26	20	18.4	36
D	=	Inscribed circle diameter (m)	64	64	64	64
A	=	Entry angle (degree)	42	27	45	23
Q	=	Entry flow (pcu/hr)	AM 1275	530	525	880
			PM 1200	565	390	785
Qc	=	Circulating flow across entry	AM 340	835	950	750
			PM 305	955	1075	680

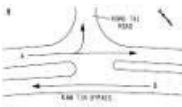
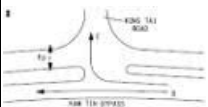
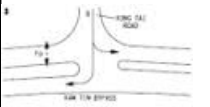
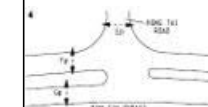
Output Parameters

			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E-V)/L$	0.53	0.49	0.94	0.79
K	=	$1 - 0.00347 \cdot (A-30) - 0.978 \cdot (1/R-0.05)$	0.97	1.01	0.94	1.05
X ₂	=	$V + ((E-V)/(1+2 \cdot S))$	9.33	8.66	6.45	9.70
M	=	$\exp((D-60)/10)$	1.49	1.49	1.49	1.49
F	=	$303 \cdot X_2$	2828	2624	1955	2938
T _d	=	$1 + (0.5/(1+M))$	1.20	1.20	1.20	1.20
F _c	=	$0.21 \cdot T_d \cdot (1 + 0.2 \cdot X_2)$	0.72	0.69	0.58	0.74
Q _e	=	Capacity = $K \cdot (F - F_c \cdot Q_c)$	AM 2504	2070	1327	2492
			PM 2528	1986	1259	2546
DFC	=	Entry Flow/Capacity = Q/Q_e	AM 0.51	0.26	0.40	0.35
			PM 0.47	0.28	0.31	0.31

DFC of Critical Approach = AM 0.51
PM 0.47

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Description: **2034 Design Traffic Flows (With Remaining Site under LUR)**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak				
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y		
Kam Tin Bypass	W		C	2	3.0	0	15	0	100%	100%	2055	2055	1870	1870	1870	1870	65	0.035		65	0.035			
	W		B	1,2	3.5	0	0	0	0%	0%	2105	0	2105	2105	0	0	393	0.187		429	0.204			
	W		B	1,2	3.0	0	0	1	0%	0%	1775	3880	1775	1775	3880	3880	332	0.187		361	0.204			
Kam Tin Bypass	E		A	1	3.0	13	0	1	15%	20%	1915	3970	1880	1870	3935	3925	397	0.211	0.211	367	0.196	0.196		
	E		A	1	3.0	0	0	0	0%	0%	2055	0	2055	2055	0	0	433	0.211		403	0.196			
Kong To Road	S		D	3	3.5	10	12	1	46% / 54%	56% / 44%	1461	1461	1285	1285	1285	1285	230	0.179	0.179	170	0.132	0.132		
Pedestrian crossing			Ep	4	Min. Crossing Time = 12GM + 15FGM = 27s																			
			Fp	2,3,4	Min. Crossing Time = 7GM + 7FGM = 14s																			
			Gp	4	Min. Crossing Time = 7GM + 7FGM = 14s																			
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase				P.M. Check Phase			
									125(75) 60(75) 770(695)   105(95)   65(65) 725(790)  								Ey 0.390 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 30%				Ey 0.329 L (sec) 47 C (sec) 108 y pract. 0.508 R.C. (%) 55%			
Stage/Phase Diagram:			   																					
I/G=3s			I/G=6s + 5s					I/G=5s					I/G=4s (Min. Green Time for Ep=27s)											

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Design Traffic Flows (With Remaining Site under LUR)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

50	(60)	125	(150)
1190	(1110)	1350	(1125)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	7	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	1	F 0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.759

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1350	1125	Q-BA	9	57	(If C-B blocked C-A) (If Minor Road Share LT&RT)
q-CB	125	150	Q-BC	423	445	
q-AB	50	60	Q-CB	372	390	
q-AC	1190	1110	Q-CA	1195	1107	
q-BA	20	10	Q-BAC	22	210	
q-BC	30	50				
f	0.600	0.833				

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.34	0.38
	C-A	1.13	1.02
	B-AC	2.32	0.29

Critical DFC	2.32	1.02
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CTA Consultants Ltd.

Priority Junction Calculation

Junction :	(C) Kam Tin Road / Kam Tai Road	Job No.:	25009HK
Scenario :	2034 Design Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)		

Arm B Kam Tai Road

20	30
(10)	(50)

Arm A Kam Tin Road EB **Arm C Kam Tin Road WB**

50	(60)	125	(150)
1190	(1110)	1350	(1125)

AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

Y = 1 - 0.0345W

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :	Input	Calculated
W	11	D 0.968
W-CR	0	E 1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)	0	F 1.029
Minor Road Share LT&RT? (Yes: 1, No: 0)	1	Y 0.621

Analysis :	Traffic Flow pcu/hr	AM	PM	Capacity pcu/hr	AM	PM
q-CA	1350	1125	Q-BA	118	157	
q-CB	125	150	Q-BC	486	503	
q-AB	50	60	Q-CB	479	495	
q-AC	1190	1110	Q-CA	N/A	N/A	
q-BA	20	10	Q-BAC	216	368	
q-BC	30	50				
f	0.600	0.833				

(If C-B blocked C-A)
(If Minor Road Share LT&RT)

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.26	0.30
	C-A	N/A	N/A
	B-AC	0.23	0.16

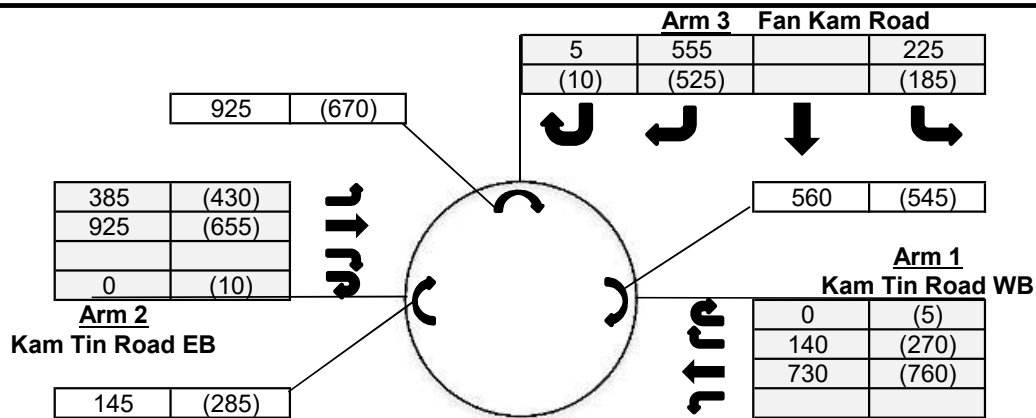
Critical DFC	0.26	0.30
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Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK

Scenario : 2034 Design Traffic Flows (With Remaining Site under LUR)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	3	7	3
E	=	Entry width (m)	8	8	5.9
L	=	Effective length of flare (m)	7.8	12	10
R	=	Entry radius	100	33	13.4
D	=	Inscribed circle diameter (m)	20	20	20
A	=	Entry angle (degree)	30	10	15
Q	=	Entry flow (pcu/hr)			
		AM	870	1310	785
		PM	1035	1095	720
Qc	=	Circulating flow across entry			
		AM	560	145	925
		PM	545	285	670

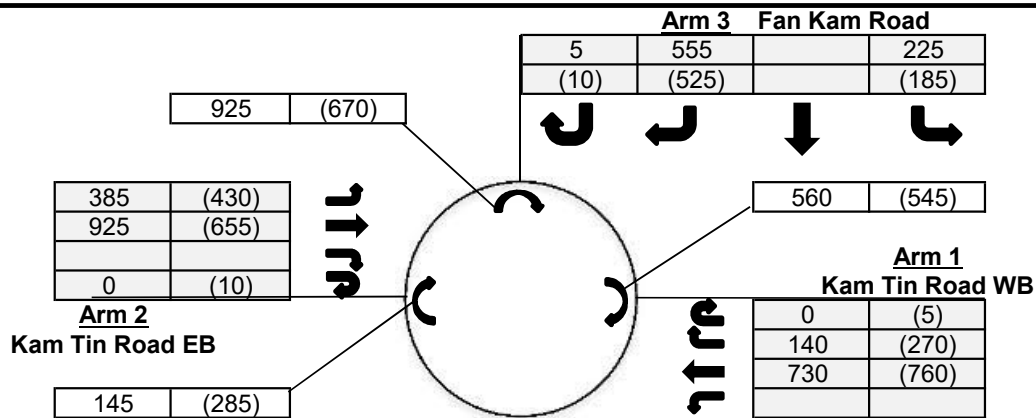
Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6*(E-V)/L$	1.03	0.13	0.46
K	=	$1-0.00347*(A-30)-0.978*(1/R-0.05)$	1.04	1.09	1.03
X2	=	$V+((E-V)/(1+2*S))$	4.64	7.79	4.50
M	=	$\text{Exp}((D-60)/10)$	0.02	0.02	0.02
F	=	$303*X2$	1406	2360	1365
Td	=	$1+(0.5/(1+M))$	1.49	1.49	1.49
Fc	=	$0.21*Td*(1+0.2*X2)$	0.60	0.80	0.60
Qe	=	Capacity = $K*(F-Fc*Qc)$			
		AM	1109	2443	837
		PM	1119	2321	993
DFC	=	Entry Flow/Capacity = Q/Qe			
		AM	0.78	0.54	0.94
		PM	0.93	0.47	0.73

DFC of Critical Approach = AM 0.94
PM 0.93

Roundabout Junction Calculation

Junction : (D) Kam Tin Road / Fan Kam Road Job No.: 25009HK
 Scenario : 2034 Design Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)



AM	(PM)
(PM)	

Input Parameters

			Arm 1	Arm 2	Arm 3
V	=	Approach half width (m)	5	7	3.2
E	=	Entry width (m)	6.5	7.5	6.5
L	=	Effective length of flare (m)	12	3.6	15
R	=	Entry radius	100	15.8	25
D	=	Inscribed circle diameter (m)	28	28	28
A	=	Entry angle (degree)	33	10	20
Q	=	Entry flow (pcu/hr)			
		AM	870	1310	785
		PM	1035	1095	720
Qc	=	Circulating flow across entry			
		AM	560	145	925
		PM	545	285	670

Output Parameters

			Arm 1	Arm 2	Arm 3
S	=	Sharpness of flare = $1.6*(E-V)/L$	0.20	0.22	0.35
K	=	$1-0.00347*(A-30)-0.978*(1/R-0.05)$	1.03	1.06	1.04
X2	=	$V+((E-V)/(1+2*S))$	6.07	7.35	5.14
M	=	$\text{Exp}((D-60)/10)$	0.04	0.04	0.04
F	=	$303*X2$	1840	2226	1556
Td	=	$1+(0.5/(1+M))$	1.48	1.48	1.48
Fc	=	$0.21*Td*(1+0.2*X2)$	0.69	0.77	0.63
Qe	=	Capacity = $K*(F-Fc*Qc)$			
		AM	1496	2234	1017
		PM	1507	2120	1185
DFC	=	Entry Flow/Capacity = Q/Qe			
		AM	0.58	0.59	0.77
		PM	0.69	0.52	0.61

DFC of Critical Approach = AM 0.77
 PM 0.69

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Description: **2034 Design Traffic Flows (With Remaining Site under LUR)**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak		
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Kam Tin Road	W	←	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1270	0.650	0.650	1180	0.604	0.604
Kam Tin Road	E	→	A	1	3.4	0	0	1	0%	0%	1955	1955	1955	1955	1955	1955	1265	0.647		1125	0.575	
Pedestrian crossing ↔ Bp2Min. Crossing Time = 5GM + 7FGM = 12s																						
Notes:									Traffic Flow (pcu / hr) 1265(1125) → ← 1270(1180)								A.M. Check Phase εy 0.650 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 15%			P.M. Check Phase εy 0.604 L (sec) 20 C (sec) 120 y pract. 0.750 R.C. (%) 24%		
Stage/Phase Diagram: 1 → ←		2 — ↑ ↓ —																				
I/G = 5s		I/G = 4s + 12s																				

Job No: 25009HK

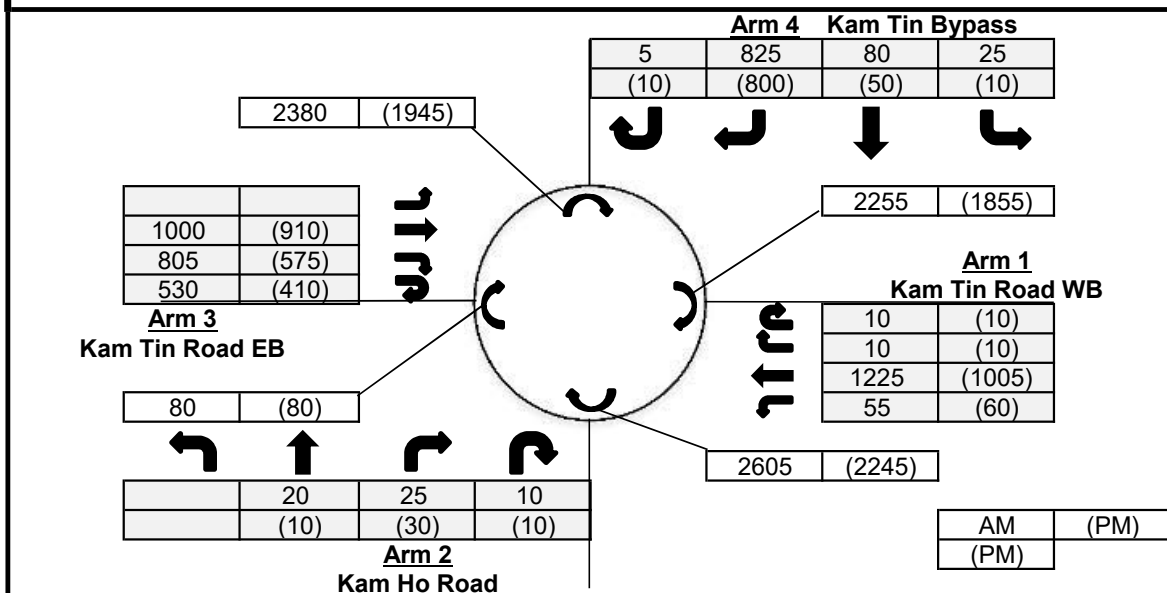
Junction: **(E) Kam Tin Road**
Description: **2034 Design Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)**

Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Saturation Flow (pcu/hr)	Total Saturation Flow (pcu/hr)	Revised Saturation Flow (pcu/hr)		Total Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.			A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Kam Tin Road	W	←	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1270	0.618	0.618	1180	0.574	0.574	
Kam Tin Road	E	→	A	1	4.4	0	0	1	0%	0%	2055	2055	2055	2055	2055	2055	1265	0.616		1125	0.547		
Pedestrian crossing ↔ Bp 2 Min. Crossing Time = 5GM + 6FGM = 11s																							
Notes:									Traffic Flow (pcu / hr)								A.M. Check Phase				P.M. Check Phase		
									1265(1125) →														

Junction: (F) Kam Tin Road / Tsing Long Highway Slip Road																			
Description: 2034 Design Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)																			
Approach	Direction	Movement notation	Phase	Stage	Width (m)	Radius (m)		Nearside 0/1	Pro. Turning (%)		Revised Saturation Flow (pcu/hr)		A.M. Peak			P.M. Peak			
						Left	Right		A.M.	P.M.	A.M.	P.M.	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Kam Tin Road	E	→	1	A	3.65	0	0	1	0%	0%	1980	1980	968	0.489		807	0.408		
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	1036	0.489		864	0.408		
	E	→	1	A	3.65	0	0	0	0%	0%	2120	2120	1036	0.489		864	0.408		
Kam Tin Road	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1325	0.621	0.621	1208	0.566		
	W	←	2	A	3.80	0	0	0	0%	0%	2135	2135	1325	0.621		1208	0.566		
	W	↙	2	A	5.00	15	0	1	100%	100%	1925	1925	685	0.356		335	0.174		
Tsing Long Highway Slip Road	N	↖	3	B	3.50	20	0	1	100%	100%	1830	1830	163	0.089	0.089	245	0.134		
	N	↖	3	B	3.50	25	0	0	100%	100%	1985	1985	177	0.089		265	0.134		
	N	→	3	B	3.60	0	30	0	100%	100%	2015	2015	130	0.065		133	0.066		
	N	→	3	B	3.50	0	28	0	100%	100%	2000	2000	130	0.065		132	0.066		
*Pedestrian Crossing			4p	A	Min. Crossing Time = 7 Gm + 7 Fm = 14s														
			5p	B	Min. Crossing Time = 7 Gm + 7 Fm = 14s														
Notes:						Traffic Flow (pcu / hr) [AM (PM)]						Check Phase			Check Phase				
						3040(2535)→ ↖ ↗ 340(510) 260(265) ← 2650(2415) ↓ 685(335)						εy 0.710 L (sec) 10 C (sec) 120 y pract. 0.825 R.C. (%) 16%			εy 0.699 L (sec) 10 C (sec) 120 y pract. 0.825 R.C. (%) 18%				
Stage / Phase Diagrams																			
A				B															
I/G = 5				I/G = 7															

Roundabout Junction Calculation

Junction : (G) Kam Tin Road / Kam Tin Bypass Job No.: 25009HK
 Scenario : 2034 Design Traffic Flows (With Remaining Site under LUR) (With Planned Improvement)



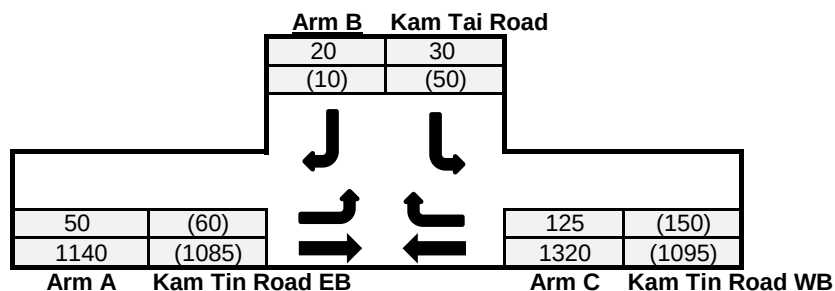
Input Parameters			Arm 1	Arm 2	Arm 3	Arm 4
V	=	Approach half width (m)	7.3	7.3	7.3	6.5
E	=	Entry width (m)	13	10	11	11
L	=	Effective length of flare (m)	12	9.5	13	15
R	=	Entry radius	70	20	42.5	42.5
D	=	Inscribed circle diameter (m)	88	88	88	88
A	=	Entry angle (degree)	30	38	29	39
Q	=	Entry flow (pcu/hr)	AM			
			PM			
Qc	=	Circulating flow across entry	AM			
			PM			

Output Parameters			Arm 1	Arm 2	Arm 3	Arm 4
S	=	Sharpness of flare = $1.6 \cdot (E - V) / L$	0.76	0.45	0.46	0.48
K	=	$1 - 0.00347 \cdot (A - 30) - 0.978 \cdot (1 / R - 0.05)$	1.03	0.97	1.03	0.99
X2	=	$V + ((E - V) / (1 + 2 \cdot S))$	9.56	8.71	9.24	8.80
M	=	$\text{Exp}((D - 60) / 10)$	16.44	16.44	16.44	16.44
F	=	$303 \cdot X2$	2897	2640	2799	2665
Td	=	$1 + (0.5 / (1 + M))$	1.03	1.03	1.03	1.03
Fc	=	$0.21 \cdot Td \cdot (1 + 0.2 \cdot X2)$	0.63	0.59	0.62	0.60
Qe	=	Capacity = $K \cdot (F - Fc \cdot Qc)$	AM			
			PM			
DFC	=	Entry Flow/Capacity = Q / Qe	AM			
			PM			

DFC of Critical Approach = AM 0.85
 PM 0.67

Priority Junction Calculation

Junction : (C) Kam Tin Road / Kam Tai Road Job No.: 25009HK
 Scenario : 2034 Design Traffic Flows (With Proposed Improvement)



AM	(PM)
(PM)	

The predictive equations of capacity of movement are:

$$Q-BA = D(627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB))$$

$$Q-BC = E(745 - Y(0.364q-AC + 0.144q-AB))$$

$$Q-CB = F(745 - 0.364Y(q-AC + q-AB))$$

The geometric parameters represented by D, E, F are:

$$D = (1 + 0.094(w-BA - 3.65))(1 + 0.0009(V-rBA - 120))(1 + 0.0006(V-IBA - 150))$$

$$E = (1 + 0.094(w-BC - 3.65))(1 + 0.0009(V-rBC - 120))$$

$$F = (1 + 0.094(w-CB - 3.65))(1 + 0.0009(V-rCB - 120))$$

where

$$Y = 1 - 0.0345W$$

q-AB, etc = the design flow of movement AB, etc

W = major road width

W-CR = central reserve width

w-BA, etc = lane width to vehicle

v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc

v-IBA = visibility to the left for waiting vehicles in stream BA, etc

Geometry :		Input				Calculated		
	W	7	V-rBA	50	w-BA	4.7	D	0.968
	W-CR	0	V-IBA	50	w-BC	4.7	E	1.029
C-B blocked C-A, residual width <2.5m? (Yes: 1, No: 0)		0	V-rBC	50	w-CB	3.5	F	0.924
Minor Road Share LT&RT? (Yes: 1, No: 0)		1	V-rCB	50			Y	0.759

Analysis :	Traffic Flow	AM	PM	Capacity	AM	PM
	pcu/hr			pcu/hr		
	q-CA	1320	1095	Q-BA	27	69
	q-CB	125	150	Q-BC	437	452
	q-AB	50	60	Q-CB	385	396
	q-AC	1140	1085	Q-CA	N/A	N/A
	q-BA	20	10	Q-BAC	62	235
	q-BC	30	50			
	f	0.600	0.833			

(If C-B blocked C-A)
(If Minor Road Share LT&RT)

Results :	Ratio of Flow-to-Capacity	AM	PM
	B-A	N/A	N/A
	B-C	N/A	N/A
	C-B	0.32	0.38
	C-A	N/A	N/A
	B-AC	0.80	0.26

Critical DFC

0.80

0.38

CTA Consultants Ltd.

Appendix 7

Noise Impact Assessment

Rezoning From “Residential (Group C)2” and “Open Space” Zones to “Residential (Group C)4” Zone for a Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Environmental Noise Impact Assessment

Prepared for:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Prepared by:

Westwood Hong & Associates Limited

Report No.:

22605-N1 Rev B

Date:

17 October 2025

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APPENDICES

AIMS

To assess noise impacts on the proposed residential development at DD110 on Kam Tin Road in Yuen Long.

To recommend noise mitigation measures for the proposed Development, if and when necessary; and to assess the suitability of the proposed building layout and the required noise mitigation measures according to relevant requirements set out in the Hong Kong Planning Standards & Guidelines (HKPSG).

SUMMARY

Noise assessments have been conducted to predict the noise impacts at the proposed Development.

For road traffic noise, the predicted maximum road traffic noise level of the residential flats will be 77dB(A), exceeding the stipulated 70dB(A) noise criterion. Therefore, noise mitigation measures are required.

With the provision of Acoustic Window (baffle type), the assessment results indicate that the predicted road traffic noise levels at all the residential flats (i.e. 100%) will comply with the 70dB(A) noise criterion.

For the fixed noise sources impact, the assessment results indicate that all the residential flats will be within the stipulated noise limits.

For the aircraft and helicopter noise, the measured noise levels on site were within the noise criterion in HKPSG.

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct an environmental noise impact assessment for the proposed residential development at Shek Kong, Yuen Long (the “proposed Development”). Figure 1 shows the location of the proposed Development.
- 1.2 This environmental noise impact assessment report supports the Rezoning Application for the proposed Development.
- 1.3 This report has been prepared based on the architectural drawings provided by the Client (Appendix 1).
- 1.4 This report comprises the following assessments:-
- Road traffic noise affecting the proposed Development
 - Fixed noise sources affecting the proposed Development
 - Fixed noise sources from the proposed Development
 - Aircraft and helicopter noise affecting the proposed Development

2. SITE LOCATION & BUILDING LAYOUT

Site Location

- 2.1 The development site is located to the north of Kam Tin Road. Shek Kong Barracks is located to the south across Kam Tin Road. The residential developments Seasons Villas and Seasons Monarch are located to the north-east and west respectively. The location of the development site is shown in Figure 1.

Development Layout

- 2.2 The proposed Development comprises 6 low-rise residential blocks with 5 storeys on top of carport and clubhouse. The carport and clubhouse are located at G/F. The building layouts are shown in Appendix 1. The development parameters are summarised in Table 2.1 below.
- 2.3 The clubhouse would be equipped with central air-conditioning and would not rely on opened windows for ventilation. The proposed Development will not give rise to an adverse noise impact on existing or planned NSRs.

Table 2.1 Development Parameters of the Proposed Development

	Parameters
Zoning	“Residential (Group C)2” and “Open Space” zones on Approved Kam Tin North Outline Zoning Plan No. S/YL-KTN/11
Site Area	8,580m ²
Number of Residential Units	240
Number of Residential Storeys	5 storeys
Height of Building	28.9mPD
Use	6 residential blocks with a clubhouse and carport at Ground Floor
Completion Year	2031

3. NOISE CRITERIA

Road Traffic Noise Criterion

- 3.1 According to the HKPSG^[1], road traffic noise criterion for domestic premises is 70dB(A) L10(1 hour) at the external facades for the hour having the peak traffic flow. The noise criterion applied to the domestic premises which rely on opened windows for ventilation.

Aircraft Noise Criteria

- 3.2 The recommended NEF25 contour of the Chek Lap Kok Airport in the HKPSG should not be exceeded for the proposed Development.

Helicopter Noise Criteria

- 3.3 According to the HKPSG, the criteria for helicopter noise is L_{max} 85dB(A) for domestic premises during 0700 – 1900 hours. The standards apply to uses that rely on openable window for ventilation and the standards should be viewed as the maximum permissible noise levels assessed at 1m from the external façade.

Noise Criteria for Fixed Noise Sources

- 3.4 The proposed Development is located within a low density residential area, not being affected by an any Influencing Factor (IF). With reference to the "Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites" (IND – TM)^[2], an Area Sensitivity Rating (ASR) of "A" was assumed for the proposed Development. The Acceptable Noise Levels (ANLs) are shown in Table 3.1.

Table 3.1 ANLs for Day, Evening and Night-Time Periods

Time Period	ANLs, ASR “A” Leq (30 mins)
Day (0700 to 1900 hours) and evening (1900 to 2300 hours)	60dB(A)
Night (2300 to 0700 hours)	50dB(A)

Note: In any event, the ASR and the ANLs adopted in this report are only indicative and they are used for assessment only. It should be noted that the noise from fixed noise sources is controlled under section 13 of the Noise Control Ordinance. Therefore, the ASRs and ANLs determined in this report shall not prejudice the Noise Control Authority’s discretion to determine noise impact due to fixed noise sources on the basis of prevailing legislation and practices being in force, and taking account of contemporary conditions/ situations of adjoining land uses. The assessment of noise impacts due to fixed noise sources in this report shall not bind the Noise Control Authority in the context of law enforcement against any of the noise from fixed noise sources being assessed.

- 3.5 The noise criteria for the design of noise sensitive developments near fixed noise sources shall refer to the IND – TM. Therefore, the assessment criteria for existing fixed noise sources in the vicinity of the proposed Development should refer to the ANLs in Table 3.1
- 3.6 The HKPSG also states that in order to plan for a better environment, all planned fixed noise sources should be so located and designed that when assessed in accordance with the TM, the level of the intruding noise at the façade of the nearest sensitive use should be at least 5dB(A) below the appropriate ANL shown in Table 2 of the IND – TM or, in the case of the background being 5dB(A) lower than the ANL, should not be higher than the background.
- 3.7 Site measurements were made at the nearby noise sensitive receivers on 18 March 2025, the prevailing background noise levels are summarised in Table 3.2 below. The measurement locations are provided in Figure 2a.

Table 3.2 Prevailing Background Noise Measurement Details and Results

Noise Sensitive Receiver	Date	Personnel	Equipment	Weather	Field Observations	Measurement Results, dB(A), L90 (1 hour)
Loc A, Village house at the western side of the development site	18 March 2025	Mr. Samuel Lee	Ono Sokki, LA-5111 (Serial No.: 14700785)	Sunny, calm	Mainly community noise	Daytime: 55 – 56 Night-time: 46 – 47 (Façade)

- 3.8 The prevailing background noise levels of the identified noise sensitive receivers were higher than ANL – 5dB(A). Therefore, the ANL – 5dB(A) are used as the criteria for noise from planned fixed sources (i.e. 55dB(A) for daytime, and 45dB(A) for night-time).

4. SITE SURVEYS

Dates and Time

4.1 Site surveys were conducted on the following dates:-

- 18 March 2025
- 10 April 2025
- 14 July 2025

Instrumentation

4.2 The instruments used by WHA for the surveys comply with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). They are listed in Table 4.1 below.

Table 4.1 Instruments Used for the Noise Surveys

Manufacturer	Type
Ono Sokki	Precision Integrating Sound Level Meter (LA-5111)
Ono Sokki	Foam Windshield
Brüel and Kjær	Noise Calibrator Type 4231

4.3 The sound level meter was calibrated before use and further checks on completion of the survey, and confirmed that the calibration levels from before and after the noise measurement agree to within 1.0dB.

4.4 The site measurements including measurement equipment, calibration procedure, measurement methodology and weather conditions were conducted in accordance with the IND – TM.

Fixed Noise Sources in the Vicinity

4.5 The study area for the fixed noise sources impact assessment is 300m. The photos of site surveys are provided in Appendix 2. The identified fixed noise sources are summarised in Table 4.2 below and given in Figure 3. Detailed discussion on the noise impact from these fixed noise sources is given in Section 6. The photos of the identified fixed noise sources are provided in Appendix 6.

Table 4.2 Identified Potential Fixed Noise Sources

Source ID	Factory	Identified Industrial Activities	Location of Fixed Noise Sources	Operation Hours
F1	Sun Luen Tai Car Repairing Workshop	The staff advised that the car repairing workshop was mainly used for car component removal & replacement, and storage use. The operation including the removal of the valuable component and sell for it, or replace the damaged component of the old vehicle and sell it out. The major tool of the above operations is the pneumatic screwdriver. All the operations are conducted inside the temporary structure with steel cover. No grinding, sawing and hammering would be conducted in the repairing workshop. The staff also advised that operations of the repairing workshop involve the car component only, would not keep the car shell. The old car shell which were stacked up in the open area were many years ago which was only for storage use. The removed car component would be stored in the open area and will be delivered to the recycling plant by a lorry. Generally, the lorry would come about every 3 months. The material handling inside the repairing workshop and loading / unloading to the lorry would be by a forklift. The staffs are working in the temporary structural for most of the time, and only using the forklift for material handling once a day. The temporary structure is a semi-enclosure with opening facing away from the proposed Development. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source (i.e. noise of pneumatic screwdriver, from a distance of 10m). The detailed noise measurements are provided in Appendix 6.	Under the steel cover, on ground level	0900 – 1800 No night-time operation
F2	Wang Luen Car Trading Centre	It is a car trading shop with vehicle display only. No industrial noise was observed.	On ground level	1000 – 1800 No night-time operation
F3	Hing Luen Car Trading Centre	It is a car trading shop with vehicle display only. No industrial noise was observed.	On ground level	1000 – 1800 No night-time operation

Source ID	Factory	Identified Industrial Activities	Location of Fixed Noise Sources	Operation Hours
F4	Hop Shing Car Repairing Workshop	The gate was closed during all site surveys. Some cars parked inside. No industrial noise was observed.	On ground level	0900 – 1800 No night-time operation
F5	Luen Tak Car Repairing Workshop	Car repairing workshop with a temporary structure. Simply hand tools handling noise was observed. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source, from a distance of 5m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation
F6	Tsat Sing Kong Substation	No industrial noise was observed.	On ground level	24 hours
F7	Concordia Tast Sing Kong Substation	Plant noise was observed from the substation. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the louvre at a distance of 5m). The detailed noise measurements are provided in Appendix 6.	On ground level	24 hours
F8	Vacant Lot	The gate was closed during the site survey and the lot was empty. No industrial noise was observed.	On ground level	-
F9	Cai Niao Warehouse	Storage use only. No industrial noise was observed.	On ground level	0900 – 1800 No night-time operation
F10	Po Hong Warehouse	Storage use only. No industrial noise was observed.	On ground level	0900 – 1800 No night-time operation
F11	1 st Street Car Repairing Workshop	The workshop comprises a temporary structure with steel cover and an open area. Noise of pneumatic screwdriver and air compressor were observed during site survey. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source from a distance of 10m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation
F12	Vacant Lot	Temporary structure with the gate was closed. No industrial noise was observed.	On ground level	-

Source ID	Factory	Identified Industrial Activities	Location of Fixed Noise Sources	Operation Hours
F13	Wai Yuen Hing Car Repairing Workshop	The workshop comprises a temporary structure and an open area. Simply hand tools handling noise inside the temporary structure was observed. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source, from a distance of 8m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation
F14	協力尾板	The workshop is providing service for repairing the tail lift of lorry, which comprises a temporary structure and an open area. Simply hand tools handling noise and pneumatic screwdriver noise were observed inside the temporary structure. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source, from a distance of 5m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation
F15	Ko Kee Sand Yard	The sand yard comprises a steel structure and an open area. A few piles of sand were located at the open area. The operation of the sand yard including a lorry deliver the sand to the sand yard, and deliver out from the sand yard. The sand yard is used for storage. A lorry with crane was observed during site surveys. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source, from a distance of 10m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation
F16	Bamboo workshop	The workshop is used as storage of bamboo. The operation of the workshop including a lorry deliver the bamboo to the workshop, and deliver out from the workshop. The staff advised that the workshop would be opened 2 – 3 times a week. A lorry with crane was observed during site surveys. The noise measurements were conducted by placing with measurement equipment (i.e. the sound level meter mounted on a stand at 1.2m height) directly towards the noise source, from a distance of 5m). The detailed noise measurements are provided in Appendix 6.	On ground level	0900 – 1800 No night-time operation

Noted:

- [1] All the identified fixed noise sources in the above table were visited during each survey (i.e. 18 March, 10 April 2025 and 14 July 2025)
- [2] The operation of the identified fixed noise sources were observed during site surveys and confirmed with the staffs.
- [3] The operating hours of the identified fixed noise sources were advised from the staffs of each site and confirmed by night-time site survey.

- 4.6 Site surveys have confirmed that there is no significant noise was emitted from the other fixed noise sources apart from those listed in Table 4.2. All the significant fixed noise sources within the assessment area are identified and considered in the assessment.

Night-time Operation

- 4.7 The operation hours were advised by the staff of the workshops, as summarised in Table 4.2. The night-time survey also confirmed that all the workshops did not have night-time operations.

Fixed Noise Source Measurements

- 4.8 On-site noise measurements were carried out at the location of site boundary and far away from Kam Tin Road to determine the potential fixed noise impact. The locations B1 and B2 are the nearest location to the Sun Luen Tai Car Repairing Workshop, which can be accessed and would not be affected by the road traffic noise impact from Kam Tin Road. The details noise measurements are provided in Table 4.3 below and Figure 2c.

Table 4.3 Noise Measurements and Observations for Fixed Noise Sources

Date	Location	Person-nel	Equipment	Weather	Observations	Measurement Results, dB(A), Leq(30mins)
14 July 2025	Loc B1, northern site boundary	Mr Samuel Lee	Ono Sokki, LA-5111 (Serial No.: 14700785)	Sunny, calm	3 hours observations, no audible fixed noise was observed	<u>Daytime</u> 48 – 53
14 July 2025	Loc B2, northwestern site boundary	Mr Samuel Lee	Ono Sokki, LA-5111 (Serial No.: 14700785)	Sunny, calm	3 hours observations, no audible fixed noise was observed	<u>Daytime</u> 47 – 52

- 4.9 According to the on-site noise measurement results, the measured noise levels are well within the criteria for fixed noise stated in Section 3. In this regard, adverse noise impact on the proposed Development from fixed noise sources is not anticipated. The fixed noise impacts would be limited which can be adequately mitigated through proper design and implementation of mitigation measures by the development itself.

5. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

- 5.1 The noise prediction was conducted by employing the WS Atkins RoadNoise 2000^[3] computer software.

Traffic Forecast

- 5.2 The anticipated occupation year of the proposed Development is 2031, the maximum traffic in 15 years after occupation of the proposed Development (i.e. 2031+15=2046) has been adopted for the purpose of the road traffic noise assessment.
- 5.3 The traffic forecast for Year 2046 was provided by the Traffic Consultant (CTA Consultants Limited). The definition of heavy vehicles in the U.K. Department of Transport’s “Calculation of Road Traffic Noise” (CRTN)^[4] has been adopted. The traffic forecast is provided in Appendix 3 and the computer plot of the noise prediction model is provided in Figure 4. Review of the data indicates that the AM peak is in general higher than the PM peak. Therefore, the set of AM peak traffic data is employed for the assessment, representing the worst-case scenario.

Noise Assessment Points for Road Traffic Noise Assessment

- 5.4 All noise sensitive rooms (e.g. living and dining rooms, bedrooms / master bedrooms) are assigned with noise assessment point. The locations of assessment points are illustrated in Appendix 4. The clubhouse will be equipped with central air-conditioning and would not rely on opened windows for ventilation. No adverse noise impact is anticipated.
- 5.5 The assessment points are taken at the height of 1.2m above each residential floor and 1m away from the façade of openable windows of the noise sensitive rooms.

Methodology of Road Traffic Noise Impact Assessment

- 5.6 The study area of the road traffic noise assessment would be 300m from the site boundary. The roads within the study area are included in the assessment. In this assessment, all roads are assumed to be of impervious surface.
- 5.7 The road traffic noise levels at the proposed Development were assessed based on the predicted traffic flows in Year 2046 and in accordance with the procedures given in the CRTN. The predicted road traffic noise levels at the building facades include a 2.5dB(A) facade reflection and correction factors for gradient, distance, view angle, barriers and road surface material.
- 5.8 The widening of Kam Tin Road is considered in the road traffic noise assessment.

Predicted Road Traffic Noise Levels (Base Scenario)

- 5.9 The predicted road traffic noise levels are presented in Appendix 4 for all Noise Sensitive Receivers (NSRs) of the proposed Development. The predicted maximum road traffic noise level of the residential flats will be 77dB(A), exceeding the stipulated 70dB(A) noise criterion. Therefore, noise mitigation measures are required.

Predicted Road Traffic Noise Levels (With Noise Mitigation Measures)

- 5.10 With the provision of Acoustic Window (baffle type) (Figure 5), all residential units of the proposed Development can comply with the stipulated 70dB(A) noise limit (Appendix 5). The proposed noise mitigation measures are given in Section 7.
- 5.11 In order to achieve noise compliance, the residential units with noise exceedance will be provided with Acoustic Window (baffle type) (Figure 5). The Acoustic Window (baffle type) will be designed by making reference to ProPECC PN5/23 “Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact”. The room size of the proposed Development would be different from the PN5/23, the calculation of the noise reduction correction is provided in Appendix 8. With the provision of these noise mitigation measures, all the flat units of the proposed Development can comply with the stipulated 70dB(A) noise limit.

6. NOISE IMPACT ASSESSMENT FOR FIXED NOISE SOURCES

6.1 The identified fixed noise sources in the vicinity are summarised in Table 4.2.

Noise Assessment Points for Fixed Noise Sources Assessment

6.2 With consideration the location of the identified fixed noise sources, representative assessment points of worst affected (with shortest distance to the fixed noise sources) are assigned for the fixed noise sources assessment. The location of the assessment points are illustrated in Figure A7-2 in Appendix 7.

6.3 The assessment points are taken at the height of 1.2m above each residential floor and 1m away from the façade of openable windows in the noise sensitive rooms.

Methodology of Noise Impact Assessment from Fixed Noise Sources

6.4 The location of the major fixed noise source (i.e. Source F1) are assumed at the noise emission point as observed during site survey. For other fixed noise sources, the noise emission points were assumed to be placed at the nearest site boundary to the proposed Development for conservatism.

6.5 Although it is unlikely that all the identified fixed noise sources will be in operation simultaneously, to be conservative, it has been assumed that all the identified fixed noise sources are in operation at the same time, which also represents a worst-case scenario. Fixed noise sources are assumed to operate continuously instead of occasionally as observed on-site and all fixed noise sources are regarded as point source.

6.6 According to the standard acoustic principle, a negative correction of 10dB(A) can be applied if the noise sources are totally screened by a substantial barrier such that none will be visible when viewed from any window, door or other opening in any façade of the NSR. For conservatism, barrier correction would not be considered in the assessment.

6.7 For the assessment of noise from fixed noise sources, the noise level at NSR was predicted using the standard acoustic principles:

$$\text{Predicted Noise Level} = \text{Sound Power Level of fixed noise source} - \text{Distance Attenuation} + \text{Façade Correction}$$

Where Distance Attenuation = $20 \log D + 8$ [where D is the distance in meters]
 Façade Correction = 3dB(A)

SWL of Identified Fixed Noise Sources

- 6.8 For the identified fixed noise sources, on-site noise measurements were made. The Sound Pressure Levels (SPLs) obtained during survey were then converted to SWLs with reference to basic acoustic principle. The SPLs at NSRs were calculated based on the distance attenuation, tonality correction, impulsiveness correction, intermittency correction, barrier correction and façade correction. Tonal noise was not identified by on-site measurements and fluctuation of noise was not observed during the site surveys, also there was no night-time operation for the identified fixed noise sources. Hence, tonality correction, impulsiveness correction and intermittency correction are not required to be applied to the fixed noise sources based on site observation and measurements.
- 6.9 For some identified noise sources (i.e. trading centre, substation, etc), no industrial noise were observed during site surveys, and industrial noise is also not anticipated. Hence, these industrial sites will not be included in the assessment.
- 6.10 The summary of the SWLs adopted in the assessment are provided in Table 6.1 below.

Table 6.1 SWLs of Identified Fixed Noise Sources

Source ID	Name	Fixed Noise Sources	No.	SWL, dB(A)	Operation hours	Reference
F1	Sun Luen Tai car repairing workshop	Noise of pneumatic screwdriver	1	99	Day and evening time	Site measurements
		Noise of forklift	1	94	Day and evening time	Site measurements
F5	Luen Tak car repairing workshop	Noise of hand tools handling	1	90	Day and evening time	Site measurements
F7	Concordia Tast Sing Kong Substation	Plant noise	1	92	Day, evening and night time	Site measurements
F11	1 st Street car repairing workshop	Noise of pneumatic screwdriver and air compressor	1	97	Day and evening time	Site measurements
F13	Wai Yuen Hing Car Repairing Workshop	Noise of pneumatic screwdriver assumed	1	93	Day and evening time	Site measurements
F14	協力尾板	Noise of hand tools handling and pneumatic screwdriver	1	90	Day and evening time	Site measurements

F15	Ko Kee sand yard	Lorry with crane for loading and unloading	1	97	Day and evening time	Site measurements
F16	Bamboo workshop	Lorry with crane for loading and unloading	1	90	Day and evening time	Site measurements

Predicted Noise Levels from Fixed Noise Sources (Base Scenario)

- 6.11 The predicted façade noise levels from fixed noise sources at the representative NSRs are in the range of 55 – 60dB(A) Leq(30min) during day and evening time periods, and in the range of 27 – 38dB(A) Leq(30min) during night-time period. These predicted noise levels are within the stipulated noise limits as mentioned in Section 3. The summary of the predicted noise levels is provided in Table 6.2. The summary of the predicted noise levels is given in Appendix 7.

Table 6.2 Predicted Façade Noise Level from Fixed Noise Sources

Representative NSRs	Day and Evening Time Periods		Night-time Period		Compliance
	Maximum Predicted Façade Noise Level, dB(A)	Noise Criteria, dB(A)	Maximum Predicted Façade Noise Level, dB(A)	Noise Criteria, dB(A)	
NSR 111	60	60	36	50	Yes
NSR 120	60	60	36	50	Yes
NSR 220	58	60	27	50	Yes
NSR 320	57	60	36	50	Yes
NSR 420	55	60	37	50	Yes
NSR 520	55	60	37	50	Yes
NSR 620	55	60	38	50	Yes

Fixed Noise Sources in the Proposed Development

- 6.12 The planned fixed noise sources such as the ventilating systems of the clubhouses, the noise impact would be in accordance with HKPSG standard (i.e. ANL – 5dB(A) as mentioned in Section 3).

- 6.13 As mentioned in Section 3.8, the prevailing background noise levels of the identified noise sensitive receivers were higher than ANL – 5dB(A). Therefore, the ANL – 5dB(A) are used as the criteria for noise from planned fixed sources (i.e. 55dB(A) for daytime, and 45dB(A) for nighttime)
- 6.14 The acoustic performance of the planned fixed noise sources would be reviewed during detailed design stage. In order to comply with the relevant noise requirements in the HKPSG, acoustic treatments such as provision of acoustic silencers and acoustic enclosures shall be proposed for the planned fixed noise sources, if necessary.

7. NOISE MITIGATION MEASURES

- 7.1 Practicable noise mitigation measures have been considered and some of those measures have been incorporated in the proposed Development, as mentioned in the following sections.

Acoustic Window (Baffle Type)

- 7.2 Acoustic window (baffle type) will be adopted for the proposed Development as noise mitigation measure. The Acoustic Window (baffle type) comprises of two layers of window. An additional window layer is introduced to the conventional side-hung window in a staggering position. The outer window is a conventional push-pull type window whilst the inner one is a half-size sliding window. By properly positioning the openings of inner window with the outer window, it can reduce noise entering indoor while allowing air flow into the room via the air gap between the two layers of windows.
- 7.3 The Acoustic Window (baffle type) will be designed by making reference to ProPECC PN5/23. The locations of acoustic window are illustrated in Figure 5. The project architect confirmed that the design of acoustic window (baffle type) could meet the natural ventilation requirement under Building Department. The configuration and acoustic performance of the acoustic window (baffle type) would be reviewed during detailed design stage.

8. AIRCRAFT AND HELICOPTER NOISE IMPACT ASSESSMENT

- 8.1 The proposed Development lies beyond the NEF25 contour of the Chek Lap Kok Airport. Hence, adverse aircraft noise impact on the proposed Development is not anticipated.
- 8.2 The Shek Kong Airfield is located at the southern side of the proposed Development. The runway of the Shek Kong Airfield is located at more than 300m south of the proposed Development. On-site noise measurements were carried out at the location of site boundary and far away from Kam Tin Road to determine the potential helicopter noise impact. The details noise measurements are provided in the Table 8.1 below.

Table 8.1 Noise Measurements and Observations for Helicopter Noise

Date	Personnel	Equipment	Weather	Observations	Measurement Results, dB(A)
18 March 2025	Mr Samuel Lee	Ono Sokki, LA-5111 (Serial No.: 14700785)	Sunny, calm	4 hours observations, no helicopter was observed.	<u>Daytime</u> 47 – 52dB(A) Leq 50 – 54dB(A) Lmax <u>Night-time</u> 46 – 51dB(A) Leq 48 – 52dB(A) Lmax
10 April 2025	Mr Samuel Lee	Ono Sokki, LA-5111 (Serial No.: 14700785)	Sunny, calm	3 hours observations, only 1 helicopter was observed.	<u>Daytime</u> 48 – 51dB(A) Leq 52 – 55dB(A) Lmax <u>Night-time</u> 47 – 50dB(A) Leq 50 – 54dB(A) Lmax

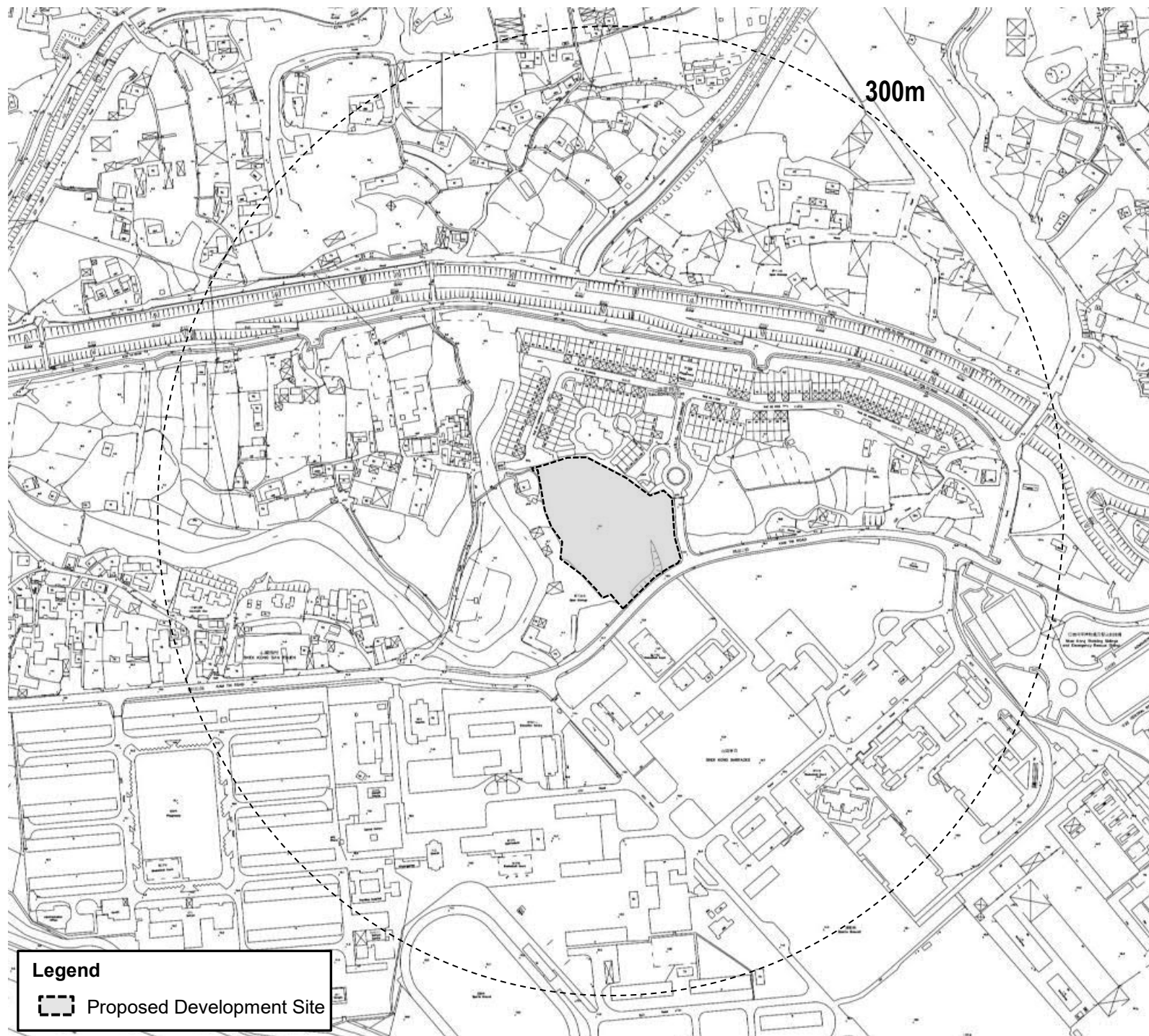
- 8.3 According to the on-site noise measurement results, the maximum measured helicopter noise level Lmax 55dB(A) within the development site is well within the criteria for helicopter noise stated in HKPSG, which is Lmax 85dB(A) for domestic premises. In this regard, adverse impact from helicopter noise to the proposed Development is not anticipated.

9. CONCLUSION

- 9.1 Noise assessments have been conducted to predict the noise impacts at the proposed Development.
- 9.2 For road traffic noise, the predicted maximum road traffic noise levels of the residential units will be 77dB(A), exceeding the stipulated noise levels. Hence, noise mitigation measures are required. With the provision of Acoustic Window (baffle type), all the residential units will be within the stipulated noise limits.
- 9.3 Site surveys were carried out to identify the fixed noise sources surrounding the proposed Development. Fixed noise sources assessment were conducted based on the site observation of the industrial sites in the vicinity, the results of the predicted levels have indicated that the present proposed scheme will comply with the noise limit set out in the HKPSG.
- 9.4 For the aircraft and helicopter noise, the measured noise levels on site were within the noise criterion in HKPSG.
- 9.5 All the planned fixed noise sources associated with the proposed Development would be designed with appropriate acoustic treatments to comply with the relevant noise standards in the HKPSG.

10. REFERENCES

- [1] "Hong Kong Planning Standards & Guidelines" of March 2014 of Hong Kong Government.
- [2] "Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites" (IND – TM) issued under the Noise Control Ordinance.
- [3] "RoadNoise 2000" Computer Software of WS Atkins Noise and Vibration, England.
- [4] “Calculation of Road Traffic Noise” of the Department of Transport, Welsh Office, UK.



Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Site Location

FIGURE

1



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PROJECT: 22605

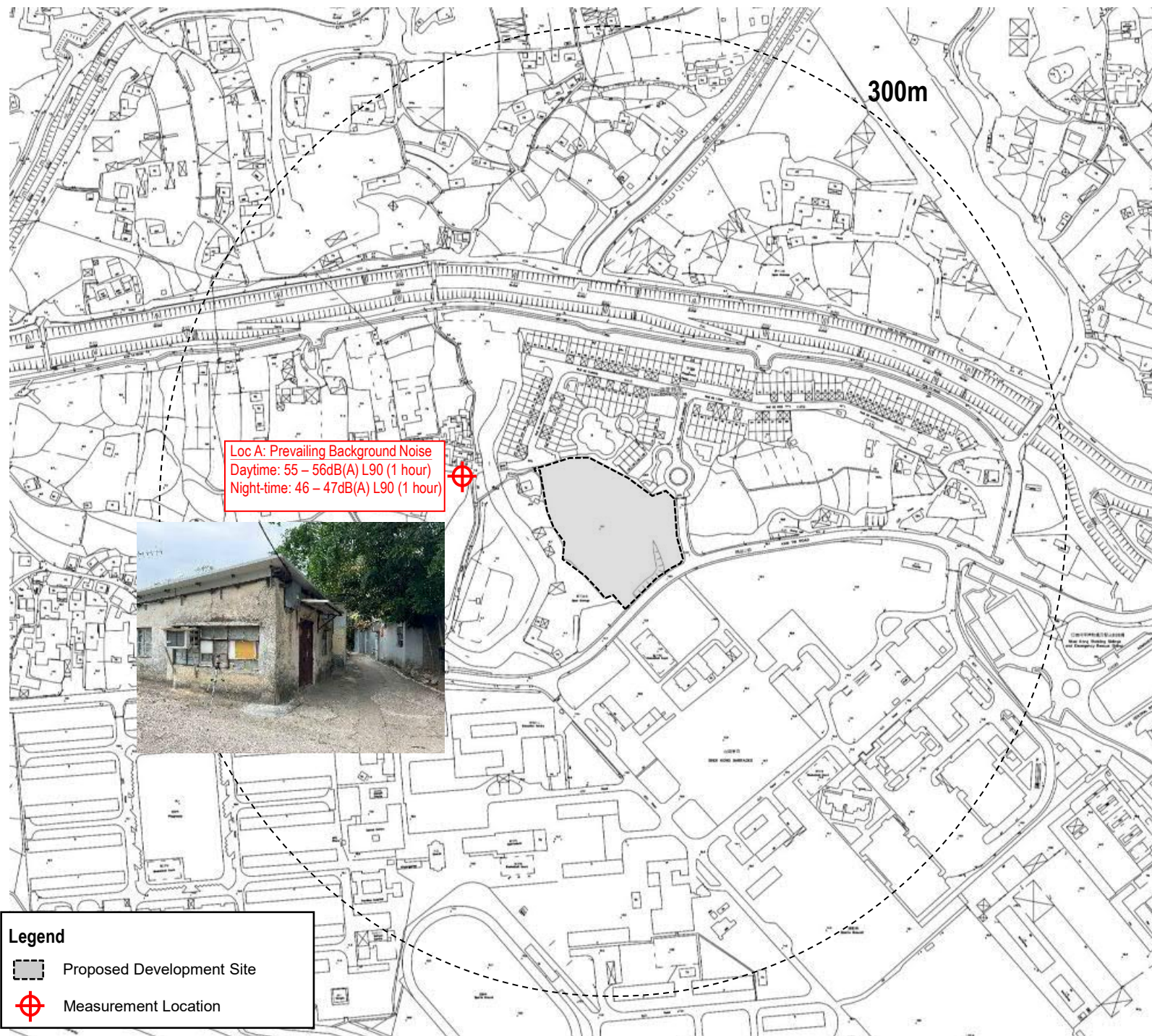
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Background
Noise
Measurement**

FIGURE

2a





PROJECT: 22605

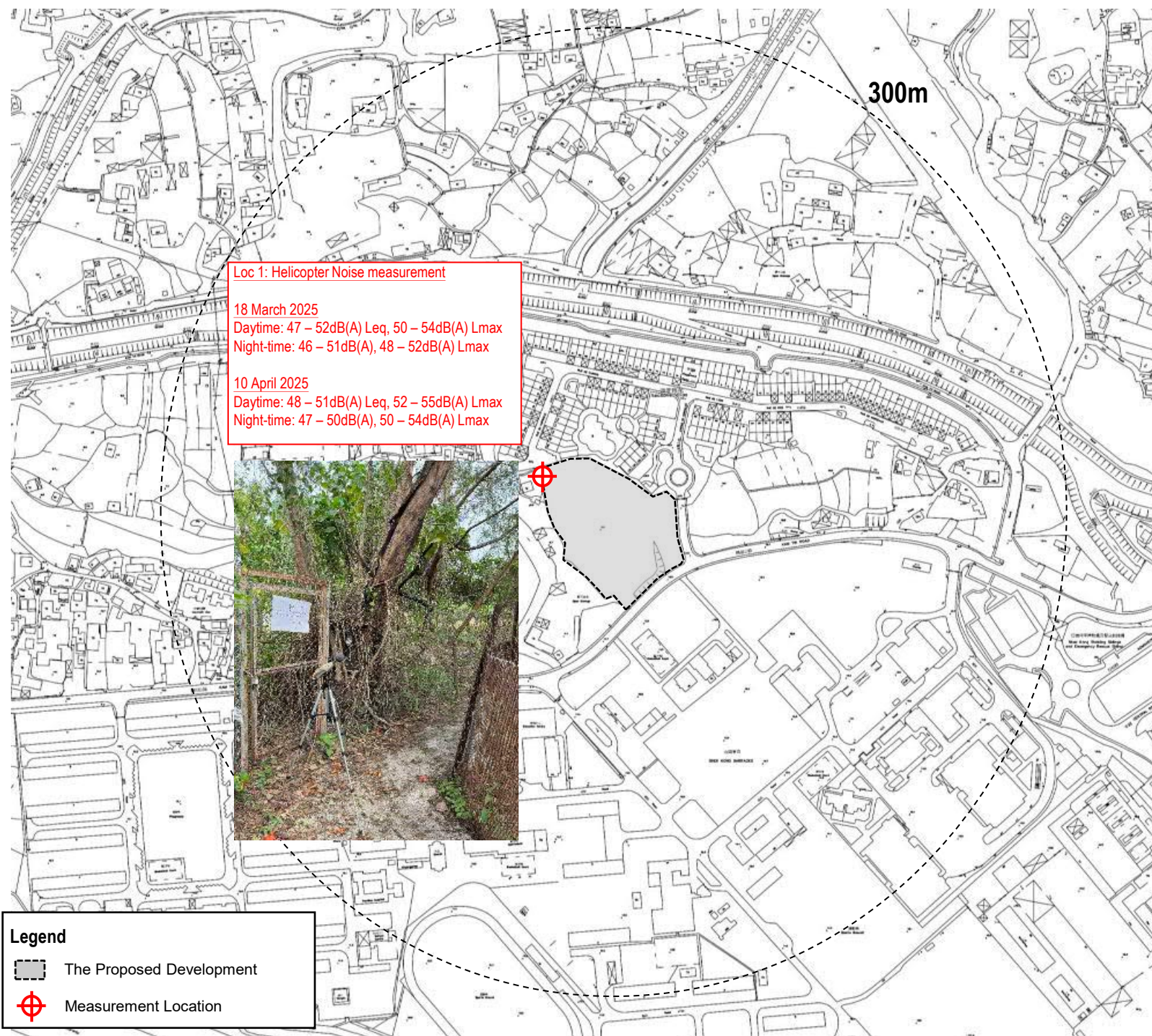
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Helicopter
Noise
Measurement**

FIGURE

2b





**Westwood Hong &
Associates Ltd**

PROJECT: 22605

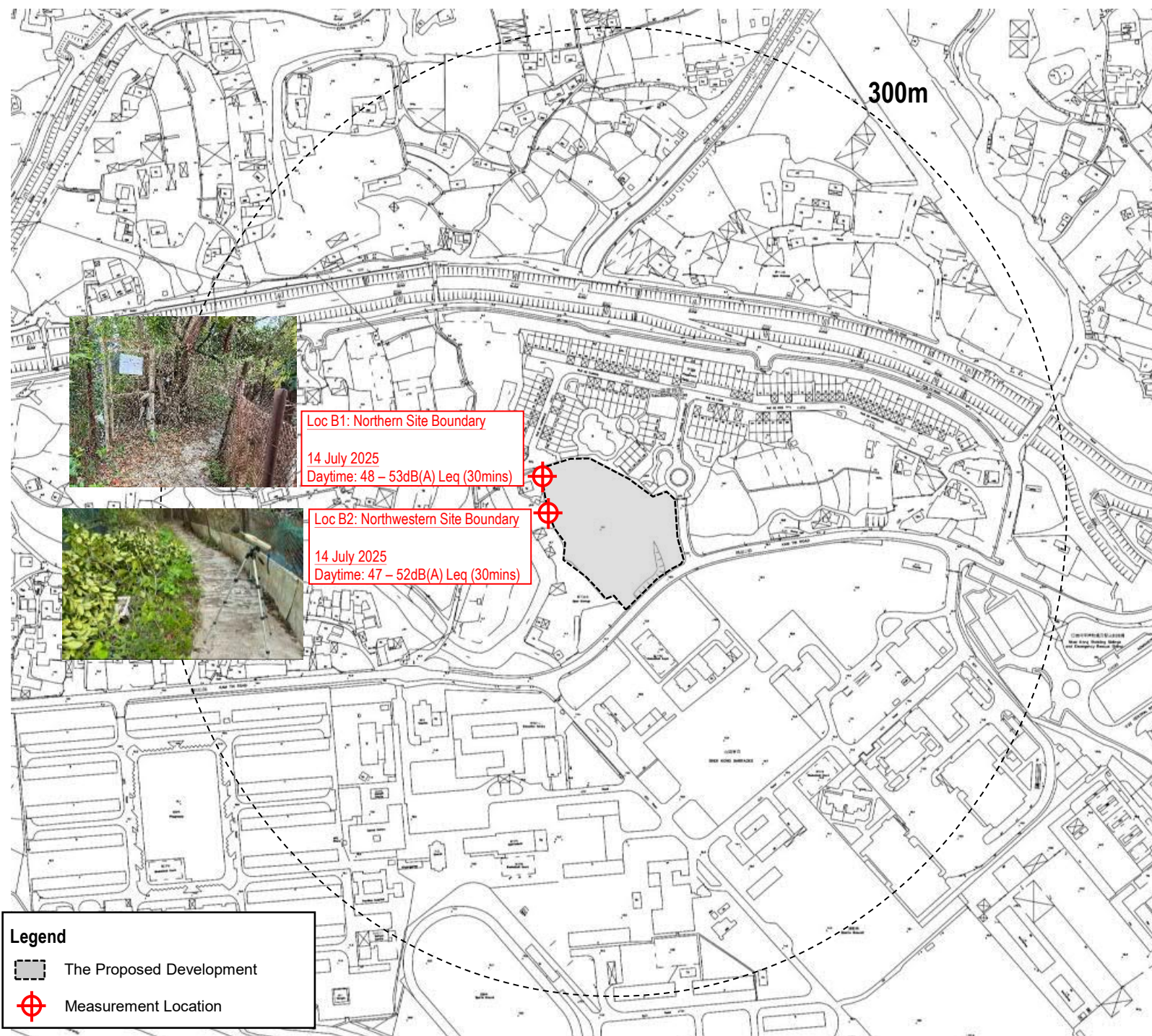
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Fixed Noise
Measurement**

FIGURE

2c



PROJECT: 22605

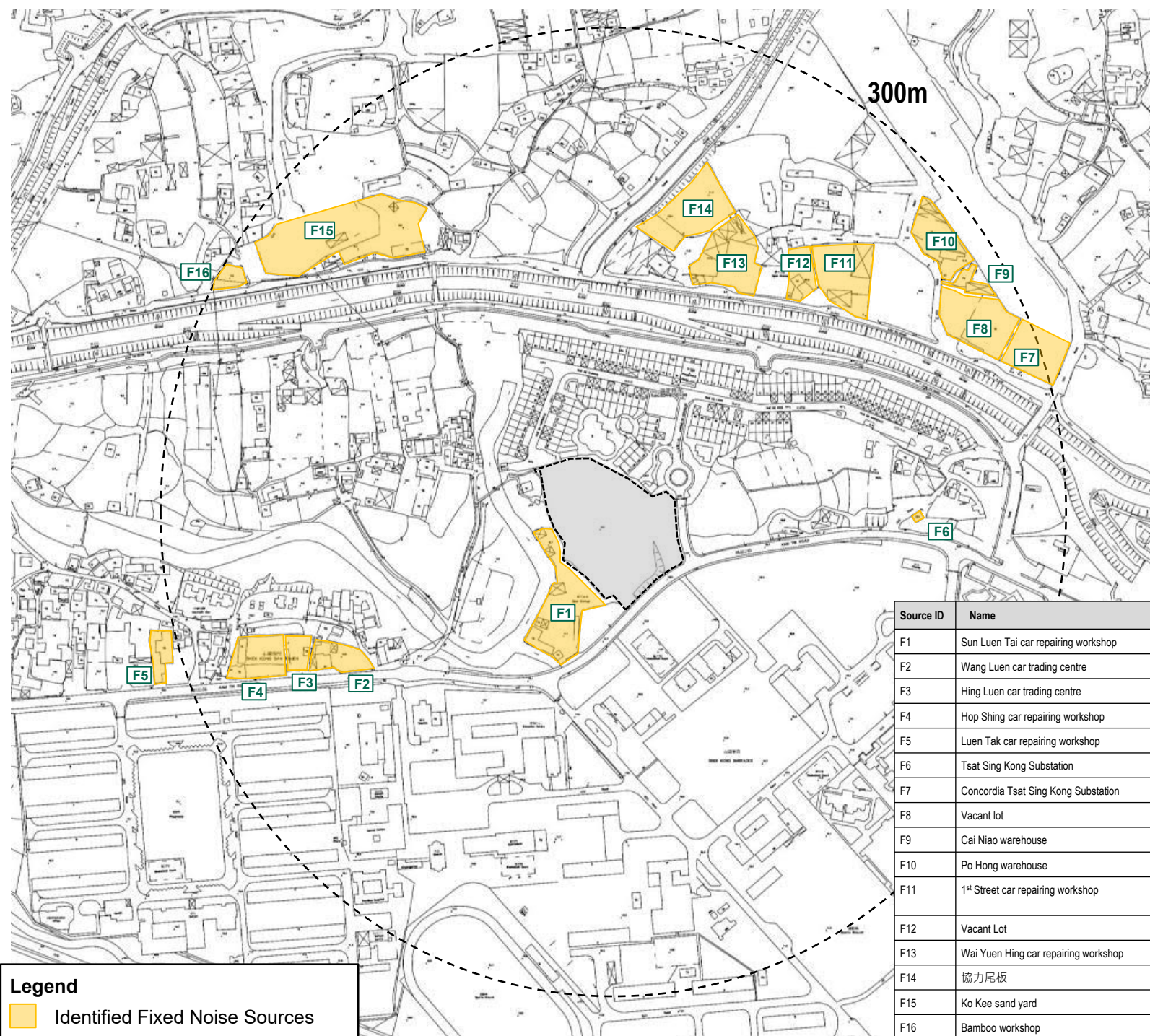
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Identified Fixed Noise Sources

FIGURE

3



PROJECT: 22605

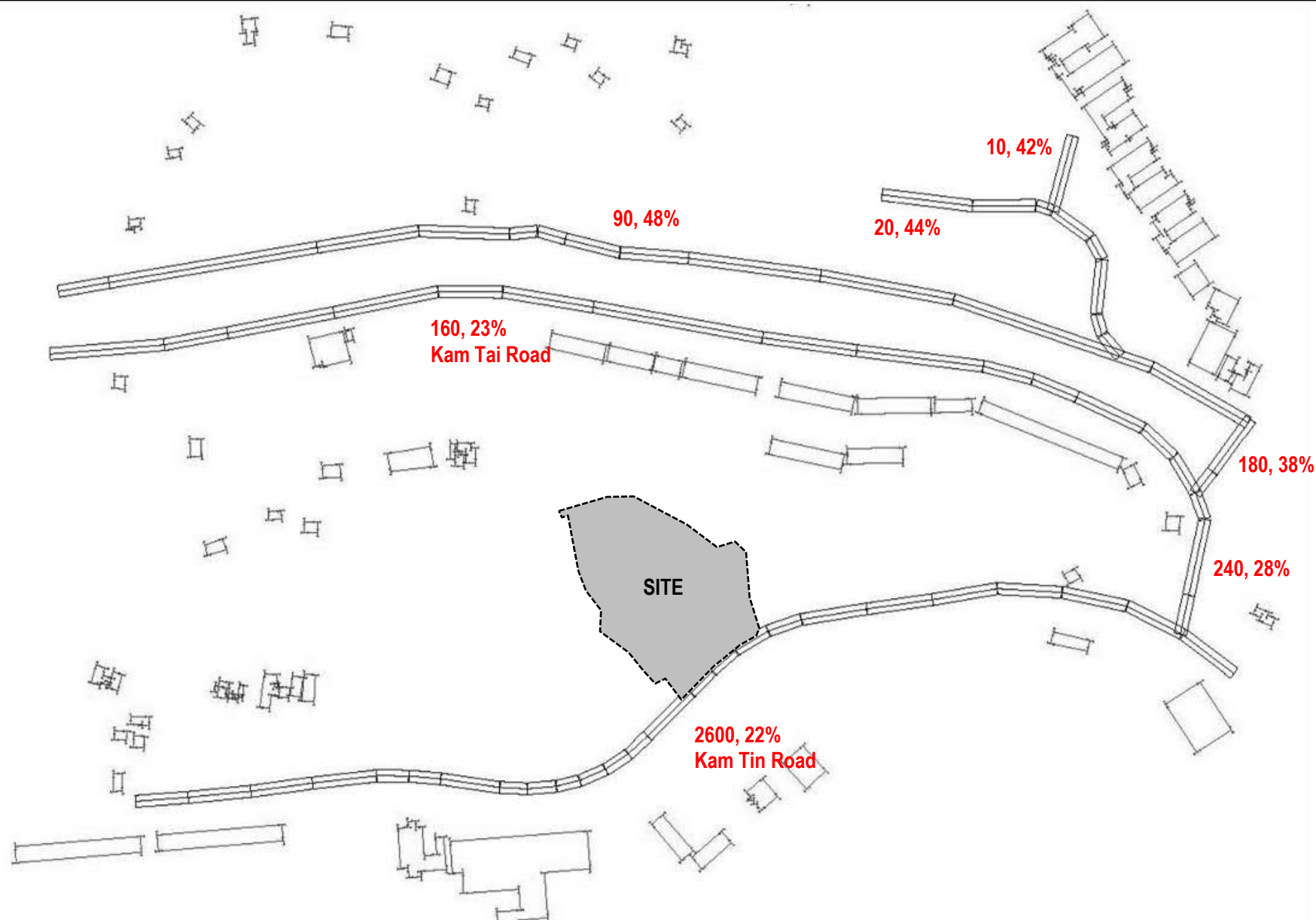
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Computer Plot
of Road Scheme**
(with Year 2046
traffic flow data
shown, AM peak)

