

**By Hand**  
26 August 2025

The Secretary  
Town Planning Board  
15/F, North Point Government Offices  
333 Java Road  
North Point  
Hong Kong

Your ref  
Our ref 295143/00/WSTY/MYNL/TYAL/NC/CHAC/05596

Level 5 Festival Walk  
80 Tat Chee Avenue  
Kowloon Tong  
Kowloon, Hong Kong

t +852 2528 3031  
f +852 2779 8428

arup.com

Dear Sir/Madam,

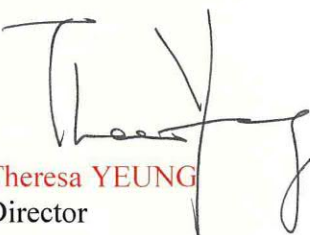
**Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from “Green Belt” and Area shown as “Road” to “Residential (Group C)5” for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung**

On behalf of the Applicants, Shing Path Limited and Hin Yiu Limited who are the two registered owners of various lots in D.D. 210, Pak Wai, Sai Kung, we hereby submit the captioned s.12A Planning Application. An original authorisation letter signed by the Applicants, documentary proof of land ownership, a signed original copy of the application form, and 4 copies of the Supporting Planning Statement are enclosed. The soft copy of the Supporting Planning Statement as required for Non-EPASS submission will be uploaded upon the receipt of the hyperlink from the Town Planning Board.

We sincerely seek favourable consideration from the Town Planning Board to agree to the captioned s.12A Application.

Should you have any queries, please contact the undersigned or our Miss Natalie CHAN at [REDACTED] or Mr. Alex CHENG at [REDACTED].

Yours faithfully,

  
Theresa YEUNG  
Director

d  
e

Enc - 1 Signed original authorisation letter  
- Documentary proof of land ownership  
- 1 Signed original copy of the application form  
- 4 Copies of the Supporting Planning Statement  
cc - Client

Application for Amendment of Plan  
Under Section 12A of the Town  
Planning Ordinance (Cap. 131) to  
Rezone the Application Site from  
“Green Belt” and Area Shown as  
“Road” to “Residential (Group C)5” for  
Proposed Residential Development at  
Various Lots in D.D. 210 and Adjoining  
Government Land, Pak Wai, Sai Kung

Supporting Planning Statement

August 2025

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 295143

**Arup Hong Kong Limited**  
Level 5 Festival Walk  
80 Tat Chee Avenue  
Kowloon Tong  
Kowloon  
Hong Kong  
[arup.com](http://arup.com)

## Contents

---

<b>Executive Summary</b>	<b>i</b>
行政摘要	iii
<b>1. INTRODUCTION</b>	<b>1</b>
<b>2. SITE CONTEXT</b>	<b>3</b>
2.1 Location	3
2.2 Land status	3
2.3 Existing Land Use	3
2.4 Surrounding Land Use	4
2.5 Accessibility	4
<b>3. PLANNING CONTEXT</b>	<b>6</b>
3.1 Land Use Zoning	6
3.2 Government’s Multi-Pronged Approach to Increasing Housing Supply	6
3.3 Policy Initiatives for Rezoning of “Green Belt” Zone for Housing Sites	7
3.4 Changing Planning Circumstances in the Immediate Surrounding	10
<b>4. THE INDICATIVE SCHEME</b>	<b>11</b>
4.1 Echoing the Government’s Effort to Identify Suitable “GB” Sites in Private Land for Residential Redevelopment	11
4.2 Key Planning and Design Principles	11
4.3 Proposed Development Parameters	12
4.4 Building Design of the Indicative Scheme	13
4.5 Landscape Design Concept	15
4.6 Traffic Arrangement, Pedestrian Connections, and Internal Transport Facilities	16
<b>5. AMENDMENT PROPOSAL</b>	<b>18</b>
5.1 Considerations for An Appropriate Zoning	18
5.2 Clear Planning Intension	18
5.3 Appropriate Zoning Control	18
5.4 Appropriate Zoning Flexibility	18
5.5 The Proposed Amendment	18
<b>6. PLANNING JUSTIFICATIONS</b>	<b>20</b>
6.1 Echoing the Government’s Prevailing Policy to Increase Housing Supply	20
6.2 Tapping into Private Resources to Shouldering the Burden of Housing Supply by Rationalising Lands Not Serving “GB” Function	20
6.3 In Line with the Government’s Initiatives and Criteria of Reviewing Suitable “GB” Zone for Housing Development	21
6.4 Not Compromising the Integrity and Function of the Wider “GB” Zone	23
6.5 Fully Compatible with the Surrounding Neighbourhood	23
6.6 Providing Merits and Enhancing the Landscape Amenity to the Locality	24
6.7 Resulting in NO Adverse Impacts to Surrounding Environment	24
6.8 Setting a Desirable Precedent for Optimising Private Land Resources in “GB” Zone for Housing Supply	24
<b>7. CONCLUSION</b>	<b>26</b>

## Tables

Table 3.3.1	Key Assessment Criteria of “Green Belt” Reviews Initiated by the Government	7
Table 3.3.2	Rezoning of “GB” Sites initiated by the Government in Sai Kung District for Housing Development	8
Table 4.3.1	Key Development Parameters of the Indicative Scheme	12
Table 6.3.1	Fulfilment of the Government’s Assessment Criteria in Reviewing “GB” Sites	21

## Figures

Figure 2.1	Location Plan
Figure 2.2	Lot Index Plan
Figure 2.3	Existing Condition of the Application Site
Figure 2.4a-b	Surrounding Condition of the Application Site
Figures 3.1a-b	Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Schedule of Uses of “GB” Zone
Figures 3.1c	Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of “GB” Zone
Figures 3.1d-g	Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Notes
Figure 3.4a	Hiram’s Highway Improvement Stage 1 (Completed in 2021)
Figure 3.4b	Hiram’s Highway Improvement Stage 2
Figure 5.5a	Proposed Amendment to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
Figures 5.5b-d	Proposed Amendment to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Notes of the “R(C)” Zone
Figures 5.5e-f	Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of the “R(C)” Zone
Figures 5.5g	Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of the “GB” Zone

## Appendices

Appendix A	Indicative Architectural Drawings
Appendix B	Landscape Master Plan with Tree Survey Report
Appendix C	Traffic Impact Assessment
Appendix D	Visual Impact Assessment
Appendix E	Environmental Assessment
Appendix F	Drainage Impact Assessment
Appendix G	Sewage Treatment and Disposal Proposal Report
Appendix H	Geotechnical Planning Review Report
Appendix I	Water Demand Assessment

# Executive Summary

This Supporting Planning Statement is submitted to the Town Planning Board for the Proposed Amendment to the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12 (the “OZP”) under Section 12A of the Town Planning Ordinance (Cap. 131), in support of the rezoning from “Green Belt” (“GB”) zone and Area Shown as “Road” to “Residential (Group C)5” (“R(C)5”) zone at various lots in D.D. 210 and adjoining Government Land, Pak Wai, Sai Kung (the “Application Site”) to facilitate a low-density residential development (the “Proposed Amendment”).

The Application Site, with a site area of about 12,692m<sup>2</sup>, is located in a low-density residential neighbourhood, with existing development in Marine Cove and low-rise houses in Pak Wai Village and Hing Keng Shek Village in its immediate surrounding. It is accessible from Hiram’s Highway, and the section has already completed the Phase 1 Improvement Work in 2021. Currently, the Application Site is occupied by a vehicle repairing workshop, a commercial horticulture workshop, and temporary structures. Majority land area of the Application Site has been paved, and barely serves the planning intention of “GB” zone which *“is primarily for defining the limits of urban and sub-urban development areas by natural features, and to contain urban sprawl as well as to provide passive recreational outlet”* (extracted from the Notes of the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12).

Boosting housing production and building up land reserve have been one of the priority objectives of the Government. A steady supply of private housing, alongside public housing, has been equally important to meet the projected demand as laid out in the Long-Term Housing Strategy. In recent years, rounds of systematic review of “GB” zones have been initiated by the Government to identify appropriate sites for housing through rezoning. Since 2021, in the Sai Kung district, a total of 6 sites in “GB” zone have been rezoned for housing development. Echoing with the Government’s ongoing efforts to increase land supply to address territorial housing demand, the Proposed Amendment at the Application Site is a timely response to unleash the potential of a sizeable developable land at a scale compatible with the surroundings.

An Indicative Scheme has been formulated to demonstrate the feasibility of the Proposed Amendment to rezone the Application Site from “GB” and area shown as “Road” to “R(C)5” with a maximum plot ratio (“PR”) of 0.6 and a maximum building height (“BH”) of 4 storeys. In the Indicative Scheme, a total of 120 private residential units will be provided in four residential towers incorporated with environmentally sensitive design. Relevant technical assessments have been carried out to ascertain that there will be no insurmountable impacts on the surrounding environment.

The Proposed Amendment at the Application Site is fully justified based on the following grounds:

- Echoing with the Government’s Prevailing Policy to Increase Housing Supply;
- Tapping into Private Resources to Shouldering the Burden of Housing Supply by Rationalising Lands Not Serving “GB” Function
- Not Compromising the Integrity and Function of the Wider “GB” Zone;

# ARUP

- Fully Compatible with the Surrounding Neighbourhood;
- Providing Merits and Enhancing the Landscape Amenity to the Locality;
- Resulting in NO Adverse Impacts on Surrounding Environment; and
- Setting a Desirable Precedent for Optimising Private Land Resources in “GB” Zone for Housing Supply

This Application has demonstrated Applicants’ genuine intention and commitment in taking forward the Proposed Amendment contributing to the much-needed housing supply in a suitable location and a compatible scale with the nearby existing development, without comprising the integrity of the wider “GB” zone. In light of the planning merits and justifications put forward in this Supporting Planning Statement, we sincerely seek the favourable consideration from the Town Planning Board to give support to this Section 12A Application.



# 行政摘要

(內文如與英文版本有任何差異，應以英文版本為準)

本規劃綱領根據《城市規劃條例》（第 131 章）第 12A 條，就位於西貢北圍丈量約份第 210 約內多個地段和毗連政府土地（「申請地點」），擬議修訂蠓涌分區計劃大綱草圖編號 S/SK-HC/12（「分區計劃大綱圖」），將申請地點由「綠化地帶」及顯示為「道路」的地方改劃為「住宅（丙類）5」地帶，以作擬議低密度住宅發展（「擬議修訂」）。

申請地點的總地盤面積為約 12,692 平方米，位於低密度住宅社區，鄰近有匡湖居以及北圍村和慶徑石村內的低矮屋宇。申請地點可從西貢公路到達，該路段已在 2021 年完成第一階段的西貢公路改善工程。申請地點現時主要用作為汽車維修工場、園景公司及臨時建築物，現時大部分的土地範圍沒有植被及已平整，難以體現現時「綠化地帶」的規劃意向，「*利用天然地理環境作為市區和近郊的發展區的界限，以抑制市區範圍的擴展，並提供土地作靜態康樂場地*」（摘錄於蠓涌分區計劃大綱草圖編號 S/SK-HC/12 的註釋）。

近年政府積極增加房屋供應及土地儲備。私人房屋及公營房屋的供應需持續平穩來滿足在長遠房屋策略中的房屋需求。近年政府亦進行了多輪「綠化地帶」用地檢討，並以透過改劃合適用地以作房屋發展。由 2021 年起，西貢區共有六塊劃作「綠化地帶」用地的改劃以促進房屋發展。為回應政府現時增加土地供應的政策以滿足殷切的住屋需求，擬議修訂善用土地及釋放這位於西貢北圍低密度住宅社區的發展土地潛力。

申請人已制定一個指示性方案以證明擬議修訂的可行性。擬議修訂建議於申請地點由「綠化地帶」及顯示為「道路」的地方改劃為「住宅（丙類）5」地帶，最高地積比率為 0.6 及最高建築物高度為 4 層。指示性方案的四棟有環保設計的住宅大廈將提供合共 120 個單位。申請人亦已進行相關技術評估來確定指示性方案不會對周圍環境造成不可克服的影響。

擬議修訂具有以下合理改劃理由：

- 呼應政府的現行政策以增加房屋供應；
- 善用私人土地資源，理順荒廢多年未能體現「綠化地帶」規劃意向的土地，以減輕房屋需求的壓力；
- 不影響廣大範圍內「綠化地帶」的完整性及作用；
- 符合政府檢視合適「綠化地帶」發展潛力的政策方針及評估標準；
- 確保與周邊的發展互相協調；
- 提升景觀美化價值及改善地區環境；

## ARUP

- 不會對周邊環境造成負面影響；及
- 建立良好的先例，善用在「綠化地帶」的土地以作房屋發展。

申請人對推進這個有助於在合適的地點提供急需的住房供應，與附近現有發展規模相容，並不影響廣大範圍內「綠化地帶」完整性的擬議修訂，持有誠懇和積極的態度。基於本規劃綱領所闡述的規劃增益和理據，我們懇請城市規劃委員會支持是次第 12A 條規劃申請。

# 1. INTRODUCTION

- 1.1.1 This Supporting Planning Statement is submitted to the Town Planning Board (“TPB”) in support of a Planning Application under Section 12A of the Town Planning Ordinance (Cap. 131) for Proposed Residential Development (“the Proposed Amendment”) at various lots in D.D. 210 and adjoining Government Land, Pak Wai, Sai Kung (“the Application Site”).
- 1.1.2 The Applicant proposes amendments to the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12 (“the OZP”) by rezoning the Application Site from “Green Belt” (“GB”) and Area shown as “Road” to the “Residential (Group C)5” (“R(C)5”) zone (“the Proposed Amendment”) with a maximum plot ratio (“PR”) of 0.6 and a maximum building height (“BH”) of 4 storeys, to facilitate a proposed low-density residential development.
- 1.1.3 The Application Site is bounded by Hing Keng Shek Road in its east, the Hiram’s Highway in its south and situated in a predominantly low-density residential neighbourhood. Currently, the Application Site has been occupied by a vehicle repair workshop, a commercial horticulture workshop, and temporary structures. Majority part of the Application Site has been paved. The Application Site also covers a portion of a footpath connecting to the existing temporary structures and village settlements to the north and northwest of the Application Site from Hing Keng Shek Road and Hiram’s Highway.
- 1.1.4 Following the completion of the first two rounds of “Green Belt” (GB) reviews in 2012 and 2013 respectively, the Chief Executive’s 2021 Policy Address reaffirmed that the Government would continue to review various land uses by conducting the third round of “GB” review to identify suitable sites to meet the pressing need for housing supply. Among the 77 GB sites identified with potential for housing development in the first two rounds of review, 45 sites have already been rezoned for housing development (as of January 2023). As the third round of “GB” review was completed in the end of 2022, the 255 hectares of “GB” clusters (30% of which is private land) identified will be proceeded with technical studies, with the target of initiating the rezoning for the second batch of sites in 2025-26, following completion of the rezoning for the first batch in 2024<sup>1</sup>.
- 1.1.5 In line with Government’s initiative, the Applicant sees the opportunity to rationalise the long-wasted land that barely serves the function of “GB” for residential development at a scale which is compatible with the surrounding and proven to be technically feasible. The proposed development will be compatible with the existing developments in the surrounding and serves an opportunity to unleash lands in “GB” zone under private ownership, as suggested in the third round of “GB” review, to increase housing supply through private sector participation to alleviate Hong Kong’s acute housing demand.
- 1.1.6 An Indicative Scheme has been formulated to demonstrate the feasibility of the Proposed Amendment. The Indicative Scheme is for a low-density residential development and serves an opportunity to enhance the landscape amenity and living environment for the Ho Chung Neighbourhood. The Indicative Scheme will provide about 120 private residential units with an anticipated population of about 360. The thoughtful building

---

<sup>1</sup> Source: <https://www.legco.gov.hk/yr2024/english/panels/dev/papers/dev20241022cb1-1346-3-e.pdf>

layout and disposition have ensured an environmentally acceptable design with local open spaces not less than 1m<sup>2</sup> per capita. Technical assessments conducted have also confirmed that the Proposed Amendment will not generate, nor be susceptible to adverse impacts on the surrounding area.

1.1.7 This Supporting Planning Statement is organised into the following sections in support of the suitability and feasibility of the Planning Application for the Proposed Amendment:

- **Section 2** describes the context of the Application Site and its surrounding areas;
- **Section 3** explains the planning context of the Application Site;
- **Section 4** presents the Indicative Scheme at the Application Site;
- **Section 5** summarises the amendment proposal to be incorporated into the Plan and Notes of the OZP;
- **Section 6** highlights the planning justifications and planning merits in support of the Proposed Amendment; and
- **Section 7** concludes the highlights and justifications of this Supporting Planning Statement.

## 2. SITE CONTEXT

### 2.1 Location

- 2.1.1 The Application Site is located at various lots in D.D. 210 and adjoining Government Land in Pak Wai, Sai Kung. It is bounded by Hing Keng Shek Road at its east, the Hiram's Highway at its south and situated in a predominantly low-density residential neighbourhood. With a site area of about 12,692 m<sup>2</sup>, the Application Site falls within an area mainly zoned as "GB" and partly in area shown as "Road" in the Draft Ho Chung OZP No. S/SK-HC/12.
- 2.1.2 Please refer to **Figure 2.1** for the location plan of the Application Site.

### 2.2 Land status

- 2.2.1 The Application Site area is about 12,692m<sup>2</sup>, which comprises of about 9,406m<sup>2</sup> (about 74% of the Application Site) of private lots held under Lots 13 (part), 14 (part), 15 (part), 16 (part), 17, 19 (part), 20, 21, 23, 25, 26, 27, 28, 29, 30, 31 (part), 32, 33, 34, 35, 36, 37, 38, 39, 40 (part), 41, 42, 45, 46 RP, 47 RP, 48 RP, 49 RP, 50 RP, 51 RP (part), 52 (part) and 53 RP in D.D. 210, and about 3,286m<sup>2</sup> (about 26%) of Government Land.
- 2.2.2 Please refer to **Figure 2.2** for the lot index plan of the Application Site.

### 2.3 Existing Land Use

- 2.3.1 The Application Site's site level ranges from about 4.1mPD to 5.7mPD which is at elevations comparatively lower than Pak Wai Village in the east (with a site level up to about 24.4mPD) and Hing Keng Shek Village in the north (with a site level up to about 55.7mPD). It also abuts an existing stream course along its eastern boundary.
- 2.3.2 Currently, the majority of the Application Site has been paved. The southern and western part of the Application Site is occupied by a vehicle repairing workshop, a commercial horticulture workshop, and temporary structures. Some temporary structures which used for storage and vehicle parking are also found in the middle of the Application Site.
- 2.3.3 Vegetations with low amenity value are grown along the two sides of the Application Site. An existing stream is running along the eastern boundary of the Application Site. There is also an existing pedestrian footpath connecting Hing Keng Road and Hing Keng Village across the Application Site, providing pedestrian access from Hiram's Highway in the south to the village settlements and temporary structures in the north of the Application Site.
- 2.3.4 Please refer to **Figure 2.3** for the existing condition of the Application Site.

## 2.4 Surrounding Land Use

- 2.4.1 The Application Site is situated in the Ho Chung neighbourhood mainly characterised by low to medium-rise residential buildings and village settlements, with scattered brownfields operations.
- 2.4.2 To the **immediate west** of the Application Site is a large piece of unmanaged vegetation cover and slope zoned “GB” and “Conservation Area” (“CA”). To the **further west** across the “GB” zone are the village houses within Luk Mei Tsuen under “Residential (Group D)” (“R(D)”) zone, which *“is intended primarily for improvement and upgrading of existing temporary structures within the rural areas through redevelopment of existing temporary structures into permanent buildings”* (extracted from the Notes of the Draft Ho Chung OZP No. S/SK-HC/12).
- 2.4.3 To the **immediate south** of the Application Site is the Hiram’s Highway which is a strategic road connecting Sai Kung Town Centre, Kowloon East and Tseung Kwan O. Across the Hiram’s Highway, there is a public car park and a cluster of village houses in Pak Wai Village, which is a recognized village in the “Village Type Development” (“V”) zone with 3-storey village houses. To the **further south** of the Application Site has been fully developed with low to medium-rise residential development cum marina development, namely Marina Cove (with existing buildings up to 6 storeys), which is zoned as “Other Specified Uses (Residential cum Marina Development)” in the Approved Hebe Haven OZP No. S/SK-HH/8.
- 2.4.4 To the **east** of the Application Site across Hing Keng Shek Road is a cluster of low-rise village settlements of Pak Wai Village in “V” zone and slope areas in the “CA” zone with dense vegetation.
- 2.4.5 To the **immediate north** of the Application Site is the slope in the same “GB” zone as the Application Site and some scattered village houses within Hing Keng Shek Village in “V” zone. **Further north** across the “GB” zone is a cluster of low-rise residential houses in “V” zone, including Hillview Lodge and Bernard Garden, as well as other village houses of recognized villages, including Hing Keng Shek and Sam Fai Tin.
- 2.4.6 Please refer to **Figures 2.4a to 2.4b** for the surrounding uses of the Application Site.

## 2.5 Accessibility

- 2.5.1 The Application Site has access to/from the Hiram’s Highway, which is a strage road connecting to other areas in Sai Kung, Kowloon East and Tseung Kwan O. Following the completion of the Stage 1 improvement project of the Hiram’s Highway in 2021<sup>2</sup>, the accessibility of the Application Site has been enhanced through road widening of sections between Clear Water Bay Road and Ta Ku Ling, and between Nam Pin Wai Roundabout and Marina Cove to dual carriageway. The traffic conditions in Sai Kung will be further enhanced with strengthened connectivity with Kowloon area upon the completion of the Stage 2 improvement project (ongoing) which will widen the sections of Hiram’s

---

<sup>2</sup> Source: [https://www.hyd.gov.hk/en/our\\_projects/road\\_projects/703th\\_Hirams/index.html](https://www.hyd.gov.hk/en/our_projects/road_projects/703th_Hirams/index.html)

Highway between Marina Cove and Sai Kung Town. The accessibility of the Application Site is anticipated to be further improved in the future.

- 2.5.2 Apart from anticipated connectivity improvement discussed above, the Application Site is currently well-served by public transport services, including franchised bus, red and green minibus with stops within 100m walking distance. Public transport services (with bus routes 92, 96R, 292P and 792M; minibus routes 1, 1A, 1S, 2, 12 and 101M) at Pak Wai provide convenient connection to Sai Kung town centre and other urban areas, such as Kwun Tong, Diamond Hill, Causeway Bay and Mong Kok etc.

## 3. PLANNING CONTEXT

### 3.1 Land Use Zoning

- 3.1.1 The Application Site falls within the “GB” zone and area shown as “Road” under the Draft Ho Chung OZP No. S/SK-HC/12. It has been designated as “GB” for over 30 years since the gazettal of the draft Ho Chung Development Permission Area (DPA) Plan No. DPA/SK-HC/1 in 1991.
- 3.1.2 According to the Notes of the OZP, the planning intention of the “GB” zone is *“primarily for defining the limits of urban and sub-urban development areas by natural features, and to contain urban sprawl as well as to provide passive recreational outlet. There is a general presumption against development within this zone”*.
- 3.1.3 The Explanatory Statement (“ES”) further elaborates the planning intention of the subject “GB” zone *“primarily for defining the limits of urban and sub-urban development areas by natural features, including foothills, lower hillslopes, spurs, isolated knolls, woodland, vegetated land and amenity areas at urban fringe, and to contain urban sprawl as well as to provide passive recreational outlet and delineating roadside amenity areas”*.
- 3.1.4 While it is noted from the ES that *“part of the area under this zoning falls within the Ho Chung Site of Archaeological Interest. Relics dated to Neolithic, Bronze Age and historic periods were unearthed in the area... Prior consultation with the AMO of Development Bureau should be made if any development, redevelopment or rezoning proposals might affect the above historic building or sites of archaeological interest and their immediate environs”*, it is confirmed that no parts of the Application Site fall within the Ho Chung Site of Archaeological Interest (SAI).
- 3.1.5 In any area shown as ‘Road’, it is specified in the covering Notes that *“all uses or developments... require permission from the Town Planning Board”*.
- 3.1.6 Please refer to **Figures 3.1a to 3.1g** for the extracts of the Notes, Schedule of Uses, and ES of the Draft Ho Chung OZP No. S/SK-HC/12.

### 3.2 Government’s Multi-Pronged Approach to Increasing Housing Supply

- 3.2.1 In view of the pressing housing issue in Hong Kong, the Government has been adopting a multi-pronged approach to expediting land supply for housing via various land creation strategies<sup>3</sup>. It was stressed in the 2020 Policy Address that privately-owned land has always been an important source of housing supply<sup>4</sup>. Various policies have been introduced to unleash the development potential of private land and alleviate the shortage of land for housing development<sup>5</sup>.

---

<sup>3</sup> Paragraph 96 of the 2020 Policy Address. Source: <https://www.policyaddress.gov.hk/2020/eng/p96.html>

<sup>4</sup> Paragraph 101 of the 2020 Policy Address. Source: <https://www.policyaddress.gov.hk/2020/eng/p99.html>

<sup>5</sup> Development Projects Facilitation Office, Development Bureau. Source: [https://www.devb.gov.hk/en/issues\\_in\\_focus/development\\_projects\\_facilitation\\_office/index.html](https://www.devb.gov.hk/en/issues_in_focus/development_projects_facilitation_office/index.html)

3.2.2 The Government has been determined to sustain steady land supply for both public and private housing in the recent years to meet the keen housing demands in Hong Kong. To speed up land supply in the short-to-medium term, various measures, including the review of “GB” zone, have been adopted. Meanwhile, the Government is committed to streamlining the development-related processes in response to the society’s expectations for speedier land supply.

3.2.3 In 2022, the Government continued its efforts in identifying more land to meet the housing demand and increase land reserve, such as a new round of study on “GB” zone, review of vacant school premises sites and the consultancy study on Agricultural Priority Areas. It also strived to gradually redevelop brownfield sites in the New Territories for housing and other uses to ease the housing problems. According to the Long-Term Housing Strategy in 2024, a supply target of 132,000 units of private housing in the upcoming 10 years has been set, accounting for about 30% of the overall housing supply target<sup>6</sup>.

3.2.4 In view of the pressing need for housing supply, there is genuine opportunity for the Applicant, as an owner of a piece of disturbed and underutilised land locating in immediate proximity to the main road, to review the development potential of the Application Site to shoulder the Government’s burden through private initiatives in a timely manner.

### 3.3 Policy Initiatives for Rezoning of “Green Belt” Zone for Housing Sites

3.3.1 As mentioned in **Paragraph 3.3.2**, reviewing and rezoning “GB” sites for housing development has been one of the major measures of the Government to increase land for housing supply. Following the completion of the two rounds of “GB” review (Stage 1 in 2012 and Stage 2 in 2013 respectively), the Government has recognised rezoning of “GB” zones as a vital source of housing land supply due to their relatively low ecological value and committed to a new round of review of land zoned “GB” (Stage 3 “GB” Review)<sup>7</sup>. The Stage 3 “GB” Review which commenced in 2021 targeted at “*sites with higher gradient and farther away from the built-up area but still with road in the vicinity, including private land*”. **Table 3.3.1** below summarises the key assessment criteria of different rounds of “GB” Reviews initiated by the Government:

**Table 3.3.1 Key Assessment Criteria of “Green Belt” Reviews Initiated by the Government**

Rounds of “GB” Review	Assessment Criteria
<b>Stage 1 “GB” Review<sup>8</sup></b>	- Devegetated, deserted and formed, and those that are closer to existing urban areas and new towns
<b>Stage 2 “GB” Review<sup>9</sup></b>	- In the fringe of built-up areas close to existing urban areas and new towns, and those

<sup>6</sup> Long Term Housing Strategy Annual Progress Report 2024. Source: [https://www.hb.gov.hk/eng/policy/housing/policy/lths/LTHS\\_Annual\\_Progress\\_Report\\_2024.pdf](https://www.hb.gov.hk/eng/policy/housing/policy/lths/LTHS_Annual_Progress_Report_2024.pdf)

<sup>7</sup> LC Paper No. CB(1)1395/20-21(01) Source: <https://www.legco.gov.hk/yr20-21/english/panels/dev/papers/dev20211025cb1-1395-1-e.pdf>

<sup>8</sup> LCQ10: Statistics on and rezoning of Green Belt sites. Source: <https://www.info.gov.hk/gia/general/201801/24/P2018012400288p.htm>

<sup>9</sup> LCQ10: Statistics on and rezoning of Green Belt sites. Source: <https://www.info.gov.hk/gia/general/201801/24/P2018012400288p.htm>

	vegetated areas with relatively less buffering effect and lower conservation value
<b>Stage 3 “GB” Review<sup>10</sup></b>	- Sites with higher gradient and farther away from the built-up area but still with roads in the vicinity, covering even private land

3.3.2 In the first two stages of the “GB” review, a total of 77 sites with potentials for residential use have been shortlisted, and 45 of them have been rezoned from “GB” to housing sites. Stage 3 of the “GB” review, completed in the end of 2022, has further identified about 255 ha of “GB” clusters (about 30% being private land), with the completion of the rezoning of the first batch of these clusters in 2024 and the target of initiating rezoning for the second batch of sites in 2025-26<sup>11</sup>.

3.3.3 Locally, a total of 6 “GB” sites in Sai Kung District, where the Application Site is located, have already been rezoned for private/public housing development during the previous rounds of land use reviews. Summary of the rezoning sites is shown in **Table 3.3.2** below.

**Table 3.3.2 Rezoning of “GB” Sites initiated by the Government in Sai Kung District for Housing Development<sup>12 13</sup>**

No.	Location	Site Area (in ha)	Rezoning Proposal and Development Restriction	No. of Flats	Status
1	The junction of Pik Sha and Clear Water Bay Road <sup>14</sup>	0.13	- To “R(C)10” - Maximum PR of 0.6 - Maximum SC of 30% - Maximum BH of 3 storeys (including carport)	4 (Private)	Rezoning Completed
2	South of Chiu Shun Road, Tseung Kwan O <sup>15</sup>	0.46	- To “R(A)8” - Maximum PR of 6.5 - Maximum BH of 130mPD	600 (Public)	Rezoning Completed
3	East of Movie City, Tseung Kwan O	2.26	- To “R(A)7” - Maximum PR of 6.5 - Maximum BH of 210mPD	2,900 (Public)	Rezoning Completed

<sup>10</sup> 2021 Policy Address. Source: [https://www.devb.gov.hk/en/about\\_us/policy/2021-policy-address-supplement/policy-address-and-pasupplement-initiatives/index.html](https://www.devb.gov.hk/en/about_us/policy/2021-policy-address-supplement/policy-address-and-pasupplement-initiatives/index.html)

<sup>11</sup> LC Paper No. CB(1)1346/2024(03). Source: <https://www.info.gov.hk/gia/general/202301/18/P2023011800376.htm?fontSize=1>

<sup>12</sup> Task Force on Land Supply Paper No. 10/2017. Retrieved from: [https://www.devb.gov.hk/filemanager/en/content\\_1054/Paper\\_10\\_2017.pdf](https://www.devb.gov.hk/filemanager/en/content_1054/Paper_10_2017.pdf)

<sup>13</sup> 9 Replies to initial written questions raised by Finance Committee Members in examining the Estimates of Expenditure 2021-22. Retrieved from: [https://www.devb.gov.hk/filemanager/en/content\\_1251/devb-pl-e.pdf](https://www.devb.gov.hk/filemanager/en/content_1251/devb-pl-e.pdf)

<sup>14</sup> RNTPC Paper No. 7/13. Retrieved from: [https://www.info.gov.hk/tpb/en/papers/RNTPC/486-rntpc\\_7-13.pdf](https://www.info.gov.hk/tpb/en/papers/RNTPC/486-rntpc_7-13.pdf)

<sup>15</sup> RNTPC Paper No. 6/17. Retrieved from: <https://www.info.gov.hk/tpb/en/papers/papers.html>

No.	Location	Site Area (in ha)	Rezoning Proposal and Development Restriction	No. of Flats	Status
4	Northwest of Ying Yip Road, Tseung Kwan O	1.59	- To “R(A)7” - Maximum PR of 6.5 - Maximum BH of 170mPD	1,600 (Public)	Rezoning Completed
5	West of Yau Yue Wan Village, Tseung Kwan O	2.95	- To “R(A)7” - Maximum PR of 6.5 - Maximum BH of 140mPD	2,700 (Public)	Rezoning Completed
6	Ta Ku Ling, Tseung Lan Shue area <sup>16</sup>	2.55	- To “R(C)7” - Maximum GFA of 23,466m <sup>2</sup> (PR of about 1.3) <sup>17</sup> - Maximum BH of 7 storeys (24m)	330 (Private)	Rezoning Completed

3.3.4 It is highlighted that the site in Ta Ku Ling was recently rezoned from “GB” to “R(C)7” for private housing development as one of the amendment items on the Draft Tseng Lan Shue OZP No. S/SK-TLS/9 and agreed by the TPB for submission to the CE in C for approval on 2 September 2022<sup>18</sup>. The rezoned “GB” site has a site area of about 2.55ha and is intended for private housing development providing about 330 flats in 14 nos. of 7-storey towers with a PR of about 1.3. In terms of land use and development intensity, the site was considered not incompatible with the surrounding areas given that there are existing low-density residential developments and village houses nearby. The Application Site shares similar context with this rezoned “GB” site by locating within a low to medium-density neighbourhood.

3.3.5 In addition, the Application Site is mostly paved with some peripheral vegetation of low conservation value and locates near to an existing residential area with existing and future’s convenient transport infrastructure connecting to Sai Kung town centre and other urban cores, meeting the criteria under the stages of “GB” Reviews with potential for housing development. Hence, the potential of the Application Site to serve as an immediate and effective contribution to housing supply in short-to-medium term through private sector involvement is worth a careful evaluation.

<sup>16</sup> RNTPC Paper No. 1/22. Retrieved from: <https://www.info.gov.hk/tpb/en/papers/papers.html>

<sup>17</sup> Of the site area of 2.55ha, about 0.76 ha is designated as non-building area (NBA) for associated access road and pedestrian facilities. The PR of the proposed residential development (with a total GFA of 23,466m<sup>2</sup>) on the development site (1.79 ha) is equivalent to about 1.3. (Source: RNTPC Paper No. 1/22. Retrieved from: <https://www.info.gov.hk/tpb/en/papers/papers.html>)

<sup>18</sup> Minutes of 1280th Meeting of the Town Planning Board held on 2.9.2022. Retrieved from: [https://www.info.gov.hk/tpb/en/meetings/TPB/Minutes/m1280tpb\\_e.pdf](https://www.info.gov.hk/tpb/en/meetings/TPB/Minutes/m1280tpb_e.pdf)

### 3.4 Changing Planning Circumstances in the Immediate Surrounding

- 3.4.1 To accommodate the anticipated traffic growth and cope with unexpected incidents along the sections of Hiram's Highway, the Government has completed the Stage 1 improvement project in 2021 and commenced the stage 2 improvement project in 2024. The project scope is to widen the sections of Hiram's Highway between Marina Cove and Sai Kung Town, Po Tung Road and section of Tai Mong Tsai Road to the south of Sha Ha (**Figures 3.4a-b**).
- 3.4.2 First stage of the improvement project between Clear Water Bay Road and Marina Cove as well as the enhancement work on local access to Ho Chung was completed in February 2021. The widening of two sections of Hiram's Highway between Clear Water Bay Road and Ta Ku Ling and between Nam Pin Wai Roundabout and Marina Cove into dual carriageway helps relieve the traffic congestion, enhance the road safety, and improve the local access to Ho Chung and Luk Mei Tsuen. The improvement project has brought convenience to the future residents of the proposed residential development at the Application Site.
- 3.4.3 The Hiram's Highway Stage 2 improvement project, which focuses improving connections between Marina Cove to Sai Kung Town, has commenced in 2024<sup>19</sup>. The completion of two stages improvement works is anticipated to enhance the overall accessibility of the Application Site with more convenient connections to other parts of Sai Kung, Kowloon East and Tseung Kwan O areas. This would help shorten the commuting time and enhance travelling experience of both nearby residents and visitors.

---

<sup>19</sup> Hiram's Highway Improvement Stage 2. Source: [https://www.hyd.gov.hk/en/our\\_projects/road\\_projects/6806th/index.html](https://www.hyd.gov.hk/en/our_projects/road_projects/6806th/index.html)

## 4. THE INDICATIVE SCHEME

### 4.1 Echoing the Government's Effort to Identify Suitable "GB" Sites in Private Land for Residential Redevelopment

- 4.1.1 The Application Site, located on the fringe of the "GB" zone, is directly accessible from the Hiram's Highway. The Hiram's Highway has undergone road widening works in the Stage 1 improvement project (completed in 2021) and is expected to be further enhanced with the ongoing Stage 2 improvement project (commenced in 2024). Notwithstanding the planning intention of the "GB" zone which is "*primarily for defining the limits of urban and sub-urban development areas by natural features, and to contain urban sprawl as well as to provide passive recreational outlet*", the Application Site has been largely paved and is currently occupied by a vehicle repairing workshop, a commercial horticulture workshop and temporary structures, which does not necessarily serving the function of a "GB". Given the Application Site is located within an established residential neighbourhood of Ho Chung and its highly accessible location, it is considered suitable to review its future use, as a response to Government's policy to identify suitable "GB" sites for housing development.
- 4.1.2 In response to the Chief Executive's target to continuously enhance "speed, quantity, quality and efficiency" in land production (2024 Policy Address), the Application Site, which has met the criteria adopted in the three rounds of "GB" review initiated by the Government, will provide an efficient solution to shouldering the Government's burden on catching housing supply target through private initiatives of residential development at an appropriate location.

### 4.2 Key Planning and Design Principles

- 4.2.1 **To Utilise Precious Private Land Resources Without Compromising on the Quality of Landscape and Environment** – The Application Site is located on the fringe of the "GB" zone adjoining established residential developments (adjoining "V", "R(D)" and "R(E)" zones) with direct connection with the Hiram's Highway. It has been occupied with land uses that hinder it from serving the intended "GB" function. Taking into consideration the profile of natural terrain, development intensity of existing residential development in the surrounding, including village houses in Pak Wai Village and Marina Cove (with existing residential towers up to 6 storeys) to the immediate south, an Indicative Scheme with compatible development intensity is proposed. The Indicative Scheme intends to be a low-density residential development subject to a maximum PR0.6 with a BH ranging from 3 to 4 storeys descending from the hillside in the north towards the main road in the south.
- 4.2.2 **To Adopt Sensitive Design to Ensure Compatibility to the Surroundings** – To respect the surrounding environment, the Indicative Scheme will adopt a sensitive design with urban oasis style that ensures compatibility and minimal disturbance. Careful attention has been paid to the boundary of the Application Site in order to avoid encroachment and minimise the potential impacts on the existing river course running along the eastern boundary. Following the profile of the natural terrain, the BH of the four residential towers are designed to descend from 4 storeys located closer to the hillside in the north to 3 storeys in the south. To minimise the potential noise nuisance arising from vehicular

traffic, an 8.5m-tall fence wall is proposed along the southern boundary of the Application Site facing Hiram’s Highway. In addition, to better integrate with the surrounding environment, tree buffer will be proposed at the entrance connecting to the Hiram’s Highway and along the boundary of the Application Site to provide a smooth transition and screen off any visual impact.

4.2.3 **To Maintain the Existing Pedestrian Access across the Application Site by Reprovisioning Footpath with Enhanced Design along the River** – Currently there is a public footpath running across the Application Site in a north-south direction connecting villages to the north to Hiram’s Highway to the south. To ensure undisturbed pedestrian access, the affected footpath will be reprovisioned for public use along the eastern boundary of the Application Site next to the river, with enhanced design, including tree shading offered by a continuous tree row.

4.2.4 **To Phase out Visual Eye Sores and Improve the Local Landscape Amenity** – Based on the tree survey, all species identified in the Application Site are common landscape species and of low amenity value. Moreover, the current uses in the Application Site, including a vehicular repairing workshop and temporary structures, have hindered it from fulfilling the intended “GB” functions and is considered incompatible with the surrounding residential environment. Quality landscape designs and tree planting with species suitable for the locality as far as possible will be proposed with dedicated management and maintenance schedule as part of the proposed residential development. This will in turn enhance the local amenity and improve compatibility with surrounding neighbourhood environment.

4.2.5 **To Overcome Specific Site Constraints and Create Liveable Neighbourhood** –In view of the natural terrain and the possible geohazard risks, the western portion of the Application Site has been designed as local open space and landscape area with no erection of any residential structures. By addressing the specific site constraints through sensitive design, the Indicative Scheme strives to introduce interesting and quality landscaped open space and recreational facilities for the enjoyment of future users.

4.2.6 Please refer to **Appendix A** for the architectural scheme of the Indicative Scheme.

### 4.3 Key Development Parameters

4.3.1 The key development parameters of the Indicative Scheme are summarised in **Table 4.3.1** below.

**Table 4.3.1 Key Development Parameters of the Indicative Scheme**

Development Parameters	Indicative Scheme
Site Area	About 12,692m <sup>2</sup>
Plot Ratio (PR)	0.6
Total Domestic GFA	About 7,615.2m <sup>2</sup>
No. of Residential Blocks	4
Building Height of Residential Blocks (No. of Storeys)	Block 1 – 4 storeys Block 2 – 4 storeys Block 3 – 4 storeys Block 4 – 3 storeys (excluding a 1-level basement)

Site Coverage	Not more than 20%
No. of Units	About 120
Average Unit Size	About 63.5 m <sup>2</sup>
Design Population <sup>(1)</sup>	About 360
Greenery Coverage	Not less than 20%
Local Open Space	Not less than 360m <sup>2</sup>
Residents' Clubhouse	One 1-storey block with GFA of not more than 380.76m <sup>2</sup> <sup>(2)</sup>
<b>Internal Transport Provision</b>	
No. of Car Parking Spaces	79
• Resident Car Parking Space	71
• Visitor Car Parking Space	8
No. of Motorcycle Parking Space	2
No. of Loading/Unloading (L/UL) Bay Provision	HGV: 4
Tentative Completion Year	About 2031

Remarks:

<sup>(1)</sup> A person per flat (PPF) ratio of 3 is assumed, according to the average household size of District Council Constituency Area (Q02) Pak Sha Wan in 2021 Population Census.

<sup>(2)</sup> According to APP-104, a maximum 5% of total domestic GFA could be applied for GFA concession for use as a clubhouse in a development with domestic GFA of up to 25,000m<sup>2</sup>. The clubhouse GFA is proposed to be exempted from GFA calculation.

## 4.4 Building Design of the Indicative Scheme

### **Building Layout of the Indicative Scheme**

- 4.4.1 The Application Site is situated at convenient location directly connected to Hiram's Highway, a strategic road connecting Sai Keung with Kowloon and Tseung Kwan O, overlooking Marina Cove and Sai Kung Bay beyond, with rolling hills behind and a stream running along the eastern boundary. The Application Site is in the Ho Chung neighbourhood with existing low- to medium-rise residential development. The building layout and building heights of the proposed residential towers above a basement carpark have been designed to aptly fit into the surrounding environment of the Application Site.
- 4.4.2 The Indicative Scheme is comprised of 4 Residential Blocks with an ancillary clubhouse block next to Residential Block 1. The building height of the four Residential Blocks are designed to descend from 4 storeys (Blocks 1, 2 and 3 located closer to the hillside in the north) to 3 storeys (Block 4 near the main road). All of them are in a compatible scale with the existing residential development nearby, such as the 3-storey village houses in the nearby "V" zones and Marina Cove with BH up to 6 storeys. By situating the clubhouse with a swimming pool and local open space in the northern part of the Application Site, not only does it provide a place for the future residents' enjoyment, but also maximise the separation between the residential blocks and the wider "GB" zone to the north of the

Application Site, minimising the impacts of the development on the integrity and functions of the “GB” zone.

- 4.4.3 The Indicative Scheme will provide about 120 nos. of residential unit with an anticipated population of about 360. An on-site sewage treatment plant will be provided at the southern portion of the Application Site to handle the sewage generated by the proposed development, in view that there are no existing public sewers in the vicinity of the Application Site for connection. A 2m-wide public footpath open for 24-hour access is proposed along the eastern boundary next to the river to re-provide the pedestrian connection between the Hiram’s Highway and the villages to the north of the Application Site, with an enhanced pedestrian comfort by continuous tree shading. All car park will be provided in the basement level to minimise the BH, with the run in/out located between Residential Blocks 1 and 2.
- 4.4.4 Please refer to **Appendix A** for the Architectural Plan of the Indicative Scheme.

### **Building Design**

- 4.4.5 The Indicative Scheme has given due consideration to development intensity, in terms of the PR and BH, of the adjoining existing residential developments. Taking into account the lower site formation level of the Application Site, the Indicative Scheme with 4-storey residential blocks near the hillside and a 3-storey residential block nearer to the main road, will be compatible with the immediate residential neighbourhood, such as the village houses in Pak Wai and Marina Cove with existing residential towers up to a BH of 6 storeys.
- 4.4.6 To respect the existing natural terrain at the western and southern portion of the Application Site, all residential blocks will provide a setback of not less than 10m from the natural terrain to reduce potential risk. Considering that the Application Site is adjoining the Hiram’s Highway, the building orientation has been designed to minimise potential noise nuisance. Meanwhile, an 8.5m fence wall is proposed along the southern boundary between the proposed development and Hiram’s Highway to further mitigate noise impacts. All Residential Blocks have at least 15m buffer with the Hiram’s Highway to ensure future residents will not be affected by traffic-related air pollution.
- 4.4.7 Moreover, the landscape design of the Indicative Scheme aims to create pleasant environment for the enjoyment of the residents. The proposed landscape elements will provide private open space with style in harmony with the architectural scheme.

### **Maximised Greening Opportunity and Provision of Local Open Space**

- 4.4.8 The Indicative Scheme has optimised the provision of greenery and fulfilled the requirement for local open space. While no building structures have been proposed in the western portion of the Application Site in view of the potential risks of the adjacent natural terrain, greening opportunities have been optimised by introducing tree planting that enhances compatibility of the proposed development with the surrounding rural settings while serving as a buffer for the proposed residential blocks from the slope.
- 4.4.9 Besides greenery, the Indicative Scheme is also proposed with local open space of not less than 360m<sup>2</sup>. A Central Plaza and BBQ Area have been proposed to the north of Residential

Block 3 to facilitate social interaction and integration among residents. To create a child-friendly residential community, a children play area has also been proposed to provide convenient access for residents to enjoy.

- 4.4.10 To further complement the tree planting and create an urban oasis within a countryside setting, interesting landscape features and local open spaces, such as the floral garden and community farm, have also been introduced as community areas for residents to enjoy, appreciate and gather, promoting community interaction and integration among residents. Installations for fostering a sustainable ecology with zero-carbon features will also be explored at the detailed design stage.

## 4.5 Landscape Design Concept

### Landscape Design

- 4.5.1 With the design concept of creating the urban oasis style, the landscape proposal for the Indicative Scheme will focus on quality and interesting landscaping features for the liveable neighbourhood, as well as an emphasis on ecological sustainability and community integration.

- **Community Farm:** A dedicated space in the Application Site will be allocated for a community farm, providing residents with the opportunity to grow their own produces of different species in accordance with the change of seasons in a year, hence creating a colourful landscape and fostering a sense of community.
- **Floral Garden:** A floral garden will be provided in the northern portion of the Site near the proposed swimming pool and clubhouse. A variety of plant species will be featured in the floral garden to promote ecological diversity. It also serves as a pleasant community area for people to enjoy and gather, which promotes interaction and integration within the community.
- **Tree Row along the Public Footpath:** A row of tree is planted along the public footpath along the eastern boundary providing shading for public users, including villagers living nearby and hikers. The lush tree lining will also help create a more comfortable and inviting environment for pedestrians by providing shading and reducing the temperature of the surrounding area, especially during hot summer months.
- **Fence Wall:** Except for the southern boundary where an 8.5m tall fence wall would be proposed to mitigate the noise impacts, a 2m tall fence wall will be installed along other sections of the site boundary. The fence wall will be constructed mainly by perforated mesh with planting area underneath, which would allow free air movement for humans and plants to live and grow healthily.

### Tree Preservation Proposal

- 4.5.2 Based on the updated tree survey, among the 130 nos. of trees surveyed, no old, valuable, rare or endangered species have been found. All the trees identified are common landscape species. A total of 116 existing trees are proposed to be felled due to poor health condition/conflict with proposed development. Specifically, due to a low suitability for

transplant and presence of climbers on trunk, the mature tree T59 is proposed to be felled. In compensation for trees to be felled, a total of 116 nos. of compensatory trees and 12 no. of new trees (not including the feature trees) are proposed in the Indicative Scheme. The implementation of proposed compensatory tree planting has achieved the compensatory planting ratio of 1:1 in terms of quantity as far as possible. Photographic record showing the trees along river at southern boundary are outside site boundary is provided for information.

### **Local Open Space Provision**

- 4.5.3 The Indicative Scheme is in accordance with the open space requirement in the Hong Kong Planning Standards and Guidelines (HKPSG), which requires at least 1m<sup>2</sup> local open space per person. With an anticipated population of about 360 persons, not less than 360m<sup>2</sup> of local open space will be provided in the Indicative Scheme.

### **Greenery Provision**

- 4.5.4 The Indicative Scheme is also in full compliance with the requirement of PNAP APP-152 that an area of not less than 20% of the total greenery will be provided. The Landscape Master Plan including Tree Survey Report and Tree Compensatory Plan is provided in **Appendix B**.

## **4.6 Traffic Arrangement, Pedestrian Connections, and Internal Transport Facilities**

### **Vehicular Access**

- 4.6.1 The vehicular access for the Indicative Scheme is located at Hing Keng Shek Road. The existing section of Hing Keng Shek Road between the proposed vehicular access and Hiram's Highway is proposed to be widened as a 6m-wide 2-lane single carriageway. The vehicular access to the basement car park is located between Residential Blocks 1 and 2.
- 4.6.2 Within the internal road network, a roundabout is proposed near the entrance location for vehicles entering the residential portions of the Site or the on-site sewage treatment plant for maintenance purpose.

### **Pedestrian Connections**

- 4.6.3 There is an existing pedestrian footpath which provides access from Hiram's Highway to the village settlements and temporary structures in the north of the Application Site. Under the Indicative Scheme, a 2m-wide public footpath is proposed along the eastern portion of the Application Site to provide public users with an unrestricted 24-hour access between the Hiram's Highway in the south and the village settlements and temporary structures in the north of the Application Site. The public footpath will be aligned with a tree row to provide shading and pleasant pedestrian environment.

## **Internal Transport Facilities**

- 4.6.4 All internal transport facilities within the Application Site are provided in accordance with the high-end requirements of the HKPSG. Parking spaces for the residential towers would be provided on basement level to reduce the building height and bulk, while the loading/unloading bays will be provided on ground level.
- 4.6.5 Please refer to the **Appendix C** Traffic Impact Assessment for the details on the traffic and transport arrangement for the Indicative Scheme.

## 5. AMENDMENT PROPOSAL

### 5.1 Considerations for An Appropriate Zoning

5.1.1 In response to the Government’s ongoing initiative to identify suitable sites for housing development, and with the fact that the existing condition of the Application Site may not be serving the planning intention of “GB”, an appropriate zoning to realise the development potential of the Application Site should be in place to realise the Indicative Scheme discussed in **Section 4**. The key factors contributing to an appropriate and successful zoning is listed out in the following sub-sections.

### 5.2 Clear Planning Intention

5.2.1 The proposed zoning should carry a clear planning intention and development direction for the type of uses and development intensity on the Application Site. In the case of this Application Site, the zoning should clearly specify that the Application Site shall predominately be used for low-density residential development.

### 5.3 Appropriate Zoning Control

5.3.1 The proposed zoning should have appropriate zoning control over the proposed use, scale and intensity by designating restrictions on the PR and BH to guide the direction of the development towards the intended planning intention and to achieve optimisation of the development potential of the Application Site. Appropriate zoning control would also ensure that the Indicative Scheme will be compatible with the surroundings in the Sai Kung context.

### 5.4 Appropriate Zoning Flexibility

5.4.1 Some kind of flexibility has to be allowed in the zoning to allow flexibility in creative and innovative design and proposals, which can tie in more closely to community aspirations and market demands in the Sai Kung Area.

### 5.5 The Proposed Amendment

5.5.1 In relation to the overall policy direction of increasing land supply for housing development through rezoning “GB” sites, the Application Site which is close to existing built-up area, has low buffering effect and conservation value, and is well-served by existing road infrastructure in the vicinity has met suitable criteria in Stages 2 and 3 of the “GB” reviews. In light of the discussion in the above Sections, this Planning Application proposes amendment to the Plan and Notes of the Draft Ho Chung OZP No. S/SK-HC/12 by rezoning the Application Site from “Green Belt” (GB) and Area shown as “Road” to a sub-area, “Residential(Group C)5” (“R(C)5”), under the original “R(C)” zone with the same set of schedule of uses and a development intensity compatible with the surrounding context for private residential use.

5.5.2 As illustrated in the Indicative Scheme for the proposed low-density residential development, the “R(C)5” sub-zone will adopt the planning intention and schedule of uses of the original “R(C)” zone, while it will be subject to a maximum PR of 0.6 and a

maximum BH with 4 storeys (excluding basements) proposed in the Notes of the OZP covering the entire Application Site. In addition to the Proposed Amendments to the Plan and the Notes of the OZP, this Application proposes the below clause to the Explanatory Statement of the proposed “R(C)5” zone to maintain effective planning control over committed public planning gain:

- For “R(C)5” zone, should the public footpath be affected by any development or redevelopment proposals, it shall be reprovisioned.

5.5.3 The Proposed Amendment on the Plan is shown in **Figure 5.5a**. The Proposed Amendments to the Notes and ES of the OZP are illustrated in **Figures 5.5b to 5.5g** respectively.

## 6. PLANNING JUSTIFICATIONS

### 6.1 Echoing the Government's Prevailing Policy to Increase Housing Supply

- 6.1.1 The Proposed Amendment for facilitating private residential development at the Application Site is in line with the Government's ongoing policy to boost the much-needed housing supply. According to the 2024 Policy Address, the Government restated its commitment in expediting up land supply for housing development by implementing various measures, such as streamlining the land development processes.
- 6.1.2 Moreover, according to the Long-Term Housing Strategy Annual Progress Report 2024, the total housing supply for the next 10-year period will be 440,000 units (in which the private housing supply target accounts for 30% of the total target, which is 132,000 units)<sup>20</sup>. As mentioned above, there are 6 sites that have been rezoned for residential development in Sai Kung District since 2021. This demonstrates that the changing planning circumstances that favours the release of development potential of suitable "GB" sites in Sai Kung for housing development.
- 6.1.3 The Application Site is in proximity to the built-up residential developments in Ho Chun and is conveniently connected to the Hiram's Highway. With the completed Hiram's Highway Improvement Stage 1 and the ongoing Stage 2 improvement work, the traffic conditions in Sai Kung and accessibility of the Application Site will be further enhanced. In view of the enhancement in the capacity of the road traffic infrastructure in Sai Kung area and the Government's initiative to rezone suitable "GB" zones for residential use, the Proposed Amendment is regarded as a proactive response to the Government's policy and the changing planning context by tapping into private land resources. The Proposed Amendment will make optimal use of the land that does not serve the intended functions of "GB" zone and provide 120 residential units by 2031.

### 6.2 Tapping into Private Resources to Shouldering the Burden of Housing Supply by Rationalising Lands Not Serving "GB" Function

- 6.2.1 Despite being zoned as part of "GB" zone on the OZP for almost 30 years, the Application Site does not perform the function of "GB" which is "*for defining limits of urban and sub-urban development, contain urban sprawl and provide passive recreational outlets.*" As shown in **Figure 2.3**, majority of the Application Site is occupied by a vehicle repairing workshop, a commercial horticulture workshop, and temporary structures. The vegetation found at the Application Site are common species in Hong Kong with generally low conservation or ecological value.
- 6.2.2 Adjoining the existing built-up area in the surrounding, the Hiram's Highway, being well-served by public transport, the Application Site has yet to fully utilise its development

---

<sup>20</sup> Long Term Housing Strategy Annual Progress Report 2022 (for the 10-year period from 2023-24 to 2032-33). Retrieved from: [https://www.hb.gov.hk/eng/policy/housing/policy/lths/LTHS\\_Annual\\_Progress\\_Report\\_2024.pdf](https://www.hb.gov.hk/eng/policy/housing/policy/lths/LTHS_Annual_Progress_Report_2024.pdf)

potential, which warrants a comprehensive review of the land uses for development compatible with the developments in its surroundings.

6.2.3 About 74% of the Application Site is occupied by private lot and the Applicant is keen to put forward the proposed residential development with a compatible scale with the surrounding. By making more efficient use of private land resources, it will help shoulder part of the burden of the Government’s housing supply.

**6.3 In Line with the Government’s Initiatives and Criteria of Reviewing Suitable “GB” Zone for Housing Development**

6.3.1 As outlined in **Section 3**, the Government conducted 3 stages of reviewing sites that fall within “GB” zones and exploring their development potential of sites to increase the land supply. The first two rounds of “GB” review have identified 77 sites in “GB” zones with potential for housing development, while the rezoning of the first batch of “GB” clusters identified in the third round of review has been completed in 2024.

6.3.2 Based on the criteria used in three rounds of “GB” review by the Government, **Table 6.3.1** below summarises the applicability of the Application Site, as a suitable “GB” site that warrants review for suitable land uses for housing purpose.

**Table 6.3.1 Fulfilment of the Government’s Assessment Criteria in Reviewing “GB” Sites**

Assessment Criteria adopted in Three Rounds of “GB” Review	Fulfilment of the Application Site
<p><b>Stage 1 “GB” Review</b> devegetated, deserted or formed, and those that are closer to existing urban areas and new towns</p>	<p>✓ The Application Site is mostly occupied by a vehicle repairing workshop, a commercial horticulture workshop, and temporary structures. Trees with generally low amenity value can be found at the Application Site.</p> <p>✓ The Application Site is conveniently connected to the Hiram’s Highway.</p>

Assessment Criteria adopted in Three Rounds of “GB” Review	Fulfilment of the Application Site
<p><b>Stage 2 “GB” Review</b> in the fringe of built-up areas close to existing urban areas and new towns, and those vegetated areas with relatively less buffering effect and lower conservation value</p>	<p>✓ The Application Site is located in the fringe of built up area, adjoining Pak Wai Village and Marina Cove, which is an established low to medium density residential neighborhood in Ho Chung.</p> <p>✓ The Application Site is conveniently connected to the Hiram’s Highway, conveniently connected to Kowloon and Sai Kung area.</p> <p>✓ Based on the tree survey, existing trees at and near the Application Site possess low conservation value. All of them are in fair to poor condition and possess defects such as imbalanced form, leaning, major cavity, cracks, and splits.</p>
<p><b>Stage 3 “GB” Review</b> sites with higher gradient and farther away from the built-up area but still with roads in the vicinity, covering even private land</p>	<p>✓ The “GB” zone in which the Application Site is located on a slopping topography. The Indicative Scheme demonstrates a sensitive and technically feasible design for a low density residential development.</p> <p>✓ The Application Site is bounded by Hing Keng Shek Road and the Hiram’s Highway and is well-served by public transport services, including franchised bus, red and green minibus with stops within 100m walking distance. The Improvement Projects of Hiram’s Highway have enhanced the connectivity of the Application Site with Sai Kung Town Centre, Kowloon East and Tseung Kwan O.</p> <p>✓ About 74% of the Application Site is private lot. Agreement to the Proposed Amendment will facilitate an early and certainty of implementation of residential development at the Application Site, bringing landscape and environmental upgrading to the area while providing about 120 flats at this convenient location to serve housing need.</p>

6.3.3 As shown in **Table 3.3.2**, a total of 6 “GB” zones have been rezoned for residential development in the Sai Kung District, ranging from 0.13 to 2.95 ha, providing a total of 7,800 public housing units and 334 private housing units in the past 10 years. Among the 6 rezoned sites, the one in Tseng Lan Shue (2.55ha) with a PR 1.3 and BHR of 7 storeys shares similar context with the Application Site proposed for low-density residential development (rezoned as “R(C)7” the Approved Tseng Lan Shue OZP No. S/SK-TLS/10 gazetted in April 2023).

#### **6.4 Not Compromising the Integrity and Function of the Wider “GB” Zone**

6.4.1 Despite the rezoning of the Application Site from “GB” zone to “R(C)5” zone will inevitably reduce the total area of “GB” zone at the local area of Pak Wai, the overall planning intention *“primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. There is a general presumption against development within this zone”* for the wider area will not be compromised due to the Proposed Amendment.

6.4.2 The Application Site is largely paved and is located at the periphery of the “GB” zone immediately adjoining the Hiram’s Highway and existing residential developments. The remaining “GB” area outside the Application Site which is currently covered by dense trees will be retained on the OZP. The wider “GB” zone will continue to serve as a landscape/visual buffer between the Application Site and the conservation area of Ho Chung. To better fit in the surrounding environment, a thoughtful landscape plan with careful selection of plant species, including native ones, and a tree compensatory proposal have been prepared to enhance visual amenity and establish pleasant landscape areas in the Application Site. A row of tree is also proposed to be planted along the eastern side of the Application Site, which also a smoother transition with the wider “GB” area and the conservation area and safeguard the wider “GB” area from encroachment by uncontrolled urban sprawl.

6.4.3 As such, rezoning the Application Site from “GB” zone to “R(C)5” zone will not jeopardise the planning intention and integrity of the wider “GB” zone. In turn, the Proposed Amendment will improve the local environment by replacing the existing under-managed land with a high-quality residential development with proper management and thoughtfully designed landscape. The Proposed Amendment will bring about an uplift of the landscape and visual amenity of the local area while ensuring compatibility with the surrounding developments by proposing quality and sensible design, reaching a win-win situation.

#### **6.5 Fully Compatible with the Surrounding Neighbourhood**

6.5.1 The proposed development intensity at the Application Site, i.e. a maximum domestic PR of 0.6 and a BHR of 3 to 4 storeys (excluding basements), is compatible with the surrounding neighbourhood. Existing residential developments near the Application Site include 3 storey village houses in Pak Wai Village, Bernard Garden, Luk Mei Tsuen, and Marine Cove with existing residential towers up to 6 storeys.

6.5.2 The Application Site is a low-lying area with elevations between 4.1mPD and 5.7mPD which is much lower than Pak Wai Village in the east (with a site level up to about 24.4mPD) and Hing Keng Shek Village in the north (with a site level up to about

55.7mPD). The proposed 3 and 4-storeys residential blocks at the Application Site (ranging from 16.475mPD to 19.8mPD) will be lower than the site formation of these existing villages.

- 6.5.3 To blend in with the locality, enhance visual amenity and establish pleasant landscape areas, lush greenery has been proposed at both sides of the Application Site. Moreover, the proposed 3 and 4-storey residential blocks in the Indicative Scheme would create a stepped building height profile which enhances the visual permeability and compatibility to the surrounding neighbourhood.

## **6.6 Providing Merits and Enhancing the Landscape Amenity to the Locality**

- 6.6.1 The Proposed Amendment helps phase out the existing temporary structures and replace with quality modern residential development with careful traffic management. The Proposed Amendment also helps to alleviate the pressing housing need and provides alternative housing options with a total of about 120 residential units.

- 6.6.2 Under the Proposed Amendment, the landscape amenity of the Application Site will be enhanced with quality landscape design and greeneries with higher aesthetic value. The currently environment within the Application Site will also be replaced by modern and contemporary well-designed residential development with long-term management. Hence, the Proposed Amendment is anticipated to enhance the landscape amenity and upgrade the living environment, thus benefitting the wider local community of Pak Wai. Moreover, the affected footpath is proposed to be reprovisioned for public use along the eastern boundary of the Application Site next to the river with an enhanced design, including tree shading offered by a continuous tree row.

- 6.6.3 The Proposed Amendment has transformed the Application Site which is occupied by visual “eyesores” that are not serving the “GB” function to a win-win development that helps to address housing need while providing considerable public planning gains.

## **6.7 Resulting in NO Adverse Impacts to Surrounding Environment**

- 6.7.1 Various technical assessments on different aspects, including visual, landscape, traffic, environmental, drainage, sewerage, geotechnical and water demand, have been conducted and included in **Appendices B to I**. Findings of the technical assessments confirmed that the Proposed Amendment is technically feasible and will not generate adverse impact on the future users on the Application Site and on the surrounding environment with appropriate mitigation measures and improvement works.

## **6.8 Setting a Desirable Precedent for Optimising Private Land Resources in “GB” Zone for Housing Supply**

- 6.8.1 The Proposed Amendment unleashes development potential of a readily available and long-wasted site for a quality residential development compatible with the surrounding context. The Proposed Amendment strikes a balance in optimising the underutilised and

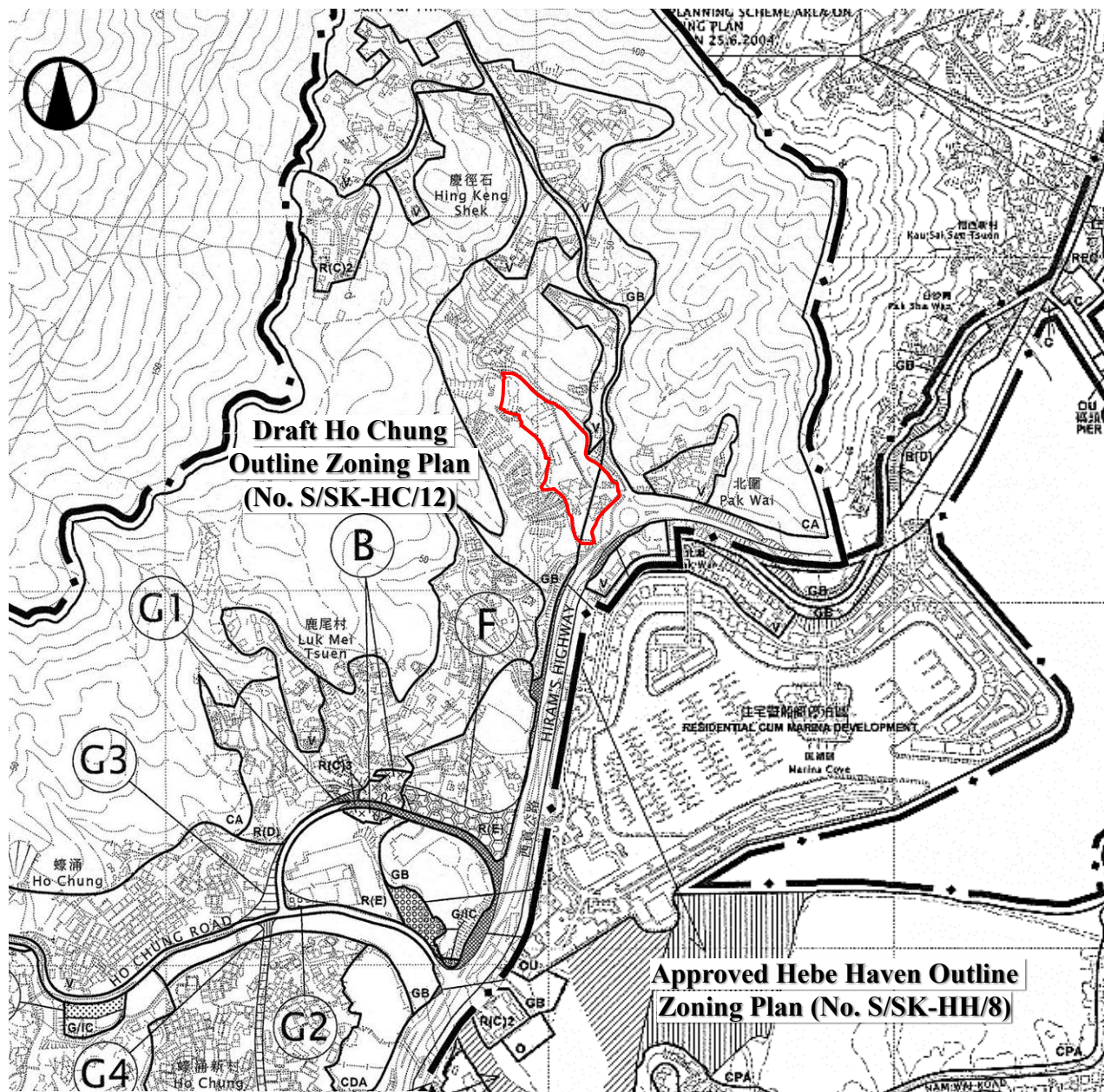
valuable land resources while providing sufficient greenery to blend in with the surrounding environment.

- 6.8.2 It is anticipated that the Proposed Amendment would enhance the living environment and living quality by enhancing the landscape amenity. It is also demonstrated that the Indicative Scheme formulated in support of the Proposed Amendment is technically feasible and no adverse impacts will be generated on the surrounding environment.
- 6.8.3 As such, it can be concluded that the Proposed Amendment would serve as a desirable precedent for reviewing suitable “GB” areas with underutilised private land to optimise their development potential and contribute to providing much needed housing supply in Hong Kong.

## 7. CONCLUSION

- 7.1.1 This S12A Planning Application is submitted for Proposed Amendment to the Draft Ho Chung OZP No. S/SK-HC/12 to rezone the Application Site from “Green Belt” and Area Shown as “Road” to “Residential (Group C)5” to facilitate a Proposed Residential Development at Various Lots in D.D. 210 and adjoining Government Land, Pak Wai, Sai Kung.
- 7.1.2 This Supporting Planning Statement has demonstrated the suitability and technical feasibility of the Proposed Amendment at the Application Site. Strong planning grounds have been provided to justify the rezoning proposal at the Application Site for the provision of about 120 residential units in a compatible scale with surrounding environment. The Proposed Amendment echoes the Government’s initiative to increase housing supply by optimising the usage of appropriate “GB” zones, including private lands which have also been examined in the third round of “GB” review. The Proposed Amendment is a win-win development as it allows the realisation of housing provision at a suitable location without compromising the integrity and function of the wider “GB” zone on the same OZP. Existing eyesores such as vehicle repairing workshop and temporary structures at the Application Site will be phased out and replaced by quality residential development with properly managed landscaping. Moreover, the affected footpath will be reprovisioned with enhanced design, including tree shading for public. Furthermore, the development scale and intensity of the Indicative Scheme have paid full respect to the surrounding developments and local planning context to ensure compatibility.
- 7.1.3 It has been also demonstrated in the technical assessments that the Proposed Amendment at the Application Site will not generate adverse impact on the surroundings in terms of landscape, traffic, visual, environmental, drainage, sewerage, geotechnical and water demand perspectives.
- 7.1.4 In view of the planning merits and justifications put forward in this Supporting Planning Statement, we sincerely seek the favourable consideration from the TPB to give support to this S12A Planning Application.

## Figures



**LEGEND**

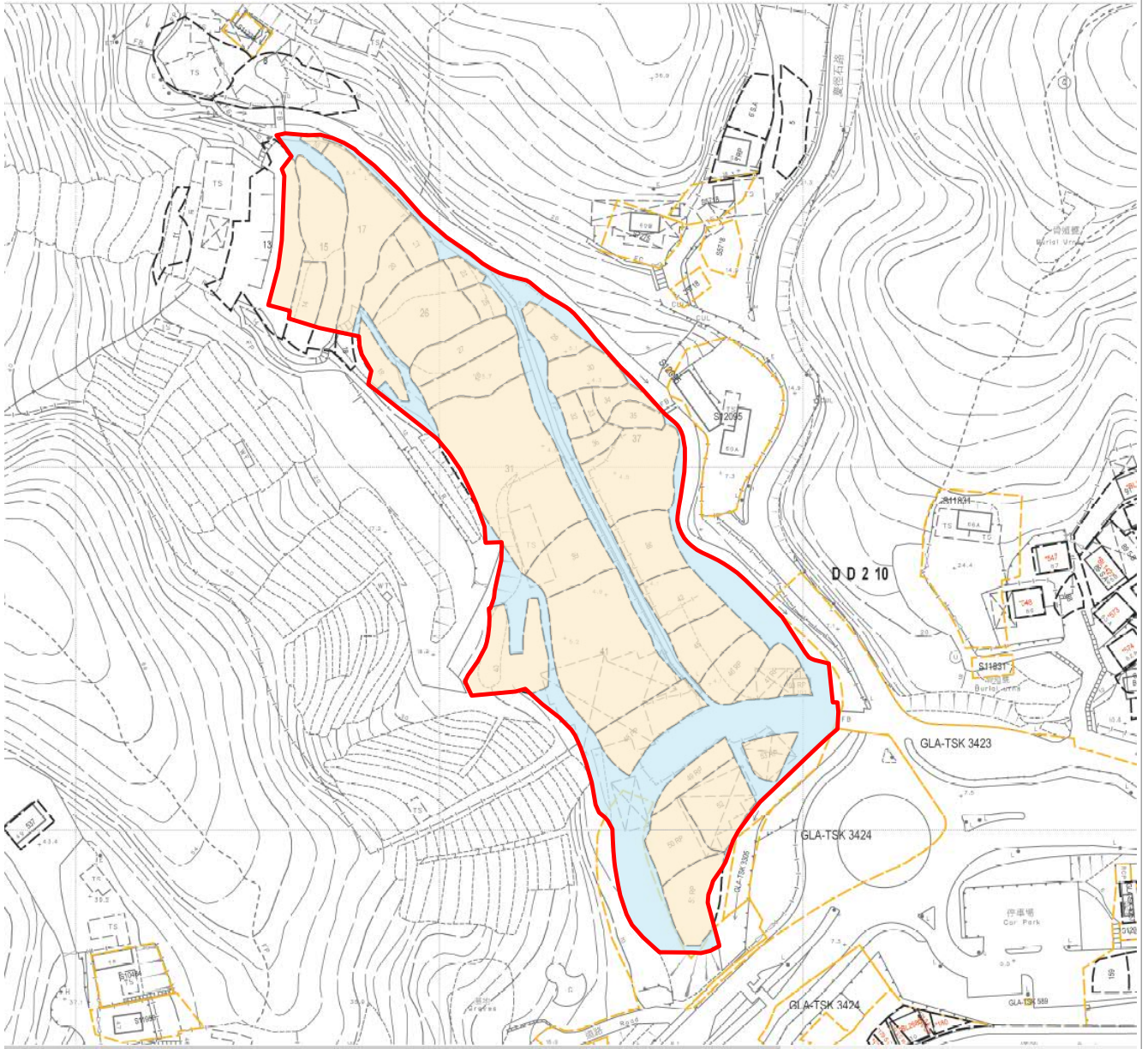


**Application Site**

**ZONING**

- C** Commercial
- CDA** Comprehensive Development Area
- R(C)** Residential (Group C)
- R(D)** Residential (Group D)
- R(E)** Residential (Group E)
- CDA** Comprehensive Development Area
- G/IC** Government, Institution or Community
- GB** Green Belt
- V** Village Type Development
- CA** Conservation Area
- CPA** Coastal Protection Area
- OU** Other Specified Uses
- O** Open Space

<i>Figure No.</i> 2.1	<i>Scale</i> -	<i>Figure Title</i> <b>Location Plan</b>
<b>ARUP</b>	<i>Date</i> March 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan(No. S/SK-HC/12) and Approved Hebe Haven Outline Zoning Plan (No. S/SK-HH/8)



**LEGEND**

- Application Site
- Private Lot
- Government Land

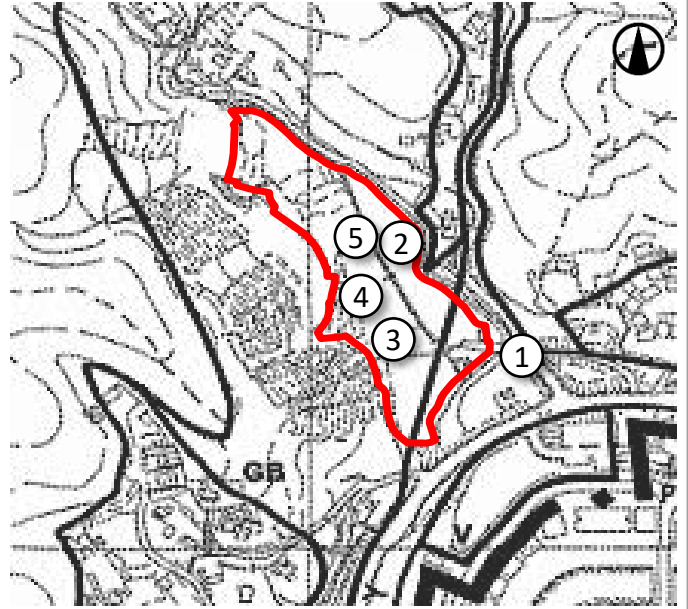
<i>Figure No.</i> 2.2	<i>Scale</i> -	<i>Figure Title</i> <b>Lot Index Plan</b>
<b>ARUP</b>	<i>Date</i> August 2023	<i>Source</i> Extracted from Lot index Plan No. ags_S00000116034_0001

**LEGEND**

 Application Site



① Existing Access to the Application Site



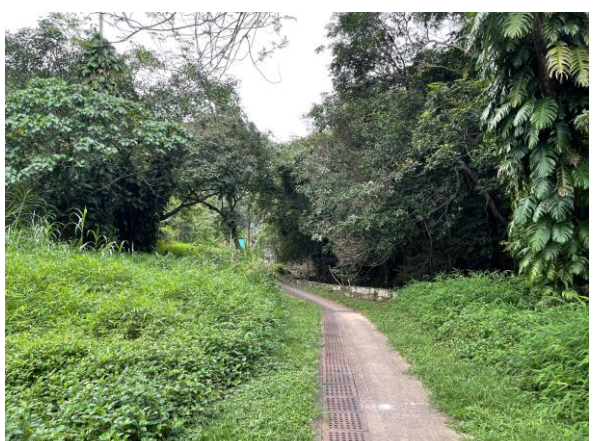
② Commercial Horticulture Workshop



③ Vehicle Repairing Workshop

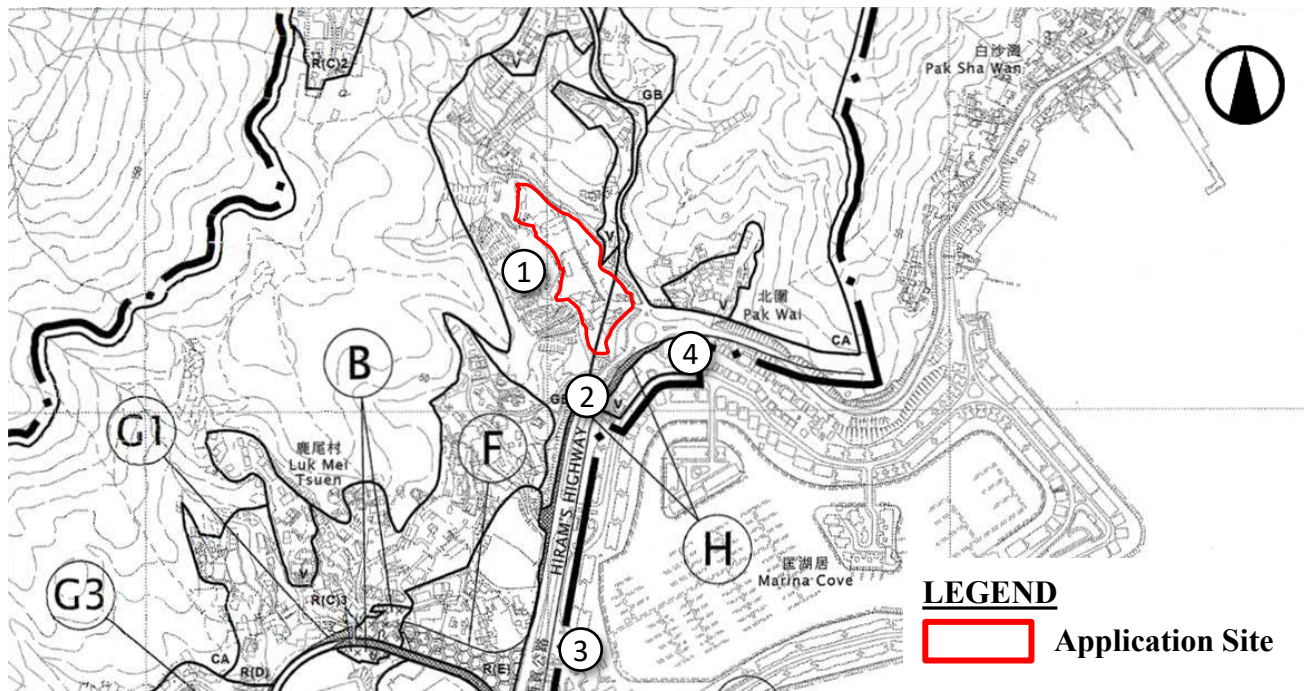


④ Temporary structures



⑤ Pedestrian Footpath Across the Application Site

Figure No.	Scale	Figure Title
2.3	-	<b>Existing Condition of the Application Site</b>
<b>ARUP</b>	Date	Source
	August 2023	Photo taken in May 2023



① Unmanaged Vegetation Cover



② Hiram's Highway

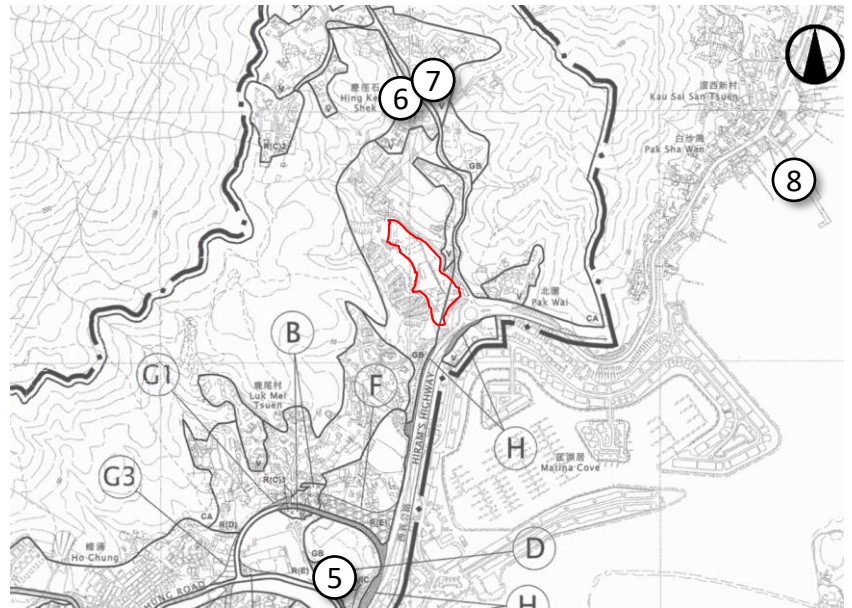


③ Marina Cove (existing buildings up to 6 storeys)



④ Pak Wai Village

<b>Figure No.</b> 2.4a	<b>Scale</b> -	<b>Figure Title</b> <b>Surrounding Condition of the Application Site (1 of 2)</b>
<b>ARUP</b>	<b>Date</b> August 2023	<b>Source</b> Photo taken in May 2023



**LEGEND**

Application Site



⑤ Che Kung Temple (Sai Kung)  
(Grade 1 Historic Building)



⑥ Bernard Garden



⑦ Hing Keng Shek Village Office



⑧ Pak Sha Wan Pier

<b>Figure No.</b> 2.4b	<b>Scale</b> -	<b>Figure Title</b> <b>Surrounding Condition of the Application Site (2 of 2)</b>
<b>ARUP</b>	<b>Date</b> August 2023	<b>Source</b> Photo taken in May 2023

**GREEN BELT**

Column 1 Uses always permitted	Column 2 Uses that may be permitted with or without conditions on application to the Town Planning Board
Agricultural Use	Animal Boarding Establishment
Barbecue Spot	Broadcasting, Television and/or Film Studio
Government Use (Police Reporting Centre only)	Burial Ground
Nature Reserve	Cable Car Route and Terminal Building
Nature Trail	Columbarium (within a Religious Institution or extension of existing Columbarium only)
On-Farm Domestic Structure	Crematorium (within a Religious Institution or extension of existing Crematorium only)
Picnic Area	Field Study/Education/Visitor Centre
Public Convenience	Government Refuse Collection Point
Tent Camping Ground	Government Use (not elsewhere specified)
Wild Animals Protection Area	Helicopter Landing Pad
	Holiday Camp
	House (other than rebuilding of New Territories Exempted House or replacement of existing domestic building by New Territories Exempted House permitted under the covering Notes)
	Petrol Filling Station
	Place of Recreation, Sports or Culture
	Public Transport Terminus or Station
	Public Utility Installation
	Public Vehicle Park (excluding container vehicle)
	Radar, Telecommunications Electronic Microwave Repeater, Television and/or Radio Transmitter Installation
	Religious Institution
	Residential Institution
	Rural Committee/Village Office
	School
	Service Reservoir
	Social Welfare Facility
	Utility Installation for Private Project

(Please see next page)

<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	<b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Schedule of Uses of “GB” Zone (1 of 2)</b>
3.1a	-		
<b>ARUP</b>	<i>Date</i>	<i>Source</i>	Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
	May 2025		

**GREEN BELT** (Cont'd)

Planning Intention

The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features and to contain urban sprawl as well as to provide passive recreational outlets. There is a general presumption against development within this zone.

Remarks

Any filling of land/pond or excavation of land, including that to effect a change of use to any of those specified in Columns 1 and 2 above or the uses or developments always permitted under the covering Notes (except public works co-ordinated or implemented by Government, and maintenance, repair or rebuilding works), shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the interim development permission area plan without the permission from the Town Planning Board under section 16 of the Town Planning Ordinance.

<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	<b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Schedule of Uses of “GB” Zone (2 of 2)</b>
3.1b	-		
<b>ARUP</b>	<i>Date</i>	<i>Source</i>	Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
	May 2025		

vehicular access via the sub-standard Ho Chung Road but it is largely accessible via footpaths. Part of the area under this zoning falls within the Ho Chung SAI and a portion of Ho Chung Trackway SAI is located within the area under this zoning.

9.8.4 As filling of land/pond may cause adverse drainage and environmental impacts on the adjacent areas, permission from the Board is required for such activities. However, filling of land specifically required under prior written instructions of Government department(s), or for the purposes of genuine agricultural practice including laying of soil not exceeding 1.2m in thickness for cultivation, and construction of agricultural structure with prior written approval from the Lands Department is exempted from the control.

9.9 Green Belt (“GB”) : Total Area 53.61 ha

9.9.1 The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features, including foothills, lower hillslopes, spurs, isolated knolls, woodland, vegetated land and amenity areas at the urban fringe, and to contain urban sprawl as well as to provide passive recreational outlet and delineating roadside amenity areas.

9.9.2 There is a general presumption against development within this zone. Development within this zone will be strictly controlled. Development proposals will be considered on individual merits taking into account the relevant Town Planning Board Guidelines.

9.9.3 As filling of land/pond and excavation of land may cause adverse drainage impacts on the adjacent areas and adverse impacts on the natural environment, permission from the Board is required for such activities.

9.9.4 Part of the area under this zoning falls within the Ho Chung SAI and a portion of Ho Chung Trackway SAI is located within the area under this zoning.

9.10 Conservation Area (“CA”) : Total area 138.30 ha

9.10.1 The planning intention of this zone is to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and to separate sensitive natural environment such as Site of Special Scientific Interest or Country Park from the adverse effects of development. Areas under this zone often constitute topographical features of woodland or vegetated areas of scenic value which should be protected from encroachment by development. There is a general presumption against development in this zone. In general, only developments that are needed to support the conservation of the

<i>Figure No.</i> 3.1c	<i>Scale</i> -	<i>Figure Title</i> <b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of “GB” Zone</b>
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

**DRAFT HO CHUNG OUTLINE ZONING PLAN NO. S/SK-HC/12**

(Being a Draft Plan for the Purposes of the Town Planning Ordinance)

**NOTES**

(N.B. This forms part of the Plan)

- (1) These Notes show the uses or developments on land falling within the boundaries of the Plan which are always permitted and which may be permitted by the Town Planning Board, with or without conditions, on application. Where permission from the Town Planning Board for a use or development is required, the application for such permission should be made in a prescribed form. The application shall be addressed to the Secretary of the Town Planning Board, from whom the prescribed application form may be obtained.
- (2) Any use or development which is always permitted or may be permitted in accordance with these Notes must also conform to any other relevant legislation, the conditions of the Government lease concerned, and any other Government requirements, as may be applicable.
- (3) No action is required to make the use of any land or building which was in existence immediately before the first publication in the Gazette of the notice of the interim development permission area plan conform to this Plan, provided such use has continued since it came into existence. Any material change of such use or any other development (except minor alteration and/or modification to the development of the land or building in respect of such use which is always permitted) must be always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board.
- (4) A use or development of any land or building permitted under an earlier draft or approved plan including interim development permission area plan for the area and effected or undertaken during the effective period of that plan is always permitted under this Plan. Any material change of such use or any other development (except minor alteration and/or modification to the completed development of the land or building which is always permitted) must be always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board.
- (5) Except to the extent that paragraph (3) or (4) applies, any use or development falling within the boundaries of the Plan and also within the boundaries of the interim development permission area plan, unless always permitted in terms of the Plan, shall not be undertaken or continued on or after the date of the first publication in the Gazette of the notice of the interim development permission area plan without permission from the Town Planning Board.
- (6) Except as otherwise specified by the Town Planning Board, when a use or material change of use is effected or a development or redevelopment is undertaken, as always permitted in terms of the Plan or in accordance with a permission granted by the Town Planning Board, all permissions granted by the Town Planning Board in respect of the site of the use or material change of use or development or redevelopment shall lapse.

<i>Figure No.</i> 3.1d	<i>Scale</i> -	<i>Figure Title</i> <b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Covering Notes (1 of 4)</b>
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

- (7) Road junctions, alignment of roads, and boundaries between zones may be subject to minor adjustments as detailed planning proceeds.
- (8) The following uses or developments are always permitted on land falling within the boundaries of the Plan except (a) where the uses or developments are specified in Column 2 of the Notes of individual zones or (b) as provided in paragraph (9) in relation to areas zoned “Site of Special Scientific Interest”, “Conservation Area” or “Coastal Protection Area”:
  - (a) maintenance, repair or demolition of a building;
  - (b) provision, maintenance or repair of plant nursery, amenity planting, open space, rain shelter, refreshment kiosk, footpath, bus/public light bus stop or lay-by, cycle track, taxi rank, public utility pipeline, electricity mast, lamp pole, telephone booth, telecommunications radio base station, automatic teller machine and shrine;
  - (c) maintenance or repair of road, watercourses, nullahs, sewer and drain;
  - (d) geotechnical works, local public works, road works, sewerage works, drainage works, environmental improvement works, marine related facilities and waterworks (excluding works on service reservoir) and such other public works co-ordinated or implemented by Government;
  - (e) rebuilding of New Territories Exempted House;
  - (f) replacement of an existing domestic building i.e. a domestic 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, by a New Territories Exempted House; and
  - (g) provision, maintenance or repair of a grave of an indigenous New Territories villager or a locally based fisherman and his family members for which permission has been obtained from Government.
- (9) In areas zoned “Site of Special Scientific Interest”, “Conservation Area” or “Coastal Protection Area”,
  - (a) the following uses or developments are always permitted:
    - (i) maintenance or repair of plant nursery, amenity planting, sitting out area, rain shelter, refreshment kiosk, road, watercourse, nullah, public utility pipeline, electricity mast, lamp pole, telephone booth, shrine and grave;
    - (ii) geotechnical works, local public works, road works, sewerage works, drainage works, environmental improvement works, marine related facilities, waterworks (excluding works on service reservoir) and such other public works co-ordinated or implemented by Government; and
    - (iii) provision of amenity planting by Government; and

<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	<b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Covering Notes (2 of 4)</b>
3.1e	-		
<b>ARUP</b>	<i>Date</i>	<i>Source</i>	Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
	May 2025		

- (b) the following uses or developments require permission from the Town Planning Board:

provision of plant nursery, amenity planting (other than by Government), sitting out area, rain shelter, refreshment kiosk, footpath, public utility pipeline, electricity mast, lamp pole, telephone booth and shrine.

- (10) In any area shown as ‘Road’, all uses or developments except those specified in paragraphs (8)(a) to (8)(d) and (8)(g) above and those specified below require permission from the Town Planning Board:

road and on-street vehicle park.

- (11) (a) Except in areas zoned “Site of Special Scientific Interest”, “Conservation Area” or “Coastal Protection Area”, temporary use or development of any land or building not exceeding a period of two months is always permitted provided that no site formation (filling or excavation) is carried out and that the use or development is a use or development specified below:

structures for carnivals, fairs, film shooting on locations, festival celebrations, religious functions or sports events.

- (b) Except as otherwise provided in paragraph (11)(a), and subject to temporary uses for open storage and port back-up purposes which are prohibited in areas zoned “Site of Special Scientific Interest”, “Conservation Area” or “Coastal Protection Area”, temporary use or development of any land or building not exceeding a period of three years requires permission from the Town Planning Board. Notwithstanding that the use or development is not provided for in terms of the Plan, the Town Planning Board may grant permission, with or without conditions, for a maximum period of three years, or refuse to grant permission.

- (c) Temporary use or development of land or building exceeding three years requires permission from the Town Planning Board in accordance with the terms of the Plan.

- (12) Unless otherwise specified, all building, engineering and other operations incidental to and all uses directly related and ancillary to the permitted uses and developments within the same zone are always permitted and no separate permission is required.

- (13) In these Notes, unless the context otherwise requires or unless as expressly provided below, terms used in the Notes shall have the meanings as assigned under section 1A of the Town Planning Ordinance.

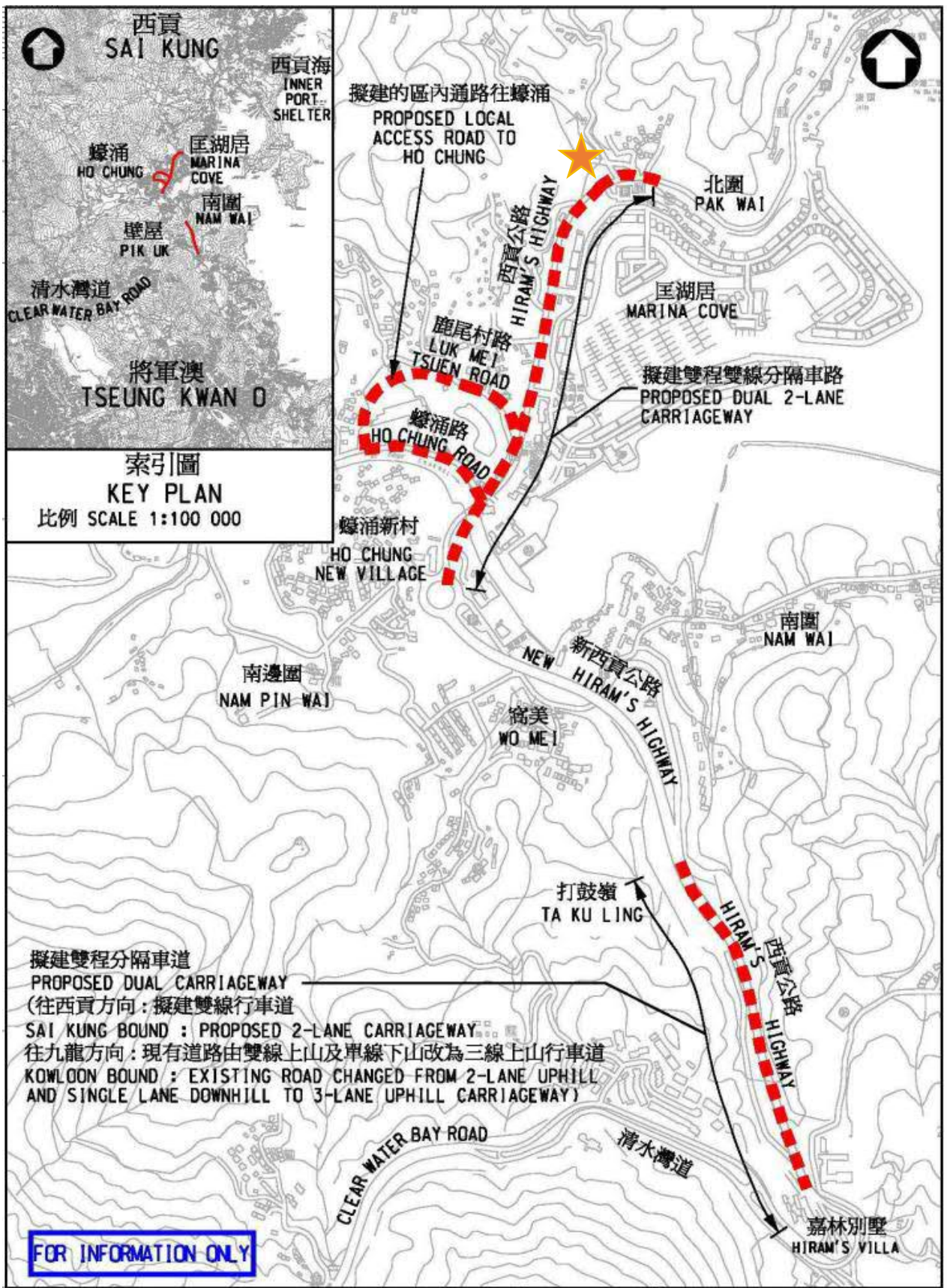
“Existing building” means a building, including a structure, which is physically existing and is in compliance with any relevant legislation and the conditions of the Government lease concerned.

“New Territories Exempted House” means a domestic building other than a guesthouse or a hotel; or a building primarily used for habitation, other than a guesthouse or a hotel, the ground floor of which may be used as ‘Shop and Services’ or ‘Eating Place’, the building

<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	<b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Covering Notes (3 of 4)</b>
3.1f	-		
<b>ARUP</b>	<i>Date</i>	<i>Source</i>	Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
	May 2025		

works in respect of which are exempted by a certificate of exemption under Part III of the Buildings Ordinance (Application to the New Territories) Ordinance (Cap. 121).

<i>Figure No.</i> 3.1g	<i>Scale</i> -	<i>Figure Title</i> <b>Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Covering Notes (4 of 4)</b>
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

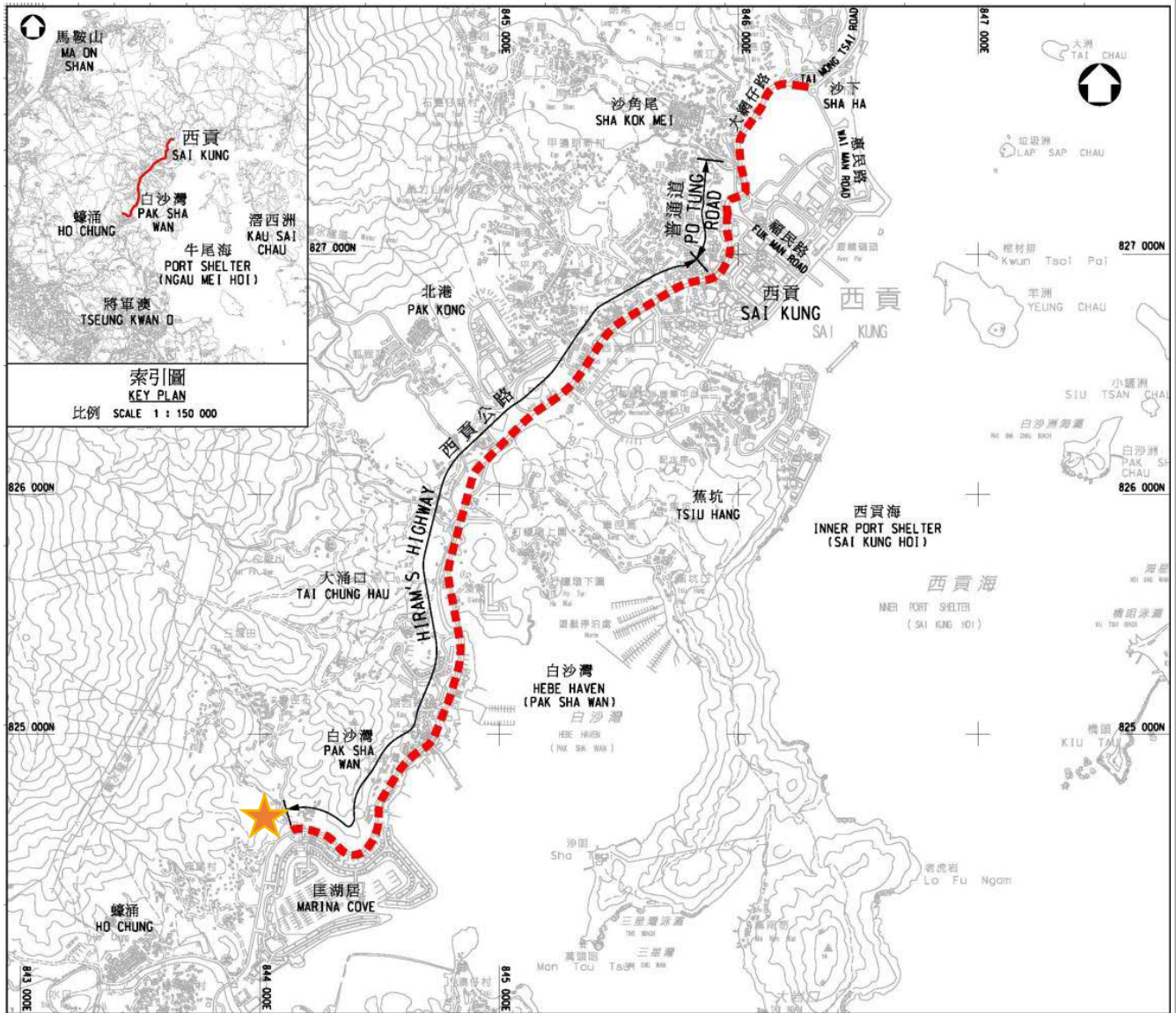


**LEGEND**



**Application Site**

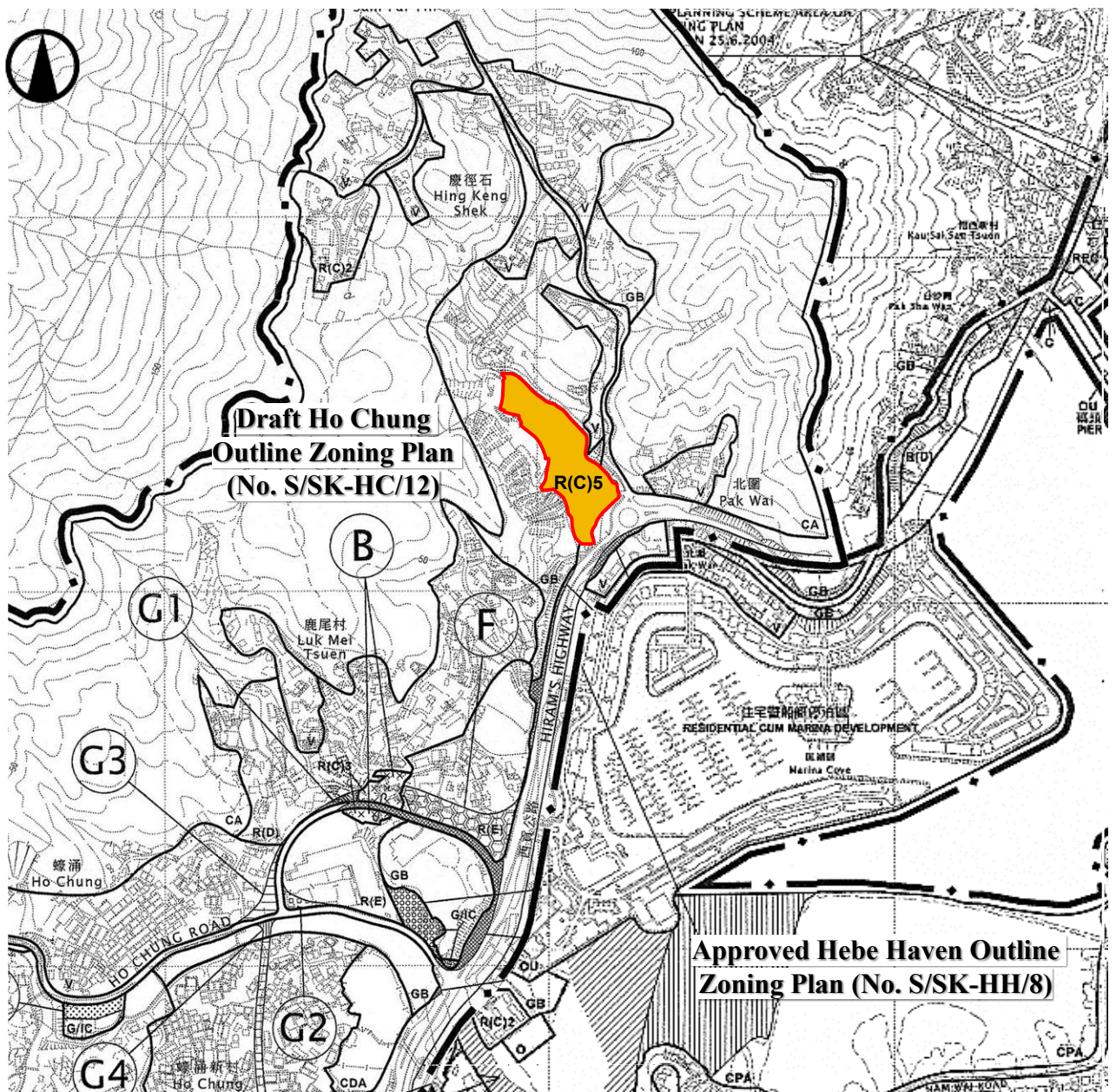
Figure No. 3.4a	Scale -	Figure Title Hiram's Highway Improvement Stage 1 (Completed in 2021)
<b>ARUP</b>	Date October 2023	Source Hong Kong Highways Department ( <a href="https://www.hyd.gov.hk/te/our_projects/road_projects/703th_Hirams/703TH-PD0001-TC.pdf">https://www.hyd.gov.hk/te/our_projects/road_projects/703th_Hirams/703TH-PD0001-TC.pdf</a> )



**LEGEND**

★ Application Site

<i>Figure No.</i> 3.4b	<i>Scale</i> -	<i>Figure Title</i> <b>Hiram's Highway Improvement Stage 2</b>
<b>ARUP</b>	<i>Date</i> October 2023	<i>Source</i> Hong Kong Highways Department ( <a href="https://www.hyd.gov.hk/te/our_projects/road_projects/6806th/HMW6806TH-SK0161.pdf">https://www.hyd.gov.hk/te/our_projects/road_projects/6806th/HMW6806TH-SK0161.pdf</a> )



**LEGEND**



**Application Site**



**Outline Zoning Plan Boundary**



**Proposed "Residential (Group C)5" ("R(C)5") Zone on Ho Chung OZP**

**ZONING**

- C** Commercial
- R(C)2** Residential (Group C)2
- R(C)3** Residential (Group C)3
- R(C)4** Residential (Group C)4
- R(C)5** Residential (Group C)5
- R(D)** Residential (Group D)
- R(E)** Residential (Group E)
- CDA** Comprehensive Development Area
- G/I/C** Government, Institution or Community
- O** Open Space
- OU** Other Specified Uses
- GB** Green Belt
- V** Village Type Development
- CA** Conservation Area
- CPA** Coastal Protection Area

<b>Figure No.</b> 5.5a	<b>Scale</b> -	<b>Figure Title</b> <b>Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)</b>
<b>ARUP</b>	<b>Date</b> May 2025	<b>Source</b> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) and Approved Hebe Haven Outline Zoning Plan (No. S/SK-HH/8)

**RESIDENTIAL (GROUP C)**

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

**Planning Intention**

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.

(Please see next page)

<i>Figure No.</i> 5.5b	<i>Scale</i> -	<i>Figure Title</i> <b>Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) - Notes of the “R(C)” Zone (1 of 3)</b>
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

**RESIDENTIAL (GROUP C)** (Cont'd)

Remarks

- (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 0.75, a maximum site coverage of 37.5% and a maximum building height of 9m with 2 storeys over one storey of carport or of a maximum plot ratio of 0.75, a maximum site coverage of 25% and a maximum building height of 12m with 3 storeys over one storey of carport, 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, a maximum site coverage of 20% and a maximum building height of 9m with 2 storeys over one storey of carport, 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.
- (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 gross floor area (GFA) of 2,393m<sup>2</sup> and a maximum building height of 12m with 3 storeys over one storey of carport, or the GFA 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.
- (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 plot ratio of 0.75 and a maximum building height of 12m with 3 storeys over one storey of carport, 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. A non-building area (NBA) is designated and shall not be accountable for plot ratio calculation.
- (e) *On land designated "Residential (Group C) 5", 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 0.6 and a maximum building height of 4 storeys (excluding basements), 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.*

(Please see next page)

<i>Figure No.</i>	<i>Scale</i>	<i>Figure Title</i>	Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) - Notes of the "R(C)" Zone (2 of 3)
5.5c	-		
<b>ARUP</b>	<i>Date</i>	<i>Source</i>	Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)
	May 2025		

**RESIDENTIAL (GROUP C)** (Cont'd)

Remarks (Cont'd)

- (f) Based on the individual merits of a development or redevelopment proposal, minor relaxation of the plot ratio/GFA/site coverage/building height restrictions stated in paragraphs (a) to (e) above may be considered by the Town Planning Board on application under section 16 of the Town Planning Ordinance.
- (g) In determining the maximum plot ratio/GFA/site coverage for the purposes of paragraphs (a) to (e) above, any floor space that is constructed or intended for use solely as car park, loading/unloading bay, plant room and caretaker's office, or caretaker's quarters and 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.
- (h) Under exceptional circumstances, for developments and/or redevelopments, minor relaxation of the NBA restriction as stated in paragraph (d) may be considered by the Town Planning Board on application under section 16 of the Town planning Ordinance.

<i>Figure No.</i> 5.5d	<i>Scale</i> -	<i>Figure Title</i> Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) - Notes of the "R(C)" Zone (3 of 3)
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

the Board by way of a planning application under section 16 of the Ordinance. A Master Layout Plan (MLP) should be submitted together with the relevant assessment reports and a landscape master plan as well as other materials as specified in the Notes of the Plan for the approval of the Board under section 4A(2) of the Ordinance. Development/redevelopment will be in accordance with an approved MLP and it should be ensured that the nature and scale of new development will be in keeping with the surrounding natural landscape and land-uses and will not exert pressure on the limited road and other infrastructural provisions in the Area. A copy of the approved MLP shall be made available for public inspection in the Land Registry pursuant to section 4A(3) of the Ordinance.

9.2 Residential (Group C) (“R(C)”) : *Total Area 5.67 ha*

9.2.1 The planning intention of this zone is primarily for low-rise, low-density residential developments where commercial uses serving the residential neighbourhood may be permitted on application to the Board, and to restrict the future developments within the prescribed development parameters.

9.2.2 This zone can be divided into four sub-areas:

- (a) “R(C)1” – The residential development in this sub-area is subject to a maximum PR of 0.75, either with a maximum SC of 37.5% and a height not exceeding 9m with 2 storeys over one storey of carport, or with a maximum SC of 25% and a height not exceeding 12m with 3 storeys over one storey of carport.

This sub-area covers only one site which is located in the area sandwiched between Hiram’s Highway and Nam Pin Wai Village and it falls within the Ho Chung Site of Archaeological Interest (SAI).

- (b) “R(C)2” – The residential development in this sub-area is subject to a maximum PR of 0.4, a maximum SC of 20% and a height not exceeding 9m with 2 storeys over one storey of carport.

This sub-area covers the area to the south-west of Hing Keng Shek which has mostly been developed into low-density residential houses. The site is only accessible via the sub-standard Hing Keng Shek Road.

- (c) “R(C)3” – The residential development in this sub-area is subject to a maximum gross floor area (GFA) of 2,393m<sup>2</sup> and a height not exceeding 12m with 3 storeys over one storey of carport.

<i>Figure No.</i> 5.5e	<i>Scale</i> -	<i>Figure Title</i> Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of the “R(C)” Zone (1 of 2)
<b>ARUP</b>	<i>Date</i> May 2025	<i>Source</i> Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

This sub-area covers two linked land parcels at Ho Chung North Road which are located close to Hiram’s Highway. This sub-area is intended for low-rise and low-density residential development.

- (d) “R(C)4” – The residential development in this sub-area is subject to a maximum PR of 0.75 and a height not exceeding 12m with 3 storeys over one storey of carport. A non-building area (NBA) is designated for an access road purpose where no development is permitted except road, footpath and other related facilities. This NBA shall not be accountable for PR calculation. A clause has been incorporated in the Notes of the “R(C)” zone to allow minor relaxation of the stated NBA restriction under exceptional circumstances based on individual merits.

This sub-area covers a site at Wo Mei Hung Min Road where part of the area under this zoning falls within the Ho Chung SAI.

- (e) “R(C)5” – *The residential development in this sub-area is subject to a maximum PR of 0.6 and a height not exceeding 4 storeys (excluding basements). This sub-area covers the area to the north-east of Luk Mei Tsuen and north-west of Marina Cove which have mostly been developed into low-density residential houses. The site is accessible from Hing Keng Shek Road and Hiram’s Highway.*

9.2.3 For “R(C)5” zone, should the public footpath be affected by any development or redevelopment proposals, it shall be reprovisioned.

9.2.4 The GFA control under the “R(C)3” zone and the PR control under “R(C)4” zone are regarded as being stipulated in a “new or amended statutory plan” according to the Joint Practice Note No. 4 “Development Control Parameters Plot Ratio/Gross Floor Area”, and shall be subject to the streamlining arrangements stated therein.

9.2.5 The above sub-areas mainly reflect the existing character and development intensity. The development restrictions are mainly to conserve the existing character and intensity of the developments so as to blend in well with the surrounding natural environment and rural character as well as not to overload the limited infrastructural facilities, particularly the transport network in the Area.

9.2.6 Some scattered areas outside existing private residential lots within this zone may not be suitable for residential development. Their suitability for development or inclusion into adjoining lots for development would be assessed individually at the land administration stage based on their visual and amenity value, accessibility and geotechnical, environmental, infrastructural and traffic impacts.

Figure No. 5.5f	Scale -	Figure Title Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of the “R(C)” Zone (2 of 2)
<b>ARUP</b>	Date May 2025	Source Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

vehicular access via the sub-standard Ho Chung Road but it is largely accessible via footpaths. Part of the area under this zoning falls within the Ho Chung SAI and a portion of Ho Chung Trackway SAI is located within the area under this zoning.

9.8.4 As filling of land/pond may cause adverse drainage and environmental impacts on the adjacent areas, permission from the Board is required for such activities. However, filling of land specifically required under prior written instructions of Government department(s), or for the purposes of genuine agricultural practice including laying of soil not exceeding 1.2m in thickness for cultivation, and construction of agricultural structure with prior written approval from the Lands Department is exempted from the control.

9.9 Green Belt (“GB”) : Total Area 52.54 ha

9.9.1 The planning intention of this zone is primarily for defining the limits of urban and sub-urban development areas by natural features, including foothills, lower hillslopes, spurs, isolated knolls, woodland, vegetated land and amenity areas at the urban fringe, and to contain urban sprawl as well as to provide passive recreational outlet and delineating roadside amenity areas.

9.9.2 There is a general presumption against development within this zone. Development within this zone will be strictly controlled. Development proposals will be considered on individual merits taking into account the relevant Town Planning Board Guidelines.

9.9.3 As filling of land/pond and excavation of land may cause adverse drainage impacts on the adjacent areas and adverse impacts on the natural environment, permission from the Board is required for such activities.

9.9.4 Part of the area under this zoning falls within the Ho Chung SAI and a portion of Ho Chung Trackway SAI is located within the area under this zoning.

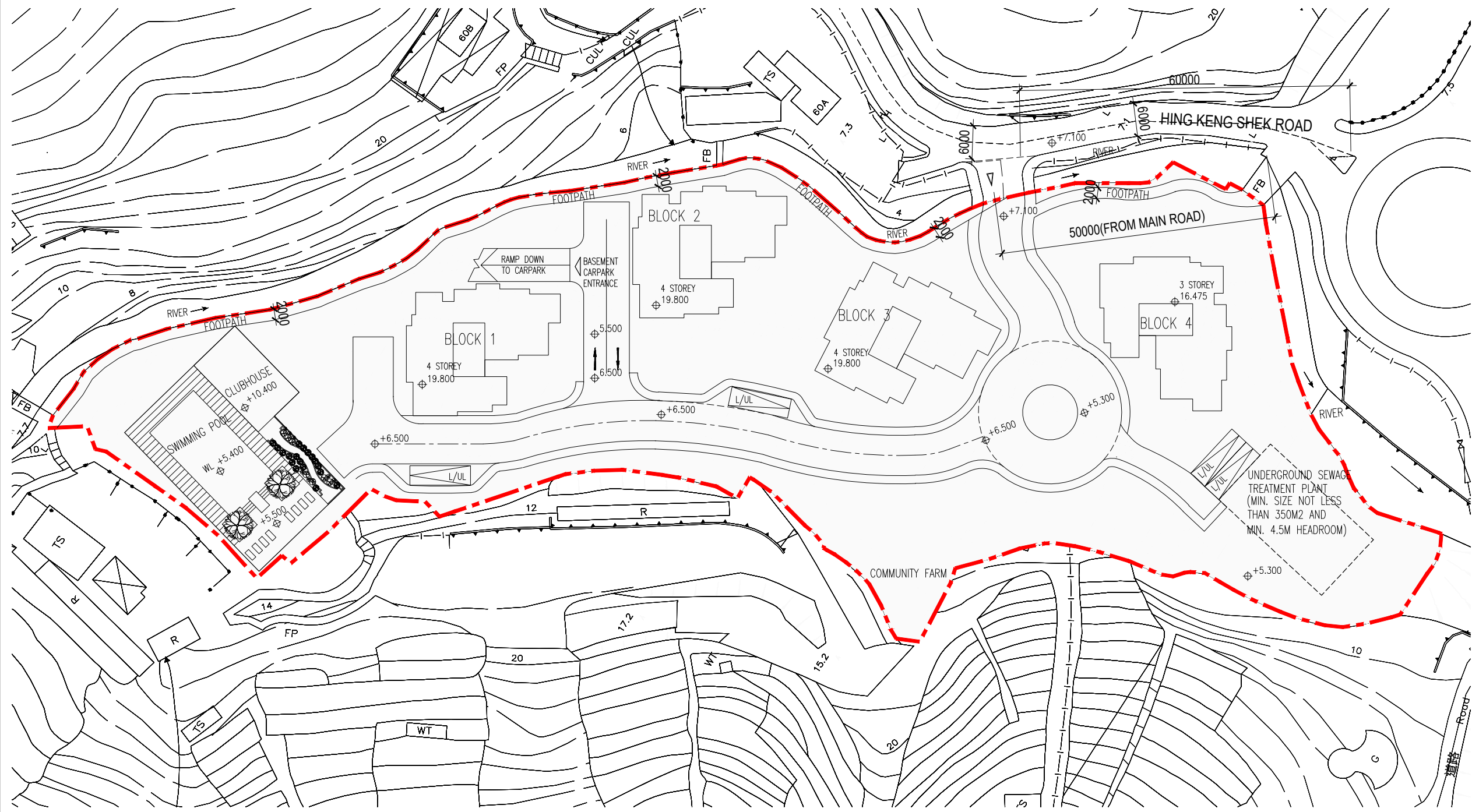
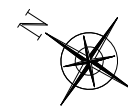
9.10 Conservation Area (“CA”) : Total area 138.30 ha

9.10.1 The planning intention of this zone is to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and to separate sensitive natural environment such as Site of Special Scientific Interest or Country Park from the adverse effects of development. Areas under this zone often constitute topographical features of woodland or vegetated areas of scenic value which should be protected from encroachment by development. There is a general presumption against development in this zone. In general, only developments that are needed to support the conservation of the

Figure No. 5.5g	Scale -	Figure Title Proposed Amendments to the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12) – Explanatory Statement of the “GB” Zone
<b>ARUP</b>	Date May 2025	Source Extracted from the Draft Ho Chung Outline Zoning Plan (No. S/SK-HC/12)

# Appendix A

## Indicative Architectural Drawings



**K & W Architects Ltd.**  
 關黃建築師有限公司

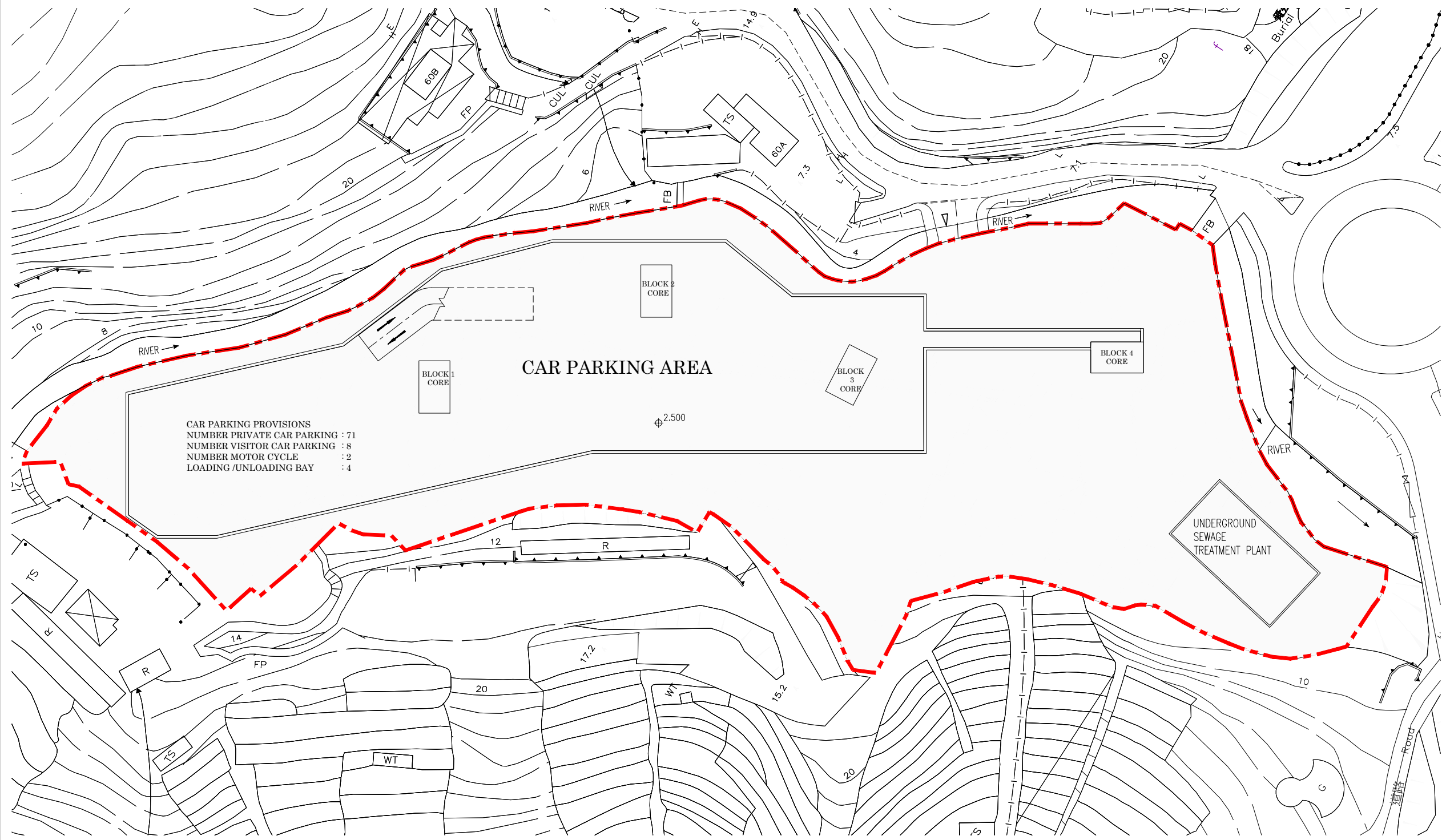
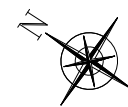


- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client  
  
 Project  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**MASTER LAYOUT PLAN**

Job No.	Drawing No.	Revision No.
D1186	MLP-01	P
Scale	Date	CAD Ref.
1:800	09/06/2025	
Drawn	Checked	Approved
SF	SF	



CAR PARKING PROVISIONS  
 NUMBER PRIVATE CAR PARKING : 71  
 NUMBER VISITOR CAR PARKING : 8  
 NUMBER MOTOR CYCLE : 2  
 LOADING /UNLOADING BAY : 4

**K & W Architects Ltd.**  
 關黃建築師有限公司



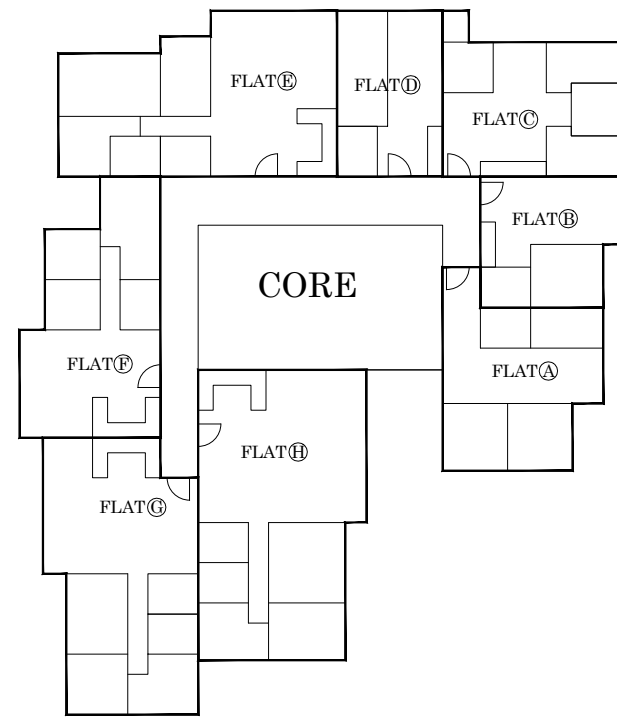
- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

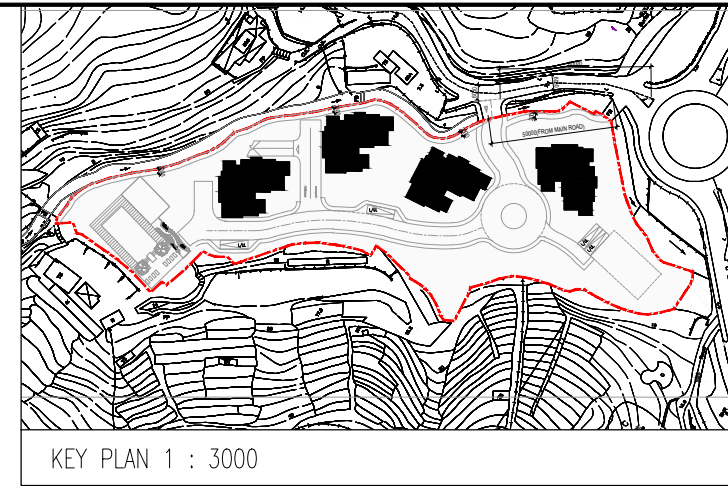
**Project**  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Drawing Title**  
**BASEMENT PLAN**

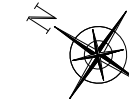
Job No.	Drawing No.	Revision No.
D1186	FL-02	P
Scale	Date	CAD Ref.
1:500	23/08/2023	
Drawn	Checked	Approved
PC	PC	



**BLOCK 1,2,3&4**



KEY PLAN 1 : 3000



BLOCK 1,2&3

FLOOR	NO. OF UNIT
G/F	8
1/F	8
2/F	8
3/F	8
R/F	
<b>TOTAL</b>	<b>32</b>

BLOCK 4

FLOOR	NO. OF UNIT
G/F	8
1/F	8
2/F	8
R/F	
<b>TOTAL</b>	<b>24</b>

**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

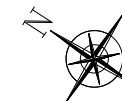
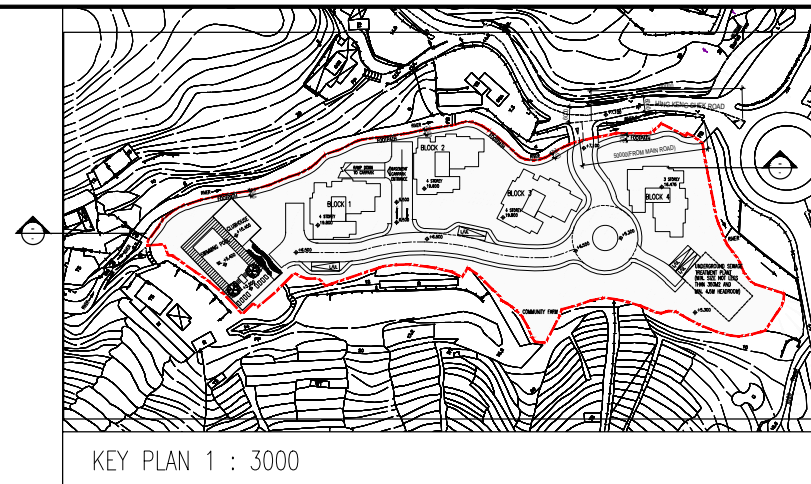
Client

**Project**  
Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Drawing Title**  
TPYICAL LAYOUT PLAN

Job No.	Drawing No.	Revision No.
D1186	FL-03	M
Scale	Date	CAD Ref.
1:300	09/06/2025	
Drawn	Checked	Approved
SF	SF	

Rev.	Date	Amendment	Purpose
3	06/06/2023		



**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

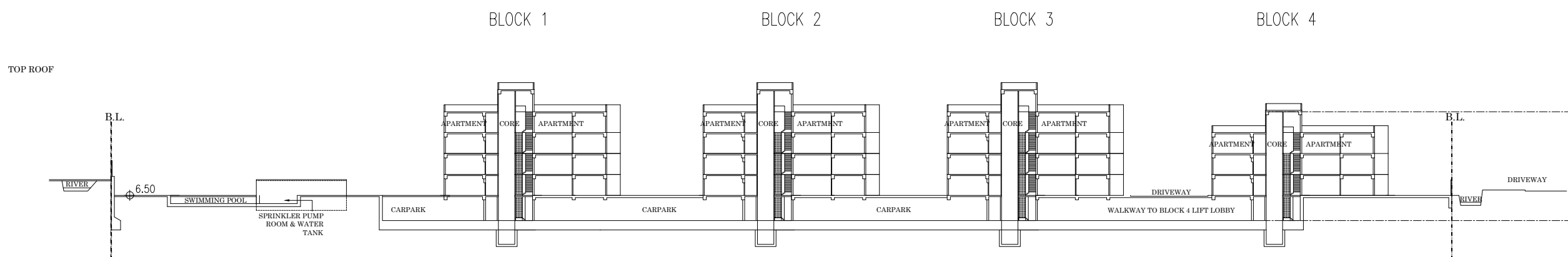
- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

**Project**  
Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**DIAGRAMATIC SECTION**

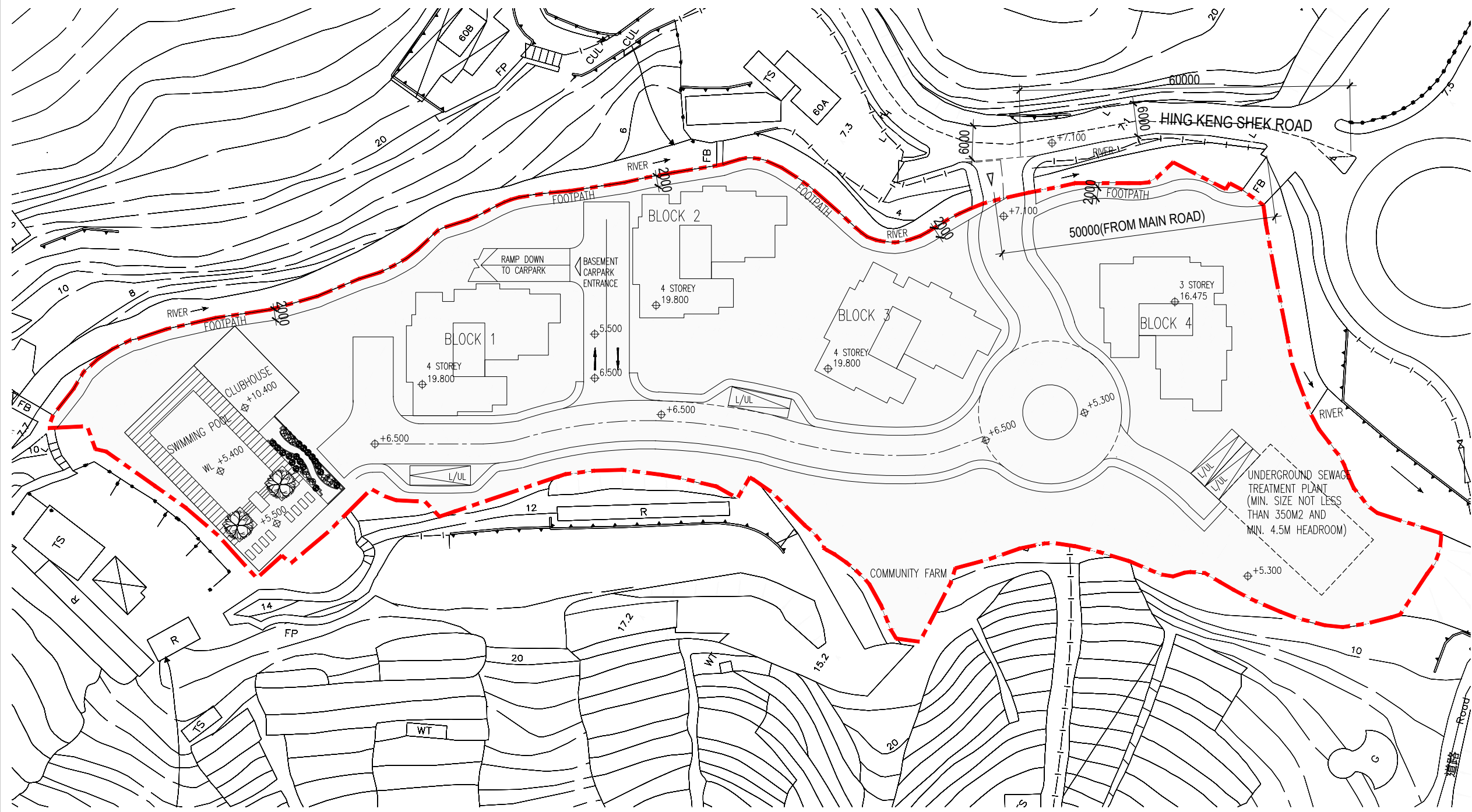
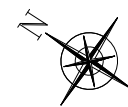
Job No.	Drawing No.	Revision No.
D1186	FL-04	L
Scale	Date	CAD Ref.
1:800	30/05/2024	
Drawn	Checked	Approved
PC	PC	



DIAGRAMATIC SECTION

# Appendix A

## Indicative Architectural Drawings



**K & W Architects Ltd.**  
 關黃建築師有限公司



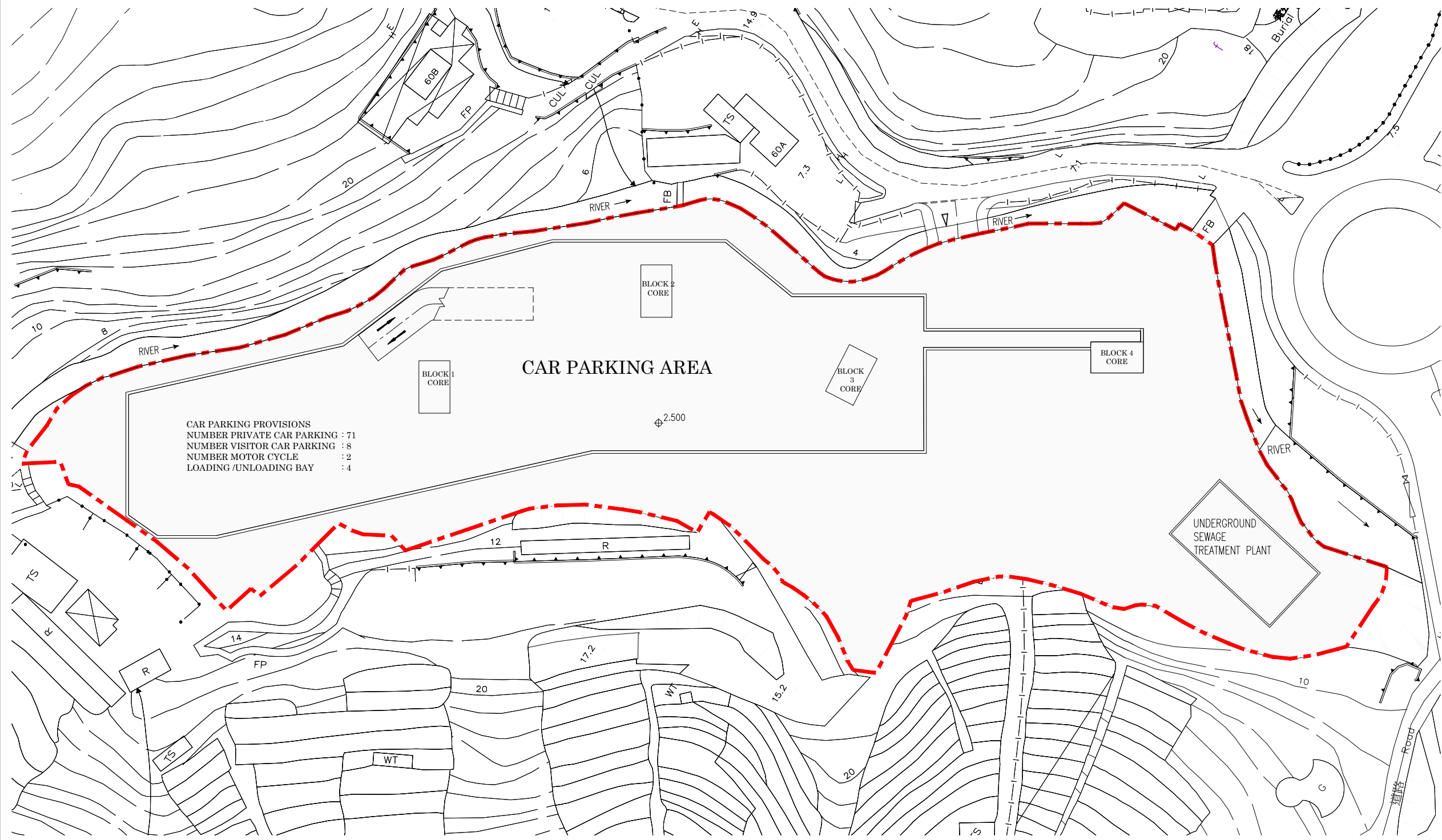
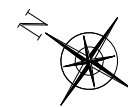
- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

**Project**  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Drawing Title**  
 MASTER LAYOUT PLAN

Job No.	Drawing No.	Revision No.
D1186	MLP-01	P
Scale	Date	CAD Ref.
1:800	09/06/2025	
Drawn	Checked	Approved
SF	SF	



CAR PARKING PROVISIONS  
 NUMBER PRIVATE CAR PARKING : 71  
 NUMBER VISITOR CAR PARKING : 8  
 NUMBER MOTOR CYCLE : 2  
 LOADING /UNLOADING BAY : 4

**K & W Architects Ltd.**  
 關黃建築師有限公司



- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

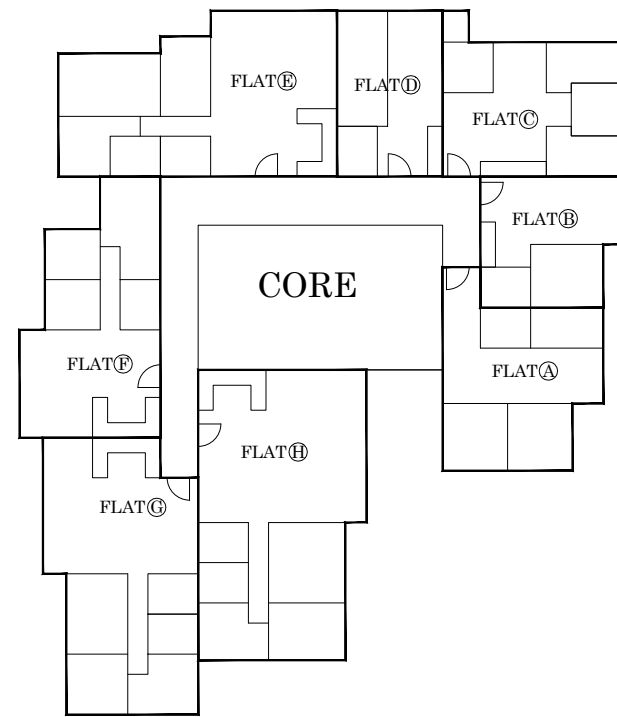
Client

---

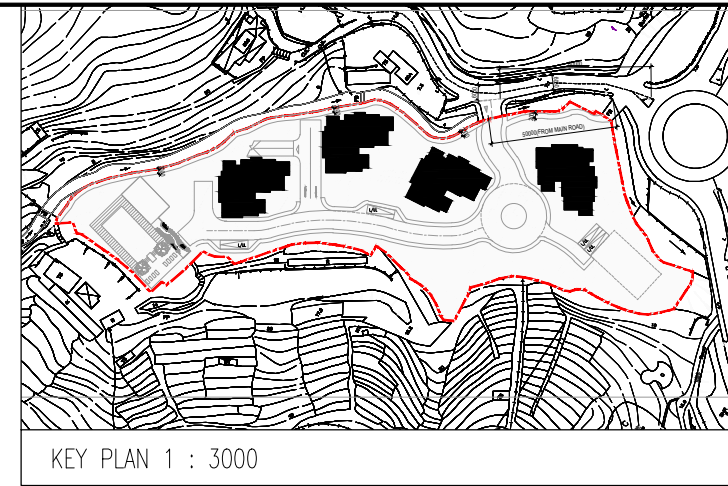
Project  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**BASEMENT PLAN**

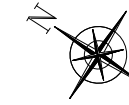
Job No.	Drawing No.	Revision No.
D1186	FL-02	P
Scale	Date	CAD Ref.
1:500	23/08/2023	
Drawn	Checked	Approved
PC	PC	



**BLOCK 1,2,3&4**



KEY PLAN 1 : 3000



BLOCK 1,2&3

FLOOR	NO. OF UNIT
G/F	8
1/F	8
2/F	8
3/F	8
R/F	
<b>TOTAL</b>	<b>32</b>

BLOCK 4

FLOOR	NO. OF UNIT
G/F	8
1/F	8
2/F	8
R/F	
<b>TOTAL</b>	<b>24</b>

**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

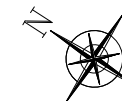
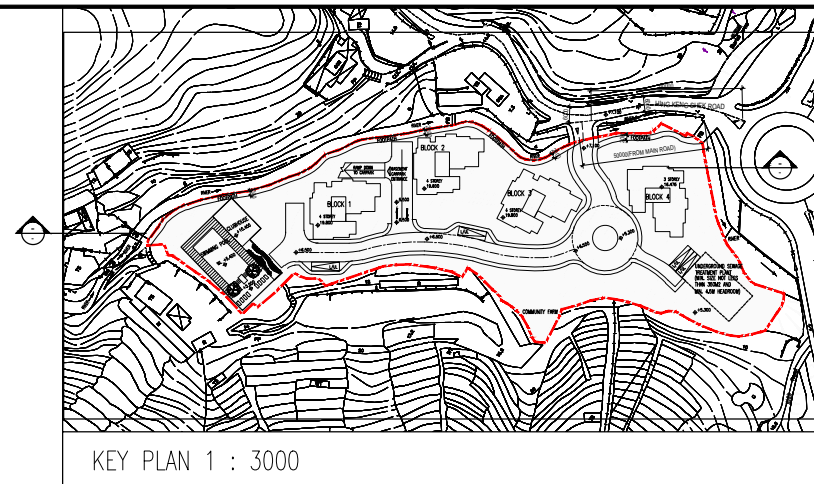
Client

**Project**  
Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Drawing Title**  
TPYICAL LAYOUT PLAN

Job No.	Drawing No.	Revision No.
D1186	FL-03	M
Scale	Date	CAD Ref.
1:300	09/06/2025	
Drawn	Checked	Approved
SF	SF	

Rev.	Date	Amendment	Purpose
3	06/06/2023		



**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

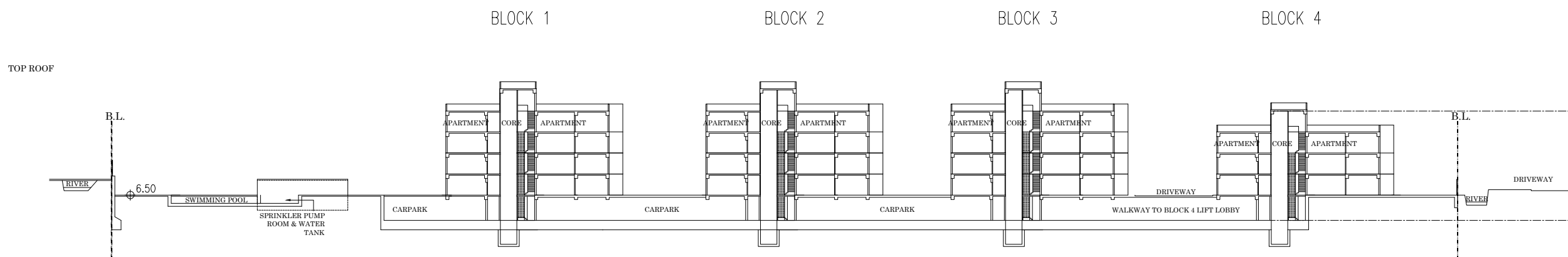
- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

**Project**  
Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**DIAGRAMATIC SECTION**

Job No.	Drawing No.	Revision No.
D1186	FL-04	L
Scale	Date	CAD Ref.
1:800	30/05/2024	
Drawn	Checked	Approved
PC	PC	



DIAGRAMATIC SECTION

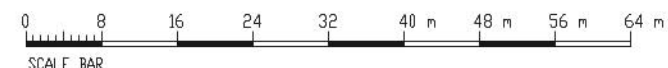
## Appendix B

### Landscape Master Plan with Tree Survey Report



**LEGEND**

- |                      |                  |                         |               |                                 |                                 |
|----------------------|------------------|-------------------------|---------------|---------------------------------|---------------------------------|
| --- SITE BOUNDARY    | 1 SWIMMING POOL  | 6 CENTRAL PLAZA         | PLANTING AREA | STONE GRANITE                   | COMPENSATORY NEW TREES (NATIVE) |
| 2 COMMUNITY FARM     | 7 FLORAL GARDEN  | 7 GRASSCRETE            | STONE GRANITE | COMPENSATORY NEW TREES (EXOTIC) |                                 |
| 3 CHILDREN PLAY AREA | 8 EVA            | ARTIFICIAL GRANITE TILE | WOOD DECK     | FEATURE TREE                    |                                 |
| 4 FOOTPATH           | 9 L/U/L AREA     | HOMOGENOUS TILE         | WOOD TILE     |                                 |                                 |
| 5 BBQ AREA           | 10 DROP-OFF AREA | STONE GRANITE           | IN-SITU EPDM  |                                 |                                 |



A	SCHEME UPDATED	07/25
NO.	DESCRIPTION	DATE BY

REVISIONS

LANDSCAPE ARCHITECT

**地利環境**  
**TEAM 73**

T 6032 2001-6710  
F 6032 2001-6709  
UNIT A, 10/F, WINGHOE CENTRAL, NO. 370 QUEEN'S ROAD CENTRAL, HONG KONG

ARCHITECT

UNDERGROUND TREATMENT PLANT (MIN. SIZE NOT LESS THAN 350M2 AND MIN. 4.5M HEADROOM)

DRAWN: \_\_\_\_\_

CHECKED: \_\_\_\_\_

APPROVED: \_\_\_\_\_

All measurements must be checked on the work by contractor.  
This drawing not to be used for construction purposes until counterchecked.

© This drawing and design are copyright and no portion may be reproduced without the written consent of TEAM 73 HK Ltd.