FIGURE

4



Legend

2590, 22% - 2590 vehicles per hour, 22% heavy goods vehicles

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

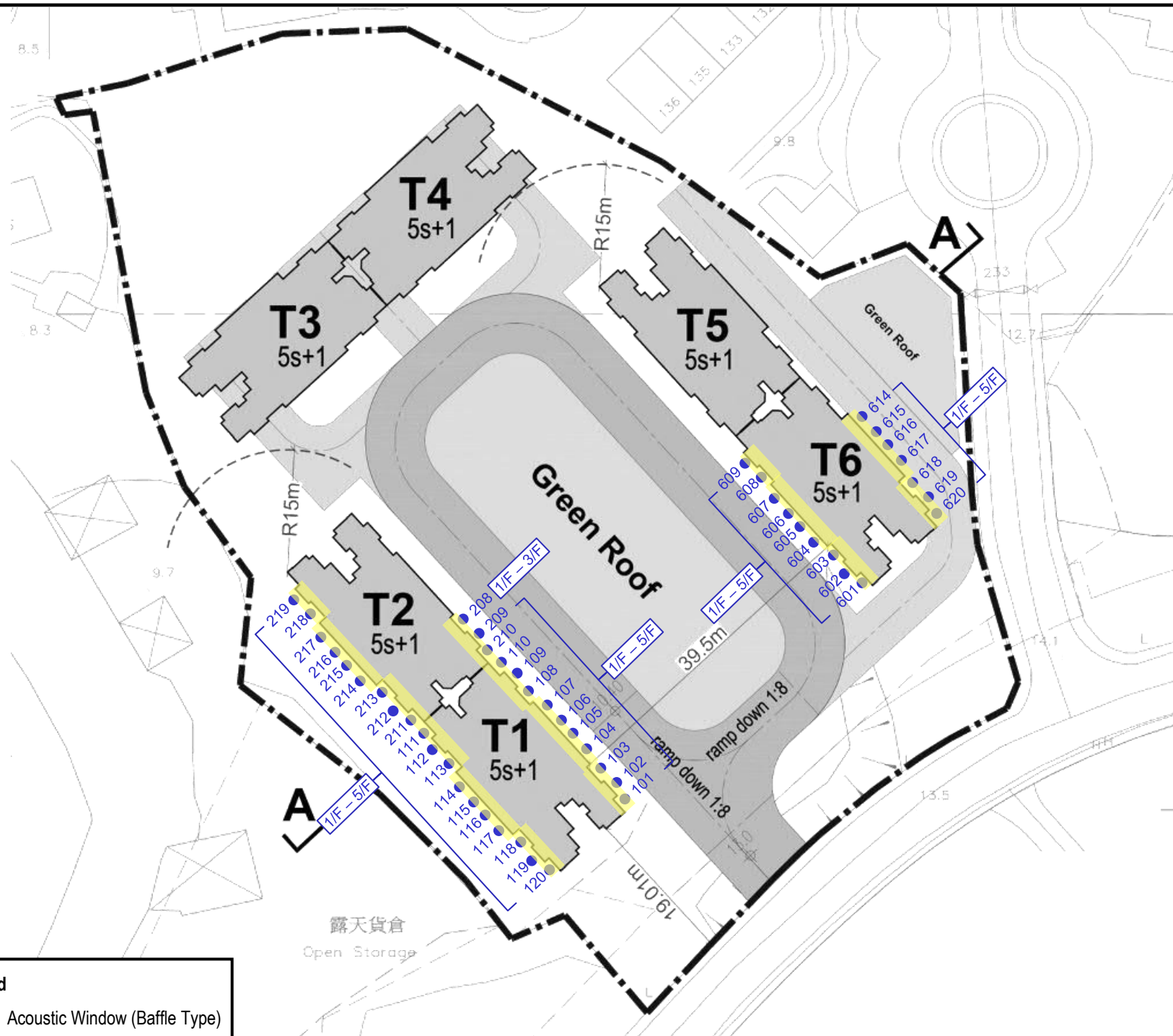
Location of Noise Mitigation Measures for Road Traffic Noise

FIGURE

5

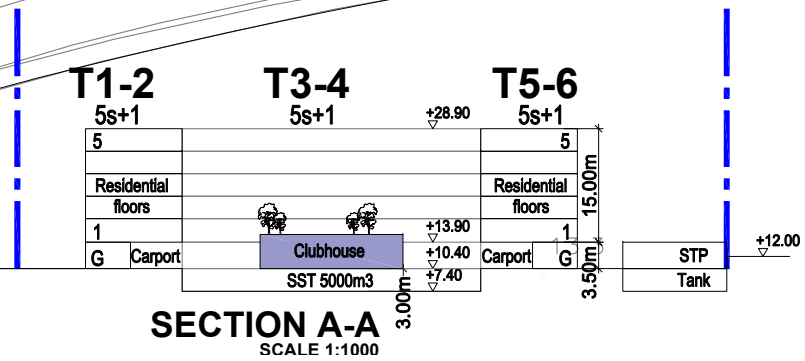
Legend

Acoustic Window (Baffle Type)

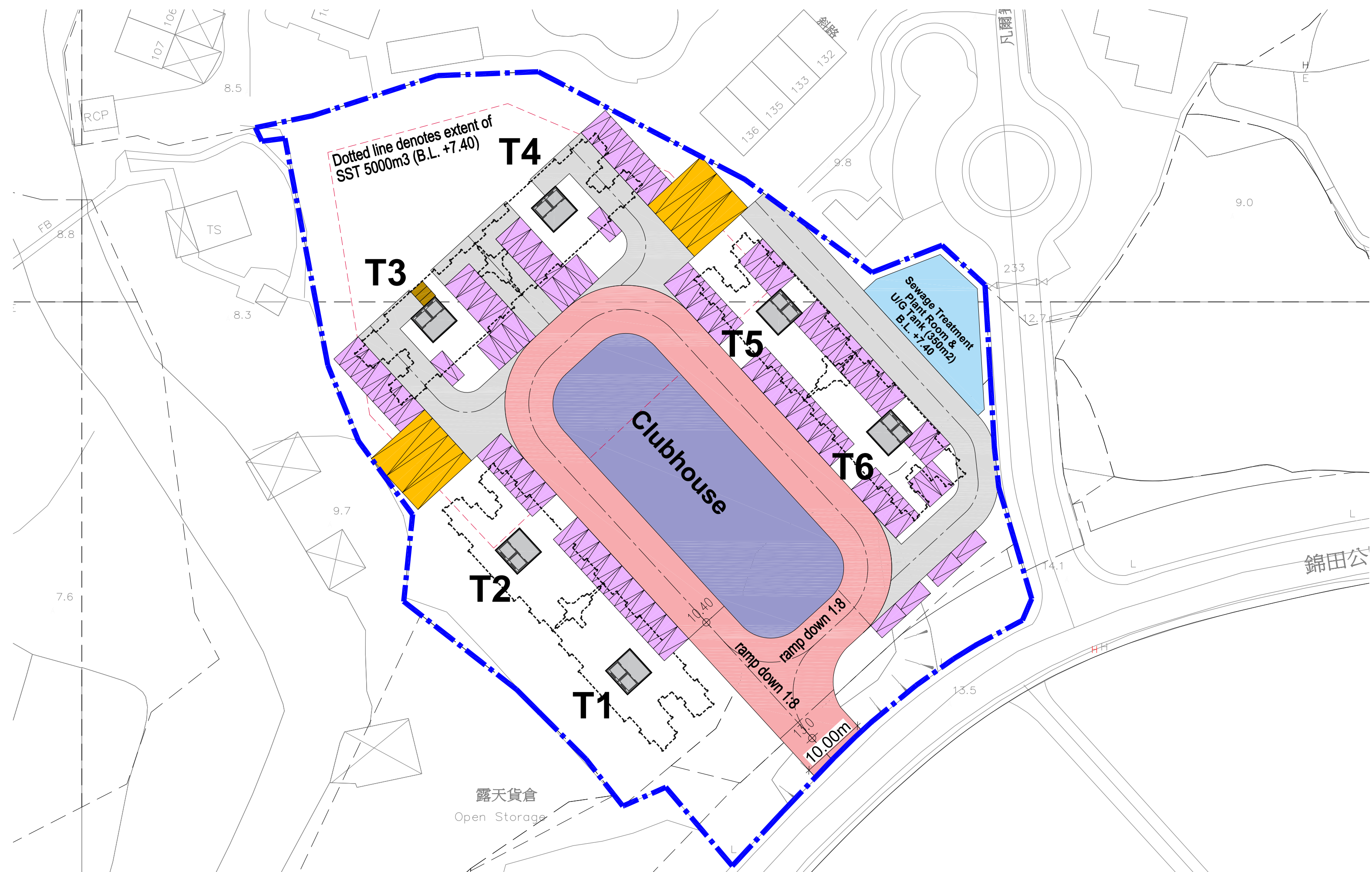


APPENDIX 1

ARCHITECTURAL DRAWINGS



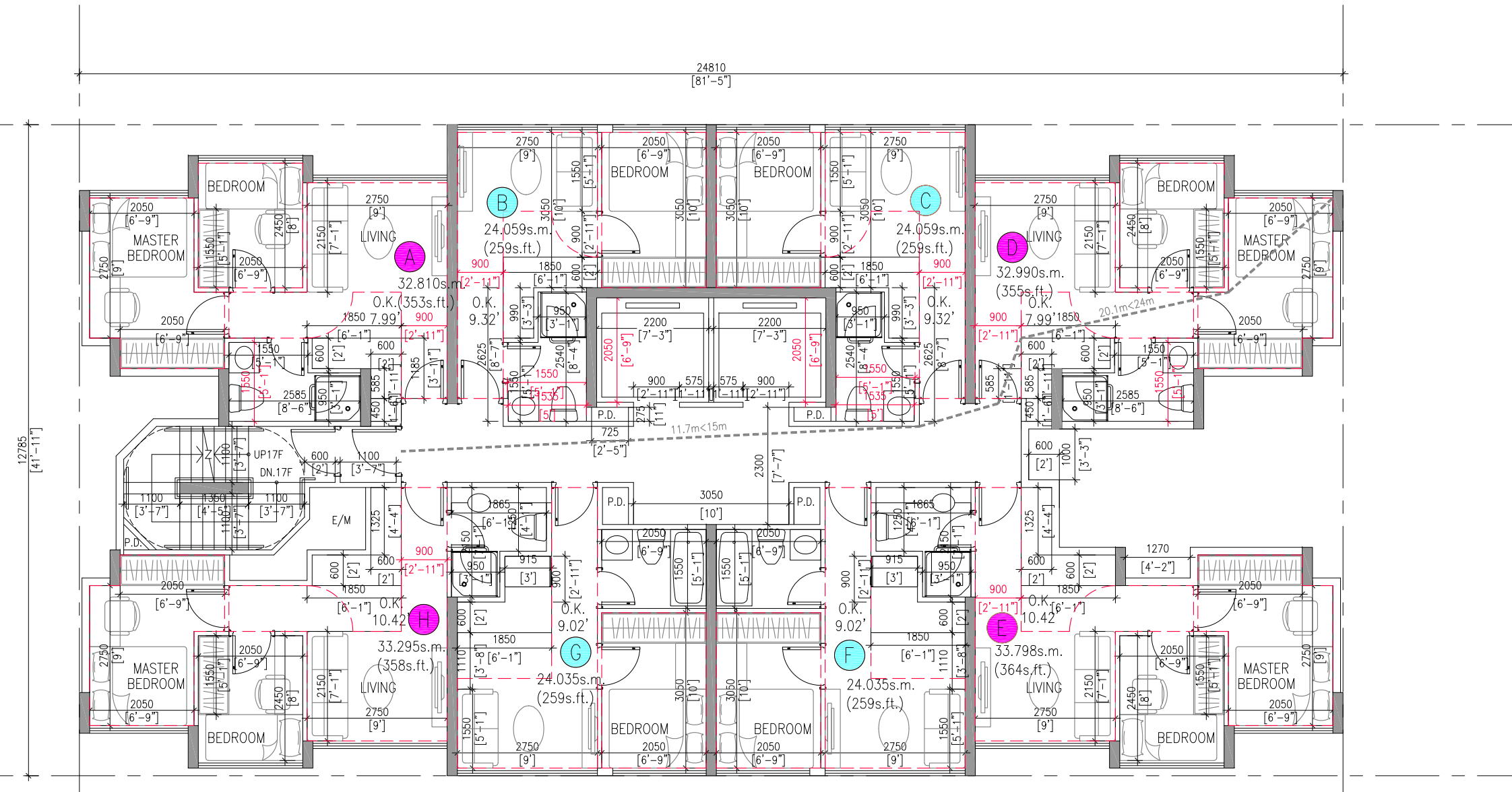
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Scale 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

GROUND FLOOR PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a



Note:
(1) Structure, Lighting and Ventilation requirement to be verified.

Prescribed window by Performance Based approach.

Dimension to be deviated from sketch paper layout.

1B Unit Critical Dimension

2B Unit Localized Dimension

UFA = 138.086 < 150 s.m.

TOTAL NFA	=	219.214	
COMMON AREA (BEFORE LIFT SHAFT EXEMPTION)	=	39.864	
TOTAL GFA (BEFORE LIFT SHAFT EXEMPTION)	=	259.078	
LIFT SHAFT AREA	=	9.020	
AREA OF LIFT SHAFT EXEMPTION	=	2.543	0.982 %
MAX. LIFT SHAFT EXEMPTED AREA (3.5% of Total GFA)	=	9.068	
COMMON AREA (AFTER LIFT SHAFT EXEMPTION)	=	37.321	
COMMON AREA (WITHOUT LIFT SHAFT AREA)	=	30.844	
TOTAL GFA (AFTER LIFT SHAFT EXEMPTION)	=	256.535	
EFFICIENCY RATE	=	85.452 %	
TOTAL SALEABLE AREA	=	229.081	
EFFICIENCY RATIO (TOTAL SALEABLE AREA / TOTAL GFA)	=	89.298%	

APPENDIX 2

PHOTOS TAKEN ON SITE

PROJECT: 22605

Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

Identified Fixed Noise Sources

FIGURE

A2-1

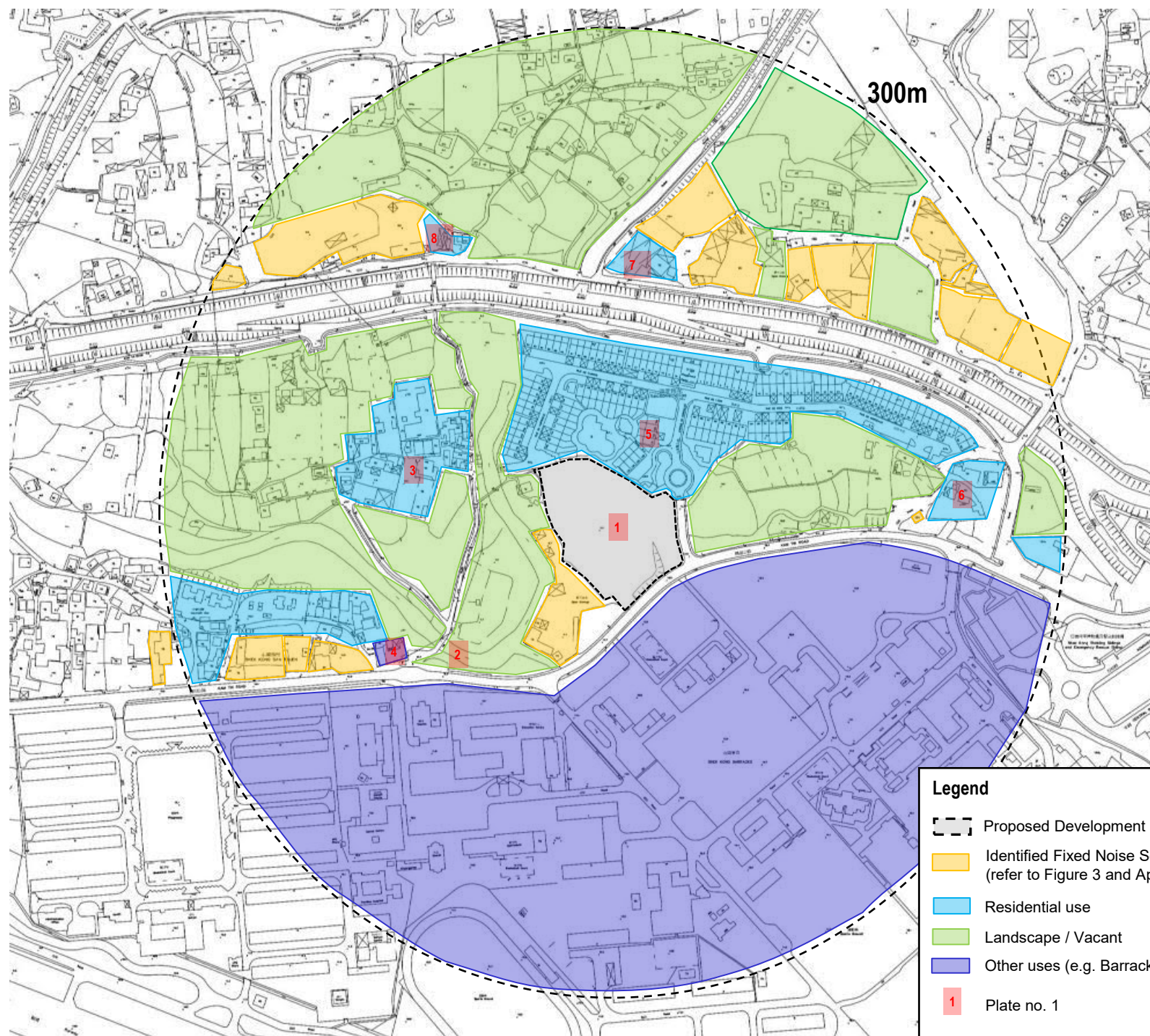




Plate 1: Development Site



Plate 2: Landscape area

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PROJECT: 22605
 Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:
Photographs taken on Site

FIGURE
A2-1



Plate 3: Village house



Plate 4: Tailor shop

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PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Photographs taken on Site

FIGURE

A2-2

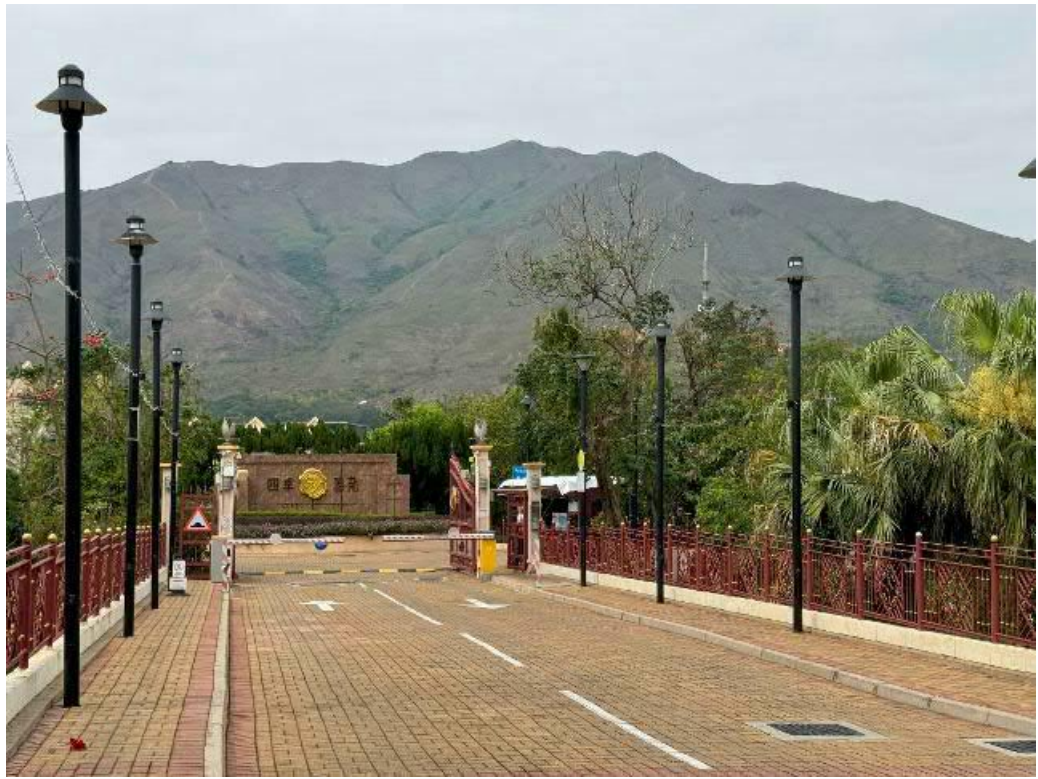


Plate 5: Residential Development – Seasons Villas



Plate 6: Village house

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Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Photographs taken on Site

FIGURE

A2-3



Plate 7: Village house



Plate 8: Village house

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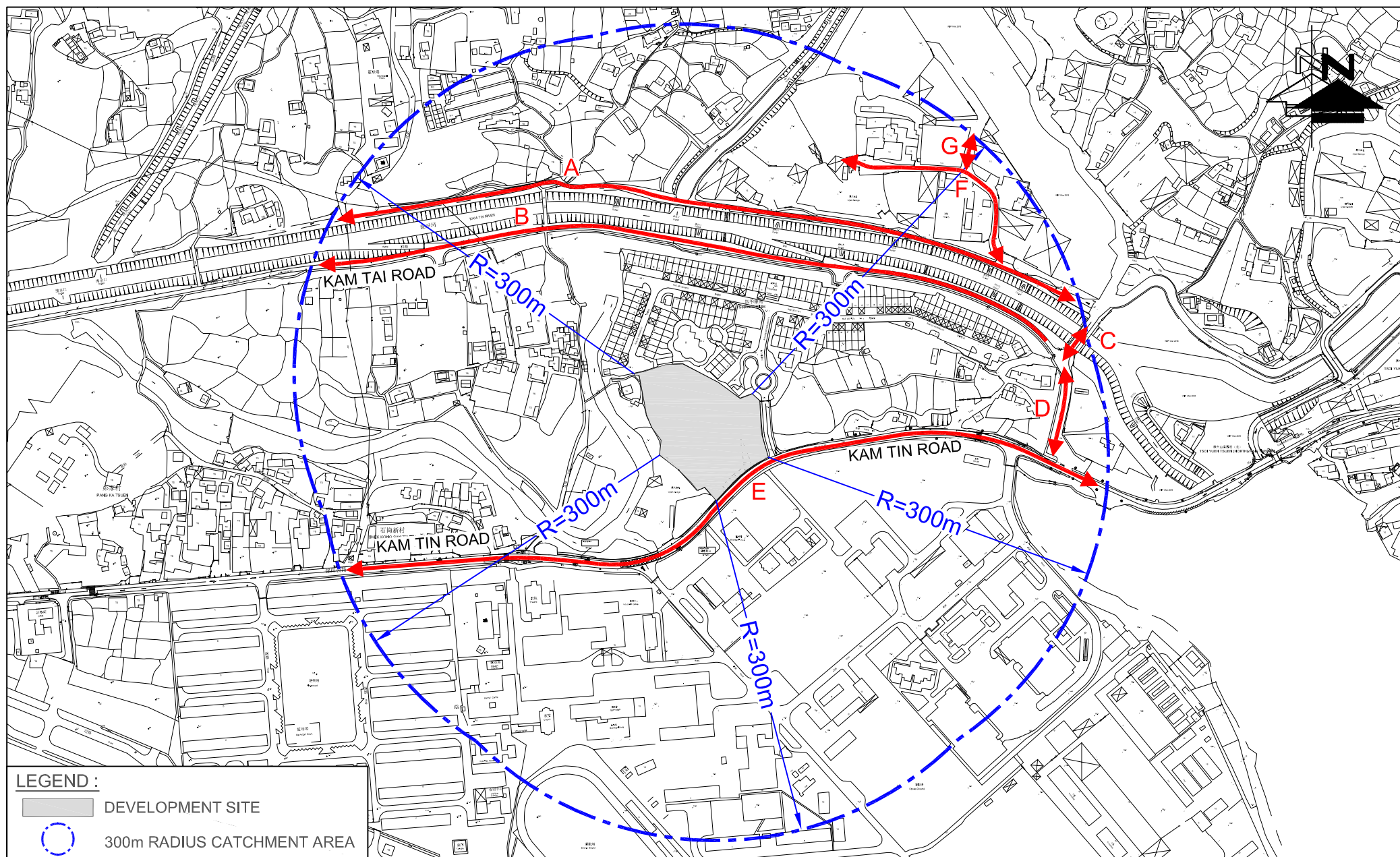
PROJECT: 22605
 Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:
Photographs taken on Site

FIGURE
A2-4

APPENDIX 3

YEAR 2046 TRAFFIC FORECAST (provided by CTA CONSULTANTS LTD)



LEGEND :	
	DEVELOPMENT SITE
	300m RADIUS CATCHMENT AREA

FIGURE NO.: 1		PROJECT TITLE: S12A Rezoning Application DD110, Kam Tin Road, Shek Kong, Yuen Long	
PROJECT NO.: 25009HK		DRAWING TITLE: INDEX PLAN	
SCALE: 1 : 4500 @A4	DATE: 06 OCT 2025	 CTA Consultants Limited 志達顧問有限公司	

25009HK



Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

TRAFFIC FORECAST FOR TRAFFIC NOISE IMPACT ASSESSMENT

Link No.	Road Name	Speed (km/hr)	Direction	Year 2046			
				AM Peak		PM Peak	
				Traffic Flow (veh/hr)	HV%	Traffic Flow (veh/hr)	HV%
A	Local Road	50	2-way	90	48%	100	31%
B	Kam Tai Road	50	WB	160	23%	170	19%
C	Local Road	50	2-way	180	38%	170	26%
D	Kam Tai Road	50	2-way	240	28%	290	23%
E	Kam Tin Road	50	2-way	2600	22%	2380	21%
F	Local Road	50	2-way	20	44%	20	29%
G	Local Road	50	2-way	10	42%	10	28%

Notes :

(1) Please refer to the Location Plan (i.e. Figure 1) attached in Appendix A.

(2) HV includes Light Van, Public Light Bus, Light Goods Vehicle, Medium Goods Vehicle, Heavy Goods Vehicle and Container/Tractor, Coach and Bus. Bus includes Coach and Bus

APPENDIX 4

PREDICTED FAÇADE NOISE LEVELS FOR ROAD TRAFFIC NOISE (BASE SCENARIO)

PROJECT: 22605

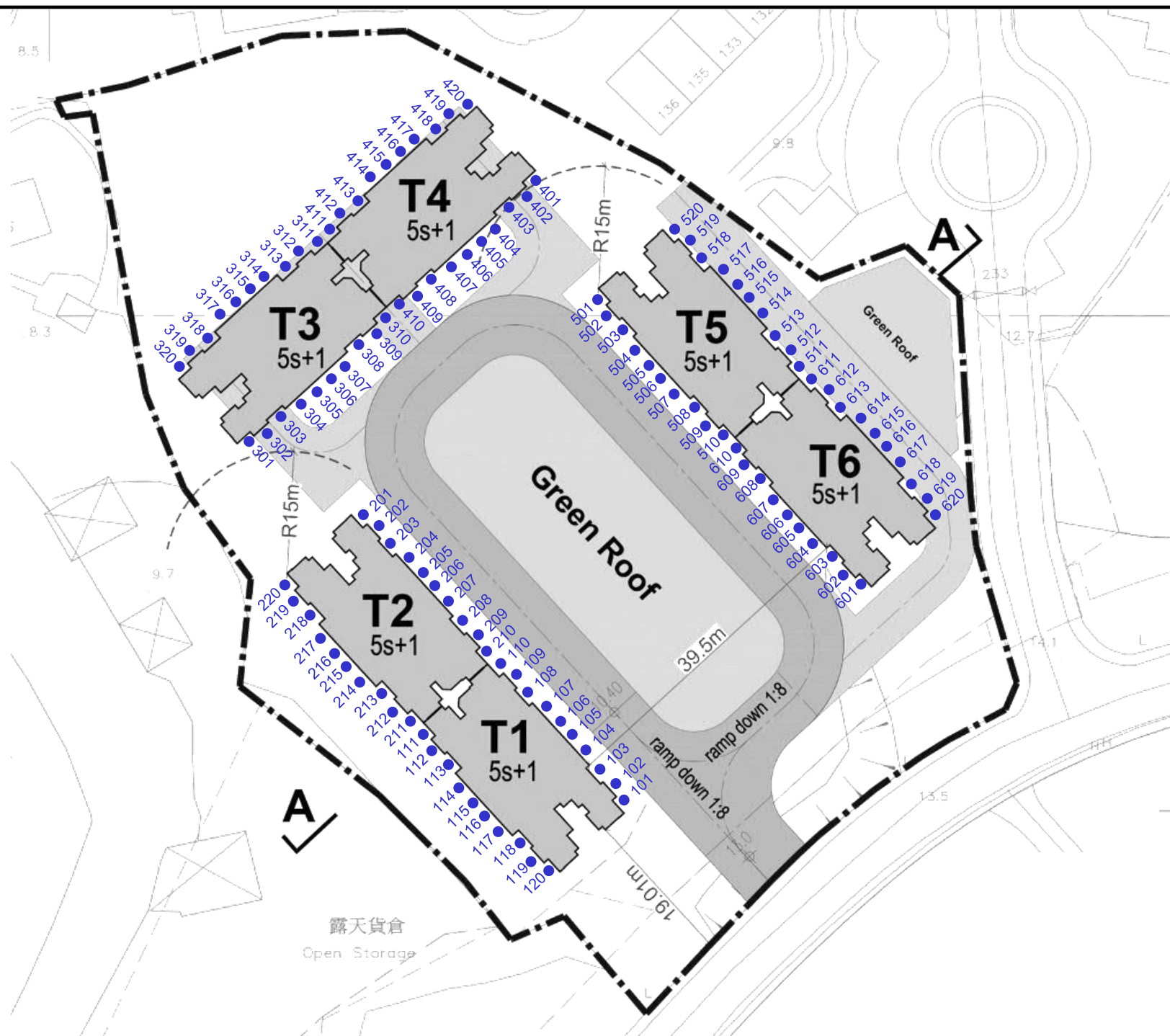
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Location of
Noise
Assessment
Points for Road
Traffic Noise
Assessment**

FIGURE

A4-1



Job No. : 22605

Job Title : Shek Kong

Scenario : Unmitigated, Year 2046 Traffic Forecast

Residential Floor	Level of Assessment Point (mPD)	Receiver																			
		T1																			
		101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
1	15.1	76.6	75.9	74.6	73.7	73.1	72.6	72.1	71.4	71.5	71.1	72.0	72.5	72.6	73.3	73.7	74.1	74.5	74.8	75.9	76.8
2	18.1	76.5	75.8	74.4	73.6	73.0	72.6	72.0	71.4	71.4	71.0	72.0	72.5	72.6	73.3	73.7	74.1	74.5	74.8	75.8	76.7
3	21.1	76.3	75.6	74.2	73.5	72.9	72.5	71.9	71.3	71.3	70.9	72.0	72.4	72.5	73.3	73.7	74.0	74.4	74.7	75.7	76.6
4	24.0	76.0	75.3	73.9	73.3	72.7	72.4	71.8	71.2	71.2	70.8	72.0	72.4	72.5	73.2	73.6	73.9	74.3	74.6	75.6	76.3
5	27.0	75.7	75.0	73.7	73.1	72.6	72.2	71.7	71.1	71.0	70.7	71.9	72.4	72.4	73.1	73.5	73.9	74.2	74.4	75.4	76.2
max		76.6	75.9	74.6	73.7	73.1	72.6	72.1	71.4	71.5	71.1	72.0	72.5	72.6	73.3	73.7	74.1	74.5	74.8	75.9	76.8

Residential Floor	Level of Assessment Point (mPD)																				
		T2																			
		201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
1	15.1	67.0	67.4	67.8	68.3	68.7	69.2	69.8	70.6	71.0	70.9	71.9	71.9	71.6	71.5	71.3	71.2	71.1	70.5	70.6	70.3
2	18.1	67.0	67.3	67.8	68.3	68.7	69.2	69.8	70.6	70.9	70.8	71.9	71.9	71.6	71.5	71.3	71.2	71.1	70.5	70.6	70.3
3	21.1	67.0	67.3	67.7	68.2	68.7	69.1	69.7	70.5	70.8	70.7	71.9	71.9	71.6	71.5	71.3	71.1	71.0	70.5	70.6	70.3
4	24.0	66.9	67.3	67.7	68.2	68.6	69.1	69.6	70.4	70.7	70.6	71.9	71.8	71.5	71.5	71.3	71.1	71.0	70.5	70.6	70.2
5	27.0	66.9	67.3	67.7	68.2	68.6	69.0	69.5	70.2	70.5	70.5	71.8	71.8	71.5	71.4	71.2	71.1	71.0	70.5	70.5	70.2
	max	67.0	67.4	67.8	68.3	68.7	69.2	69.8	70.6	71.0	70.9	71.9	71.9	71.6	71.5	71.3	71.2	71.1	70.5	70.6	70.3

Residential Floor	Level of Assessment Point (mPD)																				
		T3																			
		301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
1	15.1	69.3	69.1	68.6	68.3	68.0	67.8	67.5	67.2	67.1	66.9	59.4	60.9	60.1	61.8	62.1	62.4	62.8	62.1	64.8	66.4
2	18.1	69.2	69.1	68.6	68.3	68.0	67.8	67.5	67.2	67.1	66.9	59.4	60.9	60.1	61.9	62.1	62.4	62.8	62.1	64.8	66.4
3	21.1	69.2	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	66.9	59.5	61.0	60.2	61.9	62.1	62.4	62.9	62.1	64.9	66.4
4	24.0	69.2	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	66.9	59.6	61.0	60.3	62.0	62.2	62.5	62.9	62.1	64.9	66.4
5	27.0	69.3	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	67.0	59.6	61.1	60.3	62.0	62.2	62.5	62.9	62.2	64.9	66.4
max		69.3	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	67.0	59.6	61.1	60.3	62.0	62.2	62.5	62.9	62.2	64.9	66.4

Residential Floor	Level of Assessment Point (mPD)																				
		T4																			
		401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
1	15.1	66.8	66.2	65.9	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.8	60.6	60.2	60.7	60.6	60.5	60.5	59.6	60.1	58.9
2	18.1	66.8	66.2	65.9	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.9	60.7	60.3	60.7	60.6	60.6	60.5	59.7	60.2	58.9
3	21.1	66.8	66.2	66.0	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.9	60.7	60.3	60.8	60.6	60.6	60.6	59.8	60.3	59.0
4	24.0	66.8	66.2	66.0	66.3	66.4	66.4	66.6	66.6	66.9	66.8	60.1	60.8	60.4	60.8	60.7	60.7	60.7	59.8	60.3	59.1
5	27.0	66.8	66.3	66.1	66.3	66.4	66.5	66.6	66.7	66.9	66.9	60.4	61.0	60.5	60.9	60.8	60.8	60.7	59.9	60.4	59.2
max		66.8	66.3	66.1	66.3	66.4	66.5	66.6	66.7	66.9	66.9	60.4	61.0	60.5	60.9	60.8	60.8	60.7	59.9	60.4	59.2

Residential Floor	Level of Assessment Point (mPD)																				
		T5																			
		501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520
1	15.1	67.6	67.8	67.9	68.2	68.3	68.5	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.8	68.5	68.4	68.2	67.5	67.6	67.2
2	18.1	67.7	67.8	67.9	68.2	68.3	68.4	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.7	68.5	68.4	68.2	67.5	67.6	67.2
3	21.1	67.6	67.8	67.9	68.2	68.3	68.4	68.7	69.3	69.7	70.0	69.3	69.4	69.0	68.7	68.5	68.3	68.1	67.5	67.6	67.2
4	24.0	67.6	67.8	67.9	68.2	68.3	68.4	68.7	69.3	69.7	70.0	69.3	69.4	69.0	68.7	68.4	68.3	68.1	67.5	67.6	67.1
5	27.0	67.6	67.8	67.9	68.1	68.3	68.4	68.7	69.2	69.7	69.9	69.2	69.3	68.9	68.6	68.4	68.3	68.1	67.4	67.6	67.1
max		67.7	67.8	67.9	68.2	68.3	68.5	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.8	68.5	68.4	68.2	67.5	67.6	67.2

Residential Floor	Level of Assessment Point (mPD)	T6																			
		601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
1	15.1	76.8	75.8	74.6	73.7	73.1	72.7	72.1	71.4	71.0	70.4	69.5	70.1	69.9	71.1	71.5	71.8	72.3	72.5	73.8	75.2
2	18.1	76.7	75.7	74.5	73.7	73.1	72.6	72.1	71.4	71.0	70.4	69.5	70.1	69.9	71.1	71.4	71.8	72.2	72.5	73.8	75.1
3	21.1	76.5	75.6	74.4	73.6	73.0	72.6	72.0	71.3	71.0	70.3	69.4	70.1	69.8	71.0	71.4	71.8	72.2	72.4	73.7	74.9
4	24.0	76.3	75.4	74.3	73.5	72.9	72.5	72.0	71.2	70.9	70.3	69.4	70.0	69.7	71.0	71.3	71.7	72.1	72.2	73.5	74.7
5	27.0	76.1	75.2	74.1	73.3	72.8	72.3	71.9	71.2	70.8	70.2	69.3	69.9	69.6	70.9	71.2	71.5	71.9	72.0	73.3	74.5
max		76.8	75.8	74.6	73.7	73.1	72.7	72.1	71.4	71.0	70.4	69.5	70.1	69.9	71.1	71.5	71.8	72.3	72.5	73.8	75.2

APPENDIX 5

PREDICTED FAÇADE NOISE LEVELS FOR ROAD TRAFFIC NOISE (WITH ALL NOISE MITIGATION MEASURES)

Job No. : 22605

Job Title : Shek Kong

Scenario : Unmitigated, Year 2046 Traffic Forecast

Residential Floor	Level of Assessment Point (mPD)	Receiver																			
		T1																			
		101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
1	15.1	70.2	70.4	69.8	68.9	67.6	67.1	67.3	66.6	66.0	64.7	65.6	67.0	67.8	68.5	68.2	68.6	69.7	70.0	70.4	70.4
2	18.1	70.1	70.3	69.6	68.8	67.5	67.1	67.2	66.6	65.9	64.6	65.6	67.0	67.8	68.5	68.2	68.6	69.7	70.0	70.3	70.3
3	21.1	69.9	70.1	69.4	68.7	67.4	67.0	67.1	66.5	65.8	64.5	65.6	66.9	67.7	68.5	68.2	68.5	69.6	69.9	70.2	70.2
4	24.0	69.6	69.8	69.1	68.5	67.2	66.9	67.0	66.4	65.7	64.4	65.6	66.9	67.7	68.4	68.1	68.4	69.5	69.8	70.1	69.9
5	27.0	69.3	69.5	68.9	68.3	67.1	66.7	66.9	66.3	65.5	64.3	65.5	66.9	67.6	68.3	68.0	68.4	69.4	69.6	69.9	69.8

max 70.2 70.4 69.8 68.9 67.6 67.1 67.3 66.6 66.0 64.7 65.6 67.0 67.8 68.5 68.2 68.6 69.7 70.0 70.4 70.4

Remark:

-  Acoustic Window (Baffle type) for bedroom, with SAM, -5.5dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for master bedroom, with SAM, -6.4dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for living room, without SAM, -4.8dB(A) assumed (appendix 8)
- The presented predicted noise level after adopting acoustic windows (baffle type) (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the external façade, but the equivalent noise level at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the acoustic windows (baffle type).

Residential Floor	Level of Assessment Point (mPD)																				
		T2																			
		201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
1	15.1	67.0	67.4	67.8	68.3	68.7	69.2	69.8	65.8	65.5	64.5	65.5	66.4	66.8	66.7	65.8	65.7	66.3	65.7	65.1	70.3
2	18.1	67.0	67.3	67.8	68.3	68.7	69.2	69.8	65.8	65.4	64.4	65.5	66.4	66.8	66.7	65.8	65.7	66.3	65.7	65.1	70.3
3	21.1	67.0	67.3	67.7	68.2	68.7	69.1	69.7	65.7	65.3	64.3	65.5	66.4	66.8	66.7	65.8	65.6	66.2	65.7	65.1	70.3
4	24.0	66.9	67.3	67.7	68.2	68.6	69.1	69.6	70.4	65.2	64.2	65.5	66.3	66.7	66.7	65.8	65.6	66.2	65.7	65.1	70.2
5	27.0	66.9	67.3	67.7	68.2	68.6	69.0	69.5	70.2	65.0	64.1	65.4	66.3	66.7	66.6	65.7	65.6	66.2	65.7	65.0	70.2
max		67.0	67.4	67.8	68.3	68.7	69.2	69.8	70.4	65.5	64.5	65.5	66.4	66.8	66.7	65.8	65.7	66.3	65.7	65.1	70.3

Remark:

-  Acoustic Window (Baffle type) for bedroom, with SAM, -5.5dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for master bedroom, with SAM, -6.4dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for living room, without SAM, -4.8dB(A) assumed (appendix 8)
- The presented predicted noise level after adopting acoustic windows (baffle type) (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the external façade, but the equivalent noise level at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the acoustic windows (baffle type).

Residential Floor	Level of Assessment Point (mPD)																				
		T3																			
		301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
1	15.1	69.3	69.1	68.6	68.3	68.0	67.8	67.5	67.2	67.1	66.9	59.4	60.9	60.1	61.8	62.1	62.4	62.8	62.1	64.8	66.4
2	18.1	69.2	69.1	68.6	68.3	68.0	67.8	67.5	67.2	67.1	66.9	59.4	60.9	60.1	61.9	62.1	62.4	62.8	62.1	64.8	66.4
3	21.1	69.2	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	66.9	59.5	61.0	60.2	61.9	62.1	62.4	62.9	62.1	64.9	66.4
4	24.0	69.2	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	66.9	59.6	61.0	60.3	62.0	62.2	62.5	62.9	62.1	64.9	66.4
5	27.0	69.3	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	67.0	59.6	61.1	60.3	62.0	62.2	62.5	62.9	62.2	64.9	66.4
max		69.3	69.1	68.6	68.3	68.0	67.8	67.6	67.2	67.1	67.0	59.6	61.1	60.3	62.0	62.2	62.5	62.9	62.2	64.9	66.4

Residential Floor	Level of Assessment Point (mPD)																				
		T4																			
		401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420
1	15.1	66.8	66.2	65.9	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.8	60.6	60.2	60.7	60.6	60.5	60.5	59.6	60.1	58.9
2	18.1	66.8	66.2	65.9	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.9	60.7	60.3	60.7	60.6	60.6	60.5	59.7	60.2	58.9
3	21.1	66.8	66.2	66.0	66.2	66.3	66.4	66.5	66.6	66.8	66.8	59.9	60.7	60.3	60.8	60.6	60.6	60.6	59.8	60.3	59.0
4	24.0	66.8	66.2	66.0	66.3	66.4	66.4	66.6	66.6	66.9	66.8	60.1	60.8	60.4	60.8	60.7	60.7	60.7	59.8	60.3	59.1
5	27.0	66.8	66.3	66.1	66.3	66.4	66.5	66.6	66.7	66.9	66.9	60.4	61.0	60.5	60.9	60.8	60.8	60.7	59.9	60.4	59.2
max		66.8	66.3	66.1	66.3	66.4	66.5	66.6	66.7	66.9	66.9	60.4	61.0	60.5	60.9	60.8	60.8	60.7	59.9	60.4	59.2

Residential Floor	Level of Assessment Point (mPD)																				
		T5																			
		501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520
1	15.1	67.6	67.8	67.9	68.2	68.3	68.5	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.8	68.5	68.4	68.2	67.5	67.6	67.2
2	18.1	67.7	67.8	67.9	68.2	68.3	68.4	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.7	68.5	68.4	68.2	67.5	67.6	67.2
3	21.1	67.6	67.8	67.9	68.2	68.3	68.4	68.7	69.3	69.7	70.0	69.3	69.4	69.0	68.7	68.5	68.3	68.1	67.5	67.6	67.2
4	24.0	67.6	67.8	67.9	68.2	68.3	68.4	68.7	69.3	69.7	70.0	69.3	69.4	69.0	68.7	68.4	68.3	68.1	67.5	67.6	67.1
5	27.0	67.6	67.8	67.9	68.1	68.3	68.4	68.7	69.2	69.7	69.9	69.2	69.3	68.9	68.6	68.4	68.3	68.1	67.4	67.6	67.1
max		67.7	67.8	67.9	68.2	68.3	68.5	68.8	69.3	69.8	70.1	69.4	69.5	69.1	68.8	68.5	68.4	68.2	67.5	67.6	67.2

Residential Floor	Level of Assessment Point (mPD)																				
		T6																			
		601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620
1	15.1	70.4	70.3	69.8	68.9	67.6	67.2	67.3	66.6	65.5	70.4	69.5	70.1	69.9	66.3	66.0	66.3	67.5	67.7	68.3	68.8
2	18.1	70.3	70.2	69.7	68.9	67.6	67.1	67.3	66.6	65.5	70.4	69.5	70.1	69.9	66.3	65.9	66.3	67.4	67.7	68.3	68.7
3	21.1	70.1	70.1	69.6	68.8	67.5	67.1	67.2	66.5	65.5	70.3	69.4	70.1	69.8	66.2	65.9	66.3	67.4	67.6	68.2	68.5
4	24.0	69.9	69.9	69.5	68.7	67.4	67.0	67.2	66.4	65.4	70.3	69.4	70.0	69.7	66.2	65.8	66.2	67.3	67.4	68.0	68.3
5	27.0	69.7	69.7	69.3	68.5	67.3	66.8	67.1	66.4	65.3	70.2	69.3	69.9	69.6	66.1	65.7	66.0	67.1	67.2	67.8	68.1

max 70.4 70.3 69.8 68.9 67.6 67.2 67.3 66.6 65.5 70.4 69.5 70.1 69.9 66.3 66.0 66.3 67.5 67.7 68.3 68.8

Remark:

-  Acoustic Window (Baffle type) for bedroom, with SAM, -5.5dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for master bedroom, with SAM, -6.4dB(A) assumed (appendix 8)
-  Acoustic Window (Baffle type) for living room, without SAM, -4.8dB(A) assumed (appendix 8)
- The presented predicted noise level after adopting acoustic windows (baffle type) (i.e. mitigated noise level) does not necessarily represent the noise level at 1m away from the external façade, but the equivalent noise level at 1m from the external façade after accounting the reduction in noise levels inside the flat offered by the acoustic windows (baffle type).

APPENDIX 6

IDENTIFIED FIXED NOISE SOURCES AND SWL CALCULATIONS

Project Title: Rezoning from "Residential (Group C)2" and "Open Space" Zones to "Residential (Group C)4" Zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D.110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Job no.: 22605

Table A6-1: Summary of Sound Power Levels of Fixed Noise Sources

Source ID	Building	Photo	Fixed Noise Sources	Date of Survey	SPL	Sound Power Level (SWL) of the Site with fixed noise source, dB(A)
F1	Sun Luen Tai Car Repairing Workshop		Minor operation of using pneumatic screwdriver inside temporary structure and a forklift for loading and unloading	18 March 2025, 10 April 2025, 14 July 2025	Operation inside Temporary Structure: 71dB(A) at 10m distance	99
		 			loading and unloading by Forklift : 66dB(A) at 10m distance	94
F2	Wang Luen Car Trading Centre	 	Vehicle display only, no industrial noise was observed	18 March 2025, 10 April 2025, 14 July 2025	-	-

Project Title: Rezoning from "Residential (Group C)2" and "Open Space" Zones to "Residential (Group C)4" Zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D.110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Job no.: 22605

Table A6-1: Summary of Sound Power Levels of Fixed Noise Sources

Source ID	Building	Photo	Fixed Noise Sources	Date of Survey	SPL	Sound Power Level (SWL) of the Site with fixed noise source, dB(A)
F3	Hing Luen Car Trading Centre		Vehicle display only, no industrial noise was observed		-	-
F4	Hop Shing Car Repairing Workshop		The gate was closed during all site surveys. No industrial noise was observed.	18 March 2025, 10 April 2025, 14 July 2025	-	-
F5	Luen Tak Car Repairing Workshop		Simply hand tools handling noise was observed.	18 March 2025, 10 April 2025, 14 July 2025	68dB(A) at 5m distance	90
F6	Tsat Sing Kong Substation		No industrial noise was observed during site survey.	18 March 2025, 10 April 2025, 14 July 2025	-	-

Project Title: Rezoning from "Residential (Group C)2" and "Open Space" Zones to "Residential (Group C)4" Zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D.110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Job no.: 22605

Table A6-1: Summary of Sound Power Levels of Fixed Noise Sources

Source ID	Building	Photo	Fixed Noise Sources	Date of Survey	SPL	Sound Power Level (SWL) of the Site with fixed noise source, dB(A)
F7	Concordia Tsat Sing Kong Substation		Plant noise was observed	18 March 2025, 10 April 2025, 14 July 2025	70dB(A) at 5m distance from the louvre	92
F8	Vacant Lot		The gate was closed during site survey. The lot was empty	18 March 2025, 10 April 2025, 14 July 2025	-	-
F9	Cai Niao Warehouse		Storage only, no industrial noise was observed	18 March 2025, 10 April 2025, 14 July 2025	-	-
F10	Po Hong Warehouse		Storage only, no industrial noise was observed	18 March 2025, 10 April 2025, 14 July 2025	-	-
F11	1st Street Car Repairing Workshop		Noise of pneumatic screwdriver and air compressor were observed	18 March 2025, 10 April 2025, 14 July 2025	69dB(A) at 10m distance	97

Project Title: Rezoning from "Residential (Group C)2" and "Open Space" Zones to "Residential (Group C)4" Zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D.110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Job no.: 22605

Table A6-1: Summary of Sound Power Levels of Fixed Noise Sources

Source ID	Building	Photo	Fixed Noise Sources	Date of Survey	SPL	Sound Power Level (SWL) of the Site with fixed noise source, dB(A)
F12	Vacant Lot		Temporary structures. The gate was closed during site survey.	18 March 2025, 10 April 2025, 14 July 2025	-	-
F13	Wai Yuen Hing Car Repairing Workshop		Simply hand tools handling noise was observed.	18 March 2025, 10 April 2025, 14 July 2025	67dB(A) at 8m distance	93
F14	協力尾板		Simply hand tools handling noise and pneumatic screwdriver noise were observed.	18 March 2025, 10 April 2025, 14 July 2025	68dB(A) at 5m distance	90
F15	Ko Kee Sand Yard		lorry with crane for loading and unloading.	18 March 2025, 10 April 2025, 14 July 2025	69dB(A) at 10m distance	97

Project Title: F Rezoning from "Residential (Group C)2" and "Open Space" Zones to "Residential (Group C)4" Zone for a Proposed Residential Development at Lot Nos. 519 RP and 520 RP in D.D.110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Job no.: 22605

Table A6-1: Summary of Sound Power Levels of Fixed Noise Sources

Source ID	Building	Photo	Fixed Noise Sources	Date of Survey	SPL	Sound Power Level (SWL) of the Site with fixed noise source, dB(A)
F16	Bamboo Workshop		lorry with crane for loading and unloading.	18 March 2025, 10 April 2025, 14 July 2025	68dB(A) at 5m distance	90

APPENDIX 7

FIXED NOISE SOURCES ASSESSMENT FOR THE PROPOSED DEVELOPMENT

PROJECT: 22605

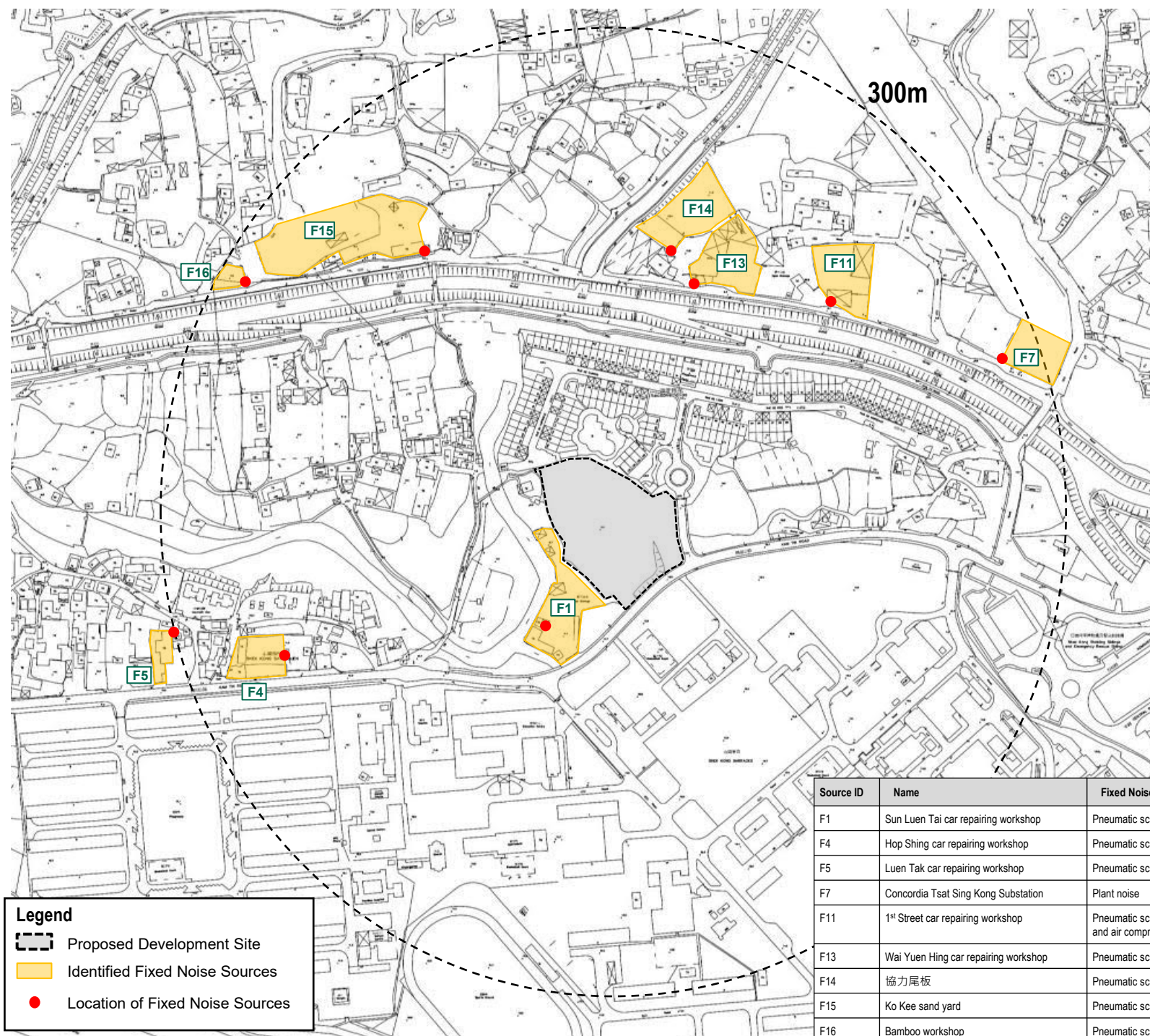
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Location of Fixed Noise Sources

FIGURE

A7-1



PROJECT: 22605

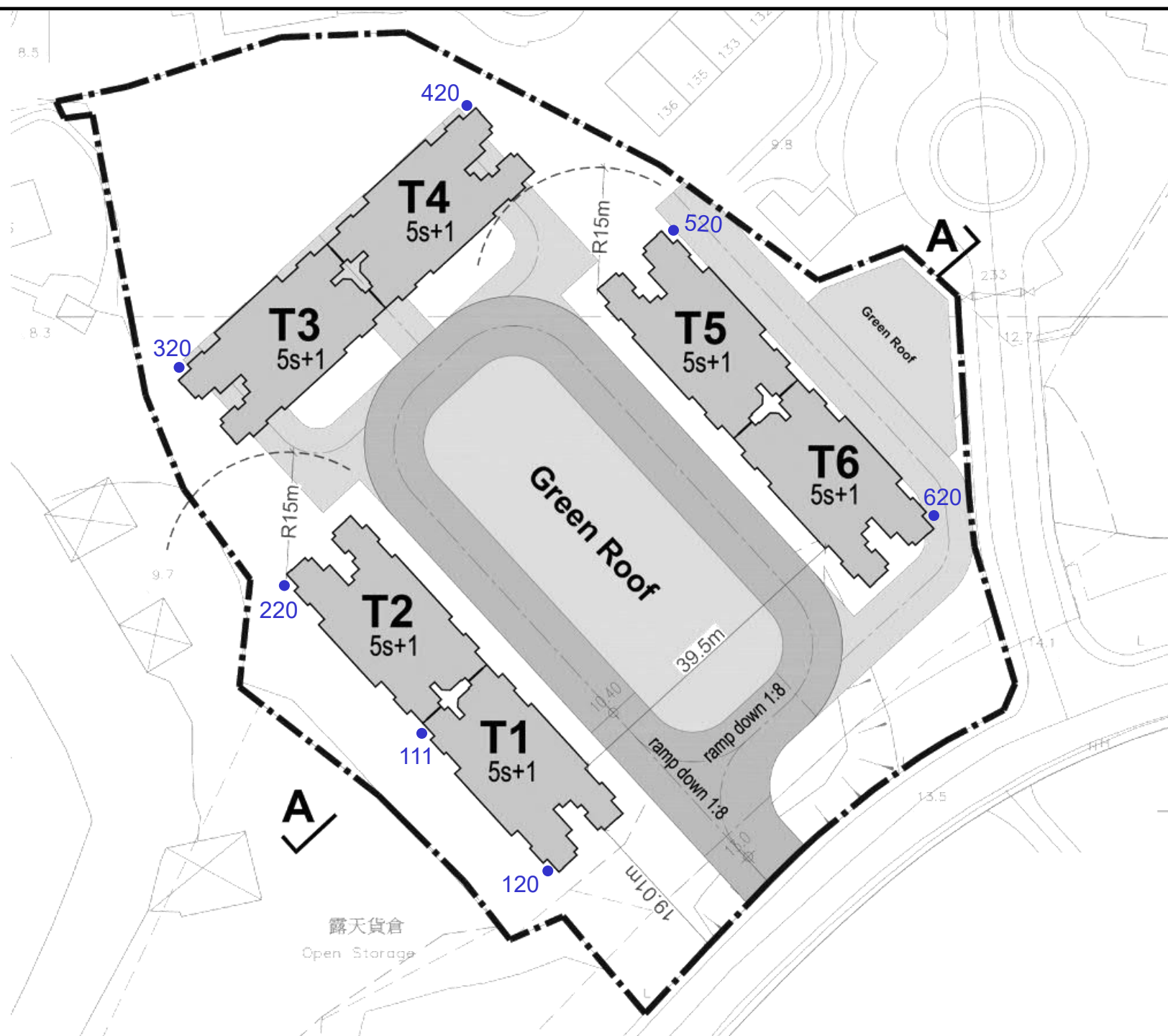
Proposed Residential
Development at Lot Nos.
519 RP (Part) and 520
RP in D.D. 110 and the
Adjoining Government
Land, Shek Kong, Yuen
Long, New Territories

TITLE:

**Location of
Noise
Assessment
Points for Fixed
Noise Sources
Assessment**

FIGURE

A7-2



Predicted Façade Noise Levels from Fixed Noise Sources during Day and Evening Time Periods (0700 - 2300)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/2025

Predicted Façade Noise Levels (dB(A), Leq (30mins)):

Floor	NSR 111	NSR 120	NSR 220	NSR 320	NSR 420	NSR 520	NSR 620
1/F	60.2	60.1	58.1	56.8	54.8	54.9	54.8
2/F	60.2	60.1	58.1	56.8	54.8	54.8	54.8
3/F	60.1	60.0	58.1	56.8	54.8	54.8	54.8
4/F	60.0	59.9	58.0	56.8	54.8	54.8	54.8
5/F	59.9	59.8	57.9	56.7	54.7	54.8	54.8

Max:	60.2	60.1	58.1	56.8	54.8	54.9	54.8
(ANL) Criterion	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Compliance	YES	YES	YES	YES	YES	YES	YES

Predicted Façade Noise Levels from Fixed Noise Sources during Night-time Period (2300 - 0700)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/2025

Predicted Façade Noise Levels (dB(A), Leq (30mins)):

Floor	NSR 111	NSR 120	NSR 220	NSR 320	NSR 420	NSR 520	NSR 620
1/F	35.9	36.0	26.6	35.6	36.7	37.2	37.6
2/F	35.9	36.0	26.6	35.6	36.7	37.2	37.6
3/F	35.9	36.0	26.6	35.6	36.7	37.2	37.6
4/F	35.9	36.0	26.6	35.6	36.7	37.2	37.6
5/F	35.9	36.0	26.6	35.6	36.7	37.2	37.6

Max:	35.9	36.0	26.6	35.6	36.7	37.2	37.6
(ANL) Criterion	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Compliance	YES	YES	YES	YES	YES	YES	YES

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 111 1/F	Xr: 826321.8 Yr: 833548.5 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	58.0	0	-43.3	0.0	0.0	3	58.7
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	58.0	0	-43.3	0.0	0.0	3	53.7
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	322.9	0	-58.2	0.0	0.0	3	34.8
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	364.5	0	-59.2	0.0	0.0	3	35.8
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	282.6	0	-57.0	0.0	0.0	3	43.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	244.8	0	-55.8	0.0	0.0	3	40.2
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	258.9	0	-56.3	0.0	0.0	3	36.7
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	282.2	0	-57.0	0.0	0.0	3	43.0
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	382.2	0	-59.6	0.0	0.0	3	33.4
TOTAL													60.2

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 LAeq - the equivalent continuous noise level over a 30 minute period, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
Job No.: 22605
Date: 21/07/25

NSR	NSR 111 1/F	Xr : 826322 Yr : 833549 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	58.0	0	-43.3	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	58.0	0	-43.3	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	322.9	0	-58.2	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	364.5	0	-59.2	0.0	0.0	3	35.8
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	282.6	0	-57.0	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	244.8	0	-55.8	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	258.9	0	-56.3	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	282.2	0	-57.0	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	382.2	0	-59.6	0.0	0.0	3	0.0
TOTAL												35.9	

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 120 1/F	Xr: 826337 Yr: 833531.8 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	58.7	0	-43.4	0.0	0.0	3	58.6
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	58.7	0	-43.4	0.0	0.0	3	53.6
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	335.2	0	-58.5	0.0	0.0	3	34.5
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	359.2	0	-59.1	0.0	0.0	3	35.9
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	286.2	0	-57.1	0.0	0.0	3	42.9
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	255.1	0	-56.1	0.0	0.0	3	39.9
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	271.9	0	-56.7	0.0	0.0	3	36.3
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	304.1	0	-57.7	0.0	0.0	3	42.3
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	404.4	0	-60.1	0.0	0.0	3	32.9
TOTAL													60.1

Definition of terms:

- | | | | |
|------------|--|------|---|
| SWL | - the sound power level of fixed source, dB(A) | Cno | - correction for no. of plant items |
| LAeq | - the equivalent continuous noise level over a 30 minute period, dB(A) | CLsr | - the correction for slant distance between the source and the NSR, dB(A) |
| No. | - the number of items of plant operating simultaneously | Cton | - the correction of tonality / impulsiveness / intermittency, dB(A) |
| Xr, Yr, Hr | - the coordinates of the NSR, m | Cfac | - the facade correction, dB(A) |
| Xs, Ys, Hs | - the coordinates of the source, m | Cbar | - the noise reduction by a substantial barrier (other building envelope), dB(A) |
| Lsr | - the horizontal distance between the source and NSR, m | CNL | - the corrected noise level, dB(A)(30 minutes) |

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 120 1/F	Xr : 826337 Yr : 833532 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	58.7	0	-43.4	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	58.7	0	-43.4	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	335.2	0	-58.5	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	359.2	0	-59.1	0.0	0.0	3	35.9
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	286.2	0	-57.1	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	255.1	0	-56.1	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	271.9	0	-56.7	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	304.1	0	-57.7	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	404.4	0	-60.1	0.0	0.0	3	0.0
TOTAL												36.0	

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
Job No.: 22605
Date: 21/07/25

NSR	NSR 220 1/F	Xr: 826304.8 Yr: 833566.8 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	66.6	0	-44.5	0.0	0.0	3	57.5
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	66.6	0	-44.5	0.0	-10.0	3	42.5
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	310.5	0	-57.8	0.0	-10.0	3	25.2
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	372.0	0	-59.4	0.0	-10.0	3	25.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	281.1	0	-57.0	0.0	0.0	3	43.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	235.6	0	-55.4	0.0	0.0	3	40.6
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	246.3	0	-55.8	0.0	0.0	3	37.2
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	258.2	0	-56.2	0.0	0.0	3	43.8
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	357.8	0	-59.1	0.0	0.0	3	33.9
TOTAL													58.1

Definition of terms:

SWL	- the sound power level of fixed source, dB(A)	Cno	- correction for no. of plant items
LAeq	- the equivalent continuous noise level over a 30 minute period, dB(A)	CLsr	- the correction for slant distance between the source and the NSR, dB(A)
No.	- the number of items of plant operating simultaneously	Cton	- the correction of tonality / impulsiveness / intermittency, dB(A)
Xr, Yr, Hr	- the coordinates of the NSR, m	Cfac	- the facade correction, dB(A)
Xs, Ys, Hs	- the coordinates of the source, m	Cbar	- the noise reduction by a substantial barrier (other building envelope), dB(A)
Lsr	- the horizontal distance between the source and NSR, m	CNL	- the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 220 1/F	Xr : 826305 Yr : 833567 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	66.6	0	-44.5	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	66.6	0	-44.5	0.0	-10.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	310.5	0	-57.8	0.0	-10.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	372.0	0	-59.4	0.0	-10.0	3	25.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	281.1	0	-57.0	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	235.6	0	-55.4	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	246.3	0	-55.8	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	258.2	0	-56.2	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	357.8	0	-59.1	0.0	0.0	3	0.0
TOTAL													26.6

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
Job No.: 22605
Date: 21/07/25

NSR	NSR 320 1/F	Xr: 826291.3 Yr: 833593.6 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	90.8	0	-47.2	0.0	0.0	3	54.8
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	90.8	0	-47.2	0.0	0.0	3	49.8
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	305.9	0	-57.7	0.0	0.0	3	35.3
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	374.9	0	-59.5	0.0	0.0	3	35.5
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	273.7	0	-56.7	0.0	0.0	3	43.3
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	219.9	0	-54.8	0.0	0.0	3	41.2
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	226.6	0	-55.1	0.0	0.0	3	37.9
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	228.1	0	-55.2	0.0	0.0	3	44.8
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	331.7	0	-58.4	0.0	0.0	3	34.6
TOTAL													56.8

Definition of terms:

SWL	- the sound power level of fixed source, dB(A)	Cno	- correction for no. of plant items
LAeq	- the equivalent continuous noise level over a 30 minute period, dB(A)	CLsr	- the correction for slant distance between the source and the NSR, dB(A)
No.	- the number of items of plant operating simultaneously	Cton	- the correction of tonality / impulsiveness / intermittency, dB(A)
Xr, Yr, Hr	- the coordinates of the NSR, m	Cfac	- the facade correction, dB(A)
Xs, Ys, Hs	- the coordinates of the source, m	Cbar	- the noise reduction by a substantial barrier (other building envelope), dB(A)
Lsr	- the horizontal distance between the source and NSR, m	CNL	- the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 320 1/F	Xr : 826291 Yr : 833594 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	90.8	0	-47.2	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	90.8	0	-47.2	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	305.9	0	-57.7	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	374.9	0	-59.5	0.0	0.0	3	35.5
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	273.7	0	-56.7	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	219.9	0	-54.8	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	226.6	0	-55.1	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	228.1	0	-55.2	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	331.7	0	-58.4	0.0	0.0	3	0.0
TOTAL												35.6	

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 420 1/F	Xr: 826326.5 Yr: 833625.8 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	129.3	0	-50.2	0.0	0.0	3	51.8
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	129.3	0	-50.2	0.0	0.0	3	46.8
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	350.6	0	-58.9	0.0	0.0	3	34.1
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	331.7	0	-58.4	0.0	0.0	3	36.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	226.1	0	-55.1	0.0	0.0	3	44.9
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	173.7	0	-52.8	0.0	0.0	3	43.2
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	183.5	0	-53.3	0.0	0.0	3	39.7
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	219.8	0	-54.8	0.0	0.0	3	45.2
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	347.3	0	-58.8	0.0	0.0	3	34.2
TOTAL													54.8

Definition of terms:

- | | | | |
|------------|--|------|---|
| SWL | - the sound power level of fixed source, dB(A) | Cno | - correction for no. of plant items |
| LAeq | - the equivalent continuous noise level over a 30 minute period, dB(A) | CLsr | - the correction for slant distance between the source and the NSR, dB(A) |
| No. | - the number of items of plant operating simultaneously | Cton | - the correction of tonality / impulsiveness / intermittency, dB(A) |
| Xr, Yr, Hr | - the coordinates of the NSR, m | Cfac | - the facade correction, dB(A) |
| Xs, Ys, Hs | - the coordinates of the source, m | Cbar | - the noise reduction by a substantial barrier (other building envelope), dB(A) |
| Lsr | - the horizontal distance between the source and NSR, m | CNL | - the corrected noise level, dB(A)(30 minutes) |

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 420 1/F	Xr : 826327 Yr : 833626 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	129.3	0	-50.2	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	129.3	0	-50.2	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	350.6	0	-58.9	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	331.7	0	-58.4	0.0	0.0	3	36.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	226.1	0	-55.1	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	173.7	0	-52.8	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	183.5	0	-53.3	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	219.8	0	-54.8	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	347.3	0	-58.8	0.0	0.0	3	0.0
TOTAL													36.7

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 520 1/F	Xr: 826352.3 Yr: 833610.5 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	126.3	0	-50.0	0.0	0.0	3	52.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	126.3	0	-50.0	0.0	0.0	3	47.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	369.0	0	-59.3	0.0	0.0	3	33.7
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	311.8	0	-57.9	0.0	0.0	3	37.1
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	216.6	0	-54.7	0.0	0.0	3	45.3
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	175.9	0	-52.9	0.0	0.0	3	43.1
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	191.7	0	-53.7	0.0	0.0	3	39.3
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	248.0	0	-55.9	0.0	0.0	3	44.1
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	377.2	0	-59.5	0.0	0.0	3	33.5
TOTAL													54.9

Definition of terms:

SWL	- the sound power level of fixed source, dB(A)	Cno	- correction for no. of plant items
LAeq	- the equivalent continuous noise level over a 30 minute period, dB(A)	CLsr	- the correction for slant distance between the source and the NSR, dB(A)
No.	- the number of items of plant operating simultaneously	Cton	- the correction of tonality / impulsiveness / intermittency, dB(A)
Xr, Yr, Hr	- the coordinates of the NSR, m	Cfac	- the facade correction, dB(A)
Xs, Ys, Hs	- the coordinates of the source, m	Cbar	- the noise reduction by a substantial barrier (other building envelope), dB(A)
Lsr	- the horizontal distance between the source and NSR, m	CNL	- the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 520 1/F	Xr : 826352 Yr : 833611 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	126.3	0	-50.0	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	126.3	0	-50.0	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	369.0	0	-59.3	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	311.8	0	-57.9	0.0	0.0	3	37.1
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	216.6	0	-54.7	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	175.9	0	-52.9	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	191.7	0	-53.7	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	248.0	0	-55.9	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	377.2	0	-59.5	0.0	0.0	3	0.0
TOTAL												37.2	

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

Calculation of Façade Noise Levels from Fixed Noise Sources (Day and Evening Time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 620 1/F	Xr: 826384.5 Yr: 833575.5 Hr: 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	1	826286.0	833503.0	12.0	122.3	0	-49.8	0.0	0.0	3	52.2
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	1	826286.0	833503.0	12.0	122.3	0	-49.8	0.0	0.0	3	47.2
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	1	826005.0	833486.0	12.0	389.9	0	-59.8	0.0	0.0	3	33.2
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	296.4	0	-57.4	0.0	0.0	3	37.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	1	826507.0	833762.0	12.0	223.2	0	-55.0	0.0	0.0	3	45.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	1	826417.0	833774.0	12.0	201.2	0	-54.1	0.0	0.0	3	41.9
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	1	826387.0	833799.0	12.0	223.5	0	-55.0	0.0	0.0	3	38.0
F15	Ko Kee sand yard, lorry with crane	97	1	826190.0	833798.0	12.0	295.5	0	-57.4	0.0	0.0	3	42.6
F16	Bamboo workshop, lorry with crane	90	1	826011.0	833771.0	12.0	421.6	0	-60.5	0.0	0.0	3	32.5
TOTAL													54.8

Definition of terms:

- | | | | |
|------------|--|------|---|
| SWL | - the sound power level of fixed source, dB(A) | Cno | - correction for no. of plant items |
| LAeq | - the equivalent continuous noise level over a 30 minute period, dB(A) | CLsr | - the correction for slant distance between the source and the NSR, dB(A) |
| No. | - the number of items of plant operating simultaneously | Cton | - the correction of tonality / impulsiveness / intermittency, dB(A) |
| Xr, Yr, Hr | - the coordinates of the NSR, m | Cfac | - the facade correction, dB(A) |
| Xs, Ys, Hs | - the coordinates of the source, m | Cbar | - the noise reduction by a substantial barrier (other building envelope), dB(A) |
| Lsr | - the horizontal distance between the source and NSR, m | CNL | - the corrected noise level, dB(A)(30 minutes) |

Calculation of Façade Noise Levels from Fixed Noise Sources (Night-time Period)

Job Title.: Shek Kong
 Job No.: 22605
 Date: 21/07/25

NSR	NSR 620 1/F	Xr : 826385 Yr : 833576 Hr : 15.1											
Source ID	Fixed Noise Source	SWL, dB(A)	No.	Source location & distance				Corrections, dB(A)					CNL dB(A)
				Xs	Ys	Hs	Lsr	Cno	CLsr	Cton	Cbar	Cfac	
F1	Sun Luen Tai car repairing workshop, noise of pneumatic screwdriver	99	0	826286.0	833503.0	12.0	122.3	0	-49.8	0.0	0.0	3	0.0
F1	Sun Luen Tai car repairing workshop, noise of forklift	94	0	826286.0	833503.0	12.0	122.3	0	-49.8	0.0	0.0	3	0.0
F5	Luen Tak car repairing workshop, noise of hand tools handling	90	0	826005.0	833486.0	12.0	389.9	0	-59.8	0.0	0.0	3	0.0
F7	Concordia Tast Sing Kong Substation, plant noise	92	1	826646.0	833715.0	12.0	296.4	0	-57.4	0.0	0.0	3	37.6
F11	1st Street car repairing workshop, noise of pneumatic screwdriver and air compressor	97	0	826507.0	833762.0	12.0	223.2	0	-55.0	0.0	0.0	3	0.0
F13	Wai Yuen Hing car repairing workshop, noise of hand tools handling	93	0	826417.0	833774.0	12.0	201.2	0	-54.1	0.0	0.0	3	0.0
F14	協力尾板, noise of pneumatic screwdriver and hand tools handling	90	0	826387.0	833799.0	12.0	223.5	0	-55.0	0.0	0.0	3	0.0
F15	Ko Kee sand yard, lorry with crane	97	0	826190.0	833798.0	12.0	295.5	0	-57.4	0.0	0.0	3	0.0
F16	Bamboo workshop, lorry with crane	90	0	826011.0	833771.0	12.0	421.6	0	-60.5	0.0	0.0	3	0.0
TOTAL													37.6

Definition of terms:

SWL - the sound power level of fixed source, dB(A)
 No. - the number of items of plant operating simultaneously
 Xr, Yr, Hr - the coordinates of the NSR, m
 Xs, Ys, Hs - the coordinates of the source, m
 Lsr - the horizontal distance between the source and NSR, m

Cno - correction for no. of plant items
 CLsr - the correction for slant distance between the source and the NSR, dB(A)
 Cton - the correction of tonality / impulsiveness / intermittency, dB(A)
 Cfac - the facade correction, dB(A)
 Cbar - the noise reduction by a substantial barrier (other building envelope), dB(A)
 CNL - the corrected noise level, dB(A)(30 minutes)

APPENDIX 8

JUSTIFICATION OF NOISE REDUCTION FOR ACOUSTIC WINDOW (BAFFLE TYPE)

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Justification of Noise Performance for Acoustic Window (Baffle Type), for Bedroom and Master Bedroom

Table A8a-1: Comparison of the Various Parameters of Acoustic Window

Key Parameters	Dimensions in Reference Case ^[1]	Bedroom in the Proposed Development	Master Bedroom in the Proposed Development
Room Size (m ²)	8	5.023	6.253
Outer Opening Area (m ²)	0.522	0.522	0.522
Gap Width (mm)	100	100	100
Overlapping Width (mm)	100	100	100
With Sound Absorptive Material (SAM) in plenum	Yes	Yes	Yes
Noise Reduction (dB(A))	7.5	5.5	6.4

Note:
[1] Reference to the ProPECC 5/23 "Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact" "

Table A8a-2: Correction for Room Size

	Bedroom in the Proposed Development	Bedroom in the Proposed Development
Room Size (ref) (m ²)	8	8
Room Size (m ²)	5.0	6.3
Room Size, dB(A) ^[1]	-2.0	-1.1

Note:
[1] Correction for room area is calculated by 10 log [Room Size / Room Size (ref)]

Table A8a-3: Corrected Noise Reduction

	Bedroom in the Proposed Development	Bedroom in the Proposed Development
Reduction Performance (ref) (dB(A)) (Table A8a-1)	7.5	7.5
Corrected Noise Reduction (dB(A)) ^[1]	5.5	6.4

Note:
[1] Corrected Noise Reduction = Reduction Performance (ref) in Table A8a-1 + Correction for Room Size in Table A8a-2

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Justification of Noise Performance for Acoustic Window (Baffle Type), for Living Room

Table A8b-1: Comparison of the Various Parameters of Acoustic Window

Key Parameters	Dimensions in Reference Case ^[1]	Living Room in the Proposed Development
Room Size (m ²)	18	10.939
Outer Opening Area (m ²)	1.125	1.125
Gap Width (mm)	100	100
Overlapping Width (mm)	100	100
With Sound Absorptive Material (SAM) in plenum	No	No
Noise Reduction (dB(A))	7	4.8

Note:
[1] Reference to the ProPECC 5/23 "Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact" "

Table A8b-2: Correction for Room Size

	Living Room in the Proposed Development
Room Size (ref) (m ²)	18
Room Size (m ²)	10.9
Room Size, dB(A) ^[1]	-2.2

Note:
[1] Correction for room area is calculated by 10 log [Room Size / Room Size (ref)]

Table A8b-3: Corrected Noise Reduction

	Living Room in the Proposed Development
Reduction Performance (ref) (dB(A)) (Table A8b-1)	7.0
Corrected Noise Reduction (dB(A)) ^[1]	4.8

Note:
[1] Corrected Noise Reduction = Reduction Performance (ref) in Table A8b-1 + Correction for Room Size in Table A8b-2

Window for 8m² and 18m² habitable rooms (i.e. dining room, living room or bedroom) can be found in [Annex A\(I\)](#).