**PROJECT**  
Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**TITLE**  
LANDSCAPE MASTER PLAN

SCALE	PAPER SIZE	ISSUE DATE
1:800	A3	10/10/2023

PROJECT NUMBER  
T73-23003

COMPUTER DWG. NUMBER  
LA\2023\A\23003-002\10 Sai Kung (HK 56)\OFFICE\CAD\_20230504

DRAWING NUMBER	REV
LMP-01	A



**LEGEND**

- - - SITE BOUNDARY
- - - GREENERY COVERAGE AREA Not less than 20% of site area
- - - PRIVATE OPEN SPACE (Assessible for the resident only) Not less than 1m<sup>2</sup> per person

A	SCHEME UPDATED	07/25	
NO.	DESCRIPTION	DATE	BY

REVISIONS

LANDSCAPE ARCHITECT

**地利環境**  
**TEAM 73**

T (852) 2861-5713  
F (852) 2861-4808  
UNIT A, 10/F, WINGASE CENTRAL NO. 328 QUEEN'S ROAD CENTRAL, HONG KONG

ARCHITECT

**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

DRAWN: \_\_\_\_\_

CHECKED: \_\_\_\_\_

APPROVED: \_\_\_\_\_

All measurements must be checked on the work by contractor.  
This drawing not to be used for construction purposes until countersigned.

© This drawing and design are copyright and no portion may be reproduced without the written consent of TEAM 73 HK Ltd.

PROJECT

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

TITLE

OPEN SPACE DEMARCATION PLAN

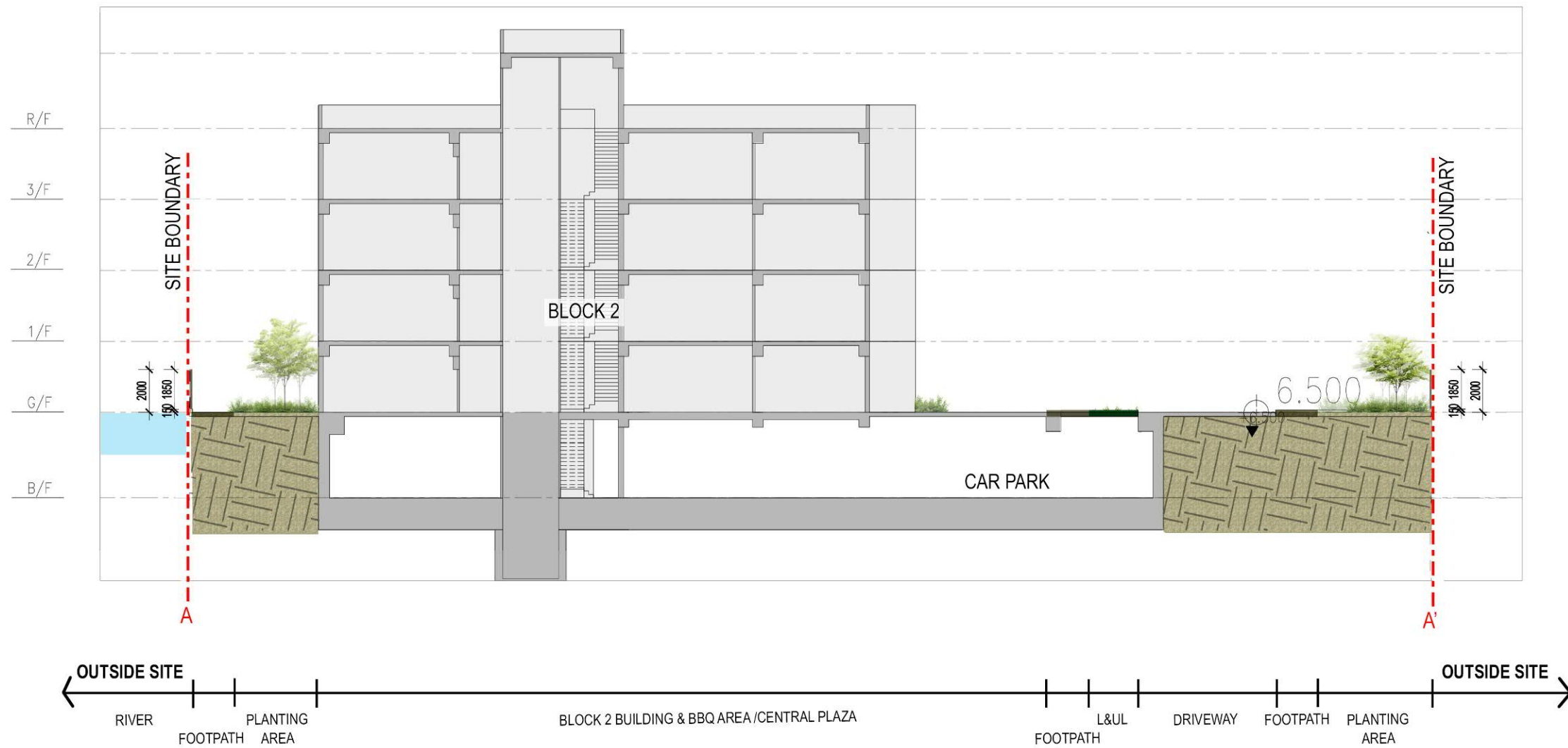
SCALE	PAPER SIZE	ISSUE DATE
1:750	A3	
PROJECT NUMBER		
T73-23003		
COMPUTER DWG. NUMBER		
L:\2023\23003-00210 Sai Kung (Wk Sai)\OFFICE\CAD_20230504		
DRAWING NUMBER	REV	
OP-01	A	



PROPOSE FENCE WALL REFERENCE IMAGE



KEY PLAN



NO.	DESCRIPTION	DATE	BY
REVISIONS			

LANDSCAPE ARCHITECT

**地利環境**  
**TEAM 73**

T (852) 2865-5713  
F (852) 2865-4889  
UNIT A, 15/F, WINGASE CENTRE, NO. 208 QUEEN'S ROAD CENTRAL, HONG KONG

ARCHITECT

**K & W Architects Ltd.**  
關黃建築師有限公司

**K&W**

DRAWN:	
CHECKED:	
APPROVED:	

All measurements must be checked on the work by contractor.  
This drawing not to be used for construction purposes until countersigned.  
© This drawing and design are copyright and no portion may be reproduced without the written consent of TEAM 73 HK, LTD.

PROJECT

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

TITLE

SECTION A-A'

SCALE	PAPER SIZE	ISSUE DATE
1:750	A3	
PROJECT NUMBER		
T73-23003		
COMPUTER DWG. NUMBER		
L:\2023\A\23003-02210_Sai Kung (HK_So)\OFFICE\CAD_20230504		
DRAWING NUMBER	REV	
SS-01		

# **Tree Survey Report**

Project Name: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from “Green Belt” and Area Shown as “Road” to “Residential (Group C)5” for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Date: 10 May 2023

Updated: 14 Jul 2025

## 1.0 Tree Survey Report

### 1.1 Introduction

Vegetation cover is an important asset that contributes to the aesthetic appeal of the proposed development and provides an essential component to enhance environmental conversation. A detailed tree survey was conducted by an experienced Arborist in January, 2022 to incorporate the changing condition of trees and the new development scheme for this submission.

### 1.2 Methodology of Tree Survey

In accordance with Lands Administration Office (Lands Department) Practice Note Issue No. 2/2020, all existing individual trees with a trunk diameter larger than 95mm (300mm girth) measured 1300mm above ground level are surveyed and identified with the following information recorded:

- (a) Drawing.: Drawing where the individual tree can be found.
- (b) Tree No.: Individual trees as being number labelled on site and marked on site and denoted correspondingly on the plan.
- (c) Photo No.: The photograph reference number of the tree being identified.
- (d) Species: Latin and Chinese names of the trees surveyed.
- (e) Tree size:
  - (i) Overall Height: Height measured from ground level to the top branch;
  - (ii) Trunk Diameter: Diameter of the main trunk measured at 1.3m high above ground level;
  - (iii) Average Crown Spread: Average diameter of the foliage canopy.
- (f) Amenity Value of a tree should be assessed by its functional values for shade, shelter, screening, reduction of pollution and noise and also its fung shui significance, and classified into the following categories:
  - (i) Good – important trees which should be retained by adjusting the design layout accordingly;
  - (ii) Fair – trees that are desirable to be retained in order to create a pleasant environment, which includes healthy specimens of lesser importance than “Good” trees;
  - (iii) Poor – trees that are dead, dying or potentially hazardous and should be removed.
- (g) Form:
  - (i) Good - Well-balanced crown and straight strong trunk(s);
  - (ii) Fair - Slightly unbalanced crown and non-straight trunk(s);
  - (iii) Poor - Misshapen or awkwardly-forked trunk and / or unbalanced crown.
- (h) Health:

- (i) Good - Sound and healthy trees;
- (ii) Fair - Trees which are with few or no visible defects or health problem;
- (iii) Poor - Rot and / or cavities in the main trunk and / or crown die back, severely infected with disease.

#### (i) Structural Condition:

- (i) Good - Trees with no or little sign of structural defect and would have low risk level of potential failure;
- (ii) Fair - Trees with moderate sign of structural defect and would have medium risk level of potential failure;
- (iii) Poor - Trees with significant and obvious sign of structural defect and would have high risk level of potential failure.

#### (j) Suitability for Transplanting: Assess the suitability of affected trees to be transplanted taken into account of the following factors: -

- conditions of the tree to be transplanted (including form, health and structure which will affect success of the proposed transplanting);
- size, species, and conservation status of the tree to be transplanted;
- availability and suitability of a permanent receptor site, both within and outside the project site;
- adequate time for preparation of transplanting operation;
- identification of a long-term maintenance party for the transplanted tree(s);
- access to the existing location and transportation to the receptor site (including availability of access to accommodate the tree, topography of the proposed route, engineering limitations, etc.); and
- cost-effectiveness.

Trees with the following features should not be considered suitable for transplanting under normal circumstances:

- low amenity value;
- irrecoverable form after transplanting (e.g. if substantial crown and root pruning are necessary to facilitate the transplanting);
- low survival rate after transplanting;
- very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);

- with evidence of over-maturity and onset of senescence;
- with poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits); or
- undesirable species (e.g. *Leucaena leucocephala* which is an invasive exotic tree).

Having considered the above factors and features of the trees, trees are assessed as follows: -

- (i) High - Trees are highly suitable for transplanting.
  - (ii) Medium - Trees are moderately suitable for transplanting.
  - (iii) Low – Trees are not suitable for transplanting.
- (k) Conservation Status: State the rarity and protection status of the species under relevant ordinances 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.
- (l) Recommendation: Proposed action for individual species which fall into three categories:
- (i) Retain
  - (ii) Transplant
  - (iii) Fell
- (m) Department to Provide Expert Advice to LandsD: AFCD (Agriculture, Fisheries and Conservation Department) / HyD (Highways Department) / LCSD (Leisure and Cultural Services Department) / Respective Government Department.
- (n) Justification: Proposed works which justify the recommendation.
- (o) Additional Remarks: Supplementary note towards the assessment.

### 1.3 Existing Tree Survey Findings

- 1.3.1 Based on the tree survey and additional tree survey carried out in Jan 2025, a total of 130 Nos. of trees (including 4 dead trees) were surveyed within and adjacent to the Site Boundary. Locations of individual tree surveyed are shown on Tree Survey and Treatment Plan in **Appendix I**.
- 1.3.2 There is no Old and Valuable trees, trees of particular value, trees of rare species and other trees (stonewall trees, trees of particular interest) found. All the species identified are common landscape species.
- 1.3.3 Tree identification and condition of individual tree surveyed is tabled in Tree

Schedule in **Appendix II**. Photographic record of individual tree is shown in **Appendix III**.

#### 1.3.4 Summary of trees surveyed within the subject site:

Tree Species	Chinese Names	No. of Trees
<i>Aleurites moluccana</i>	石栗	2
<i>Aporosa dioica</i>	銀柴	1
<i>Archontophoenix alexandrae</i>	假檳榔	3
<i>Averrhoa carambola</i>	楊桃	1
<i>Bauhinia variegata</i>	宮粉羊蹄甲	3
<i>Delonix regia</i>	鳳凰木	1
<i>Dimocarpus longan</i>	龍眼	4
<i>Ficus altissima</i>	高山榕	2
<i>Ficus hispida</i>	對葉榕	8
<i>Ficus variegata</i>	青果榕	10
<i>Koelreuteria elegans</i>	台灣欒樹	1
<i>Lagerstroemia speciosa</i>	大花紫薇	1
<i>Leucaena leucocephala</i>	銀合歡	7
<i>Litsea monopetala</i>	假柿樹	6
<i>Livistona chinensis</i>	蒲葵	1
<i>Macaranga tanarius var. tomentosa</i>	血桐	27
<i>Machilus chekiangensis</i>	長序潤楠	1
<i>Mallotus paniculatus</i>	白楸	13
<i>Roystonea regia</i>	王棕	7
<i>Schefflera heptaphylla</i>	鴨腳木	2
<i>Sterculia lanceolata</i>	假蘋婆	3
<i>Syzygium jambos</i>	蒲桃	6
<i>Taxodium distichum</i>	落羽杉	2
Dead tree	死樹	4
Total:		116

There are 23 species of woodland trees and palm trees identified in the surveyed area with the major tree species of *Macaranga tanarius var. tomentosa*, *Mallotus paniculatus*, *Ficus variegata* and *Ficus hispida* etc.

Additional tree surveyed on Jan 2025 for those trees as per requested are listed below;-

Tree Species	Chinese Names	No. of Trees
<i>Plumeria obtusa</i>	雞蛋花	1
<i>Murraya paniculata</i>	九里香	3
<i>Dimocarpus longan</i>	龍眼	3
<i>Syzygium jambos</i>	蒲桃	3
<i>Schefflera heptaphylla</i>	鴨腳木	1
<i>Leucaena leucocephala</i>	銀合歡	1
<i>Litsea monopetala</i>	假柿樹	1
<i>Macaranga tanarius</i>	血桐	1
Total:		14

#### 1.4 Tree Treatment Recommendations

1.4.1 In order to determine whether or not the existing trees will be affected by the proposed works, the proposed works for the Project have been overlaid on the Tree Survey and Treatment Plan in **Appendix I**.

1.4.2 For the affected trees affected by the proposed project, only trees of high amenity value, high survival rate after transplanting and high cost effectiveness are recommended to be transplanted. The feasibility of tree transplanting has been reviewed. The trees are not suitable to be transplanted due to the following key reasons: -

- Low amenity value;
- Irrecoverable form after transplanting (e.g. if substantial crown and root pruning are necessary to facilitate the transplanting);
- Low survival rate after transplanting;
- Very large size (unless the feasibility to transplant has been considered financially reasonable and technically feasible during the feasibility stage);
- With poor health, structure or form (e.g. imbalanced form, leaning, with major cavity/cracks/splits);
- Undesirable species (e.g. *Leucaena leucocephala* which is an invasive exotic tree); or
- On steep slope

1.4.3 Findings and recommended treatments to existing trees are summarized as follows and as shown on the Tree Survey and Treatment Plan in **Appendix I**: -

Departmental Responsibilities for Providing Expert Advice	Trees Surveyed	Retain	Transplant	Fell
DLO	116	0	0	116
Additional surveyed trees as per requested	14	14	0	0
Total nos. of Tree surveyed	<b>130</b>			

#### 1.5 COMPENSATORY TREE PLANTING PROPOSAL

1.5.1 Tree compensation has been explored within the Site as much as possible. Compensatory Planting Plan is shown in **Appendix IV**.

1.5.2 The implementation of proposed compensatory tree planting has achieved the compensatory planting ratio of 1:1 in terms of quantity as far as possible.

1.5.3 To match with the existing landscaping, the proposed compensatory tree species are consistent with the surrounding existing tree species.

1.5.4 An indicative species list for compensatory planting is tabled below subject to further design development.

Location (Lot/GA/YA/GHBA etc.)	Local Distribution Status (Native / Exotic)	Species Name	Chinese Name	Minimum Spacing (m)	DBH (mm)	Crown Spread (m)	Overall Height (m)	Nos.
Lot (Pink Area)	Native	<i>Cinnamomum burmannii</i> (Nees & T. Nees) Blume	陰香	4	95	4	6	11
Lot (Pink Area)	Native	<i>Cleistocalyx nervosum</i> (DC.) Kosterm.	水翁	4	95	4	6	9
Lot (Pink Area)	Native	<i>Cinnamomum parthenoxylon</i> (Jack) Meisn.	黃樟	4	95	4	6	3
Lot (Pink Area)	Exotic	<i>Crateva unilocularis</i> Buch.-Ham.	樹頭菜	4	95	4	6	9
Lot (Pink Area)	Native	<i>Ficus hispida</i> L. f.	對葉榕	4	95	4	6	22
Lot (Pink Area)	Exotic	<i>Hyophorbe lagenicaulis</i> (L.H. Bailey) H. E. Moore	酒瓶椰子	4	95	4	6	4
Lot (Pink Area)	Native	<i>Liquidambar formosana</i> Hance	楓香樹	4	95	4	6	27
Lot (Pink Area)	Native	<i>Litsea monopetala</i> (Roxb.) Pers.	假柿樹	4	95	4	6	13
Lot (Pink Area)	Exotic	<i>Michelia x alba</i> DC.	白蘭	4	95	4	6	4
Lot (Pink Area)	Exotic	<i>Phoenix canariensis</i> Chabaud	加那利刺葵	4	95	4	6	8
Lot (Pink Area)	Exotic	<i>Plumeria rubra</i> L.	雞蛋花	4	75	4	6	3
Lot (Pink Area)	Native	<i>Sterculia lanceolata</i> Cav.	假蘋婆	4	95	4	6	6
Lot (Pink Area)	Exotic	<i>Terminalia mantaly</i> H. Perrier	小葉欖仁	4	75	4	6	9
TOTAL								128

General Maintenance Operations of tree planting during Establishment Period is tabled below.

Maintenance Operation	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
General inspection	X			X			X			X		
Litter & Debris Removal	X	X	X	X	X	X	X	X	X	X	X	X
Check for insect/fungus	X	X	X	X	X	X	X	X	X	X	X	X
Adjusting Tree Ties	X			X			X			X		
Watering	X	X	X	X	X	X	X	X	X	X	X	X
Weeding	X			X			X			X		
Firming Up	X			X			X			X		
Fertilizing				X						X		
Tree Risk Assessment	As Appropriate											

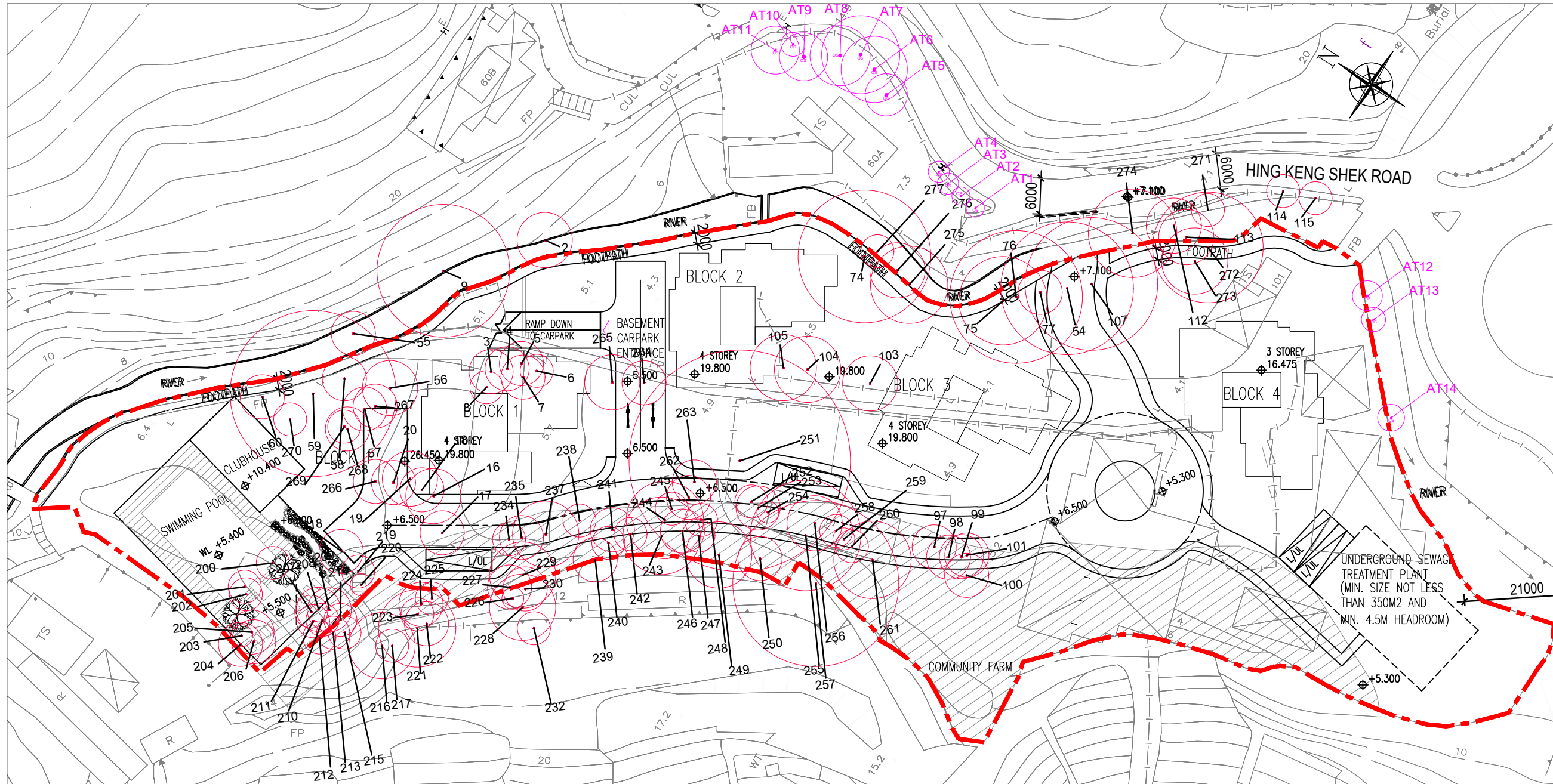
#### 1.6 CONCLUSION

1.6.1 Based on the tree survey and additional tree survey carried out in Jan 2025. Among the 130 nos. of trees, there are no old, valuable, rare or endangered species have been found. There is no Old and Valuable Trees, rare or endangered species found. All the species identified are common landscape species.

1.6.2 116 nos. of existing trees are proposed to be felled due to poor health condition/conflict with proposed development. Total 27.5m aggregate diameter at breast height (DBH) of tree will be felled.

1.6.3 In compensation for tree to be felled, there is total 116 nos. of compensatory trees and 12 nos. of new trees can be provided within the Site Boundary under this submission. The compensatory planting ratio of 1:1 in terms of quantity has achieved as far as possible.

**APPENDIX I**  
TREE SURVEY AND TREATMENT PLAN



LEGEND

- - - SITE BOUNDARY
- EXISTING TREES  
PROPOSED TO BE FELLED
- NON-BUILDING AREA
- EXISTING TREES TO BE  
RETAINED

A	SCHEME UPDATED	07/25	
NO.	DESCRIPTION	DATE	BY

REVISIONS

LANDSCAPE ARCHITECT

**地利環境**  
**TEAM 73**

T: (852) 2865-5713  
F: (852) 2865-4809  
UNIT A, 16/F, WINGASE CENTRE, NO. 208 QUEEN'S ROAD CENTRAL, HONG KONG

ARCHITECT

K & W Architects Ltd.  
關黃建築師有限公司

**K&W**

DRAWN: \_\_\_\_\_

CHECKED: \_\_\_\_\_

APPROVED: \_\_\_\_\_

All measurements must be checked on the work by contractor.  
This drawing not to be used for construction purposes until countersigned.

© This drawing and design are copyright and no portion may be reproduced without the written consent of TEAM 73 HK Ltd.

PROJECT

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

TITLE

TREE SURVEY AND TREATMENT PLAN

SCALE	PAPER SIZE	ISSUE DATE
1:750	A3	
PROJECT NUMBER		
T73-23003		
COMPUTER DWG. NUMBER		
L:\2023\A\23003-00210 Sai Kung (Wk So)\OFFICE\CAD_20230504		
DRAWING NUMBER	REV	
TS-01	A	

**APPENDIX II**  
**TREE SURVEY SCHEDULE**

## Tree Survey Schedule

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung  
 Project no.: T73-23003

Inspection date: 17& 19 January 2022

Surveyed by: Ho Kun Chung (ISA Certified Arborist no. HK-0452A)

Tree No. <sup>1</sup>	Species <sup>2</sup>		Measurements			Amenity value <sup>4</sup>	Form	Health Condition	Structural condition	Suitability for transplanting <sup>5</sup>		Conservation status <sup>7</sup>	Recommendation tree treatment	Department to provide expert advice to Lands	Additional Remarks <sup>8</sup>
	Scientific name	Chinese name	Height (m)	DBH <sup>3</sup> (mm)	Crown Spread (m)	(Good/Fair/Poor)			(High/Medium/Low)	Remarks <sup>6</sup>	(Retain/ Transplant/ Fell/ Pruning/ Form 2/ Others)				
T2	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	8	260	5	P	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T3	<i>Leucaena leucocephala</i>	銀合歡	9	160	4	P	P	P	P	L	-	-	Fell	Lot owner	Bark crack / covered by climber / leaning
T4	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	7	200	4	P	P	F	F	L	-	-	Fell	Lot owner	Broken branch / dead branch / leaning
T5	<i>Leucaena leucocephala</i>	銀合歡	9	180	4	P	P	F	F	L	-	-	Fell	Lot owner	Leaning
T6	<i>Leucaena leucocephala</i>	銀合歡	7	120	3	P	P	P	P	L	-	-	Fell	Lot owner	Leaning / broken branch
T7	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	7	230	4	P	P	F	P	L	-	-	Fell	Lot owner	Dead branch / leaning
T8	<i>Leucaena leucocephala</i>	銀合歡	7	120	3	P	P	P	P	L	-	-	Fell	Lot owner	Leaning
T9	<i>Delonix regia</i>	鳳凰木	14	550	12	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T16	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	9	260	5	P	P	P	P	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T17	<i>Archontophoenix alexandrae</i>	假檳榔	19	250	4	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T18	<i>Archontophoenix alexandrae</i>	假檳榔	19	280	4	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T19	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	9	240	5	P	P	F	F	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T20	<i>Livistona chinensis</i>	蒲葵	13	200	4	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T54	<i>Syzygium jambos</i>	蒲桃	12	700	12	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T55	<i>Dimocarpus longan</i>	龍眼	8	330	4	P	F	P	P	L	-	-	Fell	Lot owner	Wound with decay on trunk
T56	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	9	260	5	P	P	F	F	L	-	-	Fell	Lot owner	Leaning / broken branch
T57	<i>Archontophoenix alexandrae</i>	假檳榔	19	230	4	F	F	F	F	L	-	-	Fell	Lot owner	
T58	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	7	200	4	P	P	F	F	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T59	<i>Ficus altissima</i>	高山榕	15	1100	15	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T60	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	8	270	4	P	F	F	F	L	-	-	Fell	Lot owner	Leaning
T73	Dead tree	死樹	6	400	3	-	-	-	-	-	-	-	Fell	Lot owner	-
T74	<i>Lagerstroemia speciosa</i>	大花紫薇	16	480	12	F	F	F	F	L	-	-	Fell	Lot owner	
T75	<i>Syzygium jambos</i>	蒲桃	12	600	8	F	P	F	F	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T76	<i>Syzygium jambos</i>	蒲桃	12	680	12	F	P	F	P	L	-	-	Fell	Lot owner	Dead branch / leaning / climbers on trunk
T77	<i>Syzygium jambos</i>	蒲桃	8	480	4	P	P	P	P	L	-	-	Fell	Lot owner	Broken main trunk / leaning
T97	<i>Roystonea regia</i>	王棕	13	300	4	F	F	F	F	L			Fell	Lot owner	
T98	<i>Roystonea regia</i>	王棕	13	350	4	F	F	F	F	L			Fell	Lot owner	
T99	<i>Roystonea regia</i>	王棕	10	250	4	F	F	F	F	L			Fell	Lot owner	
T100	<i>Roystonea regia</i>	王棕	13	300	4	F	F	F	F	L			Fell	Lot owner	
T101	<i>Roystonea regia</i>	王棕	13	250	4	F	F	F	F	L			Fell	Lot owner	
T103	<i>Roystonea regia</i>	王棕	13	320	5	F	F	F	F	L	-	-	Fell	Lot owner	

## Tree Survey Schedule

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung  
 Project no.: T73-23003

Inspection date: 17& 19 January 2022

Surveyed by: Ho Kun Chung (ISA Certified Arborist no. HK-0452A)

Tree No. <sup>1</sup>	Species <sup>2</sup>		Measurements			Amenity value <sup>4</sup>	Form	Health Condition	Structural condition	Suitability for transplanting <sup>5</sup>		Conservation status <sup>7</sup>	Recommendation tree treatment (Retain/ Transplant/ Fell/ Pruning/ Form 2/ Others)	Department to provide expert advice to Lands	Additional Remarks <sup>8</sup>
	Scientific name	Chinese name	Height (m)	DBH <sup>3</sup> (mm)	Crown Spread (m)					(Good/Fair/Poor)	(High/ Medium/ Low)				
T104	<i>Taxodium distichum</i>	落羽杉	14	520	6	F	F	F	F	L	-	-	Fell	Lot owner	
T105	<i>Taxodium distichum</i>	落羽杉	14	490	6	F	F	F	F	L	-	-	Fell	Lot owner	
T107	<i>Syzygium jambos</i>	蒲桃	12	700	12	F	P	F	F	L	-	-	Fell	Lot owner	Dead branch / multi-trunks / leaning
T112	<i>Ficus variegata</i>	青果榕	10	300	5	F	F	F	F	L	-	-	Fell	Lot owner	Exposed root / climbers on trunk
T113	<i>Roystonea regia</i>	王棕	14	600	5	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T114	<i>Averrhoa carambola</i>	楊桃	7	170	3	F	P	F	F	L	-	-	Fell	Lot owner	Crack on trunk / leaning
T115	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	6	150	3	P	F	F	F	L	-	-	Fell	Lot owner	
T200	<i>Mallotus paniculatus</i>	白楸	7	160	3	P	P	F	F	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T201	<i>Mallotus paniculatus</i>	白楸	7	200	3	P	P	P	P	L	-	-	Fell	Lot owner	Leaning / climbers on trunk
T202	<i>Litsea monopetala</i>	假柿樹	8	105	3	F	F	F	F	L	-	-	Fell	Lot owner	
T203	<i>Mallotus paniculatus</i>	白楸	6	130	2	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T204	<i>Ficus variegata</i>	青果榕	8	160	4	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T205	<i>Mallotus paniculatus</i>	白楸	9	160	4	P	F	F	F	L	-	-	Fell	Lot owner	
T206	<i>Ficus variegata</i>	青果榕	8	160	4	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T207	<i>Mallotus paniculatus</i>	白楸	4	150	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T208	<i>Mallotus paniculatus</i>	白楸	8	150	4	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T209	<i>Mallotus paniculatus</i>	白楸	8	160	4	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T210	<i>Mallotus paniculatus</i>	白楸	7	100	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T211	<i>Mallotus paniculatus</i>	白楸	8	100	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T212	<i>Mallotus paniculatus</i>	白楸	7	150	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T213	<i>Mallotus paniculatus</i>	白楸	8	110	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T214	<i>Mallotus paniculatus</i>	白楸	8	140	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T215	<i>Litsea monopetala</i>	假柿樹	8	110	3	F	F	F	F	L	-	-	Fell	Lot owner	
T216	<i>Ficus hispida</i>	對葉榕	6	250	6	F	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T217	<i>Ficus hispida</i>	對葉榕	4	110	3	F	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T218	<i>Ficus variegata</i>	青果榕	9	200	4	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T219	<i>Ficus variegata</i>	青果榕	5	110	3	F	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T220	<i>Ficus variegata</i>	青果榕	4	100	2	F	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T221	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	7	220	7	P	P	F	F	L	-	-	Fell	Lot owner	Exposed root / leaning
T222	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	7	130	4	P	F	F	F	L	-	-	Fell	Lot owner	
T223	<i>Ficus variegata</i>	青果榕	8	150	3	F	F	F	F	L	-	-	Fell	Lot owner	

## Tree Survey Schedule

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung  
 Project no.: T73-23003

Inspection date: 17& 19 January 2022

Surveyed by: Ho Kun Chung (ISA Certified Arborist no. HK-0452A)

Tree No. <sup>1</sup>	Species <sup>2</sup>		Measurements			Amenity value <sup>4</sup>	Form	Health Condition	Structural condition	Suitability for transplanting <sup>5</sup>		Conservation status <sup>7</sup>	Recommendation tree treatment	Department to provide expert advice to Lands	Additional Remarks <sup>8</sup>
	Scientific name	Chinese name	Height (m)	DBH <sup>3</sup> (mm)	Crown Spread (m)	(Good/Fair/Poor)			(High/Medium/Low)	Remarks <sup>6</sup>	(Retain/ Transplant/ Fell/ Pruning/ Form 2/ Others)				
T224	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	10	170	4	P	F	P	F	L	-	-	Fell	Lot owner	Leaning
T225	<i>Mallotus paniculatus</i>	白楸	8	150	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T226	<i>Bauhinia variegata</i>	宮粉羊蹄甲	6	95	2	F	P	F	F	L	-	-	Fell	Lot owner	Leaning
T227	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	9	170	4	P	F	F	F	L	-	-	Fell	Lot owner	
T228	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	11	350		P	F	F	F	L	-	-	Fell	Lot owner	Exposed root / leaning / codominant stem
T229	<i>Litsea monopetala</i>	假柿樹	13	250	6	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T230	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	8	150	4	P	P	F	F	L	-	-	Fell	Lot owner	Leaning
T231	Dead tree	死樹	4	130	3	-	-	-	-	-	-	-	-	Lot owner	-
T232	<i>Ficus hispida</i>	對葉榕	4	100	3	F	P	F	F	L	-	-	Fell	Lot owner	Leaning
T233	Dead tree	死樹	4	250	0	-	-	-	-	-	-	-	-	Lot owner	-
T234	<i>Sterculia lanceolata</i>	假蒺藜	9	100	3	F	F	F	F	L	-	-	Fell	Lot owner	
T235	<i>Sterculia lanceolata</i>	假蒺藜	9	140	4	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber
T236	Dead tree	死樹	4	180	0	-	-	-	-	-	-	-	-	Lot owner	-
T237	<i>Dimocarpus longan</i>	龍眼	13	500	6	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / crack / codominant trunks
T238	<i>Ficus hispida</i>	對葉榕	9	100	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / leaning
T239	<i>Litsea monopetala</i>	假柿樹	8	120	4	F	F	F	F	L	-	-	Fell	Lot owner	
T240	<i>Ficus hispida</i>	對葉榕	7	120	3	F	P	F	F	L	-	-	Fell	Lot owner	Leaning
T241	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	8	205	4	P	F	F	F	L	-	-	Fell	Lot owner	Dead branch
T242	<i>Bauhinia variegata</i>	宮粉羊蹄甲	5	110	3	P	P	P	P	L	-	-	Fell	Lot owner	Leaning
T243	<i>Ficus variegata</i>	青果榕	13	265	7	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T244	<i>Ficus variegata</i>	青果榕	13	280	7	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T245	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	6	160	3	P	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T246	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	9	250	4	P	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T247	<i>Schefflera heptaphylla</i>	鴨腳木	8	160	3	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T248	<i>Ficus hispida</i>	對葉榕	8	170	3	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T249	<i>Ficus variegata</i>	青果榕	13	250	6	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber
T250	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	10	100	4	P	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T251	<i>Ficus altissima</i>	高山榕	15	985	20	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber / climbers on trunk / multi-trunks
T252	<i>Macaranga tanarius</i> var. <i>tomentosa</i>	血桐	8	150	3	P	P	F	F	L	-	-	Fell	Lot owner	Leaning
T253	<i>Machilus chekiangensis</i>	長序潤楠	9	135	4	F	F	F	F	L	-	-	Fell	Lot owner	
T254	<i>Sterculia lanceolata</i>	假蒺藜	6	200	2	F	P	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning

## Tree Survey Schedule

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung  
 Project no.: T73-23003

Inspection date: 17& 19 January 2022

Surveyed by: Ho Kun Chung (ISA Certified Arborist no. HK-0452A)

Tree No. <sup>1</sup>	Species <sup>2</sup>		Measurements			Amenity value <sup>4</sup>	Form	Health Condition	Structural condition	Suitability for transplanting <sup>5</sup>		Conservation status <sup>7</sup>	Recommendation tree treatment (Retain/ Transplant/ Fell/ Pruning/ Form 2/ Others)	Department to provide expert advice to Lands	Additional Remarks <sup>8</sup>
	Scientific name	Chinese name	Height (m)	DBH <sup>3</sup> (mm)	Crown Spread (m)					(Good/Fair/Poor)	(High/ Medium/ Low)				
T255	<i>Macaranga tanarius var. tomentosa</i>	血桐	13	300	10	P	P	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T256	<i>Macaranga tanarius var. tomentosa</i>	血桐	9	260	5	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T257	<i>Koelreuteria elegans</i>	台灣欒樹	13	420	15	F	F	F	F	L	-	-	Fell	Lot owner	Exposed root / multi-trunks / climbers on trunk
T258	<i>Schefflera heptaphylla</i>	鴨腳木	7	100	3	F	P	F	F	L	-	-	Fell	Lot owner	Leaning
T259	<i>Aporosa dioica</i>	銀柴	6	100	2	F	F	F	F	L	-	-	Fell	Lot owner	
T260	<i>Dimocarpus longan</i>	龍眼	8	145	3	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber
T261	<i>Dimocarpus longan</i>	龍眼	14	500	7	F	F	F	F	L	-	-	Fell	Lot owner	Covered by climber
T262	<i>Litsea monopetala</i>	假柿樹	9	120	4	F	F	F	F	L	-	-	Fell	Lot owner	
T263	<i>Litsea monopetala</i>	假柿樹	8	100	4	F	F	F	F	L	-	-	Fell	Lot owner	
T264	<i>Leucaena leucocephala</i>	銀合歡	11	100	4	P	F	F	F	L	-	-	Fell	Lot owner	
T265	<i>Leucaena leucocephala</i>	銀合歡	11	130	5	P	F	F	F	L	-	-	Fell	Lot owner	
T266	<i>Ficus hispida</i>	對葉榕	9	180	4	F	P	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T267	<i>Macaranga tanarius var. tomentosa</i>	血桐	8	135	4	P	P	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T268	<i>Macaranga tanarius var. tomentosa</i>	血桐	8	130	4	P	P	F	F	L	-	-	Fell	Lot owner	
T269	<i>Leucaena leucocephala</i>	銀合歡	7	110	3	P	P	F	F	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T270	<i>Macaranga tanarius var. tomentosa</i>	血桐	6	145	3	P	P	P	P	L	-	-	Fell	Lot owner	Covered by climber / Leaning
T271	<i>Ficus hispida</i>	對葉榕	7	160	3	P	P	P	P	L	-	-	Fell	Lot owner	Dead branch / leaning
T272	<i>Bauhinia variegata</i>	宮粉羊蹄甲	10	315	10	P	P	P	P	L	-	-	Fell	Lot owner	Broken branch / multi-trunks
T273	<i>Macaranga tanarius var. tomentosa</i>	血桐	12	300	6	P	P	P	P	L	-	-	Fell	Lot owner	Codominant trunks / leaning / climbers on trunk
T274	<i>Macaranga tanarius var. tomentosa</i>	血桐	13	310	8	P	F	F	F	L	-	-	Fell	Lot owner	
T275	<i>Aleurites moluccana</i>	石栗	13	360	7	F	F	F	F	L	-	-	Fell	Lot owner	Climbers on trunk
T276	<i>Aleurites moluccana</i>	石栗	10	400	5	F	F	F	F	L	-	-	Fell	Lot owner	Dead branch / leaning
T277	<i>Syzygium jambos</i>	蒲桃	7	150	3	F	P	F	F	L	-	-	Fell	Lot owner	Dead branch
END															

<sup>1</sup> Tree(s) in the Register of Old and Valuable Trees should be Goodlighted with OVT number.

<sup>2</sup> Guidance on proper use of scientific name of plants is given in the Agriculture, Fisheries and Conservation Department's Nature Conservation Practice Note No. 3, which can be viewed at AFCD's web page [http://www.afcd.gov.hk/english/conservation/con\\_tech/files/common/NCPC\\_No.03\\_The\\_use\\_of\\_plant\\_name\\_rev\\_2008\\_2.pdf](http://www.afcd.gov.hk/english/conservation/con_tech/files/common/NCPC_No.03_The_use_of_plant_name_rev_2008_2.pdf)

<sup>3</sup> DBH of a tree refers to its diameter at breast height (i.e. measured at 1.3 m above ground level). Guidance on DBH measurement is given in the Agriculture, Fisheries and Conservation Department's Nature Conservation Practice Note No. 2, which can be viewed at AFCD's web page [http://www.afcd.gov.hk/english/conservation/con\\_tech/files/common/NCPN\\_no.02\\_measurement\\_of\\_DBH\\_ver.2006.pdf](http://www.afcd.gov.hk/english/conservation/con_tech/files/common/NCPN_no.02_measurement_of_DBH_ver.2006.pdf)

<sup>4</sup> Amenity value of a tree should be assessed by its functional values for shade, shelter, screening, reduction of pollution and noise and also its fung shui significance, and classified into the following categories.

Good: important trees which should be retained by adjusting the design layout accordingly.

Fair: trees that are desirable to be retained in order to create a pleasant environment, which includes healthy specimens of lesser importance than "Good" trees.

Poor: trees that are dead, dying or potentially hazardous and should be removed.

**Tree Survey Schedule**

Project: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung  
 Project no.: T73-23003

Inspection date: 17& 19 January 2022

Surveyed by: Ho Kun Chung (ISA Certified Arborist no. HK-0452A)

Tree No. <sup>1</sup>	Species <sup>2</sup>		Measurements			Amenity value <sup>4</sup>	Form	Health Condition	Structural condition	Suitability for transplanting <sup>5</sup>		Conservation status <sup>7</sup>	Recommendation tree treatment	Department to provide expert advice to Lands	Additional Remarks <sup>8</sup>
	Scientific name	Chinese name	Height (m)	DBH <sup>3</sup> (mm)	Crown Spread (m)	(Good/Fair/Poor)			(High/Medium/Low)	Remarks <sup>6</sup>	(Retain/ Transplant/ Fell/ Pruning/ Form 2/ Others)				

<sup>5</sup> Assessment shall take into account conditions of an individual tree at the time of survey (including health, structure, age and root conditions), site conditions (including topography and accessibility), and intrinsic characters of tree species (survival rate after transplanting).

<sup>6</sup> Major determining factors for the rating on suitability for transplanting should be included if necessary.

<sup>7</sup> State the rarity and protection status of the species. Appendix A.III.(i) g, provides more details.

<sup>8</sup> Any additional information deemed necessary for consideration of the proposed management recommendation.

**APPENDIX II**  
TREE SURVEY SCHEDULE  
(ADDITIONAL TREES)

# Tree Assessment Schedule

Project Title: Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from “Green Belt” and Area Shown as “Road” to “Residential (Group C)5” for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Date of Tree Survey: 07/01/2025

Surveyed by: Cheng Pui Lim (Qualified Arborist)

Professional qualification : Technician Member of the Arboricultural Association of the United Kingdom (AAUK), No.: TE 2534 Location : DD210, Pak Wai, Sai Kung

Item No.	Tree ID Number(Tree ID labelling on site)	Species		Measurements			Amenity Value	Form	Health condition	Structural Condition	Suitability for transplanting		Conservation Status	Recommendation	Maintenance department to provide comments on TPRP		Remarks/ Observable defects
		Scientific Nme	Chinese Name	Height (m)	Crown Spread (m)	DBH (mm)	(High/ Med /Low)	(Good /Average /Poor)	(Good /Average /Poor)	(Good /Average /Poor)	(High/ Medium /Low)	Remark*	(Y /N) Remark**	(Retain/ Transplant/ Remove)	Before	After	
1	AT 1	<i>Plumeria obtusa</i>	雞蛋花	4.5	3	120	L	A	A	A	L		N	Retain	N/A	N/A	forked tree, imbalanced form, bending trunk, leaning, rooting area restricted, on slope
2	AT 2	<i>Murraya paniculata</i>	九里香	5.5	3	150	L	A	A	A	L		N	Retain	N/A	N/A	forked tree, imbalanced form, bending trunk, exposed root, rooting area restricted, on slope
3	AT 3	<i>Murraya paniculata</i>	九里香	5.5	3.5	220	L	A	A	A	L		N	Retain	N/A	N/A	forked tree, imbalanced form, bending trunk, rooting area restricted, on slope
4	AT 4	<i>Murraya paniculata</i>	九里香	5.5	3.5	160	L	A	A	A	L		N	Retain	N/A	N/A	forked tree, imbalanced form, bending trunk, rooting area restricted, on slope
5	AT 5	<i>Dimocarpus longan</i>	龍眼	12	7	400	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, codominant trunks, included bark, bending trunk, leaning, rooting area restricted, on slope
6	AT 6	<i>Dimocarpus longan</i>	龍眼	15	11	450	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, codominant trunks, included bark, bending trunk, leaning, rooting area restricted, on slope
7	AT 7	<i>Syzygium jambos</i>	蒲桃	14	13	400	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, bending trunk, leaning, rooting area restricted, on slope
8	AT 8	<i>Syzygium jambos</i>	蒲桃	13	10	400	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, codominant trunks, included bark, leaning, rooting area restricted, on slope
9	AT 9	<i>Syzygium jambos</i>	蒲桃	11	8	500	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, bending trunk, leaning, rooting area restricted, on slope
10	AT 10	<i>Schefflera heptaphylla</i>	鴨腳木	9	4	120	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, bending trunk, leaning, rooting area restricted, on slope
11	AT 11	<i>Dimocarpus longan</i>	龍眼	12	8	250	L	A	A	A	L		N	Retain	N/A	N/A	forked tree, imbalanced form, bending trunk, leaning, rooting area restricted, on slope
12	AT 12	<i>Leucaena leucocephala</i>	銀合歡	9	5	200	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, bending trunk, leaning, rooting area restricted, on slope
13	AT 13	<i>Litsea monopetala</i>	假柿樹	8	4	140	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, leaning, rooting area restricted, on slope
14	AT 14	<i>Macaranga tanarius</i>	血桐	6.5	4.5	150	L	A	A	A	L		N	Retain	N/A	N/A	imbalanced form, bending trunk, leaning, rooting area restricted, on slope

**APPENDIX III**  
TREE SURVEY PHOTOGRAPHIC RECORD



T2  
(Fell)



T2-1



T2-2



T2-3



T3  
(Fell)



T3-1



T3-2



T3-3



T4  
(Fell)



T4-1



T4-2



T4-3



T5  
(Fell)



T5-1



T5-2



T5-3



T6  
(Fell)



T6-1



T6-2



T6-3



T7  
(Fell)



T7-1



T7-2



T7-3



T8  
(Fell)



T8-1



T8-2



T8-3



T9  
(Fell)



T9-1



T9-2



T9-3



T16  
(Fell)



T16-1



T16-1

-----



T17  
(Fell)



T17-1



T17-2



T17-3



T18  
(Fell)



T18-1



T18-2



T18-3



T19  
(Fell)



T19-1



T19-2



T19-3



T20  
(Fell)



T20-1



T20-2



T20-3



T54  
(Fell)



T54-1



T54-2



T44-3



T55  
(Fell)



T55-1



T55-2



T55-3



T56  
(Fell)



T56-1



T56-2



T56-3



T57  
(Fell)



T57-1



T57-2



T57-3



T58  
(Fell)



T58-1



T58-2



T58-3



T59  
(Fell)



T59-1



T59-2

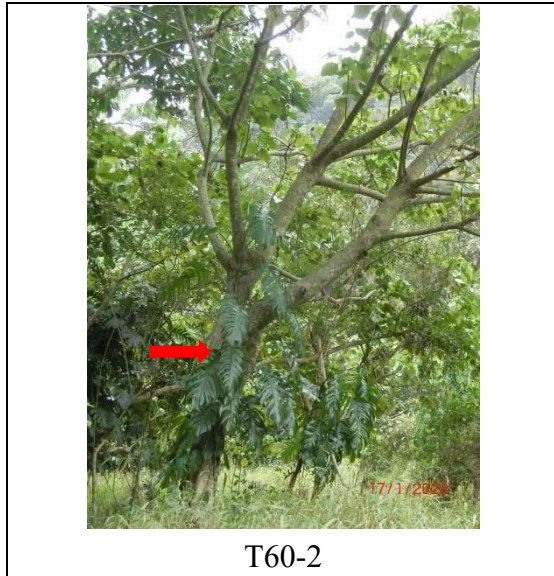
-----



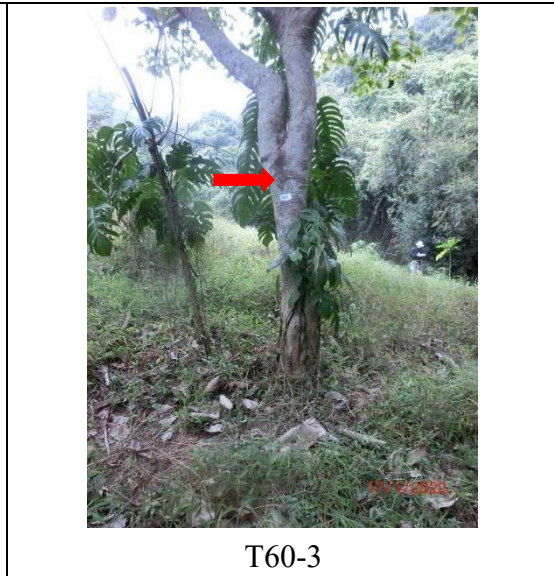
T60  
(Fell)



T60-1



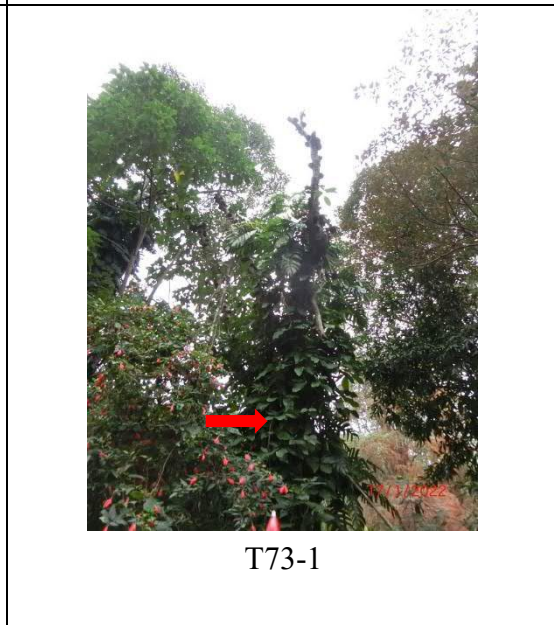
T60-2



T60-3



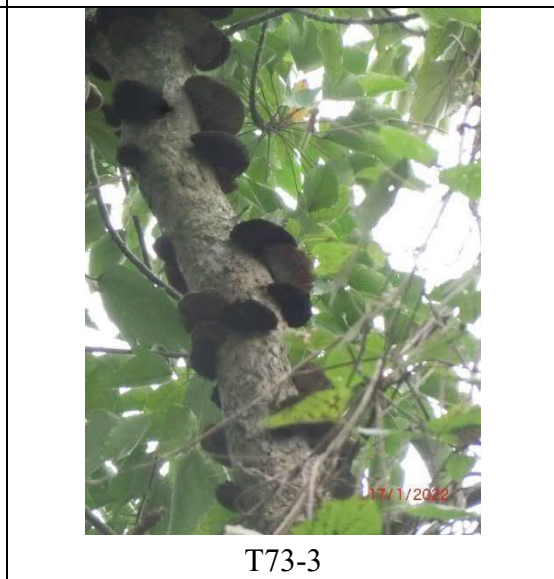
T73  
(Fell)



T73-1



T73-2



T73-3



T74  
(Fell)



T74-1



T74-2



T74-3



T75  
(Fell)



T75-1



T75-2



T75-3



T76  
(Fell)



T76-1



T76-2



T76-3



T77  
(Fell)



T77-1



T77-2



T77-3

T97  
(Fell)



T97-1

**T98**  
(Fell)



T98-1

**T99**  
(Fell)



T99-1

**T100**  
(Fell)



T100-1

T101  
(Fell)



T101-1

-----

-----



T103  
(Fell)



T103-1



T103-2



T103-3



T104  
(Fell)



T104-1



T104-2



T104-3



T105  
(Fell)



T105-1



T105-2



T105-3



T107  
(Fell)



T107-1



T107-2



T107-3



T112  
(Fell)



T112-1



T112-2



T112-3



T113  
(Fell)



T113-1



T113-2



T113-3



T114  
(Fell)



T114-1



T114-2



T114-3



T115  
(Fell)



T115-1



T115-2



T115-3



T200  
(Fell)



T200-1



T200-2



T200-3



T201  
(Fell)



T201-1



T201-2



T201-3



T202  
(Fell)



T202-1



T202-2



T202-3



T203  
(Fell)



T203-1



T203-2



T203-3



T204  
(Fell)



T204-1



T204-2

-----



T205  
(Fell)



T205-1



T205-2



T205-3



T206  
(Fell)



T206-1



T206-2



T207  
(Fell)



T207-1



T207-2



T207-3



T208  
(Fell)



T208-1



T208-2



T208-3



T209  
(Fell)



T209-1



T209-2

-----



T210  
(Fell)



T210-1



T210-2

-----



T211  
(Fell)



T211-1



T211-2



T211-3



T212  
(Fell)



T212-1



T212-2

-----



T213  
(Fell)



T213-1



T213-2



T213-3



T214  
(Fell)



T214-1



T214-2



T214-3



T215  
(Fell)



T215-1



T215-2



T215-3



T216  
(Fell)



T216-1



T216-2



T216-3



T217  
(Fell)



T217-1



T217-2



T217-3



T218  
(Fell)



T218-1



T218-2



T218-3



T219  
(Fell)



T219-1



T219-2



T219-3



T220  
(Fell)



T220-1



T220-2



T220-3



T221  
(Fell)



T221-1



T221-2



T221-3



T222  
(Fell)



T222-1



T222-2



T222-3



T223  
(Fell)



T223-1



T223-2

-----



T224  
(Fell)



T224-1



T224-2

-----



T225  
(Fell)



T225-1



T225-2



T226  
(Fell)



T226-1



T226-2



T226-3



T227  
(Fell)



T227-1



T227-2



T227-3



T228  
(Fell)



T228-1



T228-2



T228-3



T229  
(Fell)



T229-1



T229-2



T229-3



T230  
(Fell)



T230-1



T230-2



T230-3



T231  
(Fell)



T231-1



T231-2



T231-3



T232  
(Fell)



T232-1



T232-2



T232-3



T233  
(Fell)



T233-1



T233-2



T233-3



T234  
(Fell)



T234-1



T234-2



T234-3



T235  
(Fell)



T235-1



T235-2



T235-3



T236  
(Fell)



T236-1



T236-2



T237  
(Fell)



T237-1



T237-2



T237-3



T238  
(Fell)



T238-1



T238-2



T238-3



T239  
(Fell)



T239-1



T239-2



T239-3



T240  
(Fell)



T240-1



T240-2



T240-3



T241  
(Fell)



T241-1



T241-2



T241-3



T242  
(Fell)



T242-1



T242-3



T243  
(Fell)



T243-1



T243-2



T243-3



T244  
(Fell)



T244-1



T244-2



T244-3



T245  
(Fell)



T245-1



T245-2



T245-3



T246  
(Fell)



T246-1



T246-2



T246-3



T247  
(Fell)



T247-1



T247-2



T247-3



T248  
(Fell)



T248-1



T248-2



T248-3



T249  
(Fell)



T249-1



T249-2



T249-3



T250  
(Fell)



T250-1



T250-2



T250-3



T251  
(Fell)



T251-1



T251-2



T251-3



T252  
(Fell)



T252-1



T252-2



T252-3



T253  
(Fell)



T253-1



T253-2



T253-3



T254  
(Fell)



T254-1



T254-2



T254-3



T255  
(Fell)



T255-1



T255-2



T255-3



T256  
(Fell)



T256-1



T256-2



T256-3



T257  
(Fell)



T257-1



T257-2



T257-3



T258  
(Fell)



T258-1



T258-2



T258-3



T259  
(Fell)



T259-1



T259-2



T259-3



T260  
(Fell)



T260-1



T260-2



T260-3



T261  
(Fell)



T261-1



T261-2



T261-3



T262  
(Fell)



T262-1



T262-2



T262-3



T263  
(Fell)



T263-1



T263-2



T263-3



T264  
(Fell)



T264-1



T264-2



T264-3



T265  
(Fell)



T265-1



T265-2



T265-3



T266  
(Fell)



T266-1



T266-2



T266-3



T267  
(Fell)



T267-1



T267-2



T267-3



T268  
(Fell)



T268-1



T268-2



T268-3



T269  
(Fell)



T269-1



T269-2



T269-3



T270  
(Fell)



T270-1



T270-2



T270-3



T271  
(Fell)



T271-1



T271-2



T272  
(Fell)



T272-1



T272-2



T272-3



T273  
(Fell)



T273-1



T273-2



T273-3



T274  
(Fell)



T274-1



T274-2



T274-3



T275  
(Fell)



T275-1



T275-2



T275-3



T276  
(Fell)



T276-1



T276-2



T276-3



T277  
(Fell)



T277-1



T277-2



T277-3

**APPENDIX III**  
TREE SURVEY PHOTOGRAPHIC RECORD  
(ADDITIONAL TREES)

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from “Green Belt” and Area Shown as “Road” to “Residential (Group C)5” for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

---

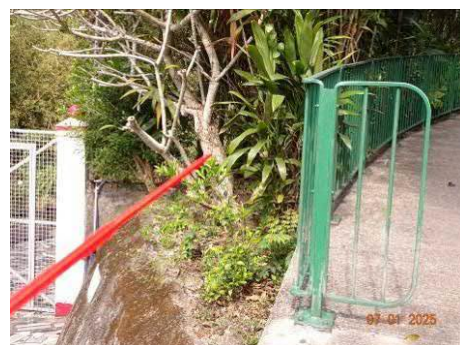
# Photographic Record

(ADDITIONAL)

Tree No. AT 1

*Plumeria obtusa* 雞蛋花

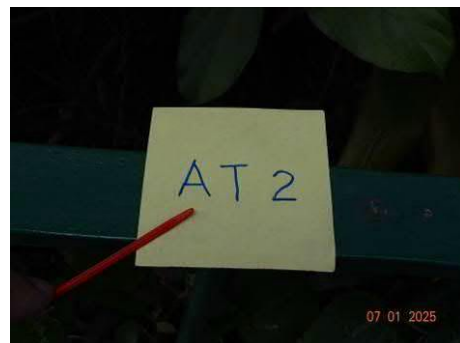
07/01/2025



Tree No. AT 2

*Murraya paniculata* 九里香

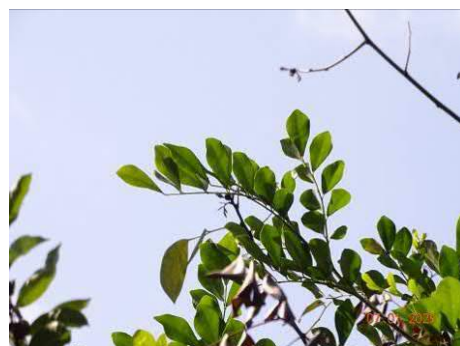
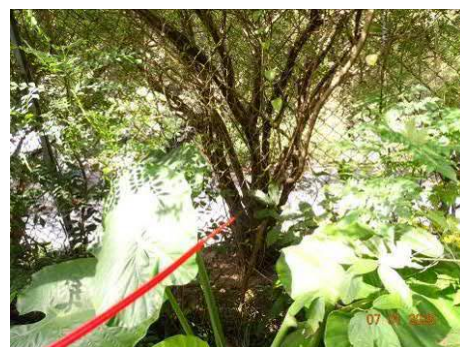
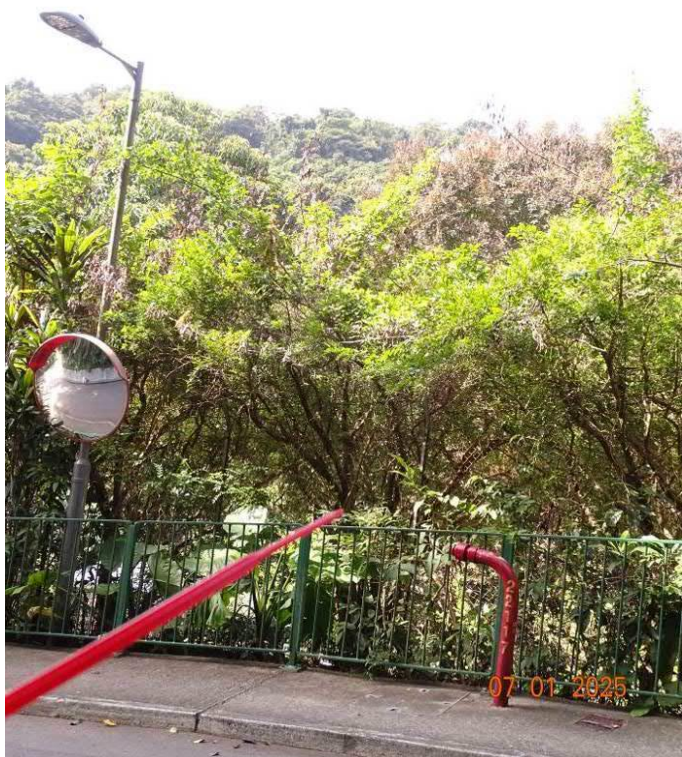
07/01/2025



Tree No. AT 3

*Murraya paniculata* 九里香

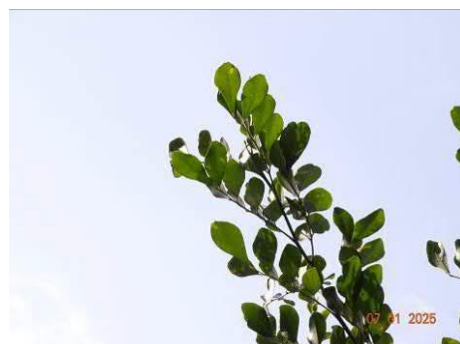
07/01/2025



Tree No. AT 4

*Murraya paniculata* 九里香

07/01/2025



Tree No. AT 5

*Dimocarpus longan* 龍眼

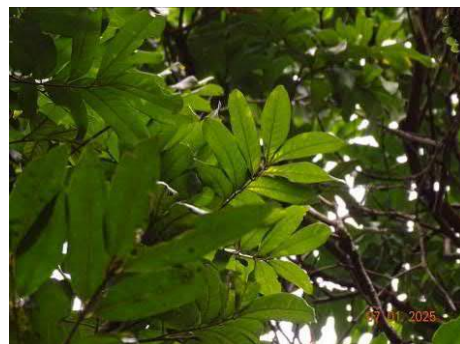
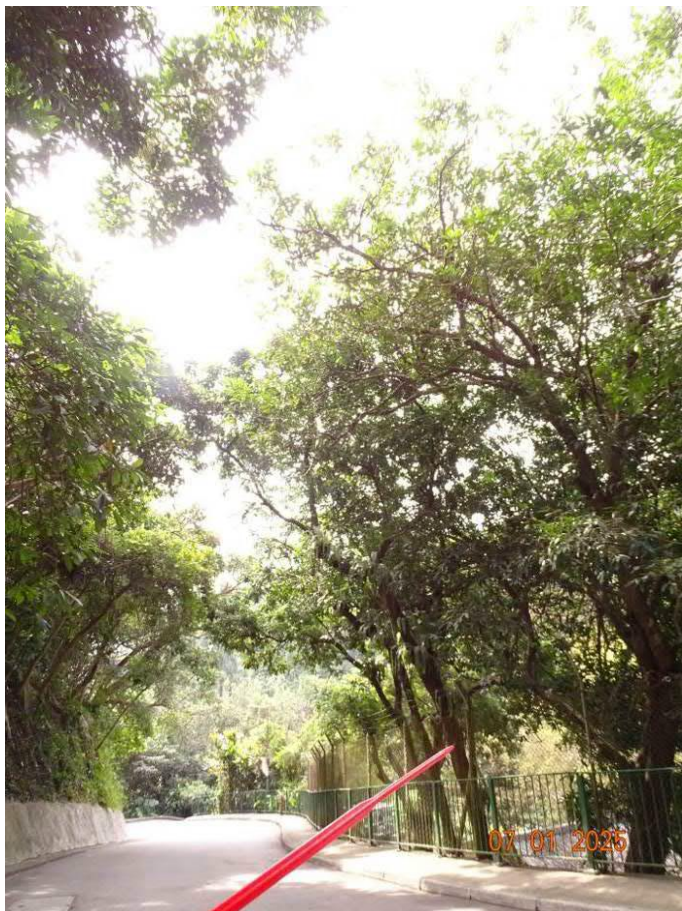
07/01/2025



Tree No. AT 6

*Dimocarpus longan* 龍眼

07/01/2025



Tree No. AT 7

*Syzygium jambos* 蒲桃

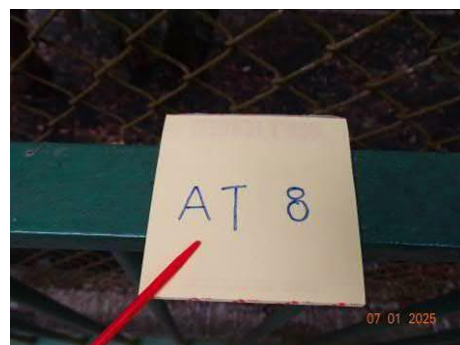
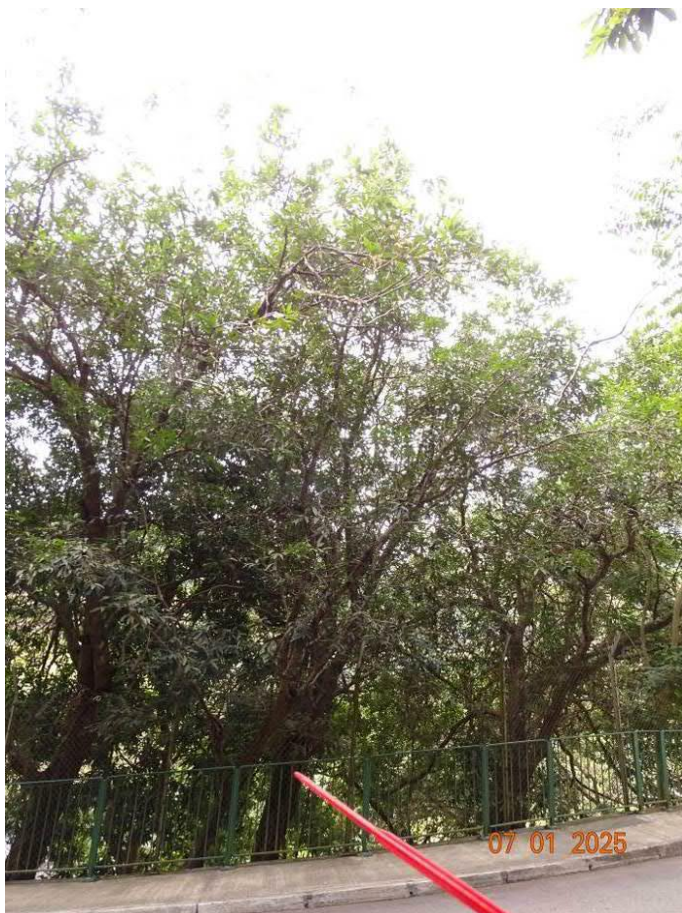
07/01/2025



Tree No. AT 8

*Syzygium jambos* 蒲桃

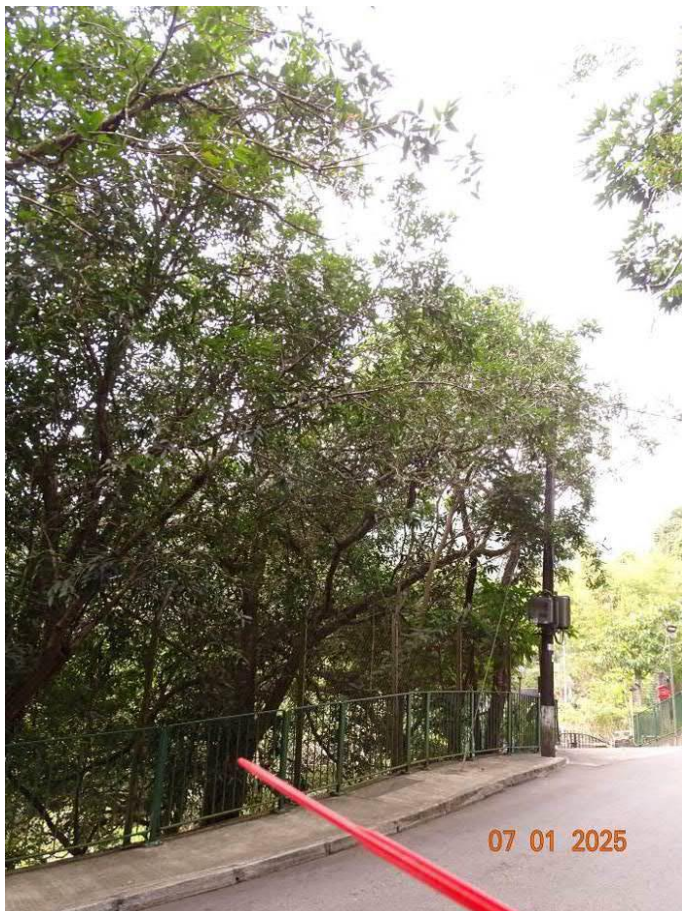
07/01/2025



Tree No. AT 9

*Syzygium jambos* 蒲桃

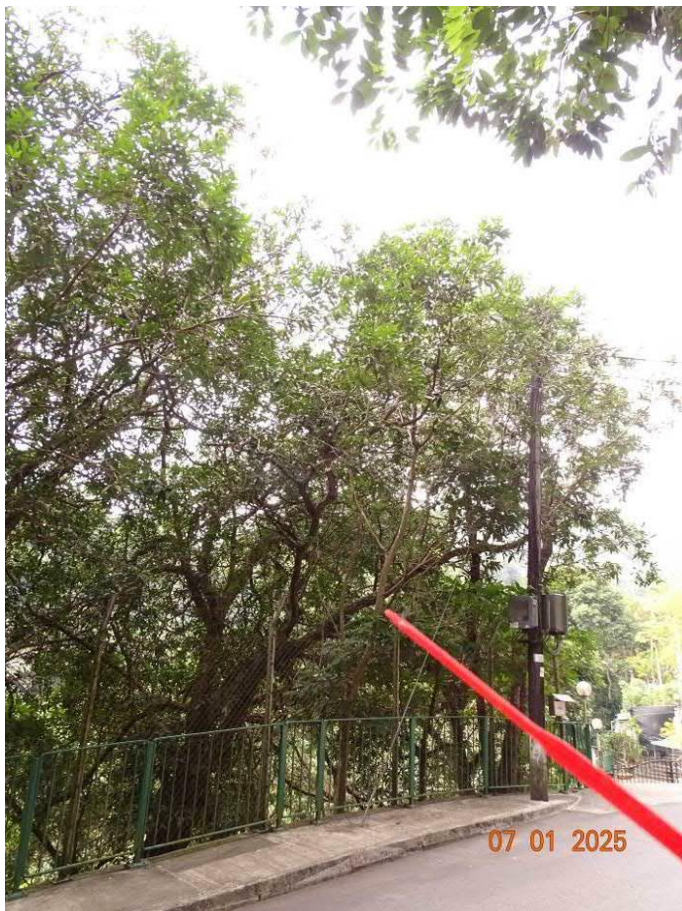
07/01/2025



Tree No. AT 10

*Schefflera heptaphylla* 鴨腳木

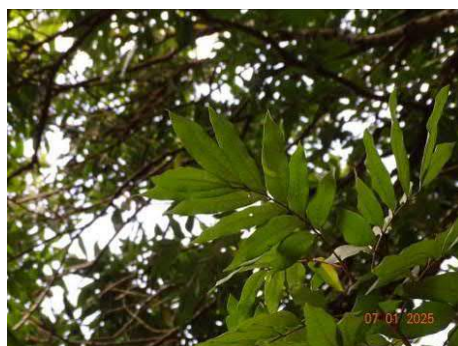
07/01/2025



Tree No. AT 11

*Dimocarpus longan* 龍眼

07/01/2025



Tree No. AT 12

*Leucaena leucocephala* 銀合歡

07/01/2025



Tree No. AT 13

*Litsea monopetala* 假柿樹

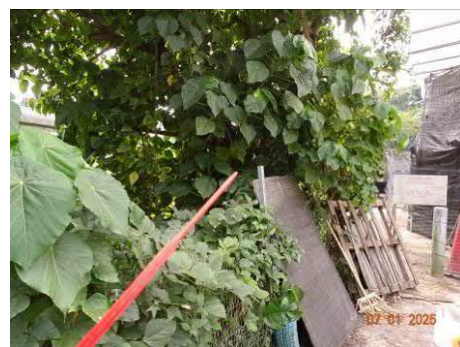
07/01/2025



Tree No. AT 14

*Macaranga tanarius* 血桐

07/01/2025



Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from “Green Belt” and Area Shown as “Road” to “Residential (Group C)5” for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

---

**End**

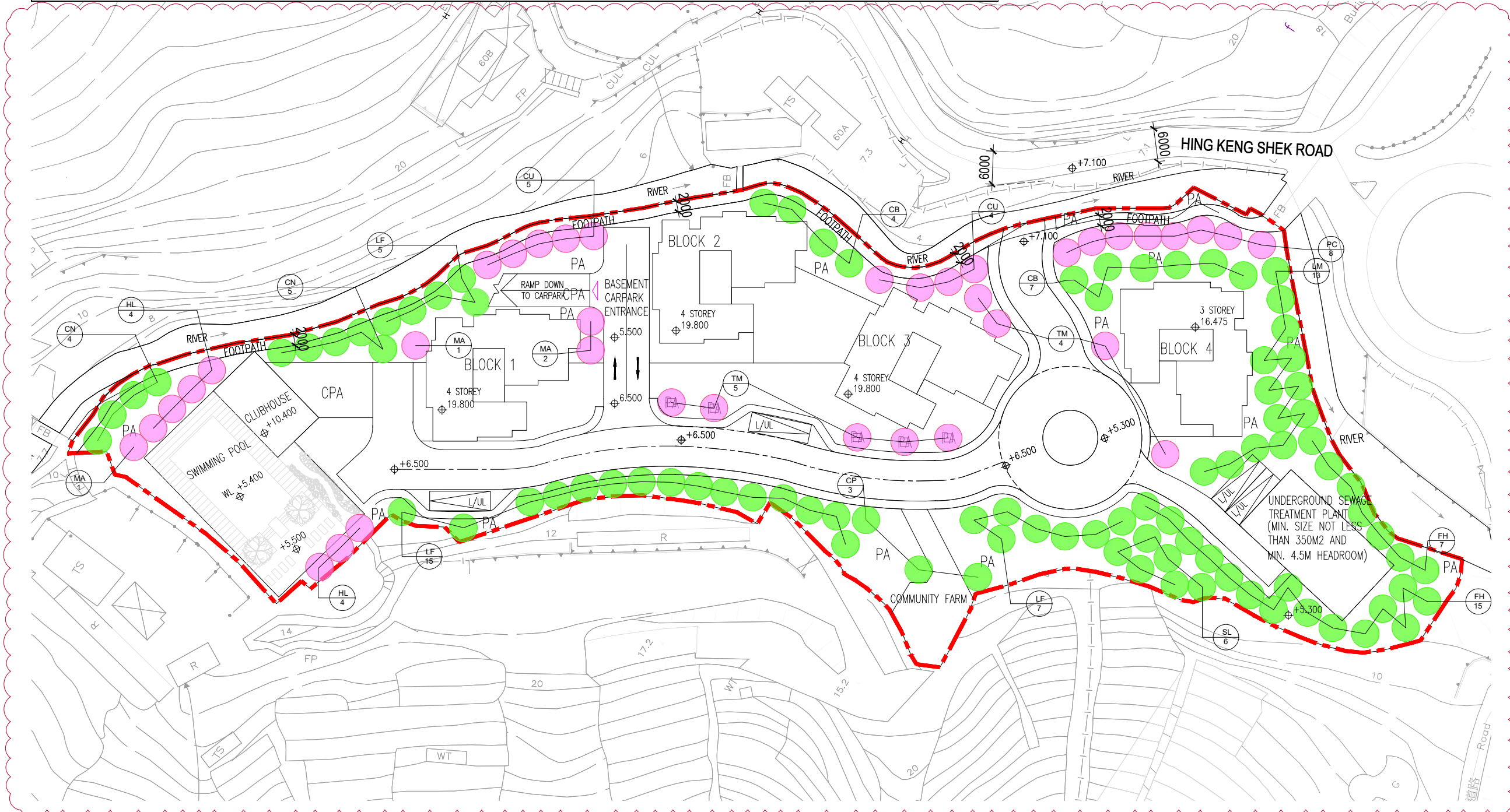
**APPENDIX IV**  
**TREE COMPENSATION PLAN**

**Plant Schedule for Compensatory Trees**

CODE	LOCAL DISTRIBUTION STATUS	BOTANICAL NAME	CHINESE NAME	STANDARD	SPACING	QUANTITY	REMARKS
CB	Native	<i>Cinnamomum bumannii</i> (Nees & T. Nees) Blume	陰香	6000(H) x 4000(S) x 95mm DBH	As Shown	11	
CN	Native	<i>Cleistocalyx nervosum</i> (DC.) Kosterm.	水翁	6000(H) x 4000(S) x 95mm DBH	As Shown	9	
CP	Native	<i>Cinnamomum parthenoxylon</i> (Jack) Meisn.	黃樟	6000(H) x 4000(S) x 95mm DBH	As Shown	3	
CU	Exotic	<i>Crateva unilocularis</i> Buch.-Ham.	樹頭菜	6000(H) x 4000(S) x 95mm DBH	As Shown	9	
FH	Native	<i>Ficus hispida</i> L. f.	對葉榕	6000(H) x 4000(S) x 95mm DBH	As Shown	22	
HL	Exotic	<i>Hyophorbe lagenicaulis</i> (L.H. Bailey) H. E. Moore	酒瓶椰子	6000(H) x 4000(S) x 95mm DBH	As Shown	4	
LF	Native	<i>Liquidambar formosana</i> Hance	楓香樹	6000(H) x 4000(S) x 95mm DBH	As Shown	27	
LM	Native	<i>Litsea monopetala</i> (Roxb.) Pers.	假柿樹	6000(H) x 4000(S) x 95mm DBH	As Shown	13	
MA	Exotic	<i>Michelia x alba</i> DC.	白蘭	6000(H) x 4000(S) x 95mm DBH	As Shown	4	
PC	Exotic	<i>Phoenix canariensis</i> Chabaud	加那利刺葵	6000(H) x 4000(S) x 95mm DBH	As Shown	8	
PR	Exotic	<i>Plumeria rubra</i> L.	雞蛋花	6000(H) x 4000(S) x 75mm DBH	As Shown	3	
SL	Native	<i>Sterculia lanceolata</i> Cav.	假蘋婆	6000(H) x 4000(S) x 95mm DBH	As Shown	6	
TM	Exotic	<i>Terminalia mantaly</i> H. Perrier	小葉欖仁	6000(H) x 4000(S) x 75mm DBH	As Shown	9	
<b>Total</b>						<b>128</b>	

LEGEND

- PROPOSED NATIVE TREE
- PROPOSED EXOTIC TREE
- FEATURE TREE



A	SCHEME UPDATE	07/25	
NO.	DESCRIPTION	DATE	BY

REVISIONS

LANDSCAPE ARCHITECT

**地利環境 TEAM 73**

T: (852) 2865-5713  
F: (852) 2865-4809  
UNIT A, 16/F, WINGASE CENTRE, NO. 208 QUEEN'S ROAD CENTRAL, HONG KONG

ARCHITECT

K & W Architects Ltd.  
關黃建築師有限公司

**K&W**

DRAWN: \_\_\_\_\_  
CHECKED: \_\_\_\_\_  
APPROVED: \_\_\_\_\_

All measurements must be checked on the work by contractor.  
This drawing not to be used for construction purposes until countersigned.  
This drawing and design are copyright and no portion may be reproduced without the written consent of TEAM 73 HK Ltd.