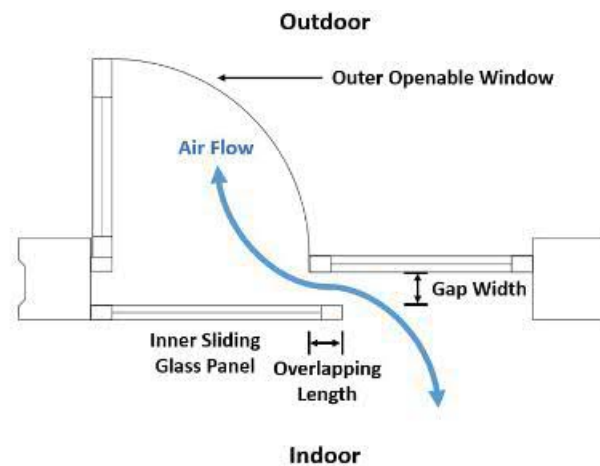


Figure 1 – A Plan on Acoustic Window (Baffle Type)

4. Typical acoustic balcony has a depth of more than 1000mm, solid parapet height of about 1200mm, and balcony ceiling lined with Sound Absorptive Material (SAM). “Enhanced Acoustic Balcony” is specially designed balcony which adopts a combination of mitigation features for the purpose of noise reduction ([Figure 2](#)), it incorporates more noise reduction features, e.g. full-height side wall(s), increased solid parapet height of not less than 1450mm, additional screen wall(s), Micro-perforated Absorber (MPA) and/or additional SAM on more surfaces. Possible designs of Enhanced Acoustic Balcony for 14m² and 18m² habitable rooms (i.e. dining room, living room or bedroom) can be found in [Annex A\(II\)](#).

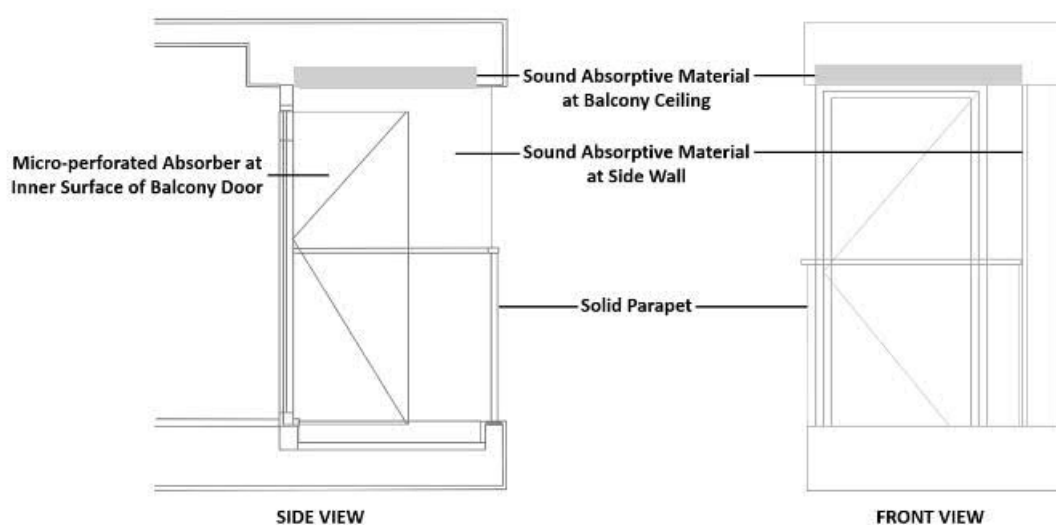


Figure 2 – Conceptual design of “Enhanced Acoustic Balcony”

Appendix 8

Air Quality Impact Assessment

Rezoning From “Residential (Group C)2” and “Open Space” Zones to “Residential (Group C)4” Zone for a Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Environmental Air Quality Impact Assessment

Prepared for:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Prepared by:

Westwood Hong & Associates Limited

Report No.:

22605-A1 Rev B

Date:

17 October 2025

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FIGURES

APPENDICES

AIMS

To assess the air quality impact due to the surrounding industrial, vehicular and odour emissions on the proposed residential development at DD110 on Kam Tin Road in Yuen Long.

To assess the air quality impact in accordance with the air quality requirements set out in the Hong Kong Planning Standards & Guidelines (HKPSG).

SUMMARY

The buffer distance requirements in the proposed Development as set out for vehicular emissions in Table 3.1, Chapter 9 of HKPSG are satisfied. No industrial chimney, other industrial emissions and potential odour sources were identified within 500m of the site. Site inspections revealed that no odour has been detected at the site boundaries and the emission of dust or fluff has not been identified from buildings in the vicinity of the proposed Development. Therefore, no adverse air quality impacts on the proposed Development are anticipated.

Air quality control requirements in the Air Pollution Control (Construction Dust) Regulation will be complied with. Relevant mitigation measures for dust and gaseous emissions, if any, will be implemented accordingly. Under such circumstances, no adverse air quality impacts in association with the proposed Development during construction phase are anticipated.

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd. was commissioned to prepare an environmental air quality impact assessment report to assess the potential air quality impact caused by air pollution sources including industrial, vehicular and odour emissions in the vicinity of the proposed residential development at Lot Nos. 519 RP (Part) and 520 RP in DD110 and the adjoining government land in Shek Kong, Yuen Long (the “proposed Development”).
- 1.2 This air quality impact assessment report aims to support the Rezoning Application for the proposed Development.
- 1.3 This report was prepared based on the architectural drawings provided by the Client (Appendix 1).
- 1.4 The report includes the following assessments:
- Industrial emission impact on the proposed Development;
 - Vehicular emission impact on the proposed Development;
 - Odour emission impact on the proposed Development; and
 - Air Quality impact control during construction.

2. SITE LOCATION

Site Location

- 2.1 The development site adjoins Shek Kong Barracks to the south and is located north of Kam Tin Road. The residential development Seasons Villas is located to the north-east. The location of the development site is shown in Figure 1. The development parameters are summarised in Table 2.1.

Building Layout

- 2.2 The proposed Development comprises 6 low-rise residential blocks with 5 storeys on top of carport and clubhouse. The carport and clubhouse are located at G/F. The building layouts are shown in Appendix 1.

Table 2.1 Development Parameters of the Proposed Development

	Parameters
Zoning	“Residential (Group C)2” and “Open Space” zones on Approved Kam Tin North Outline Zoning Plan No. S/YL-KTN/11
Site Area	8,580m ²
Number of Residential Units	240
Number of Residential Storeys	5 storeys
Height of Building	28.9mPD
Use	6 residential blocks with a clubhouse and carport at Ground Floor
Completion Year	2031

3. SITE INSPECTIONS

Site Surveys

- 3.1 Site surveys were conducted on 18 March 2025, 10 October 2022 and 17 November 2021. Photographs taken on site are shown in Appendix 2.

Industrial Emissions in the Vicinity

- 3.2 The site surveys were conducted covering the whole 500m assessment area of the development site. The results of site inspections have revealed that no industrial chimney and potential odour sources were identified within 500m of the development site.
- 3.3 The site inspections revealed that the nearby industrial uses are mainly vehicle repairing workshops, car trading centres and open storages, no air and odour emission sources from these industrial uses were observed during site surveys. No odour has been detected at the site boundaries and the emission of dust or fluff has not been identified from buildings in the vicinity of the proposed Development.
- 3.4 According to the Outline Zoning Plans, there are some areas in the vicinity of the development site zoned as I(D). Site inspections revealed that these I(D) zones are currently used as open storages and substation, which no industrial emissions are observed in these zones. Hence, adverse air quality impacts and I/R interface problem are not anticipated from these I(D) zones. Locations and photos of these I(D) zones are illustrated and provided in Figure 5.

4. HONG KONG AIR QUALITY OBJECTIVES

4.1 The Hong Kong Air Quality Objectives (HKAQO) are shown in Table 4.1.

Table 4.1 Hong Kong Air Quality Objectives

Pollutant	Averaging Time	AQO concentration ($\mu\text{g}/\text{m}^3$)	Number of exceedances allowed
Sulphur Dioxide	10 minute	500	3
	24 hour	40	3
Respirable Suspended Particulate (PM10) (ii)	24 hour	75	9
	Annual	30	NA
Fine Suspended Particulates (PM2.5) (iii)	24 hour	37.5	18
	Annual	15	NA
Nitrogen Dioxide	1 hour	200	18
	24 hour	120	9
	Annual	40	NA
Carbon Monoxide	1 hour	30,000	0
	8 hour	10,000	0
	24 hour	4000	0
Ozone	8 hour	160	9
	Peak season	100	NA
Lead	Annual	0.5	NA

- Notes:-
- (i) All measurements of the concentration of gaseous air pollutants, i.e., sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.
 - (ii) Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 micrometres or less.
 - (iii) Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 micrometres or less.
 - (iv) 24 hour level for NO₂, peak season level for O₃ and 24 hour level for CO are new parameters in World Health Organization (WHO) Air Quality Guidelines (AQGs) as well as HKAQOs.

5. EXISTING AND FUTURE AIR QUALITY IN YUEN LONG AREA

5.1 Air quality monitoring data from the Air Quality Monitoring Station (AQMS) operated by EPD were examined. The air quality monitoring data in the nearest AQMS (i.e. Yuen Long) in the past 5 years (i.e. Year 2019 to Year 2023) are tabulated in Table 5.1 below.

Table 5.1 Summary of AQMS Data from Year 2019 to Year 2023

Pollutant	Year	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)
NO₂	2019	161	44	-	86
	2020	135	32	-	64
	2021	148	40	-	78
	2022	122	37	-	68
	2023	130	37	-	67
	5-year Mean	139.2 [70%]	38 [95%]	-	72.5 [60%]
	AQOs	200 (18)	40	N/A	120 (9)
SO₂	2019	-	-	42	11
	2020	-	-	26	10
	2021	-	-	24	14
	2022	-	-	21	7
	2023	-	-	20	10
	5-year Mean	-	-	26.6 [5%]	10.4 [26%]
	AQOs	N/A	N/A	500 (3)	40 (3)
RSP (PM₁₀)	2019	-	37	-	83
	2020	-	30	-	77
	2021	-	30	-	73
	2022	-	25	-	56
	2023	-	26	-	59
	5-year Mean	-	29.6 [99%]	-	69.6 [93%]
	AQOs	N/A	30	N/A	75 (9)

Pollutant	Year	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$)
FSP (PM_{2.5})	2019	-	<u>20</u>	-	<u>38</u>
	2020	-	<u>16</u>	-	33
	2021	-	<u>17</u>	-	36
	2022	-	<u>16</u>	-	<u>38</u>
	2023	-	<u>16</u>	-	34
	5-year Mean	-	<u>17 [113%]</u>	-	35.8 [95%]
	AQOs	N/A	15	N/A	37.5 (18)

- Notes: (i) Underlined and **bold** values mean exceedance of the AQOs.
(ii) Values in () mean the number of exceedances allowed.
(iii) Percentages (%) of the AQOs are shown in []. The 5-year mean is the arithmetic average.
(iv) In consideration of the numbers of exceedances allowance in the AQOs, the 4th highest 10-minute and 24-hr SO₂, 19th highest 1-hr NO₂, 10th highest 24-hour NO₂, 10th highest 24-hour RSP and 19th highest 24-hour FSP concentrations are presented in above table.
(v) N/A – Not applicable since there are no AQOs for these parameters.

5.2 The expected commencement year would be 2031, the nearest available future background concentration data predicted by PATH v3.0 in Year 2030 at Grids (30_46), (30_47), (31_46) and (31_47) are summarised in Table 5.2 below.

Table 5.2 Summary of PATH v3.0 Background in Year 2030

Pollutant	PATH Grid	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[1]	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^{[2][3]}	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[4]
NO₂	(30_46)	56	11.44	-	22.31
	(30_47)	56.97	11.29	-	21.99
	(31_46)	48.98	10.36	-	19.43
	(31_47)	51.52	10.75	-	20.21
	AQOs	200 (18)^[5]	40	N/A	120 (9)

Pollutant	PATH Grid	Highest 1-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[1]	Annual Conc. ($\mu\text{g}/\text{m}^3$)	Highest 10-minutes Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^{[2] [3]}	Highest 24-hour Conc. beyond the allowed exceedance ($\mu\text{g}/\text{m}^3$) ^[4]
SO₂	(30_46)	-	-	23.71	6.55
	(30_47)	-	-	24.57	6.43
	(31_46)	-	-	23.98	6.47
	(31_47)	-	-	24.32	6.43
	AQOs	N/A	N/A	500 (3)	40 (3)
RSP	(30_46)	-	19.35	-	50.33
	(30_47)	-	20.38	-	53.32
	(31_46)	-	19.11	-	49.98
	(31_47)	-	20.05	-	52.34
	AQOs	N/A	30	N/A	75 (9)
FSP	(30_46)	-	11.87	-	29.6
	(30_47)	-	12.71	-	31.83
	(31_46)	-	11.67	-	29.3
	(31_47)	-	12.45	-	31.54
	AQOs	N/A	15	N/A	37.5 (18)

Note:

[1] 19th highest 1-hour concentration of NO₂

[2] 4th highest 10-minute SO₂ concentration

[3] According to EPD's "Guidelines on the Estimation of 10-minute Average SO₂ Concentration for Air Quality Assessment in Hong Kong".

[4] 10th highest 24-hour NO₂; 4th highest 24-hour concentration of SO₂; 10th highest 24-hour concentration of RSP; 19th highest 24-hour concentration of FSP.

[5] Values in () mean the number of exceedances allowed.

5.3 It can be seen from the above Table 5.1 that, the trends of NO₂, RSP, FSP and SO₂ concentrations in the area have been decreasing in general. According to the PATH data, all the pollutants are well within the AQOs.

6. PLUME IMPINGEMENT ASSESSMENT

- 6.1 According to the HKPSG^[1], the buffer distance for industrial chimney is 200m. For the proposed Development, as validated by the site surveys conducted on 18 March 2025, 10 October 2022 and 17 November 2021, no industrial chimney and dusty use are being identified within a 500m radius of the development site. Therefore, air quantitative impact assessment due to the industrial emission is hence not necessary. It is confirmed that adverse air quality impact due to industrial chimney and dusty use are not anticipated for the proposed Development.

7. VEHICULAR EMISSION ASSESSMENT

- 7.1 According to The Annual Traffic Census 2023 by Transport Department (TD), the Kam Tin Road is classified as “Rural Road”. For the Avenue De Versailles, where located to the easternmost of the proposed Development (i.e. access road leading to Kam Tin Road from Season Villas), as advised by the Traffic Consultant (CTA Consultants Ltd.), the peak traffic flows of Season Villas are only 35 veh/hr and 30 veh/hr for AM and PM peak respectively. For conservative, the Avenue De Versailles is considered as “Rural Road”.
- 7.2 There is no recommended buffer distance for rural road in HKPSG. For conservative approach, buffer distances for District Distributor and Local Distributor have been adopted for Kam Tin Road and the Avenue De Versailles respectively in the present application. The required buffer distances for District Distributor and Local Distributor as stipulated in the HKPSG are 10m and 5m respectively.
- 7.3 No air-sensitive uses including openable window, fresh air intake and recreational uses in open space is allowed within the buffer zones. Table 7.1 summarises the shortest distance between ASRs and the roads, with considering the road widening of Kam Tin Road (widening of Kam Tin Road is not covered in the subject project). The locations of the buffer zones are demonstrated in Figure 3. Therefore, adverse air quality impact due to vehicle emission is not anticipated for the proposed development.
- 7.4 The access road located to the north of T3 of the proposed Development is the private access road of the adjoining residential development (i.e. Season Villas). According to desktop review, the access road is not solely for EVA purpose, but also for access to the G/F carparking spaces. As advised by the Traffic Consultant, the access road only serves for the Season Villas without any by-pass traffic. The peak traffic flow of

Season Villas is about 30 to 35 veh/hr and will further split into the eastern part and western part of Season Villas (about 15 to 20 veh/hr each side). Therefore, the traffic flow of the access road is limited. Hence, adverse air quality impact on the proposed Development is not anticipated.

Table 7.1 Separation between ASRs/site Boundaries and the Roads

Road Name	Road Type	Shortest Distance between ASRs and the Roads ^[2]	Remark
Kam Tin Road	Rural Road ^[1]	12m	All ASRs comply with the HKPSG requirement
Avenue De Versailles (i.e. access road leading to Kam Tin Road from Season Villas)	Rural Road ^[3]	7m	All ASRs comply with the HKPSG requirement

Remark:-

- [1] According to The Annual Traffic Census 2023, Kam Tin Road is classified as Rural Road, buffer distance for District Distributor (i.e. 10m) is adopted.
- [2] The road widening of Kam Tin Road is considered.
- [3] As a conservative approach, the access road is considered as Rural Road, buffer distance for Local Distributor (i.e. 5m) is adopted.

- 7.5 For the internal roads of the proposed Development, they are not solely for EVA purpose, but also for access to the G/F carparking spaces and HGV loading/unloading bays. As advised by the Traffic Consultant, the maximum traffic generation/attraction of the proposed Development in peak hour is only 35 veh/hr, anticipating the traffic flow of each section of the internal road is even lower. Considering the traffic flow of the proposed internal road is relatively minor, adverse air quality impact on the proposed Development is not anticipated.

8. AIR QUALITY IMPACT DUE TO CARPARK OF THE PROPOSED DEVELOPMENT

- 8.1 The proposed carparking spaces are accommodating at the open area of G/F, which allows natural ventilation. There is no PTI or public transport lay-by proposed in the proposed Development. Considering the carparking spaces are mainly for private car and light good vehicles only, and the numbers of carparking spaces are relatively small for small scale proposed residential development, adverse air quality impact due to the proposed carparking spaces is not anticipated.

9. ODOUR IMPACT FROM ON-SITE SEWAGE TREATMENT PLANT

- 9.1 The proposed Sewage Treatment Plant (STP) is located at the eastern part of the proposed Development on ground level and within an enclosed building structure, with its tank located at the underground level.
- 9.2 The design of the STP will be reviewed during detailed design stage, the Environmental Consideration specified in “Guidelines for the Design of Small Sewage Treatment Plants” for minimization of the odour impact from the proposed STP will be observed and followed.
- 9.3 The exhaust outlet of the proposed STP will be located away from all nearby existing ASRs and air-sensitive use of the proposed Development as far as possible. Also, the exhaust air of the stack will be discharged in the horizontal direction, which is away from any air-sensitive uses of Tower 6 and locate away from all other existing ASRs. The potential location of the exhaust outlet and its discharge direction are illustrated in Figure 4, which the separation distances from the potential exhaust outlet to the nearest existing ASR (i.e. houses of Season Villas) and the nearest air-sensitive use of the proposed Development (i.e. Tower 6) are 45m and 14m respectively.
- 9.4 The proposed Development would accommodate a total population of about 648. According to the Sewerage Impact Assessment, the design average dry weather flow (ADWF) of the proposed STP will be 247.5m³/day.
- 9.5 The proposed STP will be housed indoors with full enclosure maintained at negative pressure. The STP will be design with an inlet chamber and wet well which will be enclosed by airtight and watertight cover. A high-efficiency deodorizer (with at least 99.5% odour removal efficiency for H₂S) with a forced ventilation system will also be installed at the STP building to remove odour before discharge into open air.
- 9.6 According to the Sewerage Impact Assessment Report of the proposed Development, the STP will be designed to treat sewage generated from the proposed Development and discharge to the nearby stormwater drainage system. Membrane Bioreactor (MBR) technology with ultra-filtration will be used for the proposed STP for meeting EPD’s effluent discharge standard. The sludge from the STP as a by-product from the MBR treatment process will be temporarily stored in the STP and removed off-site by licensed sludge collection vehicles, which the temporary storage and collection of the sludge will be performed within a fully enclosed area inside the STP. With proper discharge of sewage and sludge generated from the STP, adverse odour issues related to disposal is not anticipated.

- 9.7 A desktop review has been conducted by making reference to an Application for Amendment of Plan under S12A of the Town Planning Ordinance (Cap. 131), to Rezone the Application Site from “Green Belt” and “Government, Institution or Community” to “Residential (Group B) 9”, for Proposed Residential Development and Social Welfare Facilities at Lot Nos. 164 RP, 175 and 232 RP in D.D. 354, and Adjoining Government Land in Yau Kom Tau, Tsuen Wan, to compare the proposed STP against a committed STP which have similar design and odour removal efficiency. The comparison is summarised in Table 9.1.

Table 9.1 Summary Table of Committed STP and Proposed STP

Feature	STP in Yau Kom Tau, Tsuen Wan	Proposed STP
ADWF	2,142m ³ /day	247.5m ³ /day
Shortest Separation distance with closest ASR	25m	14m
Enclosure of odourous facilities	Yes	Yes
Odour removal efficiency of deodourising units	99 to 99.5%	99.5%

- 9.8 According to the air qualitative assessment of the report, it indicated the STP in Yau Kom Tau could be properly controlled the odour impacts and no adverse odour impacts would be anticipated. Although the separation distance to the closest ASR of the proposed STP is about 2 times shorter than that of the STP in Yau Kom Tau, the proposed STP is having much smaller ADWF (i.e. about 8 times smaller than the ADWF of STP in Yau Kom Tau). Hence, adverse air quality impact due to the proposed STP is not anticipated.
- 9.9 With STP design according to EPD’s guidelines, high efficiency deodorizer installed at the exhaust outlet, locating the exhaust and discharge angle away from the ASRs as far as possible and proper disposal, adverse air quality impact due to the proposed STP is not anticipated.

10. AIR SENSITIVE RECEIVERS

10.1 In accordance with Annex 12 of the TM-EIAO, ASRs include any domestic premises, hotel, hostel, hospital, clinic, nursery, temporary housing accommodation, school, educational institution, office, factory, shop, shopping centre, place of public worship, library, court of law, sports stadium or performing arts centre. Any other premises or places with which, in terms of duration or number of people affected, have a similar sensitivity to the air pollutant as the aforelisted premises and places would also be considered as a sensitive receiver.

10.2 Existing ASRs were identified by means of reviewing topographic maps, aerial photos and supplemented by site inspection. They mainly include developed residential village houses. Representative ASRs within 500m assessment area have been identified in Table 10.1 and shown in Figure 2.

Table 10.1 Representative ASRs

ASR ID	Description	Existing Land Status	Distance from the Proposed Development	Number of Storeys
A01	Village Houses along Kam Tai Road	Residential	450m	1-3
A02	Village Houses along local road	Residential	200m	1-2
A03	Village Houses along Kam Tai Road	Residential	340m	1-2
A04	Village Houses along Kong Po Road	Residential	490m	1-3
A05	Village Houses along Kam Tai Road	Residential	215m	2-3
A06	Seasons Villas	Residential	5m	2
A07	Village Houses along Kam Tai Road	Residential	180m	2-3
A08	Village Houses in Shek Kong Tsuen	Residential	165m	1-3
A09	Village Houses in Pang Ka Tsuen	Residential	310m	1-3
A10	Seasons Monarch	Residential	490m	3
A11	Shek Kong Barracks	Barrack	10m	1-3
A12	Village Houses adjoining the northwestern site boundary	Residential	45m	2-3

11. MITIGATION MEASURES FOR CONSTRUCTION WORK

- 11.1 The major construction activities of the proposed Development are foundation and superstructural. There will be no basement area except the storm water storage tank, with volume of about 5000m³ and the underground tank of the proposed STP, such that the scale of excavation involved in the proposed Development is relatively small. The construction activities will not be taking place concurrently at entire work sites.
- 11.2 During the construction phase, dust and gaseous emission would be generated from construction activities such as vehicles movement on haul roads, excavation, loading or unloading stockpile material, stockpiling of material, wind erosion of exposed areas and the use of construction machineries and construction vehicles.
- 11.3 The proposed Development comprises 6 low-rise residential blocks with 5 storeys above 1-storey ground floor carport and a clubhouse. Also, the proposed Development currently lies on a relatively flat terrain. Therefore, dusty activities such as excavation, site formation and superstructure works are expected to be relatively small in scale. Detailed information such as the estimated size of site formation and excavated areas, the amount of excavated materials, size of active workfront and number of dump trucks to be used on site at a time, etc. are not available at this stage and the details of construction programme will be provided once available. For conservative, a dust monitoring and audit programme will be implemented during the construction stage to ensure that the nearby ASRs will not be subject to adverse constructional air quality impact. In addition, exempted NRMMS shall be avoided.
- 11.4 Appropriate air quality control measures stipulated in the Air Pollution Control (Construction Dust) Regulation would be implemented during construction stage to control the dust and gaseous emission. These measures include:-
- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;
 - Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;
 - A stockpile of dusty material should not extend beyond the pedestrian barriers, fencing or traffic cones;
 - The load of dusty materials on vehicles leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;

- Where practicable, vehicles washing facilities including a high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;
- When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the Site boundary with provision for public crossing. Good site practice shall also be adopted by the contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;
- The portion of any road leading only to construction site that is within 30m of vehicle entrance or exit should be kept clear of dusty materials;
- Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation take place should be sprayed with water or a dust suppression chemical continuously;
- Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;
- Any skip hoist for material transport should be totally enclosed by impervious sheeting;
- Every stock of more than 20 bags of cement or dry pulverized fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the three sides;
- Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from its body and wheels;
- Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;
- Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies;
- Regular watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather;
- Erect higher hoarding (e.g. 3.5m or above) at the locations with ASRs in immediate proximity (e.g. ASR A06, etc.) to the development site boundary;
- Locate all the dusty activities away from any nearby ASRs as far as practicable;

- Provide electric power supply for on-site machinery as far as practicable and avoid using diesel generators to minimize the aerial emissions; and
- Exempted non-road mobile machinery (NRMM) shall be avoided.

Emission from Fuel Combustion Equipment

- 11.5 Apart from the dust and gaseous emission impact during construction phase, there will be exhaust emissions from the construction plants and machineries. Requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation and Air Pollution Control (Fuel Restriction) Regulations (i.e. using liquid fuel with a Sulphur content of less than 0.001% by weight) will be complied with to control the exhaust emissions from non-road mobile machineries and construction vehicles. As mentioned in Section 11.3, the scale of the project is relatively small, the number of construction plants will be limited.

Concurrent Project

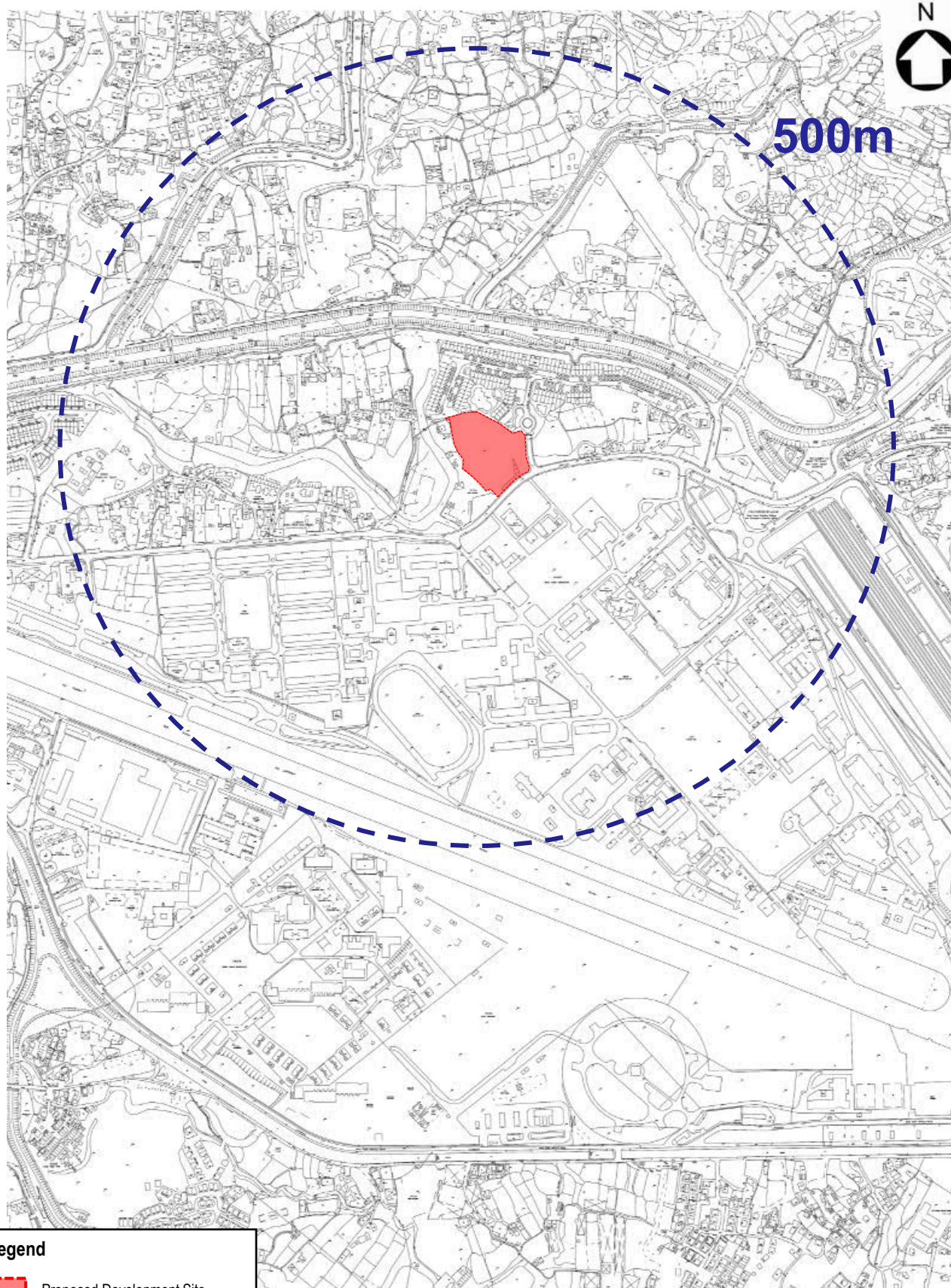
- 11.6 According to the site surveys and desktop reviews, there is no concurrent project within 500m of the proposed Development. With the implementation of air quality control measures stipulated in the Air Pollution Control (Construction Dust) Regulation and requirements stipulated in the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, in addition the relatively small scale construction works of the proposed Development, adverse cumulative construction air quality impact is not anticipated.
- 11.7 Therefore, the potential dust and exhaust emission from the construction works to the ASRs in the vicinity would be controlled.

12. CONCLUSION

- 12.1 The proposed Development satisfies the buffer distance requirements for vehicular and industrial emissions stipulated under the Hong Kong Planning Standards and Guidelines (re. Table 3.1, Chapter 9, HKPSG). Site inspections revealed that no odour has been detected at the site boundaries and the emission of dust or fluff has not been identified from buildings in the vicinity of the proposed Development. Therefore, no adverse air quality impact associated with the proposed Development during operational phase is anticipated.
- 12.2 The proposed STP will be enclosed. With STP design according to EPD’s guidelines, proper deodorization at the exhaust outlet and locating the exhaust away from the ASRs as far as possible, no adverse odour impact due to the proposed STP is anticipated.
- 12.3 Air quality control requirements in the Air Pollution Control (Construction Dust) Regulation will be followed. Relevant mitigation measures for dust and gaseous emissions will also be implemented. Therefore, no adverse air quality impact associated with the proposed Development during construction phase is anticipated.

13. REFERENCE

- [1] "Hong Kong Planning Standards & Guidelines" of March 2014 of Hong Kong Government



Legend



Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

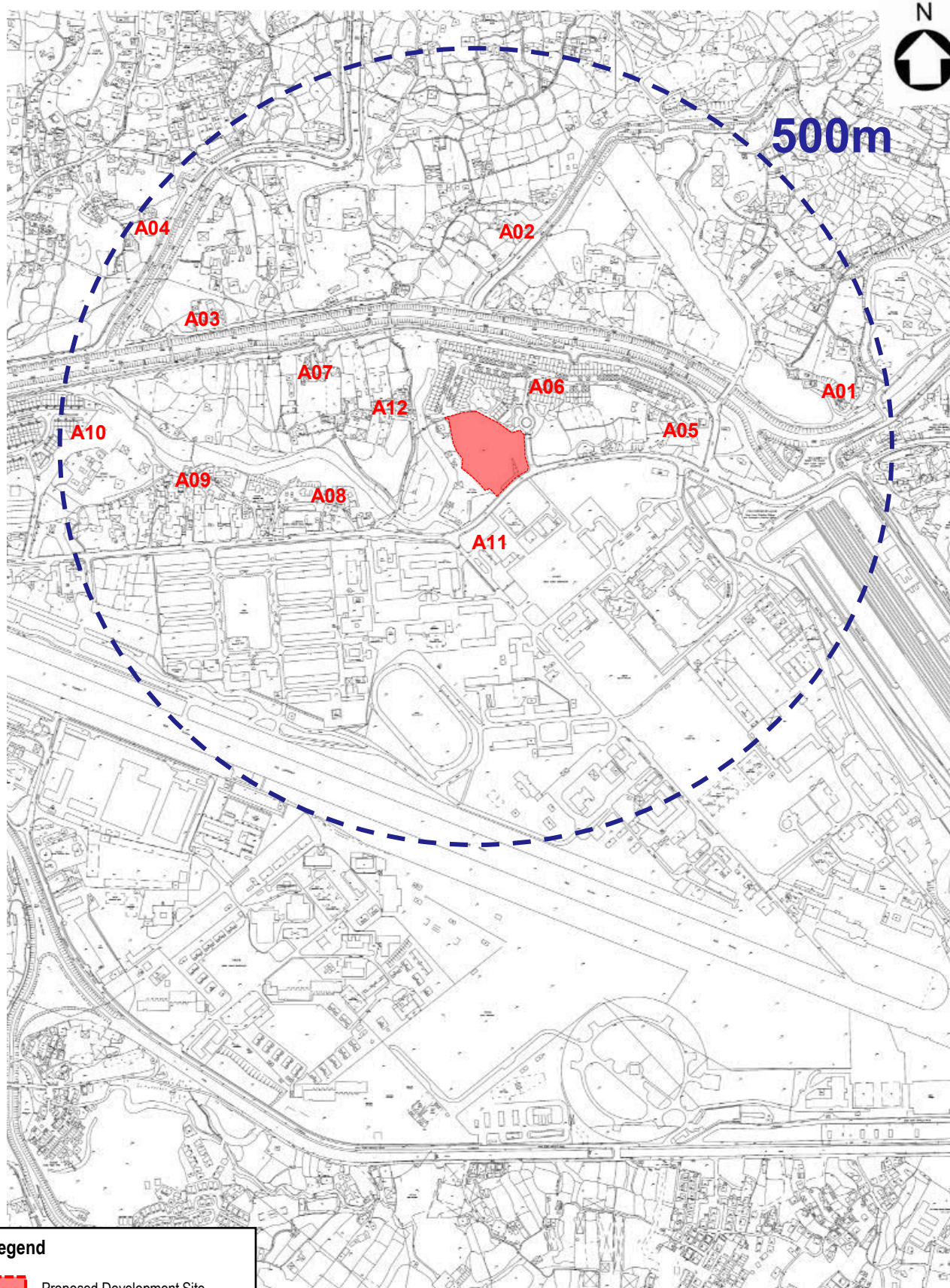
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Site Location

FIGURE

1



Westwood Hong & Associates Ltd

PROJECT: 22605

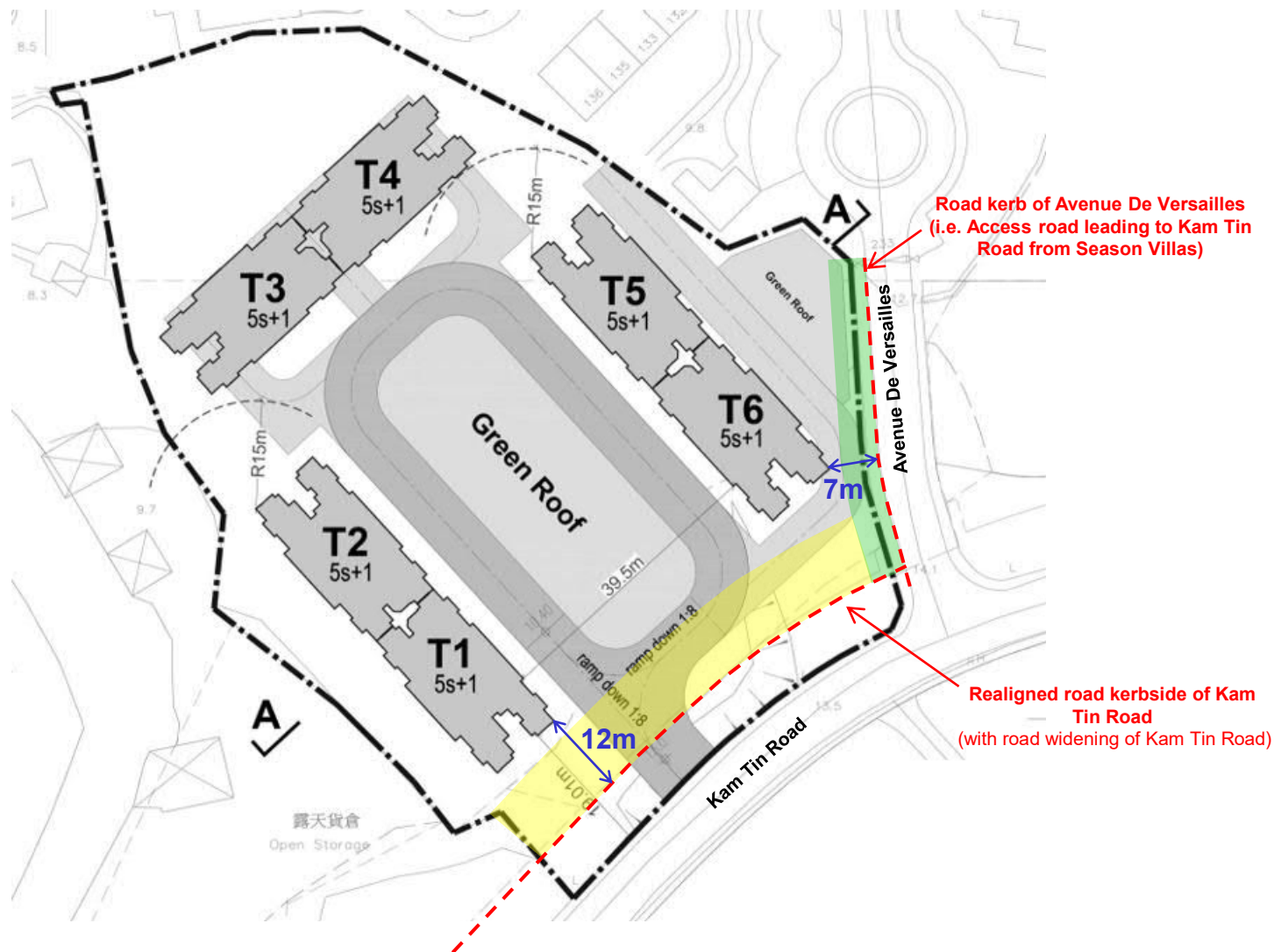
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Locations of Identified ASRs within 500m from the Proposed Development

FIGURE

2



Legend

- 5m Buffer Distance from Road
- 10m Buffer Distance from Road

*Remark: no air-sensitive use including openable window, fresh air intake and recreational use in open space shall be located within the buffer zones.

Westwood Hong & Associates Ltd

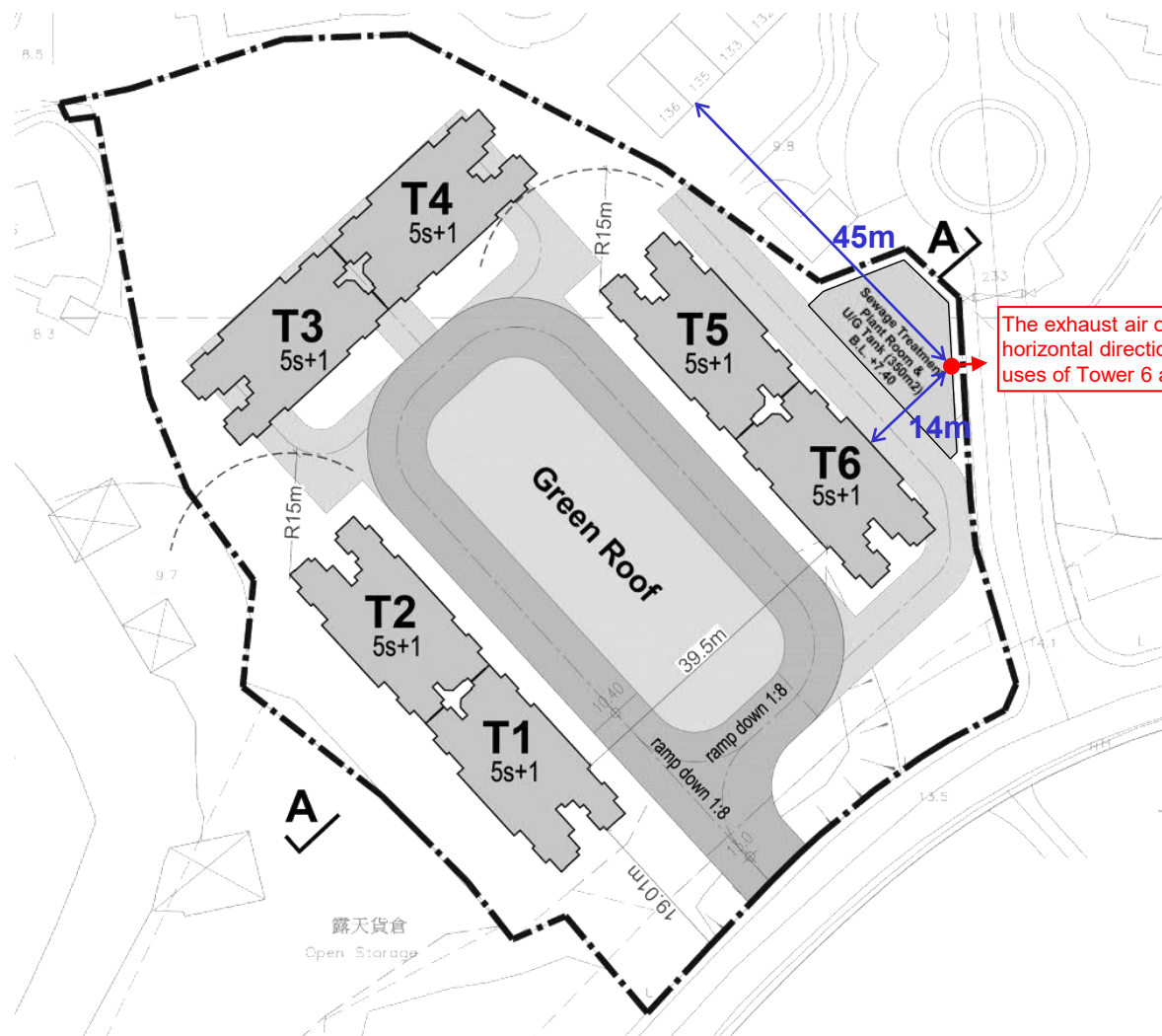
PROJECT: 22605
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Shortest Distance between ASRs within the Proposed Development and the Road

FIGURE

3



Westwood Hong & Associates Ltd

PROJECT: 22605
Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Potential Location of Exhaust Outlet and Discharge Direction

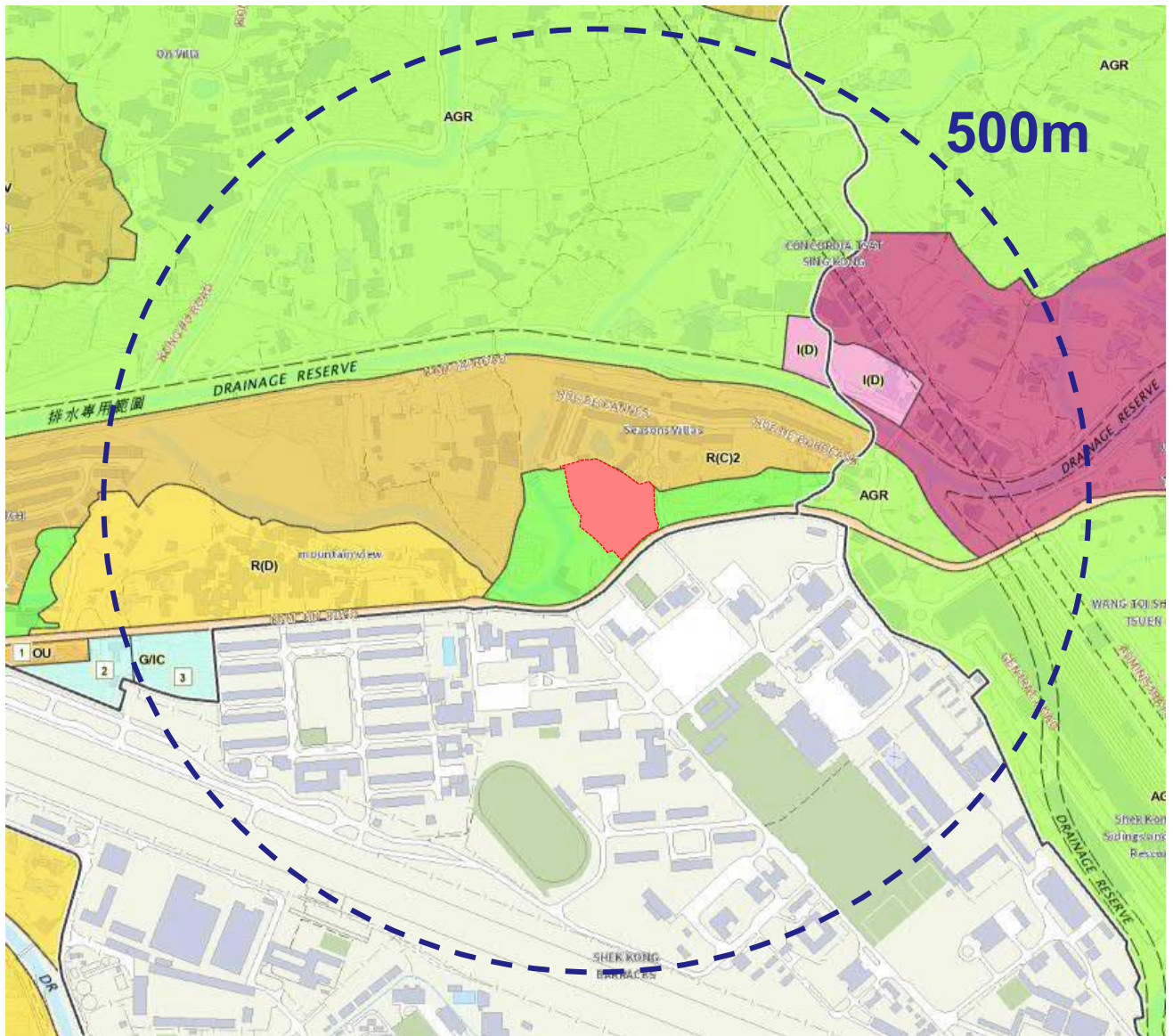
FIGURE

4

Legend



Potential location of exhaust outlet and discharge direction



Legend

 Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

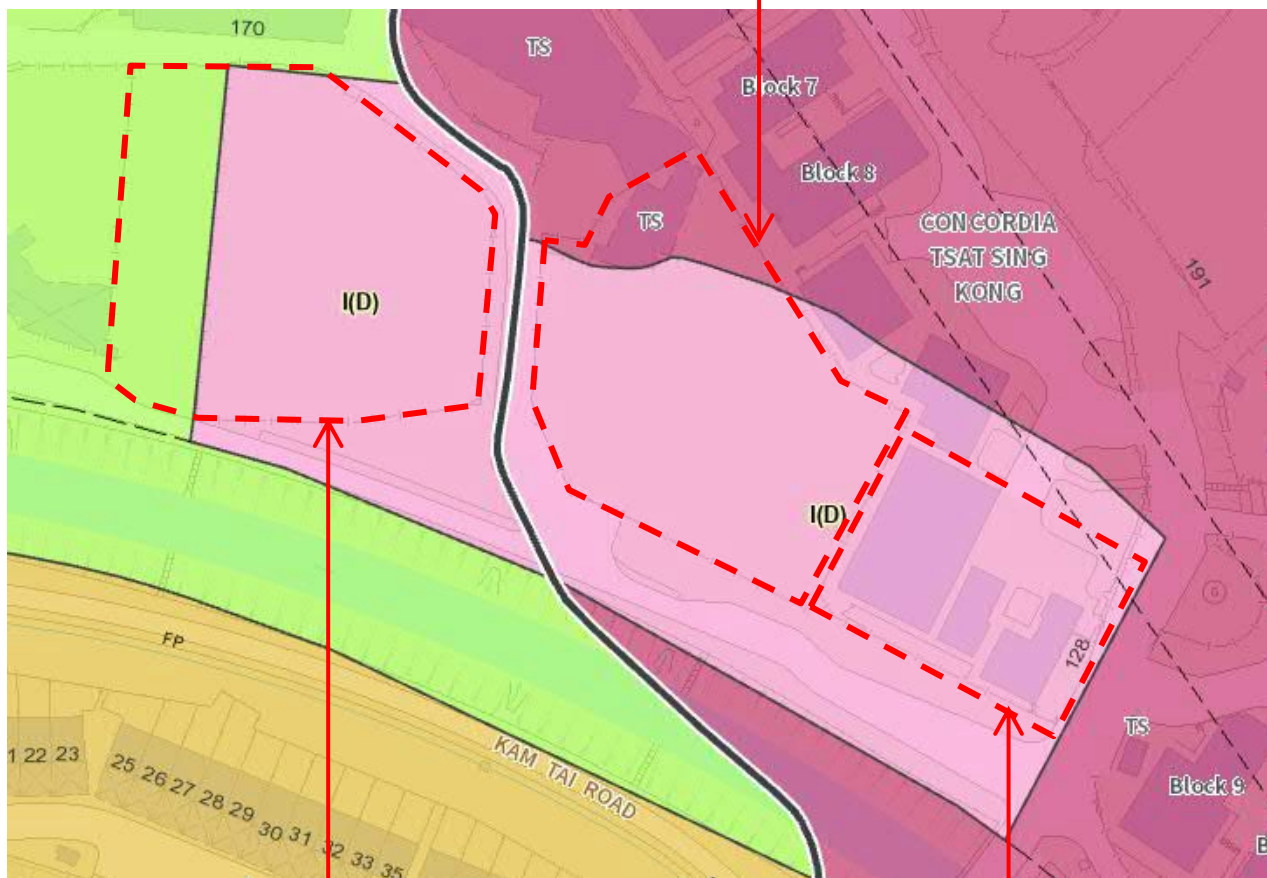
I(D) Zones within 500 Assessment Area

FIGURE

5a



Observation: Used as open storage,
no active/heavy industrial operation



Observation: Used as open storage,
no active/heavy industrial operation



Observation: Used as substation,
no active/heavy industrial operation

Westwood Hong & Associates Ltd

TITLE:

FIGURE

PROJECT: 22605

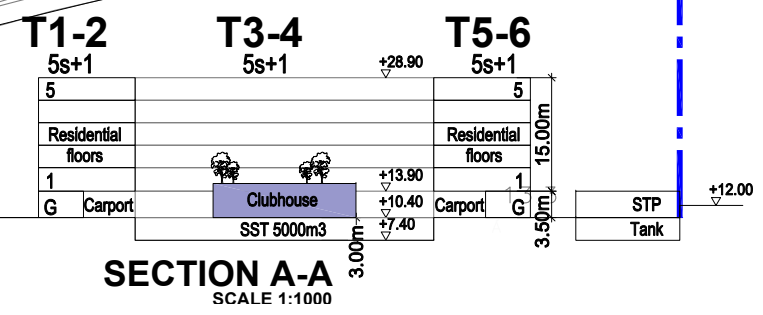
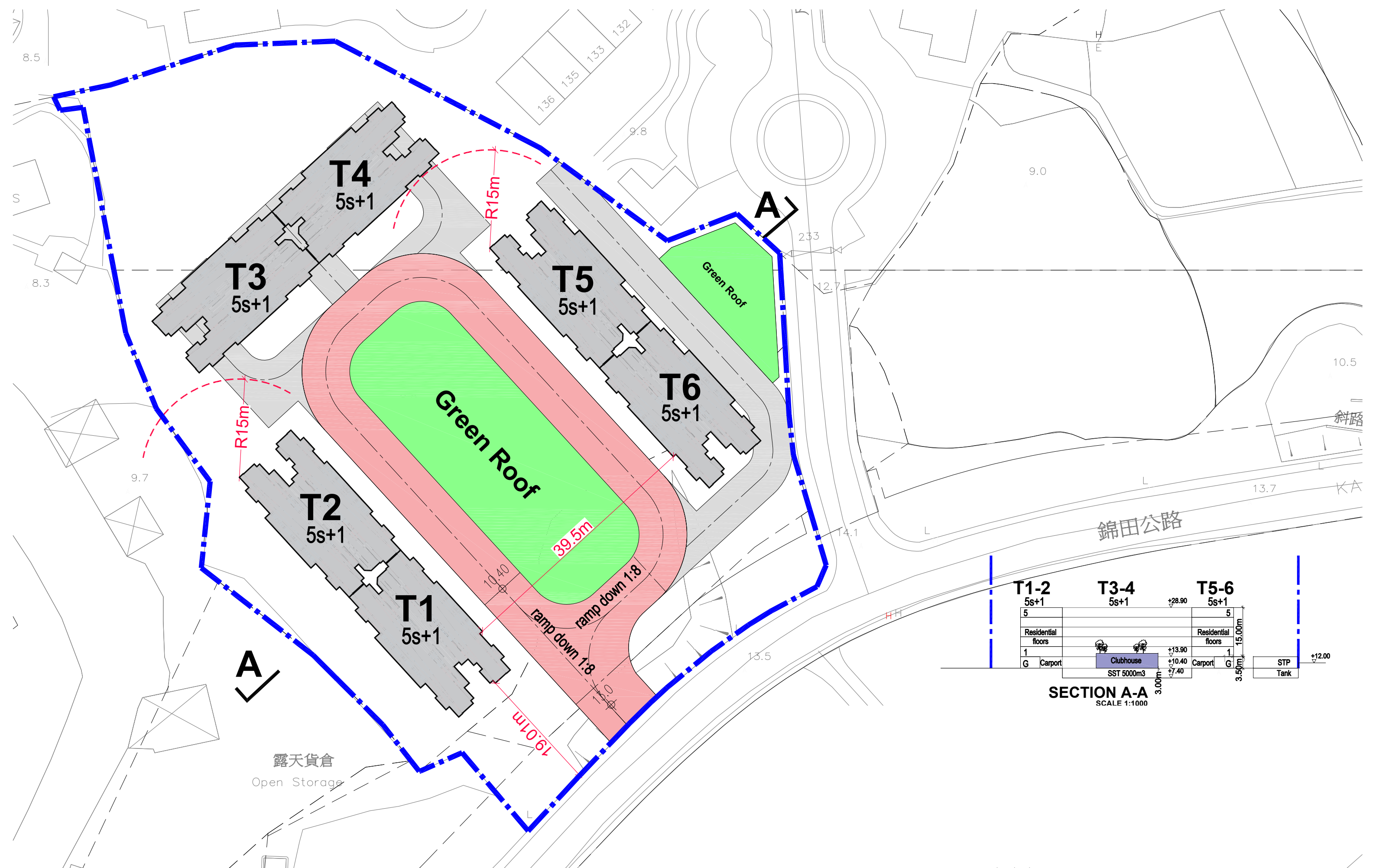
I(D) Zones within 500 Assessment Area

5b

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

APPENDIX 1

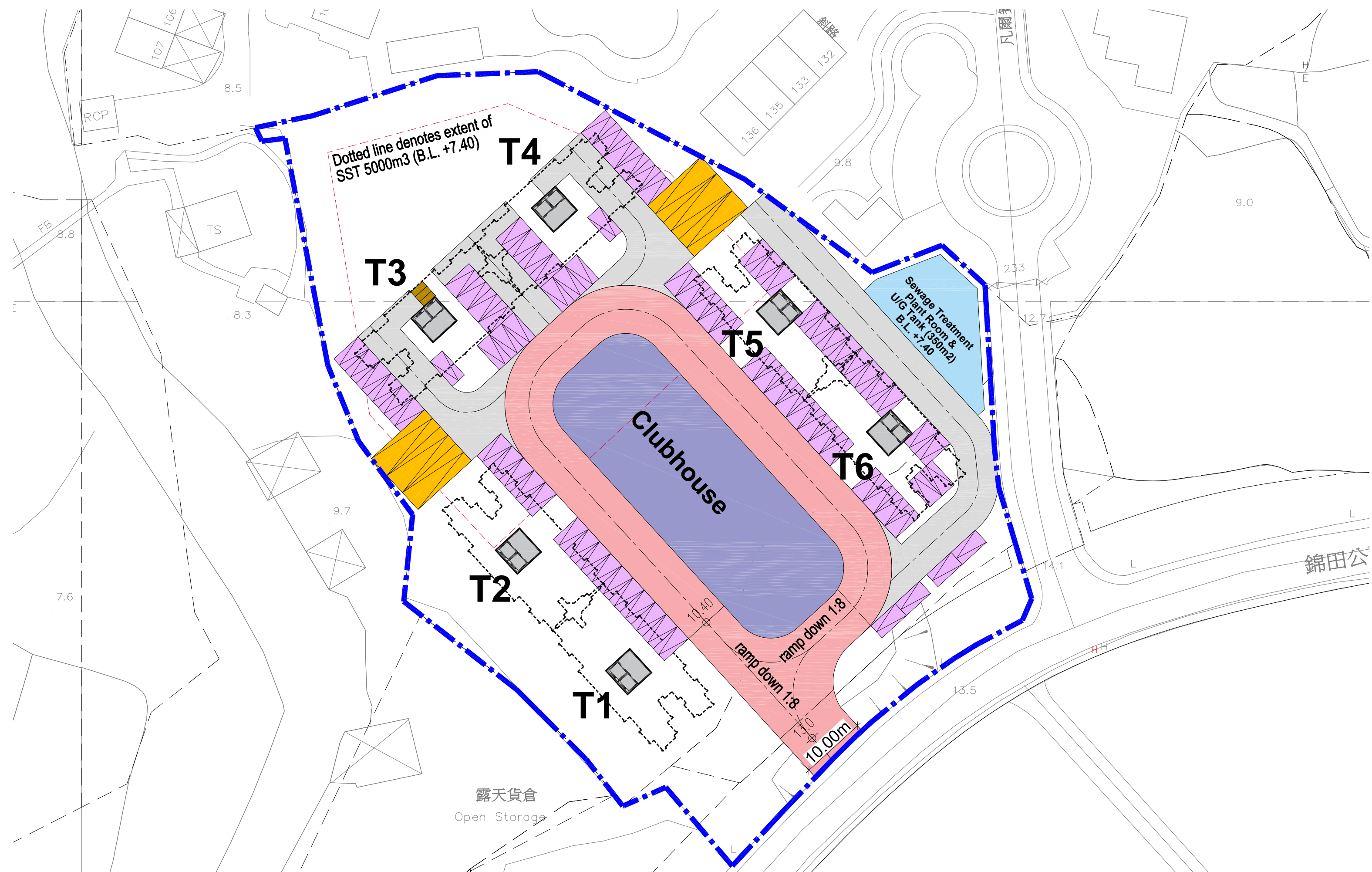
ARCHITECTURAL DRAWINGS



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

MASTER LAYOUT PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

GROUND FLOOR PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a

APPENDIX 2

PHOTOGRAPHS TAKEN ON SITE



Plate 1: Development Site

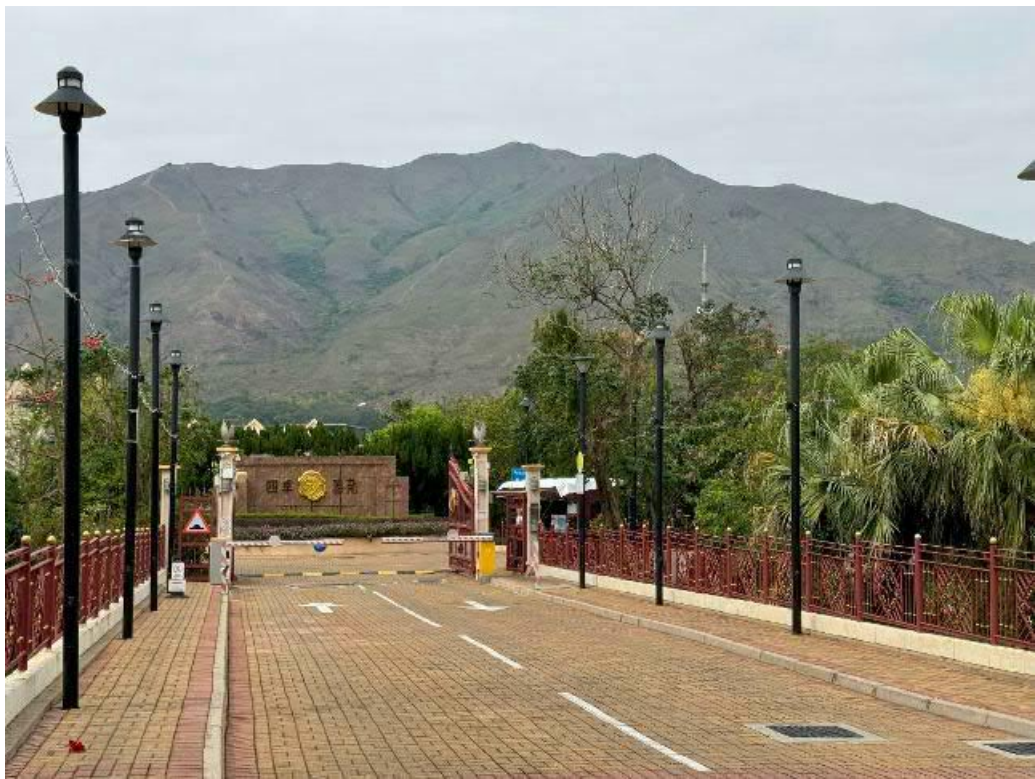


Plate 2: Seasons Villa

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TITLE:
Photographs taken on Site

FIGURE
A2-1

Appendix 9

Water Quality Impact Assessment

Rezoning From “Residential (Group C)2” and “Open Space” Zones to “Residential (Group C)4” Zone for a Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Environmental Water Quality Impact Assessment

Prepared for:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Prepared by:

Westwood Hong & Associates Limited

Report No.:

22605-WR1 Rev A

Date:

23 October 2025

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5. WATER QUALITY IMPACT DURING OPERATION PHASE	6
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FIGURES

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct a Water Quality Impact Assessment on the proposed residential development at DD110 on Kam Tin Road in Yuen Long (the “proposed Development”).
- 1.2 This assessment is to identify the potential water quality impact arising from the proposed Development.

2. LEGISLATIONS, STANDARDS & GUIDELINES

Water Pollution Control Ordinance (Cap. 358)

- 2.1 The Water Pollution Control Ordinance (WPCO) (Cap. 358) provides the major statutory framework for the protection and control of water quality in Hong Kong. According to the Ordinance and its subsidiary legislation, Hong Kong waters are divided into ten Water Control Zones (WCZs). Corresponding statements of Water Quality Objectives (WQOs) are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in the WCZ based on their beneficial uses. The development site is within the catchment of the Deep Bay WCZ.

Construction Site Drainage (ProPECC PN2/24)

- 2.2 Under ProPECC Practice Note PN2/24 Construction Site Drainage (ProPECC PN2/24), some basic environmental guidelines for the handling and disposal of construction site discharges are provided to prevent or minimise pollution problems associated with construction activities. Ten types of discharges from construction sites are identified and good practice for dealing with such discharges is listed in ProPECC PN2/24. Licensing of construction site discharges within WCZs is also discussed in ProPECC PN2/24

Drainage Plans (ProPECC PN1/23)

- 2.3 Under Professional Persons Environmental Consultative Committee Practice Note 1/23 Drainage Plans subject to Comment by the Environmental Protection Department (“ProPECC PN1/23”), various guidelines for preparing drainage plans are included. This practice note includes guidelines and recommendations for handling, treatment and disposal of effluent discharges to storm drains and foul sewers.