PROJECT

Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

TITLE

COMPENSATORY PLANTING PLAN

SCALE	PAPER SIZE	ISSUE DATE
1:800	A3	
PROJECT NUMBER		
T73-23003		
COMPUTER DWG. NUMBER		
L:\2023\A\23003-00210 Sai Kung (Wk Se)\OFFICE\CAD_20230504		
DRAWING NUMBER	REV	
OP-01	A	

**End**

# Appendix C

## Traffic Impact Assessment

**DOCUMENT STATUS CONTROL RECORD**

**Application for Amendment of Plan under Section 12A of the Town Planning Ordinance  
(Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road"  
to "Residential (Group C)5" for Proposed Residential Development at Various Lots in  
D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung**

**Traffic Impact Assessment Report**

Originating Organisation :  LLA Consultancy Limited Unit 610, 6/F, Island Place Tower, 510 King's Road, North Point, Hong Kong	Prepared by: SKL	<i>SKL</i>	Date: 14 August 2025
	Approved by: SLN	<i>SLN</i>	Date: 14 August 2025
	Revision No.: -		Date of Issue: 14 August 2025

Note: LLA Consultancy Limited. All rights reserved. Except for the internal use by the client for whom this document is prepared by LLA Consultancy Limited. No part of this document, which contains valuable trade secrets of a confidential nature to LLA Consultancy Limited may be (1) reproduced, stored in a retrieval system, or transmitted in any format or by any means, electronic, mechanical, photocopying, recording or otherwise; or (2) disclosed to any third party, without the prior consent of LLA Consultancy Limited.

## 1 INTRODUCTION

### 1.1 Background

- 1.1.1 The Applicant intends to develop the Site into a residential development at various lots in D.D.210, Pak Wai, Sai Kung ("the Site").
- 1.1.2 The Site is currently zoned as "Green Belt" ("GB") and "Road" under the Draft Ho Chung Outline Zoning Plan (OZP) No. S/SK-HC/12. The Applicant proposes amendments to the Draft Ho Chung Outline Zoning Plan (OZP) No. S/SK-HC/12 by rezoning the Application Site from "Green Belt" ("GB") and area shown as "Road" to "Residential (Group C)5" ("R(C)5"), with a maximum plot ratio of 0.6 and maximum building heights (BH) of 4 storeys (excluding basements) to facilitate the proposed residential development.
- 1.1.3 LLA Consultancy Limited was commissioned to carry out a traffic impact assessment study for the proposal to assess the potential traffic impact on its adjacent road network, in support of the planning application. This report presents the finding of the study.

### 1.2 Objectives

- 1.2.1 The objectives of the traffic impact assessment study are as follows:
- to review the existing traffic conditions in the surrounding road network;
  - to estimate the potential traffic generation due to the proposed development;
  - to assess the future traffic situation in the surrounding road network;
  - to appraise the potential traffic impact of the proposed development; and
  - to recommend the transport facilities provisions for the proposed development.

## 2 THE PROPOSED DEVELOPMENT

### 2.1 The Site

- 2.1.1 As shown in **Figure 2.1**, the Site is located near the J/O Hiram's Highway/Hing Keng Shek Road. The Site area is about 12,692 m<sup>2</sup>.

### 2.2 Development Schedule

- 2.2.1 The Site will comprise of 4 residential towers with 120 residential units. The development parameters are summarized in **Table 2.1**.

**Table 2.1 Proposed Development Schedule**

Item	Parameter
Site Area	About 12,692 m <sup>2</sup>
Plot Ratio	About 0.6
Total GFA	About 7,615.2 m <sup>2</sup>
Domestic GFA	About 7,615.2 m <sup>2</sup>
Number of Residential Blocks	4 blocks
Number of Residential Units	120 units
Estimated Residential Population	360

### 3 EXISTING TRAFFIC SITUATION

#### 3.1 Existing Traffic Conditions

3.1.1 Hing Keng Shek Road serves as a local road connecting to Hiram’s Highway. It is a single carriageway with few accesses for the low-density developments and villages nearby.

3.1.2 Hiram’s Highway is a major road in the eastern part of New Territories connecting Sai Kung with Clear Water Bay Road. The section of Hiram’s Highway between Clear Water Bay Road and Po Tung Road carried an AADT of 24,460 vehicles in 2021.

#### 3.2 Existing Junction Capacity Assessment

3.2.1 In order to assess the existing traffic conditions, a traffic count survey was carried out at the following locations in the vicinity of the Site on 1 December 2023 (Friday) during 07:30 – 09:30 and 17:30 – 19:30 and 2 December 2023 (Saturday) from 12:00 to 19:00. The locations of the surveyed junctions are presented in **Figure 3.1**.

- Hiram’s Highway/Hing Keng Shek Road Roundabout
- Hiram’s Highway/Ho Chung Road

3.2.2 The identified weekday AM, weekday PM and weekend peak hours were 08:00 – 09:00, 17:30 – 18:30 and 17:00 – 18:00, respectively and the surveyed traffic flows are presented in **Figure 3.2**.

#### 3.3 Existing Junction Capacity Assessment

3.3.1 Based on the existing traffic flows, the performances of the key junctions during the peak hour were assessed. The results are summarized and presented in **Table 3.1** and the detailed junction capacity calculation sheets are attached in **Appendix A**.

**Table 3.1 Existing Junction Performance**

No.	Junction Location	Type/ Capacity Index <sup>(1)</sup>	Junction Performance		
			Weekday AM Peak	Weekday PM Peak	Weekend Peak
J1	Hiram’s Highway/Hing Keng Shek Road Roundabout	Roundabout /DFC	0.52	0.43	0.53
J2	Hiram’s Highway/Ho Chung Road	Signalized/RC	115%	92%	70%

Note: (1) RC = Reserve Capacity; DFC = Design Flow to Capacity ratio

#### 3.4 Existing Link Capacity Assessment

3.4.1 The Volume to Capacity (V/C) Ratios of Hiram’s Highway were assessed and the results are presented in **Table 3.2**.

**Table 3.2 Link Capacity Assessment**

Direction	Bound	Capacity (pcu/hr) <sup>(1)</sup>	Traffic Flow (pcu/hr)			V/C Ratio		
			AM	PM	WN	AM	PM	WN
Hiram's Highway <sup>(2)</sup>	EB	1,020	801	997	1,055	0.79	0.98	1.03
	WB	1,020	1,054	872	1,082	1.03	0.85	1.06
Hiram's Highway <sup>(3)</sup>	NB	3,120	817	1,003	1,077	0.26	0.32	0.35
	SB	3,120	1,086	853	1,088	0.35	0.27	0.35
Hiram's Highway <sup>(4)</sup>	NB	3,120	783	1,073	1,226	0.25	0.34	0.39
	SB	3,120	1,092	957	1,124	0.35	0.31	0.36
Hiram's Highway <sup>(5)</sup>	NB	3,120	840	1,162	1,329	0.27	0.37	0.43
	SB	3,120	1,219	1,039	1,214	0.39	0.33	0.39
Hing Keng Shek Road	2-way	120	70	56	96	0.58	0.47	0.80

- Notes: AM – Weekday AM Peak Hour; PM – Weekday PM Peak Hour; WN – Weekend Peak Hour
- (1) Capacity refers to TPDM Vol.2 Ch. 2.4. A factor of 1.2 (based on the traffic count survey result) is adopted to convert the capacity from veh/hr to pcu/hr.
  - (2) The section between Hing Keng Shek Road and Pak Sha Wan Street.
  - (3) The section between access of Luk Cheung Road and Hing Keng Shek Road.
  - (4) The section between Ho Chung Road and Luk Mei Tsuen Road.
  - (5) The section between Nam Pin Wai Road and Ho Chung Road.

3.4.2 As shown in **Table 3.2**, the concerned road sections are operating with spare capacity during weekday AM, weekday PM and weekend peak hours, except the section of Hiram's Highway between Hing Keng Shek Road and Pak Sha Wan Street which is operating at its capacity.

### 3.5 Public Transport Services

3.5.1 At present, there are few franchised bus and green minibus routes travelling along Hiram's Highway and the details of these routes. The nearby bus stops of the Site are listed out in **Table 3.3** and shown in **Figure 3.3**, respectively.

**Table 3.3 Existing Public Transport Services**

Mode	Route No.	Terminating Points	Frequency (min)
Bus	92	Sai Kung – Diamond Hill Station	15 – 30
	96R <sup>(1)</sup>	Wong Shek Pier – Diamond Hill Station	25 – 30
	292P	Sai Kung – Kwun Tong (Yue Man Square)	07:30
	792M	Sai Kung – Tseung Kwan O Station	15 – 30
GMB	1	Sai Kung – Kowloon Bay (Telford Gardens)	8 – 20
	1A	Sai Kung – Diamond Hill (Choi Hung Road) Public Transport Interchange	4
	1S <sup>(2)</sup>	Sai Kung – Diamond Hill (Choi Hung Road) Public Transport Interchange	10 – 15
	2	Sai Kung – Ho Chung	15 – 30
	12	Sai Kung – Po Lam	10 – 15

Mode	Route No.	Terminating Points	Frequency (min)
	101M	Sai Kung – Hang Hau Station (via Sai Kung North Public Transport Interchange)	3 – 30

Note: (1) Service on Saturdays, Sundays and Holidays.  
(2) Overnight Service.

3.5.2 An on-site observation was carried out to identify the occupancy of the franchised bus and green minibus services in the AM peak hour and the results are summarized in **Table 3.4**.

**Table 3.4 Occupancy of Existing Franchised Bus and Green Minibus Services during AM Peak Hour**

Route No.	Observed Vehicular Trips	Passenger Capacity <sup>(1)</sup>	Passengers on Bus upon Arrival	Total No. of passengers		Passengers on Bus upon Leave	Occupancy
				Boarding	Alighting		
		[a]	[b]	[c]	[d]	[e] = [b]+[c]-[d]	[f] = [e] / [a]
<b>Sai Kung Bound</b>							
Bus 92	3	360	80	0	4	76	21%
Bus 792M	3	360	50	0	0	50	14%
GMB 1	7	112	56	2	0	58	52%
GMB 1A	22	352	229	3	5	227	64%
GMB 2	3	48	23	0	0	23	48%
GMB 12	4	64	20	0	0	20	31%
GMB 101M	20	320	178	0	2	176	55%
<b>Total</b>	<b>62</b>	<b>1616</b>	<b>636</b>	<b>5</b>	<b>11</b>	<b>630</b>	<b>39%</b>
<b>Kowloon Bound</b>							
Bus 92	2	240	90	2	1	91	38%
Bus 792M	2	240	90	5	0	95	40%
GMB 1	4	64	64	0	0	64	100%
GMB 1A	23	368	361	2	0	363	99%
GMB 2	2	32	16	0	0	16	50%
GMB 12	2	32	32	0	0	32	100%
GMB 101M	17	272	272	0	0	272	100%
<b>Total</b>	<b>52</b>	<b>1248</b>	<b>925</b>	<b>9</b>	<b>1</b>	<b>933</b>	<b>75%</b>

Note: (1) Assume the capacity of each franchised bus and green minibus is 120 pax and 16 pax, respectively.

## 4 FUTURE TRAFFIC SITUATION

### 4.1 Design Year

4.1.1 The completion year of the proposed development is expected to be 2031. As a result, the design year of the traffic impact assessment should be three years after the completion year, i.e., 2034.

### 4.2 Traffic Forecast

#### ATC Historical Data

4.2.1 Reference was made to the 2017 to 2021 Annual Traffic Census Reports, published by the Transport Department, to determine the traffic growth. The traffic data recorded at the counting stations in the vicinity of the Development Site is shown in **Table 4.1**.

**Table 4.1 Annual Traffic Census Data**

Stn. No.	Road Section			AADT <sup>(1)</sup>					Average Growth%
	Road	From	To	2017	2018	2019	2020	2021	
5017	Clear Water Bay Rd	On Sau Rd	Hiram's Highway	26,910	28,450 (5.7%)	28,980 (1.9%)	28,900 (-0.3%)	29,100 (0.7%)	2.0%
5466	Clear Water Bay Rd	Hang Hau Rd	Hiram's Highway	18,650	18,950 (1.6%)	20,240 (6.8%)	19,110 (-5.6%)	20,020 (4.8%)	1.8%
6055	Hiram's Highway	Clear Water Bay Rd	Po Tung Rd	24,050	24,450 (1.7%)	24,280 (-0.7%)	23,360 (-3.8%)	24,460 (4.7%)	0.4%
<b>Total</b>				<b>69,610</b>	<b>71,850 (3.2%)</b>	<b>73,500 (2.3%)</b>	<b>71,370 (-2.9%)</b>	<b>73,580 (3.1%)</b>	<b>1.4%</b>

Note: (1) Figures in bracket indicated the % increase between two years.

4.2.2 **Table 4.1** shows that the AADT at the concerned ATC stations has an overall annual growth of +1.4% in between the years 2017 to 2021.

#### Territorial Population and Employment Data Matrix (TPEDM) Projection Data

4.2.3 Reference was also made to the 2019–based TPEDM published by the Planning Department. The population and employment data of year 2019 and 2031 in the Southeast New Territories (Other Area) are summarized in **Table 4.2**.

**Table 4.2 Population and Employment Data in Southeast New Territories (Other Area)**

Year	2019	2026	2031
Population	68,900	65,800	59,750
Employment	27,250	27,750	28,100
Total	96,150	93,550	87,850
<b>Average Annual Growth %</b>		<b>-0.4% (2019 to 2026)</b>	<b>-1.2% (2026 to 2031)</b>

4.2.4 As shown in **Table 4.2**, the projected average annual growth rates of the population and employment total number under the TPEDM in Southeast New Territories (Other Area) are negative 0.4% and negative 1.2% between the years 2019 – 2026 and 2026 – 2031, respectively. Having considered the rates derived from ATC and TPEDM data, to be conservative, the larger growth rate of +1.4% will be adopted for the subsequent traffic forecast.

### 4.3 Traffic Generation of the Proposed Development

4.3.1 Reference was also made to the latest set of traffic generation and attraction rates documented in Chapter 3 "Transport Considerations of Town Plans" of the TPDM, for the estimation of the traffic generated by the proposed development. The traffic generation and attraction numbers were shown in **Table 4.3**

**Table 4.3 Development Traffic Generation**

Proposed Use	Unit / Content	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekend Peak Hour <sup>(1)</sup>		
		Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
<b>Mean Trip rates from TPDM</b>										
Residential – 70m <sup>2</sup>	pcu/hr/flat	0.0888	0.0515	-	0.0356	0.0480	-	0.0356	0.0480	-
<b>Traffic Generation/Attraction</b>										
Proposed Development	120 flats	11	7	18	5	6	11	5	6	11

Note: Gen. – Generation; Att. – Attraction.

(1) The trip rates for PM peak hour are adopted for the weekend peak hour.

4.3.2 In view of the above, the proposed development would generate two-way traffic flows of 18 pcu/hr in the weekday AM peak hour, 11 pcu/hr in the weekday PM peak hour and 11 pcu/hr in the weekend peak hour. The traffic distribution is shown diagrammatically in **Figure 4.1**.

### 4.4 Planned and Approved Developments

4.4.1 To estimate the future traffic flows generated and attracted by the nearby planned and approved developments, updated information has been obtained from available information regarding the planned and approved developments in the vicinity of the proposed development site, the details of these developments are listed in **Table 4.4**.

**Table 4.4 Planned and Approved Developments**

Ref	Location	Use	Development Parameters
A	Various Lot in D.D. 210, Ho Chung	Residential	2,422 m <sup>2</sup> GFA (15 flats)
B	Lot 1003 in D.D. 214, Ho Chung	Residential	5,344 m <sup>2</sup> GFA (90 flats)
C	Lot 2189 in D.D. 244, Nam Pin Wai	Residential	8,320 m <sup>2</sup> GFA (139 flats)
D	Various Lots in D.D. 244 and Adjoining Government Land, Ho Chung, Sai Kung	Residential	13,719 m <sup>2</sup> GFA (58 flats)
E	Various Lots in D.D. 210 and 244 and Adjoining Government Land, Ho Chung, Sai Kung	Residential	2,393 m <sup>2</sup> GFA (8 flats)

4.4.2 Reference is made to Volume 1 of the TPDM published by the TD on the trip rates of the foregoing developments to estimate their traffic generation and attraction. The total traffic generation and attraction by these adjacent planned/committed developments are summarized in **Table 4.5**.

**Table 4.5 Traffic Generation of the Planned and Approved Developments**

Use	Use / Content	AM Peak Hour			PM Peak Hour			Weekend Peak Hour <sup>(1)</sup>		
		Gen.	Att.	Total	Gen.	Att.	Total	Gen.	Att.	Total
<b>Adopted TPDM Mean Trip Rates</b>										
Residential – 60m <sup>2</sup>	pcu/hr/flat	0.0718	0.0425	-	0.0286	0.0370	-	0.0286	0.0370	-
Residential – 180m <sup>2</sup>	pcu/hr/flat	0.2772	0.1769	-	0.1635	0.2394	-	0.1635	0.2394	-
Residential – 240m <sup>2</sup>	pcu/hr/flat	0.3012	0.2189	-	0.2235	0.3234	-	0.2235	0.3234	-
Residential – 300m <sup>2</sup>	pcu/hr/flat	0.3252	0.2609	-	0.2835	0.4074	-	0.2835	0.4074	-
<b>Traffic Generation</b>										
Site A	15 flats	5	3	8	3	4	7	3	4	7
Site B	90 flats	7	4	11	3	4	7	3	4	7
Site C	139 flats	10	6	16	4	6	10	4	6	10
Site D	58 flats	18	13	31	13	19	32	13	19	32
Site E	8 flats	3	3	6	3	4	7	3	4	7
<b>Total</b>		<b>43</b>	<b>29</b>	<b>72</b>	<b>26</b>	<b>37</b>	<b>63</b>	<b>26</b>	<b>37</b>	<b>63</b>

Note: Gen. – Generation; Att. – Attraction.

(1) The trip rates for PM peak hour are adopted for weekend peak hour.

4.4.3 As shown in **Table 4.5**, the planned/committed developments will generate a total two-way traffic of 72, 63 and 63 pcu/hr during weekday AM, weekday PM peak hour and weekend peak hour respectively. The estimated traffic generation will be assumed to be travelling in the local road network in the same proportions as the existing traffic demands when traffic forecast is prepared in this Study.

## 4.5 Reference and Design Flows

4.5.1 The 2034 Reference Flows, i.e. the traffic flows in the vicinity without the proposed development, were estimated based on the following equation.

$$2034 \text{ Reference Flows} = 2023 \text{ Existing Traffic Flows} \times (1 + 1.4\%)^{11}$$

4.5.2 The 2034 Design Flows, i.e. the traffic flows in the local road network with the traffic generated by the proposed residential development, were estimated based on the following equation:

$$2034 \text{ Design Flows} = 2034 \text{ Reference Flows} + \text{Traffic Flows Generated by the Proposed Development}$$

4.5.3 The 2034 Reference and Design Flows are shown in **Figures 4.2** and **4.3**, respectively.

## 4.6 Junction Capacity Assessment

4.6.1 Junction capacity analysis was carried out for the assessment year 2034. The assessment results are shown in **Table 4.6** and the detailed calculation sheets are attached in **Appendix B**.

**Table 4.6 2034 Junction Capacity Assessments**

No.	Junction Location	Type/ Index <sup>(1)</sup>	Reference			Design		
			AM	PM	WN	AM	PM	WN
J1	Hiram's Highway/Hing Keng Shek Road Roundabout	Roundabout /DFC	0.61	0.50	0.63	0.61	0.50	0.63
J2	Hiram's Highway/Ho Chung Road	Signalized /RC	83%	64%	44%	82%	63%	44%

Notes: AM – Weekday AM Peak Hour; PM – Weekday PM Peak Hour; WN – Weekend Peak Hour.  
(1) RC = Reserved Capacity; DFC = Design Flow to Capacity Ratio.

4.6.2 As shown in **Table 4.6**, all the concerned junctions will perform with spare capacity for both the Reference and Design Scenarios in 2034. Therefore, the adjacent road network will be able to cope with the traffic generated by the proposed development.

## 4.7 Link Capacity Assessment

4.7.1 The V/C Ratios of Hiram's Highway were assessed and the results are presented in **Table 4.7**.

**Table 4.7 Year 2034 Link Capacity Assessments**

Direction	Bound	Capacity (pcu/hr) <sup>(1)</sup>	Traffic Flow (pcu/hr)			V/C Ratio		
			AM	PM	WN	AM	PM	WN
<b>2034 Reference Scenario</b>								
Hiram's Highway <sup>(2)(3)</sup>	EB	3,120	937	1,164	1,231	0.30	0.37	0.39
	WB	3,120	1,230	1,019	1,264	0.39	0.33	0.41
Hiram's Highway <sup>(4)</sup>	NB	3,120	955	1,171	1,257	0.31	0.38	0.40
	SB	3,120	1,267	997	1,271	0.41	0.32	0.41
Hiram's Highway <sup>(5)</sup>	NB	3,120	921	1,260	1,439	0.30	0.40	0.46
	SB	3,120	1,279	1,121	1,316	0.41	0.36	0.42
Hiram's Highway <sup>(6)</sup>	NB	3,120	1,072	1,358	1,548	0.34	0.44	0.50
	SB	3,120	1,430	1,219	1,424	0.46	0.39	0.46
Hing Keng Shek Road	2-way	120	81	66	112	0.68	0.55	0.93
<b>2034 Design Scenario</b>								
Hiram's Highway <sup>(2)(3)</sup>	EB	3,120 <sup>(3)</sup>	938	1,164	1,231	0.30	0.37	0.39
	WB	3,120 <sup>(3)</sup>	1,231	1,020	1,265	0.39	0.33	0.41
Hiram's Highway <sup>(4)</sup>	NB	3,120	961	1,176	1,262	0.31	0.38	0.40
	SB	3,120	1,277	1,002	1,276	0.41	0.32	0.41

Direction	Bound	Capacity (pcu/hr) <sup>(1)</sup>	Traffic Flow (pcu/hr)			V/C Ratio		
			AM	PM	WN	AM	PM	WN
Hiram's Highway <sup>(5)</sup>	NB	3,120	927	1,265	1,444	0.30	0.41	0.46
	SB	3,120	1,289	1,126	1,321	0.41	0.36	0.42
Hiram's Highway <sup>(6)</sup>	NB	3,120	1,078	1,363	1,553	0.35	0.44	0.50
	SB	3,120	1,440	1,224	1,429	0.46	0.39	0.46
Hing Keng Shek Road	2-way	960 <sup>(7)</sup>	99	77	123	0.10	0.08	0.13

Notes: AM – Weekday AM Peak Hour; PM – Weekday PM Peak Hour; WN – Weekend Peak Hour

- (1) Capacity refers to TPDM Vol.2 Ch. 2.4. A factor of 1.2 (based on the traffic count survey result) is adopted to convert the capacity from veh/hr to pcu/hr.
- (2) The section between Hing Keng Shek Road and Pak Sha Wan Street.
- (3) The section of Hiram's Highway will be widened to dual two-lane carriageway under Hiram's Highway Improvement Stage 2.
- (4) The section between access of Luk Cheung Road and Hing Keng Shek Road.
- (5) The section between Ho Chung Road and Luk Mei Tsuen Road.
- (6) The section between Nam Pin Wai Road and Ho Chung Road.
- (7) The section between proposed vehicular access and Hiram's Highway will be widened (discussed in **Section 5.1** below).

4.7.2 As shown in **Table 4.6**, all the concerned road sections will operate with capacity during weekday AM, weekday PM and weekend peak hours in both reference and design scenarios.

#### 4.8 Review of Public Transport Facilities

4.8.1 Based on the tentative flat mix, the overall population of the proposed development is about 360. Reference has been made to the published "Travel Characteristics Survey (TCS) 2011 Final Report". According to the Report, the daily mechanized trip rate per population is 1.83 trips (two-way) and the morning peak hour accounted for about 12% of the daily trips for the two-way trips. It is assumed that 90% of the trips are in outbound direction in the AM peak hour. Based on the above and most of residents would use public transport services, the estimated public transport demand of the proposed development in outbound direction in AM peak hour is about 72 pax/hr (i.e.  $360 \times 1.83 \times 0.12 \times 0.9$ ).

4.8.2 The public transport demand induced by the planned developments mentioned in **Section 4.4** is also considered. According to "Hong Kong Annual Digest of Statistics" published by the Census and Statistic Department, the average household size for the territory in year 2022 is 2.7, this figure is adopted for estimating the population of these developments. By following the methodology described in the aforesaid paragraph, the estimated public transport demand of the planned developments in outbound direction in AM peak hour is about 166 pax/hr (i.e.  $(15+90+139+58+8) \times 2.7 \times 1.83 \times 0.12 \times 0.9$ ).

4.8.3 Based on the existing public transport vacancy (as estimated in **Table 3.3**) and the above projected demand, the existing bus/green minibus services will still operate with capacity after accommodating the future demand induced by the proposed development and the planned developments.

## 5 PROVISION OF TRANSPORT FACILITIES

### 5.1 Access Arrangement

5.1.1 The vehicular access of the proposed development will be located at Hing Keng Shek Road. It is proposed to widen the existing section of Hing Keng Shek Road between the proposed vehicular access and Hiram's Highway to 6.0m for a 2-lane single carriageway. A 2.0m wide footpath will be also provided within the Site connecting the proposed development and Hiram's Highway and the footpath will also be opened for public use. The proposed traffic arrangement is shown in **Figure 5.1**. The project proponent will be responsible for implementing the improvement works and will undertake the management and maintenance responsibility for the footpath within the Site.

5.1.2 Swept path analysis is conducted to demonstrate the manoeuvring of vehicles entering and leaving the Site via the proposed vehicular access and shown in **Figures 5.2 – 5.3**. To ensure sufficient sightline is provided for the proposed run-out, a sightline analysis is conducted and presented in **Figure 5.4**.

### 5.2 Internal Transport Facilities

5.2.1 The internal transport facilities for the proposed development will be provided in accordance with the Hong Kong Planning Standards and Guidelines (HKPSG). The required and the proposed provisions for the proposed development are shown in **Table 5.1**.

**Table 5.1 Proposed Car Parking and Loading/Unloading Facilities**

Type	HKPSG's Requirements						Required Provision	Proposed Provision
<b>Proposed Residential Development (120 flats)</b>								
Car Parking Space	<u>For Residents</u> Parking Requirements = GPS x R1 x R2 x R3 where						14 – 24	24
	Unit Size	No. of Unit	GPS	R1	R2	R3		
	40 m <sup>2</sup> < FS ≤ 70 m <sup>2</sup>	60	1 space per 4 – 7 units	1.2	1	1.3		
	70 m <sup>2</sup> < FS ≤ 100 m <sup>2</sup>	60		2.4	1	1.3		
	<u>For Visitors</u> Visitor car parking for private residential developments with more than 75 units per block should be provided at 5 visitor spaces per block in addition to the requirements, or as determined by the Authority. For private residential developments with 75 units or less per block, the visitor car parking provision will be determined by TD on a case-by-case basis.						8	8
<b>TOTAL CAR PARKING</b>						<b>49 – 79</b>	<b>79</b>	
Motorcycle Parking Space	1 space per 100 - 150 flats						1 – 2	2
Loading / Unloading Bay	1 bay per residential block or as determined by the Authority.						4	4

5.2.2 **Table 5.2** lists out a summary of the numbers and the dimensions required for each type of spaces in the proposed development. The proposed car park layout plan is enclosed in **Appendix C**.

**Table 5.2 Summary of Overall Transport Facilities Provision**

<b>Facilities</b>	<b>Dimensions</b>	<b>Proposed Provision</b>
Car Parking Space	2.5m (W) x 5.0m (L) x 2.4 (H)	77
Disable Car Parking Space	3.5m (W) x 5.0m (L) x 2.4 (H)	2
Goods Vehicle Loading and Unloading Bay	3.5m (W) x 11.0m (L) x 4.7m(H)	4
Motorcycle Parking Space	1.0m (W) x 2.4m (L) x 2.4 (H)	2

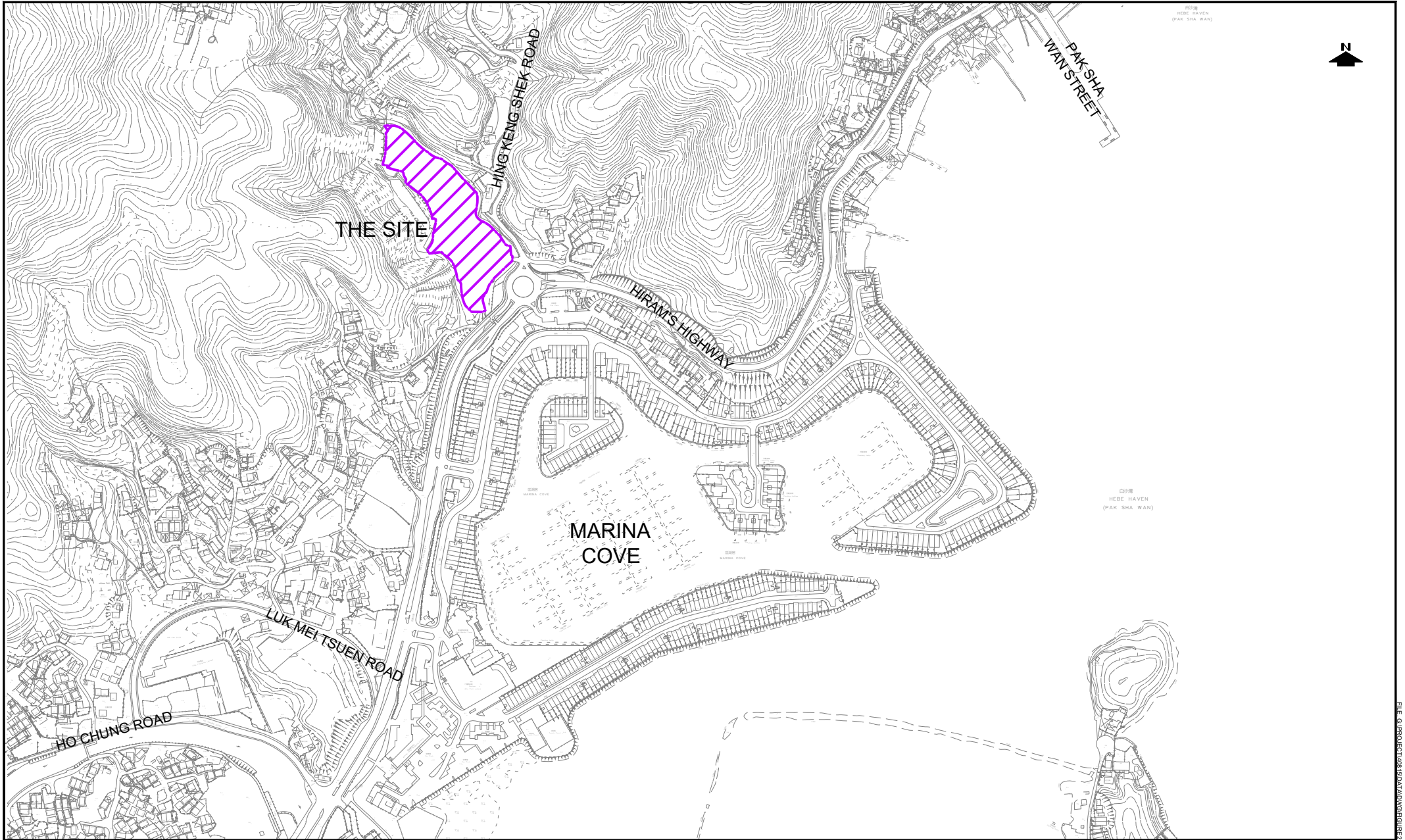
## **6 SUMMARY AND CONCLUSION**

### **6.1 Summary**

- 6.1.1 The Applicant intends to develop the Site into a residential development at various lots in D.D.210, Pak Wai, Sai Kung. The proposal will have about 120 residential units.
- 6.1.2 Traffic count surveys were carried out on 1 December 2023 (Friday) during 07:30 – 09:30 and 17:30 – 19:30 and 2 December 2023 (Saturday) from 12:00 to 19:00. The identified weekday AM, weekday PM and weekend peak hours were 08:00 – 09:00, 17:30 – 18:30 and 17:00 – 18:00, respectively. Junction and link capacity assessment based on the observed flows shows that all concerned junctions and road links are performing satisfactorily during weekday AM, weekday PM and weekend peak hours, except the section of Hiram's Highway between Hing Keng Shek Road and Pak Sha Wan Street which is operating at its capacity.
- 6.1.3 The proposed development would generate two-way traffic flows of 18 pcu/hr in the weekday AM peak hour, 11 pcu/hr in the weekday PM peak hour and 11 pcu/hr in the weekend peak hour. By assigning the additional development traffic to the 2034 Reference Flows, the 2034 Design Flows were obtained.
- 6.1.4 Junction and link capacity assessments were carried out for the key junctions and road links in the vicinity for the year 2034. The results indicated that all junctions and road links will operate satisfactorily for both reference and design scenarios. Therefore, it is anticipated that the proposed development will not induce significant traffic impact to the surrounding road network.
- 6.1.5 The vehicular access of the proposed development will be located at Hing Keng Shek Road. It is proposed to widen the existing section of Hing Keng Shek Road between the proposed vehicular access and Hiram's Highway to 6.0m for a 2-lane single carriageway. A 2.0m wide footpath will be also provided within the Site connecting the proposed development and Hiram's Highway and the footpath will also be opened for public use. The project proponent will be responsible for implementing the improvement works and will undertake the management and maintenance responsibility for the footpath within the Site.
- 6.1.6 The internal transport facilities of the proposed development will be provided in accordance with the recommendations in the HKPSG. The proposed development will provide a total of 79 private car parking spaces (including 2 nos. of parking space for disabled users), 2 motorcycle parking spaces and 4 goods vehicle loading / unloading bays.

### **6.2 Conclusion**

- 6.2.1 The findings of the traffic impact assessment indicated that the road network in the vicinity of the Site would be able to cope with the proposed development and the project is considered acceptable in traffic viewpoint.

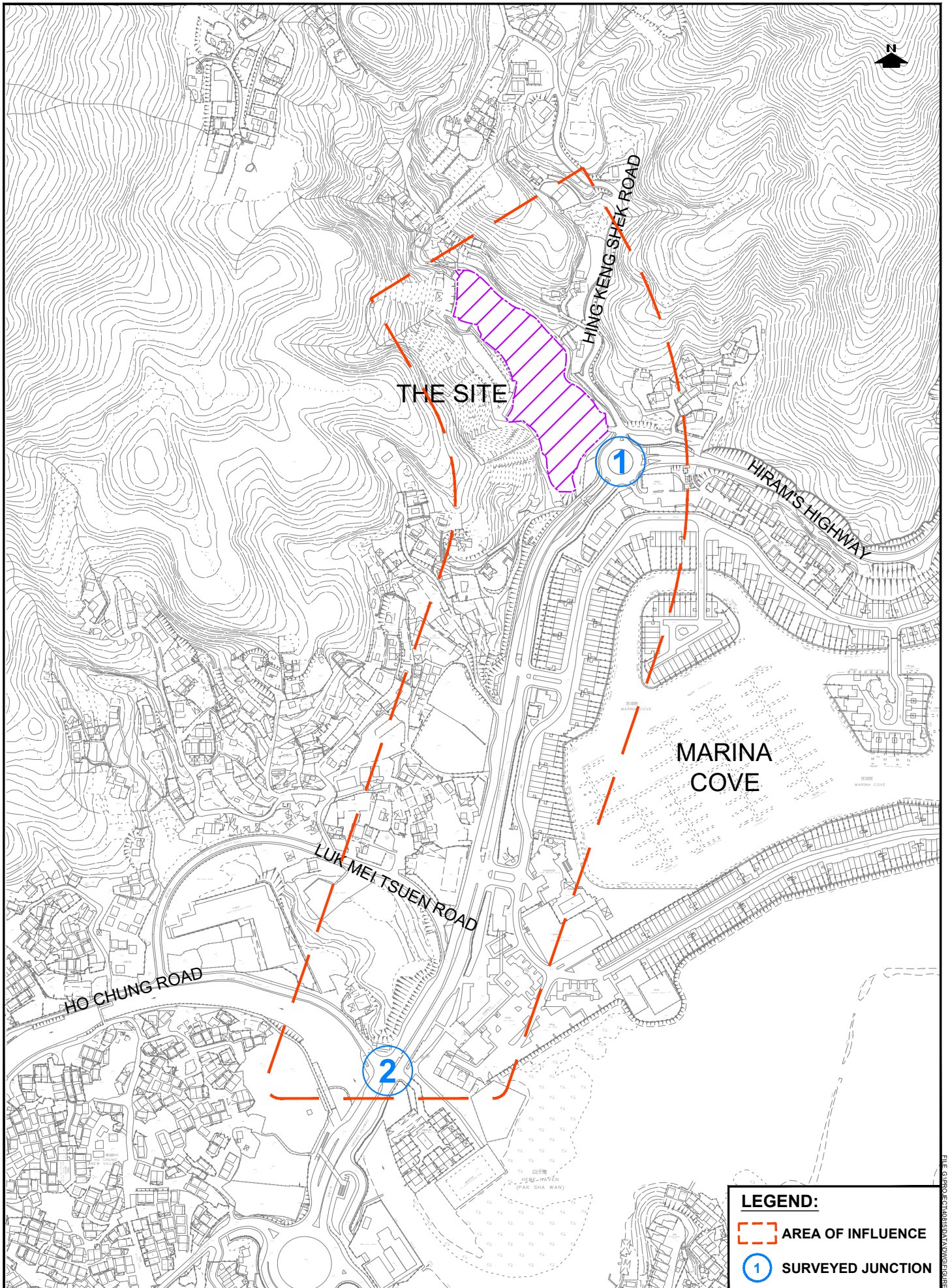


PROJECT NO.	40815	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE 1:6000
CHECKED	SLN	


PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG


DRAWING TITLE	<b>LOCATION PLAN</b>	
---------------	----------------------	--

DRAWING NO.	FIGURE 2.1	REV.	B
<b>LLA</b> 顧問有限公司 Consultancy Limited			




**LEGEND:**

 AREA OF INFLUENCE

 SURVEYED JUNCTION

PROJECT NO.	40815
DESIGNED	SLN
DRAWN	CLL
CHECKED	SLN
DATE	JUL 2025
SCALE	1:5000

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG
DRAWING TITLE	<b>LOCATION OF SURVEYED JUNCTIONS</b>

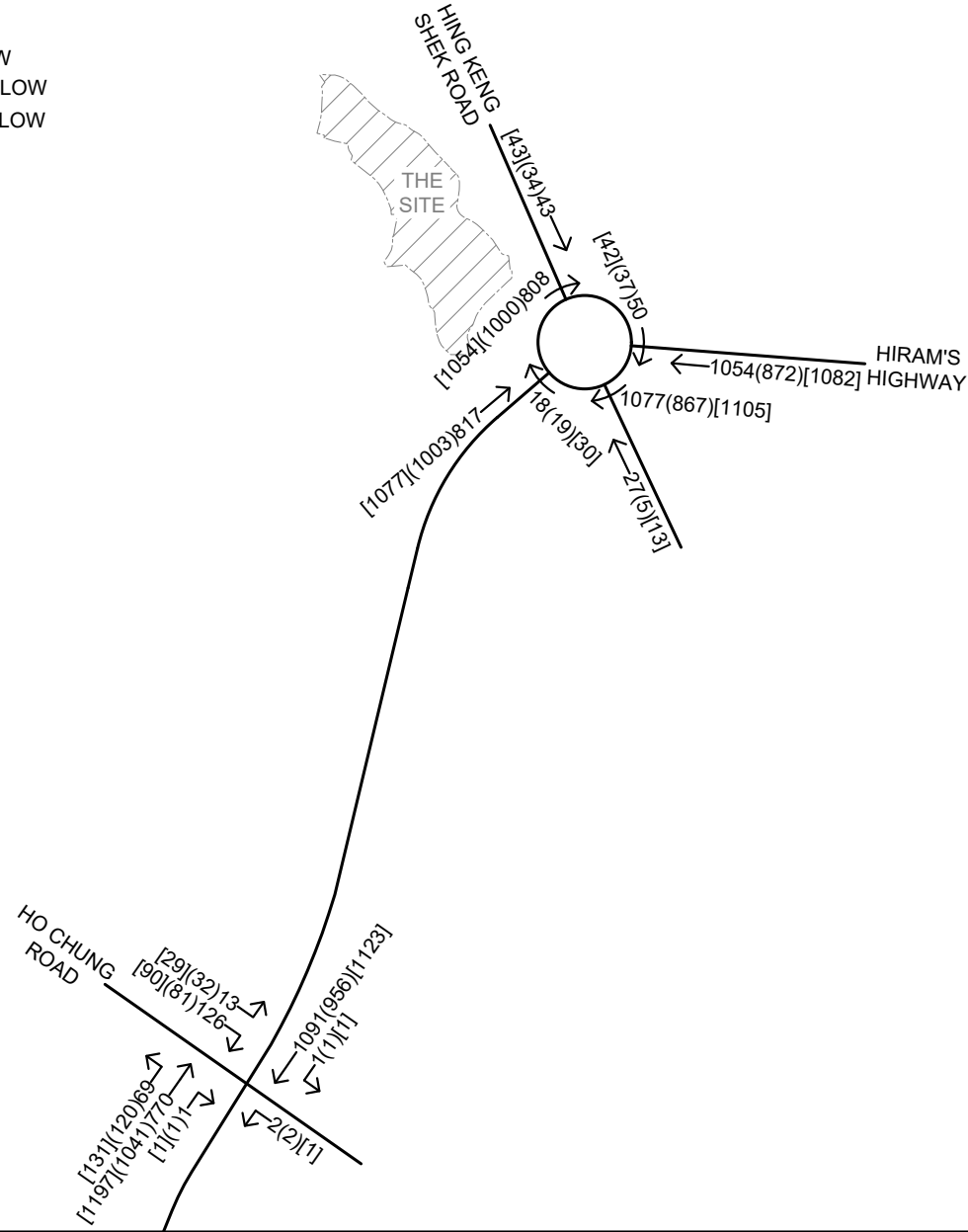
DRAWING NO.	FIGURE 3.1
REV.	B
 顧問有限公司 Consultancy Limited	

**LEGEND:**

- 312(158)[361] ← WEEKEND PEAK HOUR TRAFFIC FLOW
- ↑ WEEKDAY PM PEAK HOUR TRAFFIC FLOW
- ↖ WEEKDAY AM PEAK HOUR TRAFFIC FLOW

**NOTE:**

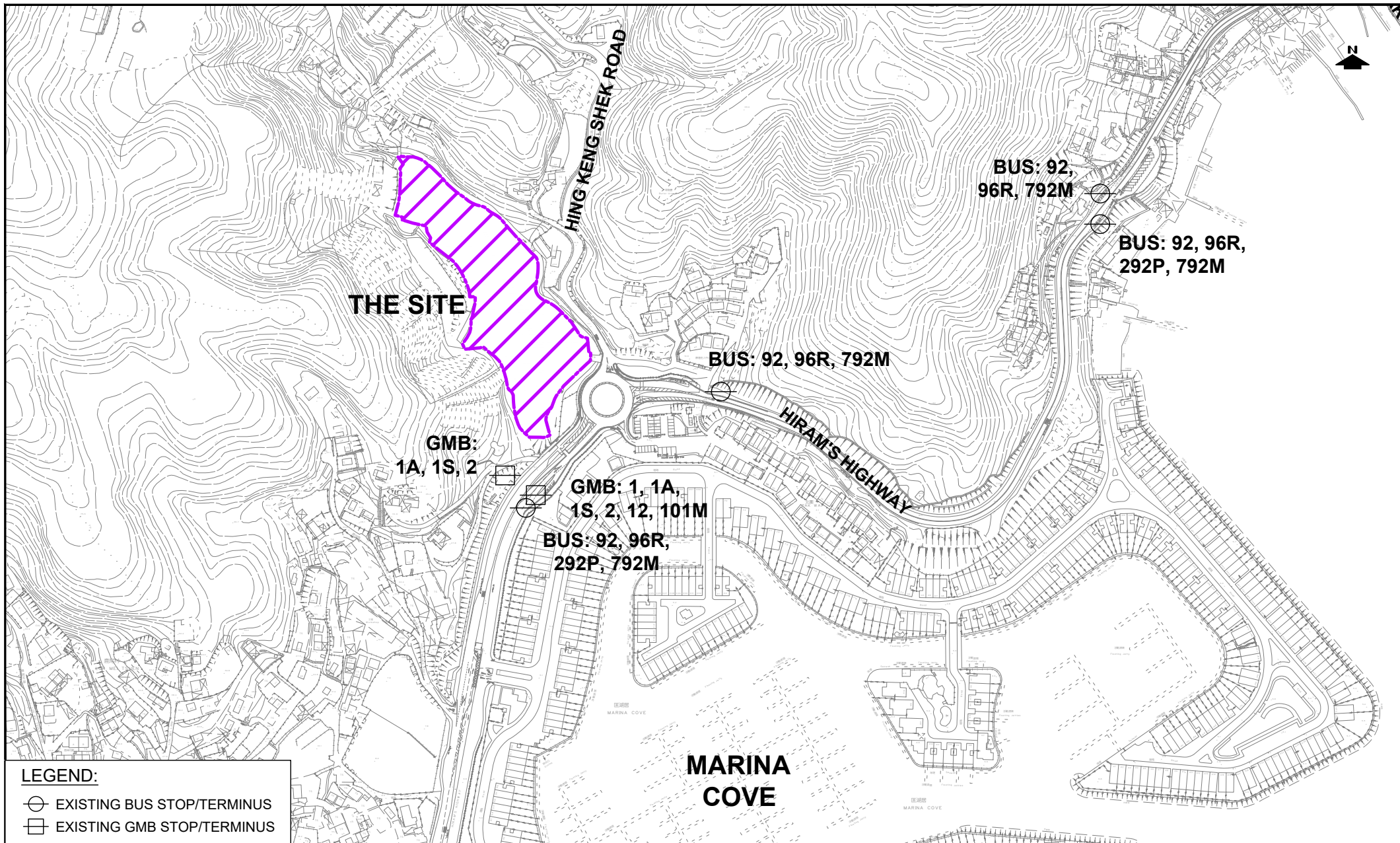
1. ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY



PROJECT NO.	<b>40815</b>	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE N.T.S.
CHECKED	SLN	

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG	
DRAWING TITLE	<b>2023 EXISTING TRAFFIC FLOWS</b>	

DRAWING NO.	<b>FIGURE 3.2</b>	REV.	<b>C</b>
<b>LLA</b> 顧問有限公司 Consultancy Limited			



**LEGEND:**

- ⊙ EXISTING BUS STOP/TERMINUS
- ⊞ EXISTING GMB STOP/TERMINUS

PROJECT NO.	40815	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE 1:4000
CHECKED	SLN	

PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

DRAWING TITLE	<b>PUBLIC TRANSPORT FACILITIES IN THE VICINITY</b>	
---------------	--	--

DRAWING NO.	FIGURE 3.3	REV.	B
-------------	------------	------	---

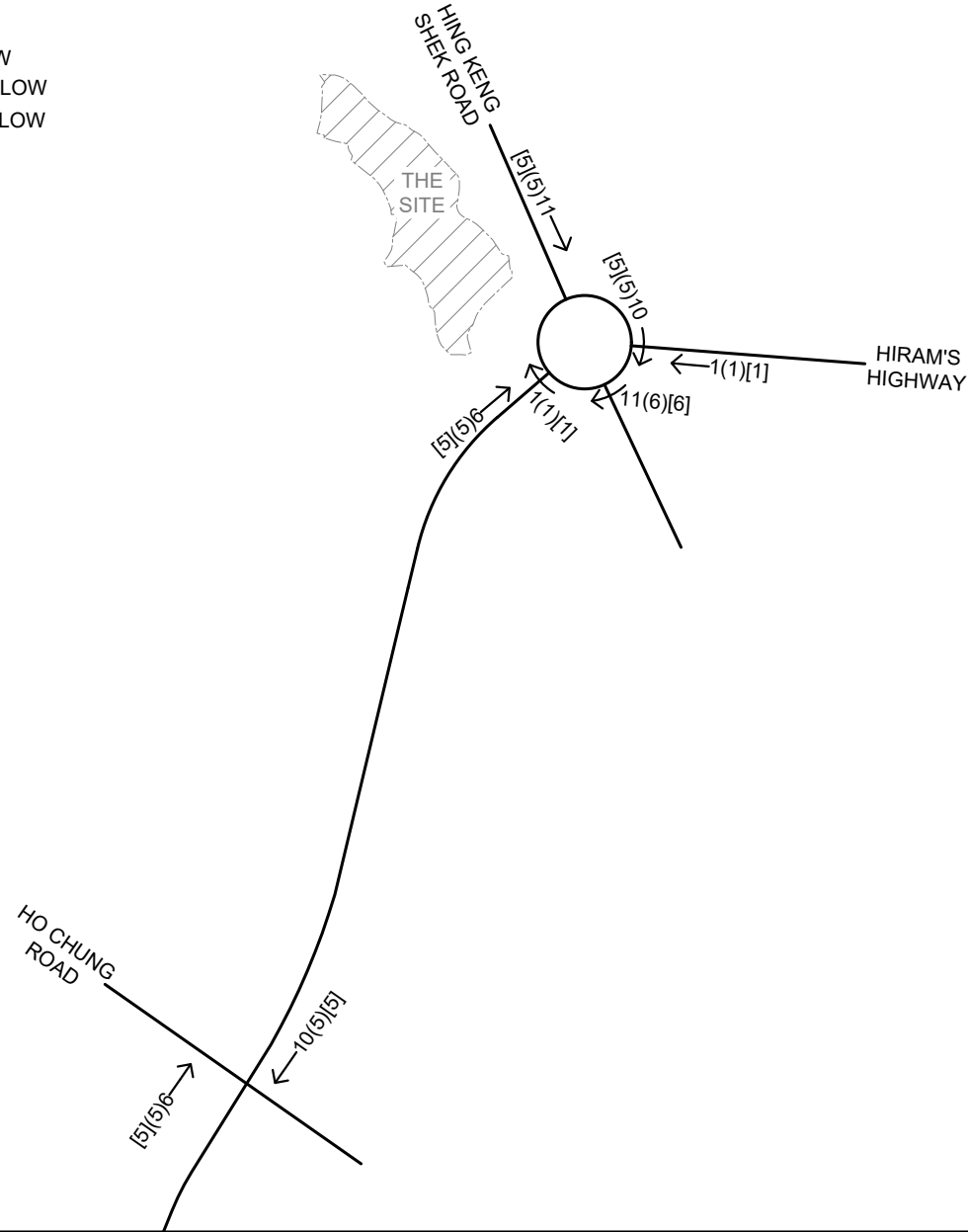
**LLA** 顧問有限公司  
Consultancy Limited

**LEGEND:**

- 312(158)[361] ← WEEKEND PEAK HOUR TRAFFIC FLOW
- ↑ WEEKDAY PM PEAK HOUR TRAFFIC FLOW
- ← WEEKDAY AM PEAK HOUR TRAFFIC FLOW

**NOTE:**

- 1. ALL TRAFFIC FLOWS ARE IN PCU/HOUR
- 2. MINOR ROADS ARE NOT SHOWN FOR CLARITY



PROJECT NO.	40815	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE N.T.S.
CHECKED	SLN	

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG
DRAWING TITLE	<b>DEVELOPMENT TRAFFIC FLOWS</b>

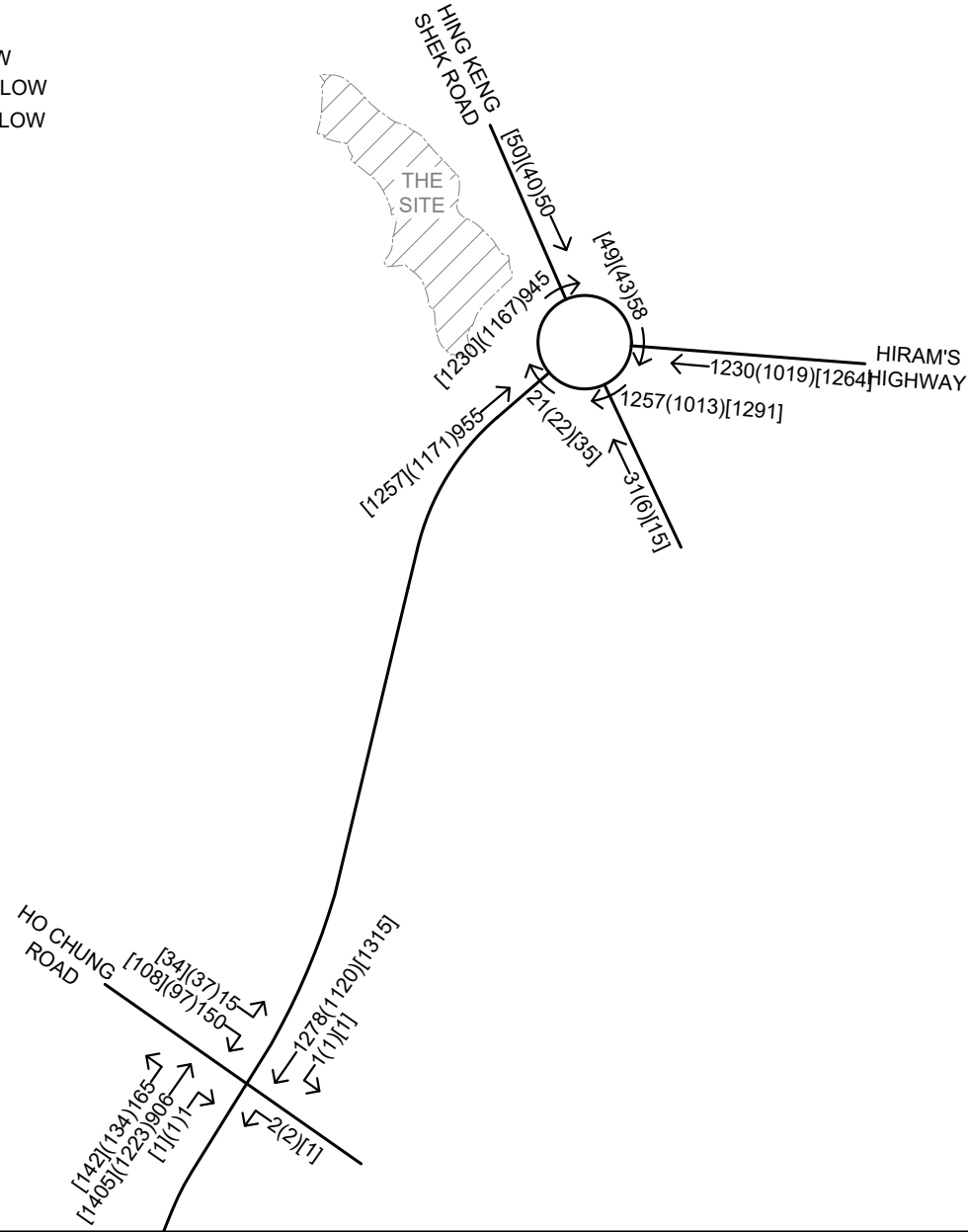
DRAWING NO.	FIGURE 4.1	REV.	D
<b>LLA</b> 顧問有限公司 Consultancy Limited			

**LEGEND:**

- 312(158)[361] ← WEEKEND PEAK HOUR TRAFFIC FLOW
- ↑ WEEKDAY PM PEAK HOUR TRAFFIC FLOW
- ↖ WEEKDAY AM PEAK HOUR TRAFFIC FLOW

**NOTE:**

1. ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY



PROJECT NO.	40815	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE N.T.S.
CHECKED	SLN	

PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

DRAWING TITLE	<b>2034 REFERENCE TRAFFIC FLOWS</b>	
---------------	-------------------------------------	--

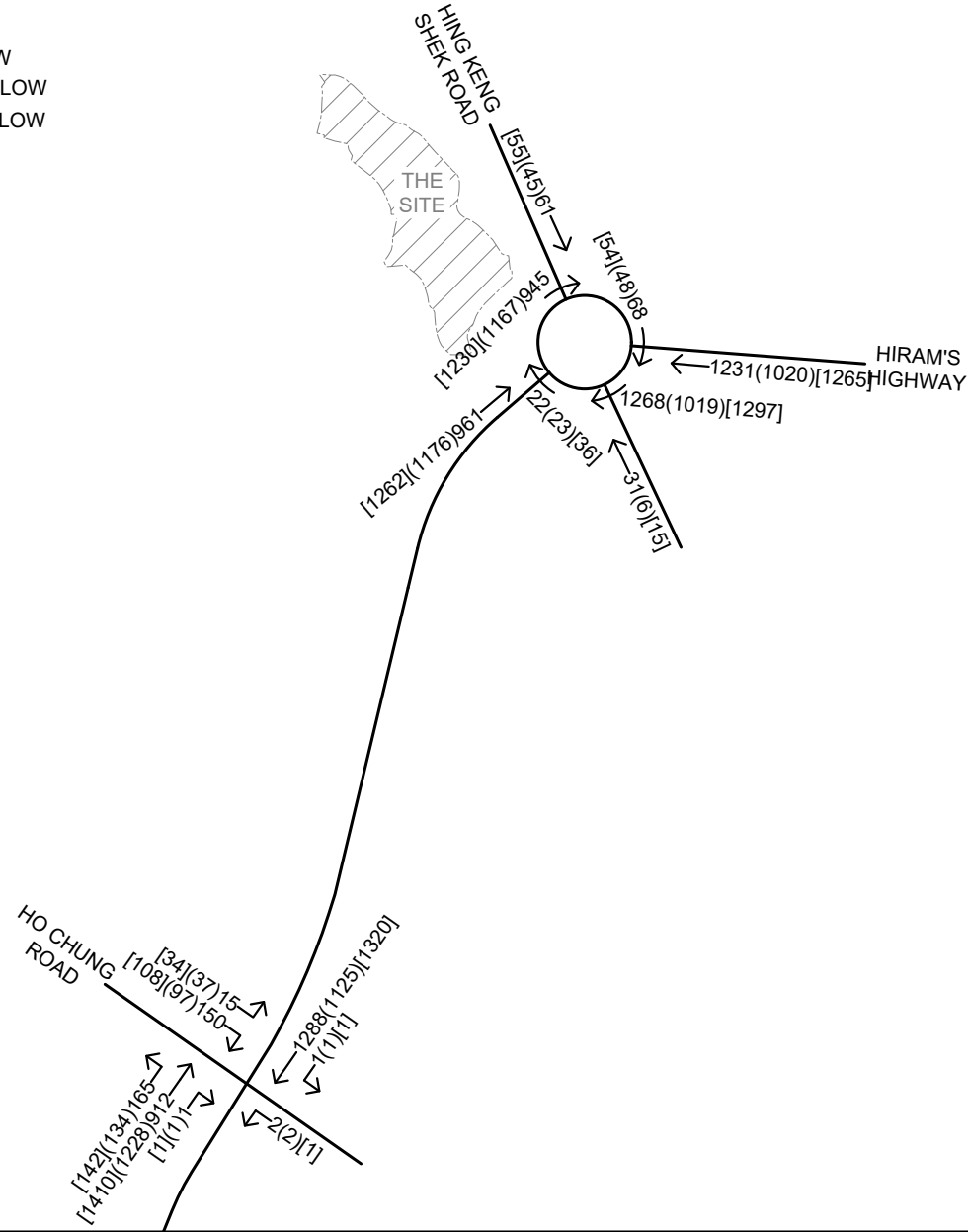
DRAWING NO.	FIGURE 4.2	REV.	D
<b>LLA</b> 顧問有限公司 Consultancy Limited			

**LEGEND:**

- 312(158)[361] ← WEEKEND PEAK HOUR TRAFFIC FLOW
- ↑ WEEKDAY PM PEAK HOUR TRAFFIC FLOW
- ↖ WEEKDAY AM PEAK HOUR TRAFFIC FLOW

**NOTE:**

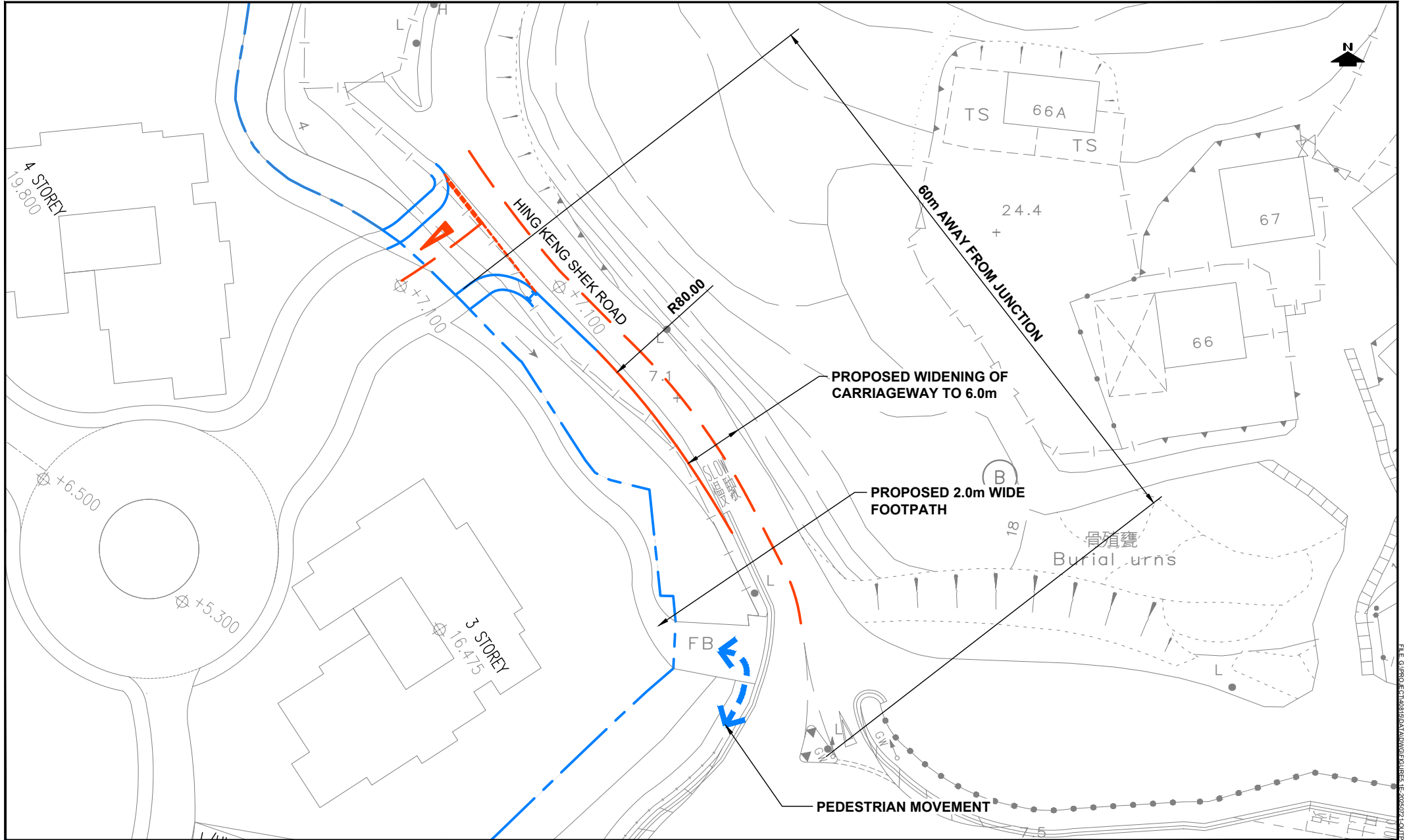
1. ALL TRAFFIC FLOWS ARE IN PCU/HOUR
2. MINOR ROADS ARE NOT SHOWN FOR CLARITY



PROJECT NO.	40815	
DESIGNED	SLN	DATE JUL 2025
DRAWN	CLL	SCALE N.T.S.
CHECKED	SLN	

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG	
DRAWING TITLE	<b>2034 DESIGN TRAFFIC FLOWS</b>	

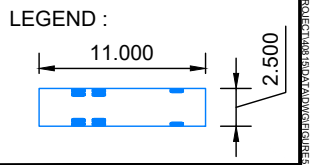
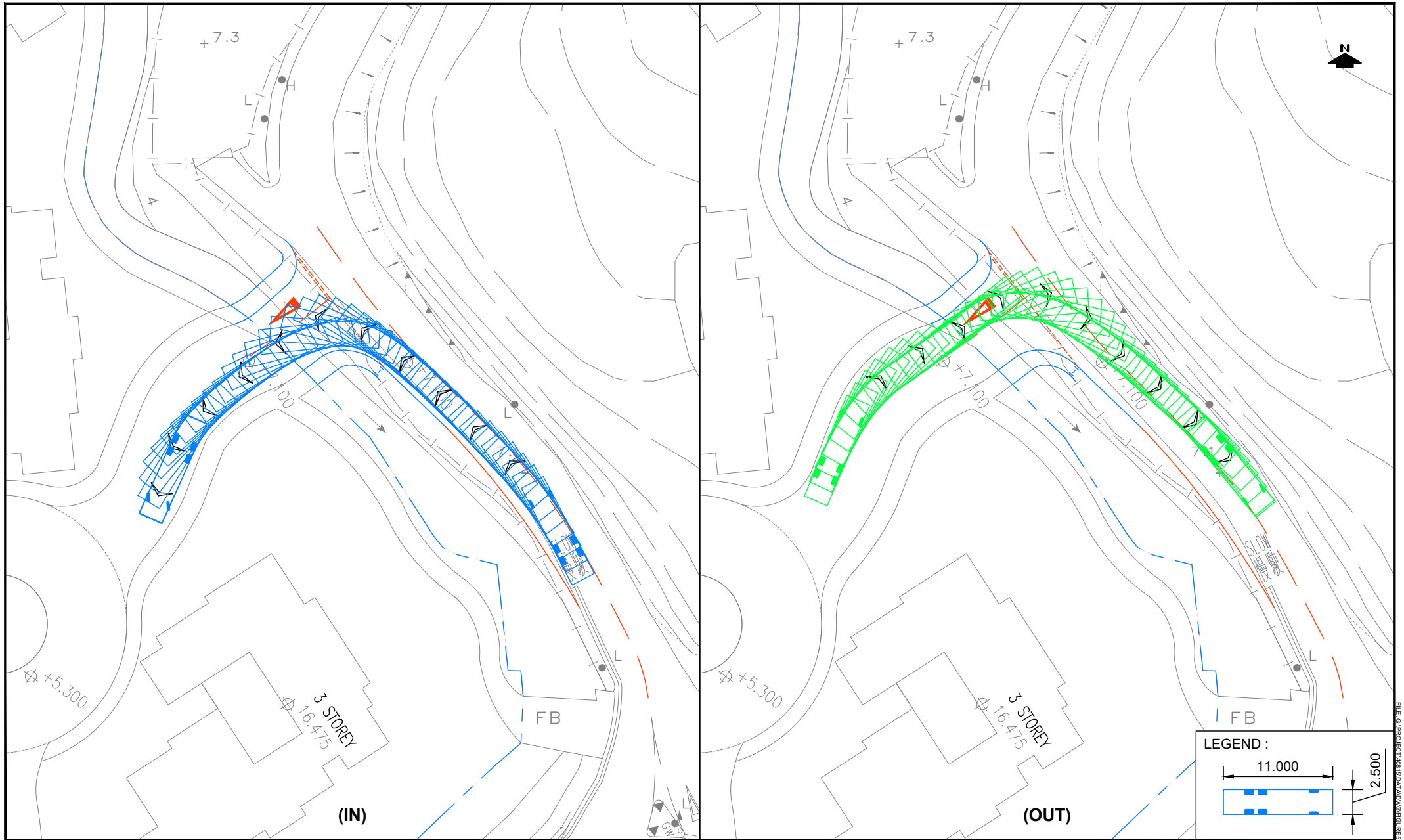
DRAWING NO.	FIGURE 4.3	REV.	E
<b>LLA</b> 顧問有限公司 Consultancy Limited			