***Environment, Transport and Works Bureau Technical Circular (Works) No. 5/2005
(ETWB TC (Works) No. 5/2005)***

- 2.4 Measures recommended in ETWB TC (Works) No. 5/2005 “Protection of natural streams/ rivers from adverse impacts arising from construction works” shall be implemented by Contractor to the construction works in the vicinity of natural rivers and streams.

Best Management Practices (BMPs)

- 2.5 Stormwater management Best Management Practices should be implemented as appropriate to reduce runoff and control the quality of runoff.

Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)

- 2.6 The EIAO-TM is issued by the EPD under Section 16 of the EIAO. It specifies the assessment method and criteria that need to be followed in the EIA. Reference sections in EIAO-TM have provided details of assessment criteria and guidelines that are relevant to the water quality impact assessment, including:
- Annex 6 – Criteria for Evaluating Water Pollution
 - Annex 14 – Guidelines for Assessment of Water Pollution

HKPSG Chapter 9

- 2.7 The HKPSG, Chapter 9 (Environment), provides for protection against water pollution for sensitive uses such as aquaculture and fisheries zones, bathing waters and other contact recreational waters.

3. WATER SENSITIVE RECEIVER

- 3.1 The water sensitive receivers (WSRs) within 500m from the boundary of development site were identified as inland watercourses. The locations of WSRs are presented in Figure 1.

Table 3.1 Summary of WSRs within Assessment Area

WSR ID	Type	Status	Estimated Distance
WSR 01	Natural watercourse	Active	11m
WSR 02	Modified watercourse	Active	465m
WSR 03	Natural watercourse	Active	388m
WSR 04	Modified watercourse	Active	110m
WSR 05	Modified watercourse	Active	146m
WSR 06	Modified watercourse	Active	492m
WSR 07	Natural watercourse	Active	484m

4. WATER QUALITY IMPACT DURING CONSTRUCTION PHASE

Source of Wastewater

- 4.1 Construction activities would inevitably have the potential to generate wastewater. Works should be carried out in such a manner as to minimise adverse impacts on local water bodies. Activities that are likely to cause water pollution include:-
- Construction surface runoff;
 - Wastewater from construction site;
 - Accidental spillage of chemicals, e.g. oil, diesel, solvents etc; and
- 4.2 The potential water quality impact during construction stage of the proposed Development will be the potential discharge of construction site runoff and wastewater. Without proper control, these could lead to increase in suspended solids level as a results of sediment-laden surface runoff, as well as increase in turbidity level. Wastewater will be generated from construction workforce, foundation works, and superstructure works. Also accidental spillage of fuel, oil and lubricants may occur from construction vehicles and other equipment.

Mitigation Measures

- 4.3 During construction, no direct discharge without treatment of construction site runoff from the construction site will be allowed. The good practice given in the Practice Notes for Professional Persons on “Construction Site Drainage” (ProPECC PN2/24) in controlling water pollution at construction site shall be implemented during the construction phase of the proposed Development. Soil erosion from the construction site can be minimised through good on-site management practices by implementing viable erosion control measures which should be incorporated in contract clauses. Construction site runoff shall be collected and treated through screening facilities before discharge into the nearby storm drains, and the discharge shall comply with the terms and conditions of the discharge licence to be issued under the WPCO.
- 4.4 The main practices provided in the above-mentioned document (i.e. ProPECC PN2/24) are also summarised in the following paragraphs which should be enforced to prevent unacceptable construction stage impacts and for compliance with the statutory criteria:-

Construction Site Runoff

- Exposed soil surfaces should be protected from rainfall through, for example, by covering temporarily exposed slope surfaces or stockpiles with tarpaulin and protect temporary access roads by crushed stone or gravel;
- Exposed soil areas should be minimised to reduce the potential for increased siltation and contamination of runoff;
- Minimise the time that soil surfaces are exposed;
- Slow down water run-off flowing across exposed soil surfaces;
- Channels, earth bunds or sand bag barriers should be provided on site to properly direct surface runoff through drainage systems;
- Oil interceptors are also recommended to be provided for stormwater drains near plant maintenance/ repair areas, where necessary;
- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent slit, construction materials or debris from getting into the drainage system;
- Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions;
- Drainage facilities must be adequate for the controlled release of storm flows;

- Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN2/24 should be installed at the construction site for collecting surface runoff. Perimeter channels at site boundaries should be provided where necessary to intercept surface runoff from outside the site. Silt removal facilities, channels and manholes should be maintained and deposited silt and grit should be removed regularly;
- There should be no direct discharge without treatment of construction site runoff into the nearby streams and public drains;
- The Contractor shall prepare a construction site drainage management plan with details of the construction phase drainage system proposed to be constructed; discharge location(s); and screening facilities; and
- The Contractor shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence throughout the construction phase.

Wastewater from Construction Site

- Sewage generated from the construction workforce should be contained by chemical toilets before connection to public foul sewer can be provided. The number of chemical toilets required would be subject to the capacity of the chemical toilets, and contractor’s practices/ work programme. The Contractor(s) will be required to provide an estimation on the amount of sewage to be generated and to provide sufficient number of chemical toilets for construction workers. The chemical toilets should be serviced and cleaned by a specialist contractor at regular intervals. No discharge of sewage into nearby environment will be allowed during construction stage;
- Canteen facilities are not expected. However, in case canteen is required, foul water from canteens on-site, if any, should also be contained by sewage holding tank before connection to public foul sewer can be provided. Wastewater collected from canteen kitchens, should be treated via grease traps and contained by sewage holding tanks, and collected by a licensed contractor regularly;
- Vehicle wheel washing facilities should be provided at site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before leaving the site area;
- Section of construction road between the wheel washing bay and public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and
- If bentonite is used, bentonite slurry should be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping

licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards in accordance with ProPECC PN2/24.

Oils and Solvents

- Spillage of fuel oils or other polluting fluids should be prevented at source. It is recommended that all stocks should be stored inside proper containers and sited on sealed area, preferably surrounded by berms, and
 - Regular site inspections to ensure the proper implementation of the above measures shall be carried out.
 - The contractor should register as a chemical waste producer if chemical wastes would be produced from the construction activities and the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied.
- 4.5 With the above proposed construction phase drainage system and recommended pollution control measures in place, no adverse water quality impact during construction phase will be expected.

5. WATER QUALITY IMPACT DURING OPERATION PHASE

Operation Phase

- 5.1 The drainage system of the proposed Development will be designed and submitted to the Drainage Services Department (DSD) for approval. Under the existing condition, the surface runoff generated from the existing development site is currently discharged to an existing watercourse at the west of the development site, and the watercourse is then discharged to Kam Tin River via a 2-cell box culvert. To avoid impact of additional runoff due to the increase of paved area in the development site, runoff from the proposed Development will be collected and discharged to the existing watercourse via a proposed 750mm diameter pipe. Detailed discussions are presented in the separate Drainage Impact Assessment.
- 5.2 There would be additional pollution loading in association with the increase of surface runoff, which is known as non-point source pollutions during operation phase. A small amount of oil, grease and grit may be deposited on the surfaces of the internal road within the development site and these pollutants could be washed into the nearby

drainage system or inland waters during rainfall events. Surface run-off generated from other paved areas within the development site may also contain debris, refuse, dust from the roof of the building blocks and cleaning agents used for washing internal roads, which may also affect the quality of the nearby receiving water environment, if uncontrolled. Under normal condition, runoff will not be generated in low rainfall intensity. However, the worst scenario to water quality will take place during the first flush under heavy rainstorm events. Proper drainage systems with silt traps will be installed to minimise the potential water quality impact. The petrol interceptor for the oil and grease from vehicles in run-off or covered carpark will be provided according to the ProPECC PN1/23.

5.3 In order to minimise the direct impact from the non-point source surface water pollution to the nearby streams and watercourses, Best Management Practices are proposed as follows:-

- Exposed surface shall be avoided within the development site to minimise soil erosion. The development site shall be either hard paved or covered by landscaping area and plantation where appropriate;
- Green areas / tree / shrub planting etc. should be introduced within the development site as far as possible including open space and along roadside amenity strips and central dividers, which can help to reduce soil erosion;
- Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system;
- Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater run-off, where appropriate;
- Good management measures such as regular cleaning and sweeping of road surface / open areas are suggested. The road surface / open area cleaning should also be carried out prior to occurrence rainstorm; and
- Manholes, as well as stormwater gullies, ditches provided at the development site should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall.

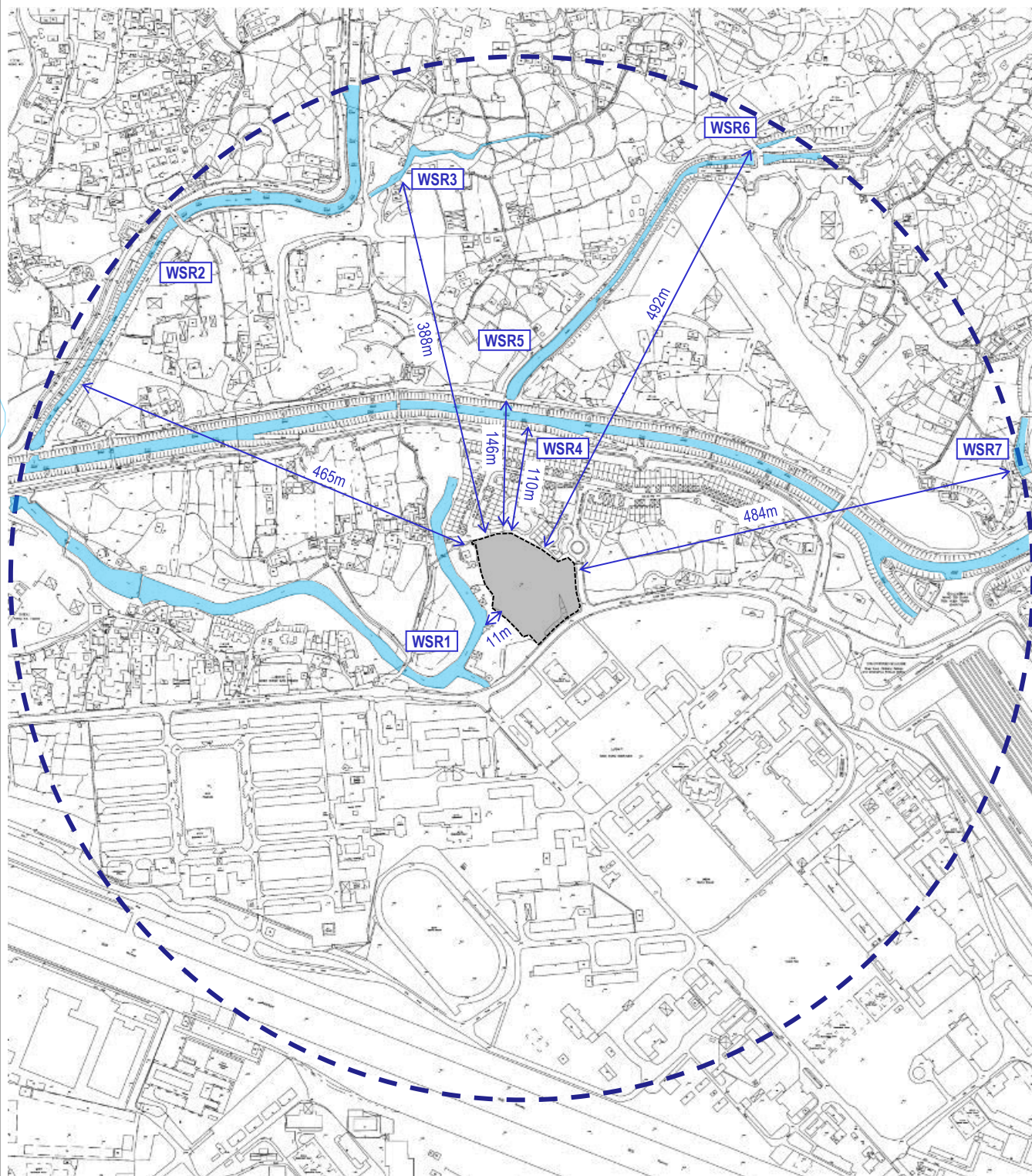
5.4 Agrochemicals will be used locally for the tree treatment where necessary. The use of agrochemical would be carefully controlled spatially (i.e. only at the required locations) and temporally (i.e. do not use before rainy day(s)), and therefore no unacceptable water quality impact associated with the use of agrochemicals is expected.

- 5.5 The proposed Development would accommodate a total population of about 648. A Sewage Treatment Plant (STP) is proposed on-site. According to the Sewerage Impact Assessment (SIA), the estimated ADWF for the proposed Development is approximately 247.5m³/day (2.86l/s). An on-site STP with plan area of about 350m² will be adopted to treat the sewage flow of 247.5m³/day generated from the proposed Development and the treated effluent will be discharged to the nearby stormwater drainage system. The internal facilities of the STP are designed to cater for a peak flow of 8.59l/s (a peaking factor of 3). The proposed STP will adopt Membrane Bioreactor (MBR) technology with ultra-filtration to meet EPD’s effluent treatment standard. As the sewage generated from the proposed Development would be adequately treated by the on-site tertiary STP before discharge, no unacceptable adverse residual water quality impact is anticipated during operation phase of the proposed Development. Detailed discussions of the proposed sewerage system are presented in the separate SIA. Relevant best practices and guidelines such as ProPECC PN1/23 “Drainage Plans Subject to Comment by the Environmental Protection Department”, “Guidelines for the Design of Small Sewage Treatment Plants”, etc. should be followed to avoid potential water quality impact during operation phase.
- 5.6 According to the SIA, dual source electricity supply as an emergency measure of STP will be provided to prevent power failure. Standby pumps, in addition to the duty pumps will be provided as backup solution during operation when the duty pump is failure to be operated or for maintenance inspection. The pump may also be used to recycle the plant effluent to maintain the STP in a working condition when incoming flow is low. In view that the risk of these two emergency measures failure at the same time is extreme low, the emergency measures are considered appropriate for the proposed temporary STP for the development site. Additionally, an emergency storage tank with storage capacity of 65m³ (about storage capacity for 6 hours of ADWF) will be provided to store the overflow of raw sewage during maintenance or the plant failure. With these measures in place, the risk of untreated sewage effluent discharge to Deep Bay WCZ due to emergency events is considered to be negligible.
- 5.7 Should public sewer be available for connection and discharge in the future, the sewage treatment plant will be decommissioned and removed and the sewage will be disposal to public sewer via a sewage terminal manhole at the boundary of the development site. Any residual wastewater or solids generated during the decommissioning of the on-site STP must be properly disposed and cannot be left in place or released to the ground or surface waters. Residual wastewater may be discharged to public sewer and the sludge from the STP should be removed off-site by

licensed sludge collection vehicles. Provided that the handling, storage and disposal of the wastes are properly managed and accidental release to the surrounding environment does not occur, adverse water quality during operation phase is not anticipated.

6. CONCLUSION

- 6.1 Potential water quality impacts associated with construction and operation have been identified. With the implementation of recommended measures, no adverse water quality impacts would arise due to the proposed Development.



Legend

- Proposed Development Site
- Inland Watercourse
- WSR ID

Westwood Hong & Associates Ltd

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TITLE:

Locations of Water Sensitive Receivers

FIGURE

1

Appendix 10

Land Contamination Assessment

Rezoning From “Residential (Group C)2” and “Open Space” Zones to “Residential (Group C)4” Zone for a Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Land Contamination Assessment

Prepared for:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Prepared by:

Westwood Hong & Associates Limited

Report No.:

22605-C1 Rev A

Date:

23 October 2025

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5. SITE APPRAISAL FINDINGS	2
SITE WALKOVER FINDINGS	2
REVIEW OF PAST LAND USES	3
REVIEW OF HISTORICAL SPILLAGE AND LEAKAGE RECORD.....	4
6. LAND CONTAMINATION ASSESSMENT	4

FIGURES

APPENDICES

1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct a Land Contamination Assessment on the proposed residential development at DD110 on Kam Tin Road in Yuen Long (the “proposed Development”). The location of the proposed Development is provided in Figure 1.

2. GUIDELINES AND EVALUATION CRITERIA

- 2.1 This assessment was prepared in accordance with the following guidelines:-
- The Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management, EPD, Revised in April 2023 (“Guidance Manual”);
 - The Guidance Note for Contaminated Land Assessment and Remediation, EPD, Revised in April 2023 (“Guidance Note”); and
 - Practice Guide for Investigation and Remediation of Contaminated Land, EPD, Revised in April 2023 (“Practice Guide”).

3. BUILDING LAYOUT

Development Layout

- 3.1 The proposed Development comprises 6 low-rise residential blocks with 5 storeys and 1 storey clubhouse and carport. The building layouts are shown in Appendix 1.

4. SITE HISTORY

Past and Present Site Condition / Activities

- 4.1 The total site area is about 8,580m². The site was developed from a farmland. According to the aerial photos, the development site had been used for agricultural purpose at least since 1963. The majority of the site became vacant and vegetated from 1994.

5. SITE APPRAISAL FINDINGS

- 5.1 The site appraisal comprises site walkover, review of historical aerial photographs, review of past and present site use and review of historical spillage and leakage records.

Site Walkover Findings

- 5.2 A walkover of the development site was conducted on 18 March 2025. Site observations were summarised in Table 5.1. The photos taken on site are provided in Appendix 2, and the site walkover checklist is provided in Appendix 5.

Table 5.1 Site Observations

Type of Existing Business	Description of Site Walkover Findings	Off-site Property Affected
Landscape and Vegetation	The site had been used for agricultural purpose at least since 1963. No potential land contamination activities were identified. At the time of the site appraisal, the site was mainly vacant and vegetated with some shrubs and trees (Plates 1 – 6). No underground facilities and transformer were observed, no signs of chemical spills / oil stains were observed. The site located to the north is the residential development Seasons Villas, to the east is the access road and landscape area, to the south is Kam Tin Road, and immediate to the west are a village house and vehicle repair workshop. The vehicle repair workshop is located 2 – 3m away from the development site and vegetations in between. The entire vehicle repair workshop is paved. Site inspection revealed that the workshop is mainly used as storage, old vehicles were stacked up in the open area. Minor operation of using pneumatic screwdriver was observed inside the temporary structure with a steel cover. All the industrial activities were conducted inside the temporary structure (Plate 9), which is about 18m from the nearest site boundary of the project site. All the old vehicles/ car component are stored at the paved open area. No visual signs of contamination were observed at the site boundary near to the workshop (Plate 10). Therefore, these buildings/ areas/ workshop would not have potential off-site land contamination affecting the site. Additionally, it is observed that the level of the adjoining car repairing workshop is slope down from south to the north-west, the anticipated pathways of the potential off-side contamination	No

	would be directed towards north-west. Therefore, adverse land contamination impact is not anticipated for the proposed Development.	
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Review of Past Land Uses

- 5.3 A review of past land uses of the development site was conducted by reviewing the aerial photographs. The aerial photographs were obtained from the Surveys and Mapping Office of the Lands Department. The referenced aerial photographs are attached in Appendix 3 and summarized in Table 5.2.

Table 5.2 Land Use History for the Development site

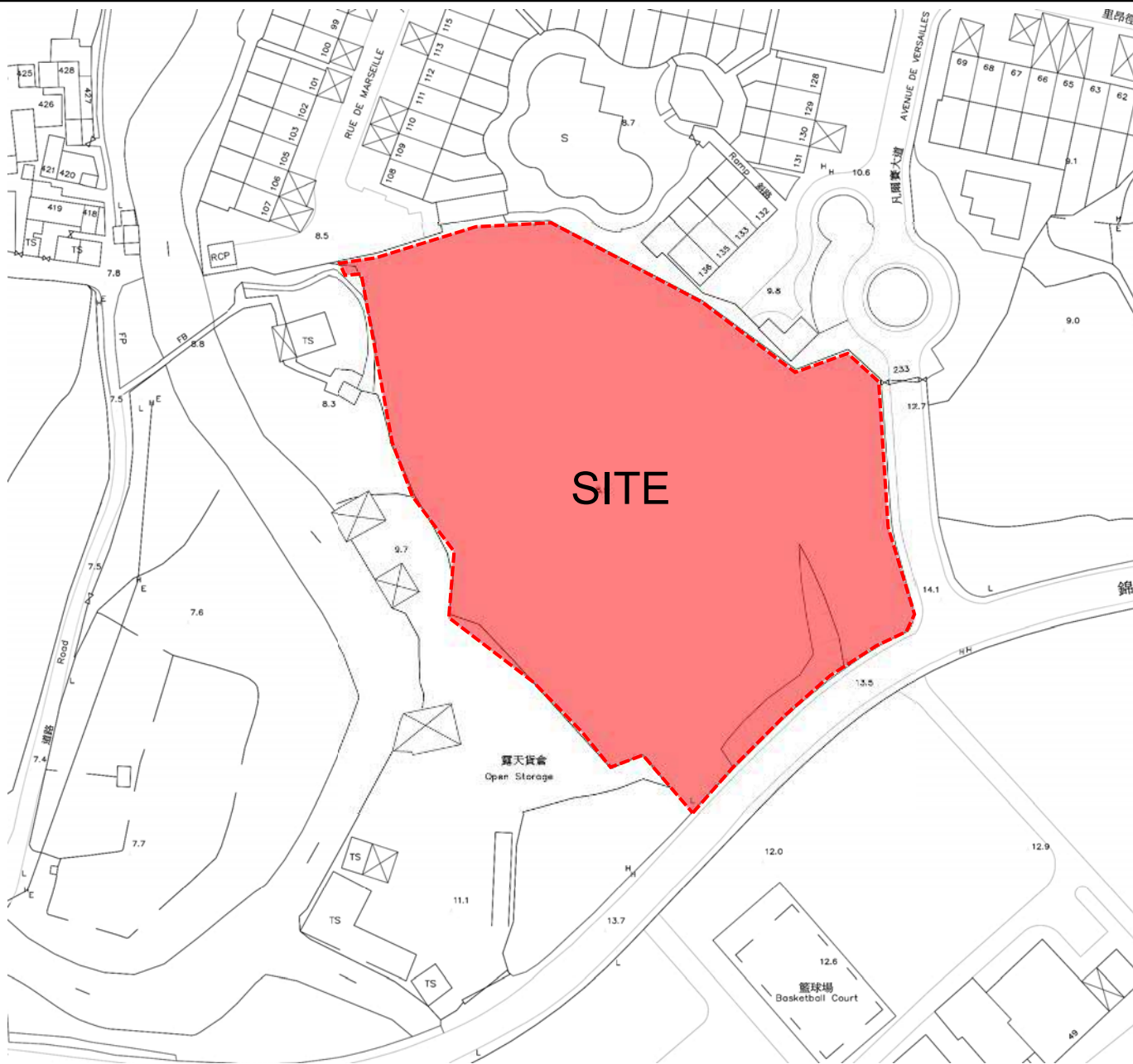
Date	Ref. no	Height (ft)	Land Use
1963	1963-8455	3900	The Shek Kong area was under development. The development site appears to be farmland.
1973	03082	5000	The Shek Kong barracks were developed. The development site appears to be farmland and vegetation.
1982	46538	4000	The development of Pang Ka Tsuen was finished. No significant changes were noted in the development site.
1994	CN07441	2800	The vehicle repair workshop along the Kam Tin Road was establishing, with 2-3m away from the development site and vegetations in between. The development site area was vacant with vegetation.
2004	CW61392	4000	The vehicle repair workshop along the Kam Tin Road was established, with 2-3m away from the development site and vegetations in between. The houses of the Season Villas were establishing. The road networks of Shek Kong were completed. The development site area was vacant with vegetation. An adjoining village house at the north-western side of the development site was established.
2015	CW116414	2500	The development of Season Villas was completed. No significant changes were noted in the development site.
2021	E140092C	3000	No significant changes were noted in the development site.
2024	E219697C	3000	No significant changes were noted in the development site.

Review of Historical Spillage and Leakage Record

- 5.4 Enquiries were made to the Environmental Protection Department (EPD) on 25 March 2025 and Fire Services Department (FSD) on 16 April 2025 for the chemical waste producer record and historical spillage and leakage records at the development site (Appendix 4).
- 5.5 The EPD Regional Office (North) has confirmed on 27 March 2025 that there were no record of chemical spillage and chemical leakage incident on the development site (Appendix 4). Inspection was made at Chemical Waste Producer Registration, there was no record of chemical waste producer at the development site.
- 5.6 Also, FSD TST East Office has confirmed on 17 April 2025, neither records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found on site (Appendix 4).

6. LAND CONTAMINATION ASSESSMENT

- 6.1 Potential land contamination impacts associated with the project have been reviewed. Based on the observation from the site inspection and the review of historical aerial photographs, the development site was mainly vacant and vegetated. Information from EPD supported that there were no chemical spillage or leakage records and confirmation from FSD supported that there was no dangerous goods licence on site. Therefore, potential contamination is not anticipated and associated impact is not expected in the development site.



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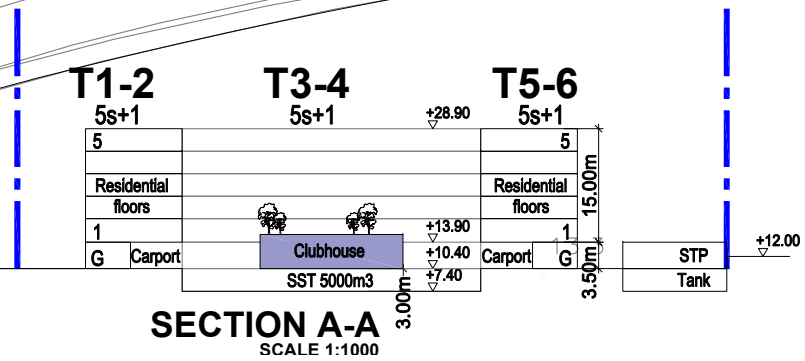
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Site Location

FIGURE

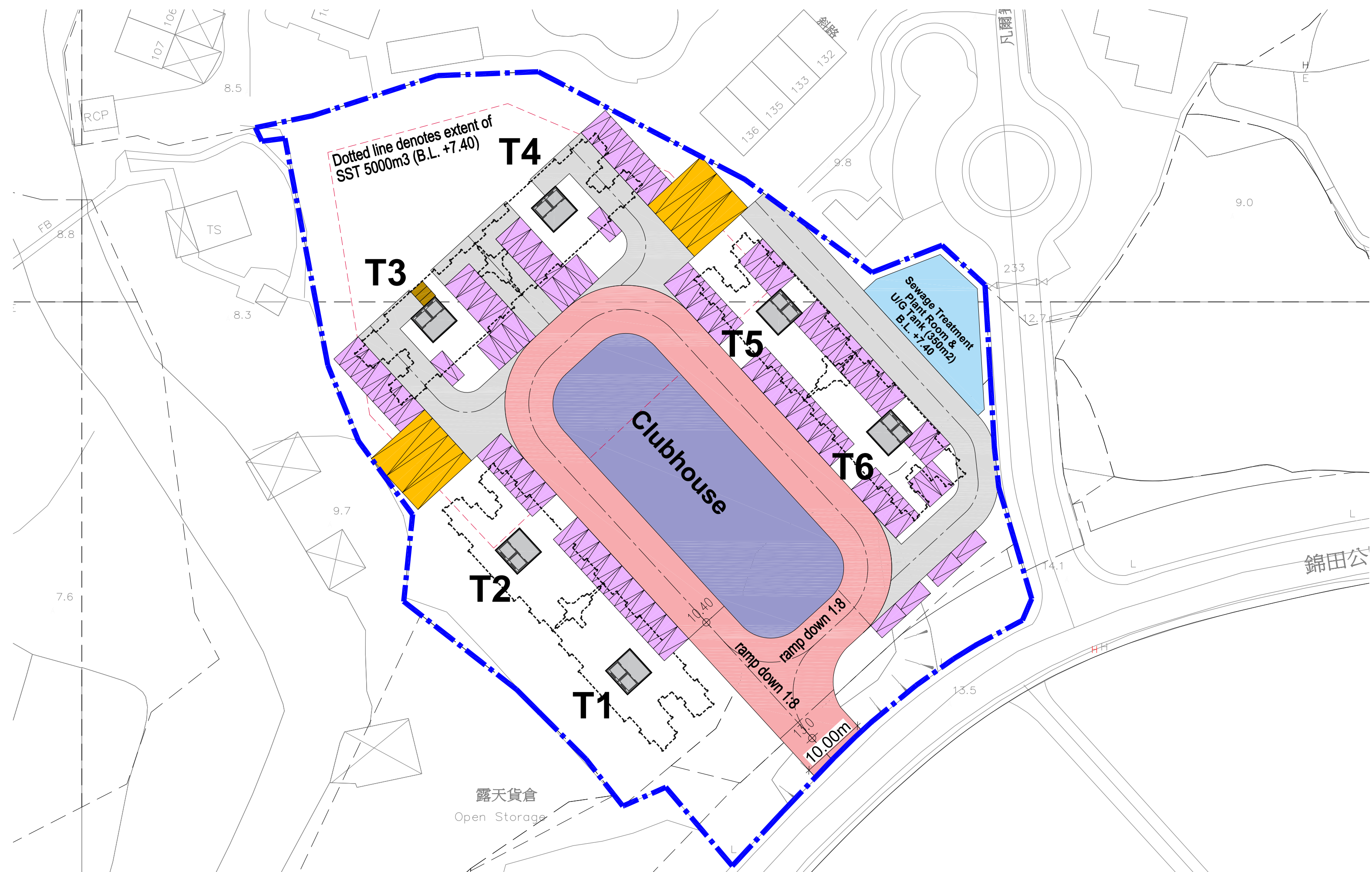
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APPENDIX 1

ARCHITECTURAL DRAWING



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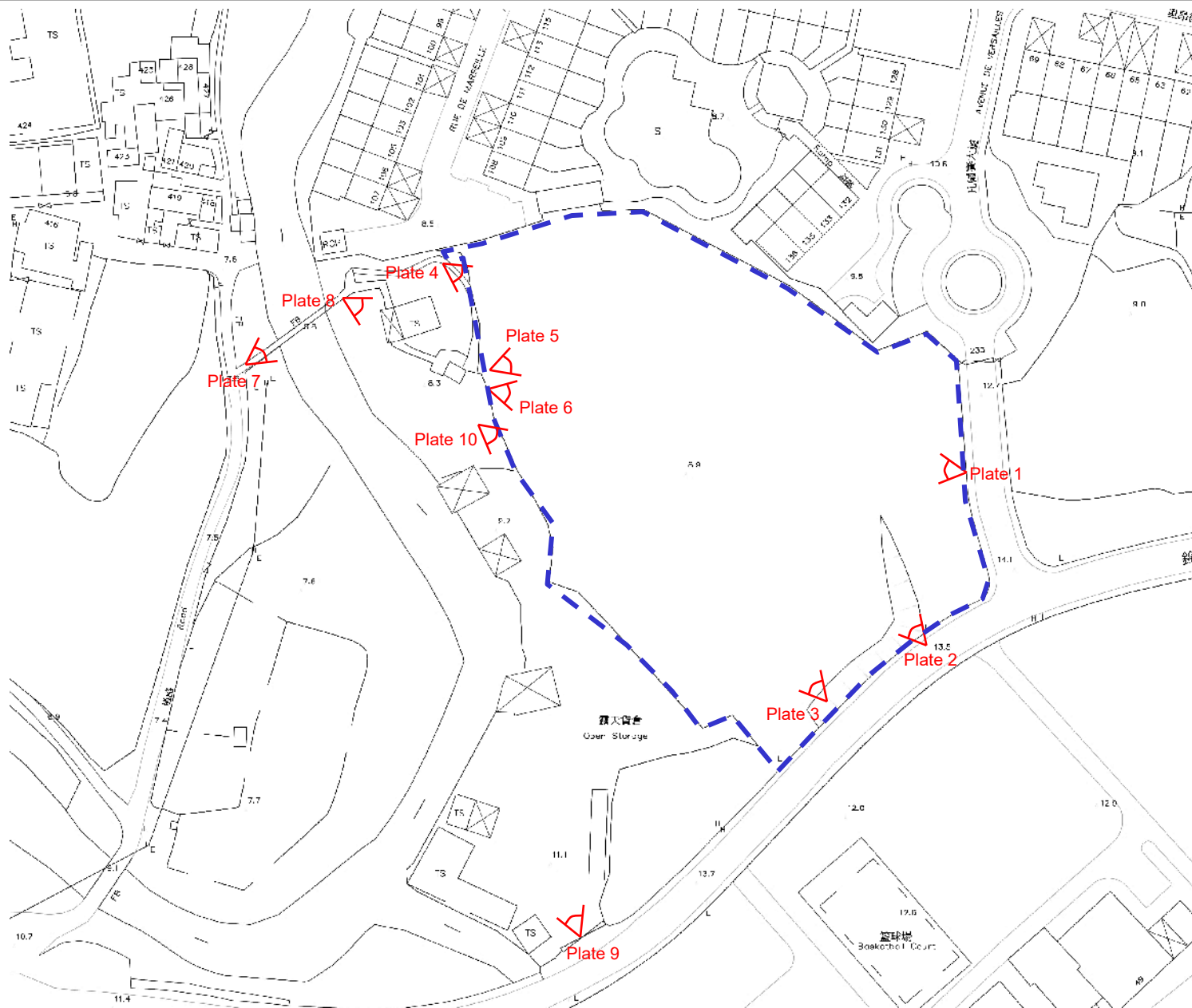
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APPENDIX 2

PHOTOGRAPHS TAKEN ON SITE



Legend



Angle of view of photo taken



Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

**Key for
Photographs taken on Site**

FIGURE

A2

Plate 1 – Photo taken on 18th March 2025:



Observation:
Vegetated, in clean condition. No sign of contamination.

Plate 2 – Photo taken on 18th March 2025:



Observation:
Vegetated, in clean condition. No sign of contamination.

Westwood Hong & Associates Ltd		TITLE: Photographs taken on Site (Plates 1 & 2)	FIGURE A2-1
PROJECT: 22605	Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories		

Plate 3 – Photo taken on 18th March 2025:



Observation:
Vegetated, in clean condition. No sign of contamination.

Plate 4 – Photo taken on 18th March 2025:



Observation:
No sign of off-site contamination.

Westwood Hong & Associates Ltd		TITLE: Photographs taken on Site (Plates 3 & 4)	FIGURE A2-2
PROJECT: 22605	Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories		

Plate 5 – Photo taken on 18th March 2025:



Observation:
Vegetated, in clean condition. No sign of contamination.

Plate 6 – Photo taken on 18th March 2025:



Observation:
Vegetated, in clean condition. No sign of contamination.

Westwood Hong & Associates Ltd		TITLE: Photographs taken on Site (Plates 5 & 6)	FIGURE A2-3
PROJECT: 22605	Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories		

Plate 7 – Photo taken on 18th March 2025 (Village houses adjoining the development site):



Observation:
No sign of off-site contamination.

Plate 8 – Photo taken on 18th March 2025 (Village houses adjoining the development site):



Observation:
No sign of off-site contamination.

Westwood Hong & Associates Ltd		TITLE: Photographs taken on Site (Plates 7 & 8)	FIGURE A2-4
PROJECT: 22605	Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories		

Plate 9 – Photo taken on 18th March 2025 (The adjoining vehicle repairing workshop)



All industrial activities are conducted inside the temporary structure

The entire vehicle repairing workshop is paved.

Plate 10 – Photo taken on 18th March 2025 (Vegetations between site boundary and vehicle repairing workshop)



The site boundary adjoining the vehicle repairing workshop, with vegetations in between. No visual signs of contamination were observed.

Westwood Hong & Associates Ltd		TITLE: Photographs taken on Site (Plates 7 & 8)	FIGURE A2-5
PROJECT: 22605	Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories		

APPENDIX 3

REFERENCED AERIAL PHOTOGRAPHS



Year 1963 (ref: 1963-8455, height: 3900ft) – The Shek Kong area was under development. The development site appears to be farmland.

Legend

 Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-1



Year 1973 (ref: 03082, height: 5000ft) – The Shek Kong barracks were developed. The development site appears to be farmland and vegetation.

Legend

 Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs



FIGURE

A3-2



Year 1982 (ref: 46538, height: 4000ft) – The development of Pang Ka Tsuen was finished. No significant changes were noted in the development site.

Legend

 Proposed Development Site

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-3



Year 1994 (ref: CN07441, height: 2800ft) – The vehicle repair workshop along the Kam Tin Road was establishing, with 2-3m away from the development site and vegetations in between. The development site was vacant with vegetation.

Legend

- Proposed Development Site
- Vehicle repair workshop

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-4



Year 2004 (ref: CW61392, height: 4000ft) — The vehicle repair workshop along the Kam Tin Road was established, with 2-3m away from the development site and vegetations in between. The houses of the Season Villas were establishing. The road networks of Shek Kong were completed. The development site area was vacant with vegetation. An adjoining village house at the north-western side of the development site was established.

Legend

- Proposed Development Site
- Vehicle repair workshop

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-5



Year 2015 (ref: CW116414, height: 2500ft) – The development of Season Villas was completed. No significant changes were noted in the development site.

Legend

- Proposed Development Site
- Vehicle repair workshop

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-6



Year 2021 (ref: E140092C, height: 3000ft) – No significant changes were noted in the development site .

Legend

- Proposed Development Site
- Vehicle repair workshop

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-7



Year 2024 (ref: E219697C, height: 3000ft) – No significant changes were noted in the development site .

Legend

- Proposed Development Site
- Vehicle repair workshop

Westwood Hong & Associates Ltd

PROJECT: 22605

Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

TITLE:

Referenced Aerial Photographs

FIGURE

A3-8

APPENDIX 4

CORRESPONDENCE OF THE EPD AND FSD

本署檔案
OUR REF: () EP910/E6/1
來函檔案
YOUR REF: 424454/EC/JC/Ic/L-029
電話
TEL NO: 2158 5851
圖文傳真
FAX NO: 2650 6033
網址
HOMEPAGE: <http://www.epd.gov.hk/>

Environmental Protection Department
Environmental Compliance Division
Regional Office (North)
10/F., Shatin Government Offices,
1 Sheung Wo Che Road,
Shatin, N.T.



環境保護署
環保法規管理科
區域辦事處(北)
新界沙田上禾輦路1號
沙田政府合署10樓

Fax (2591 6189) & Mail

27 March 2025

Westwood Hong & Associates Limited
2404 Tung Wai Commercial Building,
109-111 Gloucester Road, Hong Kong
(Attn.: Ir K.K. Iu)

Dear K.K. Iu,

Request for Information about Chemical Waste Producer and
Chemical Spillage Incidents at Various Lots in D.D.110 on Kam Tin Road
in Shek Kong, Yuen Long

We refer to your above letter under reference requesting for chemical spillage / leakage incident record. Given no particular time period were mentioned in the letter, to avoid unnecessary wastage of resources, a search of 3-year records may be a reasonable choice.

This Regional Office has no record of waste disposal and chemical spillage / leakage accident at the captioned locations in the past 3 years. Nonetheless, you may also need to check with other relevant parties / departments for such information as appropriate.

For the records of Chemical Waste Producer Registration, a registry of chemical waste producers is available in our Territory Control Office. Should you like to view the records, you may approach Mr. Gordon KWAN at 2835 1027 for making an appointment to view the records.

Yours faithfully,

(CHAU Tsz-yan)
for Director of Environmental Protection

Date: **25 March 2025**

Our Reference: **22605/230051/KK/KW/mgt**

Environmental Protection Department Regional Office (North)
10th Floor, Shatin Government Offices
No. 1 Sheung Wo Che Road
Sha Tin
New Territories

Dear Sir / Madam,

Request for Information about Chemical Waste Producer and Chemical Spillage Incident at Various Lots in D.D. 110 on Kam Tin Road in Shek Kong, Yuen Long

Westwood Hong & Associates Ltd is the consulting firm conducting an environmental study for the captioned development in Shek Kong, Yuen Long.

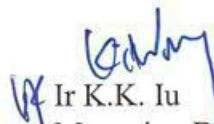
We would like to obtain information for the subject site from corresponding regional office. Please kindly advise if any of the following information is available:-

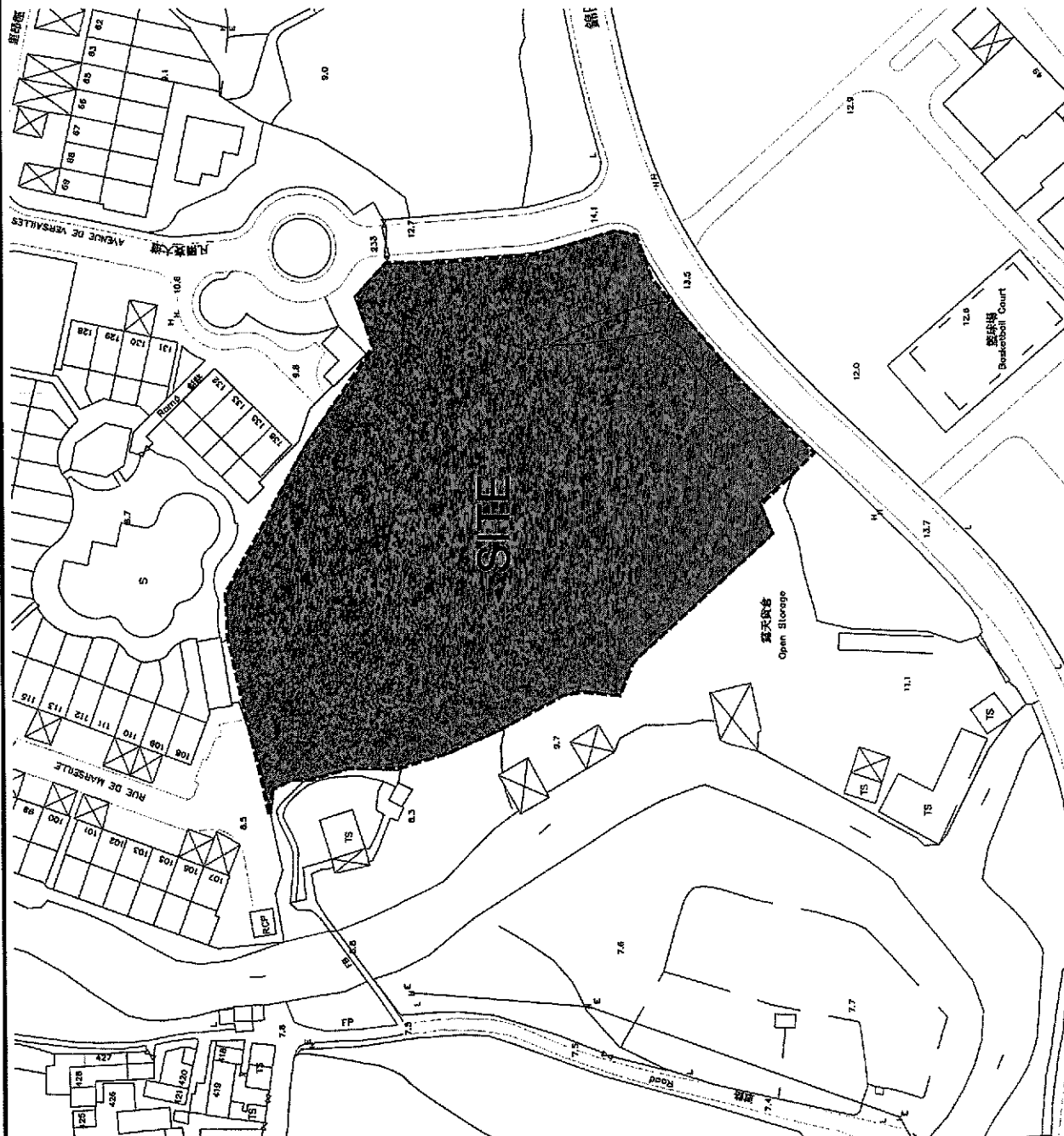
1. Records of Chemical Waste Producer;
2. Chemical spillage incident(s); and
3. Chemical leakage incident(s)

The area of interest of our study is attached with this letter.

If you have any queries, please do not hesitate to contact our Ms Kit Wong at 2838 2738.

Yours faithfully,
Westwood Hong & Associates Ltd.


Ir K.K. Lu
Managing Director



Legend

Proposed Development Area

PROJECT: 22605

Proposed Rezoning of the Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" at Various Lots in DD 110 and Adjoining Government Land, Kam Tin Road, Shek Kong, Yuen Long
- S12A Amendment of Plan Application

Westwood Hong & Associates Ltd

TITLE:
Site Location

FIGURE

1

Kit Wong

From: yin_hei_chow@hkfsd.gov.hk on behalf of ado_lea_cs@hkfsd.gov.hk
Sent: 17 April 2025 11:35
To: Camille Lam
Cc: OE8 CS/FSD; Samuel Lee
Subject: Re: Fw: Request Information for Various Lots in D.D. 110 on Kam Tin Road in Shek Kong, Yuen Long

Our reference: (6) in FSD GR 6-5/4 R Pt. 58
Your reference: 22605/230052/KK/KW/mgt

Dear Ms. LAM,

Environmental Study on Various Lots in D.D. 110 on Kam Tin Road in Shek Kong, Yuen Long
Request for Information of Dangerous Goods & Incident Records

I refer to your email of 16.4.2025 regarding the captioned request and reply below in response to your questions:-

Please be advised that neither records of dangerous goods license, fire incidents nor incidents of spillage / leakage of dangerous goods were found in connection with the given conditions of your request at the subject location.

If you have further questions, please feel free to contact the undersigned.

Best regards,

CHOW Yin-hei
Assistant Divisional Officer (Legal Affairs)
Corporate Services Division
Fire Services Department

Tel.: 2733 7896

Remark:
Lift incidents are excluded unless otherwise required.

Disclaimer:
**Fire Services Department uses its best endeavor to ensure the accuracy and reliability of the information provided, but cannot guarantee its accuracy and reliability and accepts no liability of any nature for any loss or damage arising from any inaccuracies or omissions that may from the information provided.*

From: Camille Lam <camillelam@ktaplanning.com>
Sent: Wednesday, April 16, 2025 12:34
To: ADO LEA CS/FSD

Cc: OE8 CS/FSD; kitwong@wha.com.hk; Samuel Lee

Subject: RE: Request Information for Various Lots in D.D. 110 on Kam Tin Road in Shek Kong, Yuen Long

Dear Mr Chow,

Request Information for Proposed Development at Various Lots in D.D. 110 on Kam Tin Road, Shek Kong, Yuen Long N.T.

This is KTA Planning Limited as the planning consultant authorized by the Applicants to prepare the planning application for proposed development at the captioned site (i.e. the land owners of the private lots in the captioned site). Westwood Hong & Associates Ltd (WHA) is the consulting firm conducting an environmental study for the captioned development in Shek Kong, Yuen Long.

We would like to make an inquiry of information for the following on the captioned development:-

1. Historical spillage records; and
2. Dangerous Goods (DG) records

The area of interest of our study is highlighted in the Figure 1 attached.
The Authorization Letter to KTA is also attached for reference.

If you have any queries, please do not hesitate to contact Ms Kit Wong of WHA at 2838 2738.

Yours sincerely,

Camille Lam

Senior Town Planner

KTA Planning Limited
Address Unit K, 16/F, MG Tower, 133 Hoi Bun Road, Kwun Tong
Tel: 3426 8841 (D) | Fax: 3426 9737
URL: www.ktaplanning.com



Legend

Proposed Development Area



FIGURE

1

TITLE:

Site Location

PROJECT: 22605

Proposed Rezoning of the Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" at Various Lots in DD 110 and Adjoining Government Land, Kam Tin Road, Shek Kong, Yuen Long

- S12A Amendment of Plan Application

Westwood Hong &
Associates Ltd

APPENDIX 5

SITE WALKOVER CHECKLIST

Site Walkover Checklist

General site Details

Site Owner / Client:	<u>Pacific Top Development Limited</u>
Property Address:	<u>Various lots in DD110 and adjoining government land, Kam Tin Road, Shek Kong, Yuen Long</u>

Person Conducting the Questionnaire:

Name:	<u>Ms Kit Wong</u>
Position:	<u>Associate</u>

Authorized Owner / Client Representative (If Applicable):

Name:	Ms Yu
Position:	Project Manager
Telephone:	<u>2128 8888</u>

Site Activities

Briefly describe activities carried out on-site, including types of products/chemicals/materials handled. Obtain a flow schematic if possible:

Number of employees:

Full-time:	No
Part-time:	No
Temporary/Seasonal:	No

Maximum no. of people on site at any time:	No
Typical hours of operation:	No
Number of shifts:	No
Days per week:	No
Weeks per year:	No
Scheduled plant shut-down:	No

Detail the main sources of energy at the site:

Gas	Yes / No
Electricity	Yes / No
Coal	Yes / No
Oil	Yes / No
Other	Yes / No

Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area:	Approximately 8,580m ²
What area of the site is covered by buildings (%):	0%
Please list all current and previous owners/occupiers if possible.	<u>Current occupier / owner</u> <i>Pacific Top Development Limited</i>
Is a site plan available? If yes, please attach	As attached
Area there any other parties on site as tenants or sub-tenants?	No
If yes, identify those parties:	No

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North:	<u>Immediate to the north is the residential development Seasons Villas</u>
East:	<u>Immediate to the east is landscape area</u>
South:	<u>To the immediate south is Kam Tin Road</u>
West:	<u>Immediate to the west are a village house and vehicle repair workshop</u>

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).	<u>The Site is situated on a flat terrain. Mainly vacant and vegetated with some shrubs.</u>
State the size and location of the nearest residential communities.	<u>The nearest residential communities is Seasons Villas, which is adjoining the site to the northern east.</u>
Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?	<u>No</u>

Questionnaire with Existing/ Previous Site Owner or Occupier

		Yes/ No	Notes
1.	What are the main activities/ operations at the above address?		Mainly vacant and vegetated with some shrubs and trees.
2.	How long have you been occupying the site?		Over 20 years
3.	Were you the first occupant on-site? (if yes, what was the usage of the site prior to occupancy.)	No	For agricultural use previously.
4.	Prior to your occupancy, who occupied the site?	No	
5.	What were the main activities/ operations during their occupancy?		For agricultural use previously.
6.	Have there been any major changes in operations carried out at the site in the last 10 years?	No	Now, mainly vacant and vegetated with some shrubs and trees.
7.	Have any polluting activities been carried out in the vicinity of the site in the past?	No	
8.	To the best of your knowledge, has the site ever been used as a petrol filling station/ car service garage?	No	
9.	Are there any boreholes/ wells or natural springs either on the site or in the surrounding area?	No	
10.	Do you have any registered hazardous installations as defined under relevant ordinances? (if yes, please provide details.)	No	
11.	Are any chemicals used in your daily operations? (if yes, please provide details). - Where do you store these chemicals?	No	
12.	Material inventory lists, including quantities and locations available? (if yes, how often are these inventories updated?)	No	
13.	Has the facility produced a separate hazardous substance inventory?	No	
14.	Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (if yes, please provide details).	No	
15.	How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	No	

16.	Do you have any underground storage tanks? (If yes, please provide details.) - How many underground storage tanks do you have on-site? - What are the tanks constructed of? - What are the contents of these tanks? - Are the pipelines above or below ground? - If the pipelines are below ground, has any leak and integrity testing been performed? - Have there been any spills associates with these tanks?	No	
17.	Are there any disused underground storage tanks?	No	
18.	Do you have regular check for any spillage and monitoring of chemicals handled? (if yes, please provide details.)	No	
19.	How are the wastes disposed of?	No	
20.	Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	
21.	Have any spills occurred on-site? (If yes, please provide details.) - When did the spill occur? - What were the substances spilled? - What was the quantity of material spilled? - Did you notify the relevant departments of the spill? - What were the actions taken to clean up the spill? - What were the areas affected?	No	
22.	Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work/ underground tanks (If yes, please provide details).	No	
23.	Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	
24.	Are there any known contaminations on-site? (if yes, please provide details.)	No	
25.	Has the site ever been remediated? (if yes, please provide details.)	No	

Observation

		Yes/ No	Notes
1.	Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	
2.	What are the conditions of the bund wall and floors?	No	
3.	Are any surface water drains located near to drum storage and unloading areas?	No	
4.	Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details).	No	
5.	Is there a storage site for the wastes?	No	
6.	Is there an on-site landfill?	No	
7.	Were any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	No	
8.	Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	
9.	Are there any potential off-site sources of contamination?	No	
10.	Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	
11.	Are there any sumps, effluent pits, interceptors or lagoons on site?	No	
12.	Any noticeable odours during site walkover?	No	
13.	Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	

Appendix 11

Waste Management Assessment

Rezoning From “Residential (Group C)2” and “Open Space” Zones to “Residential (Group C)4” Zone for a Proposed Residential Development at Lot Nos. 519 RP (Part) and 520 RP in D.D. 110 and the Adjoining Government Land, Shek Kong, Yuen Long, New Territories

Waste Management Assessment

Prepared for:

**Kimpton Investments Limited
Pacific Top Development Limited
Worldchamp Investments Limited**

Prepared by:

Westwood Hong & Associates Limited

Report No.:

22605-W1 Rev B

Date:

17 October 2025

Ir K. K. Lu	FHKIOA, MIOA, MCIBSE, MHKIE, MASA, APEC Engineer
	FMOIA, MIEAust, MHKIQEP, C Eng, RPE, CPEng
Ms Kit Wong	BEng, MHKIEIA
Mr Samuel Lee	BSc

Westwood Hong & Associates Ltd

2404, Tung Wai Commercial Building
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Wanchai, Hong Kong

Tel: 2838 2738 Fax: 2591 6189

Email: wha@wha.com.hk

Website: <https://whaacoustics.com>



1. INTRODUCTION

- 1.1 Westwood Hong & Associates Ltd (WHA) was commissioned to conduct a Waste Management Assessment on the proposed residential development at DD110 on Kam Tin Road in Yuen Long (the “proposed Development”).
- 1.2 This report identifies the key waste management issues arising during construction and operation phase of the proposed Development. The major wastes would be construction and demolition (C&D) materials generated from excavation works. For wastes arising during operation phase of the proposed development would be mainly municipal wastes. Mitigation measures and good site practice, including waste handling, storage and disposal, are recommended with reference to the applicable legislation and guidelines.

2. STATUTORY LEGISLATION

- 2.1 Waste collection and disposal are covered by the Waste Disposal Ordinance (Cap. 354) (WDO). Under the WDO, wastes can only be disposed of at designated waste disposal facilities licensed by EPD. The WDO also stipulates the requirements for issuing licenses for the collection and transportation of wastes. The contractor would be responsible for the disposal of waste.
- 2.2 The following legislation relates to the handling, treatment and disposal of wastes in the Hong Kong SAR and has been used in assessing potential environmental impacts:
 - Waste Disposal Ordinance (Cap. 354)
 - Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)
 - Waste Disposal (Charges for Disposal of Construction Waste) (Cap. 354N)
 - Land (Miscellaneous Provisions) Ordinance (Cap. 28)
 - Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation
- 2.3 Table 2.1 summarises other documents and guidelines related to waste management and disposal that will be followed by the proposed Development:-

Table 2.1 Other Relevant Documents and Guidelines to be Followed

Bureau / Department	Documents / Guidelines / Technical Circulars
EPD	• Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes • A Guide to the Registration of Chemical Waste Producers • A Guide to the Chemical Waste Control Scheme
CEDD	• CEDD TC No. 11/2019, Management of Construction and Demolition Materials
PlanD	• Environmental Guidelines for Planning in Hong Kong (2014), Hong Kong Planning Standards and Guidelines
Buildings Department	• ADV-19, Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers – Construction and Demolition Waste
Development Bureau	• DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials (2010) • Works Branch Technical Circular No. 2/93, Public Dumps

3. ASSESSMENT METHODOLOGY

3.1 The assessment methodology for reviewing the waste management implications during construction and operation phases include:-

- Identification/estimation of the types and quantities of waste arising from Project;
- Addressing impacts caused by handling (including stockpiling, labelling, packaging, and storage), collection, transportation and reuse/disposal of wastes in detail and propose appropriate mitigation measures;
- Adoption of waste management hierarchy with priorities towards waste reduction, on-site or off-site reuse, and recycling;
- Estimation of the types and quantities of wastes required to be disposed of and their disposal method; and
- Assessment of the impacts on the capacity of waste collection, transfer, and disposal facilities.

4. POTENTIAL IMPACTS AND MITIGATION MEASURES DURING CONSTRUCTION PHASE

Quantity of Waste

- 4.1 Since there is no structure at the development site, no demolition works would be involved for the proposed Development. The construction works of the proposed Development mainly include site excavation, site foundation works and superstructure construction.
- 4.2 Construction & Demolition (C&D) materials generated from the construction of the proposed development which comprise inert and non-inert C&D materials. The inert portion, such as soil, rock, concrete etc, namely inert C&D materials, could be reused on-site as filling materials or off-site as public fill at public fill reception facilities. The non-inert portion, such as timber formwork, paper, vegetation, etc, namely non-inert C&D materials will be reused or recycled as far as possible prior to disposal at landfill, and landfill disposal will be considered as the last resort for waste handling. Specifically, timber/woody materials will be sent to Y-Park before disposal at landfill.
- 4.3 The estimated quantity of C&D materials for site excavation, foundation works and superstructure construction are provided in Table 4.1.

Table 4.1 Estimated Quantity of Waste to be Generated

Development Stage	Waste Type	Total Amount Generated (m ³)	Total Amount Reused/ Recycled (m ³)	Total Amount Disposed (m ³)	Recommended Outlets
Site Excavation [1]	Inert C&D Material	5627	5627	-	To be reused on-site for site formation
	Non-Inert C&D Materials	423	13	410	- To be reused on-site for site formation or recycled before disposal to NENT Landfill. - Timber/woody materials to be sent to Y-Park before disposal to NENT Landfill
Site Foundation Work [2]	Inert C&D Material	239	239	-	To be reused on-site for site formation
	Non-Inert C&D Materials	18	13	5	- To be reused on-site for site formation or recycled before disposal to NENT Landfill. - Timber/woody materials to be sent to Y-Park before disposal to NENT Landfill
Superstructure Construction [2] [3]	Inert C&D Material	559	559	-	To be reused on-site for site formation
	Non-Inert C&D Materials	42	29	13	- To be reused on-site for site formation or recycled before disposal to NENT Landfill. - Timber/woody materials to be sent to Y-Park before disposal to NENT Landfill
General Refuse from Workforce	43 tons [4]	-	2 tons	41 tons	To be disposed to NENT Landfill. And the reused part to be collected by recycler.
Chemical Waste	-	A few hundred kilograms / litres per month	-	A few hundred kilograms / litres per month	To be collected by a licensed chemical waste collector and treated in the Chemical Waste Treatment Centre.

Note:

- [1] Development Site Area is 8,580m², only storm water storage tank (5,000m³) and part of the sewerage treatment plant (with area 350m² and 3m below ground) will be located at basement level which required excavation, and will generate mainly excavated soil (inert C&D materials). Excavated sediment is not anticipated.
- [2] According to the Hong Kong Polytechnic (March 1993) Reduction of Construction Waste Final Report, waste generation rate is 0.1m³ per 1m² of GFA constructed. The GFA of the proposed Development is 8,580m², there would be 858m³ total C&D materials generated from building construction (i.e. site foundation work and superstructure construction).
- [3] Wood from formworks and packaging is included in superstructure construction.
- [4] It is assumed that the generation rate of general refuse is 0.65kg per worker per day. With approximately 65 workers and 1,000 construction days, there would be total 42,250kg general refuse generated throughout the construction period.

Construction & Demolition Waste

- 4.4 The reuse and recycling of C&D materials on-site will be maximized. Stockpiling areas of inert C&D materials on-site will be provided for subsequent backfilling and reuse on site. For topsoil, they would be reused for site formation and roadworks. For vegetation, felled trees, twigs and branches would be reused as much on-site as far as possible. The C&D materials to be reused on site would stockpile by enclosing and covering, particularly during inclement weather.
- 4.5 Measures have been introduced in ADV-19 to enhance the management of C&D materials and to minimize its generation at source. The enhancement measures include the identification of opportunities to prevent waste during both the project planning and design stage as well as construction stage, and preparing of a Waste Management Plan (WMP) to ensure that measures are implemented during the construction stage for reduction of C&D materials. The WMP will be submitted to the Project Engineer / Architect / Authorized Persons for approval according to ADV-19.
- 4.6 A trip-ticket system according to the ADV-19 will be implemented during the construction phase to monitor the disposal of C&D materials and solid wastes at the public fill reception facilities and landfills and to control by fly-tipping. All dump trucks engaged on-site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with GPS or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials. The data collected by GPS or equivalent system should be recorded properly for checking and analysis the travel routing and parking locations of dump truck engaged on-site.
- 4.7 The Contractor will adopt good housekeeping practices such as waste segregation prior to disposal. Stockpiling and segregating areas will be provided at the site. Waste storage areas will be well maintained and cleaned regularly.
- 4.8 Whenever there are excess recyclable construction materials, including bricks, plastics and metals, re-use and recycling will be carried out for waste minimisation. Other recyclable inert C&D materials such as concrete, asphalt, etc. will be sorted and treated as necessary for on-site usage. Non-inert C&D materials will be sorted and delivered to or collected by registered recycle collectors for proper recycling of the waste. Specifically, non-inert C&D materials such as timber and woody materials, which would be significantly generated during site clearance since the development site is predominantly rural in character, will be sent to the Yard Waste Recycling

Centre in Y-Park for recycling prior to disposal at the designated landfill site. C&D materials will be stored on-site before re-use or disposal where possible. Available site area to allow on-site sorting and storage areas will be provided at locations away from public areas.

- 4.9 It is presently anticipated that some of the C&D materials will need to be transported off-site for re-use, recycling and disposal by trucks. With the implementation of the dust and noise control / mitigation measures, such as proper handling and packaging of wastes according to good practices and guidelines for different types of waste, covering and stockpiling materials to avoid dust and other nuisance impacts from truck movements, these secondary environmental factors are not expected to be a concern.
- 4.10 The storage, handling, transport and disposal of all C&D materials, if not managed properly, would have the potential to create visual, dust and water quality impacts. With proper implementation of good construction site practice and mitigation measures recommended in above sections, potential dust, noise and water quality impacts associated with on-site handling and transportation of all C&D materials are not anticipated.

Chemical Waste

- 4.11 Chemical waste from maintenance and servicing of construction equipment/ plant may be generated. If chemical waste is produced, the Contractor would be required to register with the EPD as a Chemical Waste Producer, and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.
- 4.12 Appropriate containers with proper labels should be used for storage of chemical wastes. Chemical wastes should be collected and delivered to designated outlet by a licensed collector. Chemical wastes (i.e. limited to spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical wastes that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre (CWTC) at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.
- 4.13 Any unused chemicals or those with remaining functional capacity should be collected for reuse as far as possible.

General Refuse

- 4.14 General refuse such as food scraps, wastepaper, empty containers, etc. would be generated from the workforce during construction phase. Such refuse will be properly managed so intentional or accidental release to the surrounding environment does not occur. Effective collection of site wastes would be required to prevent waste materials from being blown around by wind, flushed or leached into nearby waters, or creating an odour nuisance or pest and vermin problem. Specifically for food waste, which is the main source of generating unpleasant odour and causing environmental hygiene concern, it would be classified as recyclables and separated from other waste, in order to facilitate the recycling of food waste on-site and off-site. Waste storage areas will be well maintained and cleaned regularly. Table 4.1 shows the estimated quantity of general refuse from workforce to be generated during the construction phase. Recycling will be conducted for the general refuse prior to landfill disposal.
- 4.15 General refuse will be stored in enclosed bins or compaction units separate from C&D materials. A reputable waste collector will be employed by the Contractor to remove general refuse from the Site, separately from C&D materials. Preferably an enclosed and covered area will be provided to reduce the occurrence of “windblown” light materials.
- 4.16 With the implementation of the recommended waste management practices at the site, no adverse environmental impact arising from the storage, handling and transportation of refuse is anticipated.

5. POTENTIAL IMPACTS AND MITIGATION MEASURES DURING OPERATION PHASE

- 5.1 The proposed Development consists of 6 residential low-rise blocks and clubhouses, the major type of wastes generated from the operation phase is general refuse. General refuse will be removed on regular basis to minimize odour, pest and litter impacts. Recycling would be proposed prior to landfill disposal. To promote recycling of wastepaper, aluminum cans and plastic bottles, the recycling bins (such as those available from EPD) will be clearly labelled and placed at convenient locations. The recyclable materials will then be collected by reliable waste recycling agents on a regular basis. Waste generated will be disposed to public landfill, either West New Territories Landfill or North East New Territories Landfill.
- 5.2 Based on the Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2023, the municipal solid waste disposed per capita per day was 1.44 kg/person/day, and the municipal solid waste generated per capita per day was 2.15 kg/person/day. The proposed Development consists of 6 residential low-rise blocks with building height of 6 storeys, with a total of 240 residential units. The estimated overall population intake in the proposed Development will be around 648 persons, which is derived by assuming 2.7 persons per flat as per the average household size in the 2021 Population Census published by the Census and Statistics Department. Including the employment population with approximately 100 persons, the estimated quantities of municipal solid waste anticipated during the operation phase will be 1,608 kg/day. According to the Plate 3.2 of Waste Statistics for 2023, the recovery rate of municipal solid waste is 33%. It is therefore estimated that 33% of municipal solid waste (i.e. 531 kg/day) could be reused and recycled.

6. CONCLUSION

- 6.1 With the implementation of control measures in Sections 4 and 5, adverse waste management implication is not anticipated during construction and operation phases.

Appendix 12

Sewerage Impact Assessment

Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Sewerage Impact Assessment (Rev. A2)

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**Rezoning from “Residential
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Space” zones to “Residential
(Group C)4” zone for a
Proposed Residential
Development at Lot Nos. 519
RP (part) and 520 RP in D.D.
110 and the Adjoining
Government land, Shek Kong,
Yuen Long, N.T.**

Sewerage Impact Assessment (Rev. A2)

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1 Introduction

1.1 Background

- 1.1.1 The Applicant is planning to develop a residential development in Shek Kong, Kam Tin (the Site). The Development Site covers a total site area of about 8,580 m² and is located in Kam Tin North. The Site abuts Kam Tin Road to its immediate south. A low-rise, low-density residential developments, namely Seasons Villa, are located to the immediate north-east. It is currently zoned as “Residential (Group C)” and “Open Space” under the approved Kam Tin North Outline Zoning Plan (OZP) No. S/YL-KTN/11. The location of the Site is shown in **Appendix A**. This report serves as a supportive document for the Section 12A Application to rezone the Site from “Residential (Group C)2” and “Open Space” to “Residential (Group C)4” zone to enable the proposed residential development at the Site.

1.2 Key Development Parameters

- 1.2.1 The layout of the proposed residential development is provided in **Appendix B** and the development data is given in **Table 1.1** below:-

Table 1.1: Data of the proposed residential development

Items	Details
Development Site Area	About 8,580 m ²
Development	Residential Development
No. of Units	240
Estimated Year of Population Intake	2031

1.3 Objectives of Report

- 1.3.1 This Sewerage Impact Assessment (SIA) focuses on the potential sewerage impacts caused by the implementation of the proposed residential development. The objective of the SIA is to identify, assess and mitigate potential adverse sewerage impacts which may arise from the development in the vicinity of the Site.

1.4 Structure of the Report

- 1.4.1 This SIA contains the following sections in addition to this introduction (Section 1):-
- Section 2** – Methodology and Design Parameters for Sewerage Impact Assessment
- Discussing the methodology and design parameters used in the sewerage impact assessment.
- Section 3** – Estimation of Sewage Flow for the Existing Site
- Estimating the sewage flow generated from the Existing Site.
- Section 4** – Estimation of Sewage Flow for the Proposed Residential Development
- Estimating the sewage flow generated from the proposed residential development.

Section 5 – Proposed Sewage Disposal Arrangement

Discussing the proposed sewage disposal arrangement for the proposed residential development.

Section 6 – Conclusion

Summarising the findings and conclusions of the Sewerage Impact Assessment.

2 Methodology and Design Parameters for Sewerage Impact Assessment

2.1 General Approach

- 2.1.1 This SIA is carried out to identify, assess, and propose mitigation measure to any potential adverse sewerage impacts due to the proposed residential development.

2.2 Methodology

Assessment Methodology

- 2.2.1 The following approach and methodology have been adopted in this sewerage impact assessment:-
- Carry out a desktop study to collect the relevant information for assessment;
 - Estimate the potential sewage generated from the proposed residential development; and
 - Propose option(s) to mitigate the sewerage impacts.

Collected Information

- 2.2.2 Desktop study has been undertaken to collect the relevant information for the assessment. The relevant information collected is summarised below:-
- Drainage record plans in vicinity of the development site; and
 - Sewerage Impact Assessment Report attached in Rural and New Town Planning Committee (RNTPC) Paper No. 8/17 – Proposed Amendments to the Approved Kam Tin South Outline Zoning Plan No. S/YL-KTS/13.

Design Standards, Guidelines and Reference

- 2.2.3 The sewage flow generated from the proposed residential development is estimated based on the following standards, guidelines, and reference for the sewerage and sewage treatment design:-
- Sewerage Manual published by Drainage Services Department (DSD);
 - Guidelines for Estimating Sewage Flow (GESF) for Sewerage Infrastructure Planning (EPD);
 - Guidelines for the Design of Small Sewage Treatment Plants (EPD);
 - Hong Kong Planning Standards and Guidelines (HKPSG); and
 - Technical Memorandum on Effluent Standards, Water Pollution Control Ordinance Cap. 358 Section 21 (EPD).

2.3 Design Parameter and Assumptions

Design Population and Employee Data

2.3.1 The design population of the proposed residential development is shown as **Table 2.1**.

Table 2.1: Population data for the proposed residential development

Proposed Development	No. of Unit	Population ⁽ⁱ⁾
Residential (R3)	240	648
Remark:- i. It is assumed that there are 2.7 persons per unit as per the average household size of Kam Tin in the 2021 Population Census published by the Census and Statistics Department.		

2.3.2 The employee data of the proposed residential development is shown in **Table 2.2**.

Table 2.2: Estimated employee number for the development

Category	Type	No. of Employee
J11 – Community, Social and Personal Services	Staff for Property Management	15
Remark:- i. It is assumed there will be 15 staff serving the proposed development.		

UFF Flow Factors

2.3.3 The Unit Flow Factors (UFFs) for Domestic Flow and Commercial Flow are adopted in accordance with Table T-1 and T-2 of the GESF. The category of the components and the UFFs adopted in the assessment are indicated in **Table 2.3**.

Table 2.3: Unit flow factors

Component	Category Use	Unit Flow Factors (m ³ /d/p)
Domestic Flow	Residential (R3)	0.37
Commercial Flow	J11 – Community, Social and Personal Services	0.28
Remark:- i. The UFFs are based on Table T-1 and T-2 of the GESF.		

3 Estimation of Sewage Flow for the Existing Site

3.1 Estimated Sewage Flow from the Existing Site

- 3.1.1 In accordance with the SIA report attached in RNTPC Paper No. 8/17 - Proposed Amendments to the Approved Kam Tin South Outline Zoning Plan No. S/YL-KTS/13, there is proposed sewerage system provided for Kam Tin South (KTS) Development to convey the sewage flow to the existing Kam Tin Sewage Pumping Station (KTSPS) and then discharge to YLSTW ultimately. The sewerage system is expected to serve a total sewage flow of 13,900 m³/day to the KTSPS which is approximately 81% of the design capacity of KTSPS (i.e. 17,133 m³/day). Also, based on the SIA report under approved Planning Application No. A/YL-KTN/698, the existing flow to KTPS is 1,600m³/d and the reserved flow for other planned developments is 15,500m³/d (i.e. existing and committed flow to KTSPS is about 17,100m³/d). The existing KTSPS is reaching its limits for the existing developments and reserved sewage flow for planned development. Although there is proposed sewerage system provided for KTS, there is currently no existing public sewerage system in the vicinity of the proposed development.
- 3.1.2 Based on site inspection and information available on base map, no commercial activities nor residential development is identified within the existing site. Thus, it is anticipated no sewage is expected to be generated from the existing site.