PROJECT NO.	<b>40815</b>	
DESIGNED	SLN	DATE <b>JUL 2025</b>
DRAWN	CLL	SCALE <b>1:500</b>
CHECKED	SLN	

PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)S" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

DRAWING TITLE	<b>PROPOSED TRAFFIC ARRANGEMENT</b>	
DRAWING NO.	<b>FIGURE 5.1</b>	REV. <b>E</b>
<b>LLA</b> 顧問有限公司 Consultancy Limited		



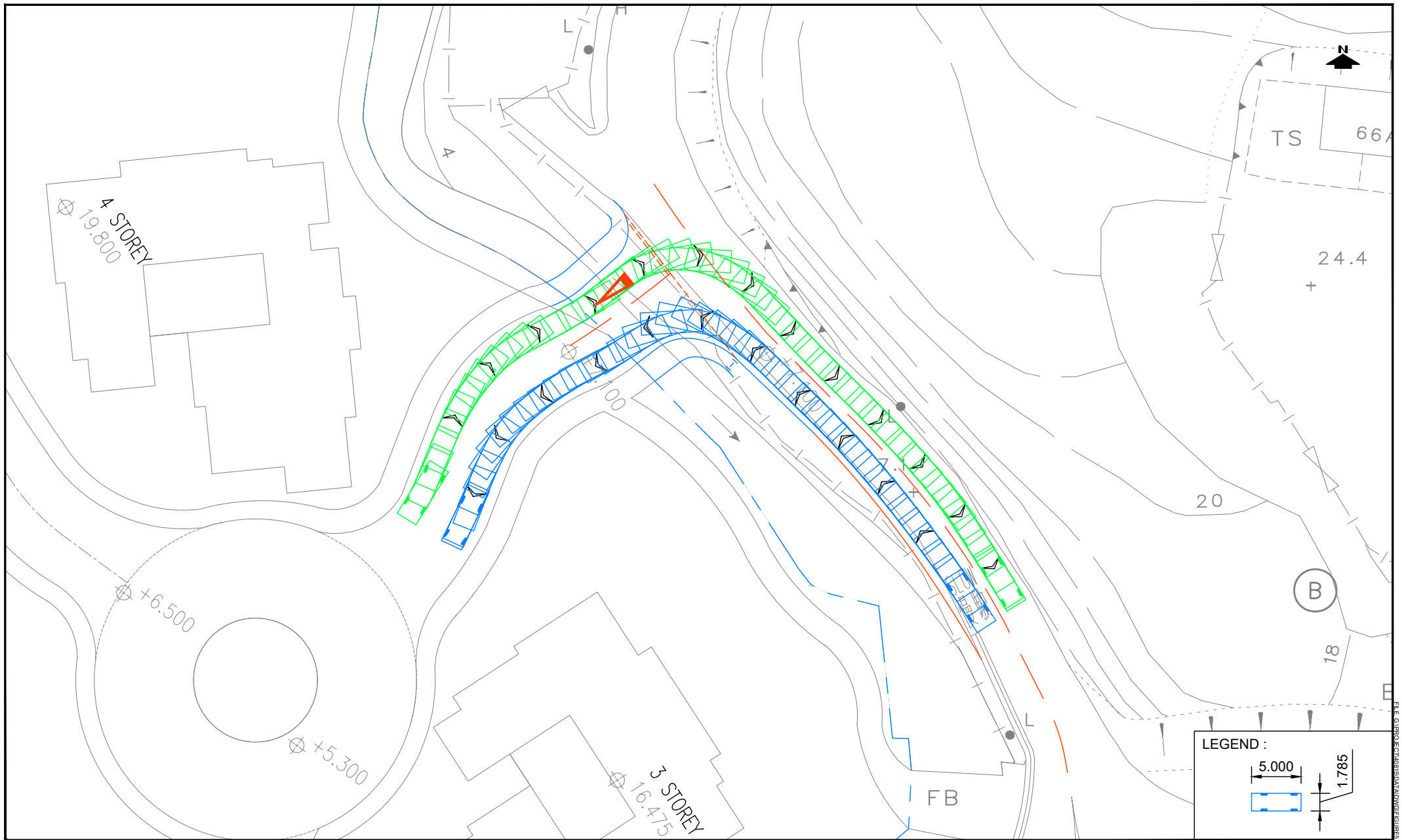
PROJECT NO.	<b>40815</b>	
DESIGNED	SLN	DATE <b>JUL 2025</b>
DRAWN	CLL	SCALE <b>1:500</b>
CHECKED	SLN	

PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

DRAWING NO.	<b>FIGURE 5.2</b>	REV.	<b>B</b>
-------------	-------------------	------	----------

**SWEPT PATH ANALYSIS - HGV**

**LLA** 顧問有限公司  
Consultancy Limited

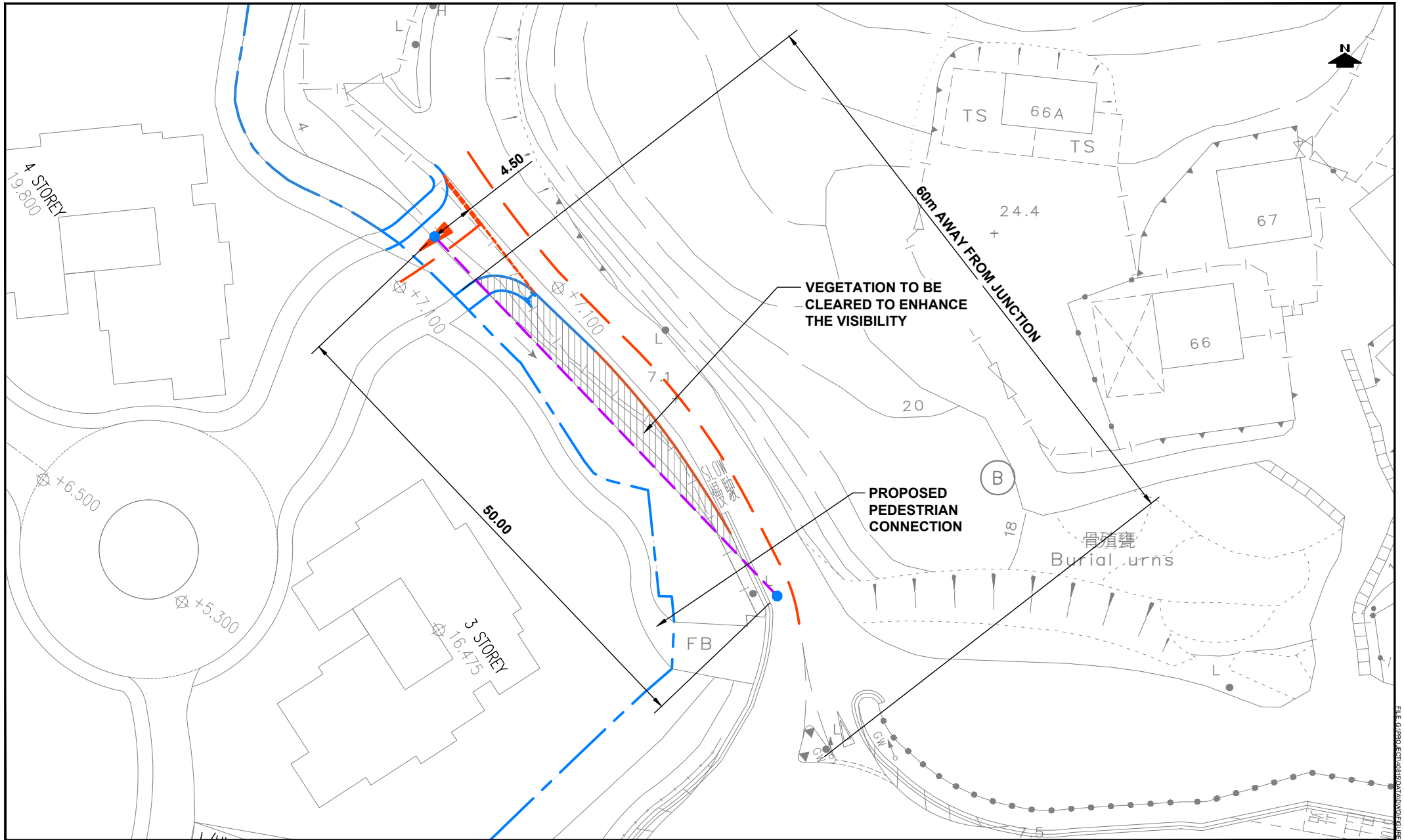


**LEGEND :**

PROJECT NO.	<b>40815</b>	
DESIGNED	SLN	DATE <b>AUG 2025</b>
DRAWN	CLL	SCALE
CHECKED	SLN	<b>1:500</b>

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG	
DRAWING TITLE	<b>SWEPT PATH ANALYSIS - PRIVATE CARS TRAVEL SIMULTANEOUSLY</b>	

DRAWING NO.	<b>FIGURE 5.3</b>	REV.	<b>C</b>
<b>LLA</b> 顧問有限公司 Consultancy Limited			



PROJECT NO.	<b>40815</b>	
DESIGNED	SLN	DATE <b>AUG 2025</b>
DRAWN	CLL	SCALE
CHECKED	SLN	<b>1:500</b>

PROJECT TITLE APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

DRAWING TITLE	<b>SIGHTLINE ANALYSIS OF PROPOSED VEHICULAR ACCESS</b>	
---------------	--	--

DRAWING NO.	<b>FIGURE 5.4</b>	
REV.	-	
<b>LLA</b> 顧問有限公司 Consultancy Limited		

**Appendix A**  
**Junction Capacity Assessment**  
**– Existing Scenario**

# LLA CONSULTANCY LIMITED

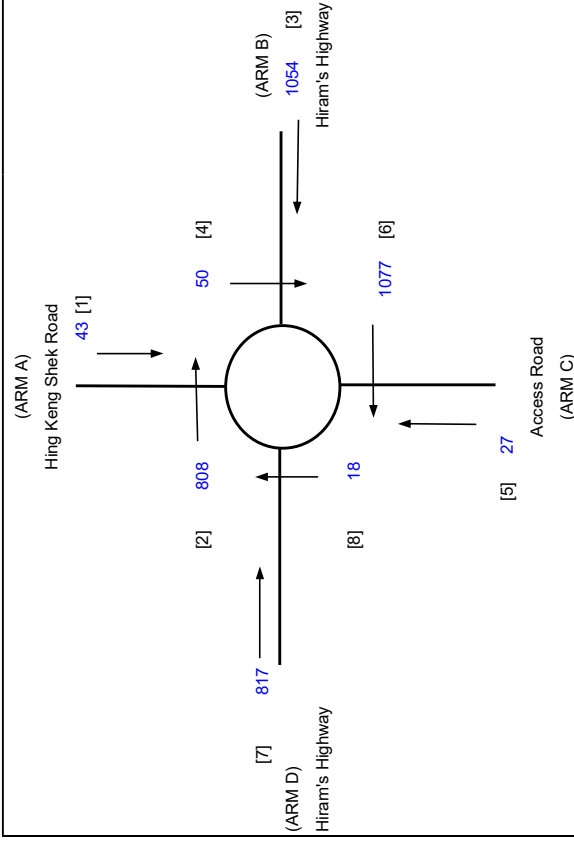
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 DATE: Jul-25



ARM	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	43	1054	27	817
Qc = Circulating flow across entry (pcu/h)	808	50	1077	18
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.36	0.14	0.00	0.00
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.02	0.96	0.94	0.98
X2 = V + ((E-V)/(1+2S))	3.67	7.05	3.50	8.00
M = EXP((D-60)/10)	0.25	0.25	0.25	0.25
F = 303*X2	1112	2137	1061	2424
Td = 1+(0.5/(1+M))	1.40	1.40	1.40	1.40
Fc = 0.21*Td*(1+0.2*X2)	0.51	0.71	0.50	0.76
Qe = K(F-Fc*Qc)*	712	2021	488	2374
DFC = Design flow/Capacity = Q/Qe	0.06	0.52	0.06	0.34
Total In Sum =				1941 PCU
DFC of Critical Approach =				0.52

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

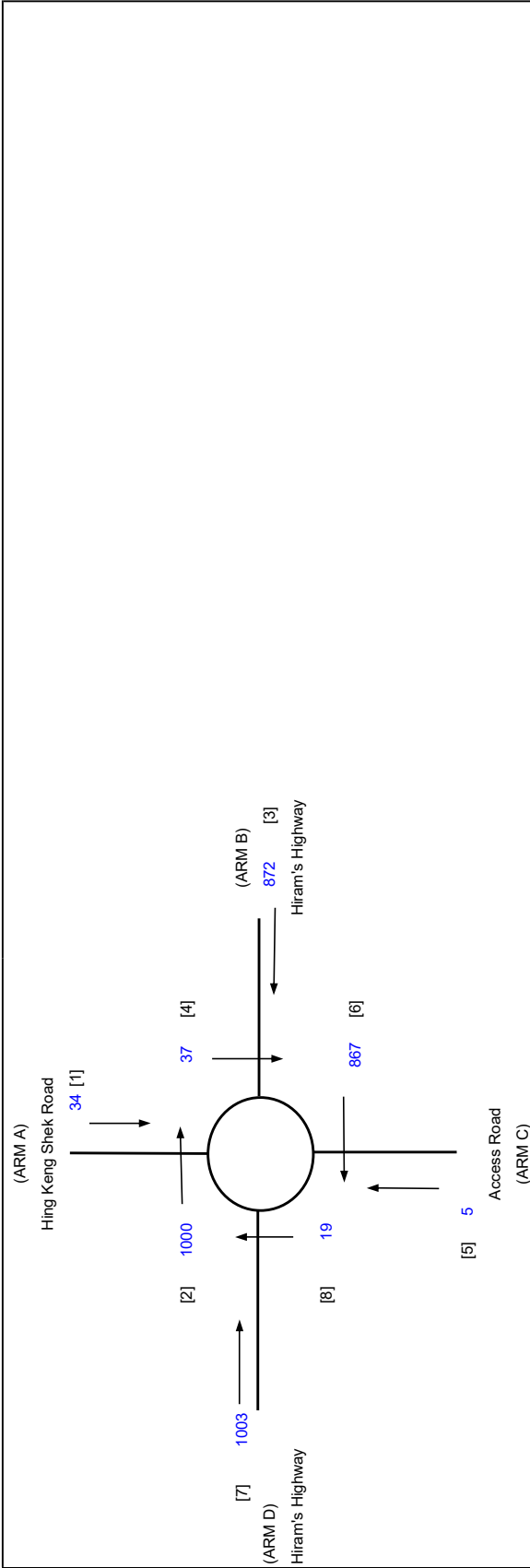
J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME : J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:

PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS  
 DATE  
 Jul-25  
 Jul-25  
 Jul-25



ARM	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	34	872	5	1003
Qc = Circulating flow across entry (pcu/h)	1000	37	867	19

S = Sharpness of flare = $1.6(E-V)/L$	0.36	0.14	0.00	0.00
K = $1-0.00347(A-30)-0.978(1/R-0.05)$	1.02	0.96	0.94	0.98
X2 = $V + ((E-V)/(1+2S))$	3.67	7.05	3.50	8.00
M = $EXP((D-60)/10)$	0.25	0.25	0.25	0.25
F = $303 * X2$	1112	2137	1061	2424
Td = $1+(0.5/(1+M))$	1.40	1.40	1.40	1.40
Fc = $0.21 * Td * (1+0.2 * X2)$	0.51	0.71	0.50	0.76
Qe = $K(F * Fc * Qc) *$	613	2030	587	2373

OUTPUT PARAMETERS:

Total In Sum = 1914 PCU

DFC = Design flow/Capacity = Q/Qe = 0.06 0.43 0.01 0.42

DFC of Critical Approach = 0.43

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

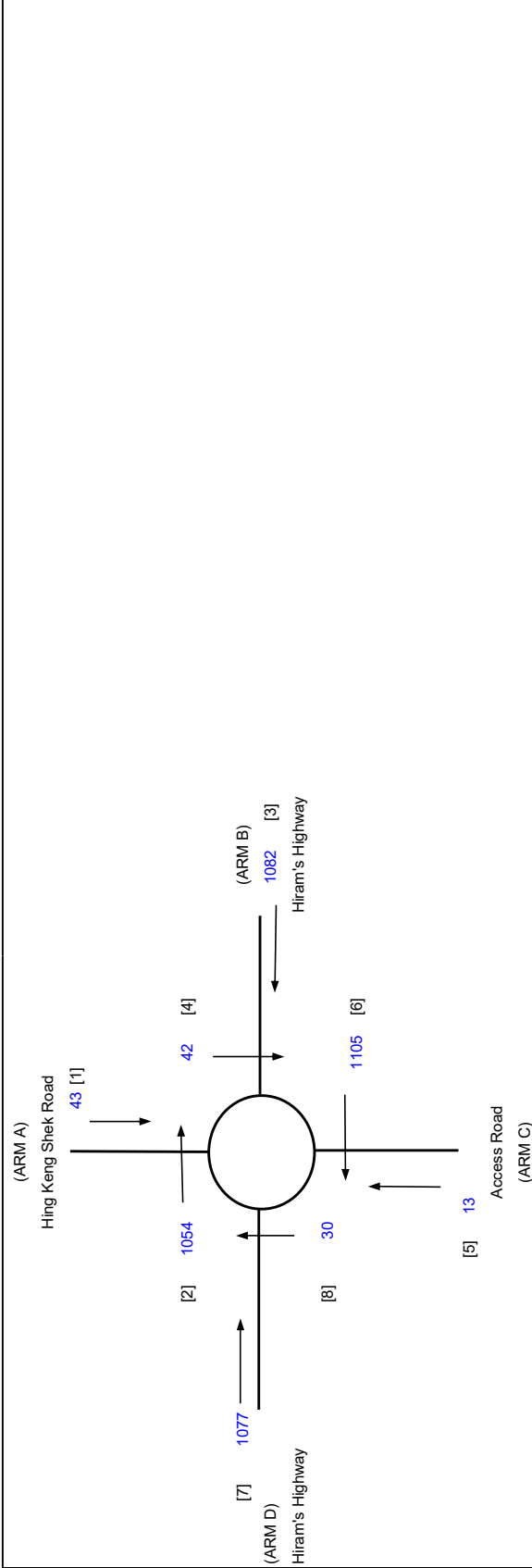
J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME : J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:

PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS  
 DATE  
 Jul-25  
 Jul-25  
 Jul-25



ARM	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	43	1082	13	1077
Qc = Circulating flow across entry (pcu/h)	1054	42	1105	30
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.36	0.14	0.00	0.00
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.02	0.96	0.94	0.98
X2 = V + ((E-V)/(1+2S))	3.67	7.05	3.50	8.00
M = EXP((D-60)/10)	0.25	0.25	0.25	0.25
F = 303*X2	1112	2137	1061	2424
Td = 1+(0.5/(1+M))	1.40	1.40	1.40	1.40
Fc = 0.21*Td*(1+0.2*X2)	0.51	0.71	0.50	0.76
Qe = K(F-Fc*Qc)*	585	2027	475	2365
DFC = Design flow/Capacity = Q/Qe	0.07	0.53	0.03	0.46
Total In Sum =				2215 PCU
DFC of Critical Approach =				0.53

# LLA CONSULTANCY LIMITED

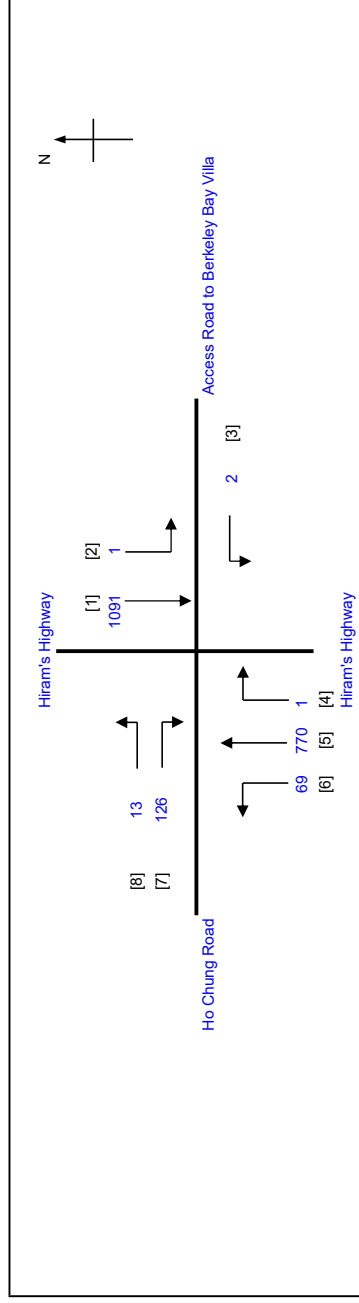
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D, D.2 to and Adjoining Government Land, Pak Wai, Sai Kung

# TRAFFIC SIGNAL CALCULATION

PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By: [Blank]  
 Checked By: [Blank]  
 Reviewed By: [Blank]

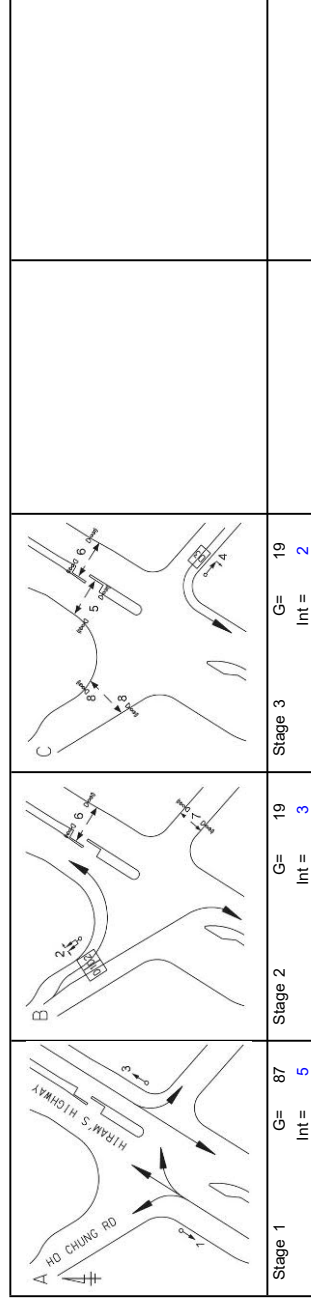
INITIALS DATE  
 SKL Jul-25  
 SLN Jul-25  
 SLN Jul-25



No. of stages per cycle = 3

Cycle time = 135 sec  
 Sum(y) = 0.335  
 Loss time = 27 sec  
 Total Flow = 2073 pcu  
 Co = 68.4 sec  
 Crm = 40.6 sec  
 Yult = 0.698  
 R.C.ult = 108.4 %  
 Cp = 43.0 sec  
 Ymax = 0.800

**R.C.(C) = 0.9\*Ymax-y/Y\*100% = 115 %**



Pedestrian Phase	Stage	Green Time Required SG	Delay FG	Green Time Provided SG	FG
P1	3	10	8	13	8
P2	2,3	13	12	23	12
P3	2	8	7	11	7
P4	3	8	7	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	526	1	527	0.00	1935							1935	0.272	0.272	8	88	88	0.418	36	11	
1	1	3.20	1	15		N	2075	565		565	0.00	2075							2075	0.272	0.272		88	88	0.418	42	11	
5,6	1	3.50	1	12	O	N	1965	386	69	455	0.15	1928	18	123					2051	0.222	0.222		72	88	0.418	48	18	
4,5	1	3.50	1	12		N	1965	384	1	385	0.00	1734							1734	0.222	0.222		72	88	0.418	36	18	
7,8	2	3.50	1	12		N	2105	126	13	139	1.00	1871	12	360					2231	0.062	0.062	19	20	20	0.418	24	50	
3	3	3.30	1	15		N	1945	2	2	2	1.00	1768							1768	0.001	0.001		0	19	0.418	0	304	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J2 Hiram's Highway/Ho Chung Road

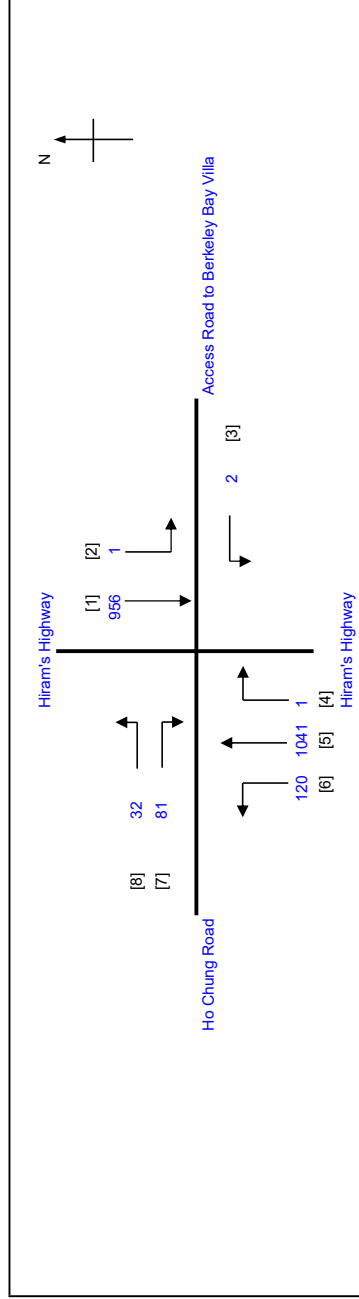
# TRAFFIC SIGNAL CALCULATION

2023 Existing PM

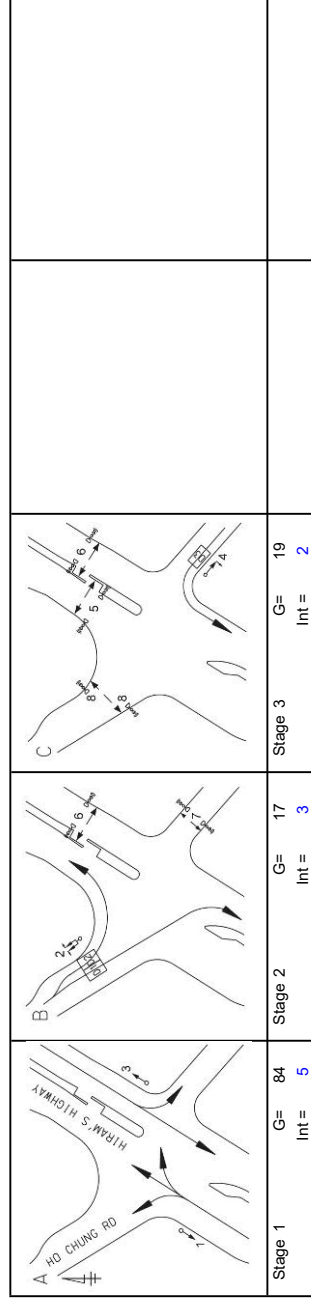
PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By: SKL  
 Checked By: SLN  
 Reviewed By: SLN

DATE: Jul-25



No. of stages per cycle	N = 3
Cycle time	C = 130 sec
Sum(y)	Y = 0.357
Loss time	L = 31 sec
Total Flow	= 2234 pcu
Co	= (1.5*L+5)/(1-Y)
Cm	= L/(1-Y)
Yult	= 0.668
R.C.ult	= (Yult-Y)*100%
Cp	= 0.9*L/(0.9-Y)
Ymax	= 1-L/C
<b>R.C.(C)</b>	<b>= (0.9*Ymax-Y)*100% = 92 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Green Time Required FG	Delay	Green Time Provided SG	Green Time Provided FG
P1	3	10	8	0	13	8
P2	2,3	13	12	8	21	12
P3	2	8	7	4	9	7
P4	3	8	7	4	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	1	461	462	0.00	1935							1935	0.239		8	66	85	0.469	48	20	
1	1	3.20	1			N	2075	495	495	495	0.00	2075							2075	0.239			66	85	0.469	48	20	
5,6	1	3.50	1	12	O	N	1965	120	509	629	0.19	1919	18	127					2046	0.307	0.307		85	85	0.469	42	11	
4,5	1	3.50	1	12		N	1965	532	532	533	0.00	1735							1735	0.307			85	85	0.469	36	11	
7,8	2	3.50	1	12		N	2105	32	81	113	1.00	1871	12	400					2271	0.050	0.050	4	14	18	0.469	18	55	
3	3	3.30	1	15		N	1945	2	2	2	1.00	1768							1768	0.001		19	0	19	0.469	0	394	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

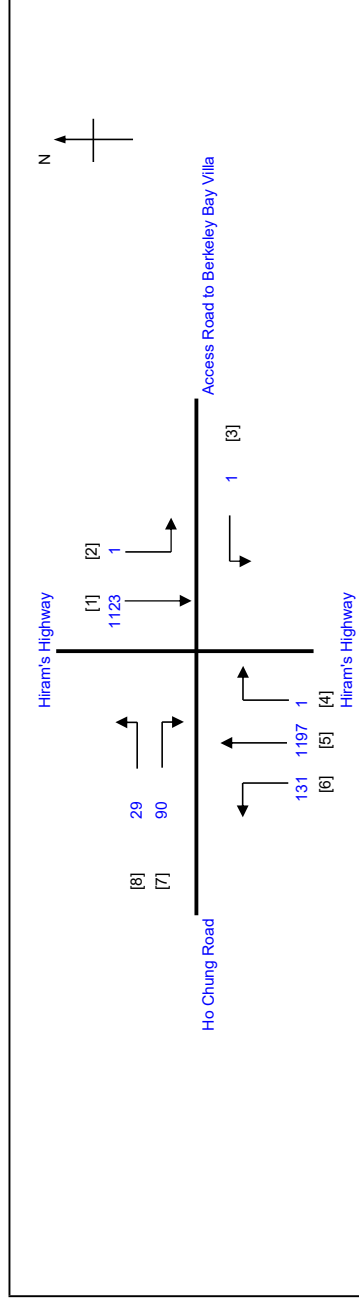
# TRAFFIC SIGNAL CALCULATION

PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

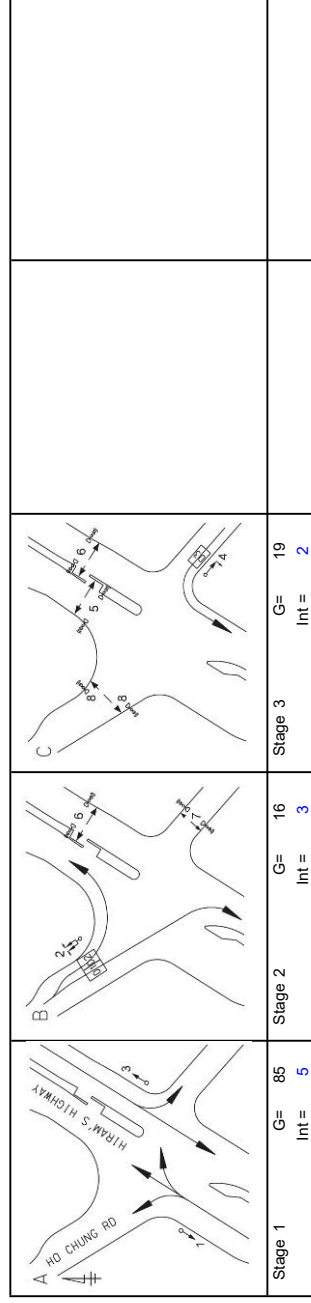
Prepared By: [Blank]  
 Checked By: [Blank]  
 Reviewed By: [Blank]

INITIALS [Blank] DATE Jul-25  
 SKL [Blank] Jul-25  
 SLN [Blank] Jul-25  
 SLN [Blank] Jul-25

## J2 Hiram's Highway/Ho Chung Road



No. of stages per cycle	N =	3
Cycle time	C =	130 sec
Sum(y)	Y =	0.404
Loss time	L =	31 sec
Total Flow	=	2573 pcu
Co	=	86.4 sec
Cm	=	52.0 sec
Yult	=	0.668
R.C.ult	=	65.4 %
Cp	=	56.2 sec
Ymax	=	0.762
<b>R.C.(C)</b>	<b>= 0.9*Ymax-y/Y*100%</b>	<b>= 70 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Green Time Required FG	Delay	Green Time Provided SG	Green Time Provided FG
P1	3	10	8	0	13	8
P2	2,3	13	12	8	20	12
P3	2	8	7	4	8	7
P4	3	8	7	4	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	1	541	542	0.00	1935							1935	0.280		8	69	86	0.530	54	20	
1	1	3.20	1				2075	582	582	582	0.00	2075							2075	0.280			69	86	0.530	54	20	
5,6	1	3.50	1	12		N	1965	131	589	720	0.18	1921	18	126					2047	0.352	0.352		86	86	0.530	48	12	
4,5	1	3.50	1	12	O	N	1965	608	608	609	0.00	1735							1735	0.351			86	86	0.530	42	12	
7,8	2	3.50	1	12		N	2105	29	90	119	1.00	1871	12	424					2295	0.052	0.052	4	13	17	0.530	18	58	
3	3	3.30	1	15		N	1945	1	1	1	1.00	1768							1768	0.001		19	0	19	0.530	0	1027	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

**Appendix B**  
**Junction Capacity Assessment**  
**– Reference & Design Scenarios**

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

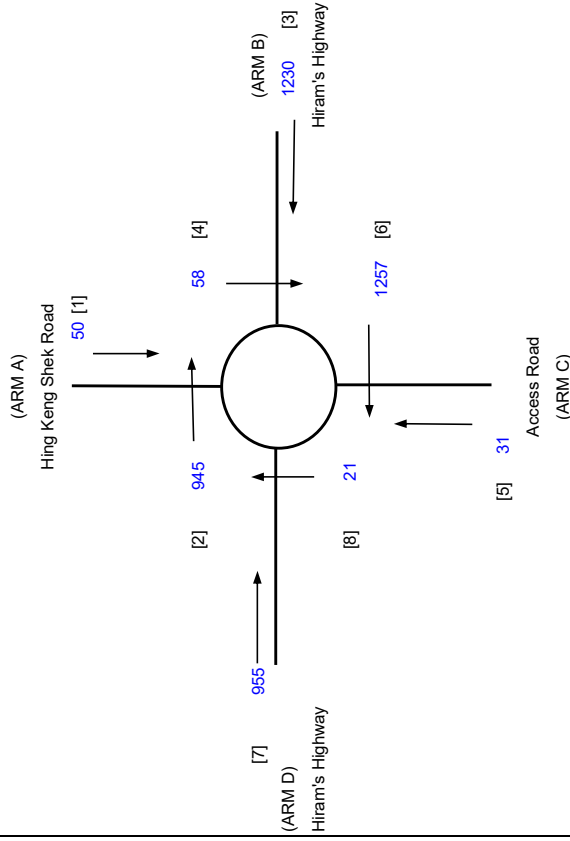
J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 SLN  
 SLN  
 DATE: Jul-25  
 Jul-25  
 Jul-25

## 2034 Reference AM



### ARM

#### INPUT PARAMETERS:

	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	50	1230	31	955
Qc = Circulating flow across entry (pcu/h)	945	58	1257	21

#### OUTPUT PARAMETERS:

S = Sharpness of flare = $1.6(E-V)/L$	0.36	0.14	0.00	0.00
K = $1-0.00347(A-30)-0.978(1/R-0.05)$	1.02	0.96	0.94	0.98
X2 = $V + ((E-V)/(1+2S))$	3.67	7.05	3.50	8.00
M = $EXP((D-60)/10)$	0.25	0.25	0.25	0.25
F = $303 * X2$	1112	2137	1061	2424
Td = $1+(0.5/(1+M))$	1.40	1.40	1.40	1.40
Fc = $0.21 * Td(1+0.2 * X2)$	0.51	0.71	0.50	0.76
Qe = $K(F * Fc * Qc) *$	641	2016	404	2372
DFC = Design flow/Capacity = $Q/Qe$	0.08	0.61	0.08	0.40

Total In Sum =

2266 PCU

DFC of Critical Approach = 0.61

# LLA CONSULTANCY LIMITED

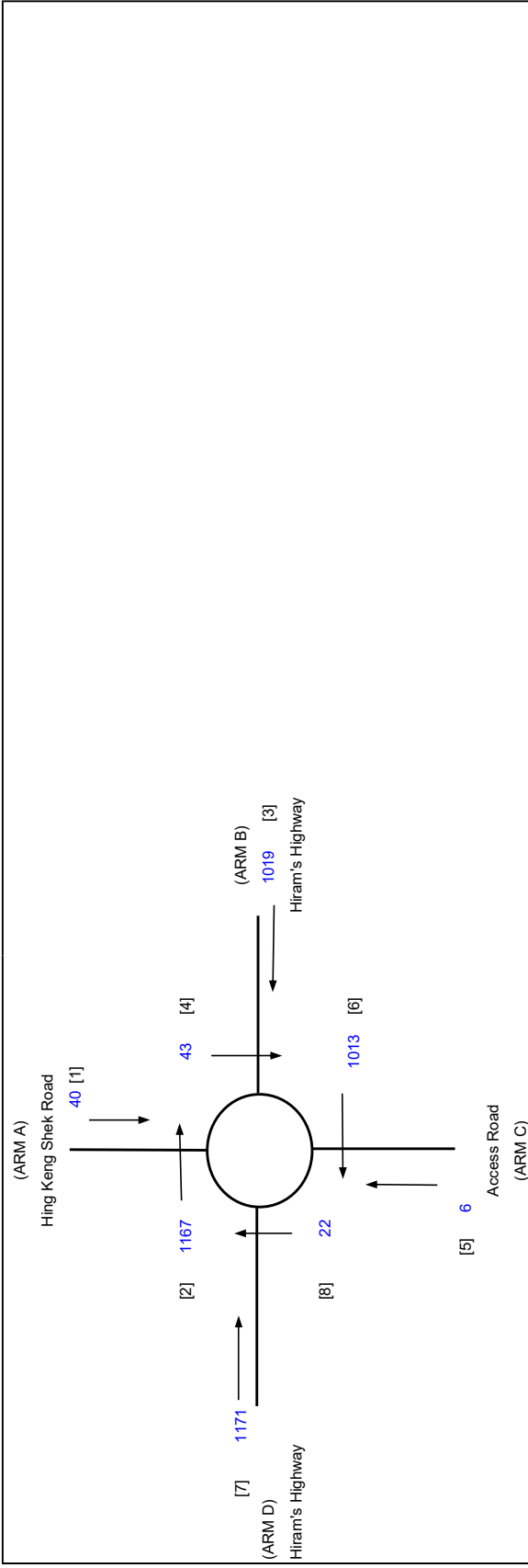
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 SLN  
 SLN  
 DATE: Jul-25  
 Jul-25  
 Jul-25



ARM	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	40	1019	6	1171
Qc = Circulating flow across entry (pcu/h)	1167	43	1013	22
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.36	0.14	0.00	0.00
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.02	0.96	0.94	0.98
X2 = V + ((E-V)/(1+2S))	3.67	7.05	3.50	8.00
M = EXP((D-60)/10)	0.25	0.25	0.25	0.25
F = 303*X2	1112	2137	1061	2424
Td = 1+(0.5/(1+M))	1.40	1.40	1.40	1.40
Fc = 0.21*Td*(1+0.2*X2)	0.51	0.71	0.50	0.76
Qe = K(F-Fc*Qc)*	526	2026	518	2371
Total In Sum = 2236 PCU				
DFC = Design flow/Capacity = Q/Qe	0.08	0.50	0.01	0.49
DFC of Critical Approach = 0.50				

# LLA CONSULTANCY LIMITED

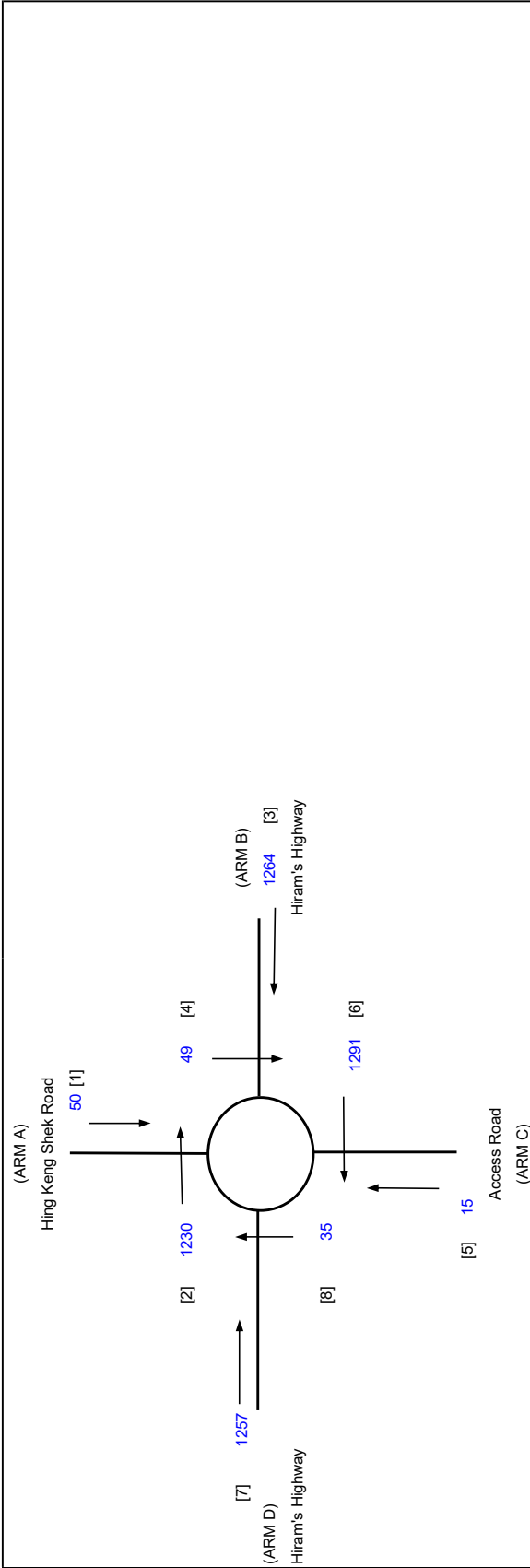
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 DATE: Jul-25  
 SLN  
 Jul-25  
 SLN  
 Jul-25



ARM	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	50	1264	15	1257
Qc = Circulating flow across entry (pcu/h)	1230	49	1291	35
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.36	0.14	0.00	0.00
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.02	0.96	0.94	0.98
X2 = V + ((E-V)/(1+2S))	3.67	7.05	3.50	8.00
M = EXP((D-60)/10)	0.25	0.25	0.25	0.25
F = 303*X2	1112	2137	1061	2424
Td = 1+(0.5/(1+M))	1.40	1.40	1.40	1.40
Fc = 0.21*Td*(1+0.2*X2)	0.51	0.71	0.50	0.76
Qe = K(F-Fc*Qc)*	493	2022	388	2361
DFC = Design flow/Capacity = Q/Qe	0.10	0.63	0.04	0.53
Total In Sum = 2586 PCU				
DFC of Critical Approach = 0.63				

# LLA CONSULTANCY LIMITED

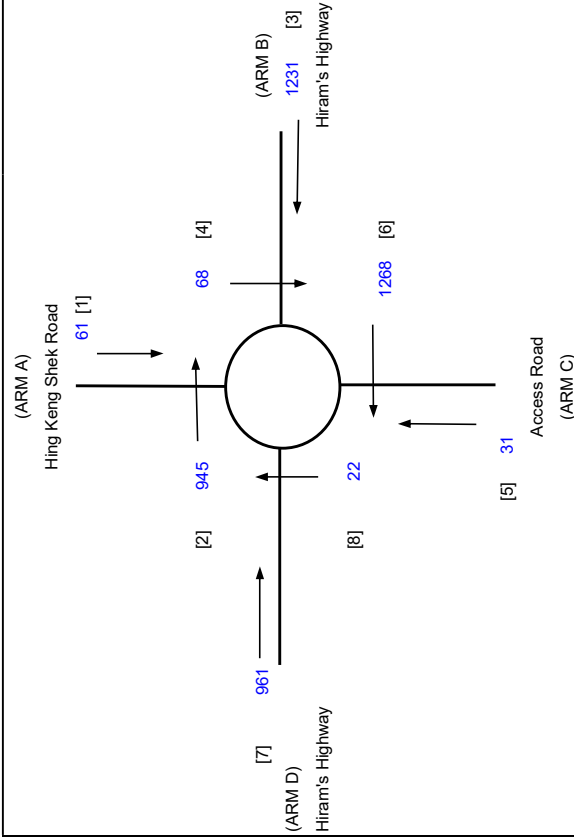
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 DATE: Jul-25



## ARM

### INPUT PARAMETERS:

	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	61	1231	31	961
Qc = Circulating flow across entry (pcu/h)	945	68	1268	22

### OUTPUT PARAMETERS:

S = Sharpness of flare = $1.6(E-V)/L$	0.36	0.14	0.00	0.00
K = $1-0.00347(A-30)-0.978(1/R-0.05)$	1.02	0.96	0.94	0.98
X2 = $V + ((E-V)/(1+2S))$	3.67	7.05	3.50	8.00
M = $EXP((D-60)/10)$	0.25	0.25	0.25	0.25
F = $303 \times X2$	1112	2137	1061	2424
Td = $1+(0.5/(1+M))$	1.40	1.40	1.40	1.40
Fc = $0.21 \times Td \times (1+0.2 \times X2)$	0.51	0.71	0.50	0.76
Qe = $K(F-Fc)Qc$ *	641	2009	399	2371

DFC = Design flow/Capacity = Q/Qe

Total In Sum =

2284 PCU

DFC of Critical Approach = 0.61

# LLA CONSULTANCY LIMITED

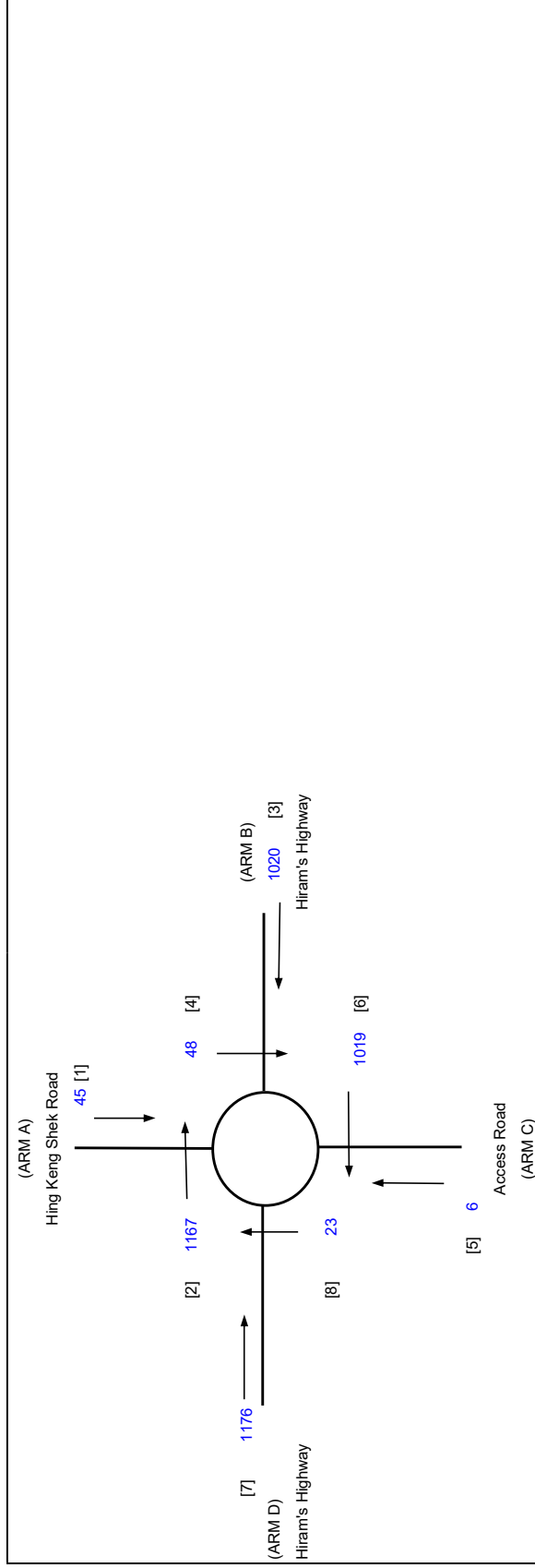
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 SLN  
 SLN  
 DATE: Jul-25  
 Jul-25  
 Jul-25



ARM	A	B	C	D
<b>INPUT PARAMETERS:</b>				
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	45	1020	6	1176
Qc = Circulating flow across entry (pcu/h)	1167	48	1019	23
<b>OUTPUT PARAMETERS:</b>				
S = Sharpness of flare = 1.6(E-V)/L	0.36	0.14	0.00	0.00
K = 1-0.00347(A-30)-0.978(1/R-0.05)	1.02	0.96	0.94	0.98
X2 = V + ((E-V)/(1+2S))	3.67	7.05	3.50	8.00
M = EXP((D-60)/10)	0.25	0.25	0.25	0.25
F = 303*X2	1112	2137	1061	2424
Td = 1+(0.5/(1+M))	1.40	1.40	1.40	1.40
Fc = 0.21*Td*(1+0.2*X2)	0.51	0.71	0.50	0.76
Qe = K(F-Fc*Qc)*	526	2023	516	2370
DFC = Design flow/Capacity = Q/Qe	0.09	0.50	0.01	0.50
Total In Sum =				2247 PCU
DFC of Critical Approach =				0.50

# LLA CONSULTANCY LIMITED

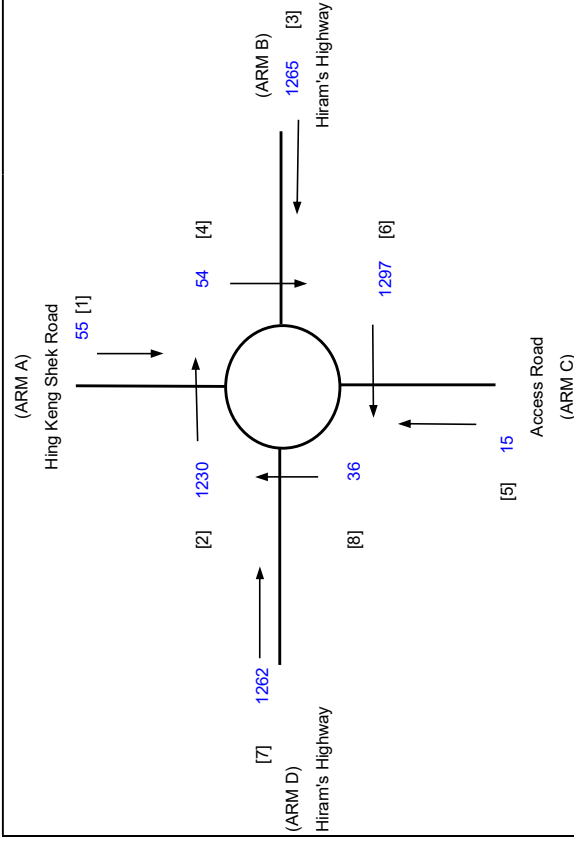
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J1 Hiram's Highway/Hing Keng Shek Road Roundabout

# PRIORITY JUNCTION CALCULATION

PROJECT NO.: 40815  
 FILENAME: J1\_HH\_HKSR.xlsx  
 REFERENCE NO.:  
 PREPARED BY: SKL  
 CHECKED BY: SLN  
 REVIEWED BY: SLN

INITIALS: SKL  
 DATE: Jul-25  
 SLN  
 Jul-25  
 SLN  
 Jul-25



## ARM

### INPUT PARAMETERS:

	A	B	C	D
V = Approach half width (m)	2.50	3.65	3.50	8.00
E = Entry width (m)	4.50	8.00	3.50	8.00
L = Effective length of flare (m)	9.00	50.00	1.00	1.00
R = Entry radius (m)	24.00	20.00	12.50	21.00
D = Inscribed circle diameter (m)	46.00	46.00	46.00	46.00
A = Entry angle (degree)	27.00	41.00	40.00	35.00
Q = Entry flow (pcu/h)	55	1265	15	1262
Qc = Circulating flow across entry (pcu/h)	1230	54	1297	36

### OUTPUT PARAMETERS:

S = Sharpness of flare = $1.6(E-V)/L$	0.36	0.14	0.00	0.00
K = $1-0.00347(A-30)-0.978(1/R-0.05)$	1.02	0.96	0.94	0.98
X2 = $V + ((E-V)/(1+2S))$	3.67	7.05	3.50	8.00
M = $EXP((D-60)/10)$	0.25	0.25	0.25	0.25
F = $303 \times X2$	1112	2137	1061	2424
Td = $1+(0.5/(1+M))$	1.40	1.40	1.40	1.40
Fc = $0.21 \times Td \times (1+0.2 \times X2)$	0.51	0.71	0.50	0.76
Qe = $K(F-Fc) \times Qc$	493	2019	385	2360

DFC = Design flow/Capacity = Q/Qe

Total In Sum =

2597 PCU

DFC of Critical Approach = 0.63

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D, D.2, D.10 and Adjoining Government Land, Pak Wai, Sai Kung

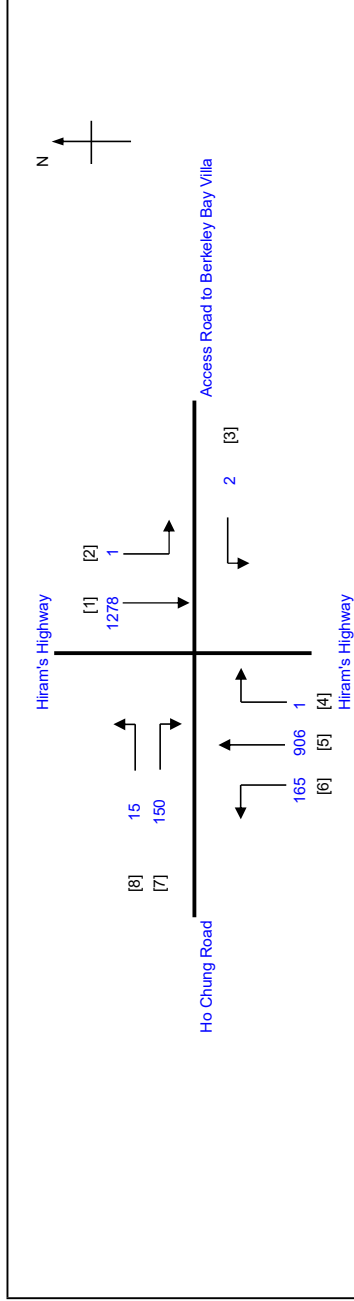
J2 Hiram's Highway/Ho Chung Road

# TRAFFIC SIGNAL CALCULATION

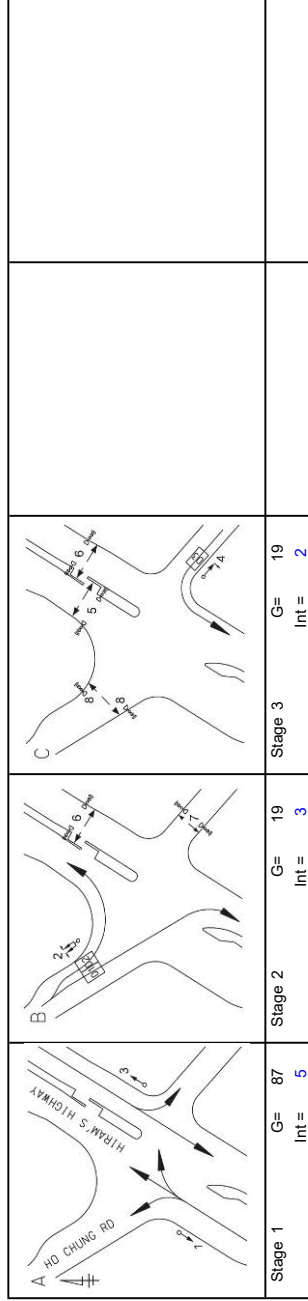
PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By:  
 Checked By:  
 Reviewed By:

INITIALS DATE  
 SKL Jul-25  
 SLN Jul-25  
 SLN Jul-25



No. of stages per cycle	N =	3
Cycle time	C =	135 sec
Sum(y)	Y =	0.393
Loss time	L =	27 sec
Total Flow	=	2518 pcu
Co	= (1.5*L+5)/(1-Y)	75.0 sec
Cm	= L/(1-Y)	44.5 sec
Yult	=	0.698
R.C.ult	= (Yult-Y)*100%	77.5 %
Cp	= 0.9*L/(0.9-Y)	47.9 sec
Ymax	= 1-L/C	0.800
<b>R.C.(C)</b>	<b>= 0.9*Ymax-Y)*100%</b>	<b>= 83 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Delay FG	Green Time Provided SG	Green Time Provided FG
P1	3	10	8	13	8
P2	2,3	13	12	23	12
P3	2	8	7	11	7
P4	3	8	7	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement Left pcu/h	Movement Straight pcu/h	Movement Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
1,2	1	3.20	1	15		N	1935	1	616	662	617	0.00	1935							1935	0.319	0.319	8	88	88	0.491	48	12
1	1	3.20	1	12		N	2075	662	662	662	662	0.00	2075	18	123					2075	0.319	0.319		88	88	0.491	48	12
5,6	1	3.50	1	12	O	N	1965	165	411	576	576	0.29	1897							2020	0.285	0.285		78	88	0.491	54	16
4,5	1	3.50	1	12		N	1965	495	495	496	496	0.00	1735							1735	0.286	0.286		79	88	0.491	42	16
7,8	2	3.50	1	12		N	2105	15	150	165	165	1.00	1871	12	360					2231	0.074	0.074		20	20	0.491	30	52
3	3	3.30	1	15		N	1945	2	2	2	2	1.00	1768							1768	0.001	0.001	19	0	19	0.491	0	445
PED	3																											

NOTE: O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

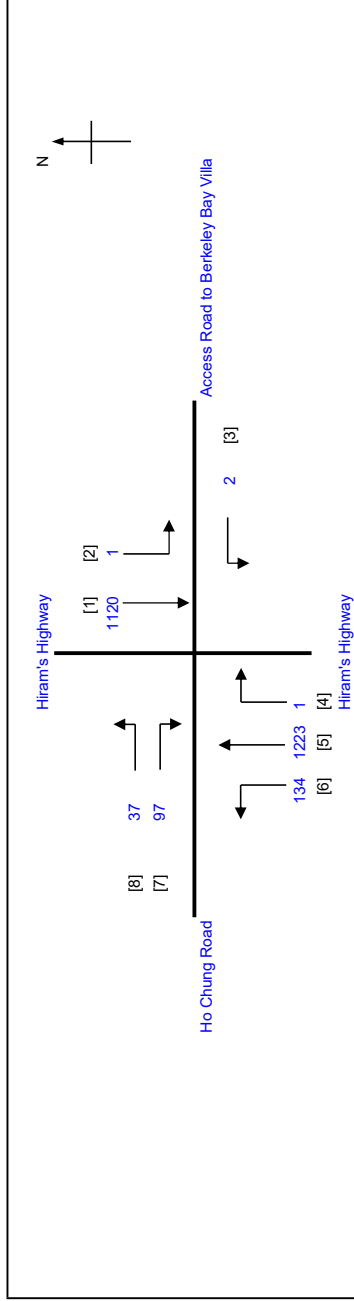
J2 Hiram's Highway/Ho Chung Road

# TRAFFIC SIGNAL CALCULATION

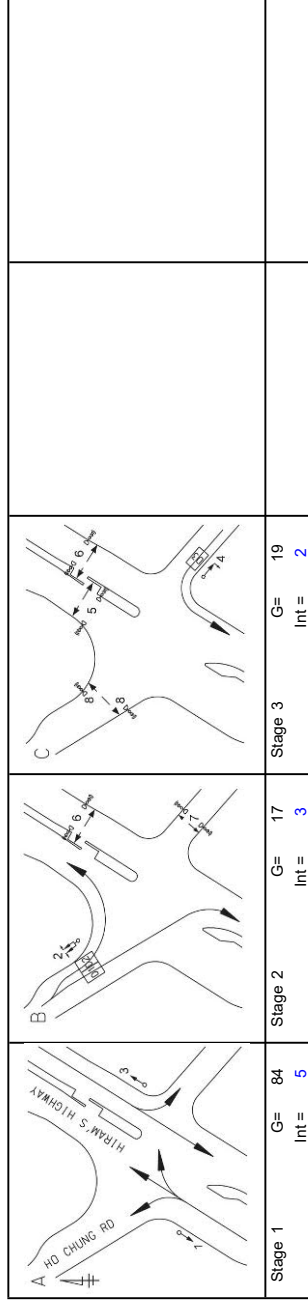
PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By:  
 Checked By:  
 Reviewed By:

INITIALS DATE  
 SKL Jul-25  
 SLN Jul-25  
 SLN Jul-25



No. of stages per cycle	N =	3
Cycle time	C =	130 sec
Sum(y)	Y =	0.418
Loss time	L =	31 sec
Total Flow	=	2615 pcu
Co	=	88.5 sec
Cm	=	53.3 sec
Yult	=	0.668
R.C.ult	=	59.6 %
Cp	=	57.9 sec
Ymax	=	0.762
<b>R.C.(C)</b>	<b>= (0.9*Ymax - Y)/Y*100%</b>	<b>= 64 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Delay FG	Green Time Provided SG	Delay FG
P1	3	10	8	13	8
P2	2,3	13	12	21	12
P3	2	8	7	9	7
P4	3	8	7	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	1	540	541	0.00	1935							1935	0.280		8	66	85	0.549	54	22	
1	1	3.20	1	15		N	2075	580	580	580	0.00	2075							2075	0.280			66	85	0.549	60	21	
5,6	1	3.50	1	12		N	1965	134	601	735	0.18	1921	18	127					2048	0.359	0.359		85	85	0.549	54	12	
4,5	1	3.50	1	12	O	N	1965	622	622	623	0.00	1735							1735	0.359	0.359		85	85	0.549	42	13	
7,8	2	3.50	1	12		N	2105	37	97	134	1.00	1871	12	400					2271	0.059	0.059	4	14	18	0.549	24	58	
3	3	3.30	1	15		N	1945	2	2	2	1.00	1768							1768	0.001	0.001	19	0	19	0.549	0	600	
PED	3																											

NOTE : O - OPPOSING TRAFFIC

N - NEAR SIDE LANE

SG - STEADY GREEN

FG - FLASHING GREEN

PEDESTRAIN WALKING SPEED = 1.2m/s

QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

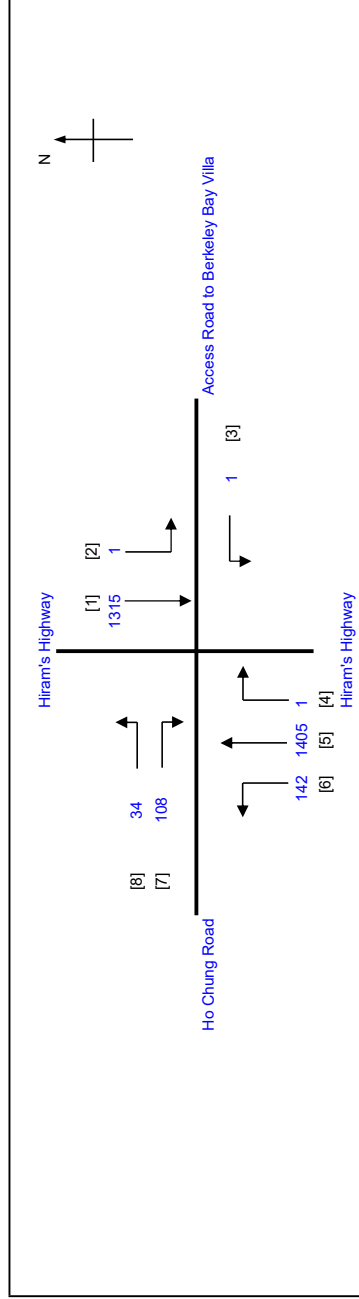
J2 Hiram's Highway/Ho Chung Road

# TRAFFIC SIGNAL CALCULATION

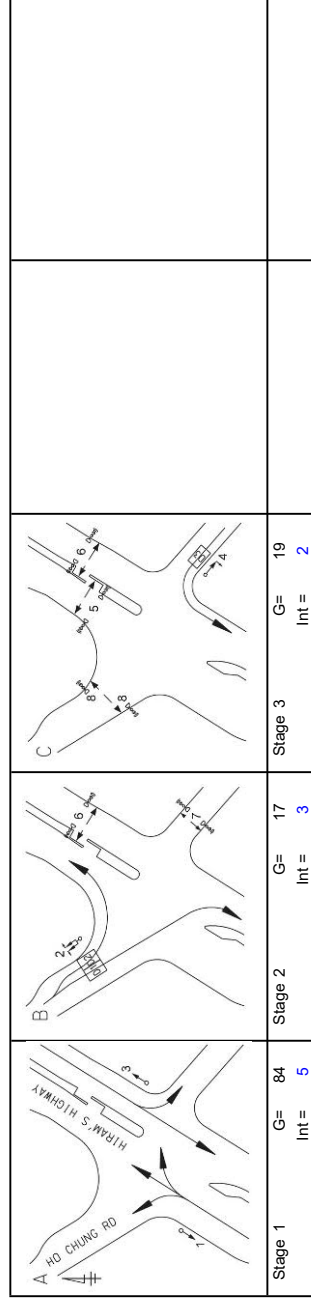
PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By:  
 Checked By:  
 Reviewed By:

INITIALS DATE  
 SKL Jul-25  
 SLN Jul-25  
 SLN Jul-25



No. of stages per cycle	N = 3
Cycle time	C = 130 sec
Sum(y)	Y = 0.472
Loss time	L = 32 sec
Total Flow	= 3007 pcu
Co	= (1.5*L+5)/(1-Y)
Cm	= L/(1-Y)
Yult	= 0.660
R.C.ult	= (Yult-Y)*100%
Cp	= 0.9*L/(0.9-Y)
Ymax	= 1-L/C
<b>R.C.(C)</b>	<b>= 0.9*Ymax-Y)*100% = 44 %</b>



Stage	Green Time Required SG	Green Time Required FG	Delay	Green Time Provided SG	Green Time Provided FG
3	10	8	0	13	8
2,3	13	12	8	21	12
2	8	7	4	9	7
3	8	7	4	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	634	1	635	0.00	1935							1935	0.328		8	68	85	0.825	60	22	
1	1	3.20	1			N	2075	681		681	0.00	2075							2075	0.328			68	85	0.825	66	22	
5,6	1	3.50	1	12	O	N	1965	697	142	839	0.17	1924	18	127					2051	0.409	0.409		85	85	0.825	60	14	
4,5	1	3.50	1	12		N	1965	708	1	709	0.00	1735							1735	0.409			85	85	0.825	48	14	
7,8	2	3.50	1	12		N	2105	34	108	142	1.00	1871	12	400					2271	0.063	0.063	5	13	18	0.825	24	62	
3	3	3.30	1	15		N	1945	1	1	1768	1.00	1768							1768	0.001		19	0	19	0.825	0	1751	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J2 Hiram's Highway/Ho Chung Road

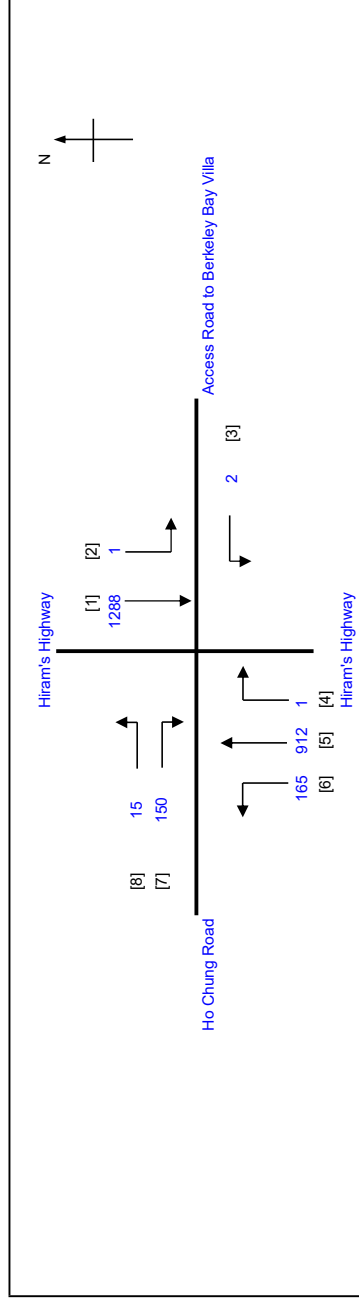
# TRAFFIC SIGNAL CALCULATION

2034 Design AM

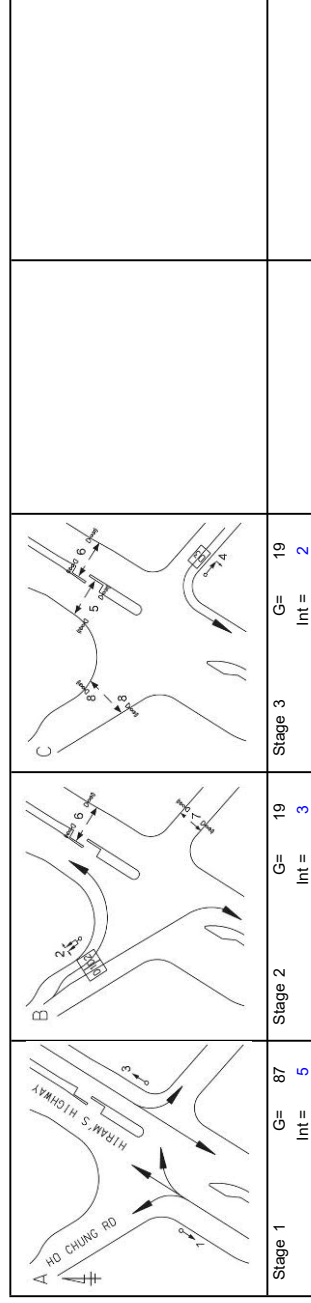
PROJECT NO.: 40815  
 FILENAME : J2\_HH\_HCR.xlsx

Prepared By: SKL  
 Checked By: SLN  
 Reviewed By: SLN

DATE: Jul-25



No. of stages per cycle	N = 3
Cycle time	C = 135 sec
Sum(y)	Y = 0.395
Loss time	L = 27 sec
Total Flow	= 2534 pcu
Co	= (1.5*L+5)/(1-Y)
Cm	= L/(1-Y)
Yult	= 44.7 sec
R.C.ult	= (Yult-Y)*100%
Cp	= 0.9*L/(0.9-Y)
Ymax	= 1-L/C
<b>R.C.(C)</b>	<b>= 0.9*Ymax-Y)*100% = 82 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Green Time Required FG	Delay	Green Time Provided SG	Green Time Provided FG
P1	3	10	8	0	13	8
P2	2,3	13	12	8	23	12
P3	2	8	7	4	11	7
P4	3	8	7	4	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	621	1	622	0.00	1935							1935	0.321	0.321	8	88	88	0.494	48	12	
1	1	3.20	1	15		N	2075	667		667	0.00	2075							2075	0.321	0.321		88	88	0.494	48	12	
5,6	1	3.50	1	12	O	N	1965	165	1	580	0.28	1898	18	123					2020	0.287	0.287		78	88	0.494	54	16	
4,5	1	3.50	1	12		N	1965	497		498	0.00	1735							1735	0.287	0.287		78	88	0.494	42	17	
7,8	2	3.50	1	12		N	2105	15		165	1.00	1871	12	360					2231	0.074	0.074	19	20	20	0.494	30	52	
3	3	3.30	1	15		N	1945	2		2	1.00	1768							1768	0.001	0.001		0	19	0.494	0	452	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J2 Hiram's Highway/Ho Chung Road

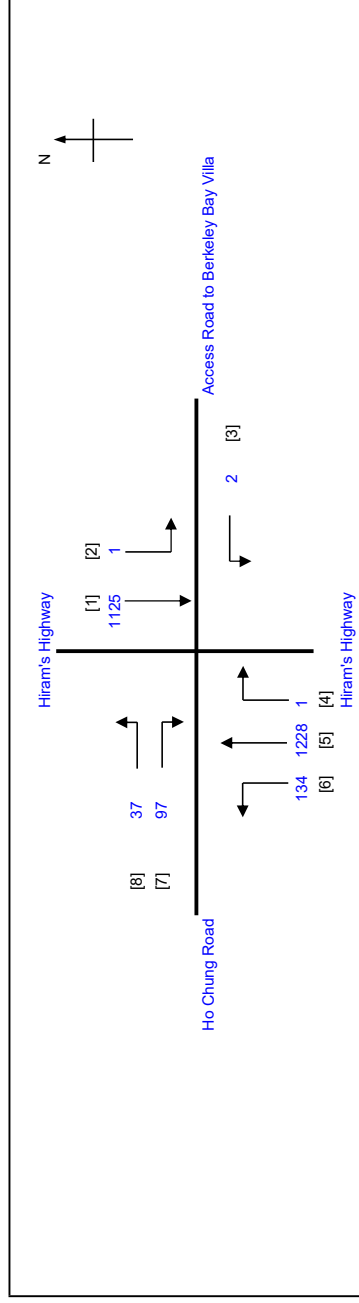
# TRAFFIC SIGNAL CALCULATION

2034 Design PM

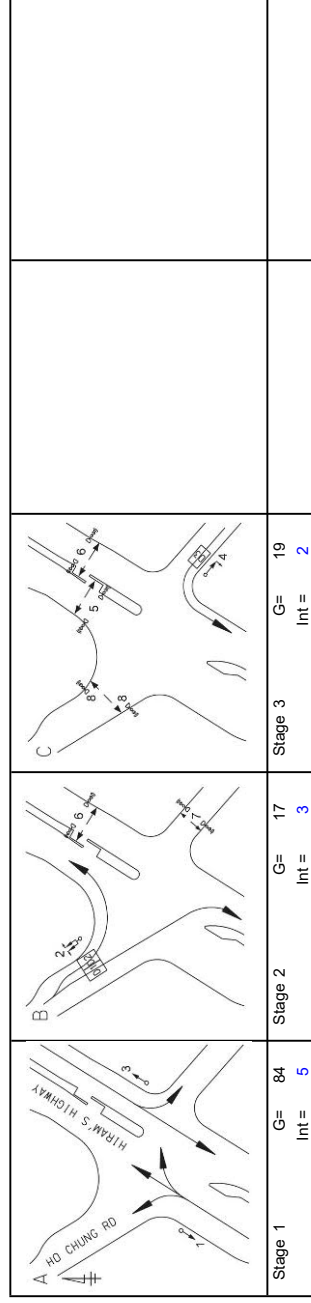
PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

Prepared By: SKL  
 Checked By: SLN  
 Reviewed By: SLN

DATE: Jul-25



No. of stages per cycle	N = 3
Cycle time	C = 130 sec
Sum(y)	Y = 0.419
Loss time	L = 31 sec
Total Flow	= 2625 pcu
Co	= (1.5*L+5)/(1-Y)
Cm	= L/(1-Y)
Yult	= 0.668
R.C.ult	= (Yult-Y)*100%
Cp	= 0.9*L/(0.9-Y)
Ymax	= 1-L/C
<b>R.C.(C)</b>	<b>= (0.9*Ymax-Y)*100% = 63 %</b>



Pedestrian Phase	Stage	Green Time Required SG	Delay FG	Green Time Provided SG	FG
P1	3	10	8	13	8
P2	2,3	13	12	21	12
P3	2	8	7	9	7
P4	3	8	7	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	542	1	543	0.00	1935							1935	0.281		8	66	85	0.551	54	22	
1	1	3.20	1	15		N	2075	583		583	0.00	2075							2075	0.281			66	85	0.551	60	21	
5,6	1	3.50	1	12	O	N	1965	604	134	738	0.18	1921	18	127					2048	0.360	0.360		85	85	0.551	54	12	
4,5	1	3.50	1	12		N	1965	624	1	625	0.00	1735							1735	0.360	0.360		85	85	0.551	42	13	
7,8	2	3.50	1	12		N	2105	37		134	1.00	1871	12	400					2271	0.059	0.059	4	14	18	0.551	24	58	
3	3	3.30	1	15		N	1945	2		2	1.00	1768							1768	0.001	0.001	19	0	19	0.551	0	605	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

# LLA CONSULTANCY LIMITED

Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)" for Proposed Residential Development at Various Lots in D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

J2 Hiram's Highway/Ho Chung Road

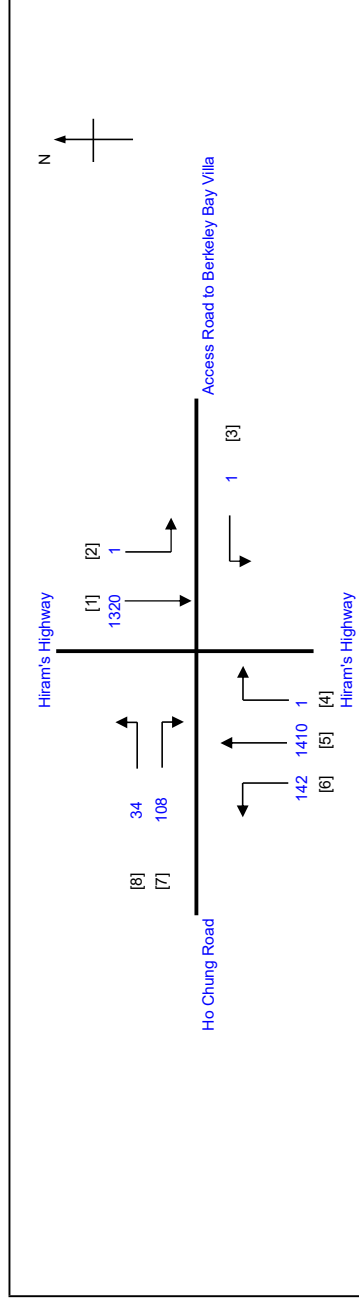
# TRAFFIC SIGNAL CALCULATION

PROJECT NO.: 40815  
 FILENAME: J2\_HH\_HCR.xlsx

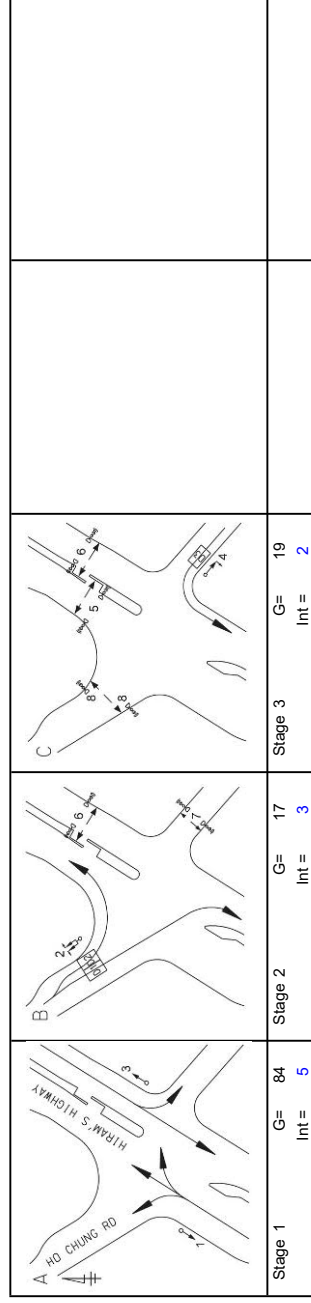
Prepared By:  
 Checked By:  
 Reviewed By:

INITIALS  
 SKL  
 SLN  
 SLN

DATE  
 Jul-25  
 Jul-25  
 Jul-25



No. of stages per cycle	N = 3
Cycle time	C = 130 sec
Sum(y)	Y = 0.473
Loss time	L = 32 sec
Total Flow	= 3017 pcu
Co	= (1.5*L+5)/(1-Y)
Cm	= L/(1-Y)
Yult	= 0.660
R.C.ult	= (Yult-Y)*100%
Cp	= 0.9*L/(0.9-Y)
Ymax	= 1-L/C
<b>R.C.(C)</b>	<b>= 0.9*Ymax-Y)*100% = 43 %</b>

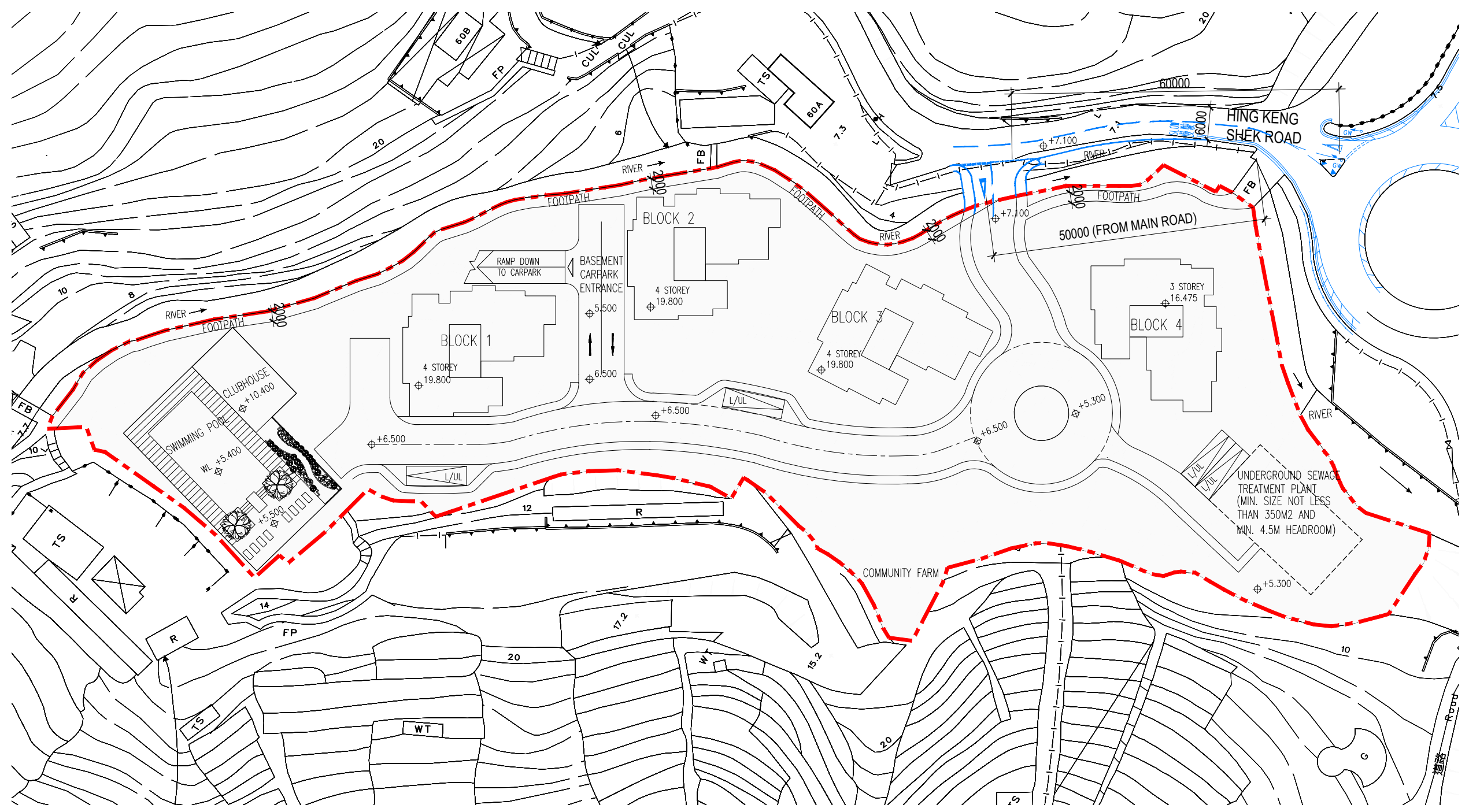
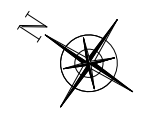


Pedestrian Phase	Stage	Green Time Required SG	Delay FG	Green Time Provided SG	FG
P1	3	10	8	13	8
P2	2,3	13	12	21	12
P3	2	8	7	9	7
P4	3	8	7	10	7

Move-ment	Stage	Lane Width m.	No. of lane	Radius m.	O	N	Straight Ahead Sat. Flow	Movement			Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare Lane m.	Flare Effect pcu/hr	Site Factor	Site Effect pcu/hr	Gradient %	Gradient Effect pcu/hr	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m /lane)	Average Delay (seconds)
								Left pcu/h	Straight pcu/h	Right pcu/h																		
1,2	1	3.20	1	15		N	1935	637	1	638	0.00	1935							1935	0.330		8	68	85	0.827	60	22	
1	1	3.20	1	15		N	2075	683		683	0.00	2075							2075	0.329			68	85	0.827	66	22	
5,6	1	3.50	1	12	O	N	1965	142	142	841	0.17	1924	18	127					2051	0.410	0.410		85	85	0.827	60	14	
4,5	1	3.50	1	12		N	1965	711	1	712	0.00	1735							1735	0.410	0.410		85	85	0.827	48	14	
7,8	2	3.50	1	12		N	2105	34	108	142	1.00	1871	12	400					2271	0.063	0.063	5	13	18	0.827	24	63	
3	3	3.30	1	15		N	1945	1	1	1	1.00	1768							1768	0.001	0.001	19	0	19	0.827	0	1770	
PED	3																											

NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE \* 6m

**Appendix C**  
**Proposed Layout Plan**



**K & W Architects Ltd.**  
 關黃建築師有限公司

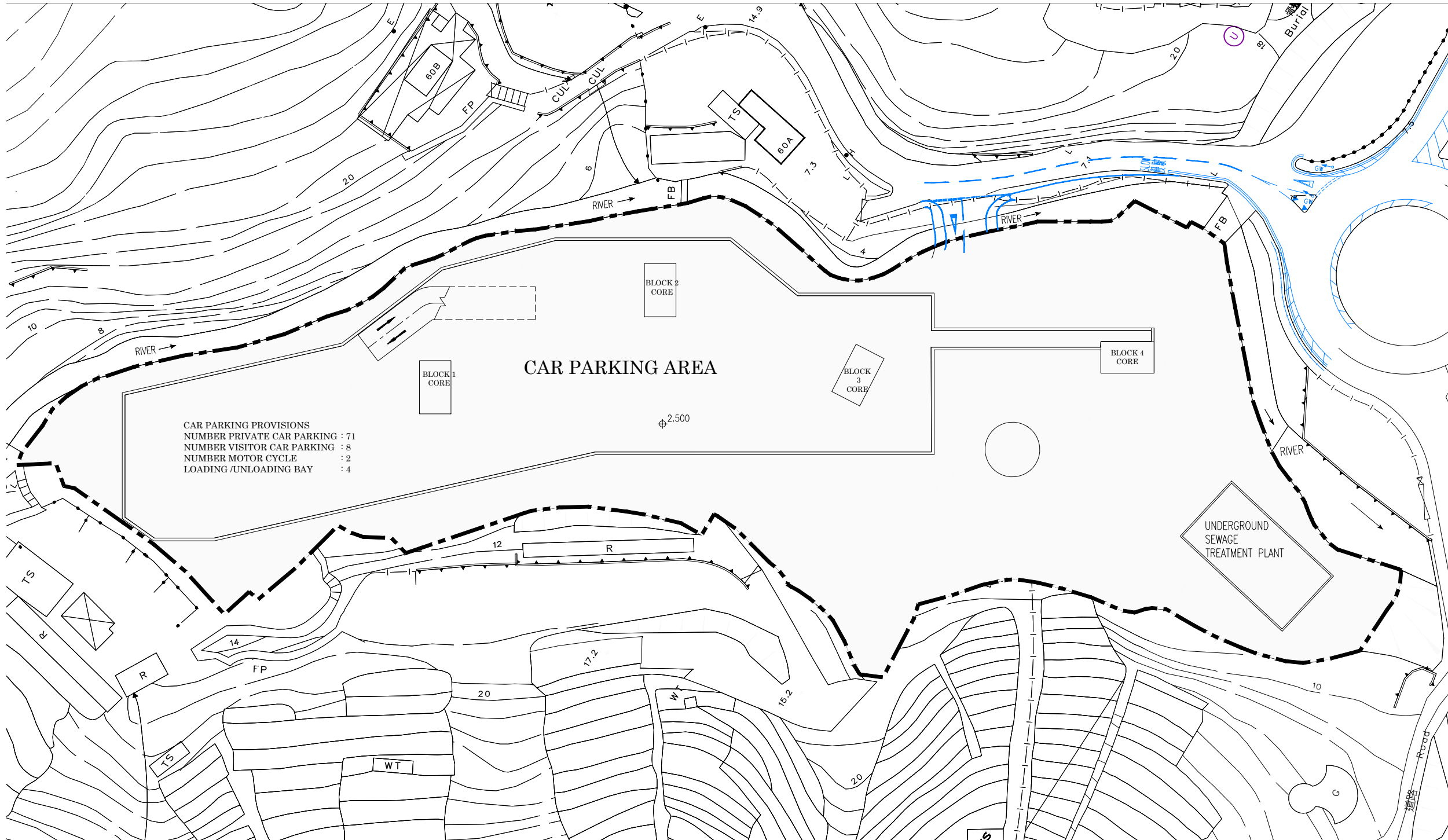


- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client  
 Project  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**MASTER LAYOUT PLAN**

Job No.	Drawing No.	Revision No.
D1186	MLP-01	N
Scale	Date	CAD Ref.
1:800	09/06/2025	
Drawn	Checked	Approved
SF	SF	



**K & W Architects Ltd.**  
 關黃建築師有限公司

**K&W**

- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

Project  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

Drawing Title  
**BASEMENT PLAN**

Job No.	Drawing No.	Revision No.
D1186	FL-02	L
Scale	Date	CAD Ref.
1:500	23/08/2023	
Drawn	Checked	Approved
PC	PC	

# Appendix D

## Visual Impact Assessment

**APPLICATION FOR AMENDMENT OF PLAN**  
**UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (Cap.131)**  
**TO REZONE THE APPLICATION SITE FROM**  
**“GREEN BELT” AND AREA SHOWN AS “ROAD” TO**  
**“RESIDENTIAL (GROUP C) 5” FOR**  
**PROPOSED RESIDENTIAL DEVELOPMENT AT**  
**VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND,**  
**PAK WAI, SAI KUNG**

## **CONTENTS**

- 1. Introduction**
- 2. Visual Context of the Application Site and Surrounding Areas**
- 3. The Proposed Development at the Application Site**
- 4. Assessment Area and Selection of Viewing Points**
- 5. Assessment of Visual Impact**
- 6. Conclusion**

## **LIST OF FIGURES**

Figure 1 Proposed Viewpoints

## **LIST OF PHOTOS**

- |     |  |
|-----|--|
| VP1 | Entrance Gate of Pak Wai                         |
| VP2 | Hing Keng Shek Village Office (村公所)              |
| VP3 | Pak Wai Bus Stop (Southbound)                    |
| VP4 | Bus Stop in front of Marina Cove Shopping Centre |
| VP5 | Ho Chung Public Toilet                           |
| VP6 | Tin Hau Temple at Nam Wai                        |

## 1. **INTRODUCTION**

- 1.1 This Visual Impact Assessment (“VIA”) is prepared in support of the Section “S.12A” Planning Application to rezone the Application Site from “Green Belt” (GB) and area shown as “Road” to “Residential (Group C) 5” for proposed residential development at various lots in D.D.210 and adjoining government land, Pak Wai, Sai Kung.
- 1.2 The Application Site situates in a flat plain valley floor off the roundabout of Hiram’s Highway.
- 1.3 This VIA is prepared to assess the visual impact of the Proposed Development at the Application Site to demonstrate that there will be no resultant adverse visual impacts on the surrounding environment.
- 1.4 The outline for the VIA is set out below :
  - Section 2 outlines the visual context of the Application Site and its Surrounding Area;
  - Section 3 describes the main design principles of the Proposed Development;
  - Section 4 identifies the Assessment Area and provides an analysis of the viewing points (“VPs”);
  - Section 5 assesses the visual impacts; and
  - Section 6 concludes the VIA.

## **2. Visual Context of the Application Site and Surrounding Areas**

### **2.1 The Site and Its Surrounding**

The subject site comprises Lot 13 (part), 14 (part), 15 (part), 16 (part), 17, 19 (part), 20, 21, 23, 25, 26, 27, 28, 29, 30, 31 (part), 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 45, 46 RP, 47 RP, 48 RP, 49 RP, 50 RP, 51 RP, 52 (part) and 53 RP, and adjoining Government Land. In DD210, Pak Wai, Sai Kung. Its total area is about 12,692m<sup>2</sup>. It was once an active agricultural nursery before 1990, but is now left vacant, covered by abandoned agricultural land and disorderly vegetation for many years. The subject site falls within an area zoned “GB” and area shown as “Road” in the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12.

2.2 Developments in the vicinity of the subject site are predominantly of low- to medium-density sites zoned for Residential (Group C) (“R(C)”), Residential (Group D) (“R(D)”), Residential (Group E) (“R E”), Village Type Development (“V”), Other Specified Uses (“OU”) or Comprehensive Development Area (“CDA”). Most of them are luxury apartments or houses. 3-storey houses in “V” zone are also found. Some of the village houses are in poor conditions as a result of the lack of management and maintenance.

2.3 In the north and west by terraced agricultural land where a number of abandoned houses are also found. Much of the agricultural land has been abandoned. A residential development, namely Marina Cove (with about 500 houses and 2 towers of 6-storey apartments) and Pak Wai Village are situated immediately on the opposite side of Hiram’s Highway. Hing Keng Shek Village which is connected to the Hing Keng Shek Road. It is located further north of the Application Site. The western boundary of the Application Site has an average level of +15mPD. The terraced slope induces an angle smaller than 15 degrees in general.

2.4 The Application Site is located in a flat plain valley floor at relatively low levels ranging from 4.1mPD to 5.7mPD. This section of Hiram’s Highway is at +7.3mPD while Hing Keng Shek Road is at +7.1mPD.

### 3. **The Proposed Scheme at the Application Site**

- 3.1 The Proposed Development at the Application Site comprises of 4 residential towers of 3 and 4 storeys, with building height (BH) of about 16.475mPD and 19.800mPD respectively. Its planning and design principles are summarized as follows :
- 3.2 **Achieving an environmentally sensitive design:** The residential tower blocks are carefully dispositioned to minimize environmental impacts from road traffic. The major facades with openable windows are oriented to avoid the excessive traffic noise as far as possible.
- 3.3 **Ensuring visual compatibility with the surrounding:** To realise a visually harmonious build form, the BH of the 4 residential towers in the Proposed Development have been carefully arranged in 2 steps. Such design has established an interesting building profile.
- 3.4 **Fulfilment of Sustainable Building Design Guidelines:** The residential towers are planned in 4 building blocks. A minimum of site coverage of greenery is provided in the development and not less than 20% of greenery is provided at pedestrian zone to enhance the environment quality of pedestrian urban space and to mitigate heat island effect.
- 3.5 **Enhancing pedestrian comfort:** A pedestrian will be constructed along the site boundary providing a comfortable footpath for public.

3.6 The key development parameters of the Proposed Development at the Application Site are listed in Table 3.1.

**Table 3.1 Key Development Parameters of the Proposed Development**

<b>Development Parameters</b>	<b>Indicative Scheme</b>
Site Area	About 12,692 m <sup>2</sup>
Plot Ratio (PR)	0.6
Total GFA	About 7,615.2 m <sup>2</sup>
• Domestic GFA	About 7,615.2 m <sup>2</sup>
• Non-domestic GFA	Nil
No. of Residential Blocks	4
Building Height of Residential Blocks	4 storeys for Block 1 4 storeys for Block 2 4 storeys for Block 3 3 storeys for Block 4 (excluding a 1-level basement)
Site Coverage	Not more than 20%
No. of Units	About 120
Average Unit Size	About 63.5 m <sup>2</sup>
Design Population <sup>[1]</sup>	About 360
Greenery Coverage	Not less than 20%
Private Open Space	Not less than 360 m <sup>2</sup>
Residents' Clubhouse	One 1-storey block with GFA of not more than 380.76 m <sup>2</sup> <sup>[2]</sup>

Remark:

<sup>[1]</sup> A person per flat (ppf) of 3 is adopted with reference to the PPF DCCA (Q02) Pak Sha Wan (Source: 2021 Population Census).

<sup>[2]</sup> According to APP-104, a maximum 5% of total domestic GFA could be applied for GFA concession for use as a clubhouse in a development with domestic GFA of up to 25,000m<sup>2</sup>. The clubhouse GFA proposed to be exempted from GFA calculation.

#### 4. Assessment Area and Selection of Viewing Points

- 4.1 According to the TPB PG No. 41, the Assessment Area is defined by approximately three times of overall maximum BH of the subject development i.e. 13.3m. Thus, a radius of 40m (i.e. 13.3m x 3) from the boundary of the Application Site defines the boundary of the Assessment Area, within which key public viewing points (“VPs”) are selected for assessment accordingly. (**Figure 1** refers).
- 4.2 When assessing the potential visual impacts of the Proposed Development, the classification of VPs is categorized as follows:

**Table 4.1 Classification of Visual Sensitivity**

<b>Receivers</b>	<b>Main Activities</b>	<b>Sensitivity</b>
Residents	Those viewers live in Hing Keng Shek Village	High
Recreational	Those viewers who would view the Application Site while engaging in recreational activities	High
Travelers	Those viewers who would view the Application Site from vehicles or on foot	Medium
Occupational	Those viewers who would view the Application Site from their workplaces	Low

- 4.3 A total of 6 VPs including short, medium and long ranges are considered to be the most affected by any development on the Application Site (**Figure 1** refers). They include:
- 4.4 **VP1: Entrance Gate of Pak Wai** – This VP is located to the southeast of the Application Site at roundabout of Hiram’s Highway. This VP is selected to assess the street-level visual impacts on car users, pedestrians and cyclists passing by Hiram’s Highway. The visual sensitivity of this VP is considered **medium**.

- 4.5 **VP2: Hing Keng Shek Village Office (村公所)** – This VP is located to the northeast of the Application Site situated in Hing Keng Shek village. It was taken at Hing Keng Shek Village Office (村公所). This VP is the only publicly-accessible location to assess the compatibility of the Proposed Development with the overall visual impacts of the existing residential developments of Hing Keng Shek village. The visual sensitivity of this VP is considered **high**.
- 4.6 **VP3: Pak Wai Bus Stop (Southbound)** – This VP locates at the South of the subject site. The Pak Wai bus stop (Southbound). This is to assess the street level visual impacts on car users, pedestrians and cyclists passing by Hiram’s Highway. The visual sensitivity of this VP is considered **medium**.
- 4.7 **VP4: Bus Stop in front of Marina Cove Shopping Centre** – This VP situates at the bus stop in front of shopping centre of Marina Cove. This VP is selected to evaluate the long range visual impacts on road users. The visual sensitivity of this VP is regarded as **medium**.
- 4.8 **VP5: Ho Chung Public Toilet** – This VP locates at a common spot for pedestrians, local users and residents to Ho Chung locating to the south of the Application Site. It is selected to assess the long-range visual impacts. The visual sensitivity of this VP is considered **medium**.
- 4.9 **VP6: Tin Hau Temple at Nam Wai** – This VP situates at a local temple locating to the southeast of the Application Site and is selected for its popularity with people visiting the temple. It represents the long-range street-level view of recreational users while viewing towards the direction for the Proposed Development. Due to the frequent use of the temple, the visual sensitivity of this VP is considered **high**.

## 5. Assessment of Visual Impact

5.1 This Section evaluates the visual impact of the Proposed Development. Reference is made to TPB PG No. 41 and the visual appraisal for the Proposed Development is carried out on the aspects of ‘visual composition’, ‘visual obstruction’, ‘effect on public viewer’ and ‘effect on visual resources’<sup>5</sup>. The overall visual resultant impact of the Development is appraised based on the classifications of visual impacts as set out in the TPB PG No. 41, which include ‘enhanced’, ‘partly enhanced/partly adverse’, ‘negligible’, ‘slightly adverse’, ‘moderately adverse’ and ‘significantly adverse’<sup>6</sup>.

### VP1: Entrance Gate of Pak Wai

5.2 This short range VP represents the views of pedestrians and car users of Hiram’s Highway with a view towards the Application Site from the south-east.

5.3 **Effects on Visual Composition** – The visual composition from this VP comprises the roundabout at the front and the ridgeline at the back of Wong Ngau Shan and Sam Fai Tin. The Proposed Development at the Application Site locates in the valley and is partly visible behind the proposed trees. The stepped height design with lower overall building height (BH) further scales down the building mass. Visual composition under the Proposed Development is considered slightly adverse.

5.4 **Effects on Visual Obstruction and Visual Permeability** – Part of the development at the Application Site from this VP are screened off by the proposed trees in the foreground. The development blocks the greenery in the background. Visual permeability and visual openness under the Proposed Development are slightly adverse.

- 5.5 **Effects on Public Viewers** – As a short-range transient VP, car users/passers-by are expected to experience minimal visual changes brought about by the development at the Application Site. The planting of trees along the south-east site boundary and the demolition of the existing temporary structures will increase the visual quality and will bring the impact on public viewers to a minimal.
- 5.6 **Effects on Visual Resources** – From this VP, the stepped BH design of the Proposed Development will create a more interesting built form while retaining some degree of visual openness. The effect on visual resources brought by the Proposed Development has been reduced to a minimal.
- 5.7 In summary, the Proposed Development has **slightly adverse** the view from this VP by breaking down its building mass and adopting lower overall BH and stepped BH profile.

**VP2: Hing Keng Shek Village Office (村公所)**

- 5.8 This short range VP represents views from Hing Keng Shek village. The villager office is a local gathering place at Hing Keng Shek village. The visual composition of this VP is dominated by trees and vegetation. The Proposed Development is not visible. There will not be any impacts for public within this VP.

### **VP3: Pak Wai Bus Stop (Southbound)**

- 5.9 This short-range VP represents views of car users, pedestrians and cyclists travel along Hiram's Highway.
- 5.10 **Effect on Visual Composition** – The visual composition of this VP comprises the Hiram's Highway, the valley with the temporary structure and the ridgeline. The Proposed Development locates at left hand side of the photo. The demolition of temporary structure and the planting of trees along the south-east site boundary enhances the visual quality at street level and this help to scale down the building mass. Visual composition under the Proposed Development is considered slightly adverse.
- 5.11 **Effect on Visual Obstruction and Visual Permeability** – Part of the Development from this VP is screened off by the proposed trees in the foreground. The development blocks the greenery in the background. Visual permeability and openness with the Proposed Development are slightly adverse.
- 5.12 **Effects on Public Viewers** – As a short range transient VP, car users, pedestrians and cyclists are expected to experience minimal visual changes bringing by the Development at the Application Site. The demolition of the temporary structure and the planting of trees along the site boundary will enhance the visual quality and bring the impact on public viewers to a minimal.
- 5.13 **Effects on Visual Resources** – The stepped BH design of the Proposed Development will bring a more interesting built form while retaining some degree of visual openness. The effect on visual resources brought by the Proposed Development has been reduced to a minimal.

#### **VP4: Bus Stop in front of Marina Cove Shopping Centre**

- 5.14 This medium-range VP represents the views of bus stop users in front of Marina Cove shopping centre.
- 5.15 **Effects on Visual Composition** – The visual composition of this VP comprises the noise barriers along the right-hand side, the Hiram’s Highway and the valley. The Proposed Development situates roughly at left of this photo. The road lamp-posts align in front of the Proposed Development and noise barriers lie on the right hand side. The Proposed Development would be behind the retaining structures and trees.

The Proposed Development would not be visible from this viewpoint.

- 5.16 **Effect on Visual Obstruction and Visual Permeability** – Due to the present of the lamp posts, the noise barriers and the traffic, the effect on visual obstruction and visual permeability under the Proposed Development is considered negligible.
- 5.17 **Effect on Public Viewers** – As a medium range VP, public waiting at the bus stop are expected to experience minimal visual changes brought by the Development.
- 5.18 **Effect on Visual Resources** – The effects on visual resources brought by the Proposed Development is considered negligible.

#### **VP5: Ho Chung Public Toilet**

- 5.19 This medium-range VP represents views from Ho Chung area, including the village house there. The Ho Chung public toilet has relatively more local gathering here. The visual composition of this VP is dominated by the village house and ATV building. The Application Site and development is not visible due to the elevation. There will not be any impacts for public viewers with this VP.

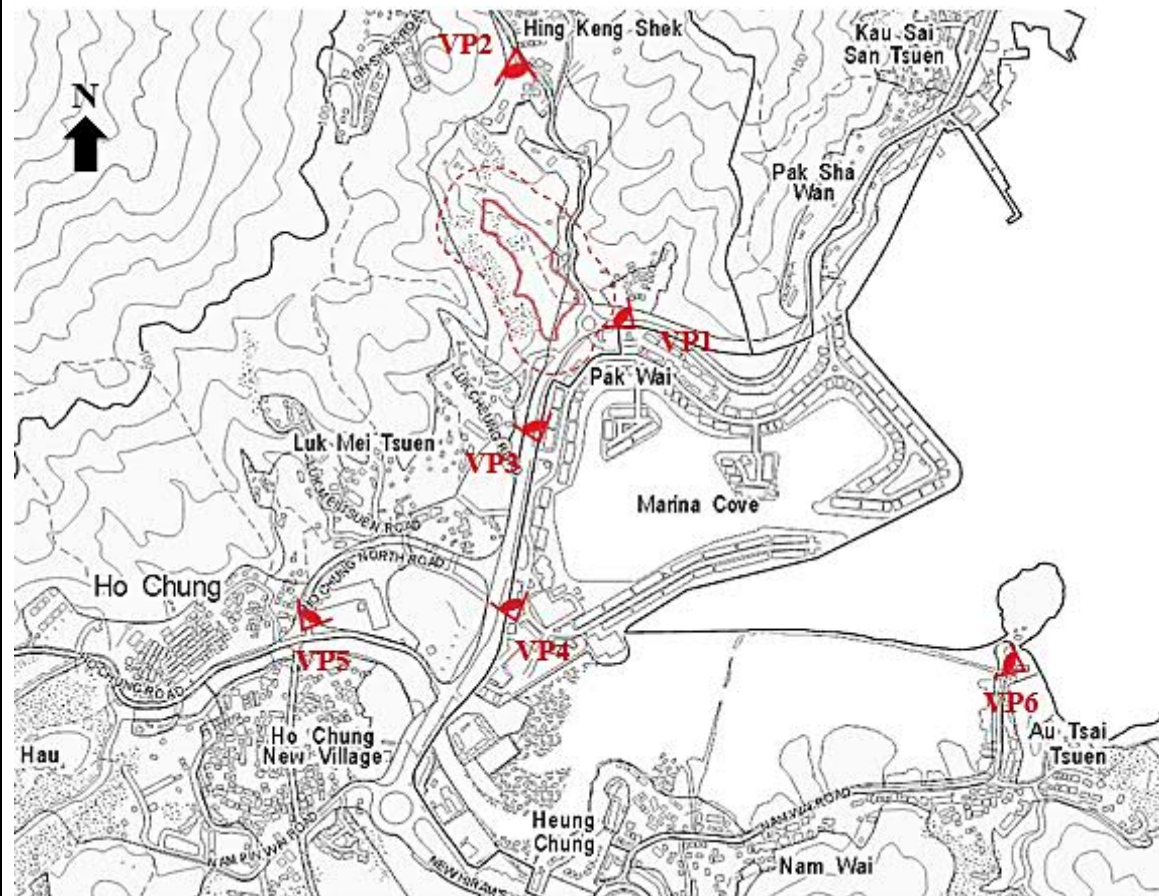
### **VP6: Tin Hau Temple at Nam Wai**

- 5.20 Long-range VP represents views of recreational users and public using Tin Hau Temple at Nam Wai. The proposed development was put in an enlarge existing condition to show its relationship to the existing structure.
- 5.21 **Effects on Visual Composition** – The visual composition of this VP consists ridgeline of Wong Ngau Shan which forms part of Ma On Shan Country Park. The residential development Maria Cove situates above the coastal line and scatter structures at Hing Keng Shek situates above Marina Cove. The Application Site locates between Hing Keng Shek structures and Maria Cove. The Development appears a minor extension at the top of existing building. The visual composition under the Proposed Scheme is negligible.
- 5.22 **Effects on Visual Obstruction and Visual Permeability** – The development will be appeared as an extension of the existing structures of Marina Cove and it brings negligible impact on visual obstruction and visual permeability.
- 5.23 **Effects on Public Viewers** – The Development will be integrated into the existing structures and it will bring very little impact to the Public Viewers.
- 5.24 **Effects on Visual Elements/ Resources** – The Proposed Development will not degrade any visual elements or resources to its surroundings. Therefore, the effect on visual elements/ resources is negligible.

## 6. **Conclusion**




- 6.1 A total of 6 VPs are assessed in this VIA on the visual acceptability of the Proposed Development at the Application Site.
- 6.2 It should be noted that the development scale and design of the Proposed Development have been thoroughly considered in order to realise a visually harmonious built form with the surrounding. Apart from adopting stepped height profile, trees have been proposed along the site boundary to enhance the visual quality of the Proposed Development.
- 6.3 Out of the 6 VPs, it is noticed that VP1 and VP3 both would bring slightly adverse visual quality and the rest are considered negligible visual quality with the Proposed Development.

In this respect, the Proposed Development is considered to be acceptable in terms of visual impact.



- VP1:** Entrance Gate of Pak Wai
- VP2:** Hing Keng Shek Village office (村公所)
- VP3:** Pak Wai Bus Stop (Southbound)
- VP4:** Bus Stop in front of Marina Cove Shopping Centre
- VP5:** Ho Chung Public Toilet
- VP6:** Tin Hau Temple at Nam Wai

### **Legend**

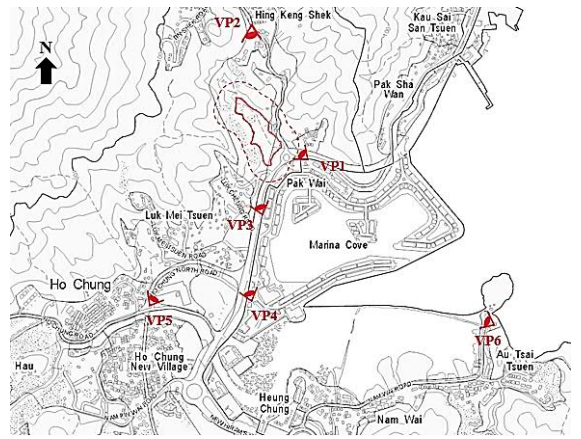
-  Application Site
-  Assessment Area (BH = 13.3 x 3 = 40m) \*
-  Proposed Viewpoint

\*The Assessment Area is subject to further study of the Indicative Scheme. With the intention for low-density residential development at the Application Site, the building height (BH) used to determine the Assessment Area has been referenced from Marina Cove Stage 3, with the maximum BH of 6 storeys.

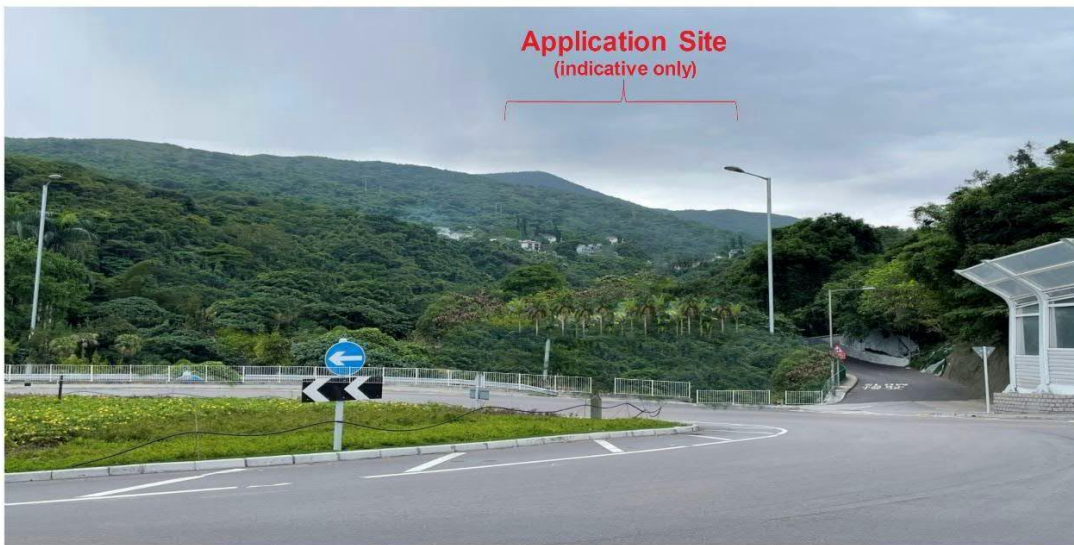
Source: Planning Data from Town Planning Board Survey Base Map from LandsD, Statutory Planning Portal 2 (<https://www1.ozp.tpb.gov.hk/gos/default.aspx?>)

**Proposed Viewpoints**

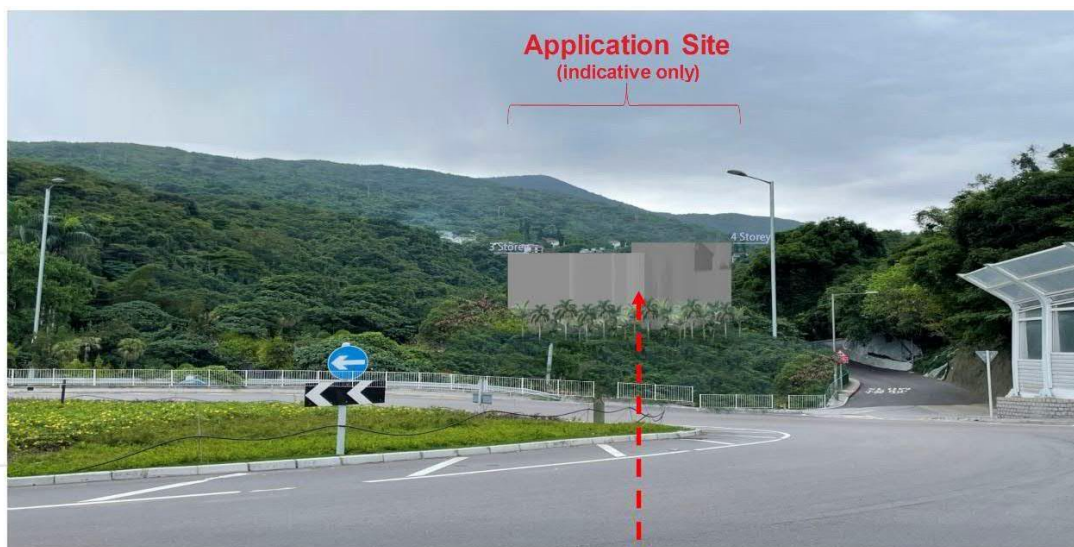
**Figure 1**



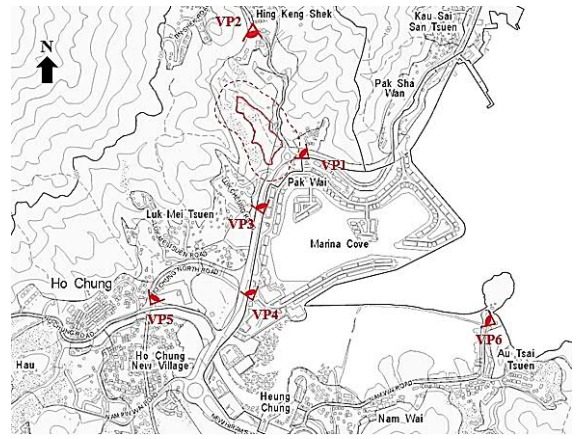
**VP 1 : Entrance Gate of Pak Wai  
(Existing Condition)**



**(Proposed Scheme)**



--- Proposed Development Building Profile



**VP 2 : Hing Keng Shek Village office (村公所)**

**(Existing Condition)**

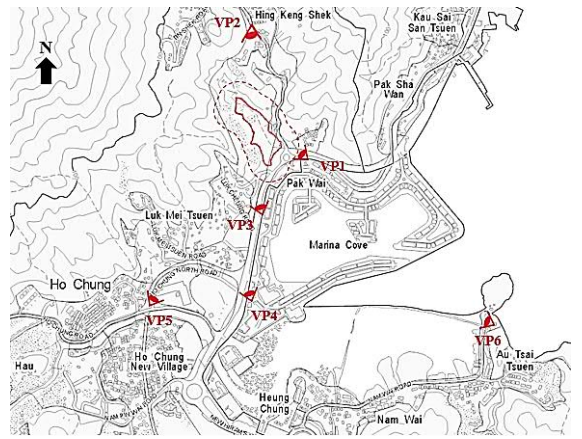


**(Proposed Scheme)**



**Note:**

The development is invisible at VP2



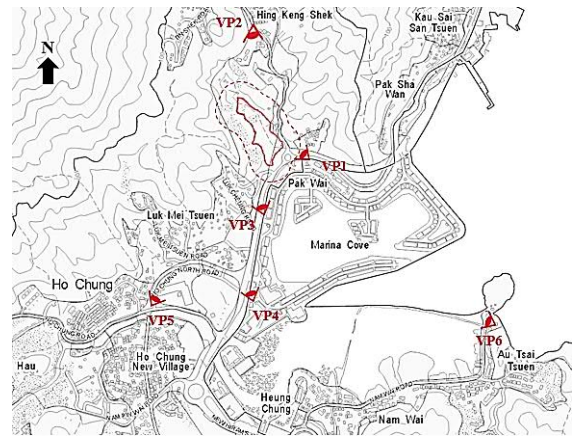
**VP 3 : Pak Wai Bus Stop (Southbound)  
(Existing Condition)**



**(Proposed Scheme)**



Proposed Development Building Profile

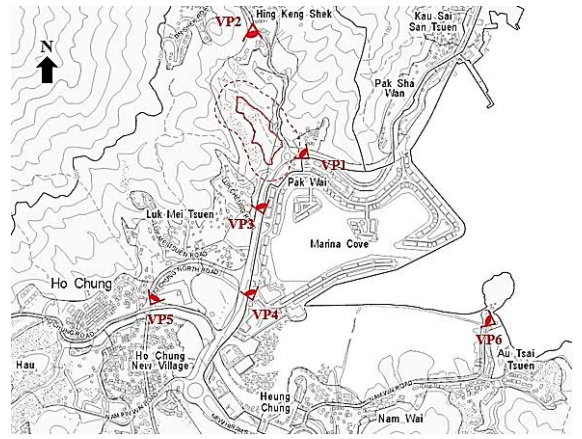


**VP 4 : Bus Stop in front of Marina Cove Shopping Centre  
(Existing Condition)**



**(Proposed Scheme)**





**VP 5 : Ho Chung Public Toilet  
(Existing Condition)**



**(Proposed Scheme)**

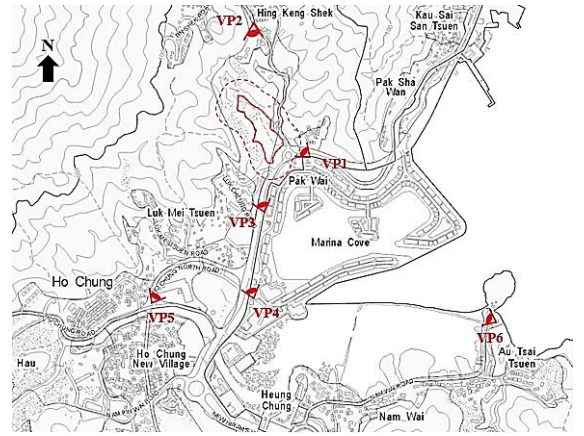


**Note:**

Our proposed development highest point is

**19.8** mPD.

The development is invisible at VP5



**VP 6 : Tin Hau Temple at Nam Wai  
(Existing Condition)**



**(Proposed Scheme)**



# Appendix E

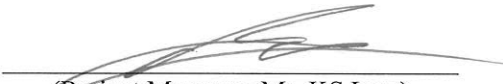
## Environmental Assessment

**Application for Amendment of Plan under Section  
12A of the Town Planning Ordinance (Cap. 131) to  
Rezone the Application Site from "Green Belt" and  
Area Shown as "Road" to "Residential (Group  
C)5" for Proposed Residential Development at  
Various Lots in D.D. 210 and Adjoining  
Government Land, Pak Wai, Sai Kung**

**Environmental Assessment**

(v3.0)

July 2025

Approved By   
(Project Manager: Mr. KS Lee )

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties.

**CINOTECH CONSULTANTS LIMITED**

Room 1710, Technology Park  
18 On Lai Street

Shatin, NT, Hong Kong

Tel: (852) 2151 2083 Fax: (852) 3107 1388

Email: [info@cinotech.com.hk](mailto:info@cinotech.com.hk)

## **TABLE OF CONTENTS**

<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1 PROJECT BACKGROUND .....	1
<b>2. PROJECT DESCRIPTION .....</b>	<b>1</b>
2.1 DESCRIPTION OF THE EXISTING SITE & ITS ENVIRONS .....	1
2.2 PROPOSED DEVELOPMENT .....	1
2.3 SCOPE OF STUDY .....	1
<b>3. AIR QUALITY IMPACT.....</b>	<b>3</b>
3.1 INTRODUCTION.....	3
3.2 LEGISLATIONS, STANDARDS AND GUIDELINES.....	3
3.3 BACKGROUND AIR QUALITY.....	5
3.4 STUDY AREA & AIR SENSITIVE RECEIVERS .....	8
3.5 CONSTRUCTION PHASE AIR QUALITY IMPACT IDENTIFICATION & EVALUATION .....	9
3.6 OPERATION PHASE AIR QUALITY IMPACT IDENTIFICATION & EVALUATION .....	10
3.7 MITIGATION MEASURES.....	12
3.8 CONCLUSION.....	12
<b>4. NOISE IMPACT ASSESSMENT .....</b>	<b>13</b>
4.1 INTRODUCTION.....	13
4.2 LEGISLATIONS, STANDARDS AND GUIDELINES.....	13
4.3 NOISE SENSITIVE RECEIVERS & REPRESENTATIVE NOISE ASSESSMENT POINTS.....	14
4.4 CONSTRUCTION NOISE IMPACT ASSESSMENT .....	15
4.5 FIXED NOISE IMPACT IDENTIFICATION & EVALUATION .....	16
4.6 TRAFFIC NOISE IMPACT IDENTIFICATION & EVALUATION .....	18
4.7 CONCLUSION.....	19
<b>5. WATER QUALITY IMPACT .....</b>	<b>20</b>
5.1 LEGISLATIONS, GUIDELINES AND REQUIREMENTS .....	20
5.2 WATER QUALITY SENSITIVE RECEIVERS .....	23
5.3 IMPACT IDENTIFICATION & EVALUATION .....	24
5.4 MITIGATION MEASURES.....	25
5.5 CONCLUSION.....	27
<b>6. WASTE MANAGEMENT CONSIDERATION .....</b>	<b>29</b>
6.1 LEGISLATIONS AND REQUIREMENTS .....	29
6.2 WASTE MANAGEMENT FOR CONSTRUCTION PHASE.....	30
6.3 WASTE MANAGEMENT FOR OPERATION PHASE .....	33
6.4 CONCLUSION.....	34
<b>7. LAND CONTAMINATION ASSESSMENT.....</b>	<b>35</b>
7.2 REVIEW OF HISTORICAL LAND USES.....	35
7.3 SITE VISIT .....	35
7.4 CONCLUSION.....	35
<b>8. CONCLUSION.....</b>	<b>36</b>

**LIST OF TABLES**

Table 3-1	Guidelines on Usage of Open Space Site.....	3
Table 3-2	Hong Kong Air Quality Objectives (2025) .....	4
Table 3-3	Average Concentrations of Pollutants in the Recent Five Years (Year 2019 - 2023) at Tseung Kwan O Air Quality Monitoring Station.....	6
Table 3-4	Predicted Background Ground Level Air Quality of PATH, Grid [48,38].....	7
Table 3-5	Predicted Background Air Quality of Grid [48, 38] of PATH on Year 2030.....	8
Table 3-6	Nearby Representative Air Sensitive Receivers for Construction Phase .....	9
Table 3-7	Planned Air Sensitive Receivers of Proposed Development.....	9
Table 4-1	Acceptable Noise Levels for different Area Sensitivity Ratings (ASRs).....	14
Table 4-2	HKPSG Road Traffic Noise Planning Criteria.....	14
Table 4-3	List of Representative Noise Sensitive Receivers in the Vicinity .....	14
Table 4-4	Representative Noise Sensitive Receivers at nearby development for Fixed Plant Noise Assessment.....	17
Table 4-5	Allowable Sound Power Level for the Building Service Equipment of the Proposed Development.....	18
Table 4-6	Summary of Traffic Noise Level (Base Scenario) .....	19
Table 5-1	Water Quality Objectives .....	20
Table 5-2	Standard for effluent discharged into the inland water (Group D).....	22
Table 5-3	List of Representative Water Quality Sensitive Receivers.....	24
Table 6-1	Estimated Quantities of C&D materials to be Generated, Reused and Disposed of.....	31

## **LIST OF FIGURES**

- Figure 2-1 Site Location Plan
- Figure 3-1 Representative Air Sensitive Receivers for Construction Phase
- Figure 3-2 Location of Planned ASRs of the Proposed Development
- Figure 3-3 Buffer Region for Road Traffic Emission
- Figure 3-4 200m Buffer Region from Planned ASRs
- Figure 4-1 Location of the Representative NSRs in the Vicinity
- Figure 4-2a Location of the Assessment Points for Traffic Noise Impact Assessment (Overview)
- Figure 4-2b Location of the Assessment Points for Traffic Noise Impact Assessment (Block 1)
- Figure 4-2c Location of the Assessment Points for Traffic Noise Impact Assessment (Block 2)
- Figure 4-2d Location of the Assessment Points for Traffic Noise Impact Assessment (Block 3)
- Figure 4-2e Location of the Assessment Points for Traffic Noise Impact Assessment (Block 4)
- Figure 5-1 Location of Representative WSRs

## **LIST OF APPENDICES**

- Appendix 2-1 Layout of Proposed Development
- Appendix 3-1 TD's Confirmation on Road Type
- Appendix 4-1 Allowable Sound Power Level for the Building Service Equipment of the Proposed Development
- Appendix 4-2 Traffic Forecast for Traffic Noise Impact Assessment (Year 2046)
- Appendix 4-3 Predicted Traffic Noise Level (Base Scenario)
- Appendix 7-1 Aerial Photos
- Appendix 7-2 Photo Record for Site Walkover

## **1. INTRODUCTION**

### **1.1 Project Background**

- 1.1.1 A residential development with clubhouse (the Proposed Development) is planned to be developed at various Lots in D.D. 210 Pak Wai, Sai Kung. The Applicant proposes to amend the *Draft Ho Chung Outline Zoning Plan (OZP)* No. S/SK-HC/12 by rezoning the Application Site from "Green Belt" ("GB") and area shown as "Road" to "Residential (Group C)5" ("R(C)5"), with a maximum plot ratio of 0.6 and maximum building heights of 4 storeys (excluding basements) to facilitate the Proposed Development.
- 1.1.2 The rezoning requires planning permission from Town Planning Board (TPB). The applicant seeks planning permission for the proposed use at the Application Site under Section 12A Planning Application ("the Application").
- 1.1.3 Cinotech Consultants Limited has been commissioned by the Project Proponent to prepare an Environmental Assessment (EA) report in supporting of the Application.

## **2. PROJECT DESCRIPTION**

### **2.1 Description of the Existing Site & its Environs**

- 2.1.1 The Proposed Development is located at the west side of the junction of Hiram's Highway and Hing Keng Shek
- 2.1.2 Road. The Application Site is occupied by botanical gardens and temporary structures. It covers a portion of the footpath from Hiram Highway leading to the existing village to the north of the site. The Site location is illustrated in **Figure 2-1**.
- 2.1.3 The Proposed Development is located within an area dominated by residential development, while no commercial and industrial buildings are identified in the vicinity. The Site is surrounded by natural terrain to its north, east and west side, while low-rise residential development is identified between natural terrain at north and east side and the project site. To the south is low-rise residential buildings separated by Hiram's Highway.

### **2.2 Proposed Development**

- 2.2.1 The Proposed Development, with site area of about 12,692m<sup>2</sup>, consists of (1) basement carpark with 79 spaces; (2) a Swimming Pool; (3) four residential buildings with 4 storeys (Blocks 1 - 3) and 3 storeys (Block 4) respectively. A tentative layout plan for the Proposed Development is illustrated in **Appendix 2-1**.

### **2.3 Scope of Study**

- 2.3.1 This EA is prepared to assess the potential environmental impact associated with the implementation of the Proposed Development in support of the submission of the planning application. The assessment has been undertaken with reference to the guidance for environmental considerations provided in Chapter 9 "Environment" of the Hong Kong Planning Standards and Guidelines (HKPSG).
- 2.3.2 The key environmental issues with potential environmental impacts arising from the Proposed

Development are air quality, noise, water and waste management during construction phase and operational phase and land contamination.

2.3.3 The assessment has covered the following major aspects:

- Air Quality Impact Assessment
  - Construction Dust
  - Traffic Emission
- Noise Impact Assessment
  - Construction Noise
  - Fixed Noise Sources during Operation Phase
  - Traffic Noise Impact during Operation Phase
- Water Quality Impact during Construction Phase and Operational Phase
- Waste Management Implication
- Land Contamination Assessment

2.3.4 Drainage impact assessment and sewerage impact assessment shall be addressed in separated reports and thus not included in this EA report.

### 3. AIR QUALITY IMPACT

#### 3.1 Introduction

3.1.1 This chapter identifies and evaluates potential air quality impact due to the Project during construction and operation phases, and recommends appropriate mitigation measures for the potential impact.

#### 3.2 Legislations, Standards and Guidelines

3.2.1 The air quality impact assessment was carried out with reference to the Hong Kong Planning Standards and Guidelines (HKPSG) and the Air Pollution Control Ordinance (Cap.311) (APCO).

Minimum Buffer Distance

3.2.2 The minimum buffer distance from the emission sources (i.e. Roads and Highways, and Industrial Area) are recommended in the Hong Kong Planning Standards and Guidelines (HKPSG) and are summarized in **Table 3-1**.

**Table 3-1 Guidelines on Usage of Open Space Site**

Pollution Source	Parameter	Buffer Distance	Permitted Uses
<b>Road and Highways</b>	<i>Type of Road</i>		
	Trunk Road and Primary Distributor	>20m	Active and passive recreation uses
		3-20m	Passive recreational uses
	District Distributor	>10m	Active and passive recreation uses
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreation uses
<5m		Passive recreational uses	
<b>Industrial Area</b>	<i>Difference in Height between Industrial Chimney Exit and the Site</i>		
	<20m	>200m	Active and passive recreation uses
		5-200m	Passive recreational uses
	20-30m (*)	>100m	Active and passive recreation uses
		5-100m	Passive recreational uses
	30-40m	>50m	Active and passive recreation uses
5-50m		Passive recreational uses	
>40m	>10m	Active and passive recreation uses	

Note:

1. In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.
2. The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.
3. The guidelines are generally applicable to major industrial areas but NOT individual large industrial establishments which are likely to be significant air pollution sources. Consult EPD when planning open space sites close to such establishments.

*Air Quality Objectives (AQO)*

3.2.3 The Air Pollution Control Ordinance (APCO) provides the statutory authority for controlling air pollutants from a variety of sources. The Hong Kong Air Quality Objectives (AQO) stipulate the maximum allowable concentrations over specific periods for the criteria pollutants (**Table 3-2**).

**Table 3-2 Hong Kong Air Quality Objectives (2025)**

<b>Pollutant</b>	<b>Averaging time</b>	<b>Concentration limit [i] (µg/m<sup>3</sup>)</b>	<b>Number of exceedances allowed</b>
Sulphur Dioxide (SO <sub>2</sub> )	10-minute	500	3
	24-hour	40 <sup>[4]</sup>	3
Respirable suspended Particulates (RSP) <sup>[2]</sup>	24-hour	75 <sup>[4]</sup>	9
	Annual	30 <sup>[4]</sup>	Not applicable
Fine Suspended Particulates (FSP) <sup>[3]</sup>	24-hour	37.5 <sup>[4]</sup>	18 <sup>[4]</sup>
	Annual	15 <sup>[4]</sup>	Not applicable
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour	200	18
	24-hours <sup>[4]</sup>	120 <sup>[4]</sup>	9 <sup>[4]</sup>
	Annual	40	Not applicable
Ozone (O <sub>3</sub> )	8-hour	160	9
	Peak season <sup>[4]</sup>	100 <sup>[4]</sup>	Not applicable <sup>[4]</sup>
Carbon Monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
	24-hours <sup>[4]</sup>	4,000 <sup>[4]</sup>	0 <sup>[4]</sup>
Lead (Pb)	Annual	0.5	Not applicable

Note:

1. 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 293Kelvin and a reference pressure of 101.325 kilopascal.
2. Respirable suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 10 µm or less.
3. Fine suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 2.5 µm or less.
4. Amended/New criteria in the new AQO (AQO-2025).

*Air Pollution Control (Construction Dust) Regulation*

3.2.4 The regulation defines notifiable and regulatory works activities that are subject to construction dust control.

*The Air Pollution Control (Fuel Restriction) Regulations*

3.2.5 The regulation provides a statutory minimum requirement to restrict commercial and

industrial processes to use ULSD (Ultra Low Sulphur Diesel) with a sulphur content of only 0.005%.

*Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation*

- 3.2.6 According to the regulation, Non-road Mobile Machinery (NRMMs) must adhere to the prescribed emission standards. Only NRMMs that have been approved or exempted and bear the appropriate label are permitted for use in specified activities and locations. These include construction sites, container terminals and backup facilities, restricted areas of the airport, designated waste disposal facilities, and specified processes.

*Recommended Pollution Control Clauses for Construction Contracts*

- 3.2.7 This guideline provides a list of relevant regulations/guidelines for contractors and general engineering practices aimed at minimizing inconvenience and environmental nuisance to nearby residents and other sensitive receivers.

*ProPECC PN 2/96 - Control of Air Pollution in Car Parks*

- 3.2.8 The practice note provides guidance on the control of air pollution in car parks including air quality guidelines required for the protection of public health; and factors that should be considered in the design and operation of car parks in order to achieve the required air quality.

### **3.3 Background Air Quality**

*Background Air Quality*

- 3.3.1 EPD has been closely monitoring the air quality in Hong Kong through their air quality monitoring stations (AQMS). The Tseung Kwan O Air Quality Monitoring Station is the closest AQMS to the Proposed Development.
- 3.3.2 The monitoring result of Tseung Kwan O AQMS during year 2019-2023 are summarized in **Table 3-3**. The measured pollutant concentrations generally show a decreasing trend from 2019 - 2023. The concentration of reported pollutants in past four recent year have complied the criteria stipulated in AQO, besides Ozone.
- 3.3.3 It should be noted that Tseung Kwan O AQMS is located within high density residential area which is about 4.5km from the Proposed Development. On the other hand, the Proposed Development is surrounded by natural terrain to its north, east and west side, and only low-rise residential developments are in the vicinity of the project site.

**Table 3-3 Average Concentrations of Pollutants in the Recent Five Years (Year 2019 - 2023) at Tseung Kwan O Air Quality Monitoring Station**

Pollutant	Averaging Time	AQO [i]	Pollutant Concentration (µg/m3) [ii]				
			2019	2020	2021	2022	2023
Respirable Suspended Particulates (RSP)	24-hour (10th Max)	75 (9)	60	52	50	46	50
	Annual	30	29	24	24	22	24
Fine Suspended Particulates (FSP)	24-hour (19th Max)	37.5 (18)	34	26	26	28	27
	Annual	15	17	12	13	13	15
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour (19th Max)	200 (18)	155	136	132	110	116
	24-hour (10th Max)	120 (9)	76	51	60	48	50
	Annual	40	29	23	26	21	22
Sulphur Dioxide (SO <sub>2</sub> )	10-minute (4th Max)	500 (3)	25	18	18	12	32
	24-hour (4th Max)	40 (3)	12	7	9	7	6
Ozone (O <sub>3</sub> )	8-hour (10th Max)	160 (9)	185	158	158	167	160
	Peak Season	100	120	112	109	105	111
Carbon Monoxide (CO)	1-hour (1st Max)	30000	2170	1670	1750	1210	1300
	8-hour (1st Max)	10000	1935	1411	1375	1105	996
	24-hour (1st Max)	4000	1420	1152	1113	834	824

Note:

[i] The numbers in brackets ( ) refer to number of exceedance allowed per year.

[ii] The pollution concentrations are obtained from the Smart Air Modelling Platform.

[iii] Exceedances has been highlighted in orange.

### PATH Background

- 3.3.4 PATH is a regional scale air quality model developed by EPD to predict future air quality over the whole Pearl River Delta region including Hong Kong. The PATH v3.0 grids corresponding to the Proposed Development is [48,38]. **Table 3-4** gives the predicted background air quality on Year 2026, 2030, 2035 & 2040 of the Grids [48,38] where the Proposed Development is located.
- 3.3.5 Generally, the predicted pollutant concentrations of PATH v3.0 show a decreasing trend from 2026 to 2040. The predicted background concentration at ground level of the Site from years 2026 to 2040 meets the relevant Air Quality Objectives (AQOs) with a significant margin, except for Ozone concentration.
- 3.3.6 Considering the population intake year of the Project is planned to be 2031, the PATH background concentrations at grid [48,38] on year 2030 are representative to reflect the background air quality.
- 3.3.7 The PATH background concentrations at Grid [48,38] from 0 to 55m (L1 to L3) on Year 2030

are listed in **Table 3-5**. The PATH prediction show that the vertical variation of the pollutant concentrations is not significant for the first 50m from the ground.

**Table 3-4 Predicted Background Ground Level Air Quality of PATH, Grid [48,38]**

Pollutant	Averaging Time	AQOs [ $\mu\text{g}/\text{m}^3$ ] [i]	PATH Model Concentration [ $\mu\text{g}/\text{m}^3$ ]			
			Year 2026 L1 (0-17m)	Year 2030 L1 (0-17m)	Year 2035 L1 (0-17m)	Year 2040 L1 (0-17m)
Respirable Suspended Particulates (RSP)	24-hour (10th Max)	75 (9)	54.64	49.63	49.42	49.33
	Annual	30	20.42	18.92	18.79	18.73
Fine Suspended Particulates (FSP)	24-hour (19th Max)	37.5 (18)	32.17	28.25	28.1	28.04
	Annual	15	12.57	11.38	11.26	11.22
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour (19th Max)	200 (18)	47.67	44.2	36.38	35.7
	24-hour (10th Max)	120 (9)	21.92	20.12	16.42	15.72
	Annual	40	10.54	9.6	8.54	8.31
Sulphur Dioxide (SO <sub>2</sub> )	10-minute (4th Max)	500 (3)	23.84	20.91	20.9	20.91
	24-hour (4th Max)	40 (3)	7.29	6.62	6.62	6.62
Ozone (O <sub>3</sub> )	8-hour (10th Max)	160 (9)	169.95	167.28	167.68	167.8
	Peak Season	100	124.56	121.6	122.04	122.19
Carbon Monoxide (CO)	1-hour (1st Max)	30000	577.5	515.72	515.27	515.08
	8-hour (1st Max)	10000	548.01	480.53	479.76	479.41
	24-hour (1st Max)	4000	509.38	440.44	439.15	438.58

Note:

- [i] The numbers in brackets ( ) refer to number of exceedance allowed per year.
- [ii] The pollution concentrations are obtained from the Smart Air Modelling Platform.
- [iii] Exceedances has been highlighted in orange.

**Table 3-5 Predicted Background Air Quality of Grid [48, 38] of PATH on Year 2030**

Pollutant	Averaging Time	AQOs [ $\mu\text{g}/\text{m}^3$ ] [i]	PATH Model Concentration [ $\mu\text{g}/\text{m}^3$ ]		
			Year 2030 L1 (0-17m)	Year 2030 L2 (17-35m)	Year 2030 L1 (35-55m)
Respirable Suspended Particulates (RSP)	24-hour (10th Max)	75 (9)	49.63	49.41	49.35
	Annual	30	18.92	18.7	18.57
Fine Suspended Particulates (FSP)	24-hour (19th Max)	37.5 (18)	28.25	27.92	27.91
	Annual	15	11.38	11.17	11.05
Nitrogen Dioxide (NO <sub>2</sub> )	1-hour (19th Max)	200 (18)	44.2	43.72	42.73
	24-hour (10th Max)	120 (9)	20.12	19.57	19.11
	Annual	40	9.6	8.91	8.44
Sulphur Dioxide (SO <sub>2</sub> )	10-minute (4th Max)	500 (3)	20.91	21.24	21.33
	24-hour (4th Max)	40 (3)	6.62	6.74	6.79
Ozone (O <sub>3</sub> )	8-hour (10th Max)	160 (9)	167.28	171.12	172.43
	Peak Season	100	121.6	124.33	125.63
Carbon Monoxide (CO)	1-hour (1st Max)	30000	515.72	516.32	516.9
	8-hour (1st Max)	10000	480.53	481.66	482.34
	24-hour (1st Max)	4000	440.44	440.87	441.43

Note:

[i] The numbers in brackets () refer to number of exceedances allowed per year.

[ii] The pollution concentrations are obtained from the Smart Air Modelling Platform.

[iii] Exceedance has been highlighted in orange.

### 3.4 Study Area & Air Sensitive Receivers

3.4.1 The Study Area for this air quality impact assessment covers the area within 500 m from the Project boundary.

3.4.2 During construction phase, residential development in the vicinity of the Site is considered as the air sensitive receivers (ASRs). The representative ASRs for construction phase are listed in **Table 3-6** and illustrated in **Figure 3-1**.

**Table 3-6 Nearby Representative Air Sensitive Receivers for Construction Phase**

ID	Location	Type	Building Height (mAG)	Horizontal Distance from Project Boundary
ASR-01	60B Pak Wai	Residential	6	30m
ASR-02	60A Pak Wai	Residential	6	11m
ASR-03	Residential Building in Pak Wai Village	Residential	9	44m
ASR-04	48 Luk Mei Tsuen	Residential	6	119m
ASR-05	73 Hing Keng Shek	Residential	6	87m

3.4.3 During operation phase, the Proposed Development itself is considered as ASRs. The planned ASRs are illustrated in **Figure 3-2** and summarized in **Table 3-7**. Apart from the Proposed Development, a basement carpark and an on-site sewage treatment plant are proposed within the Proposed Development.

**Table 3-7 Planned Air Sensitive Receivers of Proposed Development**

ID	Location	Type	Building / Facility Height (mPD)
PASR-01	Residential Tower (Block 1)	Residential	19.8
PASR-02	Residential Tower (Block 2)	Residential	19.8
PASR-03	Residential Tower (Block 3)	Residential	19.8
PASR-04	Residential Tower (Block 4)	Residential	16.475
PASR-05	Community Farm	Recreational facilities	6.5 <sup>[1]</sup>
PASR-06	Swimming Pool and Clubhouse	Recreational facilities	5.5 for Swimming Pool 10.4 for Clubhouse

Note:

[1] Community farm are at-grade recreational facilities.

### 3.5 Construction Phase Air Quality Impact Identification & Evaluation

3.5.1 Major dust emitting construction activities will be the demolition works, excavation works, foundation works and the construction works of the superstructure. Fugitive dust would be generated during the aforementioned construction activities. The concerned air pollutants during the construction phase are the Respirable Suspended Particulates (RSP) and Fine Suspended Particulates (FSP) arising from the construction work of the Proposed Development.

3.5.2 Dust control measures under the Air Pollution Control (Construction Dust) Regulation (Cap. 311R) and good site practice shall be implemented to mitigate dust impact arising from demolition work by preventing dust generation and/or by screening, suppressing and removing dust generated:

- Hoarding of not less than 2.4 m high from ground level, except for a site entrance or exit, shall be provided along the entire portion of project boundary adjoins a road, street, service lane or other area accessible to the public

- Existing structures are proposed to be demolished by non-percussive equipment such as hydraulic crusher to reduce dust emission
- Water or a dust suppression chemical shall be sprayed immediately prior to, during and immediately after excavation works
- Cover stockpile or dusty materials with tarpaulin to prevent wind erosion
- Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads or streets
- Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the construction site
- Where a vehicle leaving construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle
- Store cement bags in shelter with 3 sides and the top covered by impervious materials if the stack exceeds 20 bags
- Maintain a reasonable height when dropping excavated materials to limit dust generation
- Limit vehicle speed within site to 10 km/h and confine vehicle movement in haul road
- Minimize exposed earth after completion of work in a certain area by hydroseeding, vegetating or soil compacting
- Cover materials on trucks before leaving the site to prevent dropping or being blown away by wind
- Regular maintenance of plant equipment to prevent black smoke emission
- Throttle down or switch off unused machines or machine in intermittent use

3.5.3 With the implementation of dust suppression measures stipulated under the Air Pollution Control (Construction Dust) Regulation, good site practice, adverse air quality impact associated with the construction works is not anticipated. Quantitative construction dust assessment is considered not necessary.

3.5.4 Operation of Powered Mechanical Equipment (PME) during demolition/construction works would emit gaseous air pollutants such as nitrogen dioxide (NO<sub>2</sub>) via fuel burning. According to Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted Non-Road Mobile Machinery (NRMM) with a proper label are allowed to be used in specified activities and locations including construction sites. Supportive information and documents (e.g. third-party emission certificates, model and serial numbers of machines and engines, etc.) for each NRMM would be provided to EPD to prove that the concerned NRMM is in line with the prescribed emission standards. No significant air quality impact arising from the PME of the Project is anticipated.

### **3.6 Operation Phase Air Quality Impact Identification & Evaluation**

3.6.1 A small sewage treatment plant (STP) is proposed to be located at the south-east corner of the Project as shown in **Figure 3-1**. To prevent potential adverse odour impact on the Proposed Development and nearby sensitive receivers, the proposed sewage treatment plant shall be fully enclosed by a concrete structure and equipped with deodorizing units at the ventilation

and exhaust system. Considering the scale of the sewage treatment plant and the proposed mitigation measures, no adverse odour impact is anticipated during the operation of the Proposed Development.

- 3.6.2 The exhaust air from the proposed indoor car park in the Project is considered as a potential source of impact. The proposed car park should be located and built-in accordance to the requirements stipulated in ProPECC PN2/96 for the design, maintenance and operation of the ventilation systems to ensure the compliance of the air quality inside car parks with the concentration limits. The exhaust air should be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to occupants in the building or of neighbouring buildings, or to the public. Hence, no insurmountable impact on the nearby sensitive receivers is expected. The impact from nearby emission sources on the project is assessed in the following sections.
- 3.6.3 The residential floors of the Proposed Development rely on openable windows for ventilation, while the remaining area of the Proposed Development rely on mechanical ventilated system. The openable windows for ventilation and the fresh air intake for air sensitive uses of the Proposed Development shall be located outside of the buffer zone of the nearby emission sources (e.g. road and industrial chimney).
- 3.6.4 The Site is located at the north-west side of the junction of Hiram's Highway and Hing Keng Shek Road. With reference to The Annual Traffic Census - 2023, Hiram's Highway is classified as "Rural Road", while no classification is identified for Hing Keng Shek Road. However, with confirmed with Transport Department (TD), regarding the road type of Hing Keng Shek Road, TD has no objection on adopting "Rural Road" as the road type. Reply from TD is presented in **Appendix 3-1**. Despite road classification recommended by HKPSG for determining buffer distance as shown in **Table 3-1** do not cover "Rural Road", considering the traffic flow of nearby roads, buffer distance of 10m and 5m for District Distributor and Local Distributor has been adopted for Hiram's Highway and Hing Keng Shek Road respectively.
- 3.6.5 The building footprint of the Proposed Development and the buffer regions for road traffic emission are indicated in **Figure 3-3**. Although the layouts are tentative and subject to change, no significant change in building footprint is anticipated. As the building footprint are clearly outside of the required buffer regions, no adverse air quality impact arising from the nearby traffic emission is anticipated.
- 3.6.6 Based on the on-site survey, no industrial chimney was identified within 200m from the planned ASRs. On the other hand, marine vessels are identified at the bay area of Marina Cove, where located at the south-east of the Proposed Development. It should be noted that there are moorings within the bay area of Marina Cove. The hoteling process of marine vessels at mooring area shall be considered as stationary industrial emission and 200m of buffer region shall be provided according to HKPSG.
- 3.6.7 The 200m buffer region from residential buildings, recreational facilities and site boundary of the Proposed Development are illustrated in **Figure 3-4**. Since there is no industrial chimney and mooring within 200m of the planned ASRs of the Proposed Development, and the PATH background at Year 2030 meets the relevant AQOs with a significant margin, except for Ozone concentration. No adverse impact from marine vessels is anticipated during operation phase.