4 Estimation of Sewage Flow for the Proposed Residential Development

4.1 Estimated Sewage Flow from the Proposed Residential Development

- 4.1.1 Based on the design population for the proposed residential development and sewage unit flow factors as mentioned in **Section 2**, the estimated Average Dry Weather Flow (ADWF) for the proposed residential development is approximately 247.5 m³/d (2.86 l/s). There will be an increase of about 247.5 m³/d sewage flow generated compared to the existing situation.

Table 4.1: Estimated sewage flow for the proposed residential development

Type of Sewage Flow	Population	UFF (m ³ /d/p)	ADWF (m ³ /d)
Domestic (R3)	648	0.37	239.76
Commercial (J11)	15	0.28	4.20
Estimated ADWF in m ³ /day			243.96
Estimated average design flow for swimming pool in m ³ /day			3.54
Estimated total ADWF in m ³ /day			247.50
Estimated total ADWF in l/s			2.86
Remark:-			
i. Estimation of sewage flow from swimming pool refers to Appendix D .			

- 4.1.2 Further to the SIA report attached in RNTPC Paper No. 8/17 - Proposed Amendments to the Approved Kam Tin South Outline Zoning Plan No. S/YL-KTS/13, there is proposed sewerage system provided for Kam Tin South (KTS) Development to convey the sewage flow to the existing Kam Tin Sewage Pumping Station (KTSPS) and then discharge to YLSTW ultimately. The sewerage system is expected to serve a total sewage flow of 13,900 m³/day to the KTSPS which is approximately 81% of the design capacity of KTSPS (i.e. 17,133 m³/day). Also, based on the SIA report under approved Planning Application No. A/YL-KTN/698, the existing flow to KTPS is 1,600m³/d and the reserved flow for other planned developments is 15,500m³/d (i.e. existing and committed flow to KTSPS is about 17,100m³/d). As the Development Site is far away from the existing public sewage network, a sewage treatment plant will be proposed as the sewerage disposal scheme for the proposed residential development and will be discussed in **Section 5**.

5 Proposed Sewage Disposal Arrangement

5.1 Proposed Sewage Treatment Plant

- 5.1.1 As discussed in **Section 4.1.2**, the Development Site is far away from the existing public sewage network, therefore, an on-site sewage treatment plant (STP) (with plan area of about 350 m²) should be adopted for the Site to treat the sewage flow of 247.5m³/day generated from the proposed development and then discharging it to the nearby stormwater drainage system. The STP will be designed to treat sewage generated from the proposed residential development, as a sewerage disposal measure until public sewer and capacity of downstream sewerage are available for discharge. The internal facilities of the STP will also be designed to cater for a peak flow of 8.59 l/s (a peaking factor of 3). Membrane Bioreactor (MBR) technology with ultra-filtration will be used for the proposed sewage treatment plant for meeting EPD's effluent treatment standard. The proposed STP should provide tertiary effluent treatment standard as shown in **Table 5.1**. The proposed sewage treatment plant for the development is located at the northeast of the Site. The location is shown in the layout plan in **Appendix B**. The sludge from the STP as a by-product from the MBR treatment process will be removed off-site by licensed sludge collection vehicles. A discharge license under WPCO will be obtained for the operation of the STP.

Table 5.1: Tertiary Effluent Standard for Proposed Sewage Treatment Plant

Parameter	Tertiary Effluent Standards (Upper Limit)
SS (mg/l)	10
Total Nitrogen (TN) (mg/l)	20
BOD (mg/l)	10
Ammonia Nitrogen (NH ₃ N) (mg/l)	2
<i>E. Coli</i> (count/100ml)	100
Total Phosphorous (TP) (mg/l)	2

- 5.1.2 An equalization tank with a storage capacity of 65 m³ that is able to provide equalization volume of excess flow over 3 ADWF for a period of 2 hours will be provided.
- 5.1.3 Dual source electricity supply as an emergency measure of STP will be provided to prevent power failure. Standby pumps, in addition to the duty pumps will be provided as backup solution during operation when the duty pump is failure to be operated or for maintenance inspection. The pump may also be used to recycle the plant effluent to maintain the STP in a working condition when incoming flow is low. In view that the risk of these two emergency measures failure at the same time is extremely low. The emergency measures as mentioned in **Table 5.2** is considered appropriate for the proposed STP for the Site.

Table 5.2 Proposed emergency measures for sewage treatment plant

Failure	Emergency Measures
Power Failure	Dual source electricity supply
Pump Failure	Duty and standby pumps
System Failure	Immediate repairment of the STP with spare parts stored on-site

- 5.1.4 Apart from the provision of standby pump and dual power supply, an emergency storage tank with storage capacity of 65 m³ (about storage capacity for 6 hours of ADWF) will be provided to store the overflow of raw sewage during maintenance or the plant failure. In case of necessary and emergency, provision of tanker service to tank away the excessive raw sewage by licensed collector will be arranged and mobilized. The emergency response plan will be further developed in detailed design stage.
- 5.1.5 As the sewage generated from the proposed development would be adequately treated by the on-site tertiary sewage treatment plant before discharge, no unacceptable adverse residual water quality impact is anticipated during operation phase of the proposed residential development.

5.2 Maintenance Responsibility

- 5.2.1 The management company of the proposed residential development will maintain the internal sewerage system including the STP and associated sewers.
- 5.2.2 Should public sewer be available for connection and discharge in the future, the sewage treatment plant will be decommissioned and removed, and the sewage will be disposed to public sewer via sewage terminal manhole at the boundary of the Site. The owners of the proposed residential development will be responsible for removal of the proposed sewage treatment plant and associated sewers if public sewer is available for connection in the future.

6 Conclusion

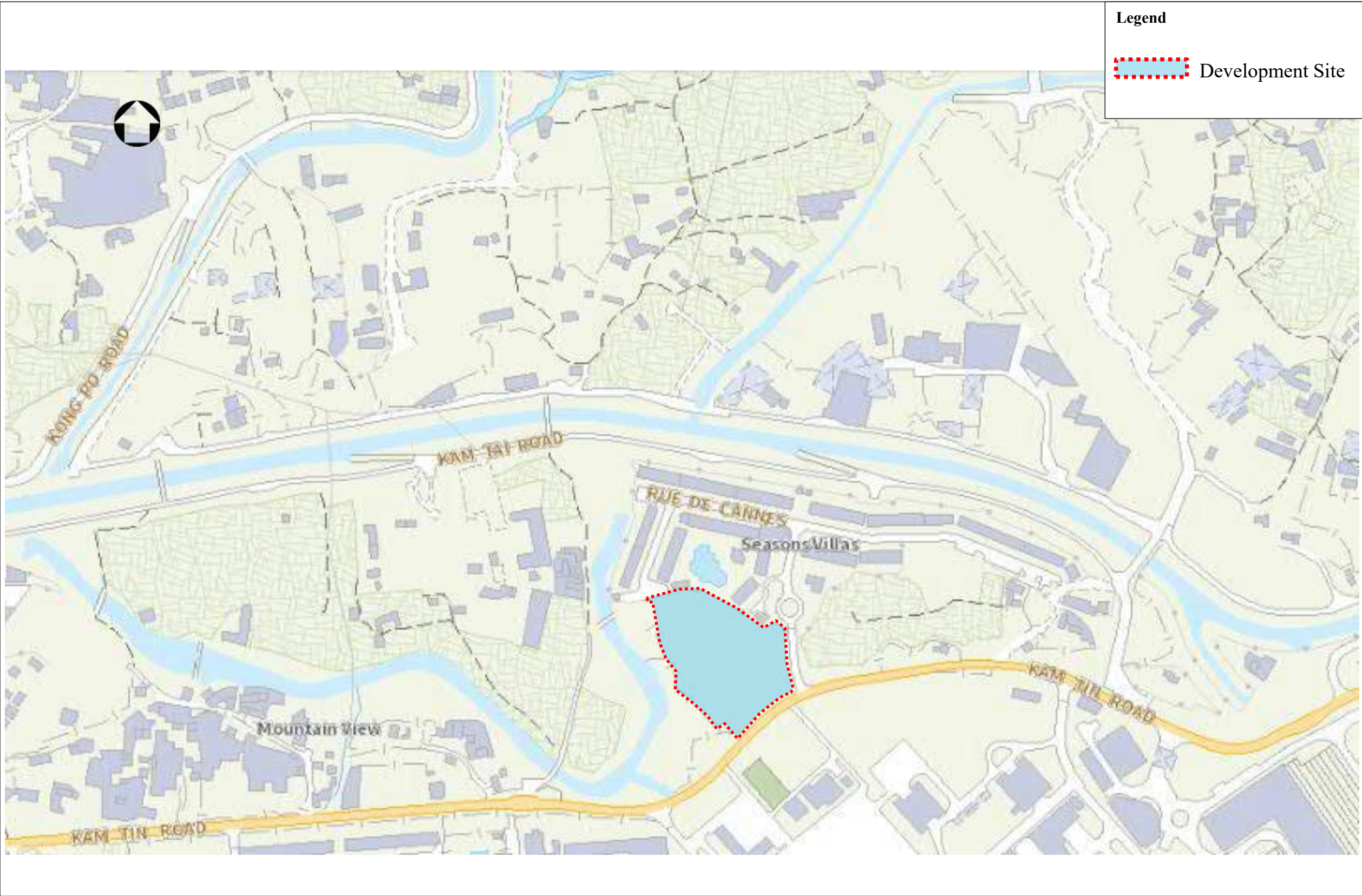
- 6.1.1 The estimated ADWF for the proposed residential development approximately 247.5 m³/d (2.86 l/s).
- 6.1.2 Since there are no existing public sewers in vicinity of the site, an on-site sewage treatment plant (plan area of about 350 m²) will be adopted for the Site to treat the sewage flow (247.5 m³/d) generated from the proposed development and the treated effluent will be discharged to the nearby stormwater drainage system. The proposed sewage treatment plant will adopt Membrane Bioreactor (MBR) technology with ultra-filtration to meet EPD's effluent discharge standard. As the sewage generated from the proposed development would be adequately treated by the on-site tertiary sewage treatment plant before discharge, no unacceptable adverse residual water quality impact is anticipated during operation phase of the proposed residential development.
- 6.1.3 The management company of the residential development will be responsible for maintaining the internal sewerage system including STP and associated sewers.

7 Appendices

Appendix A	Location Plan of the Proposed Residential Development
Appendix B	Layout Plan for the Proposed Development
Appendix C	Schematic Layout Plan of the Proposed Tertiary Sewage Treatment Plant
Appendix D	Sewage Flow Estimation for Swimming Pool

Appendix A

Location Plan of the Proposed Residential Development



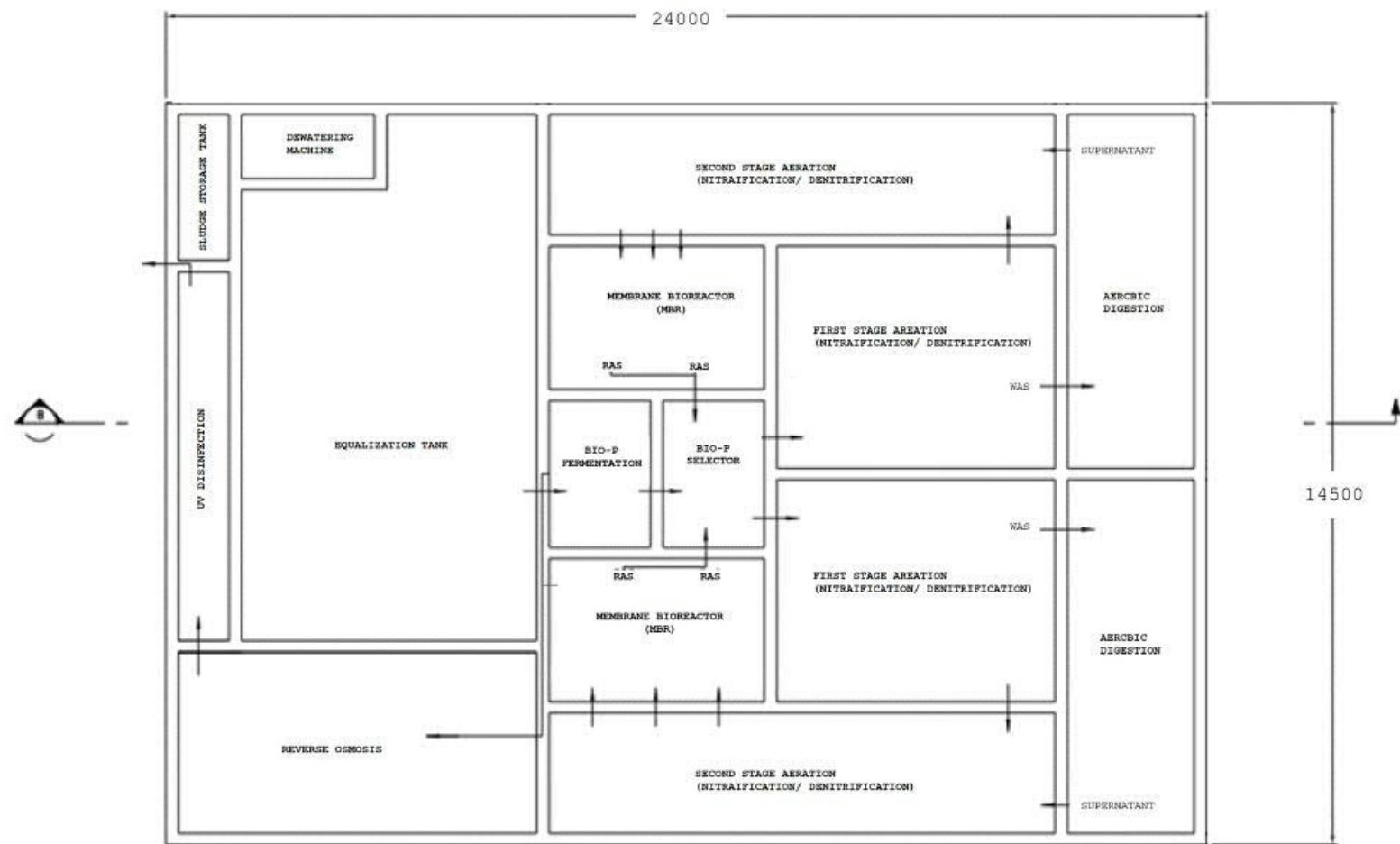
Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.			M M MOTT MACDONALD	
Title Location Plan			Appendix A	
Date	Oct 2025	Scale	N.T.S.	File

Appendix B

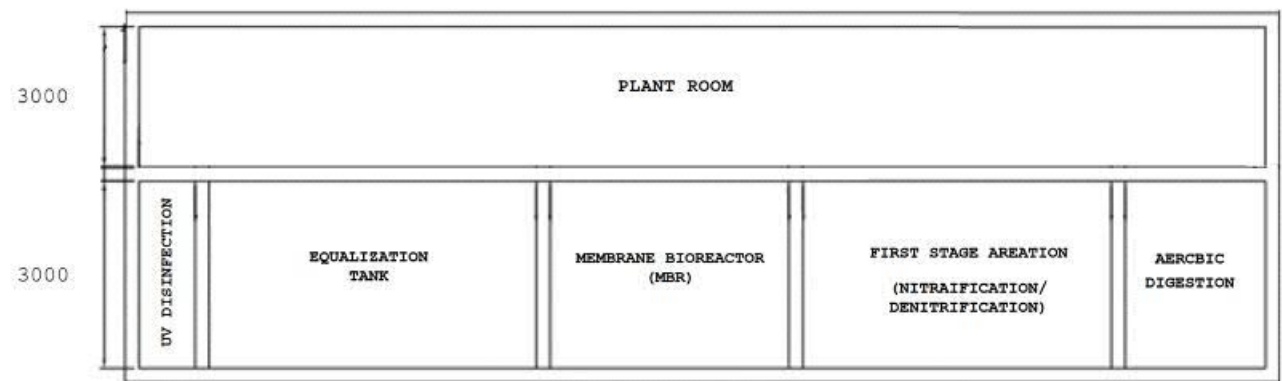
Layout Plan for the Proposed Development

Appendix C

Schematic Layout Plan of the Proposed Tertiary Sewage Treatment Plant



SEWAGE TREATMENT PLANT UNDERGROUND TANK LAYOUT



SECTION B-B

Project	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	Appendix C
Title	Schematic Layout Plan of the Proposed Tertiary Sewage Treatment Plant	
Date Oct 2025	Scale N.T.S.	
File		

Appendix D

Sewage Flow Estimation for Swimming Pool

Appendix D - Sewage Flow for Swimming Pool

Swimming Pool			Reference/ Assumption
Pool Volume =	454	m ³	Chapter 132 – Swimming Pools Bylaws Subsidiary Legislation Filtration Rate =48 m3/m2/h
Turnover Rate =	4	hrs	
Surface Loading Rate of Filter =	48	m ³ /m ² /hr	
Filter Areas Required =	2.36	m ²	
Backwash Duration =	3	min/day	
Backwash Flow Rate =	30	m ³ /m ² /hr	
Average Design Flow for swimming pool backwashing =	3.54	m ³ /day	
	0.04	l/s	
Instant peak flow =	70.90	m ³ /hr	
	19.69	l/s	

Appendix 13

Drainage Impact Assessment

Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Drainage Impact Assessment

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**Rezoning from “Residential
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Drainage Impact Assessment

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1 Introduction

1.1 General

- 1.1.1 Mott MacDonald Hong Kong Limited (hereinafter as "MMHK") was commissioned by the Applicant to prepare a Drainage Impact Assessment (DIA) for supporting the proposed residential development at Shek Kong, Yuen Long (the Site). The location of the proposed residential development is shown in **Appendix A1**. This Drainage Impact Assessment (DIA) is prepared to support the planning application under Section 12A of the Town Planning Ordinance to rezone the Site from "Residential (Group C)2" and "Open Space" to "Residential (Group C)4" zone to enable the proposed residential development at the Site.
- 1.1.2 This report forms part of the application document and will demonstrate that the proposed residential project at the Site is feasible in terms of its impact on the drainage system.

1.2 Objectives of the Assignment

- 1.2.1 The DIA focuses on the potential drainage impacts due to the implementation of the residential project at the Site. The objective of the DIA is to identify, assess and mitigate potential adverse drainage impacts which may arise from the Site.

1.3 Structure of the Report

- 1.3.1 This DIA Report contains the following sections in addition to this introduction (Section 1):-

Section 2 – Methodology and Design Parameters for Drainage Impact Assessment

Discuss the methodology adopted and the design parameters used in the drainage impact assessment.

Section 3 – Existing Drainage System

Describe the drainage conditions and catchment characteristics of the existing drainage system.

Section 4 – Drainage Impact Assessment and Proposed Drainage System

Briefly discuss the catchment characteristics of the Proposed Development and neighbouring area, assess the potential drainage impacts arising from the Proposed Development, and propose the necessary drainage mitigation works as necessary.

Section 5 – Conclusion

Summarise the findings and conclude the drainage impact arising from the Development.

2 Methodology and Design Parameters for Drainage Impact Assessment

2.1 General Approach

- 2.1.1 The DIA is conducted by comparing the existing drainage condition (Baseline Condition) against the drainage condition after the implementation of the Proposed Development (Proposed Condition) to identify potential drainage impacts to the existing drainage system near the site. Appropriate mitigation measures will be proposed to reduce potential drainage impacts, if necessary.
- 2.1.2 Potential drainage impacts are identified by comparing the baseline drainage condition against the proposed drainage condition after the implementation of the Proposed Development in respect of the water levels.

2.2 Assessment Methodology

Assessment Method

- 2.2.1 As discussed in the above section, potential drainage impacts are identified by comparing the baseline drainage condition against the proposed drainage condition. The existing drainage systems and its catchments likely to be affected by the Proposed Development are presented in **Appendix B1** and **Appendix C1** respectively.
- 2.2.2 The following approach and methodology will be adopted in the drainage impact assessment:-
- Carry out desktop study to collect the relevant information for the assessment, relevant information collected included drainage record plans and boundary information from Drainage Services Department (DSD), topographical information from basemap and Topographic Survey received from the Applicant in **Appendix G**;
 - Based on desktop information, identify the existing drainage systems in the vicinity of the Site;
 - Estimate the change in runoff generated from the Proposed Development; and
 - Assess the drainage impacts arising from the Proposed Development.
- 2.2.3 Due to the implementation of the Proposed Development site, the catchment characteristic within the Site will be changed to partly paved areas and partly landscaped areas. It is anticipated that the surface runoff shall be varied after the implementation of the Proposed Development. For analysing the implications of the proposed condition, hydraulic model software "InfoWorks ICM" was adopted in the assessment.
- 2.2.4 To perform the drainage impact assessment, a localised model (Baseline model, the extent of model refers to **Appendix E**) is developed for existing drainage condition under

this assessment. The baseline model of the existing drainage system is then used to establish hydraulic model for Proposed Development under proposed condition.

2.3 Assessment Criteria, Design Parameters and Assumptions

Assessment Criteria

- 2.3.1 The assessment criteria are based on the recommendations set out in the Stormwater Drainage Manual (SDM) – 5th Edition, Corrigendum No.1/2022 and Corrigendum No.1/2024 issued by DSD. Flood event of 1 in 10 years return period, 1 in 50 years return period and 1 in 200 years return period for village drainage, branch and trunk drains respectively as recommended in Table 10 of SDM has been adopted in the design and assessment of drainage system for the Site. This DIA has also taken the Corrigendum No. 2/2024 of SDM into account for the formulation of proposed drainage mitigation measures.
- 2.3.2 The following flood combinations in accordance with Section 6.4 and Table 11 of the SDM and repeated in **Table 2.1** are adopted to assess the existing and proposed drainage systems.

Table 2.1: Flood combinations

Flood Level Return Period (Years)	Rainfall Return Period (Years)	Sea Level Return Period (Years)	Flood Return Event Case
10	10	2	a
	2	10	b
50	50	10	a
	10	50	b
200	200	10	a
	10	200	b

Design Parameters and Assumptions for modelling

Modelling Approach

- 2.3.3 As mentioned above, the hydraulic performance of the drainage system near the Site has been assessed using InfoWorks ICM software. The assumptions and various parameters used in the modelling are presented in this section.

Baseline Model Scenario

- 2.3.4 To perform the DIA, a localised baseline model for the existing drainage system where the Site located has been developed based on the boundary information provided by DSD, topographical information from basemap and Topographic Survey received from the Applicant. The extent of baseline model is showed in **Appendix E**. Design rainfall in

accordance with SDM and its corrigenda, and downstream water boundary condition based on the collected boundary from DSD have been applied in the localised model.

2.3.5 The localised baseline model has also been incorporated the following:-

- catchment delineation and discharge points for catchments adjacent to the Site have been reviewed according to topographic data shown in basemap. The existing catchment plan can be referred to **Appendix C1**; and
- Detailed survey along the existing stream course near the Site has been carried out and incorporated into model. Details can be referred to **Appendix G**.

2.3.6 SCS-Curve Number method has been used to calculate the runoff from the assessed upland, urban and rural catchments respectively. In order to assess any drainage impact caused by the Development for streams in the vicinity of the Site, a one-dimensional (1D) hydraulic model covering the concerned area has been used. Drainage system including the conduits, river reaches and channels are modelled through the 1D network.

Proposed Model Scenario

2.3.7 Based on the localised model under baseline condition, a localised model under proposed condition was established. The changes incorporated in the model under proposed condition with reference to the latest master layout plan in **Appendix A2** are:

- a change of CN for the Site due to the Proposed Development;
- a stormwater storage tank with capacity of about 5,000m³ is built within the Development to store additional runoff from the Site; and
- the Development area is set to its formation level of about 10.4mPD.

2.3.8 The extent of the proposed model will be same as the baseline model and can be referred to **Appendix E**. A set of hydraulic models including baseline and proposed models used in this assessment is included in **Appendix H**.

Design Rainfall

2.3.9 A 4-hour duration rainfall profile has been used in model simulation and the rainfall profile is determined based on the equation as mentioned in Clause 4.3.5 of SDM where storm constants for different return period of HKO Headquarters (a, b, c) are given in Table 3a of SDM corrigendum No. 1/2024 and repeated in **Table 2.2**.

$$F(t) = \begin{cases} \frac{a[b + 2(1-c)t]}{(2t+b)^{c+1}} & , \quad 0 \leq t \leq \frac{t_d}{2} \\ F(-t) & , \quad -\frac{t_d}{2} \leq t \leq 0 \end{cases}$$

where

- $F(t)$ = rate of rainfall or instantaneous intensity in mm/hr at time t (in minutes)
- t_d = rainstorm duration (in minutes) ($t_d \leq 240$)
- a, b, c = storm constants given in Table 3a of SDM corrigendum No. 1/2024 and repeated in the following table.

Table 2.2: Storm constants for different return periods

Return Period T (years)	10	50	200
a	485.0	505.5	508.8
b	3.11	3.29	3.46
c	0.397	0.355	0.322

2.3.10 Rainfall duration of 240 minutes has been adopted for the assessment.

Design Modification due to Climate Change

2.3.11 According to SDM, climate change effect will be considered in this assessment. To take account of climate change effect, the rainfall increases percentage and mean sea level rise projected to end of 21st Century (2081 – 2100) as recommended in SDM Corrigendum No.1/2022 presented in **Table 2.3** have been adopted in this assessment for proposing the required drainage works for the development. Besides, storm surge increase due to climate change at Tsim Bei Tsui and design allowance as recommended in SDM Corrigendum No.1/2022 presented in **Table 2.4** and **Table 2.5** are also adopted in this assessment.

Table 2.3: Percentage of rainfall increase and sea level rise due to climate change

	Rainfall Increase	Sea Level Rise (m)
End of 21st Century (2081 – 2100)	16.0%	0.47

Table 2.4: Storm surge increase due to climate change in End of 21st Century

Return Period (Years)	Storm Surge Increase (m)
2	0.09
10	0.15
50	0.20
200	0.26

Table 2.5: Design allowance in End of 21st Century

Return Period (Years)	Extreme Sea Level Rise (m)	Rainfall Increase
2	0.20	12.1%
10	0.23	
50	0.25	
200	0.27	

Design Inflow from upstream

2.3.12 In order to assess the hydraulic performance of the existing drainage system, the upstream inflow boundary conditions obtained from DSD (**Appendix F**) has been adopted. To take account of the rainfall increase, the upstream inflow boundary has been increased by 28.1% in End of 21st Century. The upstream inflow boundary

conditions received by DSD and adopted in the model are summarised in **Table 2.6**. The location of the boundary is presented in the model extent in **Appendix E**.

Table 2.6: Inflow boundary adopted in the localised model with climate change in End of 21st Century

Return Period T (years)	Flood Return Event Case	End of 21 st Century	
		Inflow Boundary received from DSD (m ³ /s)	Inflow with Climate Change (m ³ /s), see model ID: KT001
10	A	231.827	296.970
	B	138.460	177.367
50	A	306.148	392.175
	B	231.843	296.991
200	A	363.374	465.482
	B	231.839	296.986

Design Water Level for Downstream Boundary

- 2.3.13 In order to assess the hydraulic performance of the existing drainage system, the downstream water level boundary conditions obtained from DSD (**Appendix F**) has been adopted. To take account of the sea level rise, the downstream water level boundary has been increased for mean sea level rise, storm surge increase due to climate change and design allowance recommended in SDM Corrigendum No.1/2022. The downstream boundary conditions received by DSD and adopted in the model are summarised in **Table 2.7**. The location of the boundary is presented in the model extent in **Appendix E**.

Table 2.7: Design water levels for different return periods

Return Period T (years)	Flood Return Event Case	End of 21 st Century	
		Water Level Boundary received from DSD (mPD)	Water Level with Climate Change (mPD) for Model, see model ID: KT012
10	A	5.456	6.216
	B	4.760	5.610
50	A	5.958	6.808
	B	5.565	6.485
200	A	6.215	7.065
	B	5.817	6.817

- 2.3.14 As shown in **Table 2.6** and **Table 2.7**, the upstream inflow boundary and downstream flood level of flood return event case A in 10-year, 50-year and 200-year return period are the worst-case scenarios. Therefore, hydraulic assessment will be conducted for

10A, 50A and 200A scenarios with the worst-case downstream water level boundary and upstream flow boundary.

Runoff Estimation

- 2.3.15 The Soil Conservation Services (SCS) Curve Number method of InfoWorks ICM rainfall runoff module has been used to compute the runoff hydrograph. The SCS Curve Number (CN) is a characteristic of the soil type, land use and the initial degree of saturation. In this assessment, weighed average SCS curve numbers is estimated based on the existing land use. The CN values for the corresponding land uses adopted in this DIA have been presented in **Table 2.8**.

Table 2.8: Curve numbers adopted for each land use

Land use	CN
Agriculture	70
Upland	65
Grassed	70
Barracks	75
Village	90
Open Storage	90
Residential	95
Commercial	95
Rail	100
Roads / Footpath	100
River	100

- 2.3.16 For the Proposed Development, a weighted CN value of 90 has been assumed for the proposed Site under the proposed condition, assuming a 20% of the landscaping area (grassed area) for the proposed site and 80% of paved area for residential area.

Roughness

- 2.3.17 There are two approaches available in the ICM which can be used in modelling hydraulic roughness of the drainage system, i.e. Colebrook-White equation (ks) for underground drains or the Manning formula (n) for open channel or river.
- 2.3.18 For existing drainage system, the following roughness values have been adopted:-
- Colebrook-White ks value of 3mm has been adopted for pipelines and box culverts; and Manning's n value of 0.04 has been adopted for existing watercourse and 0.016 has been adopted for existing engineering channel.
- 2.3.19 For proposed drainage system, concrete pipes have been provided for the proposed new pipes, Colebrook-White ks value of 3mm has been adopted for concrete pipes.

Sediment

- 2.3.20 For existing pipeline system and proposed pipeline system, siltation follows the recommendation given in SDM, which suggests allowing for 5% reduction in flow area if the gradient is greater than 1 in 25 or 10% reduction in flow area in other areas.

3 Existing Drainage System

3.1 Site Condition

- 3.1.1 The Development Site covers a total site area of about 8,580 square meters and is located in Kam Tin North. The Site abuts Kam Tin Road to its immediate south. A low-rise, low-density residential developments, namely Seasons Villa, are located to the immediate north-east. In general, the existing ground level of the Site is ranging from approximately 9 to 10 mPD and the nearby road levels of about 13.5 mPD. The Site is found to be composed mostly trees and grass based on desktop study and site inspections. The location of the Site is shown in **Appendix A1**. An existing watercourse connecting to Kam Tin River is identified at the west of the Site. Three existing watercourse crossing structures connecting the north and south side of the steam have been identified from site inspections and survey, and the details are given in **Appendix G**.

3.2 Existing Drainage System and Catchment

- 3.2.1 The surface runoff generated from the existing Development Site is currently discharged to the watercourse at the west of the Site. The watercourse is then discharged to an engineering channel (Kam Tin River) via a 2-cell box culvert.
- 3.2.2 Based on site inspections and collected information, the existing watercourse originated at the northwest side of the Site and conveys runoff from nearby villages, vegetative areas, part of barrack and the existing Development Site to Kam Tin River via the watercourse and a 2-cell box culvert. Location of the existing watercourse and Kam Tin River refers to **Appendix B1**.

3.3 Existing Land Use Surface Characteristics

- 3.3.1 The existing watercourse and Kam Tin River currently conveys runoff to downstream drainage system from several catchments. Based on the topographic data in basemap, the delineation of local catchments has been carried out. The local catchments of the existing drainage system and its catchment properties have been summarised in **Table 3.1**. The existing catchment plan and their discharge points is shown in **Appendix C1**.
- 3.3.2 The CN values for the corresponding land uses are summarised in **Table 2.8** and are used to calculate the weighted CN for the following sub-catchments.

Table 3.1: Catchment properties of existing catchment

Model ID	Area (ha)	Weighted CN
Cat_001	8.190	84.26
Cat_002	0.321	78.03
Cat_003	10.626	85.74
Cat_004	20.189	75.35
Cat_005	8.501	87.40
Cat_006	2.792	80.88

Model ID	Area (ha)	Weighted CN
Cat_007A	0.081	83.79
Cat_007B	0.462	90.00
Cat_007C	0.433	77.22
Cat_008	0.897	78.65
Cat_009A	1.289	81.65
Cat_009B	0.734	75.40
Cat_010A	1.187	75.00
Cat_010B	0.393	83.83
Cat_011A	0.190	77.91
Cat_011B	0.288	75.51
Cat_012A	0.092	70.00
Cat_012B	0.086	83.57
Cat_012C	0.858	70.00
Cat_013A	0.177	82.30
Cat_013B	0.318	82.2
Cat_014	0.222	70.94
Cat_015	0.025	71.12
Cat_017	56.851	65.00
Cat_018	16.467	65.00
Cat_019	39.24	74.61
Cat_020	55.316	75.33
Cat_021	31.806	75.28
Cat_022	74.009	65.21
Cat_023	1.513	76.86
Cat_024	2.189	75.00
Cat_025	6.586	87.93
Cat_026	27.003	75.09

3.3.3 The existing catchments of the Development Site (as indicated with Model ID: Cat_012C) have weighted CNs of 70 based on existing topography and land use. The runoff of all the existing catchments of the Development Site is discharged to the existing watercourse.

3.3.4 For other sub-catchments, weighted average CN values are ranging from about 65 to 90.

3.4 Hydraulic Performance of Existing Drainage System

3.4.1 The hydraulic performance of the existing channels has been assessed by the model with the network containing the existing watercourse and Kam Tin River. The results indicated that the predicted 200 years flood event water levels for the assessed section of Kam Tin River will generally be within riverbank with a freeboard of about 300mm,

except for the few cross sections near to the upstream and midstream of the modelled Kam Tin River. For the existing watercourse, due to the climate change effect at end of Century, downstream of the watercourse will be flooded under the 10 years flood event. Details of hydraulic model results can be referred to **Table 4.3** and the hydraulic model included in **Appendix H**.

4 Drainage Impact Assessment and Proposed Drainage System

4.1 The Development

- 4.1.1 The Development Site will be developed as a residential area with paved condition and some landscaping area. In view of the increase of paved area in the Development Site, additional runoff from the Site is anticipated. Runoff from the Development Site will be collected and discharged via a 750 mm diameter pipes. To cope with the increase of paved area in the Site, a storage tank with a size of about 5,000m³ will be provided to temporarily store the additional runoff and the stored runoff will be discharged to a new 750mm outlet pipe connecting to the existing watercourse via a 450mm pipe after the peak of storm. Based on the design arrangement, the proposed stormwater storage tank, with a storage depth of 2m, will have an inflow level of 8.3mPD and an outflow level of 7.4mPD. The design will be further refined and developed, if needed, in subsequent design and construction phases of the project. The typical drainage outlet details connecting the proposed discharge pipe to existing watercourse is shown in **Appendix B2**. The design of the drainage outlet will be subject to be confirmed at the later design and construction stage.
- 4.1.2 For the surrounding areas, according to the topography, the runoff arising from the areas at the west and south of the proposed development are currently directly discharged to the existing watercourse through overland flow. As a conservative approach, a 600mm peripheral channel, as spare drain, will be provided to collect the runoff generated from the area between the east bank of the existing watercourse and the proposed Development Site boundary. The capacity check calculation for the set of 600mm channel is provided in **Appendix I**. For the existing development at the north and east of the proposed Development Site, the existing development has their own boundary channels and internal drainages which collect and convey the runoff from the development to Kam Tin River. In this connection, peripheral channels of 300mm at the boundaries of the proposed Development Site, as spare drains, are provided since the runoff generated from the adjacent lands is expected to be directly discharged into existing drainage system. The proposed drainage arrangement is also shown in **Appendix B2**. The layout of the Proposed Development is shown in **Appendix A1**.

4.2 Changes in Catchment and Existing Drainage Network due to the Proposed Development

- 4.2.1 As discussed in **Section 3**, the runoff generated from the Site under the existing condition is discharged to the existing watercourse and there are no changes of catchment distribution under the Proposed Condition. The runoff from the Development Site will be discharged to the existing watercourse via a 750mm diameter pipe. With the stormwater stage tank in place, no additional runoff is anticipated from the proposed development.

- 4.2.2 Under the proposed condition, a CN value of 90 has been assigned for the Development Site (Model ID: Cat_012C) due to the paved condition of the Proposed Development and details given in **Table 4.1**.

Table 4.1: Catchment properties of proposed condition

Model ID	Area (ha)	Weighted CN
Cat_012C	0.858	90.00

- 4.2.3 As there is no change to other catchments served by the assessed drainage system, thus, the catchment properties for other catchments in **Table 3.1** are also applicable to the proposed condition.
- 4.2.4 The localised model under the proposed condition has incorporated the change in CN value arising from additional paved condition.

4.3 Drainage Impact Assessment

- 4.3.1 To mitigate the increase of runoff from the proposed development due to the increase of paved area in the Development Site, a storage tank with a size of about 5,000m³ will be provided to temporarily store the additional runoff and the stored runoff will be discharged after the peak of storm. Thus, the Proposed Development would lead to no increase to the hydraulic at the discharge point (i.e. Control point 5) under the 10 years, 50 years and 200 years flood return period as shown in **Table 4.2**. With the storage tank to mitigate the additional runoff, the peak runoff discharged from the Proposed Development will be reduced as compared with the baseline condition under 1 in 10 years, 1 in 50 years and 1 in 200 years flood event.

Table 4.2: Change in peak flow at the existing streamcourse with mitigation measure (control point 5)

Return period (Years)	Flow (Existing) (m ³ /s)	Flow (Proposed) (m ³ /s)	Change (m ³ /s)	Change (%)
10	1.2	0.9	0.3	-28%
50	1.5	1.1	0.4	-27%
200	1.7	1.2	0.5	-30%

- 4.3.2 The stormwater inside the Development Site will be collected by internal drainage and is proposed to be discharged to existing watercourse at the west of the Development Site via the proposed 750 mm diameter pipe.
- 4.3.3 To assess the effectiveness of the proposed drainage mitigation works, a hydraulic model has been developed under the proposed condition to incorporate the aforesaid proposed drainage system including the stormwater storage tank, the 450mm and 750mm pipes using InfoWorks ICM. The predicated water levels under the 10 years, 50 years and 200 years flood return period under the proposed Mitigation Measures are presented in **Table 4.3**.

Table 4.3: Predicted peak water levels and freeboard of stream near the Site under 10-, 50- and 200-years flood events with climate change in End of 21st century

Case	Control Points	Cross Section line ID	Existing Condition			Proposed Condition with mitigation			Change in Water Level (m) (i.e. Proposed Condition - Existing Condition)
			Bank Level (mPD)	Water Level (mPD)	Freeboard (m)	Bank Level (mPD)	Water Level (mPD)	Freeboard (m)	Water level (m)
200A	1	KT-10	8.590	8.157	0.433	8.590	8.157	0.433	0.000
	2	KT-12	8.494	7.827	0.667	8.494	7.827	0.667	0.000
	3	KT-17	7.557	7.233	0.324	7.557	7.233	0.324	0.000
	4	S13-2	8.810	7.849	0.961	8.810	7.847	0.963	-0.002
	5	S13-2-S12	8.607	7.848	0.759	8.607	7.847	0.760	-0.001
	6	S4	6.480	7.846	-1.366	6.480	7.844	-1.364	-0.002
50A	1	KT-10	8.590	7.803	0.787	8.590	7.803	0.787	0.000
	2	KT-12	8.494	7.51	0.984	8.494	7.510	0.984	0.000
	3	KT-17	7.557	6.961	0.596	7.557	6.961	0.596	0.000
	4	S13-2	8.810	7.528	1.282	8.810	7.527	1.283	-0.001
	5	S13-2-S12	8.607	7.528	1.079	8.607	7.527	1.080	-0.001
	6	S4	6.480	7.524	-1.044	6.480	7.523	-1.043	-0.001
10A	1	KT-10	8.590	7.234	1.356	8.590	7.234	1.356	0.000
	2	KT-12	8.494	6.933	1.561	8.494	6.932	1.562	-0.001
	3	KT-17	7.557	6.373	1.184	7.557	6.373	1.184	0.000
	4	S13-2	8.810	6.948	1.862	8.810	6.948	1.862	0.000
	5	S13-2-S12	8.607	6.948	1.659	8.607	6.948	1.659	0.000
	6	S4	6.480	6.941	-0.461	6.480	6.941	-0.461	0.000
Remarks:- 1. Location of control points refers to Appendix D. 2. The bank levels refer to the low bank level. 3. -ve freeboard means water level will be above channel bank level, +ve freeboard means water level below channel bank level. 4. -ve in change in water level means the water level is lower under the proposed condition as compared with the existing condition.									

- 4.3.4 With reference to results in **Table 4.3**, the predicted peak water levels of the Kam Tin River generally remain unchanged under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event compared with the Existing Condition after adopting the proposed Mitigation Measure. For all the control points of Kam Tin River (i.e. Control Points 1 to 3), there are at least 300mm freeboard under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event. For the control points along the existing watercourse (i.e. Control Points 4 to 6), the predicted peak water levels remain unchanged or slightly decrease under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event compared with the Existing Condition after adopting the proposed Mitigation Measure.
- 4.3.5 All the proposed pipeline of the proposed development, including the proposed 750mm pipes connected to the storage tank, the proposed 450mm pipe from storage tank and the proposed 750mm outlet pipes, will have more than 300mm freeboard under 1 in 10 years, 1 in 50 years and 1 in 200 years flood event. Also, based on the results of the hydraulic model under the proposed condition, with the presence of the stormwater storage tank, the peak flow discharging from the proposed development will be reduced from 0.59m³/s to 0.25m³/s under the assessed scenario of 1 in 200 years rainfall event. With the proposed drainage system including the stormwater storage tank, the proposed discharge pipe connecting the existing watercourse will have a full-bore capacity of about 0.61m³/s and the utilization of pipe is about 41%.
- 4.3.6 Based on the assessment, there are no changes or slightly improvement in the predicted peak water levels for the 10 years, 50 years and 200 years flood event for all the control points. Therefore, it is concluded that there is no significant adverse impact from the Proposed Development with proposed drainage system and storage tank.

5 Conclusion

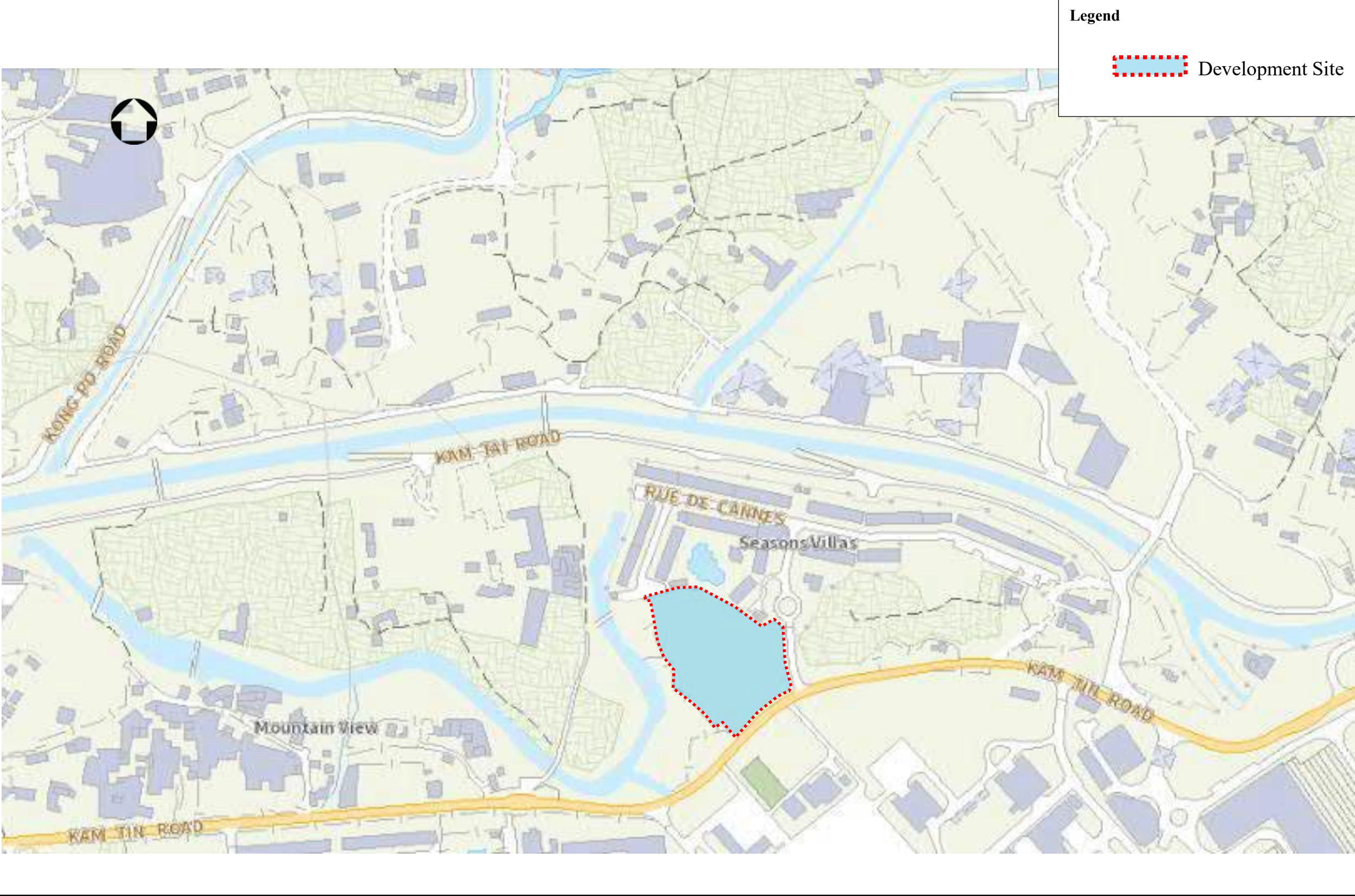
- 5.1.1 The surface runoff generated from the existing Development Site is currently discharged to the watercourse at the west of the Site. The watercourse is then discharged to an engineering channel (Kam Tin River) via a 2-cell box culvert.
- 5.1.2 The Development Site will be developed as a residential area with paved condition and some landscaping area. In view of the increase of paved area in the Development Site, additional runoff from the Site is anticipated. Runoff from the Development Site will be collected and discharged via a 750 mm diameter pipes. To cope with the increase of paved area in the Site, a storage tank with a size of about 5,000m³ will be provided to temporarily store the additional runoff and the stored runoff will be discharged to a new 750mm outlet pipe connecting to the existing watercourse via a 450mm pipe after the peak of storm. Based on the design arrangement, the proposed stormwater storage tank, with a storage depth of 2m, will have an inflow level of 8.3mPD and an outflow level of 7.4mPD. The design will be further refined and developed, if needed, in subsequent design and construction phases of the project.
- 5.1.3 With the storage tank to mitigate the additional runoff, the peak runoff discharged from the Proposed Development will be reduced as compared with the baseline condition under 1 in 10 years, 1 in 50 years and 1 in 200 years flood event.
- 5.1.4 With reference to results of the hydraulic assessment, the predicted peak water levels of the Kam Tin River generally remain unchanged under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event compared with the Existing Condition after adopting the proposed Mitigation Measure. For all the control points of Kam Tin River (i.e. Control Points 1 to 3), there are at least 300mm freeboard under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event. For the control points along the existing watercourse (i.e. Control Points 4 to 6), the predicted peak water levels remain unchanged or slightly decrease under 1 in 10 years, 1 in 50 years and 1 in 200 years rainfall event compared with the Existing Condition after adopting the proposed Mitigation Measure.
- 5.1.5 All the proposed pipeline of the proposed development, including the proposed 750mm pipes connected to the storage tank, the proposed 450mm pipe from the storage tank and the proposed 750mm outlet pipes, will have more than 300mm freeboard under 1 in 10 years, 1 in 50 years and 1 in 200 years flood event. Also, based on the results of the hydraulic model under the proposed condition, with the presence of the stormwater storage tank, the peak flow discharging from the proposed development will be reduced from 0.59m³/s to 0.25m³/s under the assessed scenario of 1 in 200 years rainfall event. With the proposed drainage system including the stormwater storage tank, the proposed discharge pipe connecting the existing watercourse will have a full-bore capacity of about 0.61m³/s and the utilization of pipe is about 41%.
- 5.1.6 Based on the assessment, there are no changes or slightly improvement in the predicted peak water levels for the 10 years, 50 years and 200 years flood event for all the control points. Therefore, it is concluded that there is no significant adverse impact from the Proposed Development with proposed drainage system and storage tank.

6 Appendices

Appendix A1	Location Plan of the Proposed Residential Development
Appendix A2	Master Layout Plan of the Proposed Residential Development
Appendix B1	Existing Drainage System
Appendix B2	Proposed Drainage System
Appendix C1	Existing Catchment Plan
Appendix C2	Proposed Catchment Plan
Appendix D	Location of Control Points in the Model
Appendix E	Existing Model Extent
Appendix F	Downstream Boundary Conditions Obtained from DSD
Appendix G	Topographic Survey received from the Applicant
Appendix H	InfoWorks ICM Hydraulic Model
Appendix I	Capacity Check for Peripheral Channels

Appendix A1

Location Plan of the Proposed Residential Development



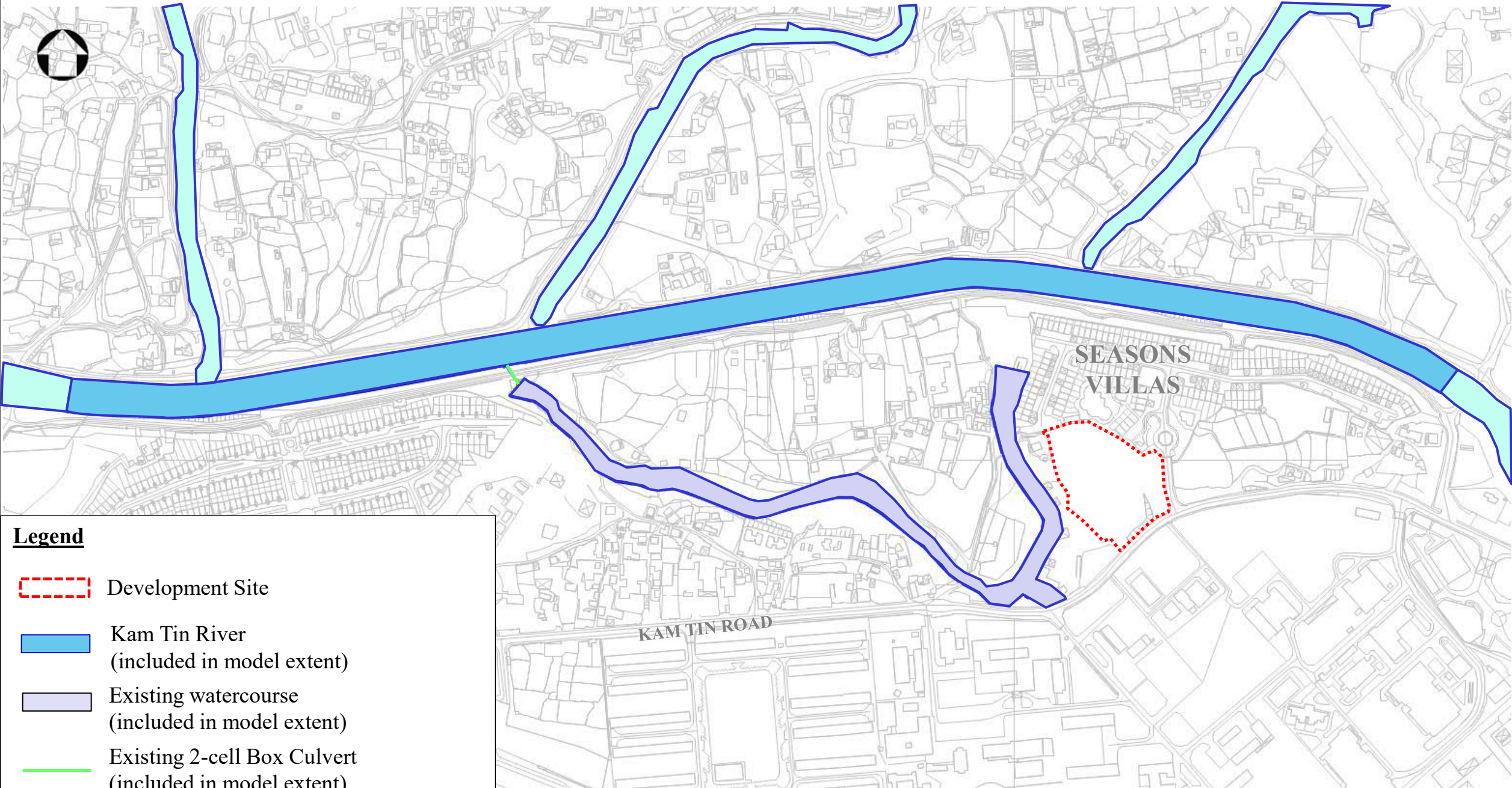
Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.			M M MOTT MACDONALD	
Title Location Plan of the Proposed Residential Development			Appendix A1	
Date	Aug 2025	Scale	N.T.S.	File

Appendix A2

Master Layout Plan of the Proposed Residential Development

Appendix B1

Existing Drainage System



Legend

Development Site

Kam Tin River
(included in model extent)

Existing watercourse
(included in model extent)

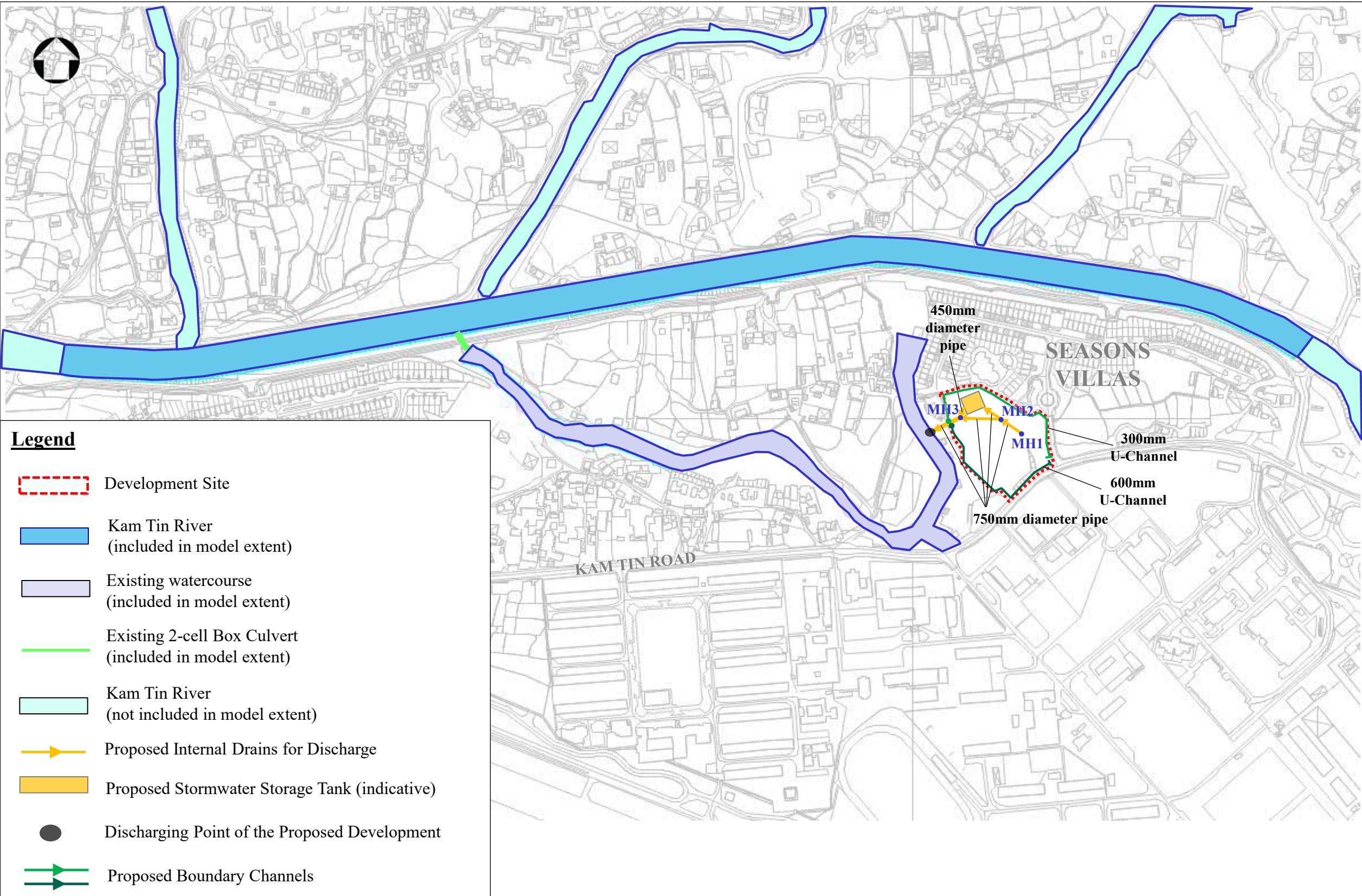
Existing 2-cell Box Culvert
(included in model extent)

Kam Tin River
(not included in model extent)

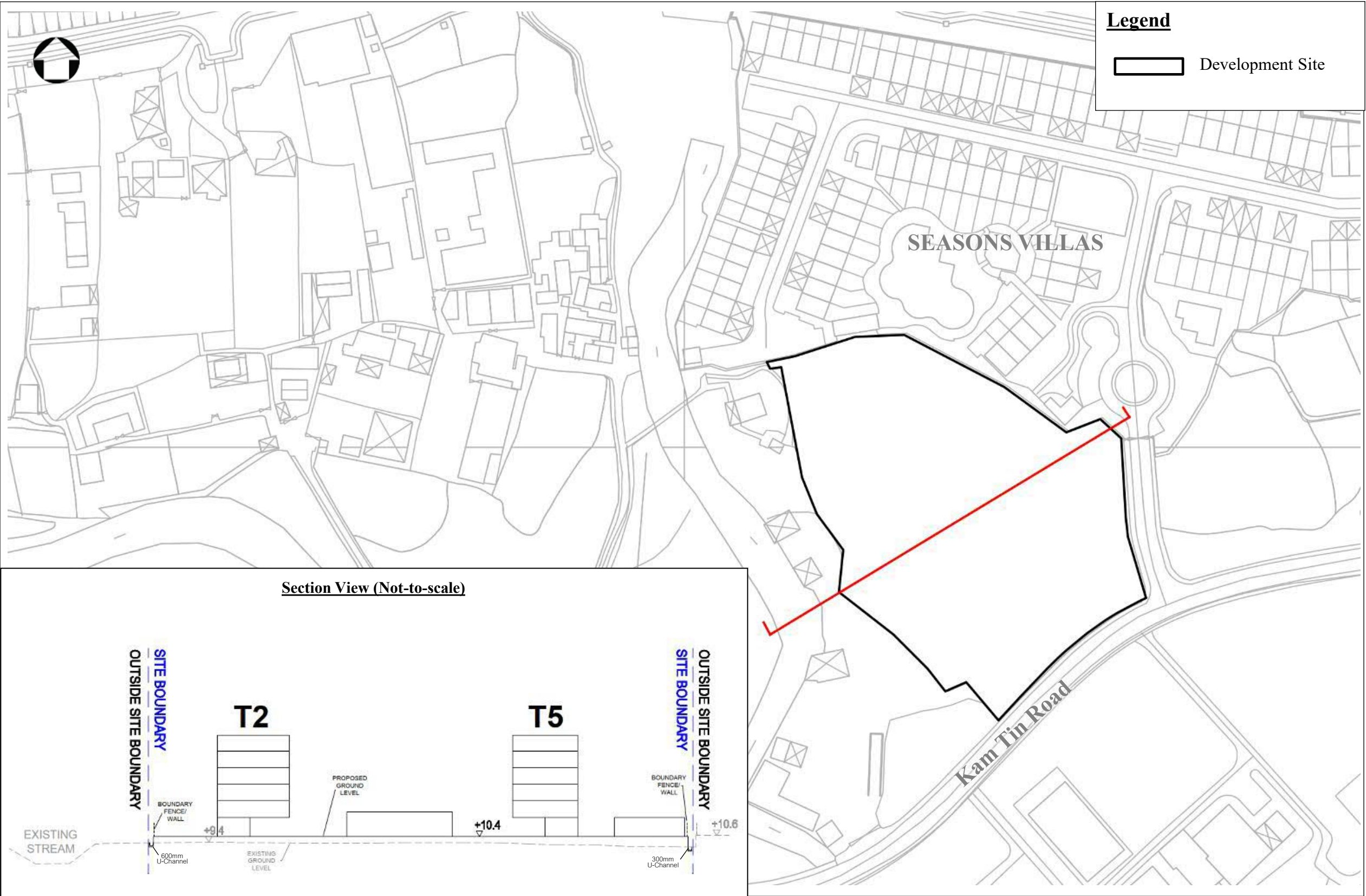
Project	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	 MOTT MACDONALD Appendix B1
Title	Existing Drainage System	
Date	Aug 2025	
Scale	N.T.S.	
File		

Appendix B2

Proposed Drainage System



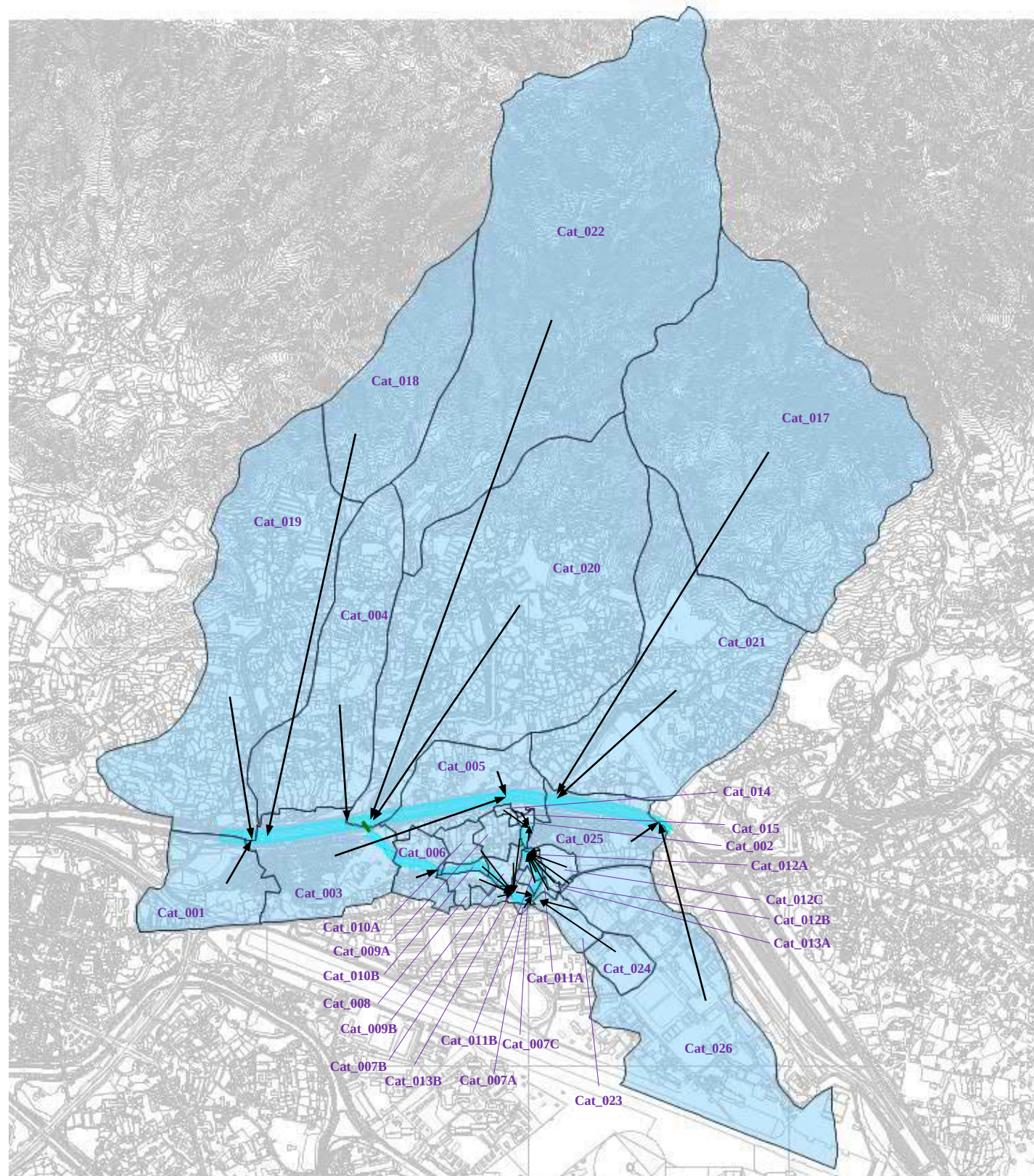
Project	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	MOTT MACDONALD Appendix B2
Title	Proposed Drainage System	
Date	Oct 2025	
Scale	N.T.S.	
File		



Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Develop ment at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.				
Title Proposed Drainage System			Appendix B2	
Date Oct 2025	Scale N.T.S.	File		

Appendix C1

Existing Catchment Plan



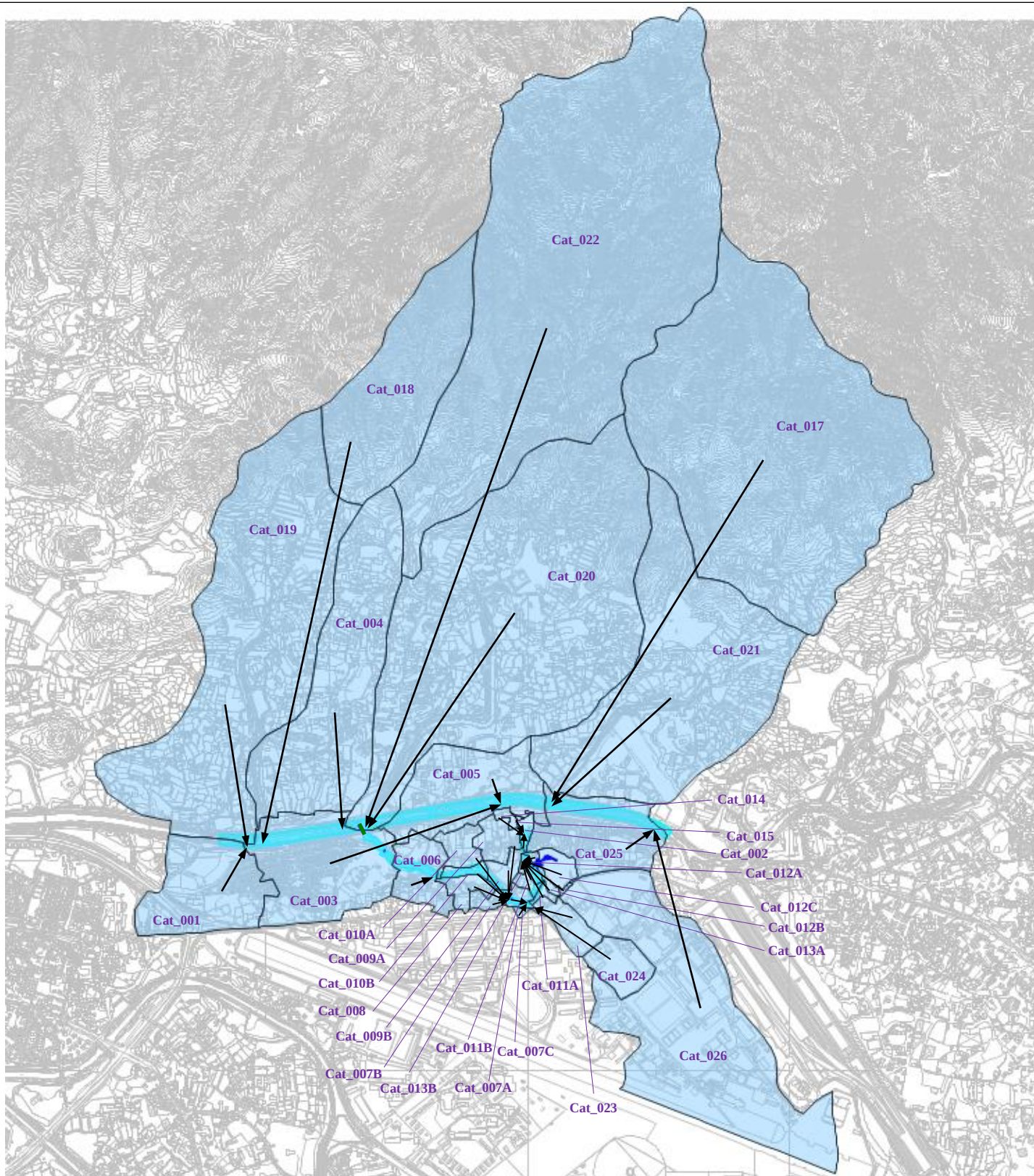
Legend

- Existing Channel Modelled
- Existing Box Culvert Modelled
- Sub-catchments
- Catchment Distribution

Project	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.			M M MOTT MACDONALD Appendix C1
Title	Existing Catchment Plan			
Date	Apr 2025	Scale	N.T.S.	

Appendix C2

Proposed Catchment Plan



Legend

- Existing Channel Modelled
- Existing Box Culvert Modelled
- Sub-catchments
- Catchment Distribution
- Proposed Drainage

Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Title Proposed Catchment Plan

Date Apr 2025 **Scale** N.T.S. **File**

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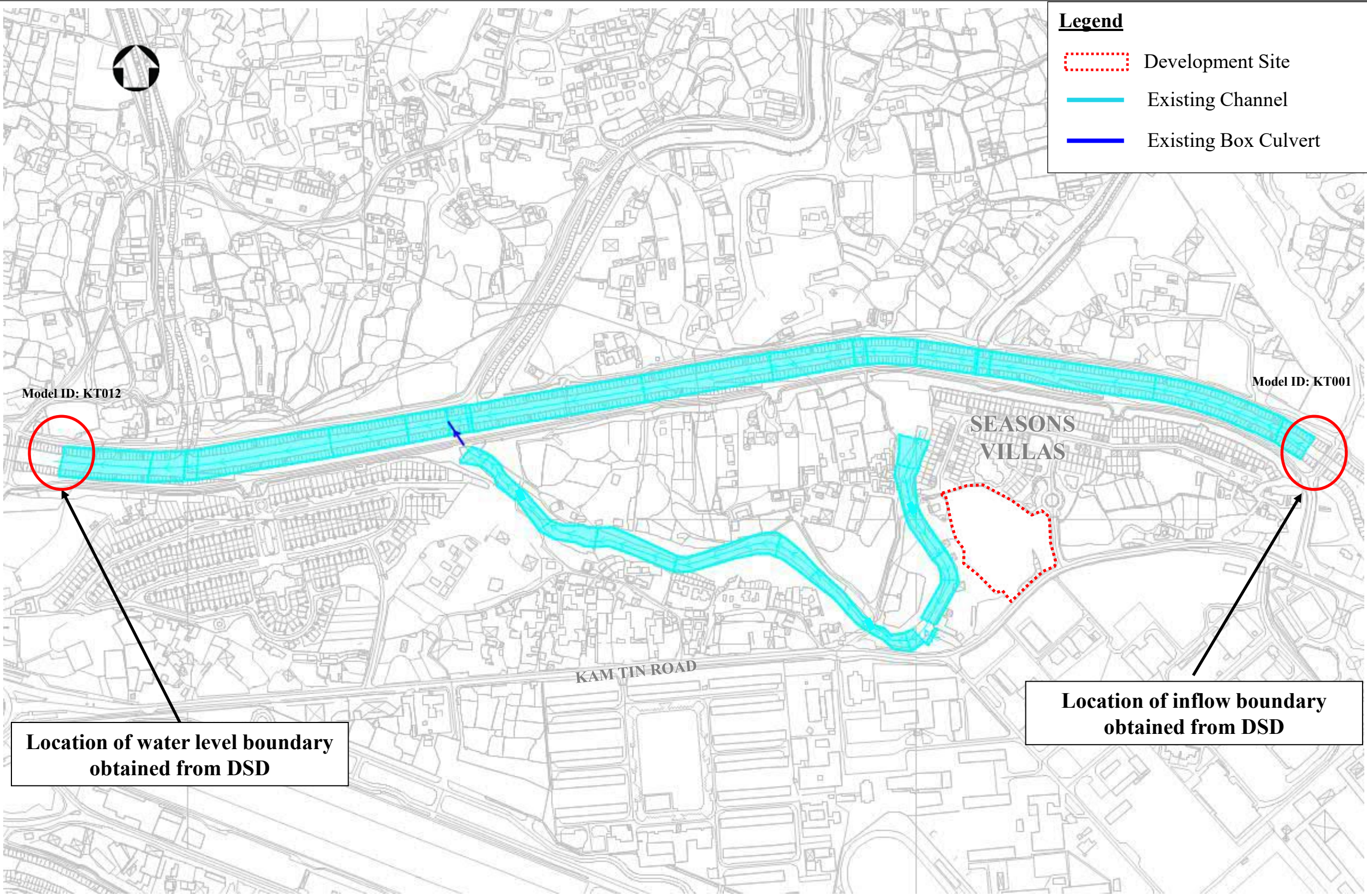
Appendix C2

Appendix D

Location of Control Points in the Model

Appendix E

Existing Model Extent



Project	Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.	MOTT MACDONALD Appendix E
Title	Existing Model Extent	
Date	Aug 2025	
Scale	N.T.S.	
File		

Appendix F

Downstream Boundary Conditions Obtained from DSD

**Drainage Services Department****Mainland North Division**11/F, Kowloon Government Offices,
405 Nathan Road, Kowloon

JL0014

渠務署**新界北渠務部**九龍彌敦道 405 號
九龍政府合署 11 樓

本署檔號 Our Ref : (00RPNA) in MN 10/YL/DD110

來函檔號 Your Ref : EC/MT/426076/L-0004

電話 Tel : (852) 2781 4107

傳真 Fax : (852) 2770 4761

By Post

15 November 2021

MOTT MACDONALD HONG KONG LIMITED

3/F, International Trade Tower,

348 Kwun Tong Road,

Kowloon,

Hong Kong

(Attn.: May TSE)

	To	Action/Inform	Copy	Sign	Date
1					
2					
Rec'd		19 NOV 2021			
3					
4					
File No. 426076					MOTT MACDONALD M M

Dear Sir/Madam,

**S12A Planning Application for Proposed Residential Development at
Various Lots in DD110 Shek Kong, Kam Tin, Yuen Long, New Territories
Request for Information**

I refer to your letter dated 28 October 2021 requesting for drainage information.

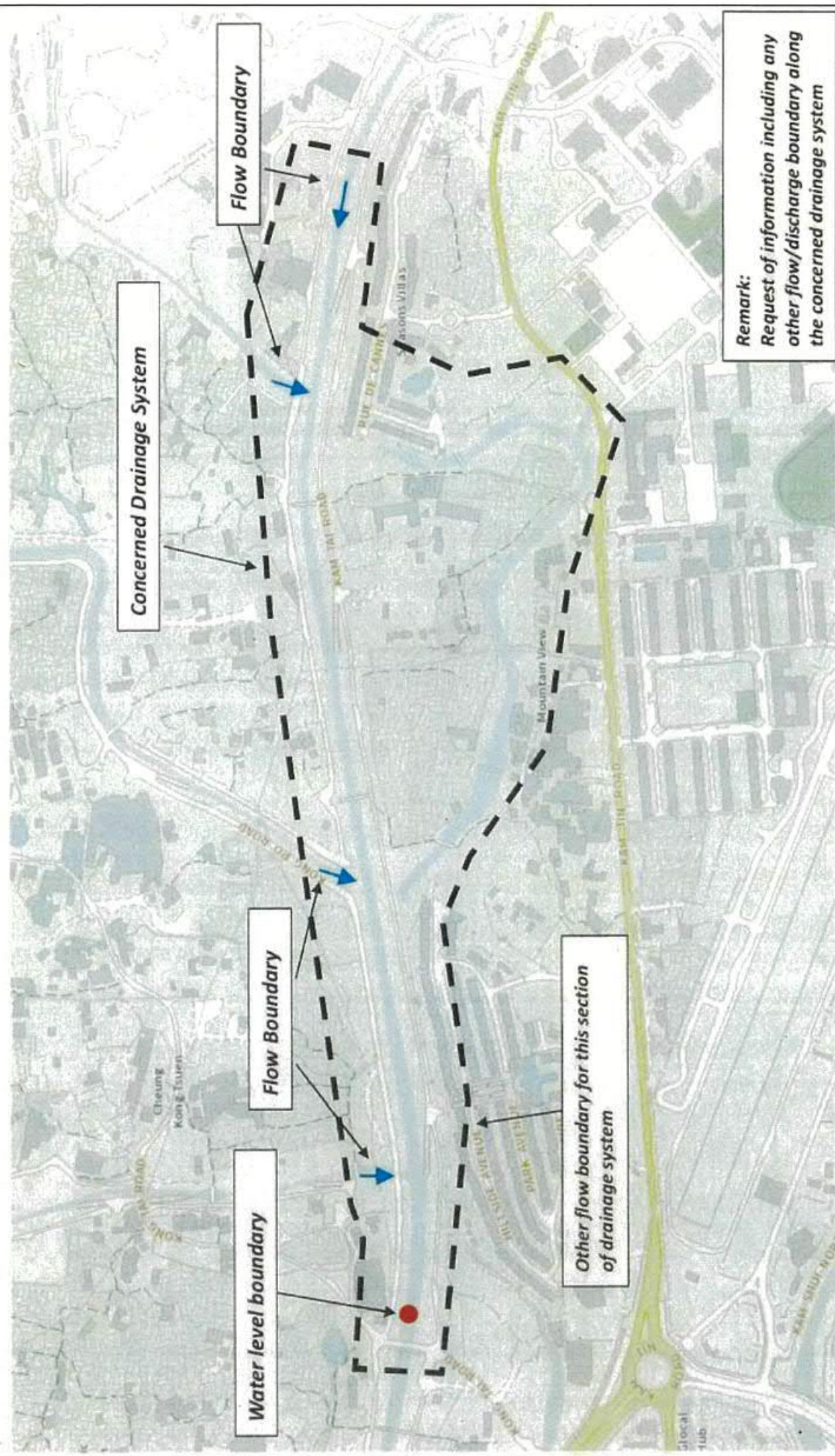
The requested information is enclosed for your reference.

Yours faithfully,

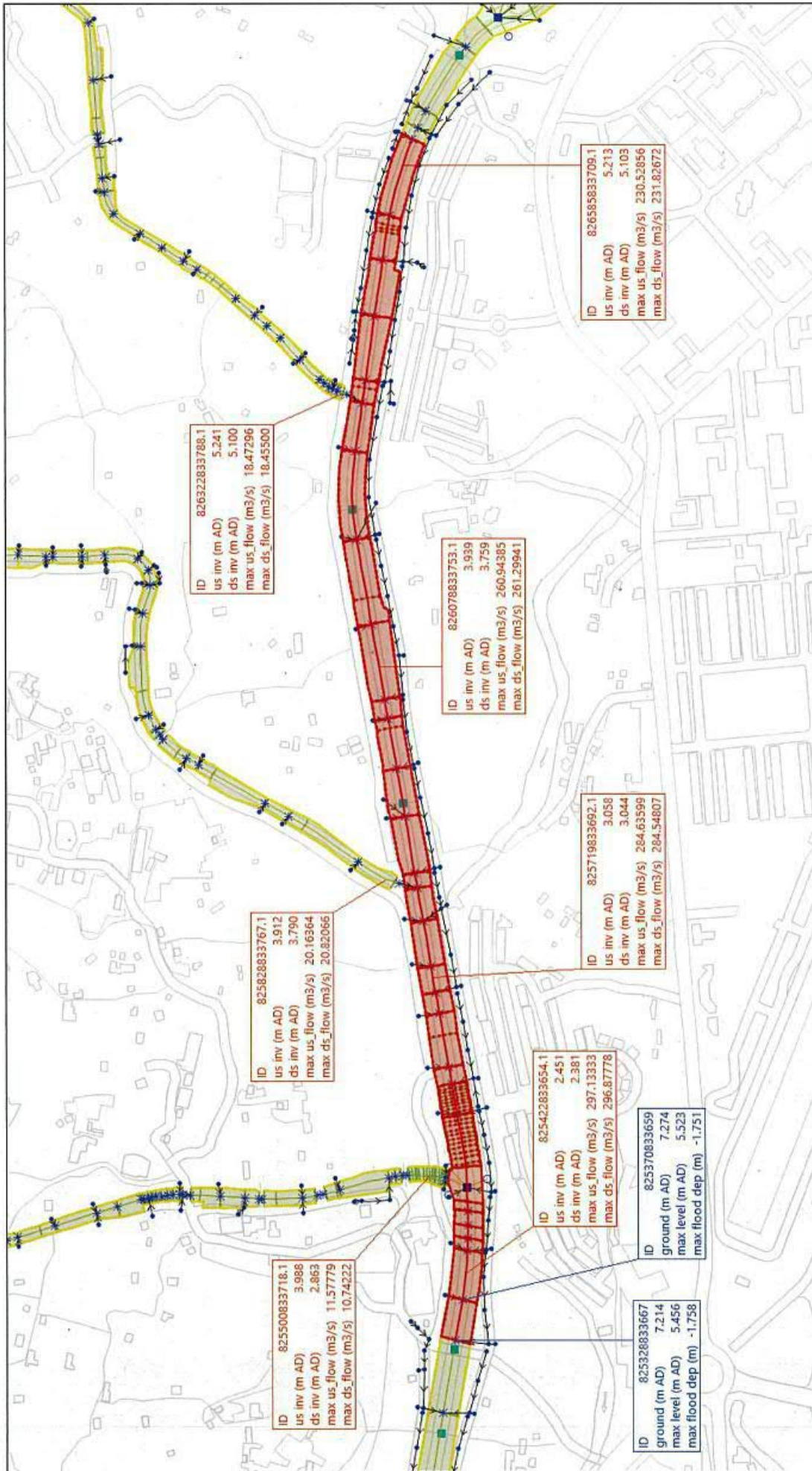
(Bill C H CHAN)

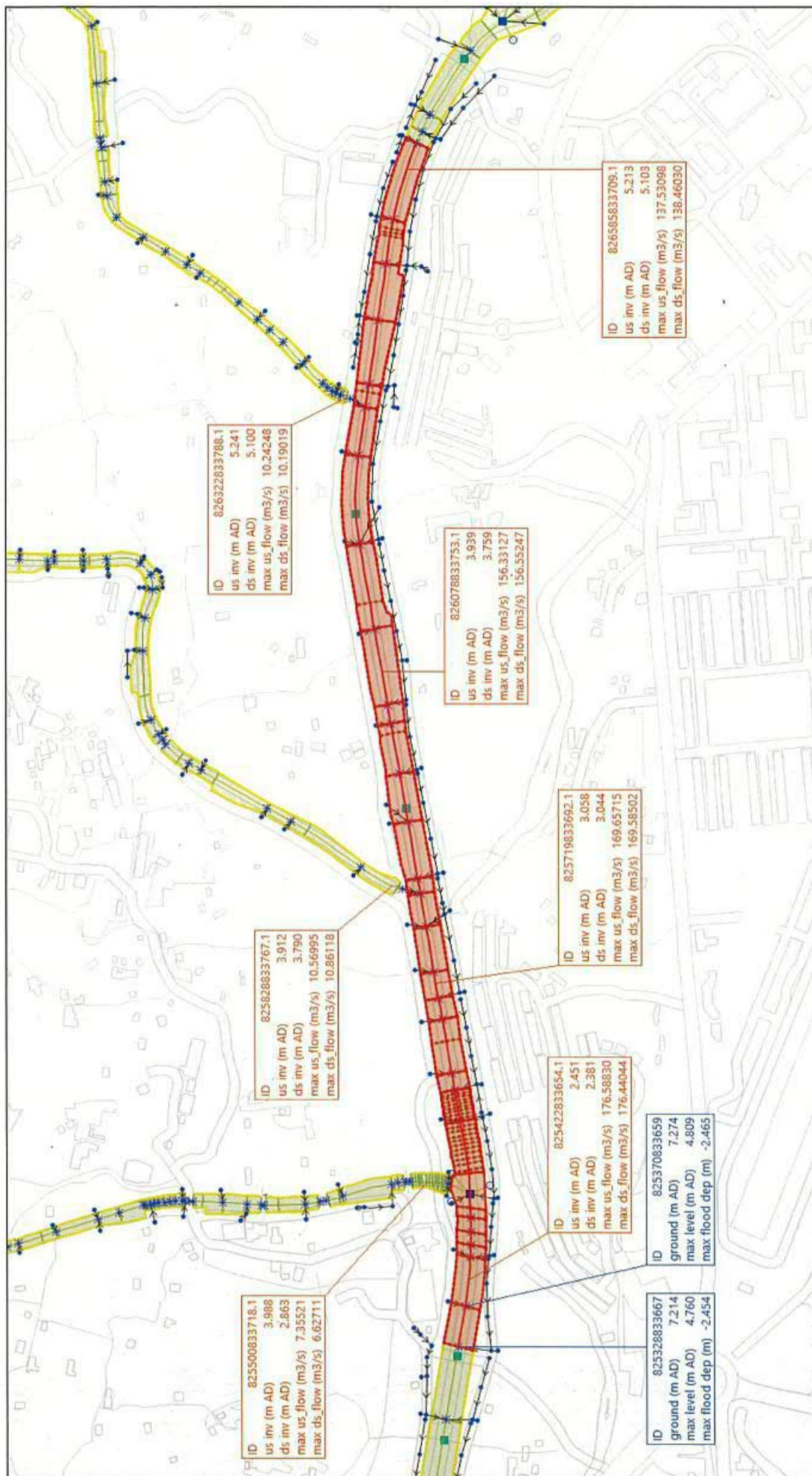
for Chief Engineer / Mainland North
Drainage Services Department

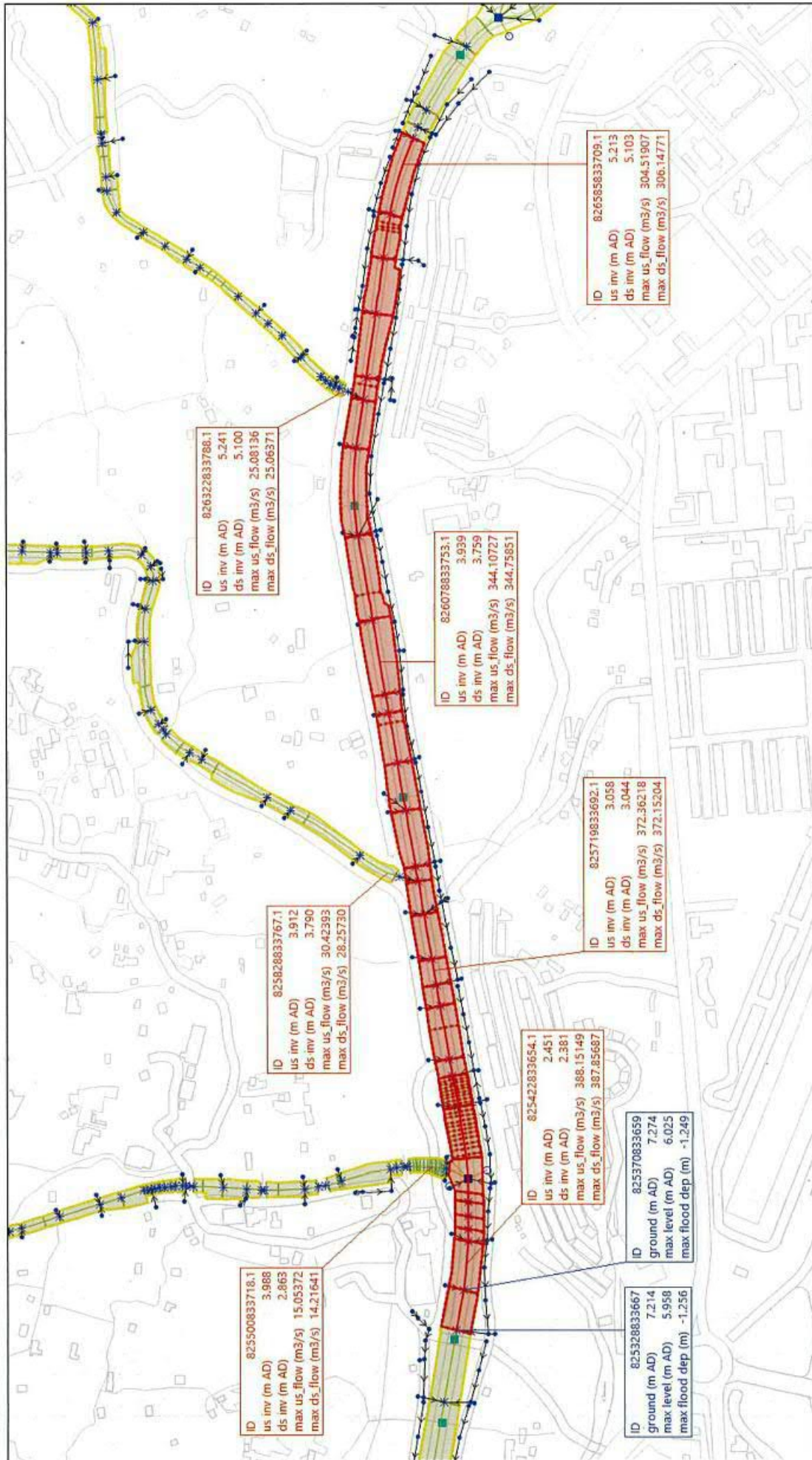
Sketch 1 - Request for Information

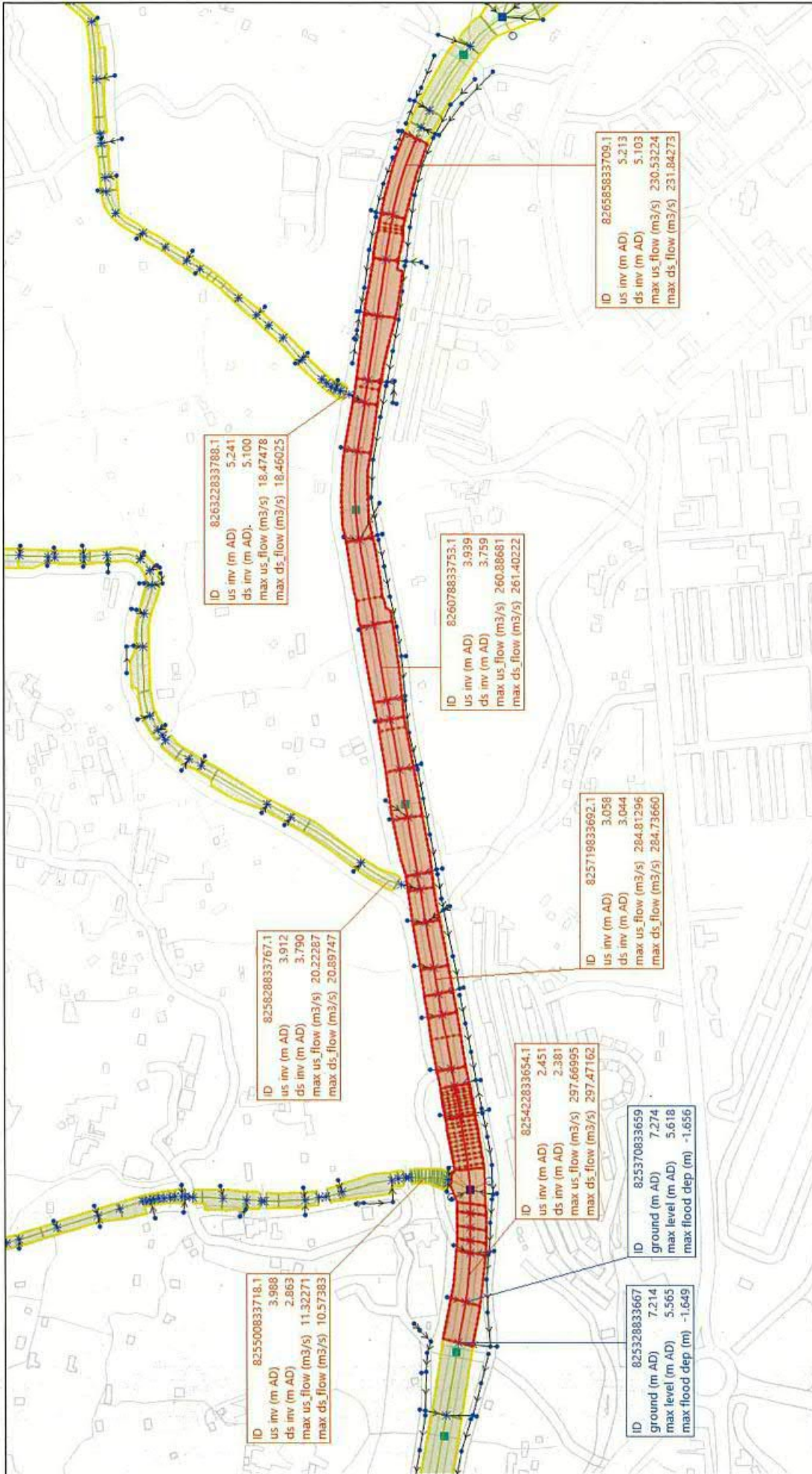


Location of Request

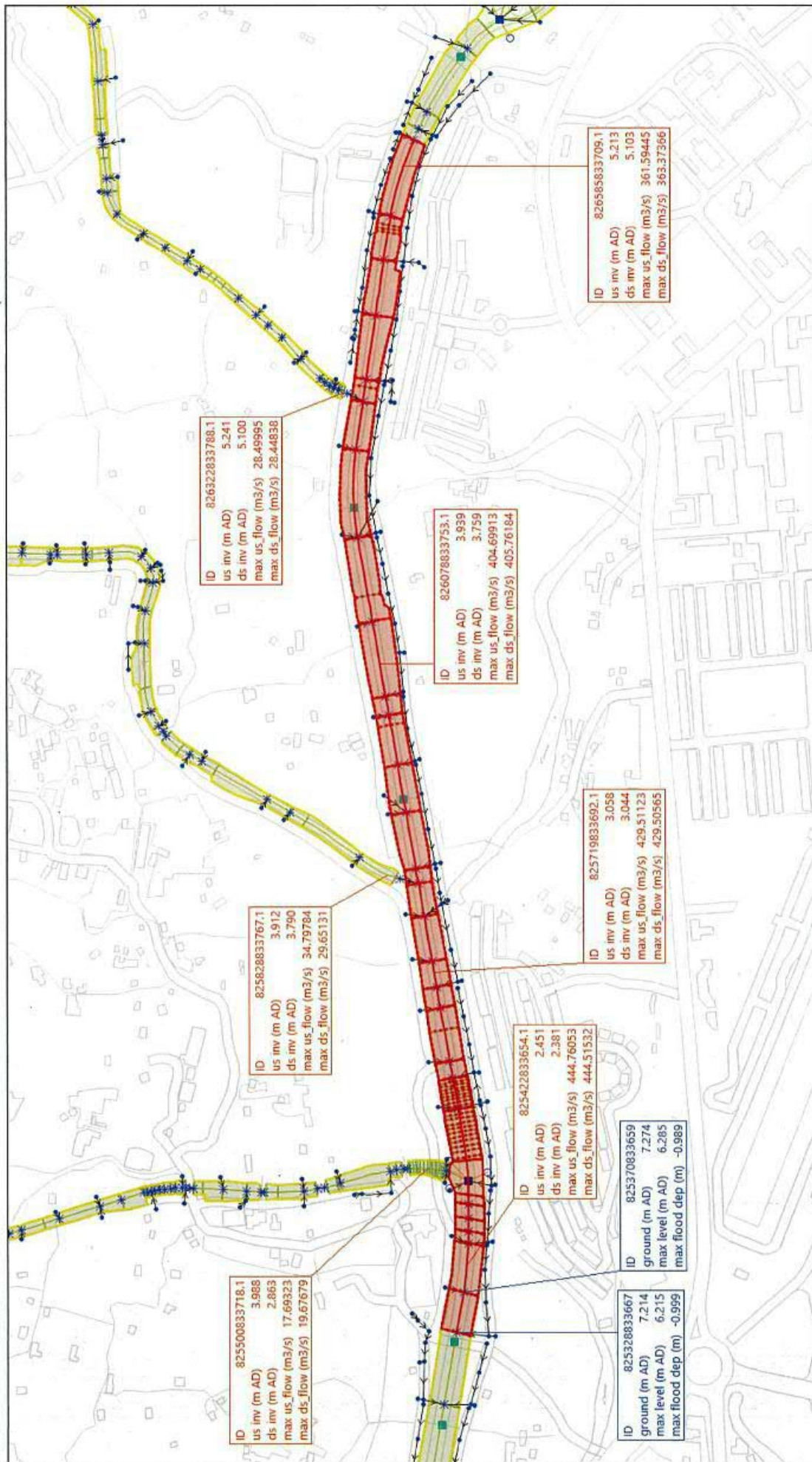


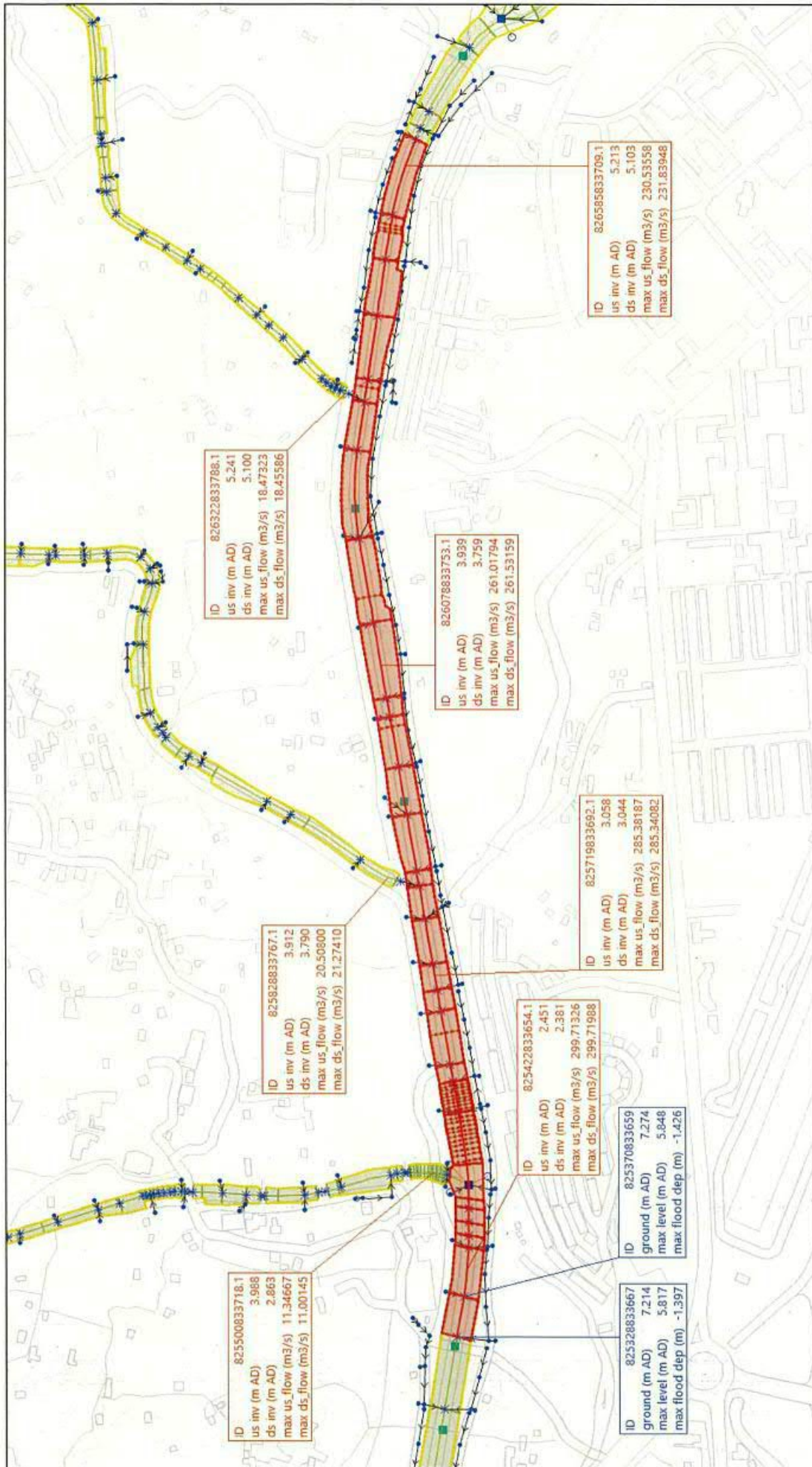






50B

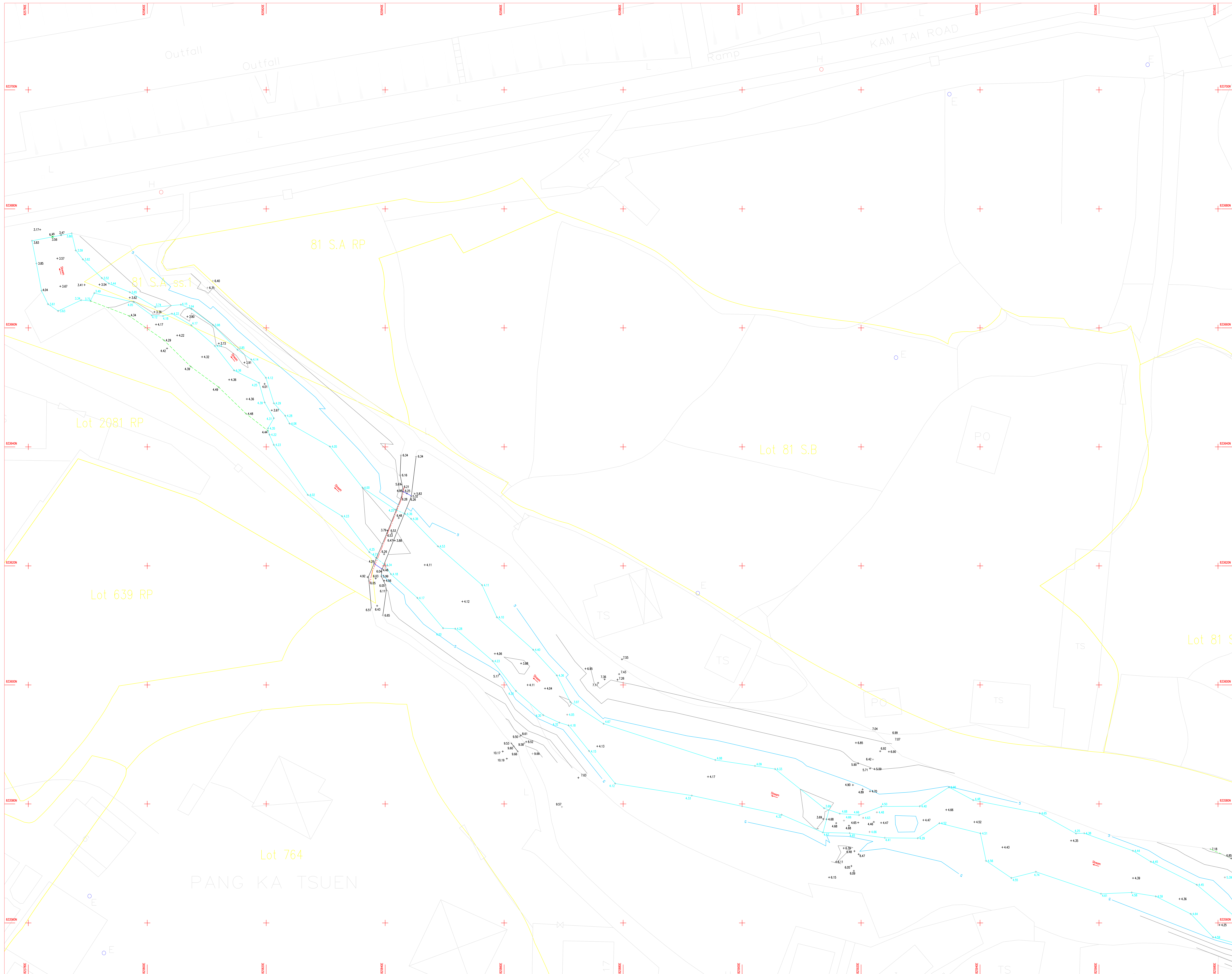


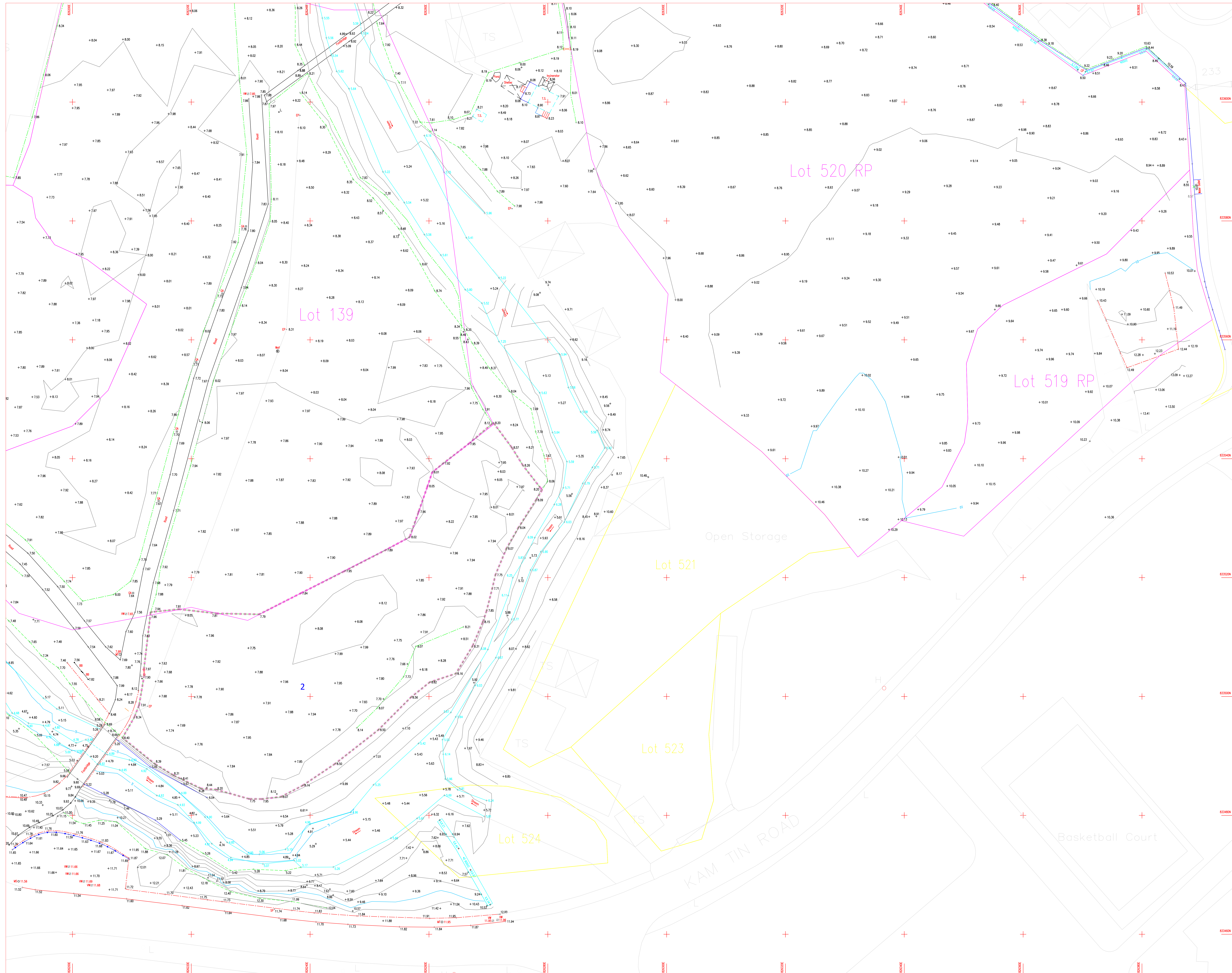


200B

Appendix G

Topographic Survey received from the Applicant





Appendix H

InfoWorks ICM Hydraulic Model

Appendix I

Capacity Check for Peripheral Channels

Appendix 14

Water Supply Impact Assessment

Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Water Supply Impact Assessment (Rev. A1)

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3/F Manulife Place
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Kowloon
Hong Kong

T +852 2828 5757
mottmac.hk

**Rezoning from “Residential
(Group C)2” and “Open
Space” zones to “Residential
(Group C)4” zone for a
Proposed Residential
Development at Lot Nos. 519
RP (part) and 520 RP in D.D.
110 and the Adjoining
Government land, Shek Kong,
Yuen Long, N.T.**

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	Apr 2025	Iann HO	Edith CHOW	May TSE	For Submission
A1	Jul 2025	Edith CHOW	May TSE	May TSE	For Submission

Document reference: 426076 | 13 | A1

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1 Introduction

1.1 General

- 1.1.1 Mott MacDonald Hong Kong Limited (hereafter as “MMHK”) was commissioned by the Applicant to prepare a Water Supply Impact Assessment (WSIA) for supporting the proposed residential development at Shek Kong, Yuen Long (the Development). This WSIA Report forms part of the application document for supporting the Development of the proposed residential development at the Site by rezoning the Site from “Residential (Group C)2” and “Open Space” to “Residential (Group C)4” zone.

1.2 Key Development Parameters

- 1.2.1 The location of the Development and layout plan are shown in **Appendices A** and **B**. The proposed development parameters are listed below:-

Table 1.2.1: Development parameters for development

Item	Details
Development Site Area	About 8,580 m ²
Development Theme	Residential development
No. of Residential Unit	240

1.3 Objectives of the Assignment

- 1.3.1 This WSIA Report aims to identify the existing and planned water supply networks within the Development and to investigate the physical constraints on the Development due to the existing and planned water supply networks. This includes fresh water and flushing water where available.

1.4 Structure of the Report

- 1.4.1 This WSIA report contains the following sections in addition to this introduction (Section 1):-

Section 2 – Methodology and Design Parameters for Water Supply Impact Assessment

Covering the approach of the WSIA and the parameters for water consumption prediction.

Section 3 – Existing Water Supply System

Briefly discussing the existing water supply system in vicinity of the proposed residential development.

Section 4 – Estimation of Water Demand of the Proposed Residential Development

Identifying and estimating the water demand arising from the proposed residential development in respect to published guidelines.

Section 5 – Proposed Water Supply Arrangement

Discussing the potential water supply system for the proposed residential development.

Section 6 – Conclusion

Summarising the findings and concluding the water supply impact arising from the proposed residential development.

2 Methodology and Design Parameters for Water Supply Impact Assessment

2.1 General Approach

- 2.1.1 The WSIA is carried out to identify and assess if there are any potential adverse impacts arising from the proposed residential development.

2.2 Methodology

Assessment Approach

- 2.2.1 The following approach and methodology have been adopted in this water supply impact assessment:-
- Estimate the water demand of the proposed residential development;
 - Identify the existing and planned water supply systems within the study area; and
 - Propose the water supply arrangement for the proposed residential development

2.3 Design Parameters

Design Population and Employee Data

- 2.3.1 The design population of the proposed residential development is shown in **Table 2.1** below. The layout plan of the proposed residential development refers to **Appendix B**.

Table 2.1: Population data of the proposed residential development

Type	Unit	Household Size	Population (nos.)
Residential Use (R3)	240	2.7	648
Residential (Service Trade)	-	-	648
Total =			648
Remark:-			
i. According to 2021 Population Census, the average domestic household size of Kam Tin is 2.7.			

Unit Demand Factor

- 2.3.2 The unit demands used in estimating the fresh water and flushing water consumption for the proposed residential development are presented in **Table 2.2**. The unit demands are based on the unit water demand in Water Supply Department Departmental Instruction (WSD DI) 1309.

Table 2.2: Unit demand for the proposed residential development

Type of Water Demand	Unit	Fresh Water Demand	Flushing Water Demand
Residential Use (R3) ⁽ⁱ⁾	m ³ /h/d	0.30	0.104
Residential (Service Trade) ⁽ⁱⁱ⁾	m ³ /h/d	0.04	-
Remark:- i. As advised by WSD, the fresh water unit demand for multi-storey residential development is 0.3m ³ /head/day and flushing water demand is 0.104m ³ /head/day. ii. The service trade are referenced on WSD DI 1309.			

Peaking Factor

- 2.3.3 In accordance with WSD DI 1309, the minimum capacity of the distribution system should be sufficient for the following peak demands.
- Fresh Water Supply – 3 times mean daily demand
 - Flushing Water Supply – 2 times mean daily demand

Peaking Flow Velocity

- 2.3.4 According to Section 1.2.1 of WSD's Manual of Main Laying Practice (2012 Edition), the maximum flow velocity under peak flow for both pumping mains and distribution mains should be less than 3m/s.
- 2.3.5 Minimum velocity of 1m/s under peak flow is also desirable to avoid water stagnant.
- 2.3.6 Design flow velocity is preferably to be ranged between 1m/s and 3m/s under peak flow.

3 Existing Water Supply System

- 3.1.1 According to the WSD's water main record, salt water main is not available in the Kam Tin area.
- 3.1.2 Potable water of the proposed residential development as well as the surrounding area are served by nearby Au Tau / Ngau Tam Mei Fresh Water Primary Service Reservoirs which have a total capacity of 141,298 m³.
- 3.1.3 Series of distribution mains ranging from DN1400 to DN450 convey the fresh water supply to the area respectively.
- 3.1.4 Fresh water main of 450mm diameter along Kam Tin Road is located at the South of the Site. Existing water supply system is shown in **Appendix C**.

4 Estimation of Water Demand of the Proposed Residential Development

4.1 Estimated Water Demand under the Proposed Residential Development

- 4.1.1 Based on the population data and unit demand factor listed in **Table 2.1** and **Table 2.2**, the total mean daily fresh water and flushing water demand for the proposed residential development is estimated to be about 306m³/day. The details of the water demand estimation are shown in **Table 4.1**.

Table 4.1: Water demand estimation for the proposed residential development

Type of Water Demand	Population (nos.)	Fresh Water Demand (m³/h/d)	Flushing Water Demand (m³/h/d)	Total Mean Fresh Water Demand (m³/d)	Total Mean Flushing Water Demand (m³/d)
Residential Use (R3)	648	0.30	0.104	194.40	67.39
Residential (Service Trade)	648	0.04	-	25.92	-
Landscaping	-	-	-	18.02	-
Total =				305.73 (says 306)	
Remark:-					
i. Water demand for irrigation normally ranges from 6 to 10 L/m²/day, as such irrigation water demand of 7 L/m²/day is adopted. The landscape area of the Site is assumed to be 30% of the Site area (~2,574 m²)					

5 Proposed Water Supply Arrangement

5.1 Water Demand and Water Supply Arrangement

- 5.1.1 As discussed in **Section 4**, the estimated fresh and flushing water demands for the proposed residential development are approximately 306m³/d in total. For supplying water to the proposed residential development under this planning application, it is proposed to branch off a DN100 fresh water main from the existing DN450 fresh water main at Kam Tin Road. The proposed water mains are shown in **Appendix D**.

6 Conclusion

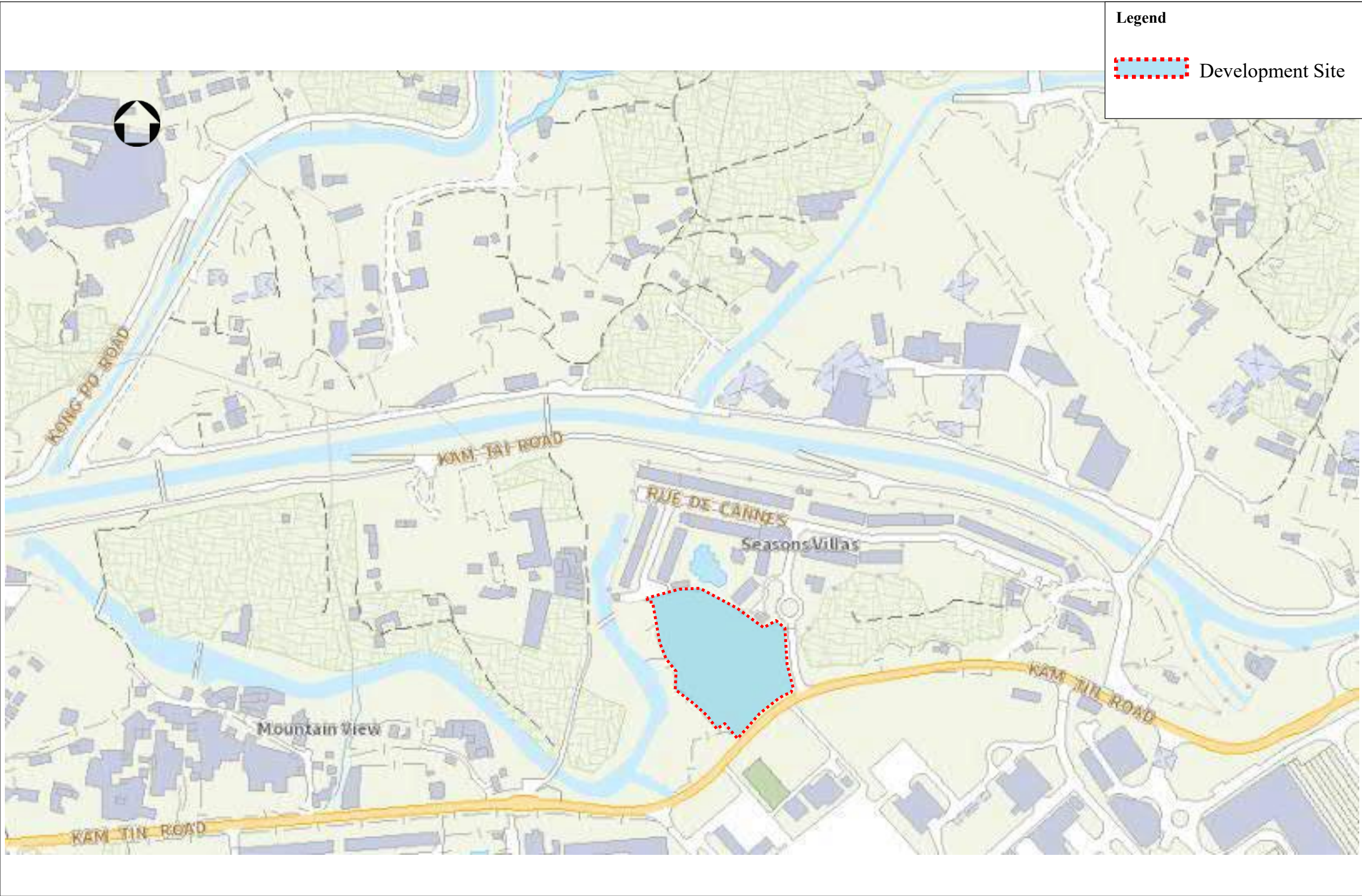
- 6.1.1 Based on the unit water demand and the estimated population, the total fresh and flushing water demands required for the proposed residential development is approximately 306m³/d. For supplying water to the proposed residential development under this planning application, it is proposed to branch off a DN100 fresh water main from the existing DN450 fresh water main at Kam Tin Road.

7 Appendices

Appendix A	Location Plan of the Proposed Residential Development
Appendix B	Layout Plan for the Proposed Development
Appendix C	Existing Water Main Layout Plan
Appendix D	Proposed Water Main Layout Plan

Appendix A

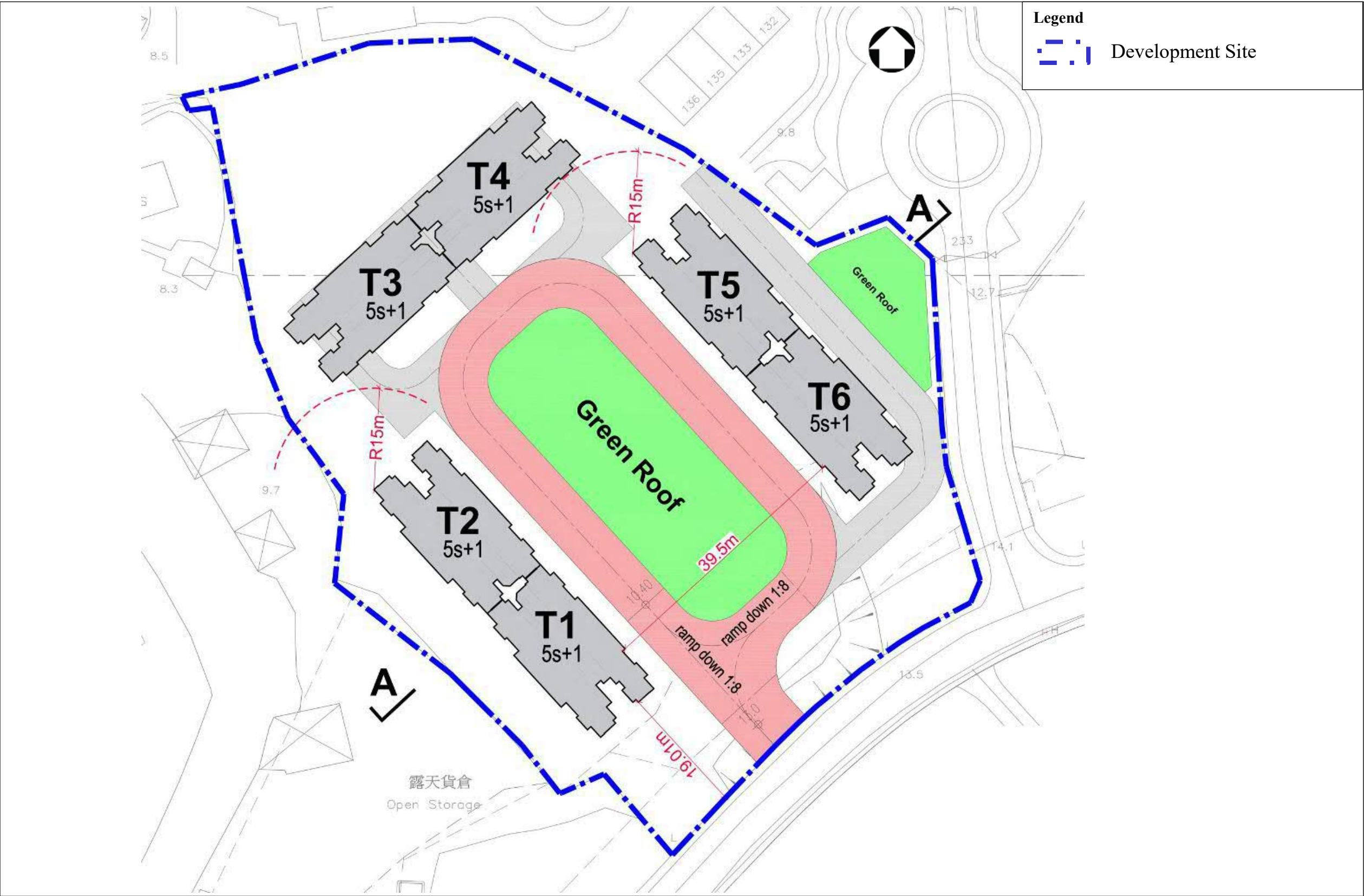
Location Plan of the Proposed Residential Development



Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.			M M MOTT MACDONALD	
Title Location Plan			Appendix A	
Date	Jul 2025	Scale	N.T.S.	File

Appendix B

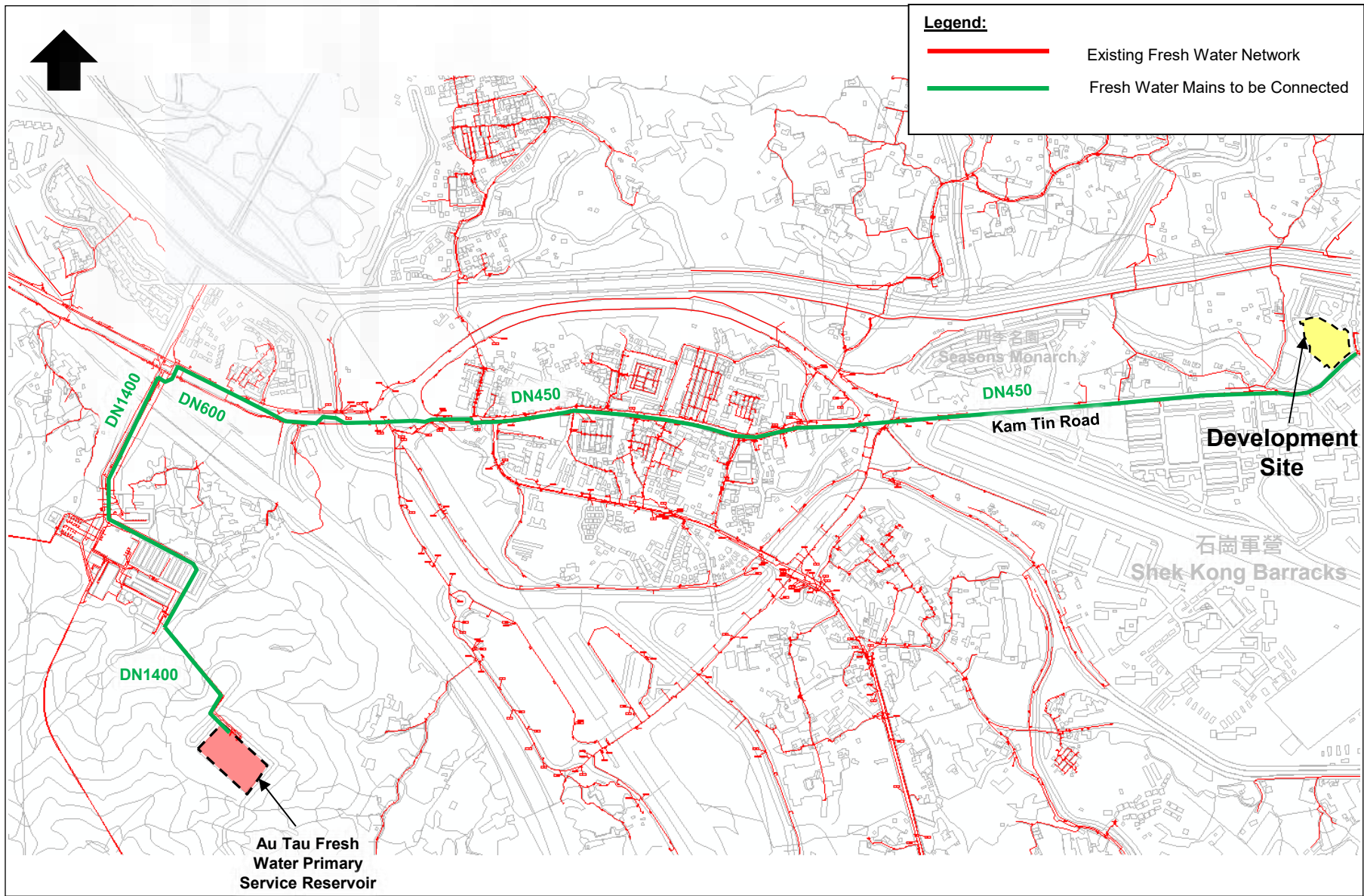
Layout Plan for the Proposed Development



Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.			M MOTT MACDONALD	
Title Layout Plan for the Proposed Development			Appendix B	
Date Jul 2025	Scale N.T.S.	File		

Appendix C

Existing Water Main Layout Plan



Project Rezoning from “Residential (Group C)2” and “Open Space” zones to “Residential (Group C)4” zone for a Proposed Residential Development at Lot Nos. 519 RP (part) and 520 RP in D.D. 110 and the Adjoining Government land, Shek Kong, Yuen Long, N.T.

Title Existing Water Main Layout Plan

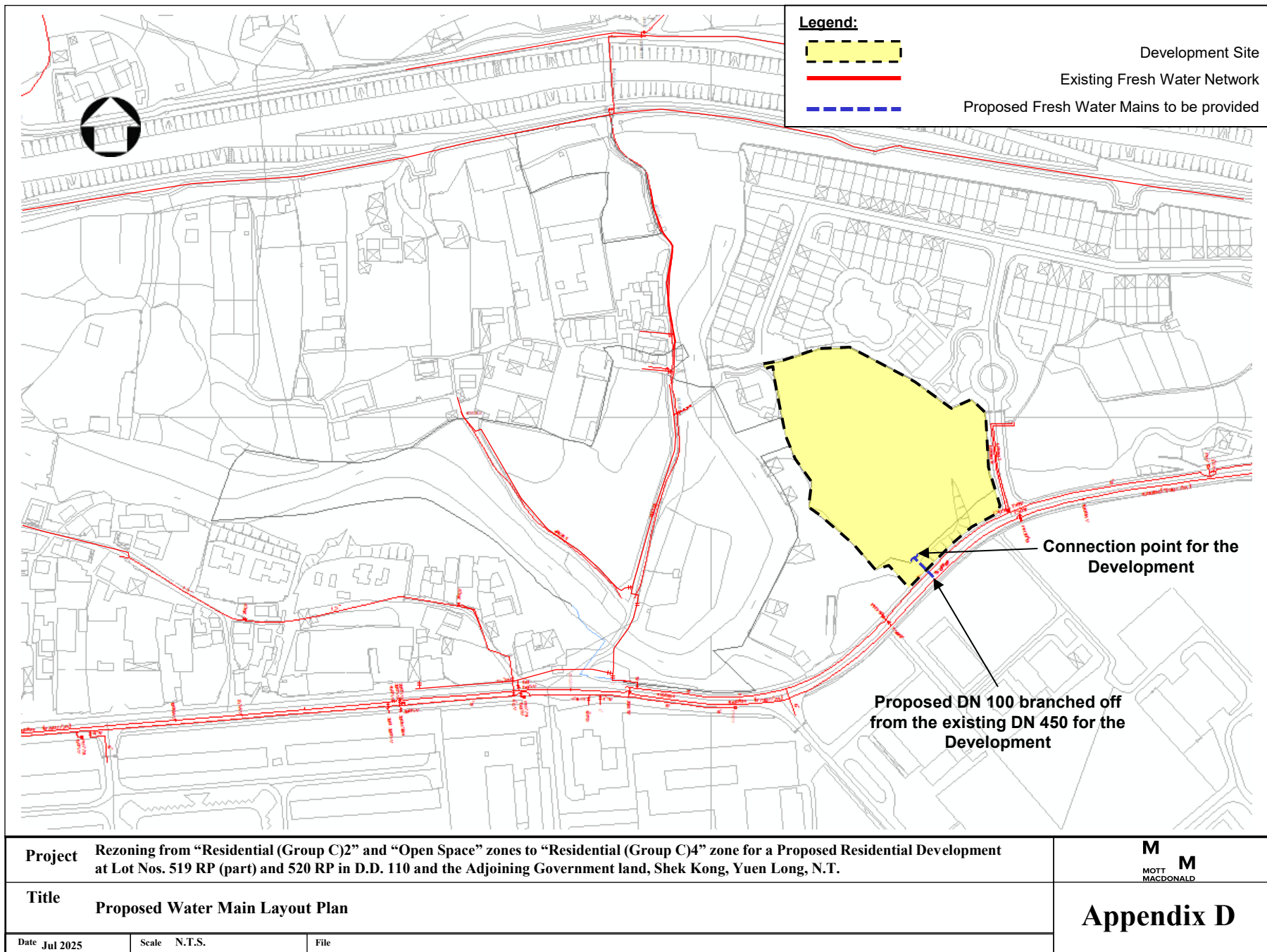
Date Jul 2025 **Scale** N.T.S. **File**

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Appendix C

Appendix D

Proposed Water Main Layout Plan



Appendix 15

Geotechnical Planning Review Report

PROJECT NO. P2541

GEOTECHNICAL PLANNING REVIEW REPORT (GPRR)

FOR

PROPOSED REZONING IN D.D. 110, KAM TIN ROAD

SHEK KONG, YUEN LONG

GREG WONG & ASSOCIATES LTD.

Prepared by:	Kelvin Au Yeung
Checked by:	Kevin Tang
Approved by:	Kevin Tang
Report No.:	2541G002
Revision:	-
Date:	October 2025

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1. Introduction
2. Site Location and Description
3. The Proposed Development / Planning
4. Existing Information
5. Ground Conditions
6. Proposed Works for the Development / Planning
7. Impacts on Adjacent Premises / Geotechnical Features
8. Conclusion

Appendix

Appendix A	Site Location Plan
Appendix B	Master Layout Plan
Appendix C	Slope Feature Information
Appendix D	SIMAR
Appendix E	Previous G.I. Information in Vicinity
Appendix F	Records of Existing Utilities
Appendix G	Schedule Area
Appendix H	Geological Survey Map
Appendix I	Scheme of Proposed Foundation & Site Formation Works

1. INTRODUCTION

This report presents the geotechnical planning review for the proposed development based on the available ground information in supplementary to the master layout plans.

Greg Wong & Associates Ltd. (GWAL) was appointed as the structural and geotechnical consultant for the proposed residential development in D.D. 110 Shek Kong.

This report is prepared to seek approval from the Town Planning Board ("TPB"/the "Board") under section 12A of the Town Planning Ordinance for rezoning of the Site from "Residential (Group C)2" ("R(C)2") and "Open Space" ("O") to "Residential (Group C)4" (R(C)4") under the approved Kam Tin North Outline Zoning Plan ("OZP") No. S/YL-KTN/11, to enable the proposed residential development at Lot Nos. 519 RP (part) and 520 RP in D.D.110 and adjoining Government land, Kam Tin Road, Shek Kong, Yuen Long.

The geotechnical review is prepared by the geotechnical consultant in accordance with the requirement set out in PNAP-APP25. This report contains the following as listed.

- Impact and proposed investigation to the adjoining premises
- Conclusion and recommendation

2. SITE LOCATION AND DESCRIPTION

2.1 Site Location

The Development Site with a total site area of approximately 8,580m², is located in Kam Tin North. The site abuts Kam Tin Road to its immediate south. Two low-rise, low-density residential developments in the same "R(C)2" zone, namely Seasons Villas and Seasons Monarch, are located to the immediate north-east and further west. Villages including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site. The areas to the immediate west and south-west of the Site are occupied by temporary structures, open storage sites and vacant vegetated land zoned "O". Shek Kong Barracks is located to the south of the Site across Kam Tin Road.

The Development Site sits on a gently sloping land with gradient gradually descending from the south at +13.5mPD towards the north at +8.1mPD in general. The site is currently sparsely vegetated. A site location plan is attached in [Appendix A](#).

2.2 Existing Features

According to the Slope Information System, there are three existing features (slope or retaining wall) within site boundary or in close vicinity. The feature is listed as follow:

Feature No.	Type	Location	Responsibility	Sub-Division	Height (m)	Angle (deg)	Length (m)
6NE-B/FR 26	Fill Slope	North-east	DD110 LOT815RP	-	2.8	30	14.5
	Retaining Wall			-	4.4	90	14.5
6NE-B/R 11	Retaining Wall	East	DD110 LOT815RP&EXT	-	5	90	50
6NE-B/F17	Fill Slope	South-west	Lands Department&DD110 LOTS520RP, 521&523	(1)	5	45	150
				(2)	5	50	60

Table 2.1 – Summary of Existing Features Record

Location plan & detail information of the features are attached in [Appendix C and D](#). The available information indicates that the slope shall be in good condition.

2.3 Existing Buildings & Structures in Vicinity

Low-rise, low-density residential developments Seasons Villas is located to the immediate north-east. Villages including Shek Kong San Tsuen and Pang Ka Tsuen are located to the west of the Site.

There is no sensitive historical building close to the site.

3. THE PROPOSED DEVELOPMENT

The proposed development comprises of 6 nos. of residential towers with 6 storeys, 1-storey clubhouse and sewage treatment plant. With site formation level at +10.4mPD, the referencing building height is about +28.9mPD. The schematic master layout plan of the proposed new building is attached in [Appendix B](#).

4. EXISTING INFORMATION

4.1 Ground Investigation Information

There is 5 GI information within the site area. There is 5 GI information in the vicinity of the site area. The GI information in the vicinity which is shown in the plan of [Appendix E](#). The GI records are summarized in Table 4.1.

Boreholes	Easting	Northing	Ground Level	Strata Thickness (m)				
			(mPD)	Fill	Alluvium	Colluvium	CDT	MDT
T.P.240	826332	833580	+9.31	0.8	0.8	-	0.7	-
TP3	826391	833554	+12.76	2.5	2.5	-	-	-
TP4	826350	833528	+9.46	1.1	1.1	-	-	-
TPS2	826362	833531	+12.00	1.0	2.1	-	-	-
TPS3	826410	833560	+12.41	0.9	2.6	-	-	-
BH2	826356	833524	+12.44	4.0	4.0	5.0	1.0	-
BH8	826339	833473	+12.43	1.5	6.0	-	15.5	1.5
BH9	826353	833498	+12.18	1.5	9.0	-	7.5	4.5
BH11	826389	833526	+12.65	1.5	7.0	-	8.5	5.3
BH13	826431	833537	+13.30	1.5	6.9	-	7.7	5.0

Table 4.1 – Summary of Boreholes and Trial Pit Record

Based on the closest borehole log, the concerned site might be covered by a layer of alluvium / colluvium / fill of 8m thick. Underneath the alluvium / fill there might be a layer of grade V to IV Tuff of about 8m thick. Below that mainly would be a layer of grade III or better grade of Tuff.

4.2 Layout of Existing Utilities

Utilities adjacent to site are located around all sides of the site. They include drain pipes, electric cables and gas ducts, etc. The utilities information of various utilities parties has been shown on the submission drawings and attached in [Appendix F](#).

4.3 Schedule Area

The site is checked to be outside the MTR Corporation Railway Protection Area Plan (Yuen Long to Kam Sheung Road Station – WR/AP/120). Plan of the closest Schedule Areas are attached in [Appendix G](#).

5. GROUND CONDITIONS

5.1 Topography

The site sits on a gently sloping land with gradient gradually descending from the south at +13.5mPD towards the north at +8.1mPD in general. The total area of the site is about 8,580m². The site is currently sparsely vegetated.

5.2 Geology

According to the 1:20000 scale geological map published by the Geotechnical control Office (Sheet 6: HGM20 Series: Edition 1 - 1988), the site is underlain by Alluvium. Part print of geological map is enclosed in [Appendix H](#).

The available information indicates that the site might be covered by a layer of residual soil of 2m to 13m thick. Underneath the residual soil there might be a layer of grade V to IV Tuff of about 8m thick. Below that mainly would be a layer of grade III or better grade of Tuff.

Soil Properties

FILL

Fill generally consists of mottled grey and greyish brown, silty fine to coarse sand with some angular to subangular fine to coarse gravel sized rock fragments.

ALLUVIUM

Alluvium generally consists of mottled light grey and reddish brown, slightly silty slightly sandy subangular fine to coarse gravel sized rock fragments.

TUFF

Tuff was classified as weak to strong, dark brown/spotted white, highly to slightly decomposed, coarse ash crystal occasionally spotted black/blue/white.

6. PROPOSED WORKS

6.1 Proposed Works on Existing Features

There are 3 existing features within site boundary or in close vicinity. It is anticipated there is works on the features as the proposed site formation, foundation & buildings works shall be within the site and would be design as have no adverse impact to the features. Monitoring on the features shall be carried out throughout the construction period.

Feature No.	<u>Proposed Works</u>
6NE-B/FR 26	No proposed work Monitoring shall be carried out during construction
6NE-B/R 11	No proposed work Monitoring shall be carried out during construction
6NE-B/F 17	Proposed partly excavation on fill slope and proposed retaining wall for formation backfill Monitoring shall be carried out during construction

Nevertheless, stability of existing feature within or close to the site (including any unregistered features) affecting or being affected by the development during construction works shall be assessed. Monitoring works shall be carried out during the whole construction period. Remedial or upgrading works shall be proposed and carried out if found necessary by the lot owner.

6.2 Proposed Works on Natural Terrain

There are no natural terrains overlooking the subject site.

6.3 Proposed Foundation Works

The proposed scheme comprises a total of 6 nos. of residential towers with 6 storeys, 1-storey clubhouse and sewage treatment plant. The available previous ground investigation information indicates that the rockhead level, defined as an at least grade III or rock with total core recovery greater than 85%, may be encountered on average at a level about 19m below the existing ground. As the rockhead level is low with a high ground water level, pile cap and mini-piles are considered to be feasible foundation options for the proposed building. The proposed foundation scheme for the proposed development shall have minimal effect or impact to the surrounding. There are existing features within the site. Detailed foundation design will be submitted separately when the proposed ground investigation works are completed. A preliminary layout of proposed foundation is attached in [Appendix I](#).

6.4 Proposed Site Formation, Excavation and Lateral Support Works

For the construction of foundation, sheet pile wall and soil open cut is considered to be feasible scheme to retain the excavation depth. For the proposed scheme level different between the formation level and level outside the proposed site, retaining wall is proposed to retain the soil load between the level different. Compacted soil fill is proposed to backfill to formation level. The choice of scheme of permanent support shall be subject to detail assessment. A preliminary layout of proposed site formation and ELS works is attached in [Appendix I](#).

6.5 Construction Method & Sequence

All monitoring point shall be installed & initial reading shall be recorded prior commencement of any works. Remedial works on existing slopes & retaining walls being affected shall be carried out prior commencement of site formation, ELS, foundation & superstructure. Pre-boring shall be carried out prior pile installation. Obstruction during sheet pile installation for temporary ELS shall be overcome by pre-boring. Strut of the ELS shall not be dismantled until completion of the permanent screen wall support the level difference. All temporary cut slope and back filling shall be backfilled by proper material with proper compaction. Groundwater shall be controlled during the excavation. Excessive groundwater drawdown at the adjacent ground shall not be allowed.

7. IMPACTS ON ADJACENT PREMISES/ GEOTECHNICAL FEATURES

As the existing registered retaining walls & slope is in close proximity to the captioned site, consideration shall be taken in the design of the proposed works. Also, vibration caused by the installation of the mini piles / sheet piles and the ground settlement caused by the wall deflection and dewatering in the excavated areas may cause adverse effects to the adjacent utilities and structures. Therefore, it is necessary to limit the amount of vibration and ground settlement by adoption suitable lateral support works design and construction method. Pre-boring shall be carried out prior installation of piling for foundation and ELS. In all case, stability of existing geotechnical features within or in vicinity to the lot affecting or being affected by the development shall be assessed & remedial works shall be carried out if found necessary.

Groundwater control during the excavation is also critical for the design. Excessive groundwater drawdown at the adjacent ground is not allowed because ground settlement will be induced and damage will be caused to the adjacent structures and utilities. Detail assessment and design will be included in the foundation, site formation and ELS submission.