### **3.7 Mitigation Measures**

- 3.7.1 All openable windows for ventilation, fresh air intake, and other planned outdoor locations for air sensitive uses of the Proposed Development should be located outside of the buffer regions to avoid potential air quality impact.
- 3.7.2 The ventilation for the car park should be designed according to the requirements in ProPECC PN 2/96.
- 3.7.3 To strengthen the odour control measures of the sewage treatment plant, the following measures are recommended:
- The STP shall be fully enclosed by a concrete structure.
  - The STP shall be equipped with deodorizing units with at least 99.5% odour removal efficiency at the ventilation and exhaust system.
  - Ventilation exhaust pipes will be taken to roof level and away from the Proposed Development and neighbouring premises.
  - Ensuring good housekeeping in the sewerage collection systems to prevent the development of anaerobic conditions, etc

### **3.8 Conclusion**

- 3.8.1 During construction phase, major dust emitting construction activities will be the demolition of existing structures, excavation works, foundation works and construction works of the superstructures. With the implementation of dust suppression measures stipulated under the Air Pollution Control (Construction Dust) Regulation and the adoption of good site practice, adverse air quality impact associated with the construction works is not anticipated.
- 3.8.2 During operation phase, the Proposed Development itself is considered as ASRs. The minimum buffer distance requirement recommended in Chapter 9 of HKPSG has been fulfilled. Taken into consideration of the large margin in the PATH background, no adverse air quality impact to the Proposed Development during operation phase is anticipated.
- 3.8.3 Although the proposed sewage treatment plant of the Proposed Development is considered an air pollution source, however, with a fully enclosed concrete structure and deodorizing units installed at the ventilation and exhaust system, no adverse odour impact to the surroundings is anticipated.
- 3.8.4 The exhaust air from the proposed indoor car park in the Project is considered as a potential source of impact. The proposed car park should be located and built-in accordance to the requirements stipulated in ProPECC PN2/96 for the design, maintenance and operation of the ventilation systems to ensure the compliance of the air quality inside car parks with the concentration limits. The exhaust air should be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to occupants in the building or of neighbouring buildings, or to the public. Hence, no insurmountable impact on the nearby sensitive receivers is expected.

## **4. NOISE IMPACT ASSESSMENT**

### **4.1 Introduction**

4.1.1 This chapter identifies and evaluates potential noise impact associated with the Proposed Development and nearby noise sources, and to provide appropriate suggestions and mitigations for minimizing potential noise impact if necessary.

### **4.2 Legislations, Standards and Guidelines**

#### Construction Noise

4.2.1 Construction noise is governed by the Noise Control Ordinance (NCO) (Cap. 400) which prohibits the use of PME during the restricted hours (7 p.m. to 7 a.m. on Monday to Saturday and any time on a general holiday, including Sunday) without a valid Construction Noise Permit (CNP) issued by the Authority. The criteria and procedures for issuing the permit are specified in the "Technical Memorandum on Noise from Construction Works Other than Percussive Piling" - (TM1).

4.2.2 For construction works other than percussive piling, although TM1 does not provide control over daytime construction activities, the noise limits are set out in the "Practice Note for Professional Persons Environmental Consultative Committee" (ProPECC) "Minimizing Noise from Construction Activities" (PN1/24).

#### Fixed Plant Noise

4.2.3 Fixed noise sources, such as the building services system, ventilation system, and the operation of the Project is controlled under the NCO and "Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites" (IND-TM). According to the IND-TM, the Acceptable Noise Level (ANL) for a Noise Sensitive Receiver (NSR) is determined by the Area Sensitive Ratings (ASR); which classify a NSR based on the type of the area within, and the degree of the effect on the NSR of particular Influencing Factors (IFs). The different types of area containing the NSR are categorised into the rural area, low density residential area, urban area and other areas, with reference to Table 1 of the IND-TM. While the IFs, defined as industrial areas or area containing a number of factories or major road with an annual average daily traffic flow (AADT) in excess of 30,000, should be assessed for their influence on the NSR according to the degree of influence ("not affected", "indirectly affected" and "directly affected").

4.2.4 The HKPSG states that all planned fixed noise sources should be located and designed so that when assessed in accordance with the IND-TM, the level of the intruding noise at the facade of the nearest sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of the IND-TM or the background noise level, whichever is lower. When the prevailing background noise levels would be adopted as the assessment criteria, the prevailing background noise levels,  $L_{90}(1\text{-hour})$ , at the relevant NSRs shall be measured during the typical operation hours of the fixed plant within daytime, evening and night times. The Acceptable Noise Levels (ANLs) for different Area Sensitivity Ratings (ASRs) are given in **Table 4-1**.

**Table 4-1 Acceptable Noise Levels for different Area Sensitivity Ratings (ASRs)**

Time Period	Area Sensitivity Rating A	Area Sensitivity Rating B	Area Sensitivity Rating C
	dB(A)	dB(A)	dB(A)
Day (0700 to 1900 hours)	60 (55)*	65 (60)*	70 (65)*
Evening (1900 to 2300 hours)			
Night (2300 to 0700 hours)	50 (45)*	55 (50)*	60 (55)*

\* Numbers in ( ) limit indicates the ANL-5dB(A) limit for planned fixed plant.

Traffic Noise

4.2.5 HKPSG provides guidance on acceptable road traffic noise levels at the openable windows of various types of noise sensitive buildings. The relevant criteria are shown in **Table 4-2**. For domestic premises, road traffic noise criteria [ $L_{10(1hr)}$ ] of 70 dB(A) shall be adopted.

**Table 4-2 HKPSG Road Traffic Noise Planning Criteria**

Uses	Road Traffic Noise Criteria $L_{10, (1hr)}$ dB(A)
<b>Domestic Premises</b>	<b>70</b>
Hotel and Hostels	70
Offices	70
Educational institutions	65
Hospital & Clinics	55
Places of public worship and courts of law	65

Note: The above criteria apply to noise sensitive uses which rely on openable window / balcony for ventilation.

**4.3 Noise Sensitive Receivers & Representative Noise Assessment Points**

Existing Representative Noise Receiver in the Vicinity

4.3.1 The existing land uses in the vicinity of the Site are mainly residential uses, while no commercial and industrial buildings are identified within 300m from site boundary. Residential development located at the south-west is blocked by the natural terrain and therefore, no direct line-of-sight between the Proposed Development and the residential development located at the south-west. The representative noise sensitive receivers within the 300m assessment area that having direct line-of-sight to the Proposed Development in different directions, except for residential development located at west of the site, and rely on opened windows for ventilation are illustrated in **Figure 4-1** and listed in **Table 4-3**.

**Table 4-3 List of Representative Noise Sensitive Receivers in the Vicinity**

ID	Description	Type	Nearest Distance from Project Boundary
NSR-01	60A Pak Wai	Residential	11m
NSR-02	Residential Building in Pak Wai Village	Residential	44m
NSR-03	73 Hing Keng Shek	Residential	87m

Planned Noise Assessment Points of the Proposed Development

4.3.2 All openable window for ventilation for the bedrooms/living rooms of the residential flats of

the Proposed Development are considered as Noise Sensitive Receivers (NSRs). Although the Proposed Development is still in early stage and locations of openable window for ventilation are not yet decided, possible locations of openable window are carefully designed to avoid adverse traffic noise impact. The locations of possible openable window are illustrated in **Figures 4-2a to 4-2c**. Noise assessment points for traffic noise impact assessment have been selected at all building facade for representing the possible openable window locations.

4.3.3 The possible locations of openable window for ventilation and representative noise assessment points have been illustrated in **Figures 4-2a to 4-2c**. Representative noise assessment points have been assigned to each building façade of the residential flat, at 1.2m above the slab level and 1m away from the façade.

#### **4.4 Construction Noise Impact Assessment**

4.4.1 Four major works will be conducted in the construction phase of the redevelopment, including: demolition, site formation, foundation and superstructure works.

4.4.2 Construction noise generated by the powered mechanical equipment (PME) during construction phase can be minimised with implementation of the following mitigation measures. The Proposed Development consists of four residential blocks (3-storeys and 4-storeys) with basement car park. Considering the scale of the Proposed Development is small, no significant construction impact is anticipated with proper implementation of the mitigation measures. "Recommended Pollution Control Clauses for Construction Contracts" which is available on EPD website, will be incorporated into the tender document of this project. The following construction noise mitigation measures that can be applied but not limited to:

- Use non-percussive equipment such as hydraulic crusher, sawing, coring machines for demolishing existing building and structure
- Use non-percussive piling diving method such as hydraulic press-in method, vibration or jacking method for foundation work
- Use Quality Powered Mechanical Equipment (QPME) recognized by the Environmental Protection Department (EPD). The QPME shall be registered with EPD, and valid label issued by EPD shall be affixed on the QPME all times.
- Use Quieter Construction Methods as far as practicable
- Schedule work to minimize concurrent activity and duration of impact
- Regular maintenance of equipment to prevent noise emission due to impairment
- Adopt good site practice, such as throttle down or switch off equipment unused or intermittently used between works
- Position mobile noisy equipment in locations away from nearby NSRs and point the noise sources to directions away from NSRs
- Make good use of other structures for noise screening
- Use of mobile noise barriers/enclosures along the path of noise propagation

4.4.3 Construction activities under the Proposed Development involves concrete removal works, demolition works, site formation/excavation works and superstructure works. Subject to detailed site works arrangement, the contractor shall consider the following mitigation

measures, if necessary and applicable:

Concrete Removal Works / Demolition Works:

- Use of high pressure water jetting instead of traditional jackhammers and drill hammers;
- Use of quieter type wire saws or diamond wire saws for cutting large areas and heavily reinforced concrete;
- Use of quieter type blade saws utilizing diamond blades with higher speeds and smoother blades reduces excitation of vibration;
- Use of hydraulic crushers for concrete breaking instead of traditional excavator-mounted breakers;
- Use of handheld concrete crushers instead of traditional jackhammers;
- Use of hydraulic splitters instead of traditional jackhammers and breakers.

Site Formation / Excavation Works:

- Use of silent piling by press-in method instead of traditional massive augering and piling machines or drop hammer for sheet piling / channel planking installation work;
- Use of a sheet piling noise reducer such as a suitable shock absorber to reduce collisions between sheet pile / channel planking and holding parts;
- Use of pile driving impact cushions to reduce noise generated by piling impact;
- Pre-augering/pre-trench/boring pile holes to remove underground obstruction for avoiding hard driving / soften the ground;
- Use of crack inducers instead of traditional percussive breakers.

Superstructure Works:

- Use of prefabricated structure / sections to replace in-situ construction to reduce the amount of mechanical equipment used on site;
- Use of self-compacting concrete (without the aid of a vibrator e.g. poker for compaction) for in-situ concreting;
- Use of crack inducers instead of traditional percussive breakers.

4.4.4 With proper noise mitigation measures implemented during the construction phase, no adverse noise impact arising from the construction activities is expected.

## **4.5 Fixed Noise Impact Identification & Evaluation**

External Fixed Noise Source

4.5.1 The Proposed Development shall be used primarily and mainly for residential purposes. The dwellings would rely on openable windows and single split air conditioning units. Fixed noise source in the vicinity within 300m should be reviewed.

4.5.2 No industrial activities and commercial buildings were identified in the environs as the Proposed Development is located within an area dominated by residential development. Major existing fixed plants within 300m from the project boundary have been reviewed, while no major fixed noisy plant is identified. Considering the land use in the vicinity, the quantity

and scale of existing noisy fixed source shall be limited.

4.5.3 No adverse noise impact arising from fixed plants to the Proposed Development is anticipated.

*Planned Fixed Noise Source in the Proposed Development*

4.5.4 The potential noise issue arising from the operation of the noisy building service equipment, e.g.: HVAC & sewage treatment facilities, has been reviewed in early stage of the Proposed Development. The major potential fixed noise sources are located indoor in the plant room & E&M room. As the noise from the plants may transmit to the outdoor area via louvres/exhausts at the building facades, the NSRs with direct line-of-sight to the Proposed Development have also been assessed.

4.5.5 The Site is located at area dominated by low-rise residential buildings, where characterised as “Low Density Residential Area” with reference to the definition of the type of area containing the NSR as described in the IDM-TM. Hiram’s road (Stn no. 6055) has a traffic flow of 22,860 according to the Traffic Department’s Annual Traffic Census 2023, which is not considered as a “IF”. In view of the traffic impact on the Proposed Development, the representative NSRs shall be considered “not affected by IF” and classified as “ASR A”. The criteria for planned fixed noise sources would be 55 dB(A) for day and evening time and 45 dB(A) for night time, as tabulated in **Table 4-1**. Representative NSRs (as shown in **Figure 4-1**) for fixed noise assessment are listed in **Table 4-4**.

**Table 4-4 Representative Noise Sensitive Receivers at nearby development for Fixed Plant Noise Assessment**

ID	Description	Horizontal Distance from Building Facades	Area Sensitivity Ratings for ANL <sup>[1]</sup>
NSR-01	60A Pak Wai	11m	A
NSR-02	Residential Building in Pak Wai Village	44m	A
NSR-03	73 Hing Keng Shek	87m	A

Note:

[1] The NSRs located within a Low-Density Residential Area without affected by IF directly, and thus, ASR of A is adopted.

4.5.6 Since the project is still in early design stage with no detailed information of the specification of the planned fixed noisy plants, maximum allowable sound power level in different direction will be determined so as to ensure the compliance of the planned fixed noise sources. Horizontal distance between project boundary and the NSRs at nearby residential buildings has been measured (as shown in **Figure 4-1**) to calculate the maximum allowable sound power level (SWL) at the building façades of Proposed Development which is detailed in **Appendix 4-1** and summarised in **Table 4-5**.

**Table 4-5 Allowable Sound Power Level for the Building Service Equipment of the Proposed Development**

Location	Maximum Allowable Sound Power Level at Source, dB(A)	
	Day and Evening (07:00 – 23:00)	Night (23:00 – 07:00)
NE façade	75	65
SE façade / Sewage Treatment Plant	87	77
NW facade	93	83

- [1] For assessment purpose, a 6dB(A) of Tonality/ Intermittency/ Impulsiveness correction has been adopted.  
 [2] Since noise sensitive receivers located at south-west is completely blocked by natural terrain and slope, no fixed noise impact is anticipated at nearby NSR at south-west side.

4.5.7 According to **Table 4-5**, lowest maximum allowable power level among three directions is identified at the north-east of the Site, with maximum SWL of ~75 dB(A) at day & evening time and ~65 dB(A) at night. To minimise the fixed noise impact on the surrounding residential buildings, planned fixed noisy plants and exhausts should be designed to avoid direct line-of-sight to the nearest residential buildings (60A Pak Wai) at north-east side.

4.5.8 With allowable sound power level implemented properly, the criteria of the planned fixed noisy plant as shown in **Table 4-1** should be complied thus no adverse noise impact arising from the fixed noise sources is anticipated. The planned fixed plant at the Proposed Development should be designed and reviewed during detailed design stage with reference to the standard stipulated in the HKPSG to ensure compliance.

#### **4.6 Traffic Noise Impact Identification & Evaluation**

##### Assessment Methodology

4.6.1 An in-house noise model (MARC) was used to predict the traffic noise levels arising from the road network. It adopts the methodology provided in the UK Department of Transport's Calculation of Road Traffic Noise (CRTN) 1988, which is stipulated in Chapter 9, Section 4.2.7 of the HKPSG for assessing road traffic noise impact. Road traffic noise levels are presented in terms of noise levels exceeded for 10% of the one-hour period for the hour having the peak traffic flow [ $L_{10(1\text{-hour})}$  dB(A)].

4.6.2 The assessment was based on the projected peak hour flows for the worst year within 15 years after completion of the Project in Year 2031. Based on the traffic forecast provided by the traffic consultant, the maximum traffic projections within 15 years upon occupation of the proposed development, that is between Year 2031 (year of population intake) and Year 2046 would occur in AM peak of Year 2046, were adopted for road traffic model. The major roads within 300m from the Site boundary have been included in the assessment. The adopted traffic forecast and corresponding road index map are shown in **Appendix 4-2**.

4.6.3 Base Scenario without mitigation measure, other than the architectural designs incorporated into the building design including buildings orientation, setback, fence wall, had been considered in the Traffic Noise Impact Assessment.

##### Architectural Design in Base Scenario

4.6.4 In the Base scenario, the architectural design has been optimised to reduce the potential traffic noise impact from the surrounding roads. Building setback, orientation of the building has been designed in a way such that most of the NSRs will not be severely affected by the major

traffic noise sources. Since some location of south-east facade of Block 4 may experience adverse traffic noise impact due to wide view-angle, fence wall with 8.5mAG above the ground level (14mPD), as shown in **Figure 4-2a**, has been incorporated in the design in early stage and thus adopted in Base Scenario.

Predicted Traffic Noise Level in Base Scenario

4.6.5 The summaries of the predicted traffic noise level are listed in **Table 4-6**. The detailed results of the Base Scenario are presented in **Appendix 4-3**.

**Table 4-6 Summary of Traffic Noise Level (Base Scenario)**

Floor	Range of Predicted Traffic Noise Level, dB(A)				Compliance Rate
	Block 1	Block 2	Block 3	Block 4	
4/F	53 - 61	55 - 68	56 - 68	--	100%
3/F	53 - 60	54 - 67	54 - 67	<40 – 69	100%
2/F	52 - 60	52 - 65	52 - 66	<40 – 67	100%
1/F	51 - 60	50 - 63	50 - 64	<40 – 67	100%

4.6.6 In general, the predicted traffic noise level is increasing with elevation. The highest traffic noise level is 69 dB(A) found at 4/F of Block 4 (B4-E) facing Hiram’s Highway. The predicted traffic noise levels show that all NSRs for the residential flats of the proposed redevelopment comply with the criteria of 70 dB(A). As the compliance rate is 100%, no adverse traffic noise impact is anticipated and no further mitigation measures are required.

**4.7 Conclusion**

4.7.1 Considering the scale of the Proposed Development is small, no significant construction impact is anticipated with proper implementation of the mitigation measures. External noisy fixed plants within 300m from project boundary have been reviewed. No adverse fixed noise impact on the Proposed Development is anticipated.

4.7.2 Limitation of Sound Power Level for building service equipment will be incorporated into the tender document to ensure the fixed noise sources at the Proposed Development will be designed with appropriate mitigation for complying with the relevant criterion. The planned fixed plants should be reviewed during the detailed design stage to ensure compliance with the standard stipulated in the HKPSG.

4.7.3 Traffic noise impact assessment has been conducted based on predicted peak traffic flow (15 years upon the commencement of Project, Year 2046). Under the Base Scenario without mitigation measure, the predicted traffic noise levels for the residential flats of the proposed redevelopment fully comply with the HKPSG traffic noise criteria. As the compliance rate is 100%, no adverse traffic noise impact is anticipated and no further mitigation measures are required.

## 5. WATER QUALITY IMPACT

### 5.1 Legislations, Guidelines and Requirements

5.1.1 The Water Pollution Control Ordinance (Cap. 358) (WPCO), in existence since 1980, is the major legislation relating to the protection and control of water quality in Hong Kong. According to the WPCO and its subsidiary legislation, Hong Kong waters are divided into ten Water Control Zones (WCZs). Water Quality Objectives (WQOs) provide the limits for different parameter for each WCZ to minimize the impact on water quality. With reference to the WCZs map, the study area, i.e. the area within 500m from the Site boundary, is located within the Port Shelter WCZ. **Table 5-1** has summarized the WQO for Port Shelter WCZ.

**Table 5-1 Water Quality Objectives**

WQO	Port Shelter WCZ
<b>AESTHETIC APPEARANCE</b>	
Waste discharges shall cause no objectionable odours or discolouration of the water.	Whole Zone
Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substance should be absent.	Whole Zone
Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole Zone
There should be no recognisable sewage-derived debris.	Whole Zone
Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent.	Whole Zone
Waste discharges shall not cause the water to contain substances which settle to form objectionable deposits.	Whole Zone
<b>BACTERIA</b>	
The level of Escherichia coli should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzones and Fish Culture Subzones
The level of Escherichia coli should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in one calendar year. Samples should be taken at least 3 times in a calendar month at intervals of between 3 and 14 days.	Bathing Beach Subzones
<b>COLOUR</b>	
Waste discharges shall not cause the colour of water to exceed 50 Hazen units.	Inland Waters
<b>DISSOLVED OXYGEN</b>	
Waste discharges shall not cause the level of dissolved oxygen to fall below 4 mg per litre for 90% of the sampling occasions during the year; values should be calculated as the water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of	Marine waters excepting Fish Culture Subzones

dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the year.	
The dissolved oxygen level should not be less than 5 mg per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the year.	Fish Culture Subzones
Waste discharges shall not cause the level of dissolved oxygen to be less than 4 mg per litre.	Inland waters
<b>pH</b>	
The pH of the water should be within the range of 6.5–8.5 units. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.2 units.	Marine waters excepting Bathing Beach Subzones
The pH of the water should be within the range of 6.0–9.0 units for 95% of samples. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.5 units.	Bathing Beach Subzones
Waste discharges shall not cause the pH of the water to exceed the range of 6.5–8.5 units.	Ho Chung (A) Subzone
The pH of the water should be within the range of 6.0–9.0 units.	Other inland waters
<b>TEMPERATURE</b>	
Waste discharges shall not cause the natural daily temperature range to change by more than 2.0°C.	Whole Zone
<b>SALINITY</b>	
Waste discharges shall not cause the natural ambient salinity level to change by more than 10%.	Whole Zone
<b>SUSPENDED SOLIDS</b>	
Waste discharges shall neither cause the natural ambient level to be raised by 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
Waste discharges shall not cause the annual median of suspended solids to exceed 25 mg per litre.	Inland waters
<b>AMMONIA</b>	
The ammonia nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean), as unionised form.	Whole Zone
<b>NUTRIENTS</b>	
Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.1 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	Marine waters

5-DAY BIOCHEMICAL OXYGEN DEMAND	
Waste discharges shall not cause the 5-day biochemical oxygen demand to exceed 5 mg per litre.	Inland waters
CHEMICAL OXYGEN DEMAND	
Waste discharges shall not cause the chemical oxygen demand to exceed 30 mg per litre.	Inland waters
DANGEROUS SUBSTANCES	
Waste discharges shall not cause the concentration of dangerous substances in the water to attain such levels as to produce significant toxic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to toxicant interactions with each other.	Whole Zone
Waste discharges of dangerous substances shall not put a risk to any designated beneficial uses of the aquatic environment.	Whole Zone
PHENOL	
Phenols shall not be present in such quantities as to produce a specific odour, or in concentrations greater than 0.05 mg per litre as C <sub>6</sub> H <sub>5</sub> OH.	Bathing Beach Subzones
TURBIDITY	
No changes in turbidity or other factors arising from waste discharges shall reduce light transmission substantially from the normal level.	Bathing Beach Subzones

5.1.2 A Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) was issued under the WPCO which gives guidance on the permissible effluent discharges based on the type of receiving waters (foul sewers, inland waters, marine waters, inshore waters and coastal waters) and the flow rate. TM-DSS set limits to control the physical, chemical and microbial quality of effluents. The effluents generated from the Proposed Development will be treated properly by the on-site sewage treatment plant (STP) and discharged to the inland water (Group D), which classified as “general amenity and secondary contact recreation”. The standard for effluent discharged into the inland water (Group D) has been presented in **Table 5-2**.

**Table 5-2 Standard for effluent discharged into the inland water (Group D)**

Flow rate (m <sup>3</sup> /day) Determinand	≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000
	<b>pH (pH units)</b>	6-10	6-10	6-10	6-10	6-10	6-10	6-10
<b>Temperature (°C)</b>	30	30	30	30	30	30	30	30
<b>Colour (lovibond units)</b>	1	1	1	1	1	1	1	1
<b>Suspended solids</b>	30	30	30	30	30	30	30	30
<b>BOD</b>	20	20	20	20	20	20	20	20
<b>COD</b>	80	80	80	80	80	80	80	80
<b>Oil &amp; Grease</b>	10	10	10	10	10	10	10	10
<b>Iron</b>	10	8	7	5	4	2.7	2	1.3
<b>Boron</b>	5	4	3.5	2.5	2	1.5	1	0.7
<b>Barium</b>	5	4	3.5	2.5	2	1.5	1	0.7
<b>Mercury</b>	0.1	0.05	0.001	0.001	0.001	0.001	0.001	0.001
<b>Cadmium</b>	0.1	0.05	0.001	0.001	0.001	0.001	0.001	0.001

Flow rate (m3/day) Determinand	≤200	>200 and ≤400	>400 and ≤600	>600 and ≤800	>800 and ≤1000	>1000 and ≤1500	>1500 and ≤2000	>2000 and ≤3000
<b>Other toxic metals individually</b>	1	1	0.8	0.8	0.5	0.5	0.2	0.2
<b>Total Toxic metals</b>	2	2	1.6	1.6	1	1	0.5	0.4
<b>Cyanide</b>	0.4	0.4	0.3	0.3	0.2	0.1	0.1	0.05
<b>Phenols</b>	0.4	0.3	0.2	0.1	0.1	0.1	0.1	0.1
<b>Sulphide</b>	1	1	1	1	1	1	1	1
<b>Sulphate</b>	800	600	600	600	600	400	400	400
<b>Chloride</b>	1000	800	800	800	600	600	400	400
<b>Fluoride</b>	10	8	8	8	5	5	3	3
<b>Total phosphorus</b>	10	10	10	8	8	8	5	5
<b>Ammonia nitrogen</b>	20	20	20	20	20	20	20	10
<b>Nitrate + nitrite nitrogen</b>	50	50	50	30	30	30	30	20
<b>Surfactants (total)</b>	15	15	15	15	15	15	15	15
<b>E. coli</b>	1000	1000	1000	1000	1000	1000	1000	1000

Note:

[1] All units are in mg/L unless otherwise stated.

- 5.1.3 A practice note (PN) for professional persons was issued by the Environmental Protection Department (EPD) to provide environmental guidelines for handling and disposal of construction site discharges. The (ProPECC) "Construction Site Drainage" PN (2/24) provides good practice guidelines for dealing with various types of discharge from a construction site. Practices outlined in the PN should be followed as far as possible during construction to minimize the water quality impact due to construction site drainage.
- 5.1.4 The ProPECC PN 1/23 on Drainage Plans Subject to Comment by the EPD provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers. The design of site drainage and disposal of various site effluents generated within the new development area should follow the relevant guidelines and practices as given in the ProPECC PN 1/23. As there is a carpark in the proposed development, the relevant practice and mitigation measures during operational phase are recommended with reference to Section 5 of ProPECC PN 1/23.

## 5.2 Water Quality Sensitive Receivers

- 5.2.1 Water Quality sensitive receivers (WSRs) within 500m from project boundary has been identified and the representative water quality sensitive receivers are illustrated in **Figure 5-1**. The representative water sensitive receivers are summarized in **Table 5-3**. Modification or removal works on any watercourse and WSR is not anticipated.

**Table 5-3 List of Representative Water Quality Sensitive Receivers**

WSR ID	Status	Distance to Project Boundary (m)
Natural Watercourse		
WSR01a	Active	290
WSR01c	Active	130
WSR02a	Active	420
Modified Watercourse		
WSR01b	Active	0
WSR02b	Active	390
WSR03a	Active	480
Channelized Watercourse		
WSR01d	Active	0
Conservation Zone		
CZ01	Active	20
Secondary Contact Recreation Subzone		
SC01	Active	110

5.2.2 All identified natural watercourses and conservation zones are located on the hill at a higher elevation compared to the Proposed Development. Considering the topographic location of the Proposed Development, water generated from the site cannot reach the natural watercourses and conservation zones during both construction and operation phases. Additional attention should be paid for the modified channel that is identified at close proximity to the Site. On the other hand, Secondary Contact Recreation Subzone is located approximately 100 meters from the site with Hiram's Highway and residential houses in between. Since the Proposed Development does not involve any modification or removal works on the watercourse and WSR, with proper implementation of the mitigation measures as stated in **Section 5.4**, no adverse water quality impact on the nearby WSR is anticipated during construction and operation phases.

### 5.3 Impact Identification & Evaluation

#### Construction Phase

- 5.3.1 Potential sources of water quality impact associated with the Proposed Development have been identified. They are construction site runoff, sewage generated from construction workforce and accidental spillage of chemicals.
- 5.3.2 Construction site surface runoff may carry pollutants into nearby water drainage system, which may lead to increased suspended solids and other pollutants' (e.g. metals and organics) concentrations in receiving waters, and may cause blockage of storm water drains. Nevertheless, the impact is anticipated to be insignificant if mitigations proposed in **Section 5.4** are implemented properly.
- 5.3.3 Sewage will be generated by the sanitary facilities that serving the on-site construction workforce. Considering the scale of the construction site, the number of on-site construction workforce is limited. With the mitigation measures as described in **Section 5.4**, like provision of adequate chemical toilets, no adverse water quality impact is anticipated.

5.3.4 Chemicals, such as fuel and lubricating oil for powered mechanical equipment (PME), may be stored and used onsite for the construction work. Accidental spillage of these chemicals may be carried down by construction site runoff and deteriorate water quality in receiving waters. Nevertheless, since there should be no immerse need for chemical or oil in this proposed development, the quantity stored or used onsite should be limited. With proper implementation of mitigations proposed in **Section 5.4**, the impact is anticipated to be insignificant.

#### Operation Phase

5.3.5 The Proposed Development is used mainly for residential purpose. Sewage generated from the Proposed Development will be discharged to the existing watercourse after treated by the on-site sewage treatment plant, that will be addressed in separated reports (Sewerage Impact Assessment). Stormwater generated from the Proposed Development will be discharged to the existing watercourse and addressed in separated report (Drainage Impact Assessment).

5.3.6 Pollutants such as vehicle dust, debris and grease within the Proposed Development will accumulate on the surface of the paved area of the Proposed Development. The surface runoff may carry the pollutants to the nearby drainage system during rainfall event. However, with provision of appropriate mitigation measures, such as adequate silt traps and oil interceptors, no water quality impact is anticipated during operation phase.

### **5.4 Mitigation Measures**

#### Construction Phase

5.4.1 Construction surface runoff should be prevented or minimized in accordance with the guidelines stipulated in the ProPECC PN 2/24, which includes but not limited to the followings:

- Provide sufficient chemical toilets with regular maintenance by licensed chemical waste collector where necessary.
- Channels, earth bunds or sand bag barriers should be provided on site to direct storm-water to sand/silt removal facilities. Where necessary, perimeter channels should be provided at the project boundary to intercept storm-runoff from outside the site. These shall be implemented in advance of construction work.
- Sand/silt removal facilities such as sand traps, silt traps and sediment basins shall be provided to remove sand/silt particles from runoff to meet the requirements of the Technical Memorandum standard under the WPCO. These facilities shall be properly and regularly maintained.
- Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil could not be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporarily exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces
- Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed

to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.

- The Contractor should implement the Precautions/Actions relating to rainstorms as summarized in Appendix A2 of ProPECC PN 2/24.
- If there is excess effluent, it shall be treated by sedimentation up to the standard stipulated in the water discharge licence issued by EPD. Only that effluent can be discharged into the designated discharge point to safeguard the water quality in the receiving water. If discharge to stormwater system is not permitted under the WPCO, the treated water is proposed to be removed from the Site by tankers. The effluent will then be delivered to public sewage treatment plant.
- Open stockpiles of materials on site shall be covered with tarpaulin or similar fabric during rainstorms.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers.
- Final surfaces of earthworks shall be well compacted and sequential work shall be executed after the final surfaces are completed to minimize erosion arose from rainstorm.
- Wheel washing facilities shall be provided in the construction site and all vehicles and plant shall be cleaned before they leave the site. The wastewater shall be treated by silt removal facilities and sedimentation before discharging into storm drains. The section between the wheel washing facilities and public road shall be paved to avoid site run-off from intruding public drainage system.
- Wastewater from building construction works like cleaning of works, concreting and similar activities shall not be discharged into the storm drains. The wastewater shall be treated by the silt removal facilities to remove settleable solids and pH adjustment before discharging into foul sewers.

5.4.2 Since a modified watercourse is identified in close proximity of the Proposed Development, the following measures should also be taken:

- The use of less or smaller construction plant may be specified to reduce disturbance to the riverbed where aquatic inhabitants are located.
- Proper locations well away from rivers/streams for temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction debris and spoil should be identified before commencement of the works.
- Stockpiling of construction materials, if necessary, should be properly covered and located away from any stream/river.
- Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby rivers/streams by rain.
- Adequate lateral support may need to be erected in order to prevent soil/mud from slipping into the stream/river, but without unduly impeding the flow during heavy rain.

5.4.3 Adequate portable chemical toilets will be provided to cater for the sewage generated from the construction workforce. Any effluent discharge from the construction site should comply with the standards stipulated in the TM-DSS under WPCO. Discharge license under WPCO

should be obtained.

5.4.4 It is recommended that the contractor should prepare an emergency plan associated with the accidental spillage of chemical. Any chemical spillage should be immediately contained and cleaned up. Disposal of chemical waste should be complied with the Waste Disposal Ordinance (Cap. 354). Mitigation measures as per the Code of Practice of the Packaging, Labelling and Storage of Chemical Wastes under Waste Disposal Ordinance is suggested as follows:

- All chemicals shall be stored in suitable containers which are sealable, robust and in good condition.
- Chemical storage areas shall have impermeable floor and bund-wall. The bund shall at least have a capacity of 110% of the volume of the largest container or 20% by volume of the chemical stored in the area, whichever is largest. All liquid collected within the bund shall be treated as chemical waste. Where possible, storage areas should be sheltered to prevent rainfall entering.
- All chemical should be labelled accurately to enable proper use, handling and storage by the construction workforce.

5.4.5 Above mitigation will be incorporated into the tender of the Proposed Development. With the proper implementation of the above mitigation, water quality impact from different sources during construction stage is not anticipated.

#### Operation Phase

5.4.6 During operation phase, recommendations from ProPECC PN 1/23 should be followed as far as possible to minimise the potential water quality impacts.

5.4.7 Surface runoff in the open areas Proposed Development should be collected by the drainage system with adequate silt traps and oil interceptors. For the basement carpark that may generate wastewater, drainage in basement carpark should be connected to foul sewer via petrol interceptors as per the recommendation from ProPECC PN 1/23. The typical design of the petrol interceptor can refer to Appendix A of the ProPECC PN 1/23.

5.4.8 All sewage or waste water generated from the Proposed Development will be treated properly, in accordance with the standard stipulated in TM-DSS, by the on-site treatment plant prior to the discharge to the existing watercourse. To facilitate proper flow during emergency conditions, mitigation measures such as standby power supply, standby pump and twin mains shall be incorporated into the design of the STP.

5.4.9 Given that the provision of swimming pool in the Proposed Development, recommendations from ProPECC PN 1/23 regarding the discharge of swimming pool shall be followed. Backwash water from the swimming pool will be connected to the sewage treatment plant and discharge to the existing watercourse via the sewers within the Proposed Development.

5.4.10 With proper implementation of the mitigation measures during operation phase, no adverse water quality impact is anticipated.

## **5.5 Conclusion**

5.5.1 Potential water quality impact associated with the Proposed Development during construction phase would be construction site runoff, sewage generated from construction workforce and

accidental spillage of chemicals. However, with proper implementation of mitigation measures, no adverse water quality impact is anticipated.

- 5.5.2 For operation phase, all sewage and wastewater generated from the Proposed Development will be properly treated by the on-site treatment plant prior to the discharge to the existing watercourse. All water should be discharged through the public drainage and sewerage system that will be addressed in separated reports (Drainage Impact Assessment and Sewerage Impact Assessment).

## **6. WASTE MANAGEMENT CONSIDERATION**

### **6.1 Legislations and Requirements**

- 6.1.1 In general, sustainable approaches to waste management should be adopted to produce less waste and reuse or recover value from waste. The consideration on waste management for the Project will take into account of the below Ordinances/Guidelines/Practice Notes adopted in Hong Kong.
- 6.1.2 The following legislations/guidelines related to the handling, treatment and disposal of waste in Hong Kong are listed:
- Waste Disposal Ordinance (Cap. 354) (WDO)
  - Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C)
  - Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)
  - Land (Miscellaneous Provisions) Ordinance (Cap. 28)
  - Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
  - Air Pollution Control Ordinance (Control of Asbestos (sections 51 to 84))
  - ProPECC PN2/97 Handling of Asbestos Containing Materials in Buildings
  - ADV-19 – Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers – Construction and Demolition Waste
  - Code of Practice on the Handling, Transportation and Disposal of Asbestos Wastes
- 6.1.3 Waste collection and disposal is covered by the Waste Disposal Ordinance (Cap. 354) (WDO). This provides a licensing system for the disposal of certain wastes and for the control of certain wastes by regulation. All wastes should be properly stored and disposed in accordance with relevant waste management regulations and guidelines.
- 6.1.4 Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) outlines the requirement for chemical waste handling and disposal.
- 6.1.5 Under the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N), construction waste delivered to a landfill for disposal must not contain more than 50% by weight of inert materials. Construction waste delivered to a sorting facility for disposal must contain more than 50% by weight of inert materials, and construction waste delivered to a public fill reception facility for disposal must consist entirely of inert materials.
- 6.1.6 Land (Miscellaneous Provisions) Ordinance (Cap. 28) provides control over placing and maintaining of C&D materials on unleased land. If the occupier does not hold the relevant license, the Department of Lands will take action accordingly.
- 6.1.7 Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (ADV-19) provides mitigation measures on waste generation and management during the planning stage of a building development to minimise waste disposals at landfills.

## **6.2 Waste Management for Construction Phase**

### Waste Types

6.2.1 The site clearance, demolition of existing structure, excavation, and superstructure construction activities to be carried out for the proposed development would generate a variety of waste that can be divided into distinct categories based on their composition and ultimate method of disposal. The identified waste types include:

- Construction and demolition (C&D) materials, comprising inert and non-inert materials, from the demolition and construction works;
- Potential asbestos containing materials;
- Chemical waste from any maintenance of construction plant and equipment; and
- General refuse from the workforce

### *Inert and non-inert C&D Materials*

6.2.2 Inert C&D Material (or public fills) includes construction debris, soil, rock and concrete, should be re-used on-site as filling materials or off-site as public fill at public fills reception facilities. Non-inert C&D Material (or C&D waste) includes metal from the existing structures, wood from formwork, equipment parts, and materials and equipment wrappings, etc. should be re-used or recycled as far as possible.

6.2.3 As the Proposed Development involves demolition of existing structure and construction of 1 floor of basement, it is estimated that about 28,455 m<sup>3</sup> excavated materials would be generated and about 4,100 m<sup>3</sup> would be suitable for backfilling during site formation stage. It is also estimated that about 50 m<sup>3</sup> C&D materials will be generated during the demolition work.

6.2.4 In order to account for the quantity of C&D materials to be generated from construction of the new building, C&D materials generation rate of 0.1 m<sup>3</sup> per m<sup>2</sup> of GFA constructed is adopted in accordance with the "Reduction of Construction Waste Final Report, Hong Kong Polytechnic University (March 1993)". The total GFA of the proposed development from the Proposed Development will be around 10,000m<sup>2</sup>. The C&D materials generated from superstructure construction is approximately 1,000m<sup>3</sup>. Hence, the total amount of inert C&D materials generated by the Project is projected at 29,400 m<sup>3</sup>.

6.2.5 The volume of non-inert C&D material, such as building materials, maintenance and packaging waste; generated during site clearance, demolition of existing buildings, and construction of superstructure works is projected at 105 m<sup>3</sup>, which will be subject to specific construction procedures and site practices. The estimated amount of non-inert C&D material generated would be minimal with careful design, planning, good site management and control of ordering procedures etc.

6.2.6 The estimated quantities of inert and non-inert C&D material generated from the construction of the Proposed Development are presented in **Table 6-1**.

**Table 6-1 Estimated Quantities of C&D materials to be Generated, Reused and Disposed of**

Construction Activities	Sum (m <sup>3</sup> )	Wastes to be Reused/Recycled/disposed of (m <sup>3</sup> )					
		Inert C&D material			Non-inert C&D material		
		Reused/Recycled On-Site	Reused/Recycled Off-Site(a)	Disposed Off-Site	Reused/Recycled On-Site	Reused/Recycled Off-Site(a)	Disposed Off-Site
Excavation	28,455	4,100	0	24,355	0	0	0
Demolition of Existing Buildings	50	0	0	45	0	0	5
Superstructure Construction	1,000	0	0	900	0	10	90
All	29,505	4,100	0	25,300	0	10	95
		29,400			105		

Note

[1] The inert C&D materials not reused on-site shall be disposed off-site and delivered to the Tseung Kwan O Area 137 Fill Bank.

[2] Non-inert C&D materials should be reused or recycled as much as possible before disposed off-site, estimated to be 10% of the total generated.

6.2.7 It is estimated that about 14% of inert C&D material to be reused on-site. It is proposed to deliver the rest of inert C&D materials to the Tseung Kwan O Area 137 Fill Bank. The remaining non-recyclable C&D materials are not suitable for public fill reception facilities and requires disposal to licensed landfill facilities (the closest landfill is the South East New Territories (SENT) Landfill).

#### *Chemical Waste*

6.2.8 Chemical waste, such as cleaning fluids, solvents, spent lubricants and fuel for equipment or waste battery, may be generated. As far as the scale of the works is small, the quantity of chemical waste generated would be minimal. It is expected that the approximate quantity of the lubrication oil is about 100L/month and hence approximately 3.6 m<sup>3</sup> of chemical waste will be generated during construction period of 36 months. The chemicals should be collected and handled by a licensed collector and further dispose of at a licensed chemical treatment and disposal facility (Chemical Waste Treatment Centre - CWTC). Furthermore, the chemical waste should be handled in accordance with the Waste Disposal (Chemical Waste)(General) Regulation. The Works Contractor should register as a Chemical Waste Producer under the WDO.

6.2.9 In addition, other chemical waste, if any, to be generated during the demolition works will be handled and disposed of in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). For asbestos wastes, if any, will be handled and disposed of in accordance with the Code of Practice on the Handling, Transportation and Disposal of Asbestos Wastes.

6.2.10 With the implementation of proper chemical waste management measures listed in **Section 6.2.22**, the impact is anticipated to be insignificant.

6.2.11 No hazardous materials or hazardous wastes are expected to be generated during the construction of the Site.

### *General Refuse*

- 6.2.12 General refuse such as food scraps, waste paper, empty containers, etc., would be generated from construction workforce during construction phase.
- 6.2.13 The maximum number of construction workers to be employed will be approximately 15 workers per day. The daily arising of general refuse from the construction workforce can be estimated based on a generation rate of 0.65 kg per worker per day, the estimated quantity of the general refuse is 9.75 kg/day (= 15 workers x 0.65 kg/worker/day). Considering the construction period is around 2 years, the total quantity of general refuse is ~7118 kg (9.75 kg/day x 2 years)
- 6.2.14 Such refuse should be properly managed so intentional or accidental release to the surrounding environment does not occur. If the general refuse is recyclable, such as paper, plastics and aluminium materials, the reuse and recycling of such waste is encouraged. Effective collection of site wastes such as providing enclosed bins or compaction units would be required to prevent waste materials being blown around by wind, flushed or leached into nearby waters, or creating an odour nuisance or pest and vermin problem. Waste storage areas should be well maintained and cleaned regularly. General refuse will be collected daily and disposed of at SENT landfill.
- 6.2.15 With the implementation of good waste management practices as suggested in **Section 6.2.21** at the site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of general refuse generated by construction workers.

### *Mitigation Measures*

- 6.2.16 Prior to the commencement of the construction works, the contractor will identify the types and amount of waste generated, and handle, store, collect and dispose waste in accordance with Waste Disposal Ordinance (Cap. 354). The associated mitigation measures and good site practice should be implemented as follows:

#### *C&D Materials*

- 6.2.17 In general, minimization/reuse/recycling of C&D materials (i.e. both inert and non-inert C&D materials) should be considered prior to disposal. Waste minimization measures should be adopted during construction phase, measures may include:
- On-site sorting of C&D materials;
  - Recycling of construction materials for on-site use;
  - Avoidance and minimization to reduce the potential quantity of C&D materials generated;
  - Reuse of materials as practical as possible;
  - Recovery and Recycling as practical as possible;
  - Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.
- 6.2.18 The Contractor should submit a waste management Plan (the Plan) to the project proponent for agreement, covering the types of waste and their estimated quantities, timing of waste arising; measures for reducing waste generation etc. as recommended in Section 3 of ADV-19. If the project will produce more than 300,000 m<sup>3</sup> of construction and demolition material,

advice from the Director of Environmental Protection should be sought prior to the acceptance of the Plan.

- 6.2.19 The Contractor should adopt good housekeeping practices such as waste segregation prior to disposal. Stockpiling and segregating areas should be provided at site. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into nearby waters, or creating an odour nuisance or pest and vermin problems. Waste storage areas should be well maintained and cleaned regularly.
- 6.2.20 During inclement weather (e.g. heavy rainstorm), the stockpile should be covered by tarpaulin or other water-resistant fabric. This can prevent dust and waste from being blown away by wind or washed into watercourses/drainage system.

#### *General Refuse*

- 6.2.21 General refuse should be stored in enclosed bins or compaction units separate from C&D materials. 3-color recycle bins for the collection of recyclable municipal waste should also be provided. A reputable waste collector should be employed by the Contractor to remove or recycle general refuse from the Site, separately from C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of "wind-blown" light materials.

#### *Chemical Waste*

- 6.2.22 If chemical waste is produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C). Chemical waste should be stored in appropriate containers and collected by a licensed chemical waste collector. The chemical waste management measures should include, but not limited to the following:
- Minimize the production of Chemical Waste
  - Registration of Chemical Waste Producers with EPD should be carried out for any person who produces chemical waste
  - Give notification of certain Chemical Waste for Disposal to EPD as required in Section 4 of the Regulation & Section 17 of the Ordinance
  - Carry out Packaging, Labelling and Storage of Chemical Wastes as per Sections 9 to 19 of the Regulation
  - Collection of Chemical Waste and the "Trip Ticket" System as per Sections 20 to 29 of the Regulation
  - Precautions Against Dangers from Spillages, Leakages or Accidents involving Chemical Waste as per Sections 30 to 32 of the Regulation
- 6.2.23 Provided that good site practices are strictly followed, there would be no adverse impacts related to waste management during construction phase.

### **6.3 Waste Management for Operation Phase**

- 6.3.1 Domestic wastes will be expected as the major type of waste from the redevelopment, including food residues, plastic, metal products, paper, etc.. No chemical or hazardous waste

is anticipated, including waste generated during the operation and maintenance of the equipment and facilities. Wastes generated will be collected and disposed of on a regular basis. Building management will be arranged by the future owners to manage the development including waste disposal.

- 6.3.2 The domestic waste will be collected (at the refuse collection point) and disposed of daily at SENT landfill or regularly collected by recyclers, waste recycling would be carried out during operation phase. To minimize waste generation and promote recycling, it is recommended to implement source separation of domestic waste in the proposed development.
- 6.3.3 Based on the anticipated population intake for the Proposed Development, which is projected to be about 360 and will be further refined during the detailed design stage, it is estimated that approximately 335 kg per day (= 360 persons x 0.93kg/person/day) of general refuse will be generated during the operation phase. With the proper implementation of the control measures, adverse impacts due to waste management will not be anticipated.

## **6.4 Conclusion**

- 6.4.1 A variety of wastes including inert C&D material, C&D waste, chemical waste and general refuse would be generated during the construction phase and domestic waste would be generated during operation phase. Provided that the wastes generated would be managed with appropriate measures, no adverse environmental impacts arising from the handling, storage, transportation or disposal of the wastes generated during the construction and operation stage of the Proposed Development would be envisaged.

## **7. LAND CONTAMINATION ASSESSMENT**

7.1.1 According to the desktop study and planning statement for the Application, the Site is currently occupied by a commercial horticulture workshop and temporary structures with some vehicle repair activities. According to **Table 2.3** of "Practice Guide for Investigation and Remediation of Contaminated Land (EPD, revised in April 2023)" (PG), a commercial horticulture workshop and temporary structures do not belong to any potential contaminated land use types, while a vehicle repair workshop is classified as a potentially land use type. As the Project is still at a planning stage and the operations at the Site are ongoing, a preliminary site appraisal for the Application shall be conducted accordingly. This appraisal shall include a review of historical land uses, an inquiry into land contamination-related records and a site visit for the site appraisal in relation to the land contamination assessment.

### **7.2 Review of Historical Land Uses**

7.2.1 A review of aerial photographs was undertaken to evaluate the likelihood of potential contamination associated with past land uses within the Site from 1990 – 2023. The reviewed aerial photos for the Site are attached in **Appendix 7-1**. Findings indicate that the site was primarily covered in flora before 2011, with horticultural activities first recorded in 2011 near the site and later within the site from 2015 onward. Suspected vehicle parking or maintenance activities in the centre area of the Site have been noted since 2017, concentrated in two areas as illustrated in **Appendix 7-1**.

### **7.3 Site Visit**

7.3.1 A site visit was carried out on 19<sup>th</sup> December 2024 to verify the information obtained from the desktop study and to evaluate potential land contamination issues. The photo record from the site visit is presented in **Appendix 7-2**. The Site was operating as commercial horticulture workshop where the ground mostly paved. Although a vehicle repair workshop was noted in the desktop study, only vehicle parking on the Site was found in well-maintained paved area. According to the site representative, vehicles were primarily parked or abandoned, with only minor maintenance activities, such as car detailing, being performed occasionally. Temporary storage areas for the horticultural workshop and construction materials were also found within the Site. Additionally, no observable cracks/fissures or signs of oil stain were observed. Hence, the potential for the land contamination at the Site is not anticipated. The need for further studies shall be determined at a later stage.

### **7.4 Conclusion**

7.4.1 Based on the findings of this preliminary site appraisal, the Site had primarily been used for commercial horticulture workshops. Although minor vehicle maintenance activities were noted in the desktop study, only vehicle parking was found on the Site during the visit, and it was located in a well-maintained paved area. Therefore, the potential for land contamination at the site is not anticipated. The need for further studies will be determined at a later stage.

## **8. CONCLUSION**

- 8.1.1 The Project Proponent has proposed to develop a residential development with clubhouse (Proposed Development) at various Lots in D.D. 210 Pak Wai, Sai Kung.
- 8.1.2 This EA is prepared to assess the potential environmental impact associated with the implementation of the Project in support of the submission of the Application. The assessment has been undertaken with reference to the guidance for environmental considerations provided in Chapter 9 "Environment" of the Hong Kong Planning Standards and Guidelines.
- 8.1.3 The key environmental issues with potential environmental impacts arising from the Project are identified, based on the environment of the Project, as air quality, noise, water, waste management and land contamination. The Sewerage Impact Assessment and Drainage Impact Assessment are provided in separated reports under this Application.

### Air

- 8.1.4 During construction phase, major dust emitting construction activities will be the demolition of existing structures, excavation works, foundation works and construction works of the superstructures. With the implementation of dust suppression measures stipulated under the Air Pollution Control (Construction Dust) Regulation and the adoption of good site practice, adverse air quality impact associated with the construction works is not anticipated.
- 8.1.5 During operation phase, the Proposed Development itself is considered as ASRs. The minimum buffer distance requirement recommended in Chapter 9 of HKPSG has been fulfilled. Taken into consideration of the large margin in the PATH background, no adverse air quality impact to the Proposed Development during operation phase is anticipated.
- 8.1.6 The proposed sewage treatment plant of the Proposed Development is considered an air pollution source. However, with proper implementation of the mitigation measures, no adverse odour impact to the surroundings is anticipated.
- 8.1.7 The exhaust air from the proposed indoor car park in the Project is considered as a potential source of impact. The proposed car park should be located and built-in accordance to the requirements stipulated in ProPECC PN2/96 for the design, maintenance and operation of the ventilation systems to ensure the compliance of the air quality inside car parks with the concentration limits. The exhaust air should be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to occupants in the building or of neighbouring buildings, or to the public. Hence, no insurmountable impact on the nearby sensitive receivers is expected.

### Noise

- 8.1.8 Considering the scale of the Proposed Development is small, no significant construction impact is anticipated with proper implementation of the mitigation measures. External noisy fixed plants within 300m from project boundary have been reviewed. No adverse fixed noise impact on the Proposed Development is anticipated.
- 8.1.9 Limitation of Sound Power Level for building service equipment will be incorporated into the tender document to ensure the fixed noise sources at the Proposed Development will be designed with appropriate mitigation for complying with the relevant criterion. The planned fixed plants should be reviewed during the detailed design stage to ensure compliance with the standard stipulated in the HKPSG.

8.1.10 Traffic noise impact assessment has been conducted based on predicted peak traffic flow (15 years upon the commencement of Project, Year 2046). Under the Base Scenario without mitigation measure, the predicted traffic noise levels for the residential flats of the proposed redevelopment fully comply with the HKPSG traffic noise criteria. As the compliance rate is 100%, no adverse traffic noise impact is anticipated and no further mitigation measures are required.

Water

8.1.11 Potential water quality impact associated with the Proposed Development would be construction site runoff, sewage generated from construction workforce and accidental spillage of chemicals. However, with proper implementation of mitigation measures, the impact on water quality is anticipated to be insignificant.

8.1.12 For operation phase, all sewage and wastewater generated from the Proposed Development will be properly treated by the on-site treatment plant prior to the discharge to the existing stream. All water should be discharged through the public drainage and sewerage system that will be addressed in separated reports (Drainage Impact Assessment and Sewerage Impact Assessment).

Waste Management

8.1.13 A variety of wastes including inert C&D material, C&D waste, chemical waste and general refuse would be generated during the construction phase and domestic & commercial waste would be generated during operation phase. Provided that the wastes generated would be managed with appropriate measures, no adverse environmental impacts arising from the handling, storage, transportation or disposal of the wastes generated during the construction and operation stage of the Proposed Development would be envisaged.

Land Contamination

8.1.14 Based on the findings of this preliminary site appraisal, the site had primarily been used for commercial horticulture workshops. Although minor vehicle maintenance activities were noted in the desktop study, only vehicle parking was found on the site, and it was located in a well-maintained paved area. Therefore, the potential for land contamination at the site is not anticipated. The need for further studies will be determined at a later stage.

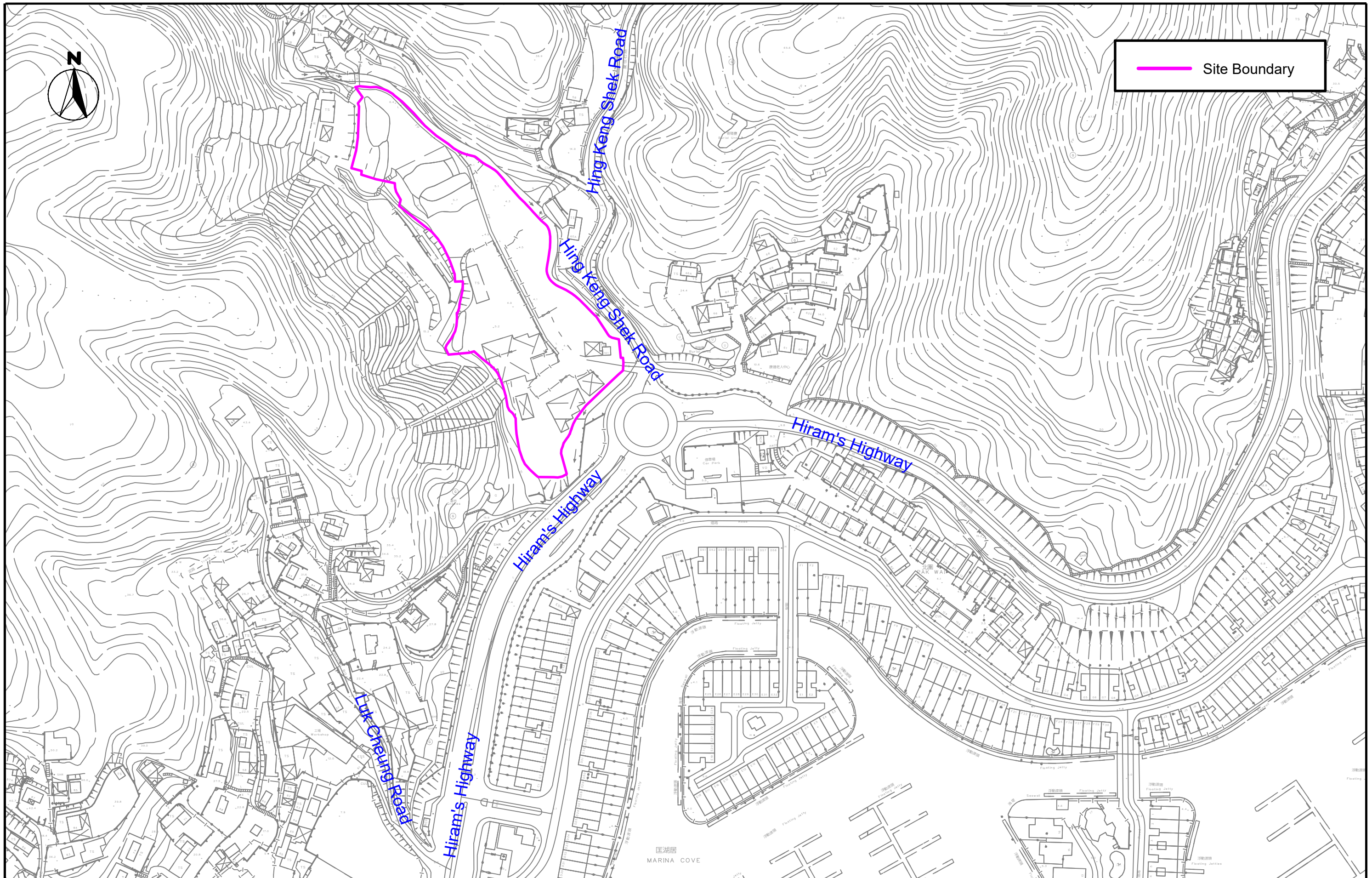
---

---

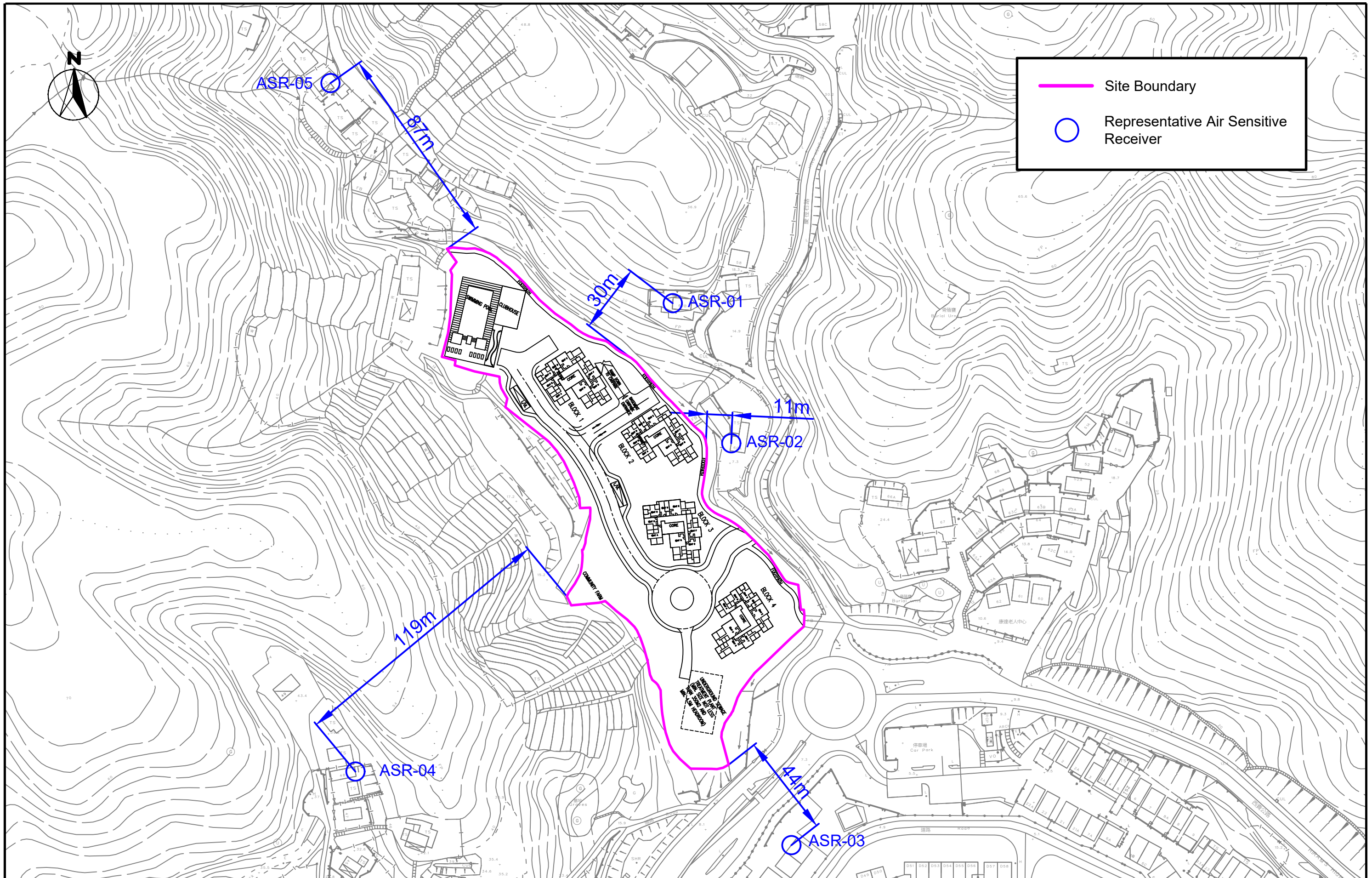
## FIGURES



---

---



SCALE	1:2000 @ A3	DATE	Jul 2023
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	2-1
		REV	-



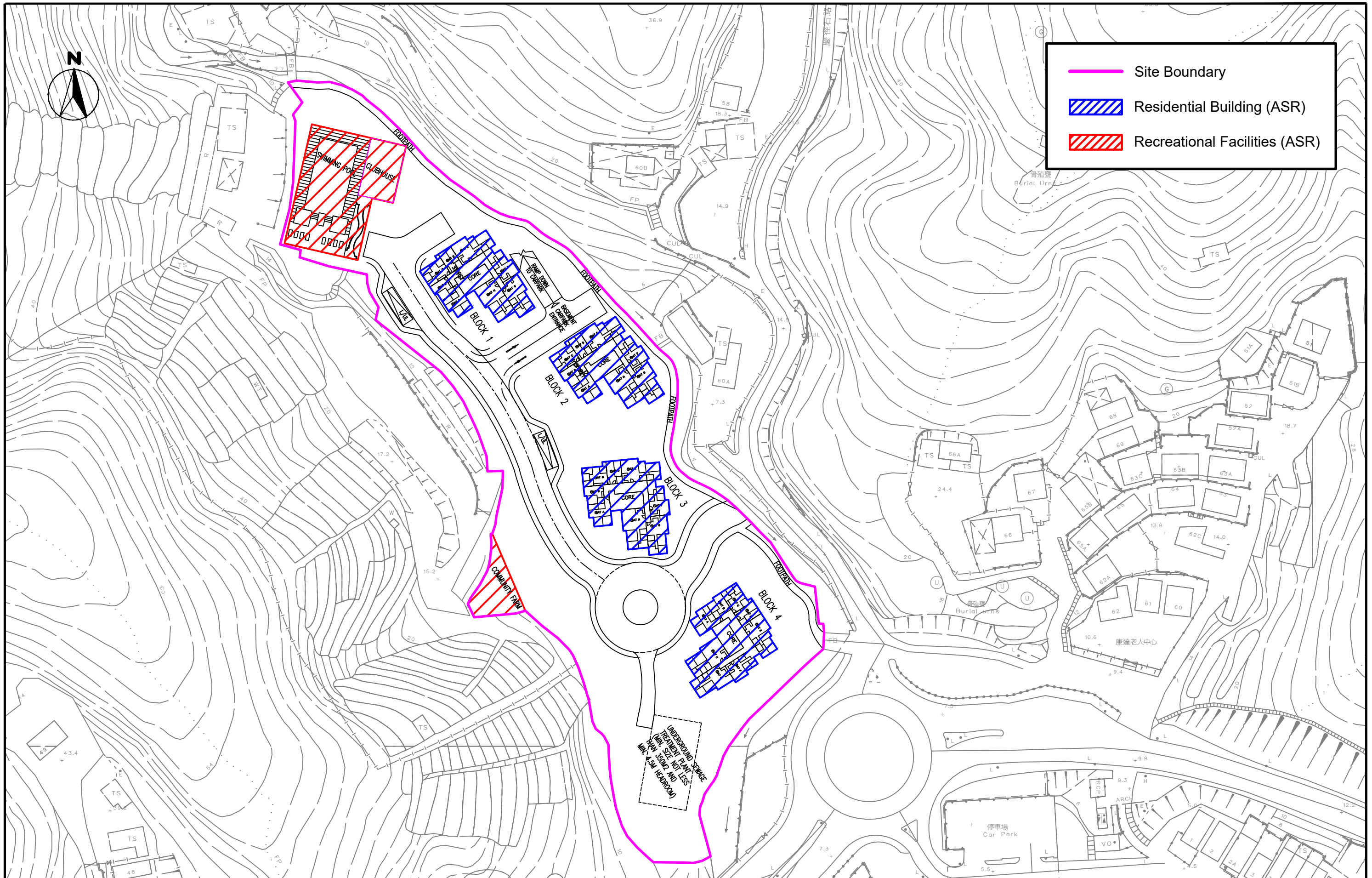
	Site Boundary
	Representative Air Sensitive Receiver



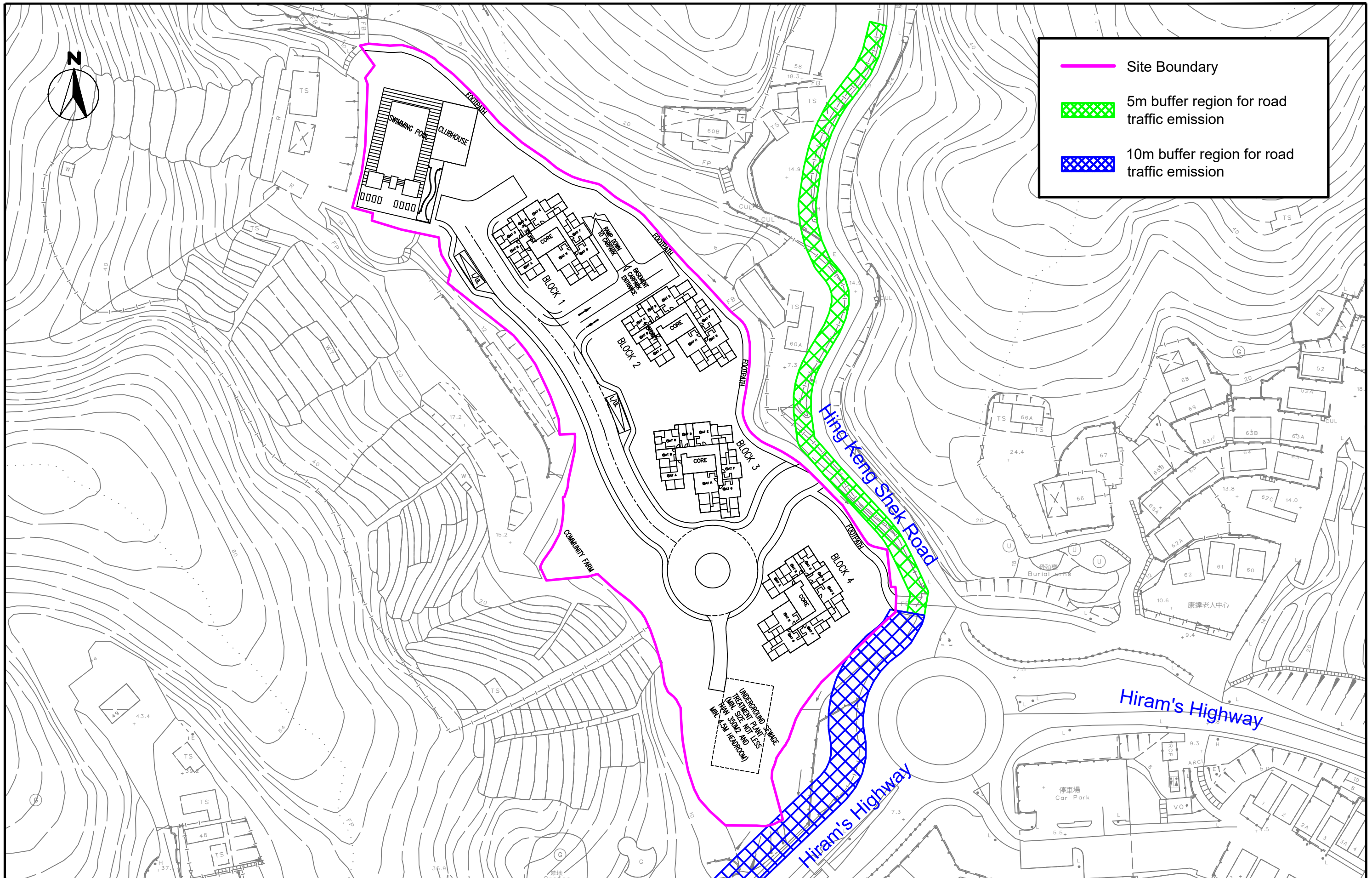
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung




### Representative Air Sensitive Receivers for Construction Phase

SCALE	1:1500 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	3-1
		REV	-



SCALE	1:1000 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	3-2
		REV	-



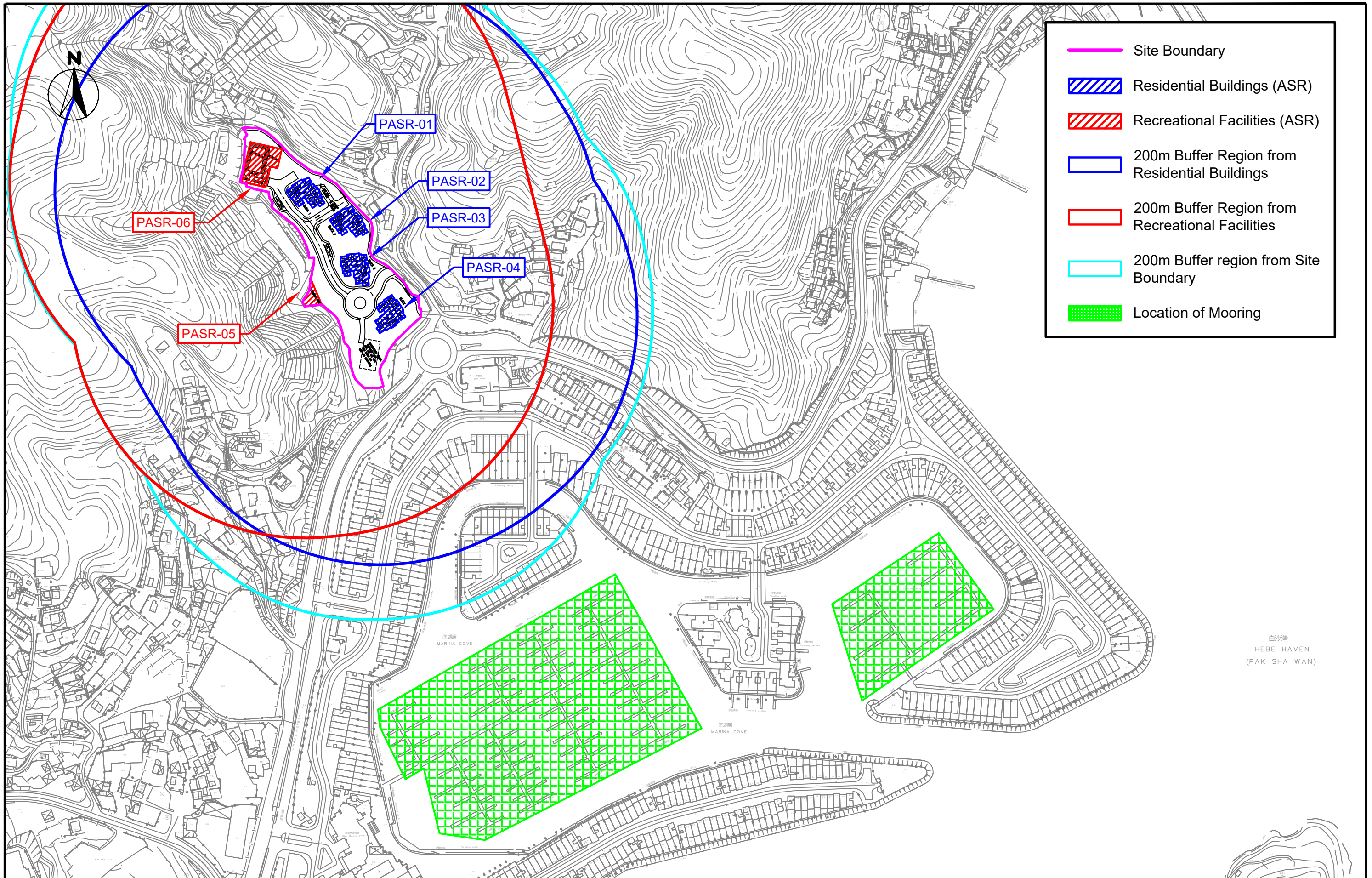
	Site Boundary
	5m buffer region for road traffic emission
	10m buffer region for road traffic emission



Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Buffer Region for Road Traffic Emission

SCALE	1:1000 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	3-3
		REV	-



	Site Boundary
	Residential Buildings (ASR)
	Recreational Facilities (ASR)
	200m Buffer Region from Residential Buildings
	200m Buffer Region from Recreational Facilities
	200m Buffer region from Site Boundary
	Location of Mooring