In addition, in order to ensure the adjacent premises will not be damaged by the proposed works, settlement monitoring stations, titling check points and building settlement pins will be proposed to be installed around the site. The movement of the adjacent premises will be monitored at these stations continuously throughout the work period. The noise from proposed works shall be kept within acceptable limit to minimize the disturbance to the environment. The detailed assessment and discussion on these aspects will be presented in the separate submission for ELS works.

8. CONCLUSION

On the basis of the available geotechnical information, the following conclusions and recommendations are drawn:

- The proposed development as presented in the preliminary Master Layout Plan is considered as a geotechnical feasible scheme.
- Pile cap and pile foundation are considered to be feasible foundation options for the proposed development.
- The site formation works for the proposed development shall be minimal.
- Suitable groundwater control scheme shall be considered in design to avoid excessive groundwater drawdown at the adjacent area.
- Proper excavation and lateral support works design and construction method have to be adopted to minimise the adverse effect on the existing utilities and structures. The detailed discussion will be presented the separate submission for excavation and lateral support works.
- Stability of all slopes (man-made & natural terrains) and retaining walls (including unregistered features) within or in vicinity to the lot affecting or being affected by the development during demolition & construction works shall be assessed & remedial works shall be carried out if found necessary

It is noteworthy to note that the works/proposal mentioned in this report are preliminary only at the planning stage and will be subjected to detailed study in the detail design stage under separate cover. Based on the current assessment, the proposed development is considered geotechnical feasible.

Greg Wong & Associates Ltd.

Proposed Rezoning in D.D. 110, Kam Tin Road, Shek Kong, Yuen Long

Geotechnical Planning Review Report

Appendix A

Site Location Plan



Kam Tai Road

**Seasons Villas
(~+16mPD)**

Kam Tai Road

Development Site

Kam Tin Road

**Mountain View
(~+13mPD)**

**Shek Kong
San Tsuen
(~+15mPD)**

Kam Tin Road

**Shek Kong
Barracks
(~+15mPD
to 39mPD)**

0m 20m 50m 100m

Legend



Site Boundary

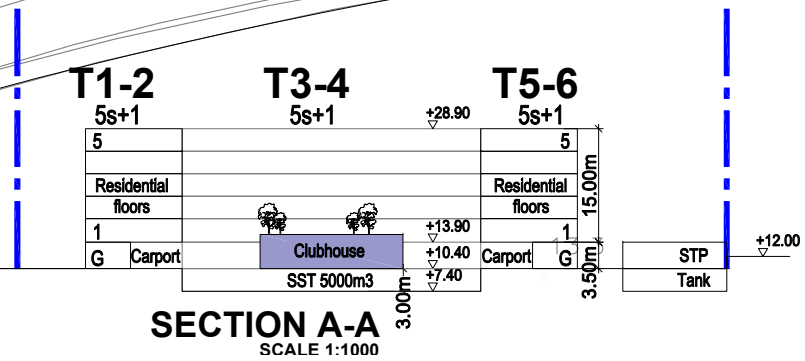
Greg Wong & Associates Ltd.

Proposed Rezoning in D.D. 110, Kam Tin Road, Shek Kong, Yuen Long

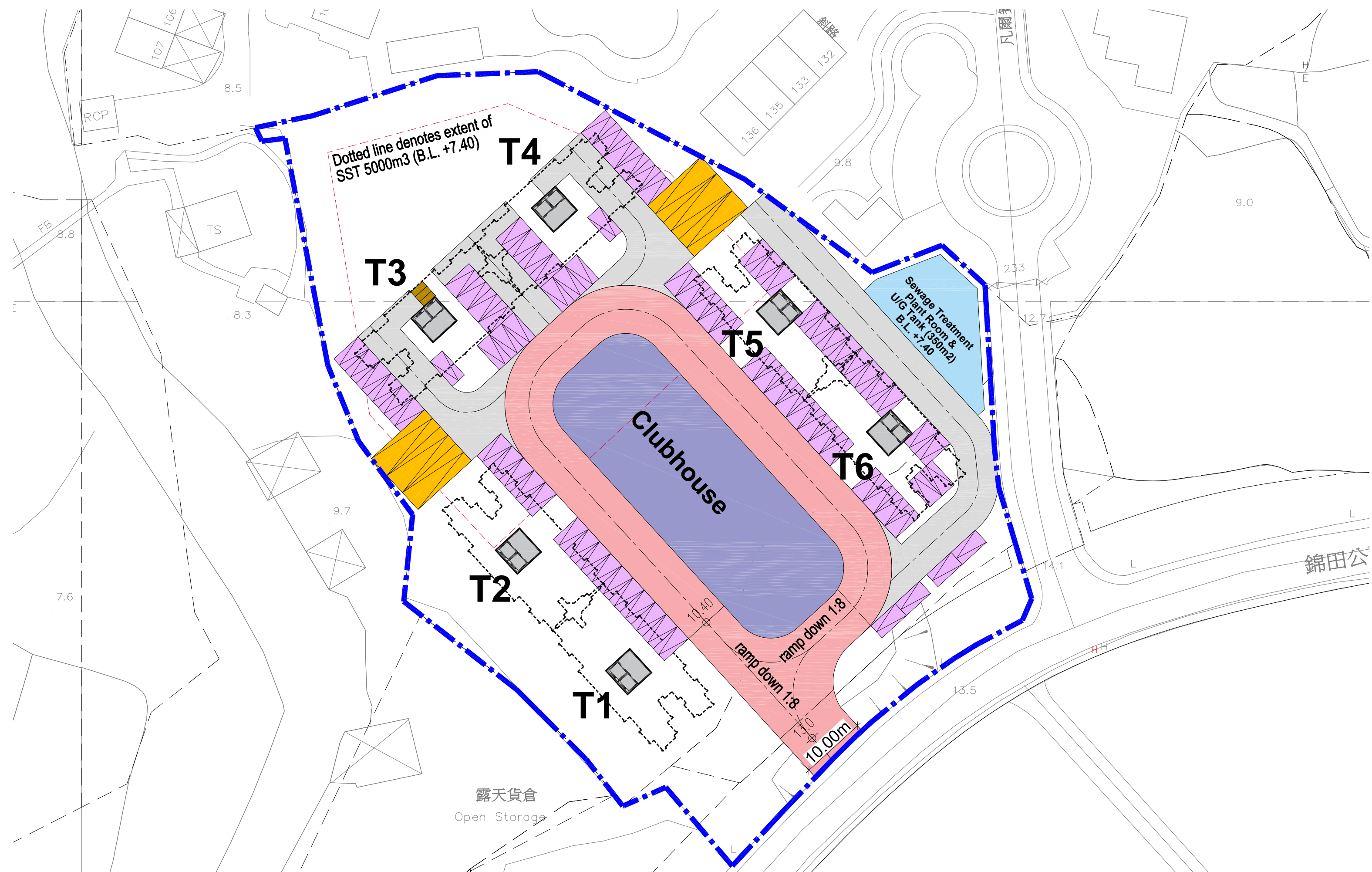
Geotechnical Planning Review Report

Appendix B

Master Layout Plan



Dwg No: 20250309 - shek kong.dwg
Scale 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a



REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

GROUND FLOOR PLAN

Dwg No: 20250309 - shek kong.dwg
Scale: 1 : 500(A3)
Date: 24/04/2025
File Path: p:\dd110, shek kong, kam tin road, yuen long\g. scheme\2025_shek kong new alternative s12a

Appendix C

Slope Feature Information

BASIC INFORMATION

Location: LOT 815 IN DD 110, KAM TIN ROAD, SHEK KONG, YUEN LONG
Date of Formation: post-1977
Date of Construction/ Modification: N/A
Approximate Coordinates: Easting : 826380 Northing : 833610

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Residential building
Distance of Facility from Crest (m): 1
Facility at Toe: District open space
Distance of Facility from Toe (m): 0
Consequence-to-life Category: 1
Remarks: N/A

SLOPE PART

(1) Max. Height (m): 2.8 Length (m): 14.5 Average Angle (deg): 30

WALL PART

(1) Max. Height (m): 4.4 Length (m): 14.5 Face Angle (deg): 90

MAINTENANCE RESPONSIBILITY

Maintenance Type: Private Party: DD110 LOT815RP Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 23-06-2003
Data Source: Districts
Slope Part Drainage: N/A
Wall Part Drainage: N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: N/A Vegetated: 100 Chunam: N/A Shotcrete: N/A Other Cover: N/A
Material Description: Material type: Soil Geology: Decomposite granite
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART



Wall Part (1)

Type of Wall:	Wall Material: Concrete	Wall Location: Wall at toe
Berm:	No. of Berms: N/A	Min. Berm Width (m): N/A
Weepholes:	Size (mm): 50	Spacing (m): 1.5

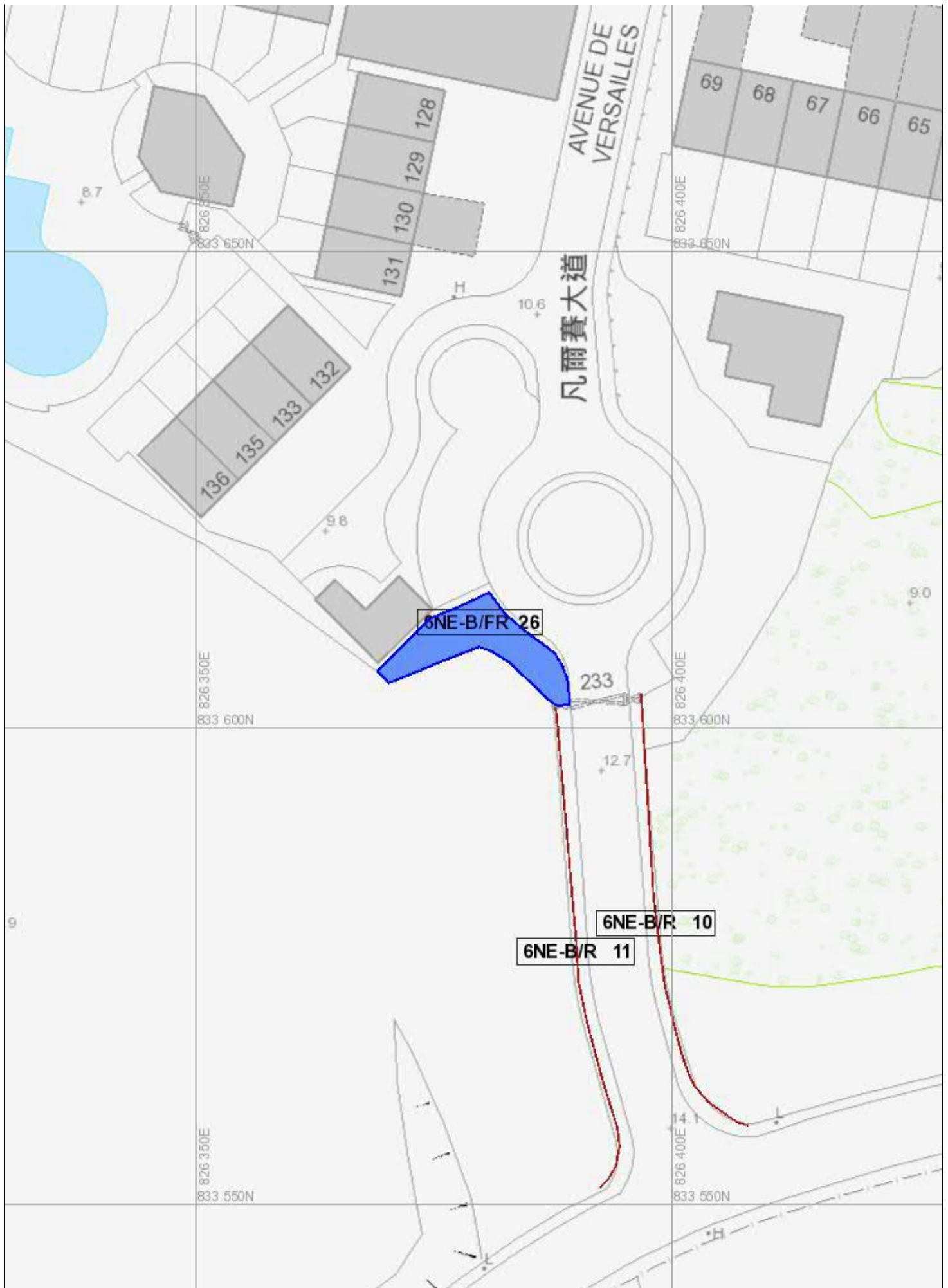
SERVICES

N/A

PHOTO



Photo taken on: 22 July 2003 (Front Elevation of RW-2)



BASIC INFORMATION

Location: LOT 815 IN DD 110, KAM TIN ROAD, SHEK KONG, YUEN LONG
Date of Formation: post-1977
Date of Construction/ Modification: N/A
Approximate Coordinates: Easting : 826389 Northing : 833589

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with low traffic density
Distance of Facility from Crest (m): 0
Facility at Toe: District open space
Distance of Facility from Toe (m): 0
Consequence-to-life Category: 3
Remarks: N/A

SLOPE PART

N/A

WALL PART

(1) Max. Height (m): 5 Length (m): 50 Face Angle (deg): 90

MAINTENANCE RESPONSIBILITY

Maintenance Type: Private Party: DD110 LOT815RP&EXT Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 23-07-2003
Data Source: Basic data interpreted from API techniques
Slope Part Drainage: N/A
Wall Part Drainage: (1) Position: Crest Size(mm): 300

SLOPE PART

N/A

WALL PART

Wall Part (1)
Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A



SERVICES

N/A

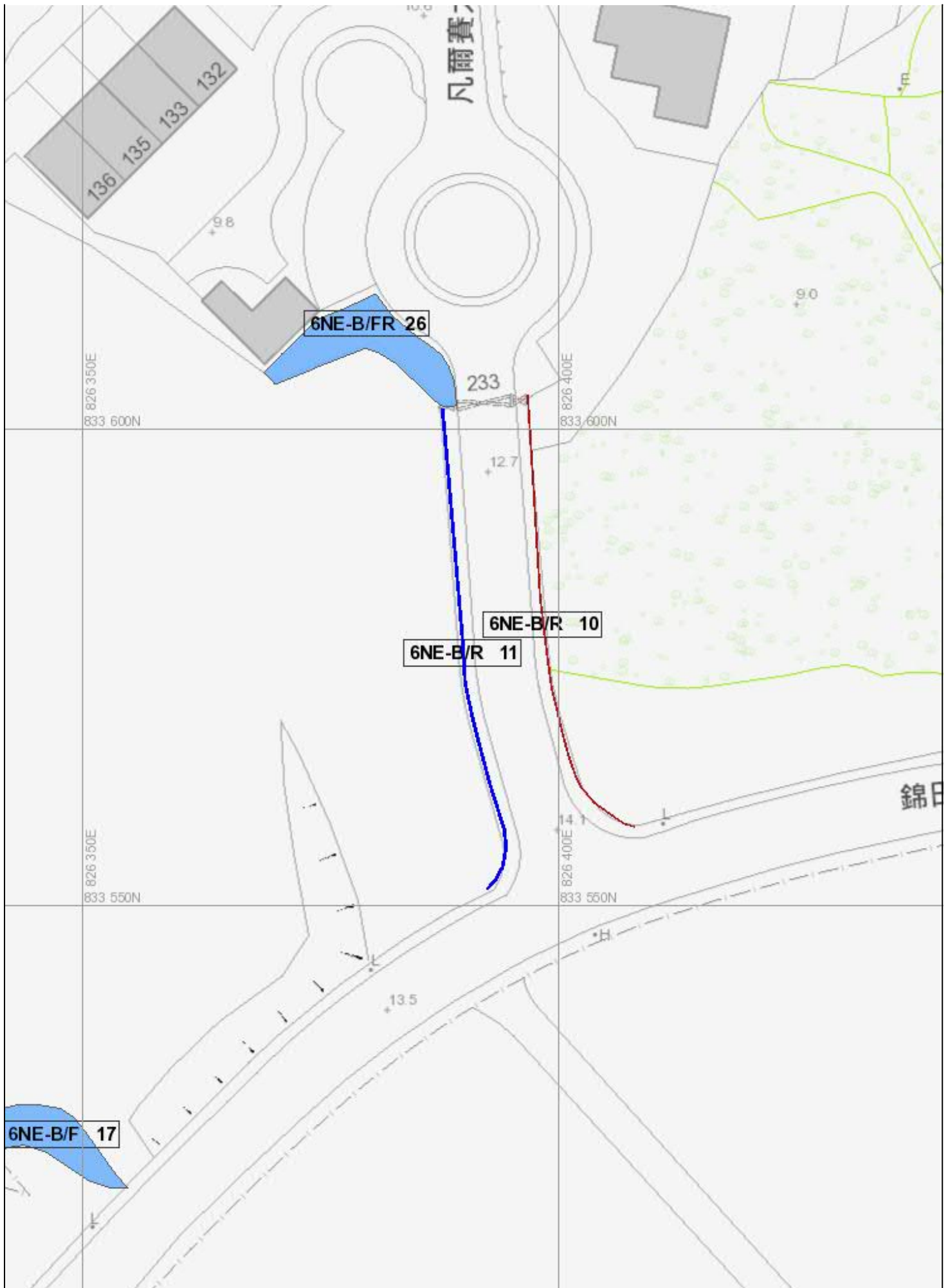
PHOTO



Photo taken on: 22 July 2003 (Front Elevation of the Ramp Structure)



Photo taken on: 22 July 2003 (Front Elevation of the Ramp Structure)



BASIC INFORMATION

Location: No. 250 Kam Tin Road, Yuen Long.
Date of Formation: post-1977
Date of Construction/ Modification: N/A
Approximate Coordinates: Easting : 826304 Northing : 833522

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Open car park
Distance of Facility from Crest (m): 0
Facility at Toe: Remote area or abandoned facilities
Distance of Facility from Toe (m): 0
Consequence-to-life Category: 2
Remarks: N/A

SLOPE PART

(1)	Max. Height (m): 5	Length (m): 150	Average Angle (deg): 45
(2)	Max. Height (m): 5	Length (m): 60	Average Angle (deg): 50

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

Maintenance Type: Mixed	Party: Lands D	Agent: Lands D
Maintenance Type: Mixed	Party: DD110 LOT520RP	Agent: N/A
Maintenance Type: Mixed	Party: DD110 LOT521	Agent: N/A
Maintenance Type: Mixed	Party: DD110 LOT523	Agent: N/A

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 06-09-2004
Data Source: EI(Lands D)
Slope Part Drainage: (1) Position: On slope Size(mm): 325
Wall Part Drainage: N/A

SLOPE PART



Slope Part (1)

Surface Protection (%): Bare: 100 Vegetated: 0 Chunam: 0 Shotcrete: 0 Other Cover: 0

Material Description: Material type: Soil & Rock Geology: N/A

Berm: No. of Berms: N/A Min. Berm Width (m): N/A

Weepholes: Size (mm): N/A Spacing (m): N/A

Slope Part (2)

Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0

Material Description: Material type: Soil & Rock Geology: N/A

Berm: No. of Berms: N/A Min. Berm Width (m): N/A

Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

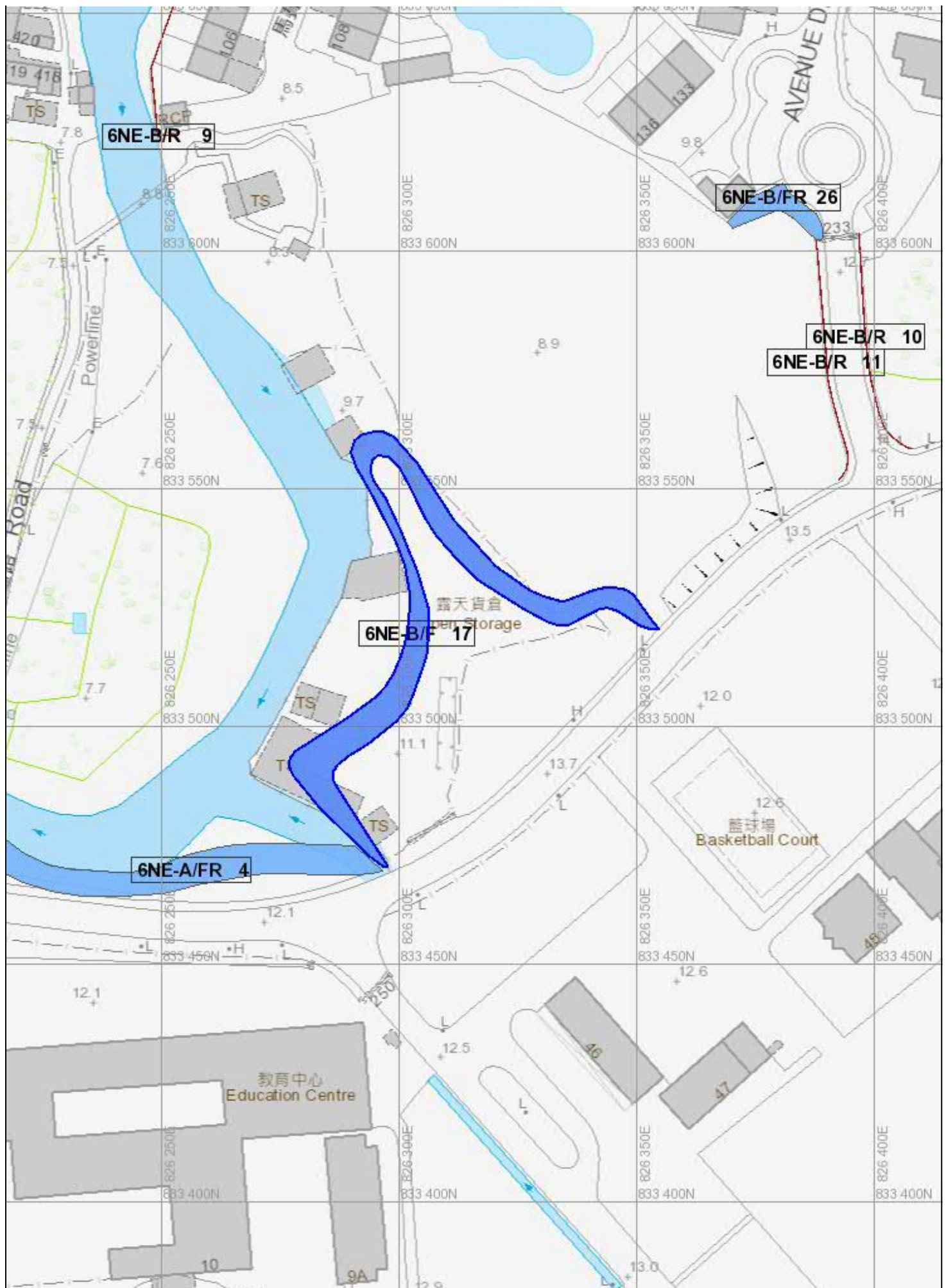
N/A

SERVICES

(1) Utilities Type: Water Main Size (mm): 450 Location: On crest Remark: N/A

PHOTO





Greg Wong & Associates Ltd.

Proposed Rezoning in D.D. 110, Kam Tin Road, Shek Kong, Yuen Long
Geotechnical Planning Review Report

Appendix D

SIMAR

Slope Maintenance Responsibility Report

(6NE-B/FR26)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/FR26		Sub-Division	Not Applicable
	Location	WITHIN DD110 LOT815RP		
	Responsible Lot/Party	DD110 LOT815RP	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 6NE-B/FR26

Location Plan



Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



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Slope Maintenance Responsibility Report

(6NE-B/R11)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/R11		Sub-Division	Not Applicable
	Location	TO THE SOUTH OF DD110 LOT815RP		
	Responsible Lot/Party	DD110 LOT815RP&EXT	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

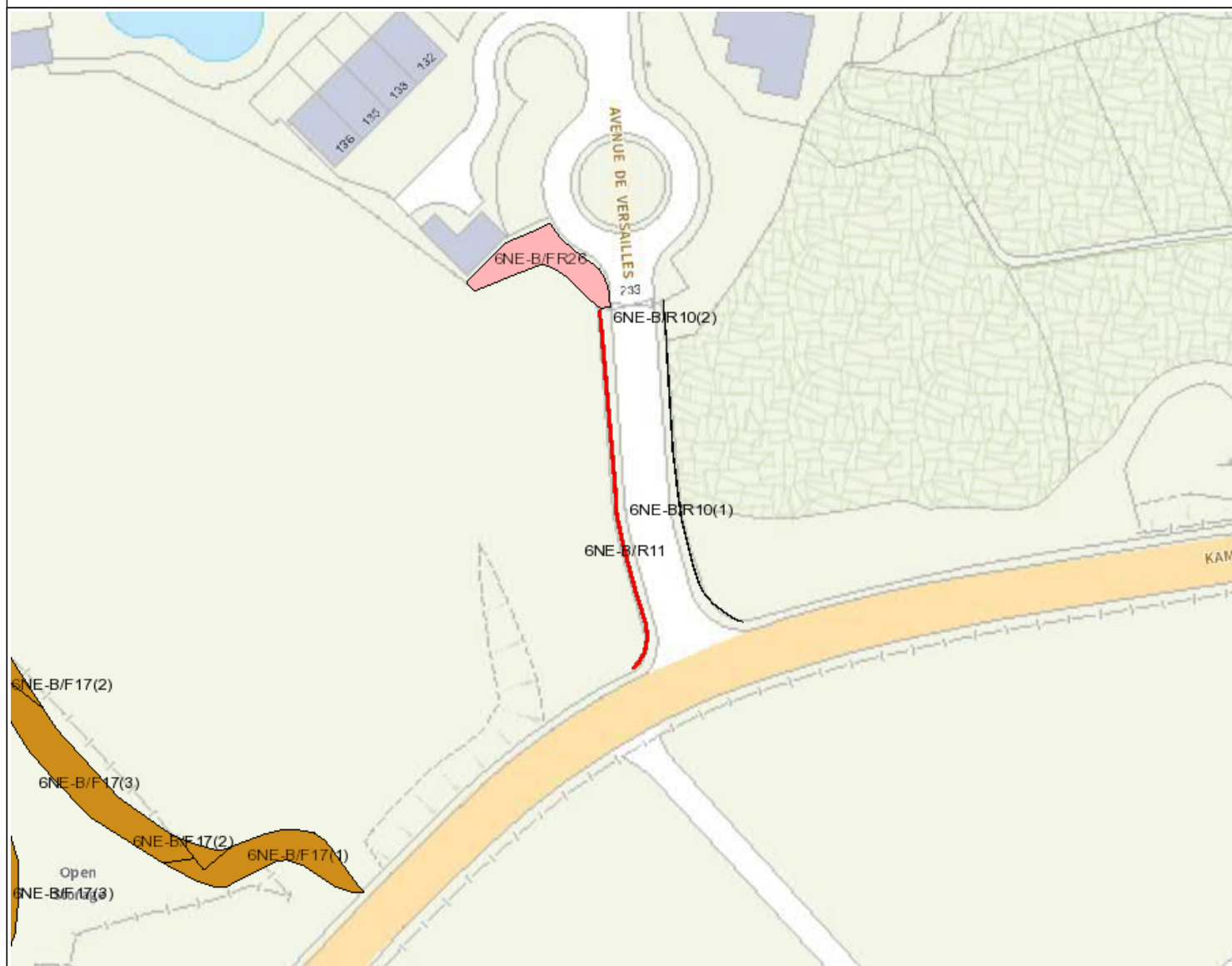
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Search Criteria: 6NE-B/R11

Location Plan



Legend

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Search Criteria: 6NE-B/R11

Slope Maintenance Responsibility Report

(6NE-B/F17)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/F17		Sub-Division	1
	Location	WITHIN DD110 LOTS520 RP, 521, 523 AND GOVERNMENT LAND		
	Responsible Lot/Party	Lands Department	Maintenance Agent	Lands Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- End of Report -

Notes:

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Search Criteria: 6NE-B/F17

Location Plan



Legend

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- Slope(s) Maintained by Government and Private Party/Parties



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Search Criteria: 6NE-B/F17

Slope Maintenance Responsibility Report

(6NE-B/F17)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/F17		Sub-Division	2
	Location	WITHIN DD110 LOTS520 RP, 521, 523 AND GOVERNMENT LAND		
	Responsible Lot/Party	DD110 LOT520RP	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

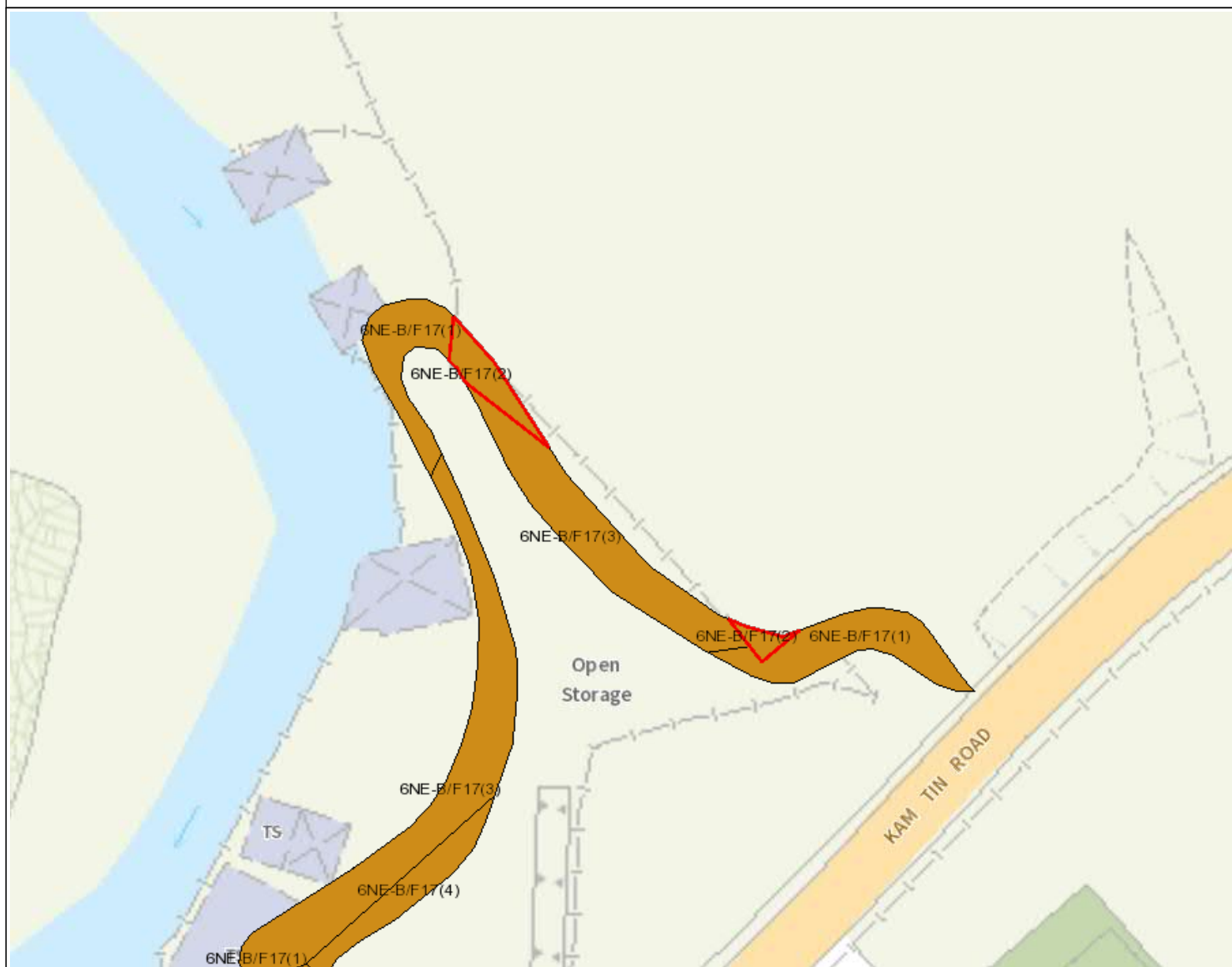
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Search Criteria: 6NE-B/F17

Location Plan



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Search Criteria: 6NE-B/F17

Slope Maintenance Responsibility Report

(6NE-B/F17)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/F17		Sub-Division	3
	Location	WITHIN DD110 LOTS520 RP, 521, 523 AND GOVERNMENT LAND		
	Responsible Lot/Party	DD110 LOT521	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

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Search Criteria: 6NE-B/F17

Location Plan



Legend

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- - - - - Search Location
- Slope(s) Maintained by Government
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- Slope(s) Maintained by Government and Private Party/Parties



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Search Criteria: 6NE-B/F17

Slope Maintenance Responsibility Report

(6NE-B/F17)



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	6NE-B/F17		Sub-Division	4
	Location	WITHIN DD110 LOTS520 RP, 521, 523 AND GOVERNMENT LAND		
	Responsible Lot/Party	DD110 LOT523	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

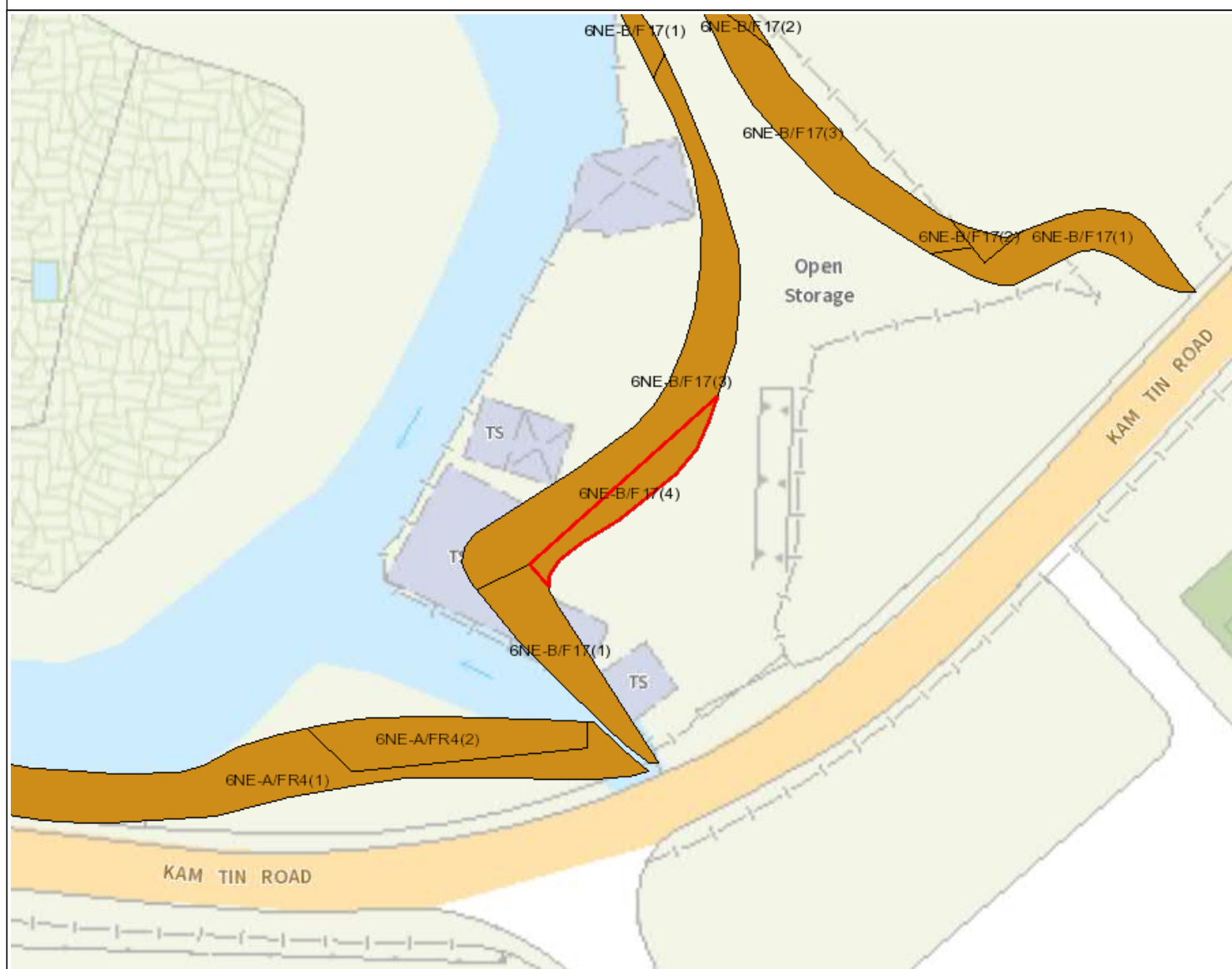
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Search Criteria: 6NE-B/F17

Location Plan



Legend

- Slope Area(s)
- - - - - Search Location
- Slope(s) Maintained by Government
- Slope(s) Maintained by Private Party/Parties
- Slope(s) Maintained by Government and Private Party/Parties



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

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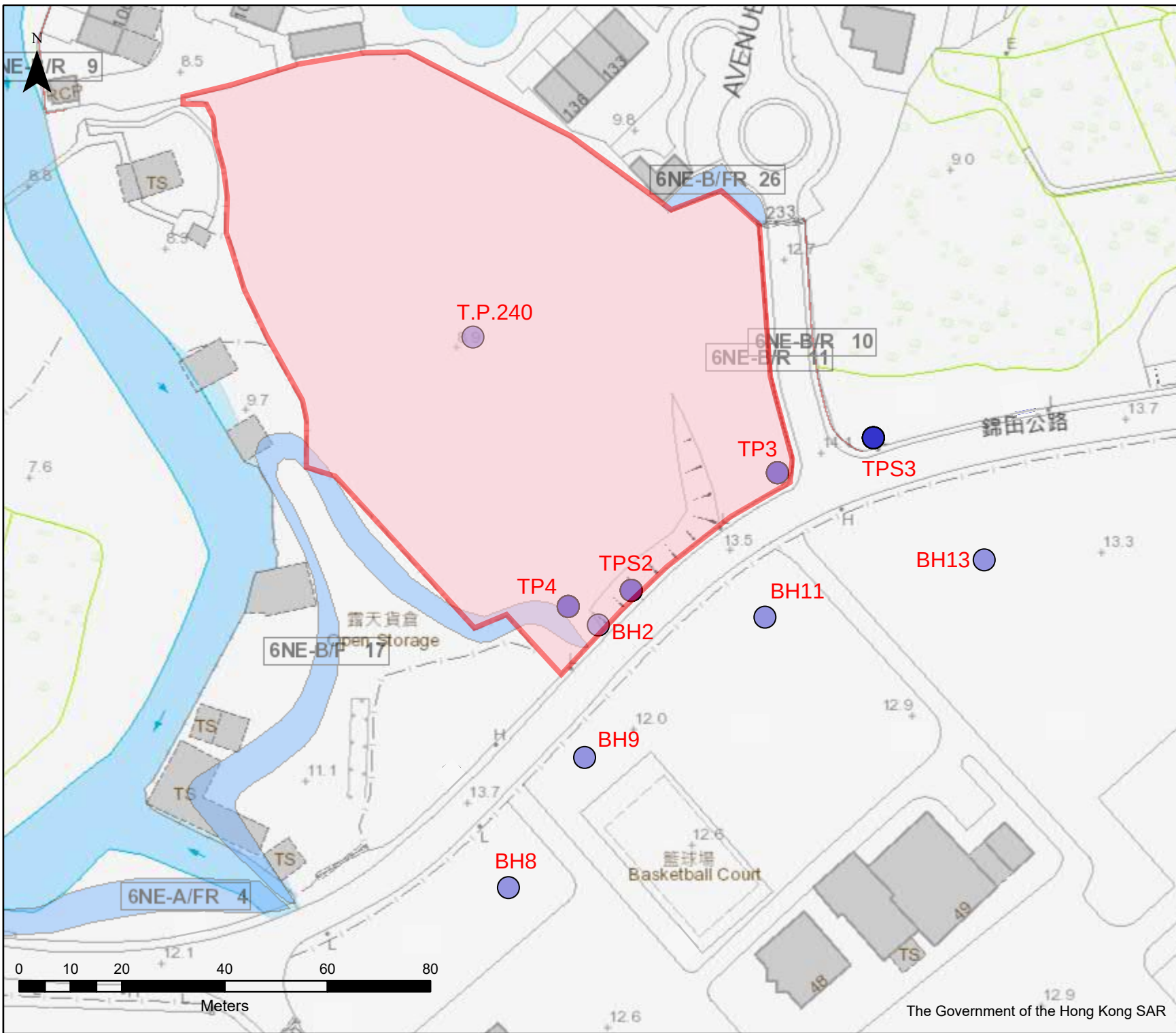
Printed on: 20/10/2022

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Search Criteria: 6NE-B/F17

Appendix E

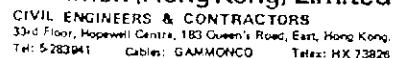
Previous G.I. Information in Vicinity



Man-made Features

- Cut slopes
- Disturbed terrain
- Fill slopes
- NT defence measures
- NT stabilisation measures
- Retaining walls
- Slope Features

Division	
Scale	1:1000
Date	08/07/2025
 GEOTECHNICAL ENGINEERING OFFICE CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT	



T. P. 240

SHEET 1 OF 1





DRILLHOLE RECORD

HOLE NO. BH 2

CONTRACT NO. : GE/2018/06

SHEET 1 OF 2

PROJECT Ground Investigation - New Territories West
Agreement No. CE 78/2017(HY) Upgrading of Remaining Sections of Kam Tin Road and Lam Kam Road - Investigation

METHOD	Rotary	CO-ORDINATES	TASK ORDER NO
MACHINE & NO.	HD19	E 826356.59 N 833524.51	GE/2018/06.53
FLUSHING MEDIUM	Water	ORIENTATION Vertical	DATE : 19/12/2020 to 21/12/2020
			GROUND LEVEL + 12.44 mPD

Drilling Progress	Casing Depth/Size	Water Level (m) Shift start / end	Flush Returns %	TCR %	SCR %	RQD %	FI	Depth of FI / Test	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
19/12/2020	SW									No. Type Depth	+12.44	0.00			Brown (7.5YR 5/4), mottled grey and greyish brown, silty fine to coarse SAND with some angular to subangular fine to coarse gravel sized rock fragments. (FILL)
										A 0.50					
										B 1.00					
										C 1.50					
										D 2.00	+10.44	2.00			
			60	95						1					Firm, brown (7.5YR 5/4), mottled grey, slightly clayey sandy SILT with some angular fine to coarse gravel sized rock fragments. (FILL)
	SW 3.10 PW									2	3.00 3.10				
			60	0						3	3.50 3.60	+8.84	3.60		
			60	50						T2IOI	+6.44	4.00			Grey (N 5), mottled reddish brown, angular to subangular fine to coarse GRAVEL sized rock fragments. (FILL)
			60	70						T2IOI		4.20			
			60	83						T2IOI		4.70			
	PW 5.50 RW		60	88						T2IOI		5.50			
			60	88						T2IOI		6.10			
		0.50m at 12:00	60	64						T2IOI		6.50			
19/12/2020		5.70m at 08:00	60	43						T2IOI		7.50			
21/12/2020			60	50						T2IOI		8.30			
			60	71						T2IOI		9.00			
	HW	2.60m at	60	95				9.50		4	+3.44	9.00		V	Extremely weak, dark brown (7.5YR 3/4), spotted white, completely decomposed coarse ash crystal TUFF. (SANDY SILT)

- Disturbed sample
- Piston sample
- Split spoon sample
- U76 undisturbed sample
- U100 undisturbed sample
- Mazier sample
- SPT liner sample
- Water sample
- Environmental Sample
- Standard penetration test
- In-situ vane shear test
- Permeability test
- Pressuremeter test
- Packer Test
- Acoustic or optical televiwer survey
- Piezometer tip
- Standpipe
- Groundwater Sampling Well
- Vibrating wire piezometer
- Impression packer test

LOGGED S. C. Law
DATE 21/12/2020
CHECKED Y. M. Leung
DATE 24/12/2020

REMARKS
1. An inspection pit was excavated to 2.00m.
2. A water sample was taken at 10.10m.
3. A standpipe was installed to 9.50m.
4. Piezometer buckets were installed in standpipe from 0.50 m to 7.00m depth at 0.50m intervals.

[illegible]



Contract No. :
GE/2018/06

Project : Ground Investigation - New Territories West
Agreement No. CE 78/2017(HY) Upgrading of Remaining Sections of Kam Tin Road and Lam Kam Road -
Investigation

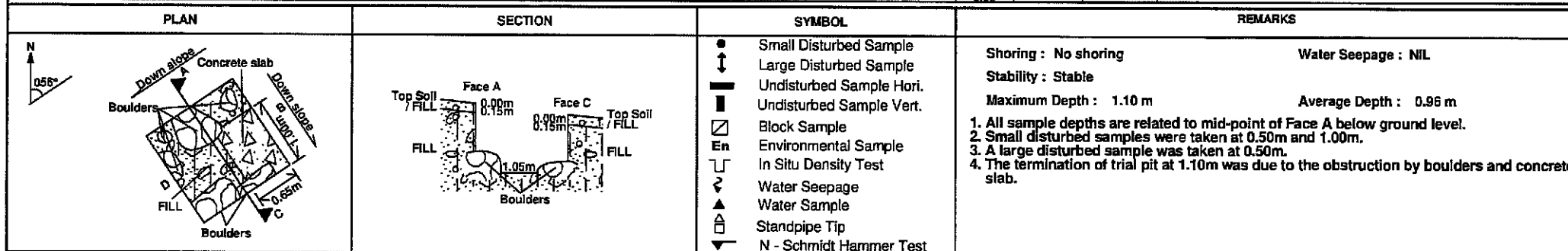
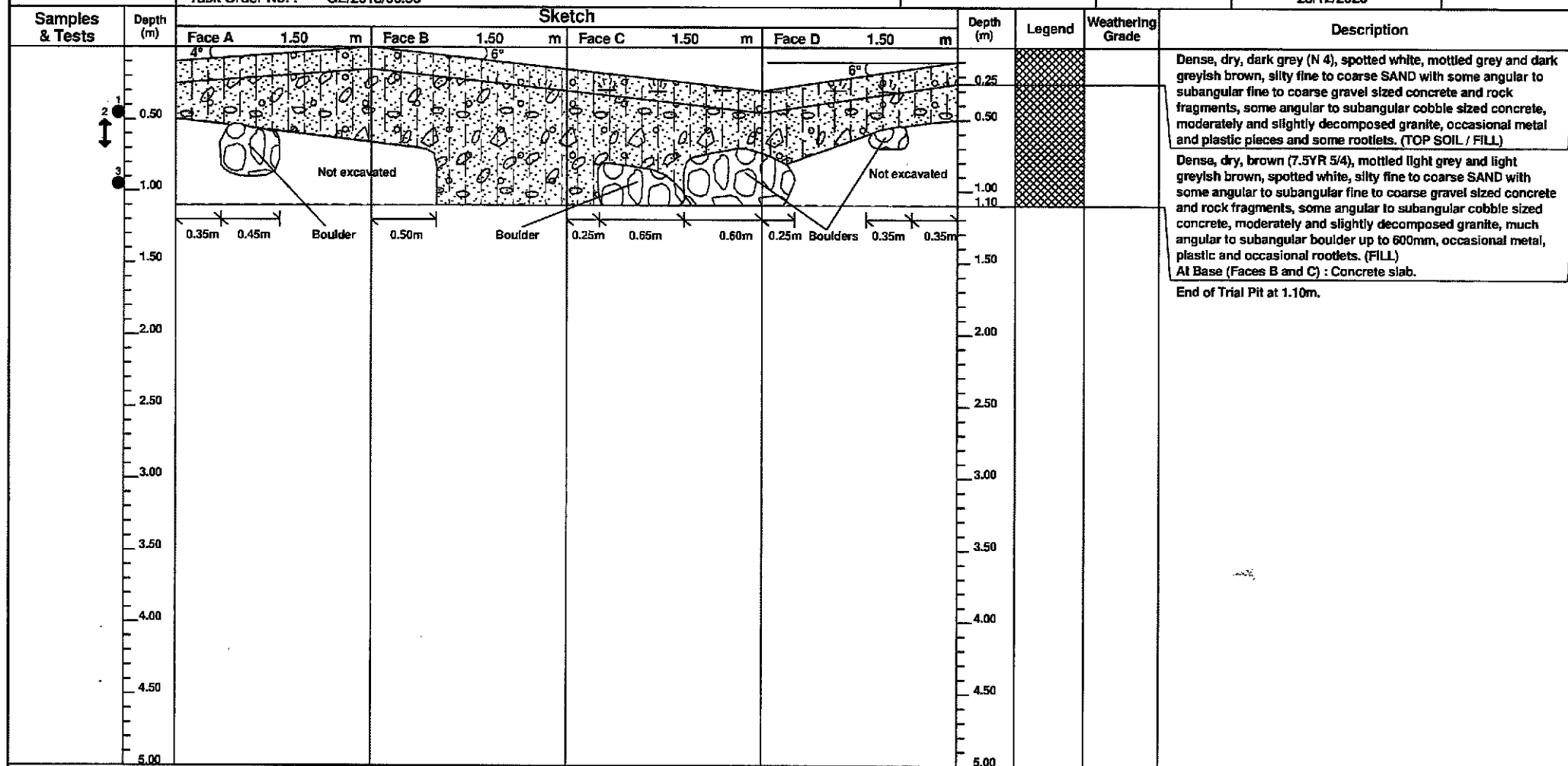
Task Order No. : GE/2018/06.53

LOGGED BY : S. C. Law
DATE : 18/12/2020
CHECKED BY : Y. M. Leung
DATE : 21/12/2020

CO-ORDINATES :
E 826350.73
N 833528.11

GROUND LEVEL : +9.46 mPD
EXCAVATION DATES :
17/12/2020
BACKFILL DATES :
28/12/2020

TRIAL PIT NO.
TP 4



TRIAL PIT RECORD



FUGRO
GEOTECHNICAL
SERVICES LTD

Project : PWP Item No. 820TH, Upgrading of Remaining Sections of
Kam Tin Road and Lam Kam Road

Logged by : W.P. Yiu
Date logged : 19/06/2008
Checked by : A.B. Hollinshead
Date checked : 21/06/2008

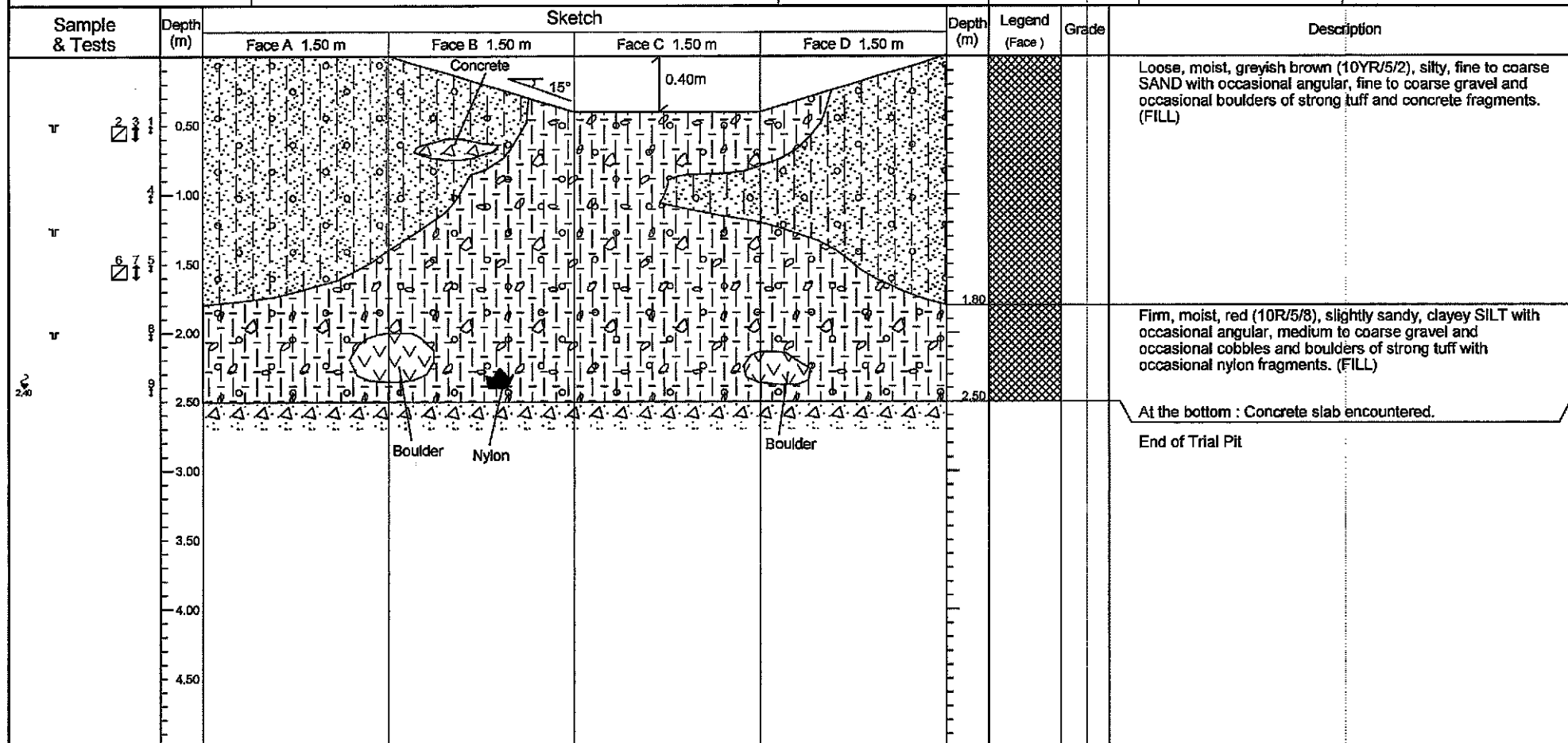
Co-ordinates :
E 826391.44 m
N 833554.12 m
Ground Level :
+12.76 mPD

Excavation Dates:
16/06/2008 to 18/06/2008
Backfill Date:
03/07/2008

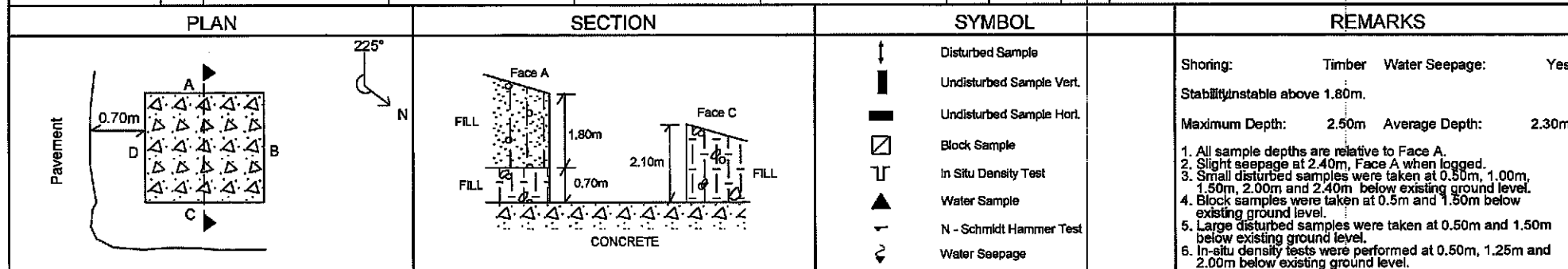
Trial Pit No.:
TP3

Contract No.: GE/2008/04

WORKS ORDER No.: GE/2008/04.5

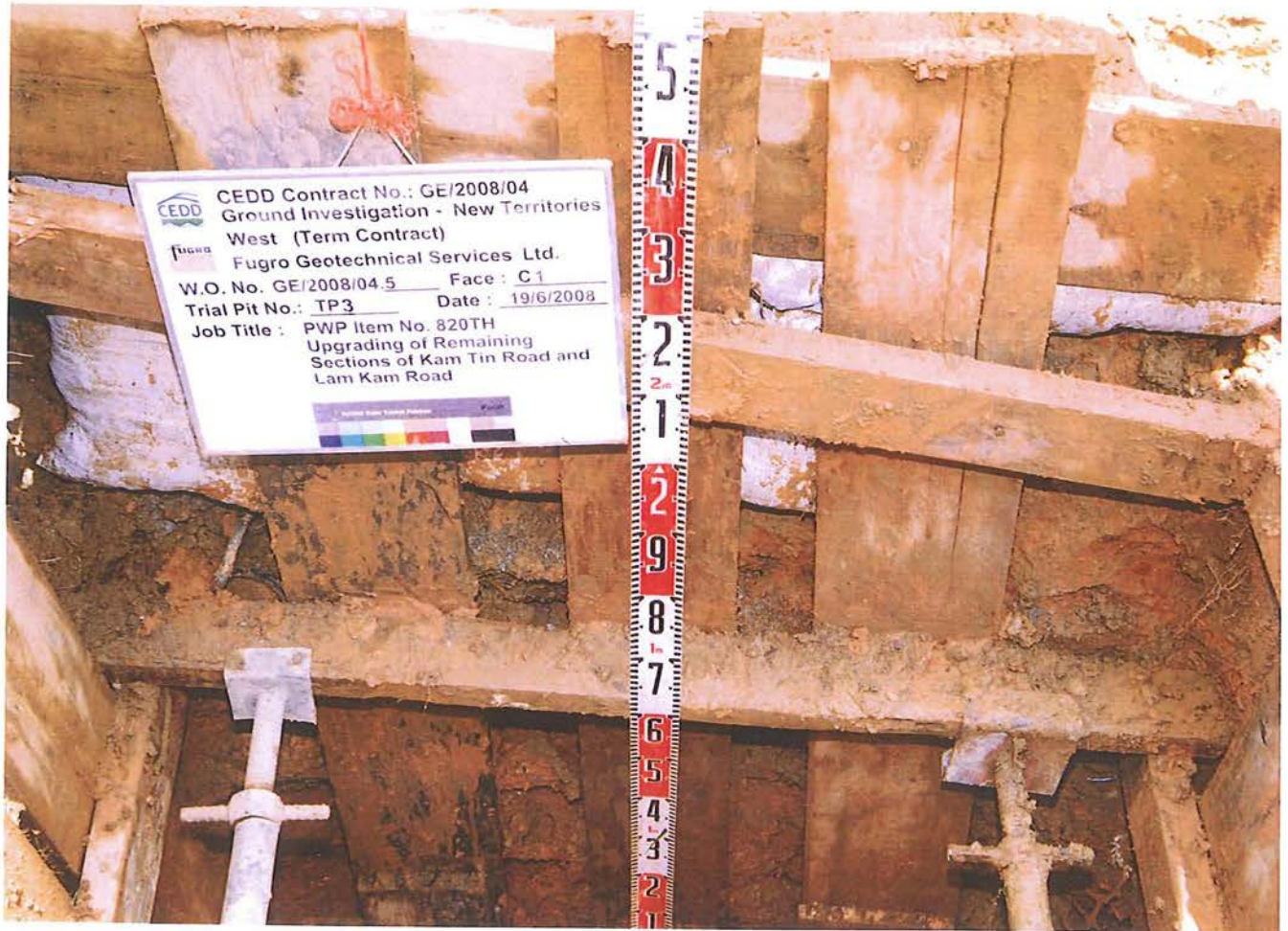


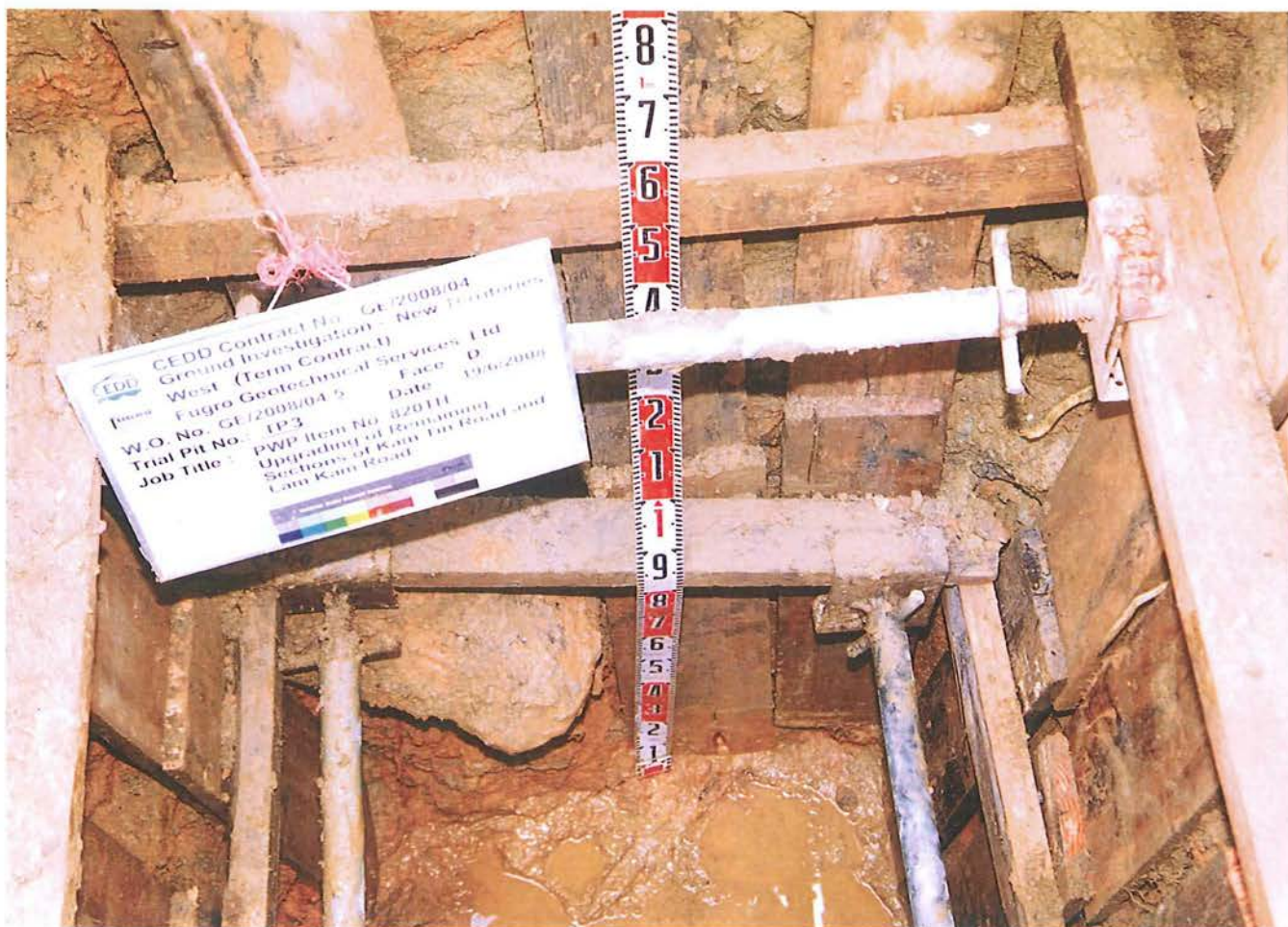
TRIAL PIT RECORD



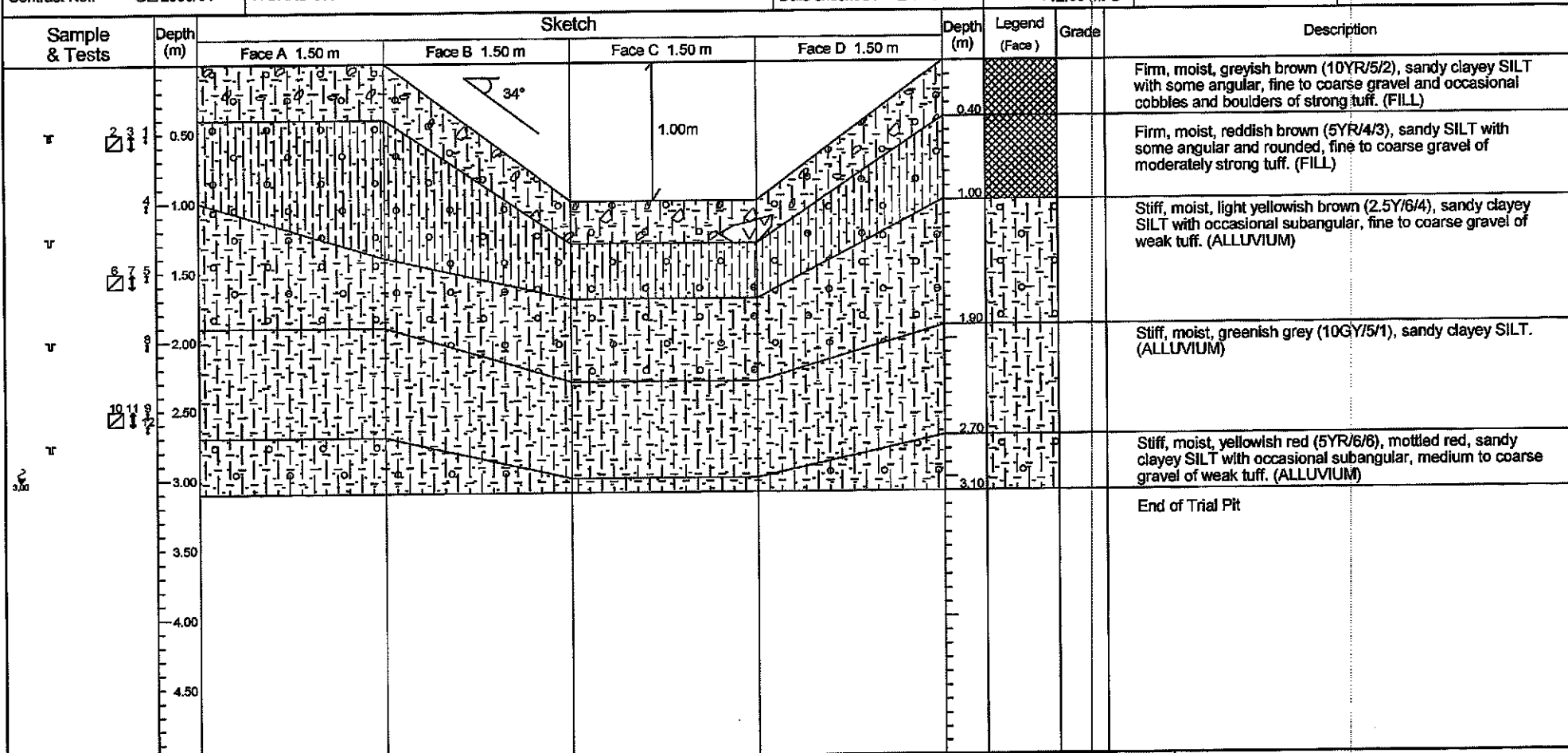




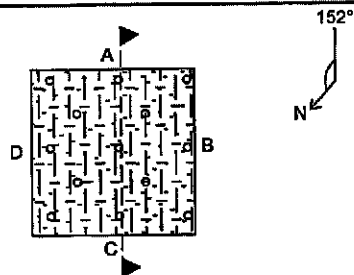




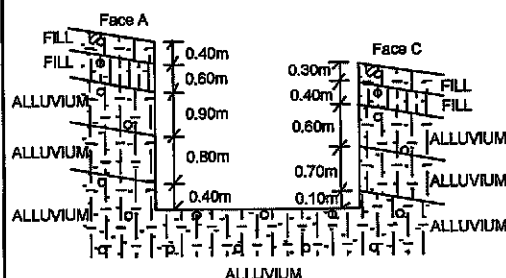




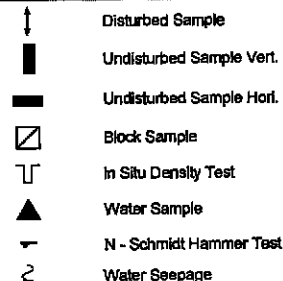
PLAN



SECTION

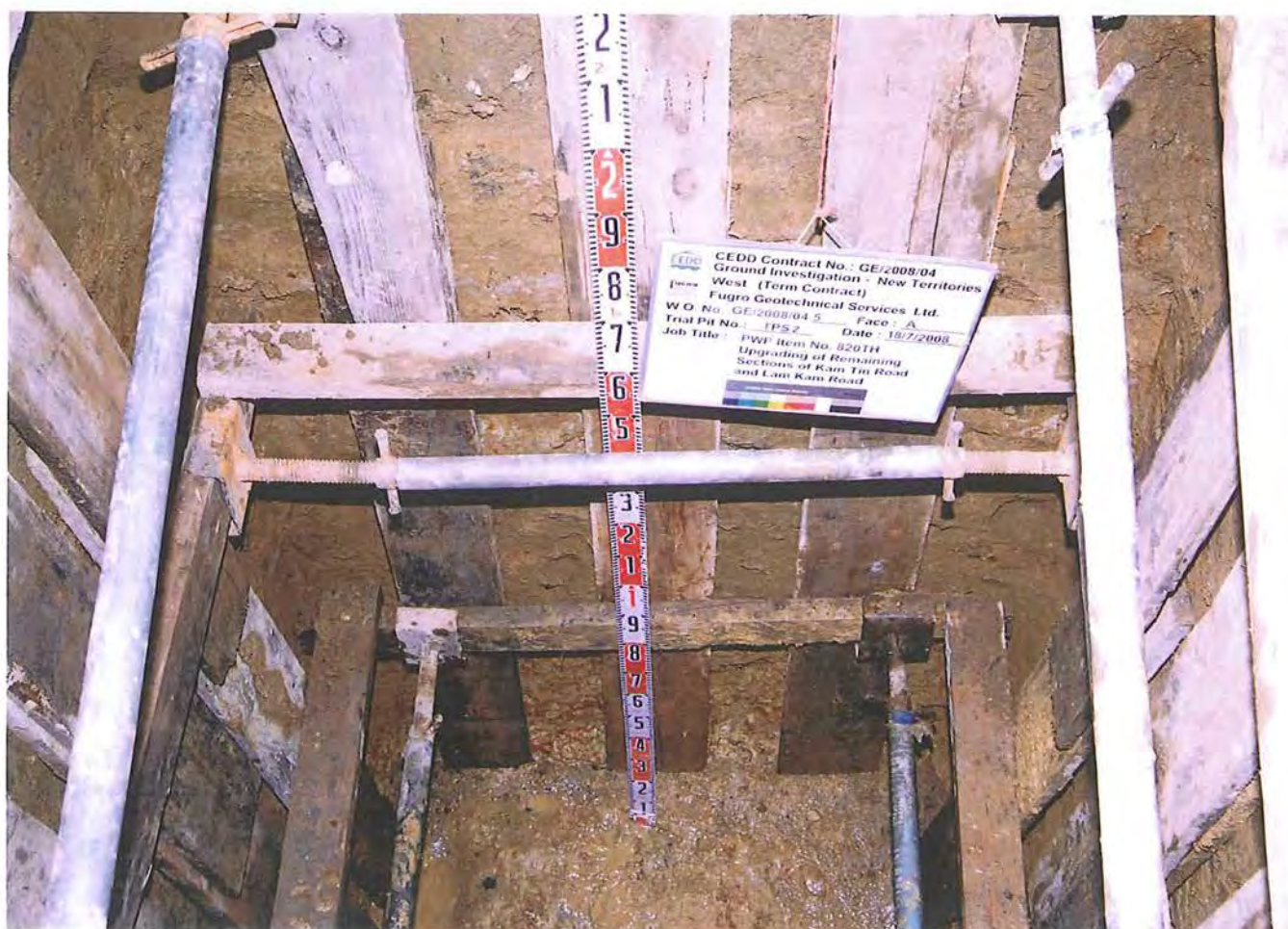


SYMBOL



REMARKS

Shoring: Timber Water Seepage: Yes
Stability: Stable
Maximum Depth: 3.10m Average Depth: 2.60m
1. All sample depths are relative to Face A.
2. Slight seepage at 3.00m, Face A when logged.
3. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m, 2.00m, 2.50m and 2.60m below existing ground level.
4. Block samples were taken at 0.5m, 1.50m and 2.50m below existing ground level.
5. Large disturbed samples were taken at 0.50m, 1.50m and 2.50m below existing ground level.
6. In-situ density tests were performed at 0.50m, 1.25m, 2.00m and 2.75m below existing ground level.
7. A standpipe was installed at 3.10m.











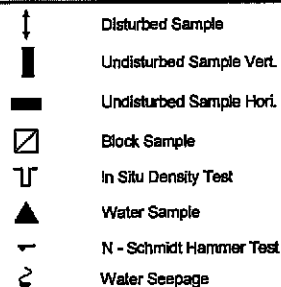
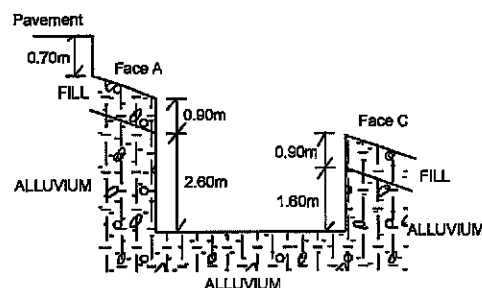
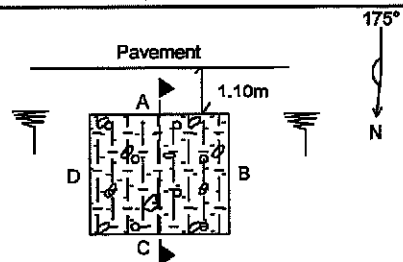
Sample & Tests	Depth (m)	Sketch				Depth (m)	Legend (Face)	Grade	Description
		Face A 1.50 m	Face B 1.50 m	Face C 1.50 m	Face D 1.50 m				
1	0.50					0.50			Firm, moist, greyish brown (10YR/5/2), sandy, slightly clayey SILT with some subangular, medium to coarse gravel and occasional cobbles and boulders of moderately strong tuff. (FILL)
2	1.00					1.00			Stiff, moist, reddish yellow (5YR/6/6), mottled black and red, slightly sandy, clayey SILT with some subrounded to rounded, medium to coarse gravel and occasional cobbles of moderately strong tuff and quartz. (ALLUVIUM)
3	1.50					1.50			
4	2.00					2.00			
5	2.50					2.50			
6	3.00					3.00			End of Trial Pit
7	3.50					3.50			
8	4.00								
9	4.50								

PLAN

SECTION

SYMBOL

REMARKS



Shoring: Yes Water Seepage: Yes
Stability: Stable
Maximum Depth: 3.50m Average Depth: 3.00m
1. All sample depths are relative to Face A.
2. Slight seepage at 3.20m, Face A when logged.
3. Small disturbed samples were taken at 0.50m, 1.00m, 1.50m, 2.00m, 2.50m and 3.00m below existing ground level.
4. Block samples were taken at 0.50m, 1.50m and 2.50m below existing ground level.
5. Large disturbed samples were taken at 0.50m, 1.50m and 2.50m below existing ground level.
6. In-situ density tests were performed at 0.50m, 1.25m, 2.00m and 2.75m below existing ground level.
7. A standpipe was installed at 2.94m.

TRIAL PIT RECORD











CONTRACT NO.
GC/87/07

DRILLHOLE RECORD

W.O. NO. PW7/2/23.29
HOLE NO. BH8
DATE from 22-12-87 to 23-12-87

PROJECT British Military Hospital at Shek Kong

METHOD Rotary

CO-ORDINATES
E 26339.10
N 33473.44

ROCK COREBIT T.C. & Diamond

MACHINE & NO. DR77

HOLE DIA. PX, HX, T2101, TNW

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL +12.43 m.p.d.

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
22/12/87											0.00				
										+10.93	1.50				Medium dense, brown, silty fine to coarse SAND with gravel(FILL)
								N=20	1		1.95				Very stiff, yellow, clayey SILT (ALLUVIUM)
									M		2.50				
									2		3.50				Medium dense, light greyish white, clayey fine to medium SAND with gravel (ALLUVIUM)
								N=20	3		3.95				
									M		4.50				
									4		5.50				Very stiff, yellow, clayey sandy SILT with gravel (ALLUVIUM)
								N=16	5		5.95				
									M		6.50				
									6		6.70				
										+4.93	7.50				COBBLES in gravelly silty sand matrix (ALLUVIUM)
								N=27	7		7.95			V A	Medium dense, brown mottled white, silty fine SAND (C.W. GRANODIORITE)
									M		8.50				
								N=14	8		9.50			V A	Medium dense, yellowish brown mottled white, very silty fine SAND (C.W. GRANODIORITE)
									9		9.95				

● SMALL DISTURBED SAMPLE

L S.P.T. LINER SAMPLE

▼ WATER LEVEL

M MAZIER SAMPLE

† BULK DISTURBED SAMPLE

▲ WATER SAMPLE

↓ STANDARD PENETRATION TEST

■ UNDISTURBED SAMPLE

— PERMEABILITY TEST

HE HAND EXCAVATION

LOGGED BY:

DRAWN BY:

CHECKED BY:

REMARKS:

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 2 of 3

CONTRACT NO. <u>GC/87/07</u>		DRILLHOLE RECORD		W.O. NO. <u>PW7/2/23.29</u>	
				HOLE NO. <u>BH8</u>	
				DATE from <u>22-12-87</u> to <u>23-12-87</u>	
PROJECT <u>British Military Hospital at Shek Kong</u>					
METHOD <u>Rotary</u>		CO-ORDINATES E <u>26339.10</u> N <u>33473.44</u>		ROCK COREBIT <u>T.C. & Diamond</u>	
MACHINE & NO. <u>DR77</u>				HOLE DIA. <u>PX,HX,T2101, TNW</u>	
FLUSHING MEDIUM <u>Water</u>		ORIENTATION <u>Vertical</u>		GROUND LEVEL <u>+12.43</u> m.P.D.	

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
22/12/87											10.00				
											10.50	x x	V	A	Ditto (C.W.Gd.)
		2.72m 13:00		98					M			x x			
									10		11.50	x x			Medium dense,
									11		11.95	x x			brownish grey
								N=20			12.50	x x			
				98					M			x x	V	A	mottled white,
									12		13.50	x x			
									13		13.95	x x			very silty fine
								N=22			14.50	x x			SAND
	HX		80	98					M			x x			(C.W.GRANODIORITE)
									14		15.50	x x			
									15		15.95	x x			Dense, brownish grey
								N=35			16.50	x x			mottled white, very silty
									M			x x			fine SAND
				98								x x			(C.W. GRANODIORITE)
									16		17.50	x x	V	A	Very dense, grey
									17		17.95	x x			mottled white, silty
		3.10m 18:00						N=66			18.50	x x			fine to medium SAND
22/12/87										-6.07		x x			with rock fragments
									M			x x			(H.W. GRANODIORITE)
23/12/87		3.98m 8:00		85								x x	IV	B	
			70						18		19.50	x x			
									19		19.54	x x	V/III	C	
	T2101			55	0	0	F (200/40mm)				20.00	x x			Details as next page

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▼ WATER LEVEL M MAZIER SAMPLE
 † BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST ■ UNDISTURBED SAMPLE
 —●— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Waf
 REMARKS: F : Fractured DRAWN BY: Waf CHECKED BY: Ji

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 3 of 3

CONTRACT NO. <u>GC/87/07</u>				DRILLHOLE RECORD				W.O. NO. <u>PW7/2/23.29</u>			
								HOLE NO. <u>BH8</u>			
								DATE from <u>22-12-87</u> to <u>23-12-87</u>			
PROJECT <u>British Military Hospital at Shek Kong</u>											
METHOD <u>Rotary</u>				CO-ORDINATES E <u>26339.10</u> N <u>33473.44</u>				ROCK COREBIT <u>T.C. & Diamond</u>			
MACHINE & NO. <u>DR77</u>								HOLE DIA. <u>PX,HX,T2101, TNW</u>			
FLUSHING MEDIUM <u>Water</u>				ORIENTATION <u>Vertical</u>				GROUND LEVEL <u>+12.43</u> m.P.D.			

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
23/12/87	T2101			55	0	0	F				20.00	x x			Weak to moderately strong, grey mottled white, coarse grained, highly to moderately weathered GRANODIORITE with very closely to closely spaced weathered and some iron stained joints; fractured (H/M.W.GRANODIORITE)
											21.00	x x			
				77	11	0	F				21.90	x x	IV/III	C	
											22.50	x x			
			70	100	25	0	18.9			-10.60	23.03	x x			
	TNW			100	98	96	4.5					x x			Strong, grey mottled white, coarse grained, slightly weathered GRANODIORITE with closely to medium spaced some manganese stained joints (S.W. GRANODIORITE)
23/12/87		3.25m										x x			
		13:00								-12.14	24.57	x x	II	D	
															Bottom of Hole

● SMALL DISTURBED SAMPLE
L S.P.T. LINER SAMPLE
▼ WATER LEVEL
M MAZIER SAMPLE

⬆ BULK DISTURBED SAMPLE
▲ WATER SAMPLE
↓ STANDARD PENETRATION TEST
■ UNDISTURBED SAMPLE

— PERMEABILITY TEST
HE HAND EXCAVATION

LOGGED BY: Wong
 CHECKED BY: 70

REMARKS: F : Fractured

G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH 8

DEPTH: 0.00 M. TO 23.03 M.

DATE: 29-12-87

BOX 1 OF 2



0

0.5m

1m



G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH8

DEPTH: 23.03 m. TO 24.57 m.

DATE: 29-12-87

BOX 2 OF 2



23.03

24.57
END

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 1 of 3

CONTRACT NO.
GC/87/07

DRILLHOLE RECORD

W.O. NO. PW7/2/23.29
HOLE NO. BH9
DATE from 23-12-87 to 25-12-87

PROJECT British Military Hospital at Shek Kong

METHOD Rotary

CO-ORDINATES
E 26353.92
N 33498.75

ROCK COREBIT T.C. & Diamond

MACHINE & NO. DR77

HOLE DIA. PX,HX,T2101, TNW

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL +12.18 m.p.d.

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
23/12/87											0.00				Medium dense, brown, silty SAND with gravel (FILL)
				Inspection Pit							10.68				
								N=10	1		1.95				Medium dense, dark brown, silty fine to medium SAND(ALLUVIUM)
									M		2.50				Very stiff, reddish yellow mottled grey, clayey sandy SILT with gravel (ALLUVIUM)
	PX			80					2		3.50				
								N=24	3		3.95				
23/12/87		3.04m 18:00									4.50				
24/12/87		Dry 8:00		70					M		5.30				
									4						
				80							5.90				COBBLES & GRAVEL in brown silty sand matrix (ALLUVIUM)
	T2101			58							6.50				
				75					M		7.10				
				55					5		7.50				
	T2101			88							7.95				Medium dense, dark brown, silty fine to medium SAND with gravel (ALLUVIUM)
								N=36	6		8.50				
									M7		8.80				
				0							9.50				COBBLES in sandy silt matrix (ALLUVIUM)
	T2101			36				N=9	8		9.95				Details as next page

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▼ WATER LEVEL M MAZIER SAMPLE
 ↑ BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST ■ UNDISTURBED SAMPLE
 —●— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Wong CHECKED BY: 70
 REMARKS:

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 2 of 3

CONTRACT NO. GC/87/07		DRILLHOLE RECORD										W.O. NO. PW7/2/23.29		HOLE NO. BH9		DATE from 23-12-87 to 25-12-87	
PROJECT British Military Hospital at Shek Kong																	
METHOD Rotary						CO-ORDINATES E 26353.92 N 33498.75						ROCK COREBIT T.C. & Diamond					
MACHINE & NO. DR77												HOLE DIA. PX,HX,T2101, TNW					
FLUSHING MEDIUM Water						ORIENTATION Vertical						GROUND LEVEL +12.18 m.P.D.					
Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	RQD	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description		
24/12/87											10.00						
										+1.68	10.50						Stiff, yellowish brown, sandy SILT with gravel (ALLUVIUM)
		3.07m 12:00		98					M								
									9		11.50						
		3.50m 13:00						N=22	10		11.95			V	A		Medium dense, brownish grey, very silty fine
											12.50						
				98					M								SAND
									11		13.50						(C.W.G _d)
									12		13.95						
			80					N=20			14.50						
				98					M								Dense, greenish brown, very silty fine SAND (C.W.G _d)
									13		15.50			V	A		
									14		15.95						
								N=52			16.50						Weak to moderately strong, brownish grey, coarse grained, highly to moderately weathered GRANODIORITE; fractured (H/M.W.G _d)
				30					M	4.82	17.00						
				73	11	11	F							IV/III	B		Moderately strong, brownish grey, coarse grained, moderately weathered GRANODIORITE with very closely to medium spaced manganese stained joints (M.W.G _d)
										-5.87	18.05						
											18.81			III	C		
24/12/87		3.17m 18:00		100	47	47	6.6										
											19.05						
25/12/87		4.07m 8:00		100	47	30	15.4			-7.07	19.25						
			70											II	D		Details as next page

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▼ WATER LEVEL

⬆ BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST

— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Wong

REMARKS: F : Fractured DRAWN BY: Wong CHECKED BY: JW

M MAZIER SAMPLE ■ UNDISTURBED SAMPLE

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 3 of 3

CONTRACT NO. <u>GC/87/07</u>				DRILLHOLE RECORD				W.O. NO. <u>PW7/2/23.29</u>							
								HOLE NO. <u>BH9</u>							
								DATE from <u>23-12-87</u> to <u>25-12-87</u>							
PROJECT <u>British Military Hospital at Shek Kong</u>															
METHOD <u>Rotary</u>				CO-ORDINATES E <u>26353.92</u> N <u>33498.75</u>				ROCK COREBIT <u>T.C. & Diamond</u>							
MACHINE & NO. <u>DR77</u>								HOLE DIA. <u>PX,HX,T2101, TNW</u>							
FLUSHING MEDIUM <u>Water</u>				ORIENTATION <u>Vertical</u>				GROUND LEVEL <u>+12.18 m.P.D.</u>							
Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
25/12/87	TNW		70	100	47	30	15.4				20.00				
				100	78	69	7.9				20.09	X X			Strong, grey speckled white & green, coarse grained, slightly weathered GRANODIORITE with very closely to medium spaced manganese & some iron stained joints (S.W.Gd)
				100	93	93	4.0				21.61	X X			
25/12/87		3.26m 11:00								-10.44	22.62	X X			
															Bottom of Hole

● SMALL DISTURBED SAMPLE

⬆ BULK DISTURBED SAMPLE

— PERMEABILITY TEST

L S.P.T. LINER SAMPLE

▲ WATER SAMPLE

HE HAND EXCAVATION

▼ WATER LEVEL

⬇ STANDARD PENETRATION TEST

LOGGED BY: Woy

DRAWN BY: Woy

M MAZIER SAMPLE

■ UNDISTURBED SAMPLE

CHECKED BY: 70

REMARKS:

G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH9

DEPTH: 0.00 M. TO 20.09 M.

DATE: 29-12-87

BOX 1 OF 2

0

0.5m

1m



G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH 9

DEPTH: 20.09 m. TO 22.62 m.

DATE: 29-12-87

BOX 2 OF 2

0

0.5m

1m

20.09

21.61

22.62
END

SITE INVESTIGATION DEPARTMENT

Page 1 of 3

CONTRACT NO. GC/87/07						DRILLHOLE RECORD						W.O. NO. PW7/2/23.29 HOLE NO. BH11 DATE from 25-12-87 to 28-12-87					
PROJECT British Military Hospital at Shek Kong																	
METHOD Rotary						CO-ORDINATES E 26389.00 N 33526.03						ROCK COREBIT T.C. & Diamond					
MACHINE & NO. DR75												HOLE DIA. PX,HX,T2101,TNW					
FLUSHING MEDIUM Water						ORIENTATION Vertical						GROUND LEVEL +12.65 m.p.d.					
Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	RQD	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description		
25/12/87											0.00						
										+11.15	1.50	*			Medium dense, brown, silty fine to coarse SAND with gravel (FILL)		
								N=11	1.		1.95	- *			Medium dense, brownish yellow, clayey silty fine to medium SAND with gravel (ALLUVIUM)		
	T2101										2.50	* -					
	PX			67							3.50	OO OO OO			COBBLES in gravelly silty sand matrix (ALLUVIUM)		
								N=44	2.		3.95	x -			Medium dense, pinkish brown, slightly clayey silty fine to medium SAND with gravel (ALLUVIUM)		
									M		4.50	- x					
			85	100					3.		5.50	- x					
								N=8	4.		5.95	x -					
											6.50	- o					
									M			- x			Medium dense, brownish yellow, slightly clayey silty fine to medium SAND with gravel (ALLUVIUM)		
									5.		7.50	x -					
	HX							N=18	6.		7.95	- x					
										+4.15	8.50	x -					
									M			X X			Medium dense,brownish grey speckled white & green, very silty fine SAND (C.W.GRANODIORITE)		
		1.29m						N=28	7.		9.50	X X V	A				
		12:00									9.95	X X					
				100					8.		10.00	X X					

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▽ WATER LEVEL M MAZIER SAMPLE
 † BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST ■ UNDISTURBED SAMPLE
 —●— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Wong CHECKED BY: Ji
 REMARKS:

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 2 of 3

CONTRACT NO. GC/87/07										W.O. NO. PW7/2/23.29									
DRILLHOLE RECORD										HOLE NO. BH11									
PROJECT British Military Hospital at Shek Kong										DATE from 25-12-87 to 28-12-87									
METHOD Rotary					CO-ORDINATES E 26389.00 N 33526.03					ROCK COREBIT T.C. & Diamond									
MACHINE & NO. DR75										HOLE DIA. PX,HX,T2101,TNW									
FLUSHING MEDIUM Water					ORIENTATION Vertical					GROUND LEVEL +12.65 m.P.D.									
Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description				
25/12/87											10.00								
		1.82m							M		10.05	X X							
		13:00		100					9			X X	V	A	Medium dense, brownish grey speckled white & green, very silty				
								N=13	10		11.05	X X			& green, very silty				
											11.95	X X			fine SAND				
											12.50	X X			(C.W.Gd)				
									M			X X							
				100					11		13.50	X X			Medium dense, greenish grey, very silty fine SAND				
								N=27	12		13.95	X X	V	A	(C.W.Gd)				
			85								14.50	X X							
									M			X X							
				80					13	2.85	15.50	X X							
									14		15.80	X X	IV	A	Very dense, greenish grey, silty SAND with rock fragments (H.W.Gd)				
								(219) 150mm		3.80	16.45	X X							
25/12/87	T2101	3.10m		100	7	0	F			4.35	16.85	X X	IV/III	B	Weak, greenish grey, coarse grained, highly to moderately weathered GRANODIORITE; fractured				
		18:00					14.3				17.00	X X							
28/12/87		4.05m		100	73	51	8.7			5.05	17.70	X X	III	C					
		8:00										X X			Moderately strong, grey speckled white, coarse grained, moderately weathered GRANODIORITE with very closely to closely spaced manganese stained joints				
											18.46	X X							
											19.51	X X							
											19.96	X X							
				100	100	100	0								Details as next page				
				100	97	93	3.9												

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▽ WATER LEVEL

↑ BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST

— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Wong

REMARKS: F : Fractured DRAWN BY: Wong CHECKED BY: ji

M MAZIER SAMPLE ■ UNDISTURBED SAMPLE

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 3 of 3

CONTRACT NO.
GC/87/07

DRILLHOLE RECORD

W.O. NO. PW7/2/23.29
HOLE NO. BH11
DATE from 25-12-87 to 28-12-87

PROJECT British Military Hospital at Shek Kong

METHOD Rotary

CO-ORDINATES
E 26389.00
N 33526.03

ROCK COREBIT T.C. & Diamond

MACHINE & NO. DR75

HOLE DIA. PX, HX, T2101, TNW

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL +12.65 m.P.D.

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
28/12/87	TNW	3.02m 12:00	70	100	97	93	3.9				20.00	X X			Strong, grey speckled white & green, coarse grained slightly weathered GRANODIORITE with very closely to widely spaced manganese stained joints
											21.51	X X			
				100	89	85	1.2				22.36	X X		II D	
										-9.71					Bottom of Hole

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▼ WATER LEVEL M MAZIER SAMPLE
 † BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST ■ UNDISTURBED SAMPLE
 —●— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: WJ DRAWN BY: WJ CHECKED BY: WJ

REMARKS:

G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH11

DEPTH: 0.00 m. TO 19.51 m.

DATE: 29-12-87

BOX 1 OF 2



G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH11

DEPTH: 19.51 M. TO 22.36 M.

DATE: 29-12-87

BOX 2 OF 2



0

0.5m

1m



VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 1 of 3

CONTRACT NO. GC/87/07		DRILLHOLE RECORD		W.O. NO. PW7/2/23.29	
		HOLE NO. BH13		DATE from 21-12-87 to 23-12-87	
PROJECT British Military Hospital at Shek Kong					
METHOD Rotary		CO-ORDINATES		ROCK CORE BIT T.C. & Diamond	
MACHINE & NO. DR75		E 26431.65 N 33537.17		HOLE DIA. PX, HX, T2101, TNW	
FLUSHING MEDIUM Water		ORIENTATION Vertical		GROUND LEVEL +13.30 m.p.d.	

Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
21/12/87											0.00				Medium dense, brown, silty fine to coarse SAND with gravel (FILL)
										+11.80	1.50				
								↓ N=26	1.		1.95				Very stiff, reddish yellow, clayey sandy SILT (ALLUVIUM)
	PX										2.50				
	T2101			48							3.50				COBBLES in gravelly silty sand matrix (ALLUVIUM)
								↓ N=25	2.		3.95				Very stiff, reddish brown mottled grey, sandy SILT (ALLUVIUM)
											4.06				
	T2101		85	58							5.10				COBBLES in gravelly sandy silt matrix (ALLUVIUM)
				83							5.45				
								↓ N=13	3.		5.50				Stiff to very stiff, yellowish brown mottled grey, clayey sandy SILT with gravel (ALLUVIUM)
									M		5.95				
				90							6.50				
								↓ N=19	5.		7.50				
	HX	3.27m									7.95				
21/12/87	T2101	18:00		86							8.05				COBBLES in gravelly clayey sand matrix (ALLUVIUM)
22/12/87		4.10m							M		8.40				
		8:00						↓ N=23	6.		8.50				
			75	100							9.50				
									7.		9.50				Details as next page

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▽ WATER LEVEL

↓ BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST

— PERMEABILITY TEST HE HAND EXCAVATION

M MAZIER SAMPLE ■ UNDISTURBED SAMPLE

REMARKS: _____

DRAWN BY: CHECKED BY:

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 2 of 3

CONTRACT NO. GC/87/07		DRILLHOLE RECORD		W.O. NO. PW7/2/23.29		HOLE NO. BH13		DATE from 21-12-87 to 23-12-87							
PROJECT British Military Hospital at Shek Kong															
METHOD Rotary				CO-ORDINATES E 26431.65 N 33537.17				ROCK COREBIT T.C. & Diamond							
MACHINE & NO. DR75								HOLE DIA. PX,HX,T2101,TNW							
FLUSHING MEDIUM Water				ORIENTATION Vertical				GROUND LEVEL +13.30 m.P.D.							
Drilling Progress	Casing depth/size	Water level/time/date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
22/12/87											10.00	X X			
											10.50	X X			Medium dense, pinkish brown mottled white, very silty fine SAND (C.W.GRANODIORITE)
				100					M						
									8		11.50	X X	V	A	
									9		11.95	X X			
		2.67m 12:00						N=18			12.50				
				100					M			X X			Medium dense to dense, brownish grey mottled white, very silty fine SAND (C.W. GRANODIORITE)
									10		13.50	X X			
		3.10m 13:00						N=28			13.95				
									11		14.50	X X	V	A	
				75					M			X X			
				95					12		15.50				
									13		15.95	X X			
								N=120			16.15				
											16.35	X X			Moderately strong to strong, grey mottled white and green, coarse grained, moderately to slightly weathered GRANODIORITE with very closely to medium spaced some manganese stained joints, partly fractured (M/S.W. GRANODIORITE)
				100	57	31	9.2	F							
											17.45	X X	III/II	C	
				100	37	37	12.2					X X			
				100	27	0	F	F			18.43				
											18.87	X X			
				100	72	65		F			19.37				
		2.39m 18:00									20.00	X X	II	D	Details as next page

● SMALL DISTURBED SAMPLE L S.P.T. LINER SAMPLE ▼ WATER LEVEL

↑ BULK DISTURBED SAMPLE ▲ WATER SAMPLE ↓ STANDARD PENETRATION TEST

— PERMEABILITY TEST HE HAND EXCAVATION LOGGED BY: Wzy

REMARKS: F : Fractured DRAWN BY: Wzy CHECKED BY: Wzy

M MAZIER SAMPLE ■ UNDISTURBED SAMPLE

VIBRO (H. K.) LTD.

SITE INVESTIGATION DEPARTMENT

Page 3 of 3

CONTRACT NO.
GC/87/07

DRILLHOLE RECORD

W.O. NO. PW7/2/23.29
HOLE NO. BH13
DATE from 21-12-87 to 23-12-87

PROJECT British Military Hospital at Shek Kong

METHOD Rotary

CO-ORDINATES
E 26431.65
N 33537.17

ROCK COREBIT T.C. & Diamond

MACHINE & NO. DR75

HOLE DIA. PX, HX, T2101, TNW

FLUSHING MEDIUM Water

ORIENTATION Vertical

GROUND LEVEL +13.30 m.P.D.

Drilling Progress	Casing depth/size	Water level/ time/ date	Water Recovery %	Total core Recovery %	Solid core Recovery %	R Q D	Fracture Index/m	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Zone	Description
22/12/87				100	72	65	6.8				20.00	X X			Strong, grey mottled white and green, coarse grained, slightly weathered GRANODIORITE with closely to medium spaced joints (S.W.GRANODIORITE)
23/12/87	TNW	3.85m	75	100	85	63	8.3				20.40	X X			
		8:00									21.24	X X	II	D	
										-7.94					Bottom of Hole

● SMALL DISTURBED SAMPLE
↓ BULK DISTURBED SAMPLE
— PERMEABILITY TEST
REMARKS:

L S.P.T. LINER SAMPLE
▲ WATER SAMPLE
HE HAND EXCAVATION

▼ WATER LEVEL
↓ STANDARD PENETRATION TEST
LOGGED BY: Wong
DRAWN BY: Wong

M MAZIER SAMPLE
■ UNDISTURBED SAMPLE
CHECKED BY: Wong

G.C.O. CONTRACT NO. GC/87/07

SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH13

DEPTH: 0.00 M. TO 17.45 M.

DATE: 29-12-87

BOX 1 OF 2



G.C.O. CONTRACT NO. GC/87/07
SITE INVESTIGATION — NEW TERRITORIES WEST

VIBRO (HK) LTD

SITE: BRITISH MILITARY HOSPITAL AT SHEK KONG

WORKS ORDER NO: PW7/2/23.29

HOLE NO: BH13

DEPTH: 17.45 m. TO 21.24 m.

DATE: 29-12-87

BOX 2 OF 2



17.45



18.87



21.24
END

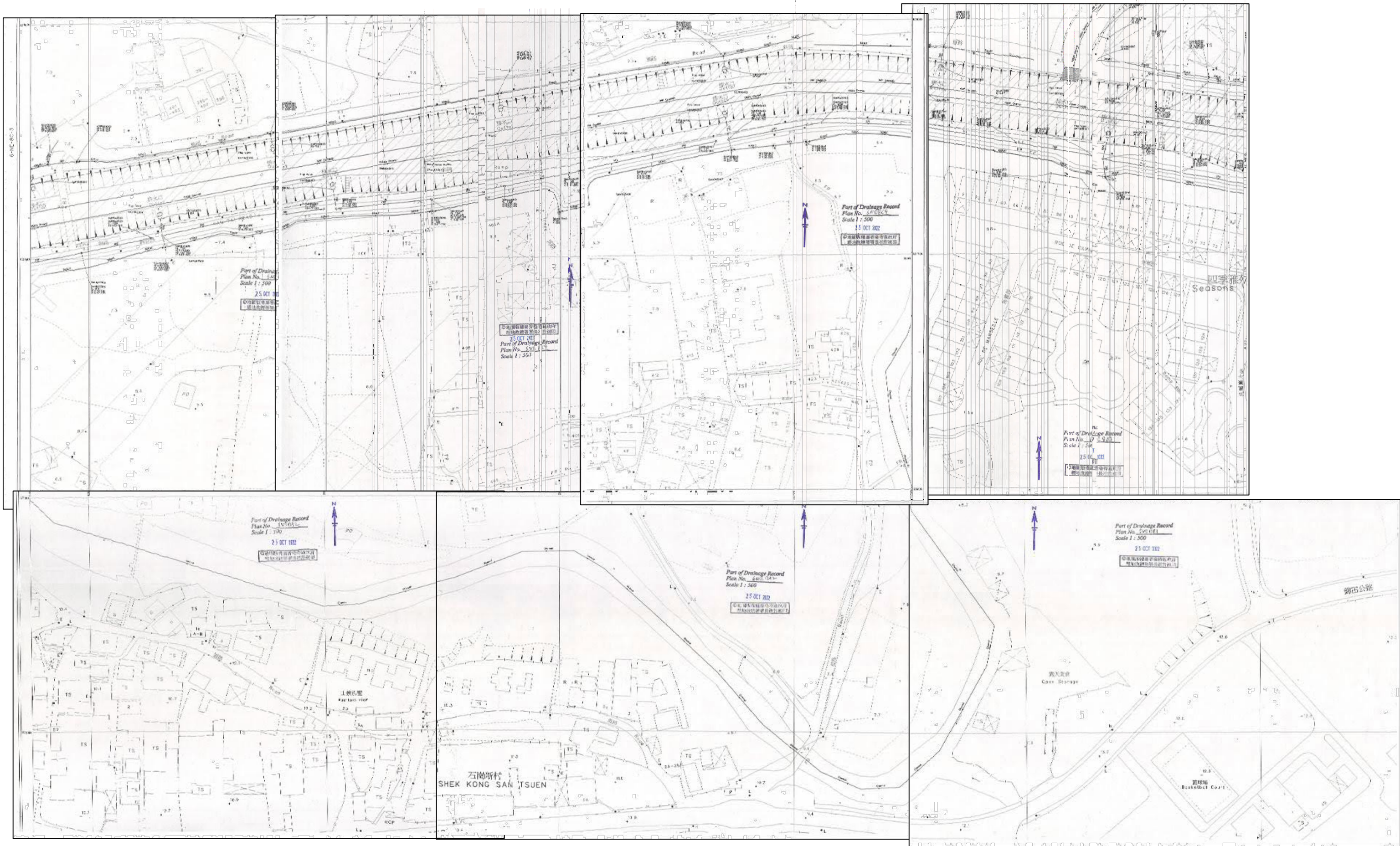
18.43

20.40

18.87
15.2
240

Appendix F

Records of Existing Utilities

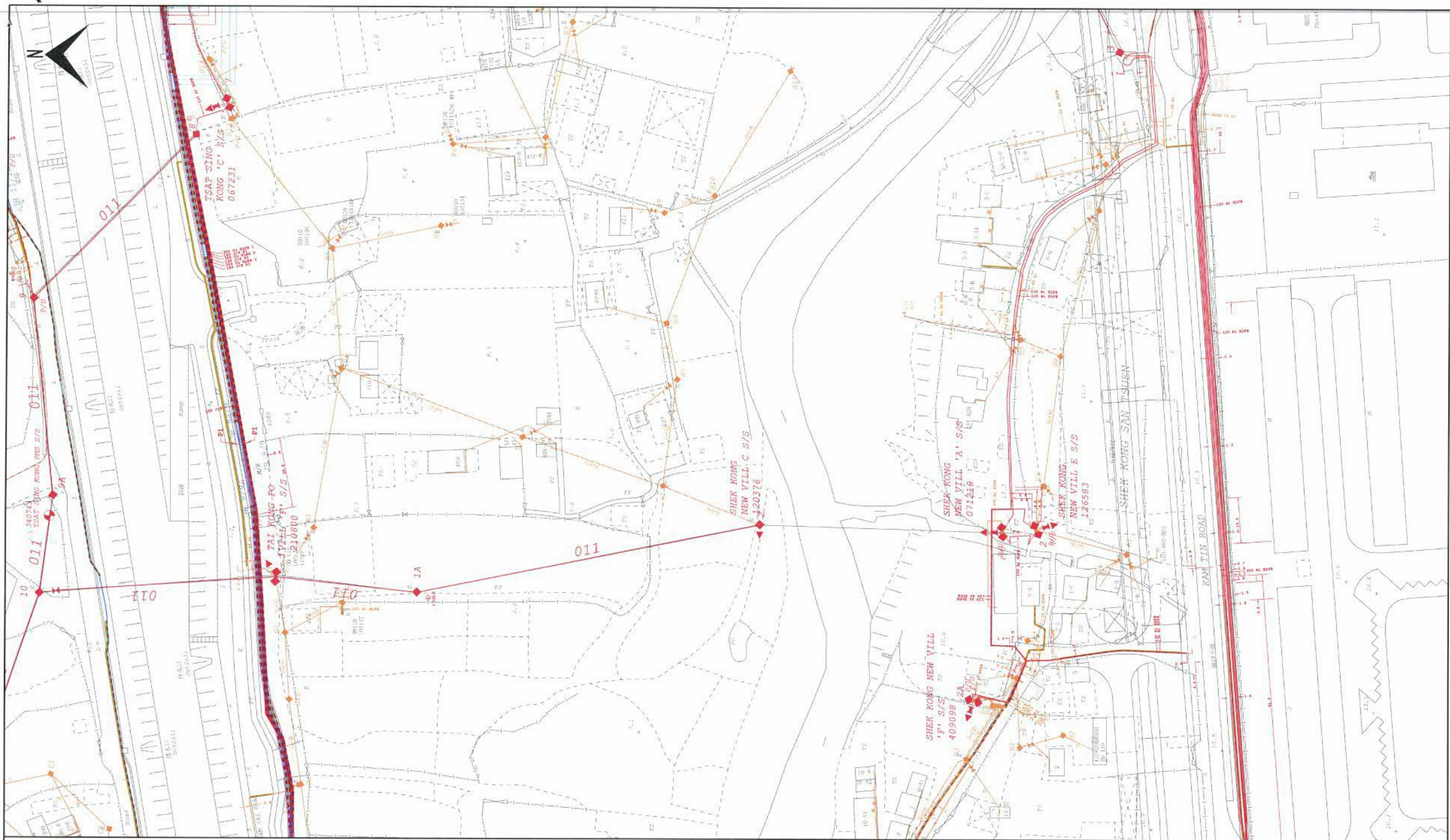


Legend for Drainage Record Plan

	Storm Water Manhole		Existing Pipe (Storm/Sewer/Combined)
	Storm Water Terminal Manhole		Existing Pipe (Storm/Sewer/Combined) (Planning / Identifying to be Abandoned)
	Storm Water Special Manhole		Rising Main (Storm/Sewer)
	Sewer Manhole		Existing Rising Main (Storm/Sewer) (Planning / Identifying to be Abandoned)
	Sewer Terminal Manhole		Vacuum Sewer
	Sewer Special Manhole		Existing Vacuum Sewer (Planning / Identifying to be Abandoned)
	Combined Manhole		Abandoned Pipe
	Catchpit		Abandoned Pipe (Filled with Materials)
	Desilting Opening		Proposed Pipe (Storm/Sewer)
	Inspection Opening		Works In Progress Pipe (Storm/Sewer)
	Dry Weather Flow Interceptor		Not Yet Commissioned Pipe (Storm/Sewer)
	Sand Trap		Existing U Channel / Stepped Channel (Storm)
	Inlet		Proposed U Channel / Stepped Channel (Storm)
	Outlet		Works In Progress U Channel / Stepped Channel (Storm)
	Gully Sump / Gully		Existing Submarine Outfall with Diffuser
	Tapping Point (Storm/Sewer)		Proposed Submarine Outfall with Diffuser
	Overflow (Sewer/Combined)		Works In Progress Submarine Outfall with Diffuser
	Interface Valve Chamber		Slope Sign Board
	Oil / Petrol Interceptor		Slope Number
	Valve		Slope Boundary
	Spot Level (Storm/Sewer)		Harbour Area Treatment Scheme Sewage Tunnel Protection Area (100m width)
	Water Gauge		(Please note that all proposed works within the HATS Sewage Tunnel Protection Area have to be complied with the requirements in the Environment, Transport and Works Bureau Technical Circular (Works) No.28/2003 or the Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers No. APP-62 issued by the Buildings Department)
	Fencing/Railing/Concrete Parapet		Harbour Area Treatment Scheme Sewage Tunnel Protection Area (200m width)
	Tunnel / Box Culvert (Storm/Sewer)		(Please note that all proposed works within the HATS Sewage Tunnel Protection Area have to be complied with the requirements in the Environment, Transport and Works Bureau Technical Circular (Works) No.28/2003 or the Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers No. APP-62 issued by the Buildings Department)
	Drainage Reserve		Existing Y-Junction (Storm/Sewer/Combined)
	Tunnel Protection Zone		

Notes :

- All levels are given in metres above principal datum.
- All dimensions shown are in millimetres unless otherwise stated.
- The information shown on the record drawings are subject to verification on site and no guarantee can be given that this is a complete record.
- Abbreviations for Channels of width smaller or equal to 1200mm:
900C = 900mm width Surface Channel
900SC = 900mm width Stepped Channel
900UC = 900mm width U Channel
900DWF = 900mm width Dry Weather Flow Channel
- The Incoming Pipes are marked A1, A2, A3, ... counting clockwise from the first Outgoing Pipe X1. Outgoing Pipes are marked X1, X2, X3 ... counting clockwise from North.
eg.
- Piling foundations on culverts may be present but not shown for brevity. Please refer to the relevant as-built drawings on details of the pile foundation.
- Drainage facilities maintained by other parties, if shown, are indicative only. It is no guarantee that these information are exact.

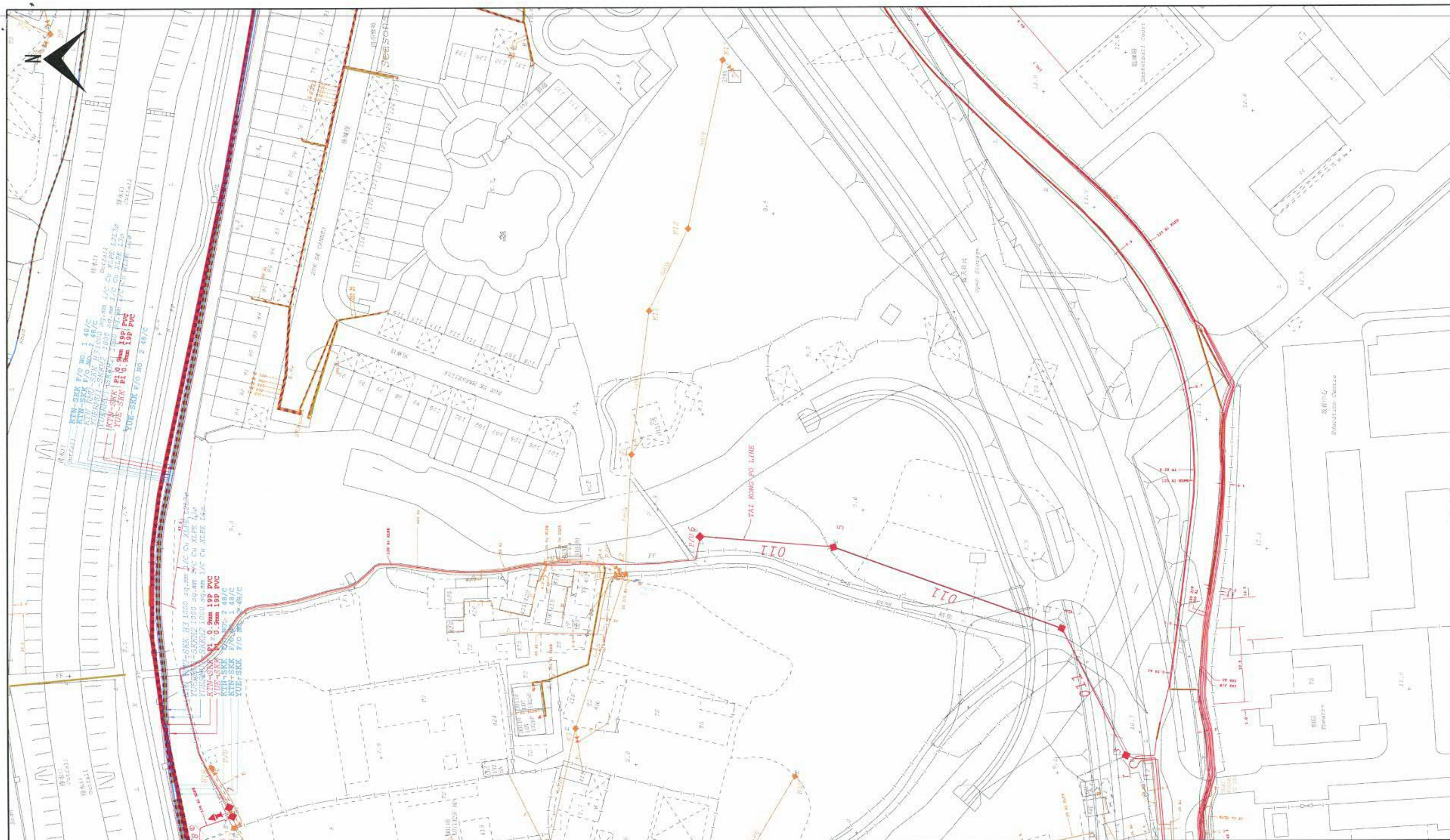


Legend				
400kV CABLE/SUBMARINE CABLE/OHL	ABANDONED TRANSMISSION CABLE	SUB SUBMARINE 11kV CABLE	P L.V. OVERHEAD LINE (PVC)	TEMPERATURE SENSING CABLE (DTS)
THROUGH DUCT 400kV CABLE	33kV CABLE	011 11kV OVERHEAD LINE	W L.V. OVERHEAD LINE (Wall Mounted)	AERIAL EARTH WIRE (AEW)
AS BUILT 400kV CABLE	THROUGH DUCT 33kV CABLE	11kV STEEL POLE	L.V. STEEL POLE	OVERHEAD LINE FIBRE OPTIC
400kV OVERHEAD LINE TOWER	AS BUILT 33kV CABLE	11kV WOOD POLE	L.V. WOOD POLE	OVERHEAD LINE FIBRE OPTIC
132kV CABLE/SUBMARINE CABLE/OHL	SUB 33kV SUBMARINE CABLE	POLE MOUNT TRANSFORMER	L.V. PILLAR	SHALLOW COVER INSTALLATION
THROUGH DUCT 132kV CABLE	033 33kV OVERHEAD LINE	L.V. CABLE	PILOT CABLE	CLP 400/132/66kV SUBSTATION
AS BUILT 132kV CABLE	33kV STEEL POLE	AS BUILT / ABANDONED L.V. CABLE	THROUGH DUCT PILOT CABLE	CLP 33kV SUBSTATION
132kV OVERHEAD LINE TOWER	33kV WOOD POLE	L.V. OVERHEAD LINE (1 PHASE)	AS BUILT / ABANDONED PILOT CABLE	400kV CABLE JOINT BAY
132kV TERMINAL OHL POLE	11kV CABLE	L.V. OVERHEAD LINE (3 PHASE)	FIBRE OPTIC	132kV CABLE JOINT BAY
132kV DOUBLE OHL POLE	THROUGH DUCT 11kV CABLE	L.V. OVERHEAD LINE (ABC)	THROUGH DUCT FIBRE OPTIC	DUCT LINE
132kV SINGLE OHL POLE	AS BUILT / ABANDONED 11kV CABLE		AS BUILT FIBRE OPTIC	

ALL LOCATIONS, MEASUREMENTS, DIMENSIONS AND DISTANCES ARE FOR CLP POWER INTERNAL USE ONLY. THEY SHOULD NOT BE SCALED AND ASSUMED ACCURATE. CLP POWER ACCEPTS NO RESPONSIBILITY IN THE EVENT OF ANY INACCURACY. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN CLOSE PROXIMITY TO OUR EQUIPMENT. PLEASE CONTACT OUR REGIONAL OFFICE AS SOON AS YOU ARE READY TO COMMENCE WORK.

MAP NO: CLP Facility Records Map
06NE08C
06NE13A

SCALE: 1:1000 PRINTED ON: 27-10-2022



Legend				
400kV CABLE/SUBMARINE CABLE/OHL	ABANDONED TRANSMISSION CABLE	11kV SUBMARINE CABLE	L.V. OVERHEAD LINE (PVC)	TEMPERATURE SENSING CABLE (DTS)
THROUGH DUCT 400kV CABLE	33kV CABLE	11kV OVERHEAD LINE	L.V. OVERHEAD LINE (Wall Mounted)	AERIAL EARTH WIRE (AEW)
AS BUILT 400kV CABLE	THROUGH DUCT 33kV CABLE	11kV STEEL POLE	L.V. STEEL POLE	OVERHEAD LINE FIBRE OPTIC
400kV OVERHEAD LINE TOWER	AS BUILT 33kV CABLE	11kV WOOD POLE	L.V. WOOD POLE	OVERHEAD LINE FIBRE OPTIC
132kV CABLE/SUBMARINE CABLE/OHL	33kV SUBMARINE CABLE	POLE MOUNT TRANSFORMER	L.V. PILLAR	SHALLOW COVER INSTALLATION
THROUGH DUCT 132kV CABLE	33kV OVERHEAD LINE	L.V. CABLE	PILOT CABLE	CLP 400/132/66kV SUBSTATION
AS BUILT 132kV CABLE	33kV STEEL POLE	THROUGH DUCT L.V. CABLE	THROUGH DUCT PILOT CABLE	CLP 33kV SUBSTATION
132kV OVERHEAD LINE TOWER	33kV WOOD POLE	AS BUILT / ABANDONED L.V. CABLE	AS BUILT / ABANDONED PILOT CABLE	CLP 11kV SUBSTATION
132kV TERMINAL OHL POLE	11kV CABLE	L.V. OVERHEAD LINE (1 PHASE)	FIBRE OPTIC	400kV CABLE JOINT BAY
132kV DOUBLE OHL POLE	THROUGH DUCT 11kV CABLE	L.V. OVERHEAD LINE (3 PHASE)	THROUGH DUCT FIBRE OPTIC	132kV CABLE JOINT BAY
132kV SINGLE OHL POLE	AS BUILT / ABANDONED 11kV CABLE	L.V. OVERHEAD LINE (ABC)	AS BUILT FIBRE OPTIC	DUCT LINE

ALL LOCATIONS, MEASUREMENTS, DIMENSIONS AND DISTANCES ARE FOR CLP POWER INTERNAL USE ONLY. THEY SHOULD NOT BE SCALED AND ASSUMED ACCURATE. CLP POWER ACCEPTS NO RESPONSIBILITY IN THE EVENT OF ANY INACCURACY. EXTREME CARE MUST BE EXERCISED WHEN WORKING IN CLOSE PROXIMITY TO OUR EQUIPMENT. PLEASE CONTACT OUR REGIONAL OFFICE AS SOON AS YOU ARE READY TO COMMENCE WORK.



MAP NO: CLP Facility Records Map

06NE08C

06NE13B

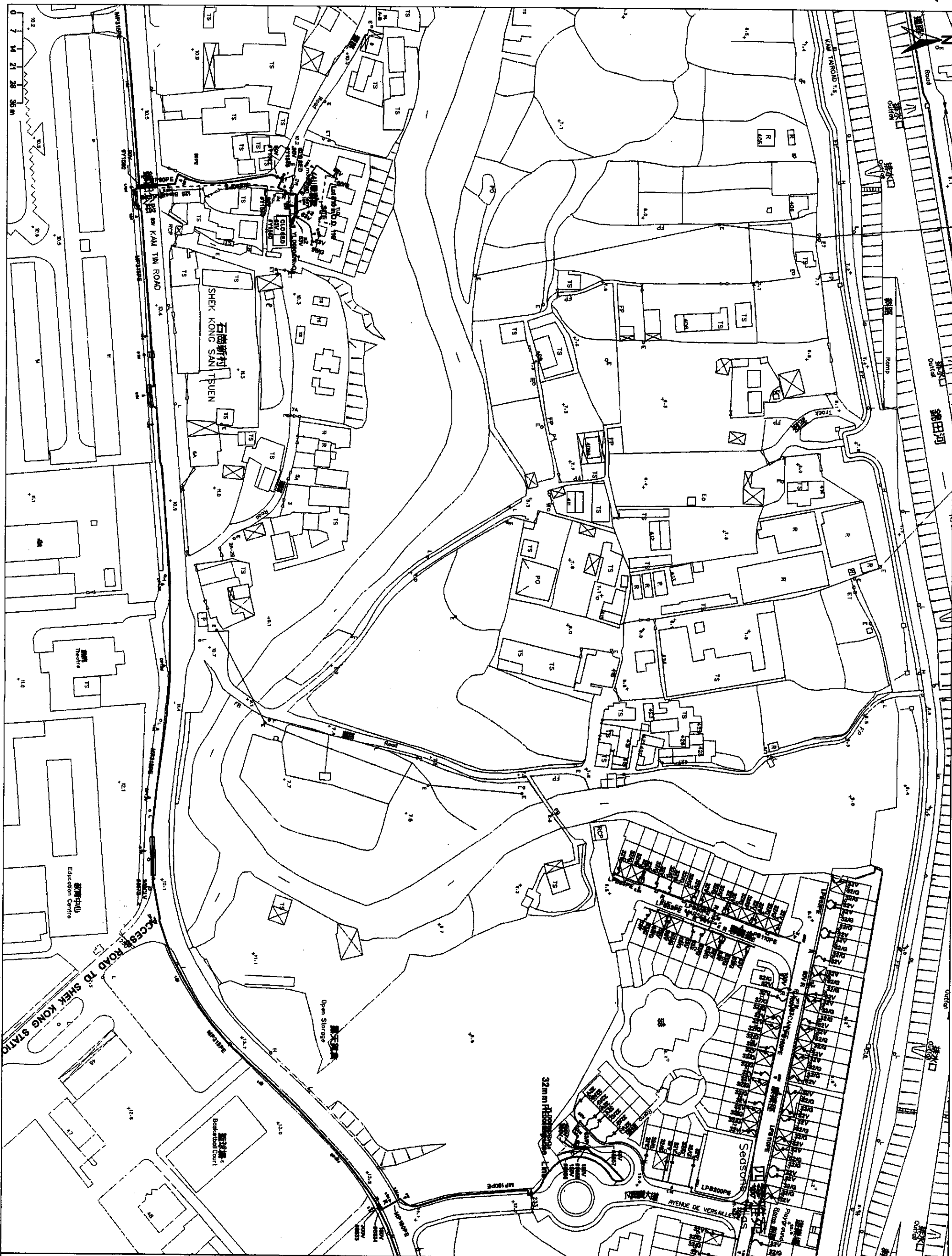
06NE13A

06NE08D

SCALE: 1:1000

PRINTED ON: 27-10-2022

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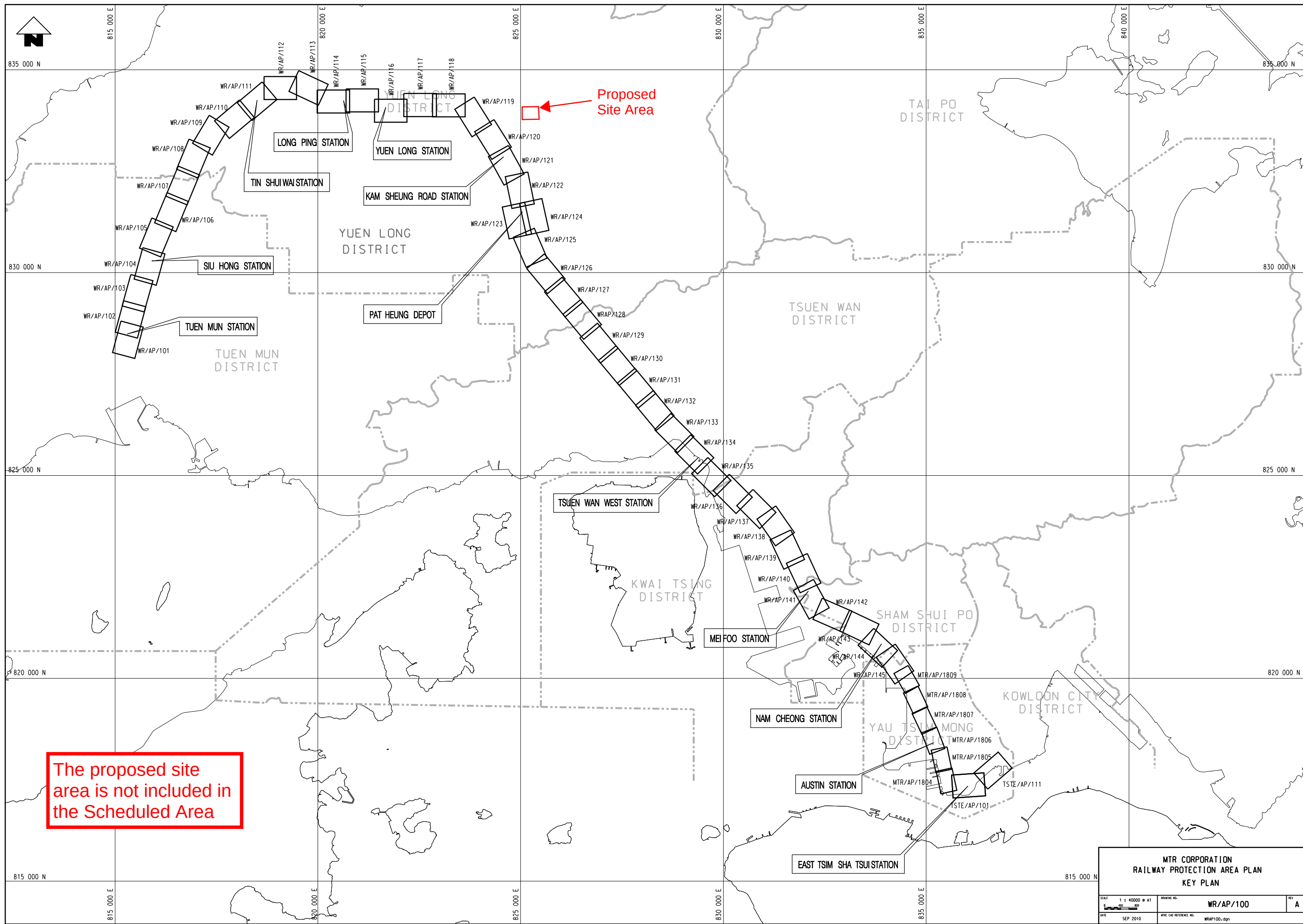


 煤氣 Towngas 香港中華煤氣有限公司 The Hong Kong and China Gas Company Limited	輸氣操作部 時間: 11:22:29 比例: 1:1300	圖例: <table border="0"> <tr> <td>LP2</td> <td>現內管 A 管 (2.0 千磅以下)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP3</td> <td>現內管 B 管 (2.0-7.5 千磅)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP4</td> <td>現內管 C 管 (7.5-400 千磅)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP5</td> <td>現內管 D 管 (400-400 千磅)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP6</td> <td>現內管 E 管 (400-700 千磅)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP7</td> <td>現內管 F 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP8</td> <td>現內管 G 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP9</td> <td>現內管 H 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP10</td> <td>現內管 I 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP11</td> <td>現內管 J 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP12</td> <td>現內管 K 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP13</td> <td>現內管 L 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP14</td> <td>現內管 M 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP15</td> <td>現內管 N 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP16</td> <td>現內管 O 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP17</td> <td>現內管 P 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP18</td> <td>現內管 Q 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP19</td> <td>現內管 R 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP20</td> <td>現內管 S 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP21</td> <td>現內管 T 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP22</td> <td>現內管 U 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP23</td> <td>現內管 V 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP24</td> <td>現內管 W 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP25</td> <td>現內管 X 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP26</td> <td>現內管 Y 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> <tr> <td>LP27</td> <td>現內管 Z 管 (700 千磅以上)</td> <td>—</td> <td>新管</td> </tr> </table>	LP2	現內管 A 管 (2.0 千磅以下)	—	新管	LP3	現內管 B 管 (2.0-7.5 千磅)	—	新管	LP4	現內管 C 管 (7.5-400 千磅)	—	新管	LP5	現內管 D 管 (400-400 千磅)	—	新管	LP6	現內管 E 管 (400-700 千磅)	—	新管	LP7	現內管 F 管 (700 千磅以上)	—	新管	LP8	現內管 G 管 (700 千磅以上)	—	新管	LP9	現內管 H 管 (700 千磅以上)	—	新管	LP10	現內管 I 管 (700 千磅以上)	—	新管	LP11	現內管 J 管 (700 千磅以上)	—	新管	LP12	現內管 K 管 (700 千磅以上)	—	新管	LP13	現內管 L 管 (700 千磅以上)	—	新管	LP14	現內管 M 管 (700 千磅以上)	—	新管	LP15	現內管 N 管 (700 千磅以上)	—	新管	LP16	現內管 O 管 (700 千磅以上)	—	新管	LP17	現內管 P 管 (700 千磅以上)	—	新管	LP18	現內管 Q 管 (700 千磅以上)	—	新管	LP19	現內管 R 管 (700 千磅以上)	—	新管	LP20	現內管 S 管 (700 千磅以上)	—	新管	LP21	現內管 T 管 (700 千磅以上)	—	新管	LP22	現內管 U 管 (700 千磅以上)	—	新管	LP23	現內管 V 管 (700 千磅以上)	—	新管	LP24	現內管 W 管 (700 千磅以上)	—	新管	LP25	現內管 X 管 (700 千磅以上)	—	新管	LP26	現內管 Y 管 (700 千磅以上)	—	新管	LP27	現內管 Z 管 (700 千磅以上)	—	新管	圖則顯示的管位位置只作參考之用。其實際位置和深度仍須以人手開挖探孔確定。在煤氣管道設施附近施工期間，必須加倍小心。 檢查日期: Nov 2 2022
LP2	現內管 A 管 (2.0 千磅以下)	—	新管																																																																																																								
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Appendix G

Schedule Area

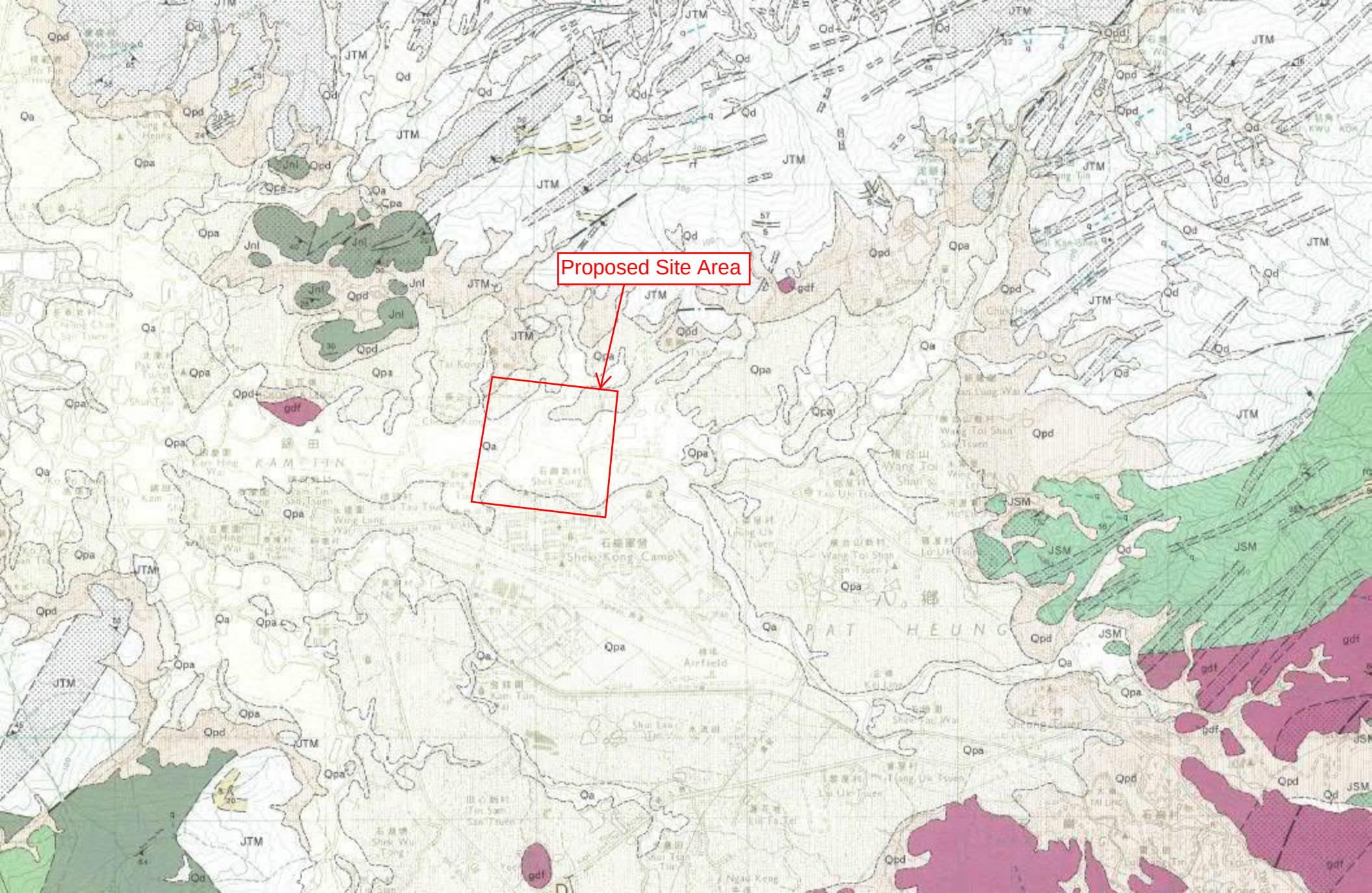
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MTR CORPORATION RAILWAY PROTECTION AREA PLAN KEY PLAN		
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DATE: SEP 2010	MTR CAD REFERENCE NO.: WRAP100.dgn	

Appendix H

Geological Survey Map



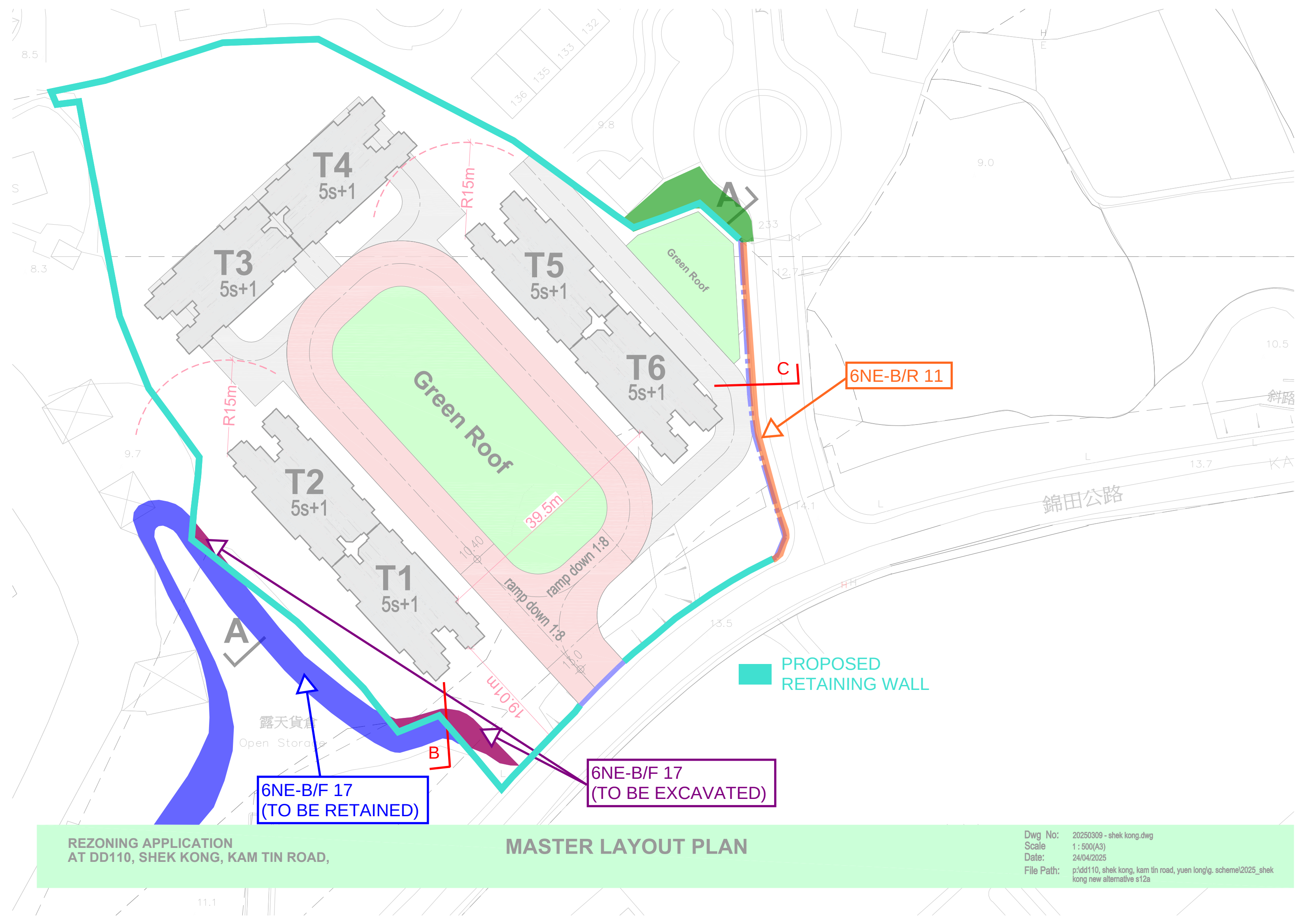
Scale 1 : 20 000 比例



糜稜岩		Mylonite
片岩		Schist
變質岩石		Metamorphosed

Appendix I

Schedule of Proposed Foundation & Site Formation Works

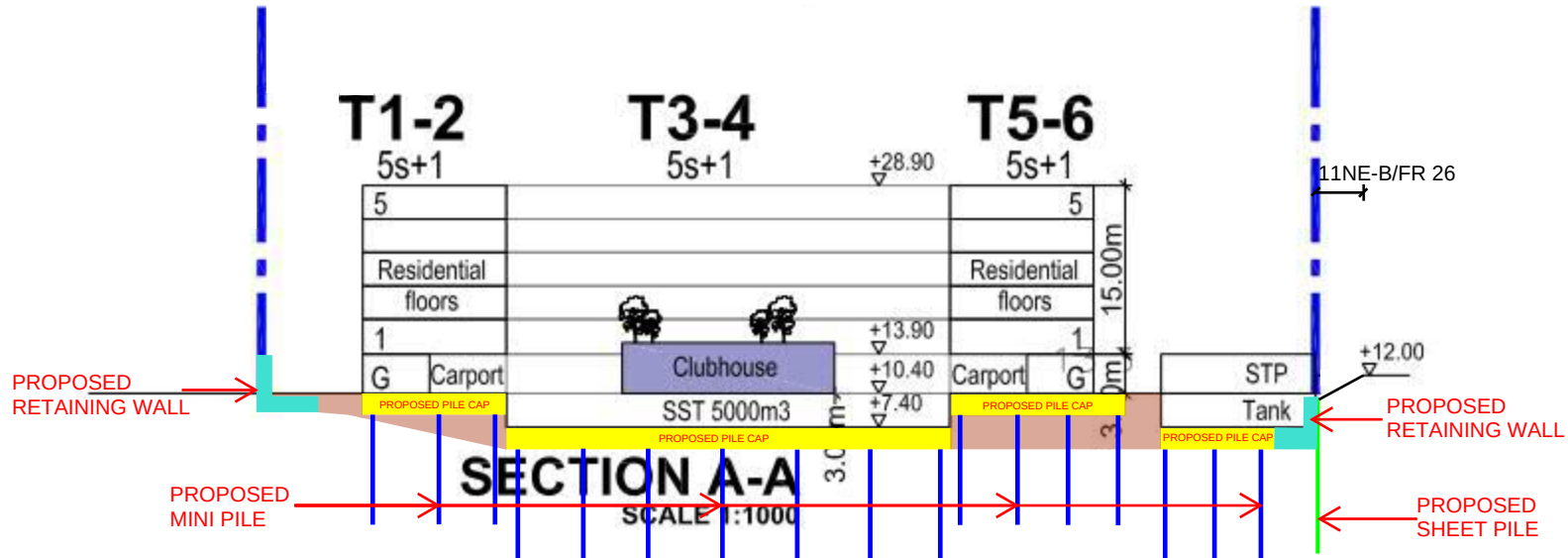


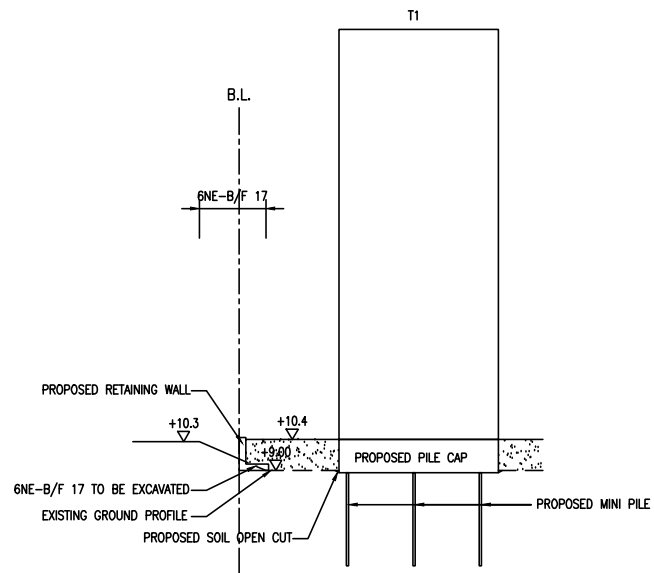
REZONING APPLICATION
AT DD110, SHEK KONG, KAM TIN ROAD,

MASTER LAYOUT PLAN

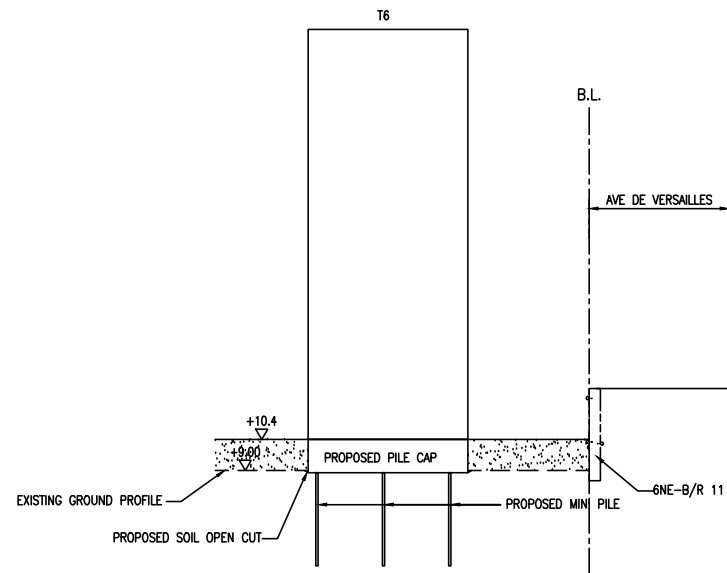
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Date: 24/04/2025
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Figure 1





SECTION B-B



SECTION C-C

 PROPOSED BACKFILL