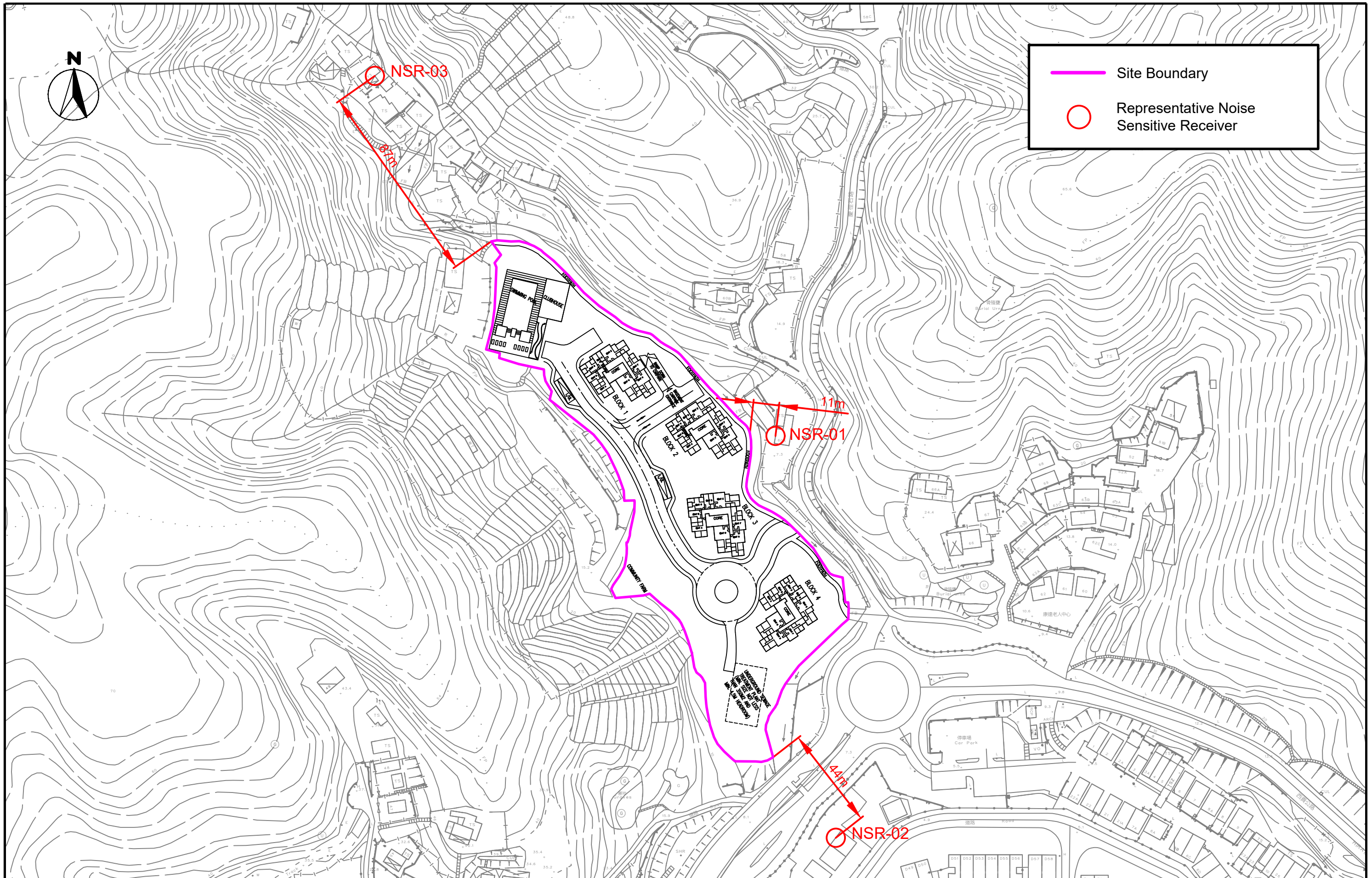
白沙灣  
HEBE HAVEN  
(PAK SHA WAN)



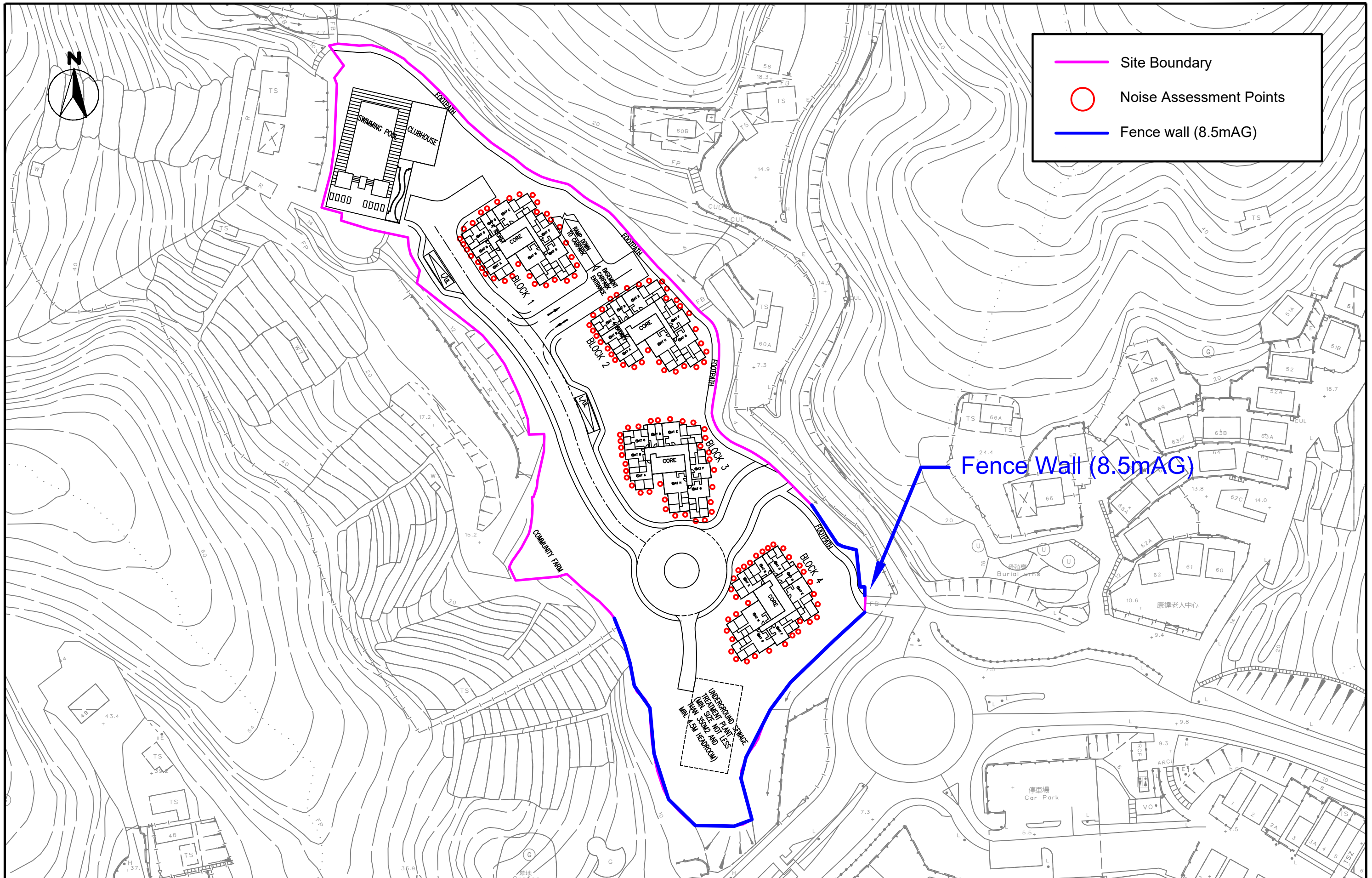
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung




### 200m Buffer Region from Planned ASRs

SCALE	1:2000 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	3-4
		REV	-



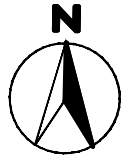
SCALE	1:1500 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-1
		REV	-



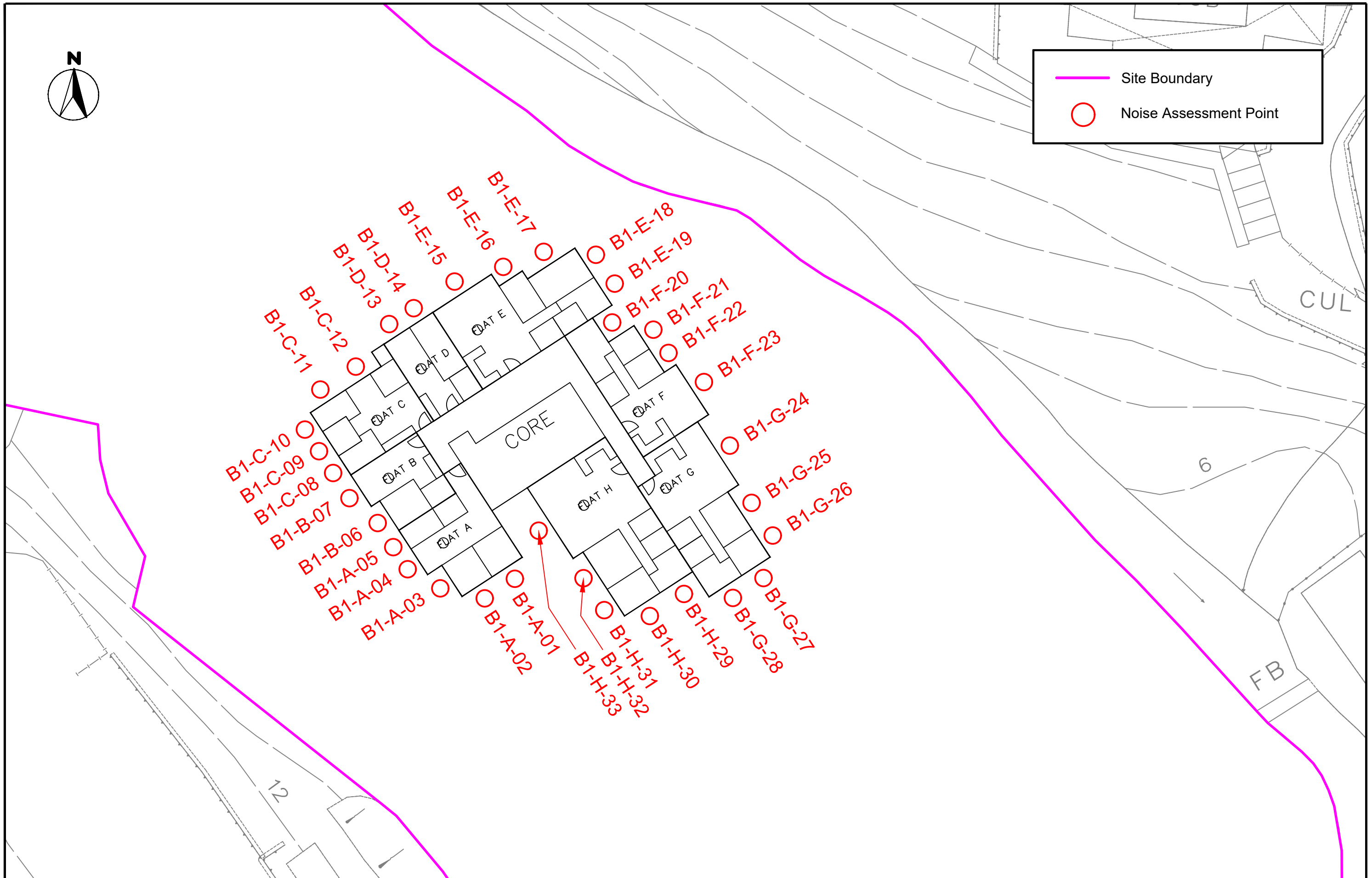
	Site Boundary
	Noise Assessment Points
	Fence wall (8.5mAG)

Fence Wall (8.5mAG)

SCALE	1:1000 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-2a
		REV	-



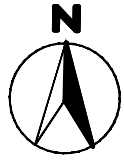
— Site Boundary  
○ Noise Assessment Point





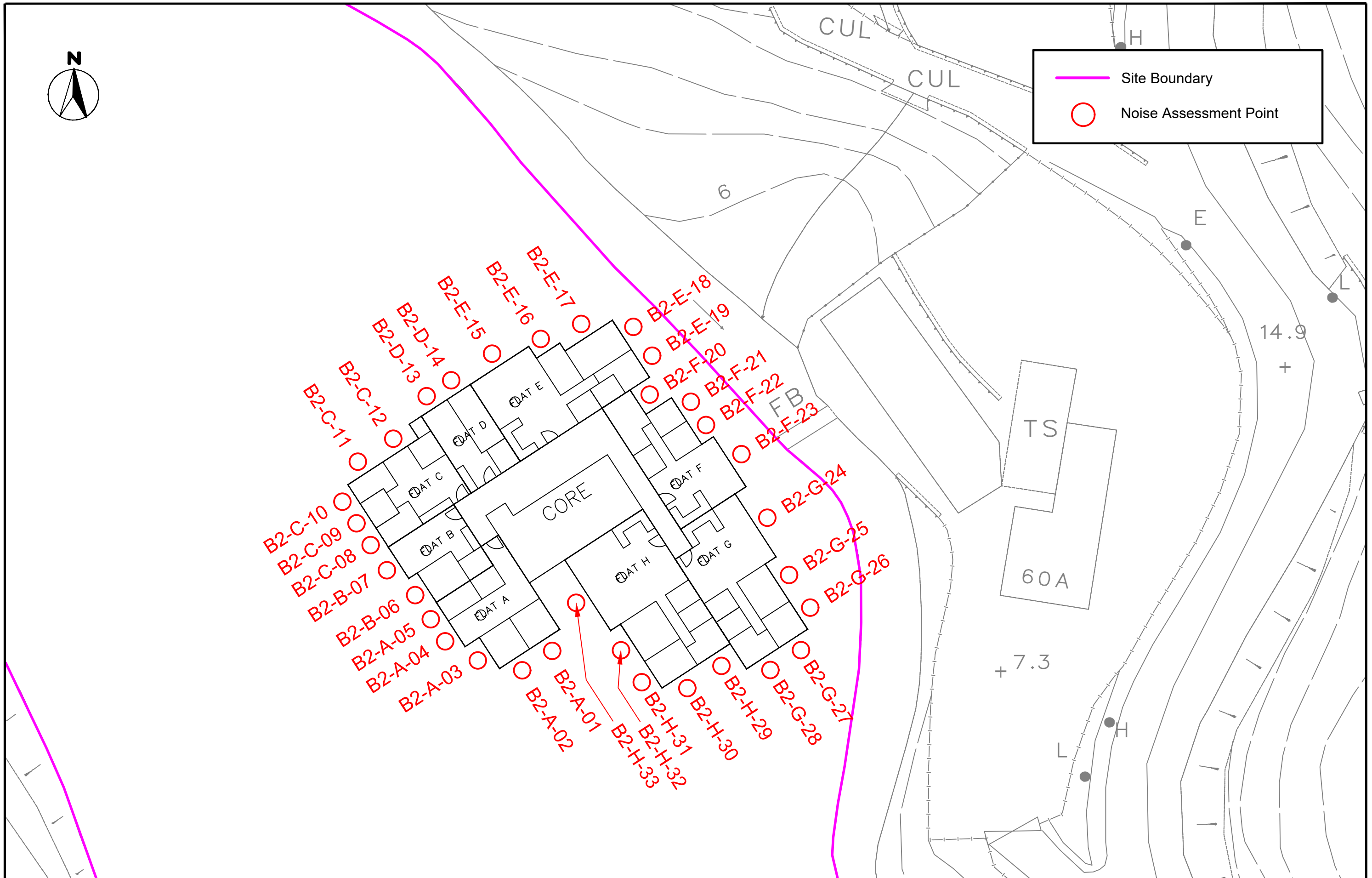
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Location of the Assessment Points for Traffic Noise Impact Assessment (Block 1)

SCALE	1:250 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-2b
		REV	-



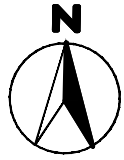
	Site Boundary
	Noise Assessment Point





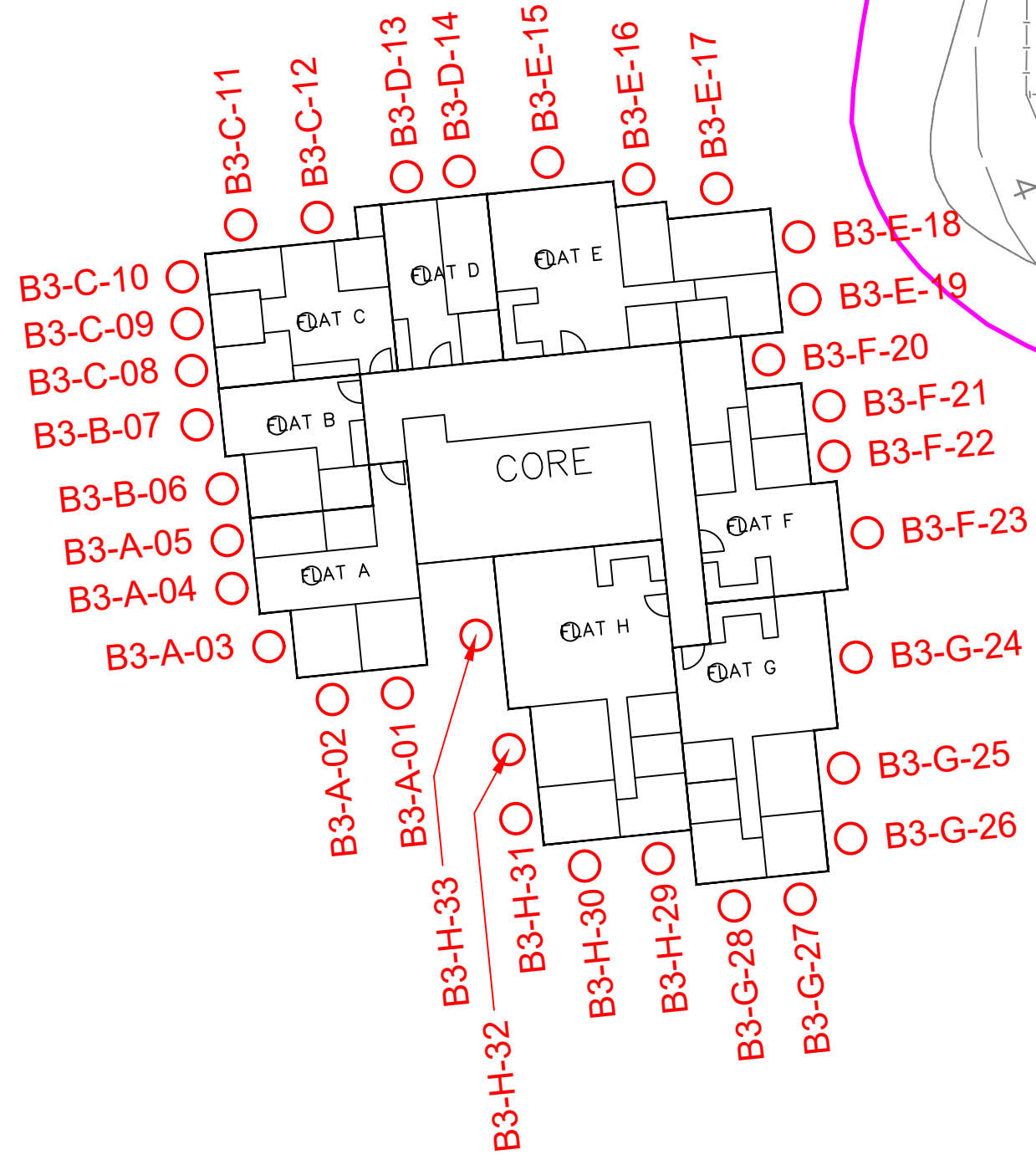
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Location of the Assessment Points for Traffic Noise Impact Assessment (Block 2)

SCALE	1:250 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-2c
		REV	-



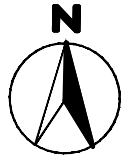
	Site Boundary
	Noise Assessment Point



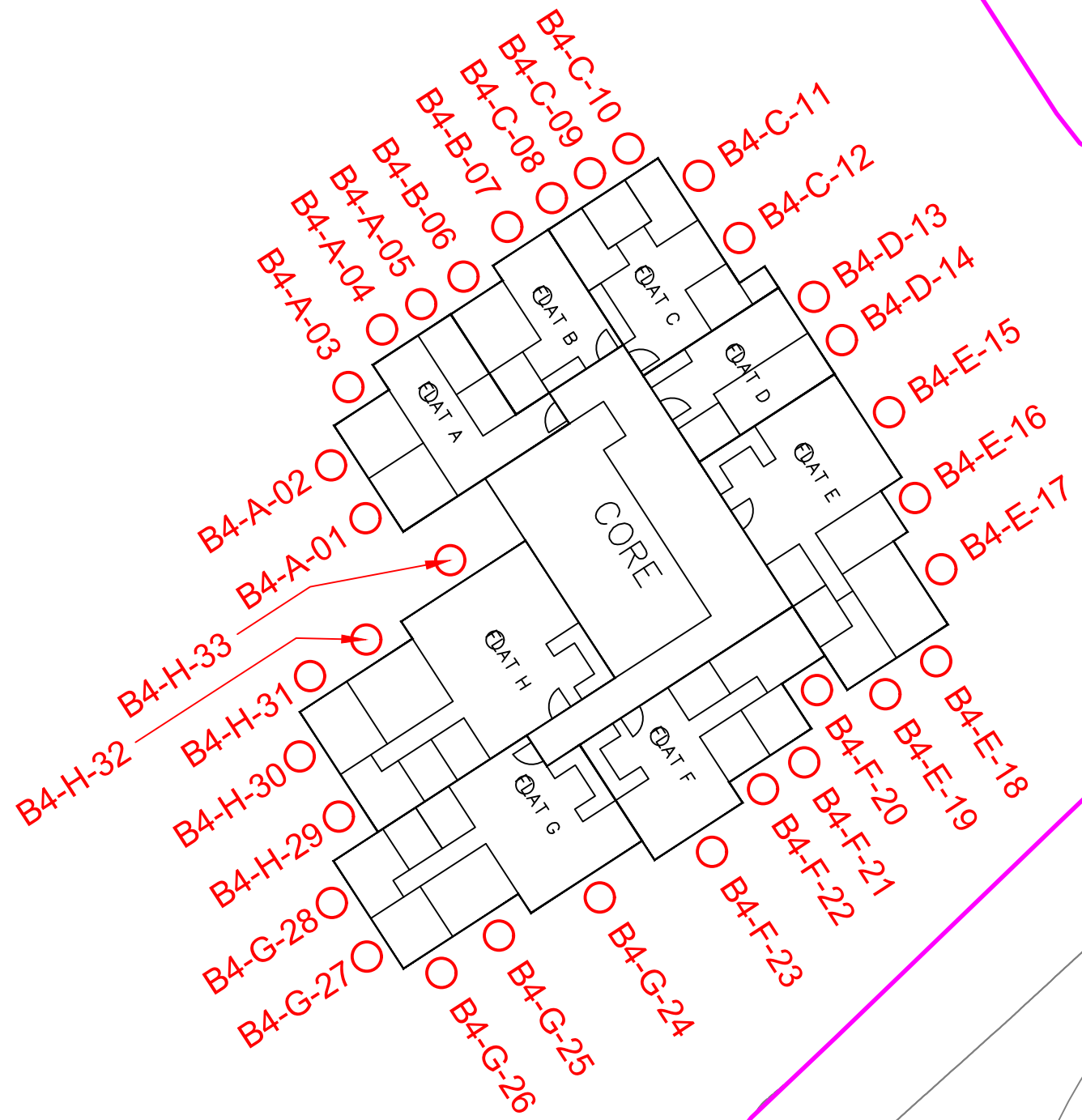
Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Location of the Assessment Points for Traffic Noise Impact Assessment (Block 3)

SCALE	1:250 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-2d
		REV	-



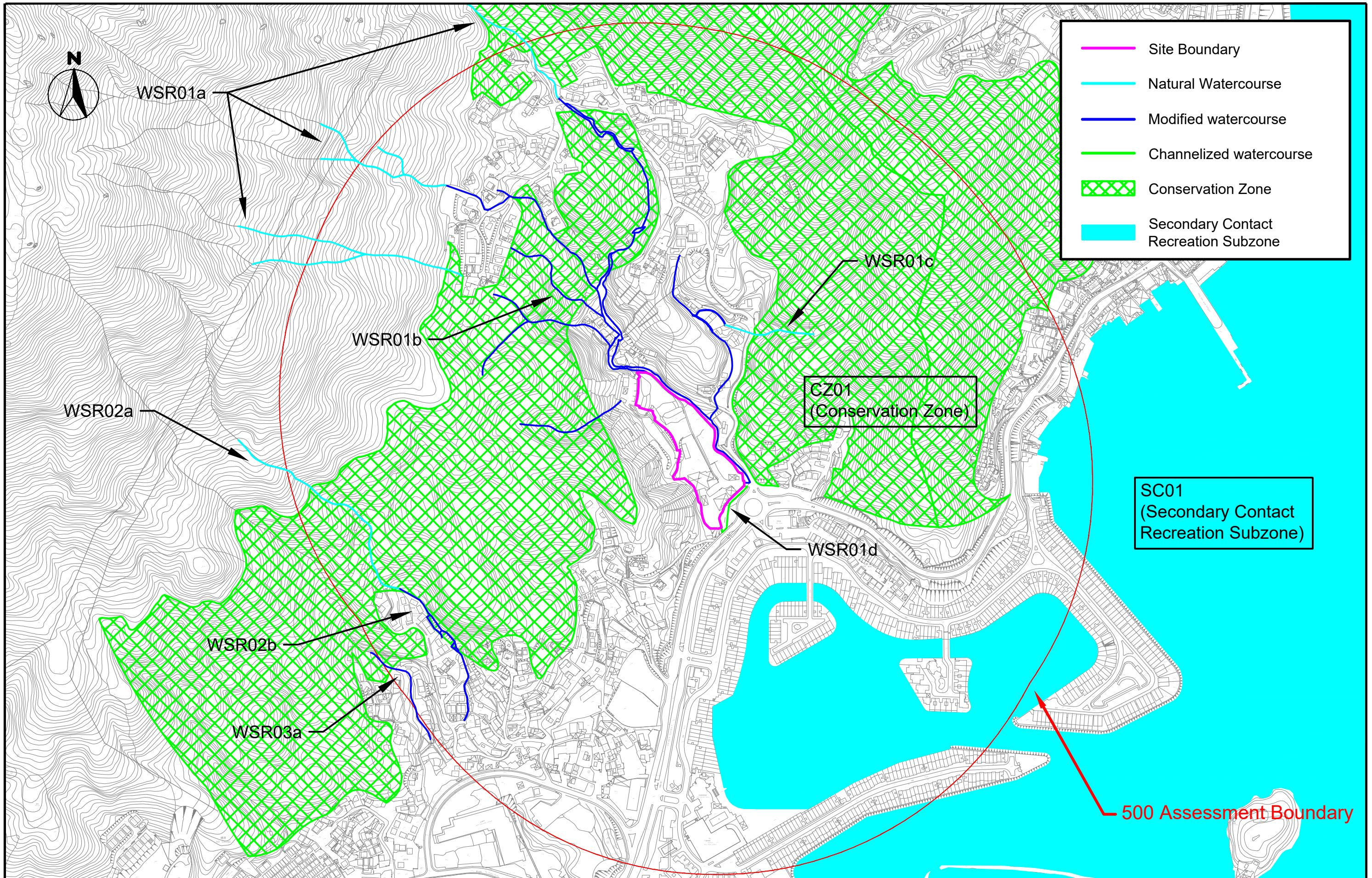
— Site Boundary  
○ Noise Assessment Point



Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Location of the Assessment Points for Traffic Noise Impact Assessment (Block 4)

SCALE	1:250 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	4-2e
		REV	-



	Site Boundary
	Natural Watercourse
	Modified watercourse
	Channelized watercourse
	Conservation Zone
	Secondary Contact Recreation Subzone



Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

### Location of Representative WSRs

SCALE	1:5000 @ A3	DATE	Jul 2025
CHECK	CC	DRAWN	LL
JOB No.	--	DRAWING No.	5-1
		REV	-

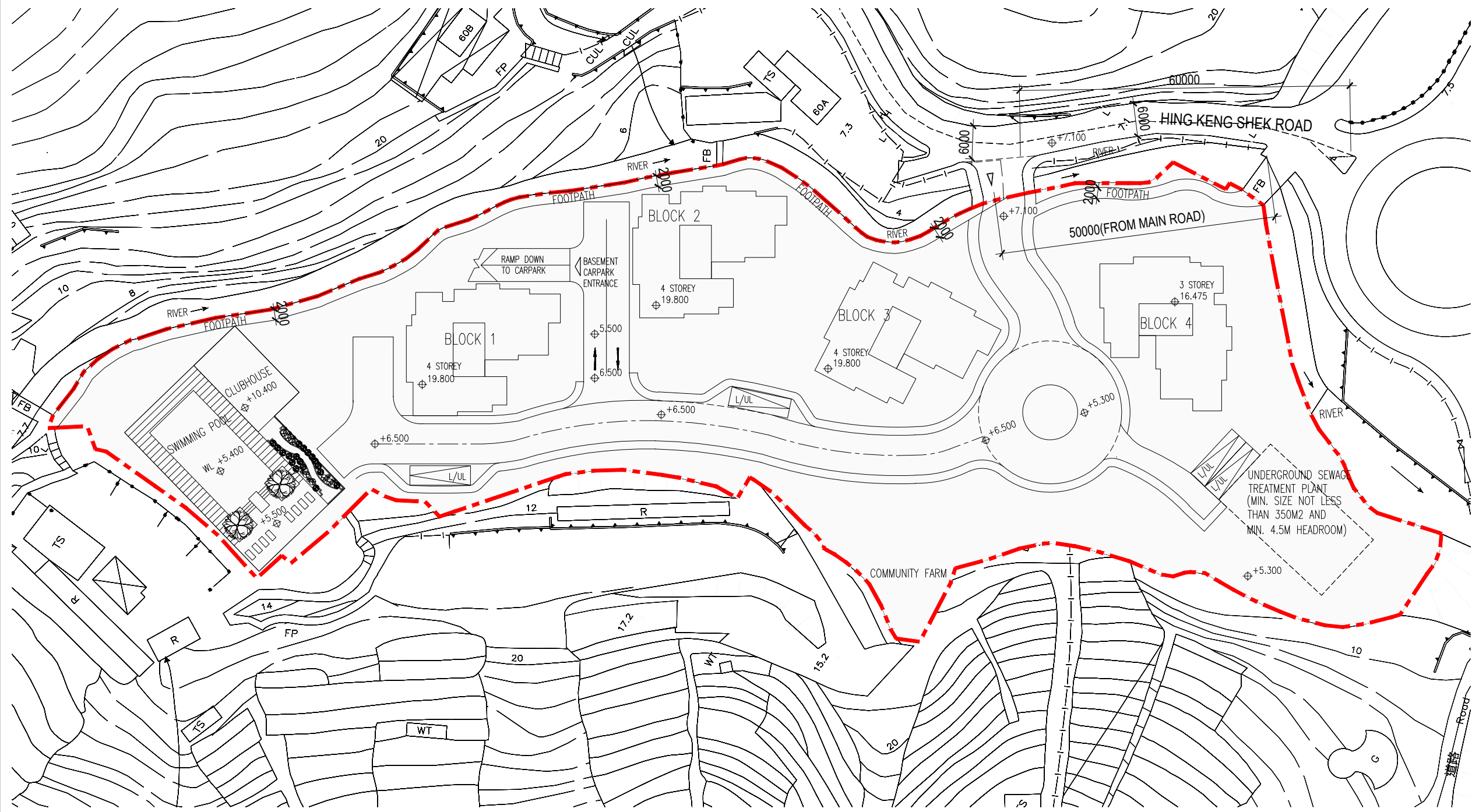
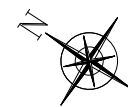
---

---

**APPENDIX 2-1  
LAYOUT OF PROPOSED DEVELOPMENT**

---

---



**K & W Architects Ltd.**  
 關黃建築師有限公司



- This drawing and the contents herein are the copyright of K & W Architects Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of K & W Architects Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

Client

**Project**  
 Application for Amendment of Plan Under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Drawing Title**  
 MASTER LAYOUT PLAN

Job No.	Drawing No.	Revision No.
D1186	MLP-01	P
Scale	Date	CAD Ref.
1:800	09/06/2025	
Drawn	Checked	Approved
SF	SF	

---

**APPENDIX 3-1**  
**TD'S CONFIRMATION ON ROAD TYPE**

---

[REDACTED]

---

**From:** [REDACTED]@td.gov.hk>  
**Sent:** Wednesday, December 4, 2024 12:09 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** Re: Section 12A Application for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung // Road Classification

Dear [REDACTED],

I refer to your email dated 29.11.2024.

Please note that Hing Keng Shek Road is not under TD's management. Comments from relevant authorities / parties should be sought. Notwithstanding, we have no objection to the proposed road type of Hing Keng Shek Road.

Regards,

[REDACTED]  
E/SK, TE/NTE, TD  
Tel: [REDACTED]

From: [REDACTED]  
To: [REDACTED]@td.gov.hk>  
Cc: [REDACTED]  
Date: 29/11/2024 03:02 PM  
Subject: Section 12A Application for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung // Road Classification

---

Dear [REDACTED],

We are the traffic consultant of the captioned project.

Regarding the current submission of the Environmental Assessment to the EPD, EPD's comment was received regarding the road type of Hing Keng Shek Road as follow:

*EPD's Comment: Please provide the confirmation from Transport Department for the road type of Hing Keng Shek Road.*

There is no road classification in Annual Traffic Census Reports for the above road. Meanwhile, Hing Keng Shek Road is connecting to Hiram's Highway. So, we consider that Hing Keng Shek Road shall only have the same classification as Hiram's Highway, which is a "Rural Road", but not a higher hierarchy.

In view of the above, we would like to seek your confirmation on the road type of Hing Keng Shek Road as "Rural Road" and the confirmation will be solely for environmental assessment use.

Should you have any query or require any additional information, please feel free to contact the undersigned or our [REDACTED] at [REDACTED].

Thanks & Regards

[REDACTED]

[REDACTED]

---

**APPENDIX 4-1  
ALLOWABLE SOUND POWER LEVEL  
FOR THE BUILDING SERVICE  
EQUIPMENT OF THE PROPOSED  
DEVELOPMENT**

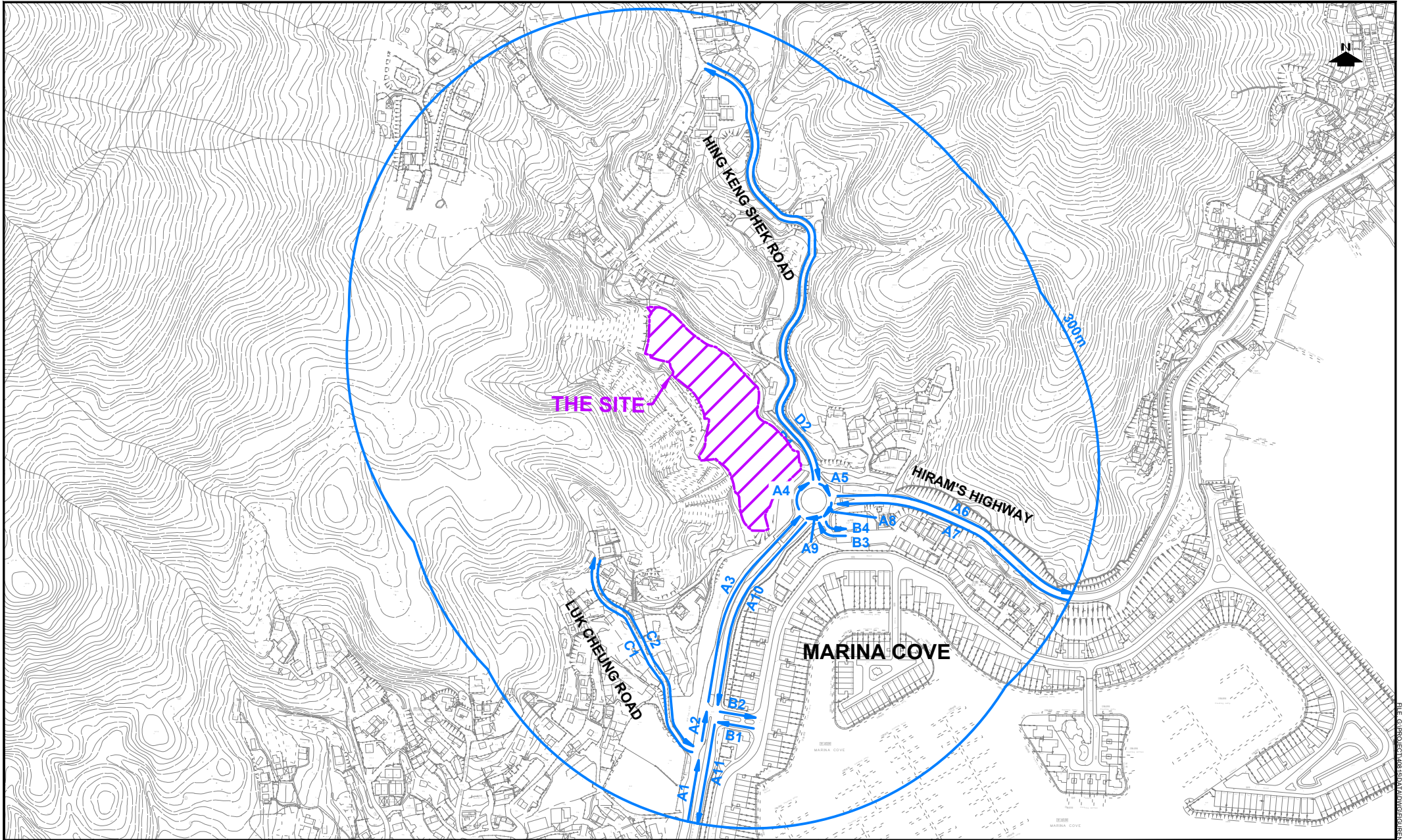
---

## Allowable Sound Power Level for the Building Service Equipment of the Proposed Development

Representative NSR	Time period	Maximum Allowable Sound Pressure Level at NSR, dB(A)	Horizontal Distance (m)	Correction, dB(A)			Maximum Allowable Sound Power Level at Source, dB(A)
				Distance	Façade	Tonality/ Intermittency/ Impulsiveness	
<b>NE façade</b>							
NSR-01	Day and Evening	55	11	29	-3	-6	<b>75</b>
	Night	45					<b>65</b>
<b>SE façade / Sewage Treatment Plant</b>							
NSR-02	Day and Evening	55	44	41	-3	-6	<b>87</b>
	Night	45					<b>77</b>
<b>NW façade</b>							
NSR-03	Day and Evening	55	87	47	-3	-6	<b>93</b>
	Night	45					<b>83</b>

[1] For assessment purpose, a 6dB(A) of Tonality/ Intermittency/ Impulsiveness correction has been adopted.

**APPENDIX 4-2  
TRAFFIC FORECAST FOR TRAFFIC  
NOISE IMPACT ASSESSMENT (YEAR  
2046)**



PROJECT NO.	40815	
DESIGNED	SLN	DATE SEP 2023
DRAWN	CLL	SCALE 1:5000
CHECKED	SLN	

PROJECT TITLE	APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP. 131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)S" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG
DRAWING TITLE	<b>ROAD SECTIONS WITHIN 300m OF THE SITE</b>

DRAWING NO.	FIGURE N1	REV.	B
<b>LLA</b> 顧問有限公司		Consultancy Limited	

**Table 2 2046 Traffic Forecast – AM Peak Hour**

No	Road	2046 Project Traffic Flows (veh/hr)	% of Heavy Vehicles
A1	Hiram's Highway	1,100	30%
A2	Hiram's Highway	1,100	30%
A3	Hiram's Highway	1,150	29%
A4	Hiram's Highway	1,200	29%
A5	Hiram's Highway	1,150	31%
A6	Hiram's Highway	1,100	31%
A7	Hiram's Highway	1,350	28%
A8	Hiram's Highway	1,450	28%
A9	Hiram's Highway	1,450	29%
A10	Hiram's Highway	2,550	29%
A11	Hiram's Highway	2,600	29%
B1	Access to Marina Cove	50	12%
B2	Access to Marina Cove	50	9%
B3	Access to Marina Cove	100	11%
B4	Access to Marina Cove	100	9%
C1	Luk Cheung Road	50	23%
C2	Luk Cheung Road	50	15%
D1	Hing Keng Shek Road	100	8%
D2	Hing Keng Shek Road	100	25%

**Table 3 2046 Traffic Forecast – PM Peak Hour**

No.	Road	2046 Project Traffic Flows (veh/hr)	% of Heavy Vehicles
A1	Hiram's Highway	1,400	21%
A2	Hiram's Highway	1,400	21%
A3	Hiram's Highway	1,400	21%
A4	Hiram's Highway	1,450	21%
A5	Hiram's Highway	1,400	22%
A6	Hiram's Highway	1,350	22%
A7	Hiram's Highway	1,300	22%
A8	Hiram's Highway	1,350	22%
A9	Hiram's Highway	1,300	21%
A10	Hiram's Highway	2,300	21%
A11	Hiram's Highway	2,300	21%
B1	Access to Marina Cove	50	21%
B2	Access to Marina Cove	50	20%
B3	Access to Marina Cove	100	22%
B4	Access to Marina Cove	100	19%
C1	Luk Cheung Road	50	19%
C2	Luk Cheung Road	50	20%
D1	Hing Keng Shek Road	150	8%
D2	Hing Keng Shek Road	50	23%

---

寄件者: [REDACTED]  
寄件日期: 2024年9月23日星期一 11:24  
收件者: [REDACTED]  
副本: [REDACTED]  
主旨: Re: S12A for Proposed Residential Development at Various Lots in DD210 and Adjoining Government Land, Pak Wai, Sai Kung

郵件標幟: 待處理  
標幟狀態: 已標幟

類別: Departmental Comment

Dear [REDACTED],

I refer to your email dated 17.9.2024.

Please note that the Noise Impact Assessment is not under our purview. We are not in a position to provide comments on the traffic figures tailor-made for the environmental assessment study. Notwithstanding the above, we have no objection in principle to the methodology of traffic forecast provided that the methodology is consistent with the TIA Report submitted in the project.

Regards,

[REDACTED]  
E/SK, TE/NTE, TD  
Tel: [REDACTED]

From: [REDACTED]  
To: [REDACTED]  
Cc: [REDACTED]  
Date: 17/09/2024 03:03 PM  
Subject: S12A for Proposed Residential Development at Various Lots in DD210 and Adjoining Government Land, Pak Wai, Sai Kung

---

Dear [REDACTED],

Thank you for your attached letter on 16 September 2024 indicating that you have no adverse comment on the 2046 traffic forecast for Environmental Assessment.

Based on your suggestion, we reviewed the 2022 annual traffic census data and we would be pleased to provide the following updated Table 4 for your reference.

**Table 4 Annual Traffic Census Data**

Stn. No.	Road Section			AADT <sup>(1)</sup>					Average Growth%
	Road	From	To	2018	2019	2020	2021	2022	
5017	Clear Water Bay Rd	On Sau Rd	Hiram's Highway	28,450	28,980↓ (1.9%)	28,900↓ (-0.3%)	29,100↓ (0.7%)	27,720↓ (-4.7%)	-0.6%
5466	Clear Water Bay Rd	Hang Hau Rd	Hiram's Highway	18,950	20,240↓ (6.8%)	19,110↓ (-5.6%)	20,020↓ (4.8%)	19,140↓ (-4.4%)	0.2%
6055	Hiram's Highway	Clear Water Bay Rd	Po Tung Rd	24,450	24,280↓ (-0.7%)	23,360↓ (-3.8%)	24,460↓ (4.7%)	23,480↓ (-4%)	-1.0%
<b>Total</b>				<b>71,850</b>	<b>73,500↓ (2.3%)</b>	<b>71,370↓ (-2.9%)</b>	<b>73,580↓ (3.1%)</b>	<b>70,340↓ (-4.4%)</b>	<b>-0.5%</b>

Note: (1) Figures in bracket indicated the % increase between two years.

The average annual growth rate derived between 2018 to 2022 is **-0.5%** while the rate derived between 2017 to 2021 is **+1.4%**. Therefore, the growth rate of **+1.4%** adopted in the submitted traffic forecast is considered conservative and acceptable for the exercise.

Based on the above, we would be pleased to have your further comment, if any. Should you have any further query, please feel free to call me at [REDACTED].

Thanks & Regards

[REDACTED]

[REDACTED]

**APPENDIX 4-3  
PREDICTED TRAFFIC NOISE LEVEL  
(BASE SCENARIO)**

**Predicted Traffic Noise Level for Base Scenario (by Noise Assessment Points)**

Block 1																																		
NSR ID	B1-A-01	B1-A-02	B1-A-03	B1-A-04	B1-A-05	B1-B-06	B1-B-07	B1-B-08	B1-C-09	B1-C-10	B1-C-11	B1-C-12	B1-D-13	B1-D-14	B1-E-15	B1-E-16	B1-E-17	B1-E-18	B1-E-19	B1-F-20	B1-F-21	B1-F-22	B1-F-23	B1-G-24	B1-G-25	B1-G-26	B1-G-27	B1-G-28	B1-H-29	B1-H-30	B1-H-31	B1-H-32	B1-H-33	
Floor	mPD	L10,1hr (dB(A))																																
4	17.69	55.4	57.0	57.6	57.4	54.5	54.1	53.9	53.8	53.7	54.0	53.6	52.9	54.9	55.2	56.1	56.4	57.3	59.7	59.7	58.6	59.9	59.9	60.3	60.3	61.0	59.5	60.6	55.7	57.2	55.6	54.7	54.3	
3	14.36	54.1	56.1	56.9	56.8	53.6	53.2	53.1	53.0	52.9	53.3	53.6	52.9	54.9	55.2	56.1	56.4	57.3	59.5	59.5	58.6	59.6	59.7	59.9	59.9	60.4	58.8	59.9	53.9	56.1	54.1	53.5	53.3	
2	11.03	53.0	55.2	56.2	56.0	52.8	52.4	52.3	52.2	52.1	52.6	53.6	52.9	54.9	55.2	56.1	56.4	57.3	59.3	59.4	58.6	59.5	59.5	59.7	59.7	59.6	60.1	58.3	59.5	52.4	55.2	52.9	52.5	52.3
1	7.70	52.1	54.2	55.1	55.0	52.0	51.7	51.6	51.5	51.4	52.0	53.5	52.9	54.9	55.2	56.1	56.4	57.3	59.2	59.3	58.6	59.4	59.4	59.6	59.6	59.5	59.9	58.0	59.3	51.1	54.6	51.8	51.5	51.4

Block 2																																		
NSR ID	B2-A-01	B2-A-02	B2-A-03	B2-A-04	B2-A-05	B2-B-06	B2-B-07	B2-B-08	B2-C-09	B2-C-10	B2-C-11	B2-C-12	B2-D-13	B2-D-14	B2-E-15	B2-E-16	B2-E-17	B2-E-18	B2-E-19	B2-F-20	B2-F-21	B2-F-22	B2-F-23	B2-G-24	B2-G-25	B2-G-26	B2-G-27	B2-G-28	B2-H-29	B2-H-30	B2-H-31	B2-H-32	B2-H-33	
Floor	mPD	L10,1hr (dB(A))																																
4	17.69	63.5	63.1	62.4	61.8	56.4	55.9	55.8	55.7	55.5	56.2	56.4	55.3	58.1	58.5	59.3	59.6	60.4	65.6	65.6	61.0	66.3	66.3	66.8	67.1	67.5	67.4	66.8	65.7	65.8	64.7	58.4	57.6	
3	14.36	62.7	62.2	61.5	61.0	54.1	53.8	53.9	53.9	53.8	54.9	56.5	55.3	58.1	58.5	59.3	59.6	60.4	64.6	64.8	60.9	65.7	65.8	66.2	66.3	66.6	67.0	66.9	66.2	65.1	65.2	64.0	56.8	55.9
2	11.03	61.6	61.2	60.5	60.1	51.9	51.7	52.1	52.1	52.1	53.6	56.5	55.3	58.1	58.5	59.3	59.6	60.4	62.9	62.8	60.9	63.6	63.6	64.0	64.0	64.2	64.6	64.5	63.8	63.0	63.7	62.7	55.6	54.6
1	7.70	58.8	58.6	58.2	57.8	50.0	49.9	50.4	50.5	50.5	52.7	56.4	55.3	58.1	58.4	59.3	59.6	60.3	62.2	62.0	60.8	62.8	62.7	63.0	62.9	62.7	62.9	62.4	61.0	59.9	60.5	59.7	54.2	53.2

Block 3																																		
NSR ID	B3-A-01	B3-A-02	B3-A-03	B3-A-04	B3-A-05	B3-B-06	B3-B-07	B3-B-08	B3-C-09	B3-C-10	B3-C-11	B3-C-12	B3-D-13	B3-D-14	B3-E-15	B3-E-16	B3-E-17	B3-E-18	B3-E-19	B3-F-20	B3-F-21	B3-F-22	B3-F-23	B3-G-24	B3-G-25	B3-G-26	B3-G-27	B3-G-28	B3-H-29	B3-H-30	B3-H-31	B3-H-32	B3-H-33	
Floor	mPD	L10,1hr (dB(A))																																
4	17.69	59.3	59.5	59.0	58.5	57.1	56.2	56.2	55.8	55.7	56.0	55.9	55.7	58.3	58.9	60.9	62.0	63.3	67.5	67.4	65.4	67.3	67.3	67.5	67.0	66.1	65.6	64.0	62.8	60.2	61.9	59.6	57.2	56.5
3	14.36	57.2	57.6	57.2	56.7	55.3	54.3	54.4	54.0	53.7	53.8	54.8	54.5	57.4	58.2	60.2	61.4	62.7	66.9	66.7	64.1	66.1	65.8	65.9	65.7	64.5	63.6	61.4	59.8	57.8	58.7	57.4	55.1	54.5
2	11.03	55.5	55.9	55.5	55.1	53.6	52.5	52.7	52.3	52.0	51.9	53.8	53.6	56.4	57.1	58.9	60.2	61.2	65.9	65.6	62.7	64.8	64.2	64.4	64.5	63.0	61.7	59.5	57.7	55.9	56.6	55.6	53.4	52.8
1	7.70	54.0	54.4	54.0	53.6	52.0	50.8	51.1	50.6	50.3	50.2	52.1	52.0	54.7	55.4	57.2	58.4	59.2	63.9	63.8	60.4	62.8	61.9	62.1	62.5	61.1	59.5	57.3	55.6	54.1	54.8	54.0	51.9	51.4

Block 4																																		
NSR ID	B4-A-01	B4-A-02	B4-A-03	B4-A-04	B4-A-05	B4-B-06	B4-B-07	B4-C-08	B4-C-09	B4-C-10	B4-C-11	B4-C-12	B4-D-13	B4-D-14	B4-E-15	B4-E-16	B4-E-17	B4-E-18	B4-E-19	B4-F-20	B4-F-21	B4-F-22	B4-F-23	B4-G-24	B4-G-25	B4-G-26	B4-G-27	B4-G-28	B4-H-29	B4-H-30	B4-H-31	B4-H-32	B4-H-33	
Floor	mPD	L10,1hr (dB(A))																																
3	14.36	<40	51.9	58.6	59.1	59.5	59.8	60.5	60.9	61.2	61.4	66.7	66.9	67.5	67.8	68.1	66.7	66.7	68.6	68.4	67.1	68.3	68.2	68.4	67.6	66.9	66.7	64.2	62.6	53.2	58.3	46.4	<40	<40
2	11.03	<40	49.7	58.2	58.7	59.1	59.4	60.1	60.4	60.8	60.9	65.8	66.0	66.7	67.2	67.4	64.5	61.2	61.7	61.5	60.2	61.4	61.4	61.4	61.3	61.3	60.1	59.0	49.4	55.7	45.5	<40	<40	
1	7.70	<40	48.2	57.1	57.5	57.8	58.0	58.4	58.6	58.8	58.8	64.4	64.8	65.6	66.3	66.7	63.5	59.1	58.5	58.2	56.2	57.8	57.8	57.6	57.9	57.9	58.1	57.1	56.3	46.7	53.6	45.2	<40	<40

**Predicted Traffic Noise Level for Base Scenario (by flats)**

Block 1										
NSR ID		B1-A	B1-B	B1-C	B1-D	B1-E	B1-F	B1-G	B1-H	
Floor	mPD	L10,1hr (dB(A))								
4	17.69	57.6	54.1	54.0	55.2	59.7	60.3	61.0	57.2	
3	14.36	56.9	53.2	53.6	55.2	59.5	59.9	60.4	56.1	
2	11.03	56.2	52.4	53.6	55.2	59.4	59.7	60.1	55.2	
1	7.70	55.1	51.7	53.5	55.2	59.3	59.6	59.9	54.6	

Block 2										
NSR ID		B2-A	B2-B	B2-C	B2-D	B2-E	B2-F	B2-G	B2-H	
Floor	mPD	L10,1hr (dB(A))								
4	17.69	63.5	55.9	56.4	58.5	65.6	66.8	67.5	65.8	
3	14.36	62.7	53.9	56.5	58.5	64.8	66.2	67.0	65.2	
2	11.03	61.6	52.1	56.5	58.5	62.9	64.0	64.6	63.7	
1	7.70	58.8	50.4	56.4	58.4	62.2	63.0	62.9	60.5	

Block 3										
NSR ID		B3-A	B3-B	B3-C	B3-D	B3-E	B3-F	B3-G	B3-H	
Floor	mPD	L10,1hr (dB(A))								
4	17.69	59.5	56.2	56.0	58.9	67.5	67.5	67.0	61.9	
3	14.36	57.6	54.4	54.8	58.2	66.9	66.1	65.7	58.7	
2	11.03	55.9	52.7	53.8	57.1	65.9	64.8	64.5	56.6	
1	7.70	54.4	51.1	52.1	55.4	63.9	62.8	62.5	54.8	

Block 4										
NSR ID		B4-A	B4-B	B4-C	B4-D	B4-E	B4-F	B4-G	B4-H	
Floor	mPD	L10,1hr (dB(A))								
3	14.36	59.5	60.5	66.9	67.8	68.6	68.4	67.6	58.3	
2	11.03	59.1	60.1	66.0	67.2	67.4	61.4	61.4	55.7	
1	7.70	57.8	58.4	64.8	66.3	66.7	57.8	58.1	53.6	

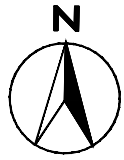
---

---

**APPENDIX 7-1  
AERIAL PHOTOS**

---

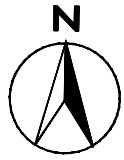
---



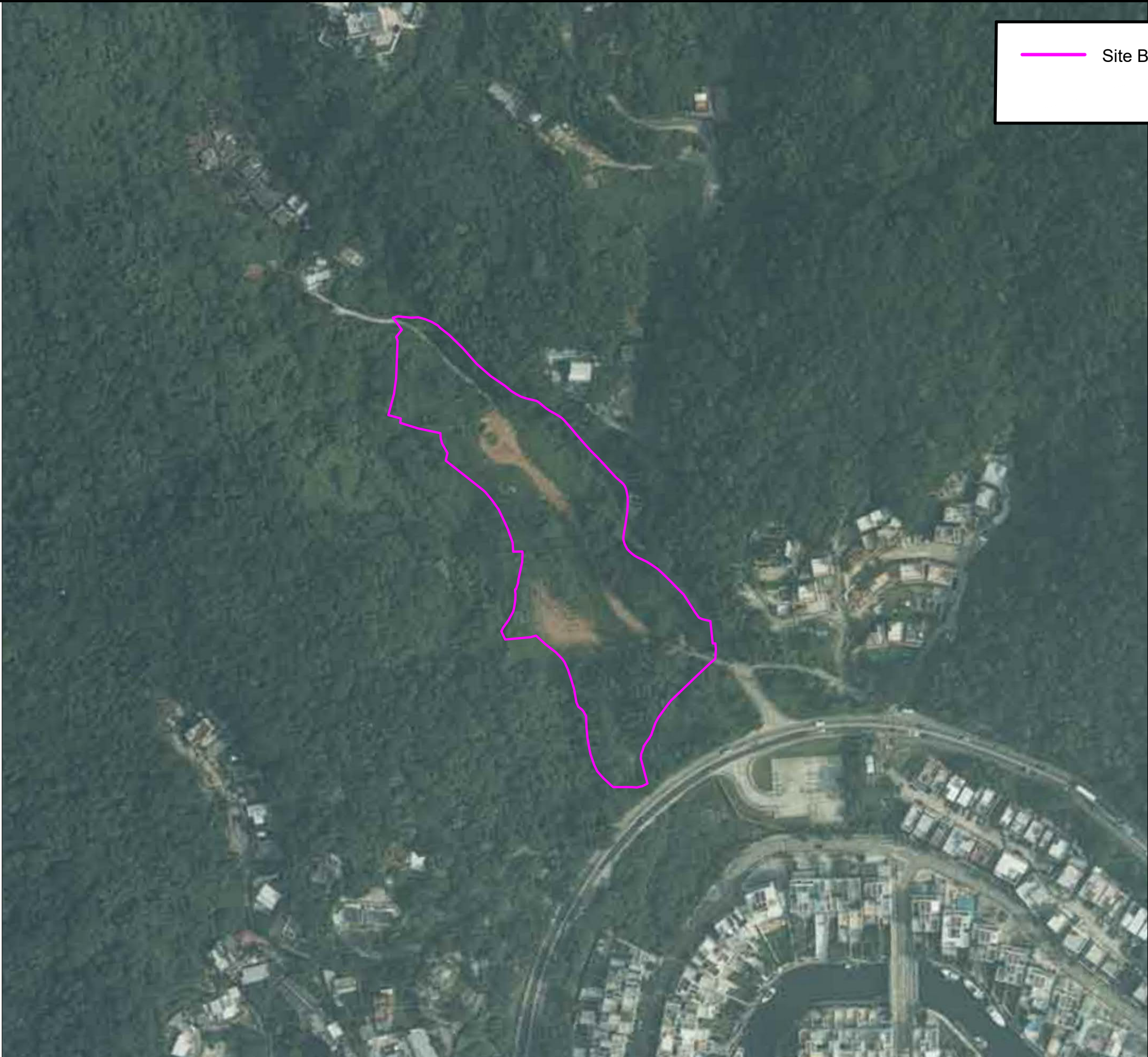
— Site Boundary



SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-

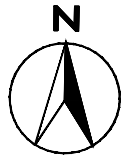


— Site Boundary

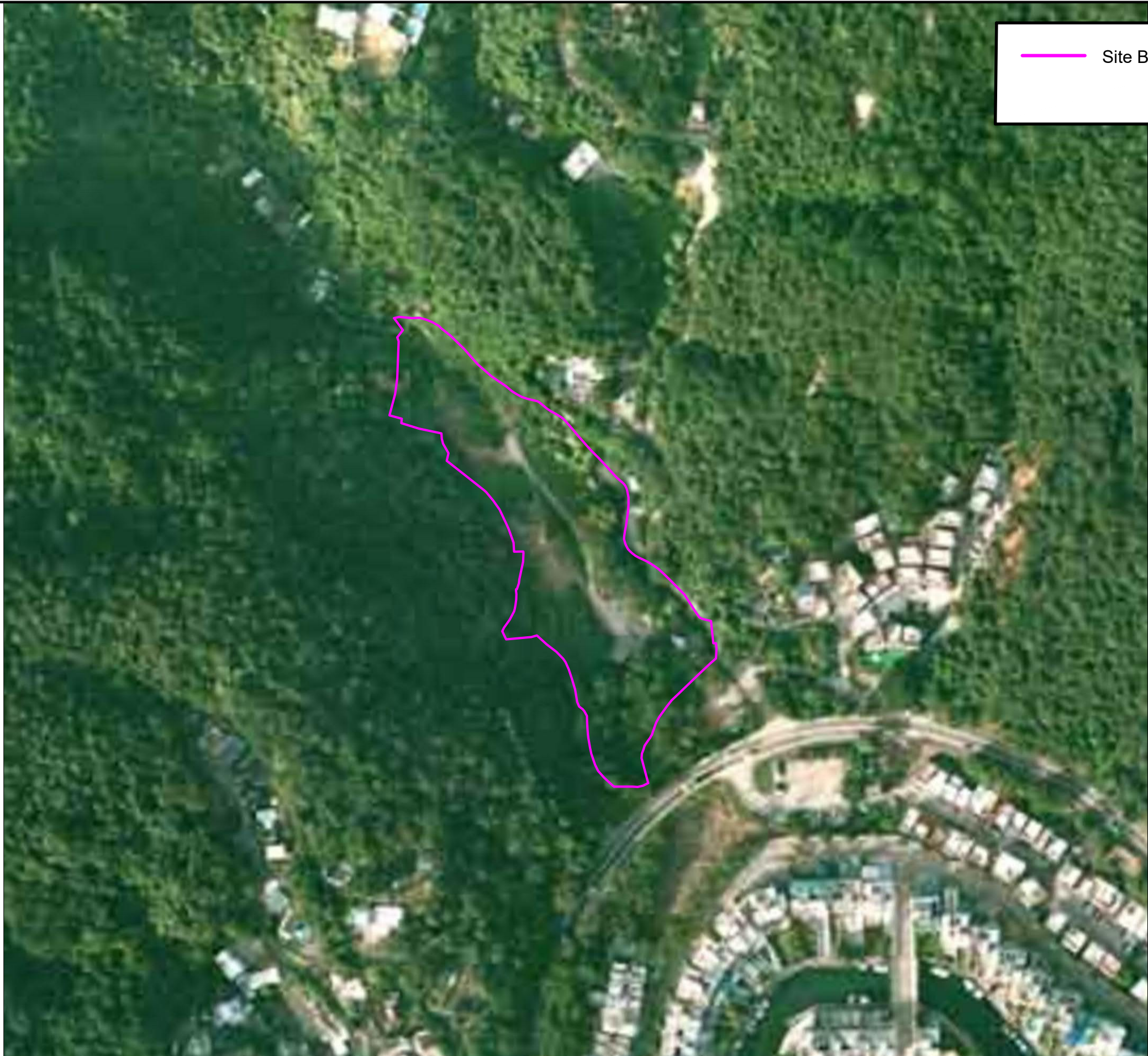


**Year:** 2001    **Photo no.:** 2001\_CW32439  
**Description:** The site was primarily covered by flora, with clearances observed in certain areas for pathway development.

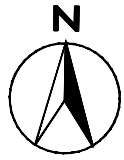
SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-



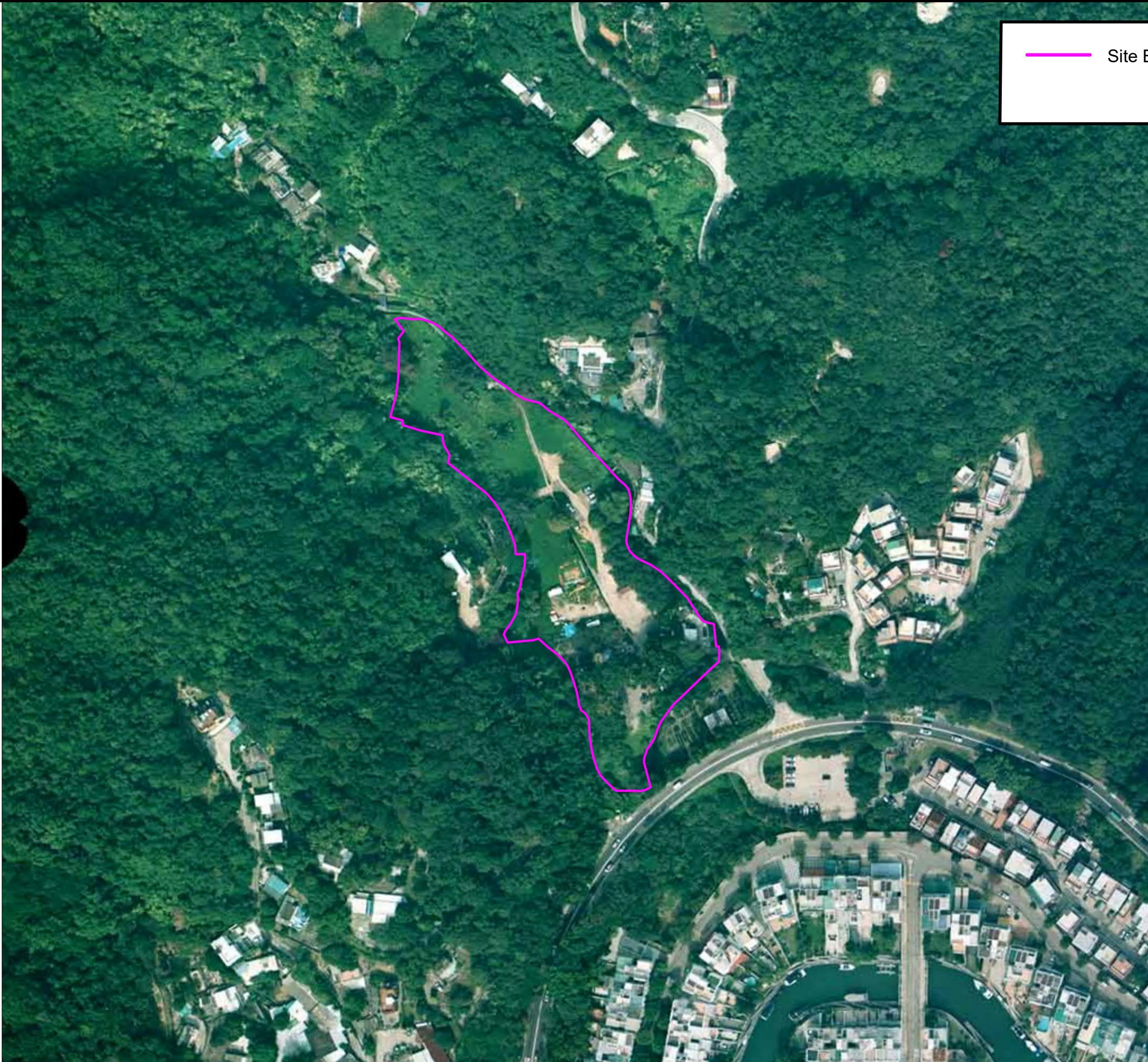
— Site Boundary



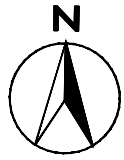
SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-



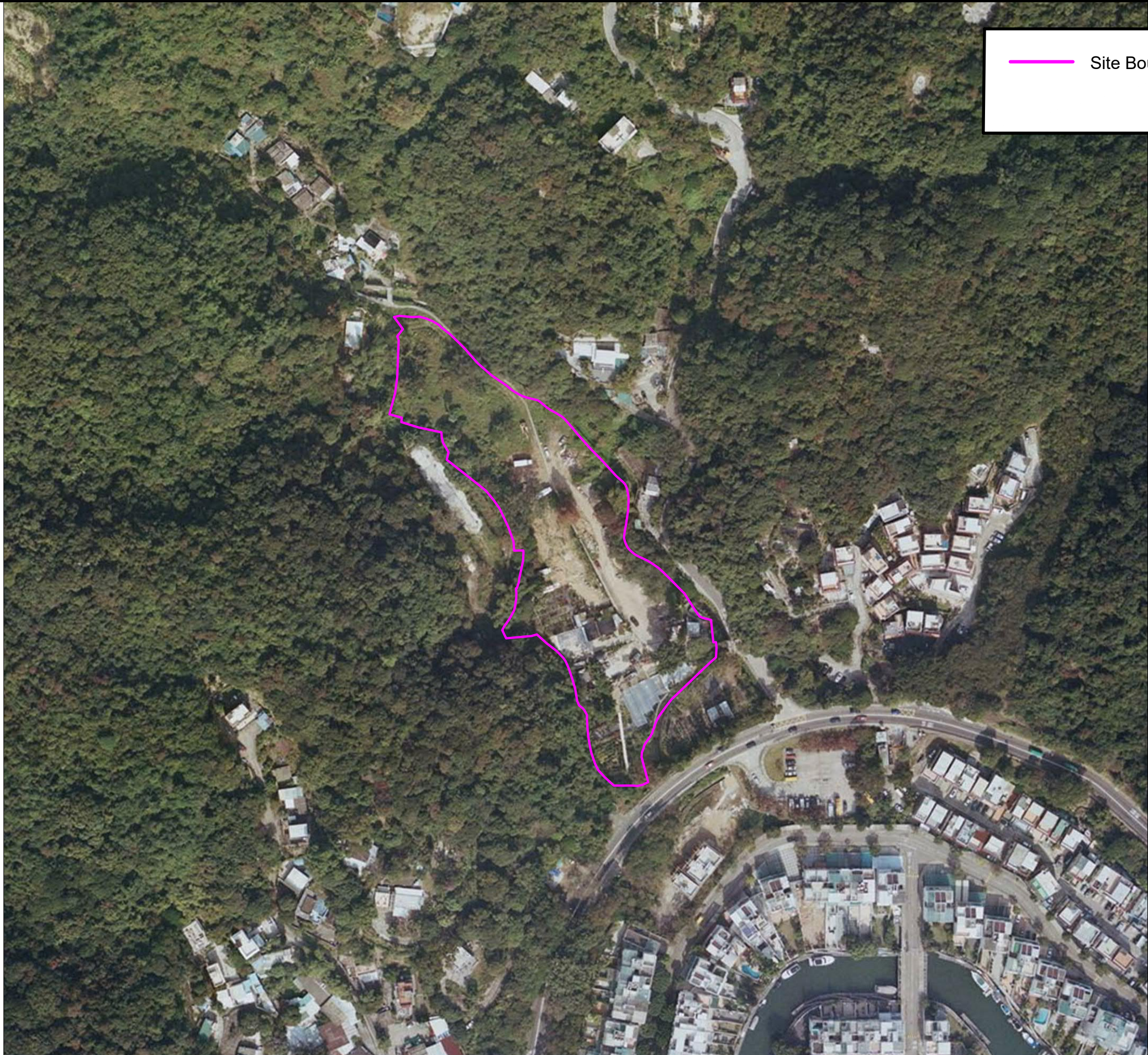
— Site Boundary



SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-

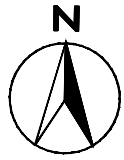


— Site Boundary



**Year:** 2015    **Photo no.:** 2015\_CS57777  
**Description:** Horticultural activities were recorded, as some greenhouses were observed in the southern part of the Site.

SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-



— Site Boundary

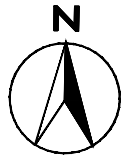
□ Potentially contaminated area

**Year:** 2017    **Photo no.:** 2017\_E027214C

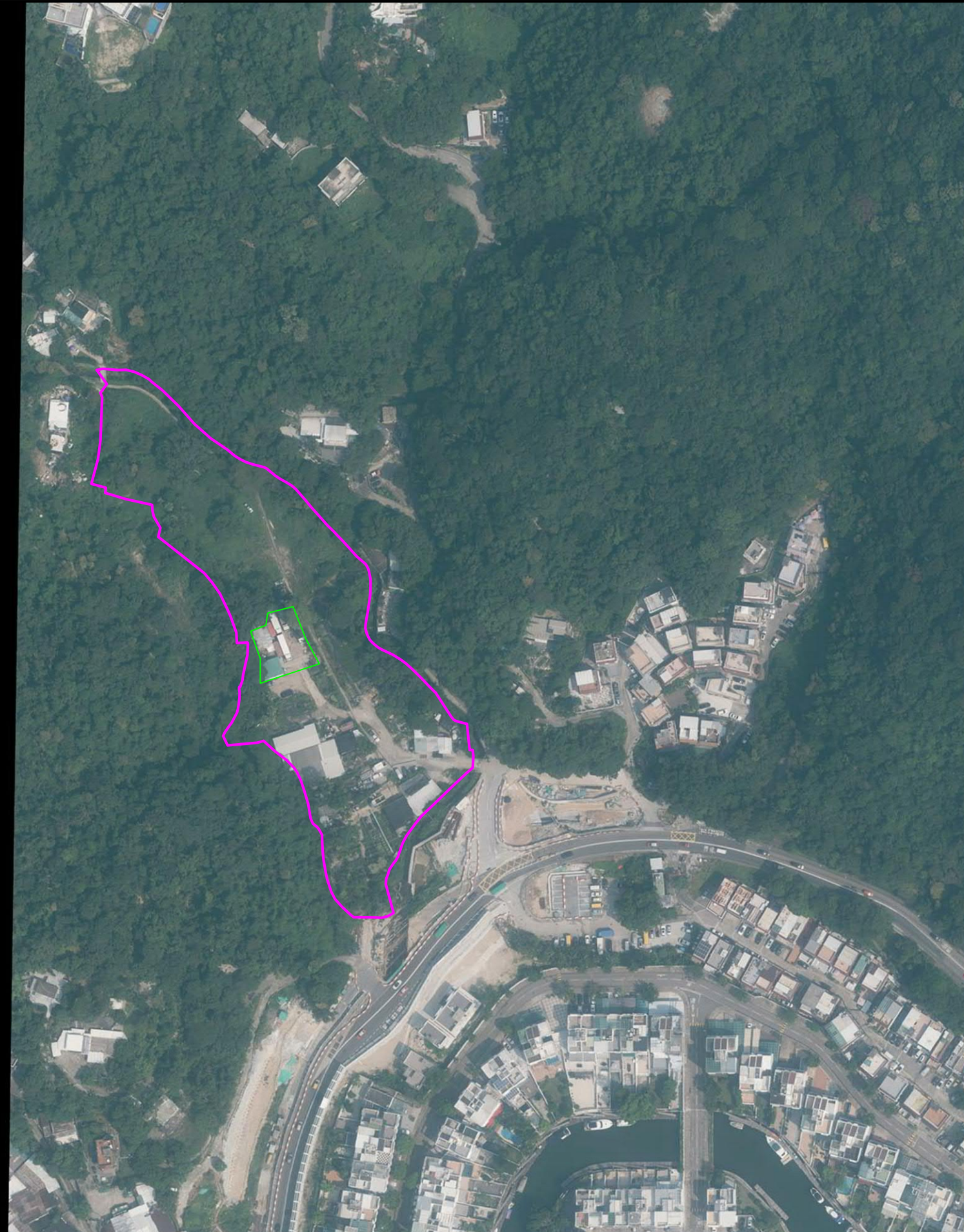
**Description:** Horticultural activities were recorded, as some greenhouses were observed in the southern part of the Site. Some vehicles were also parked in the northern part (Circled in green) of the Site.



SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-



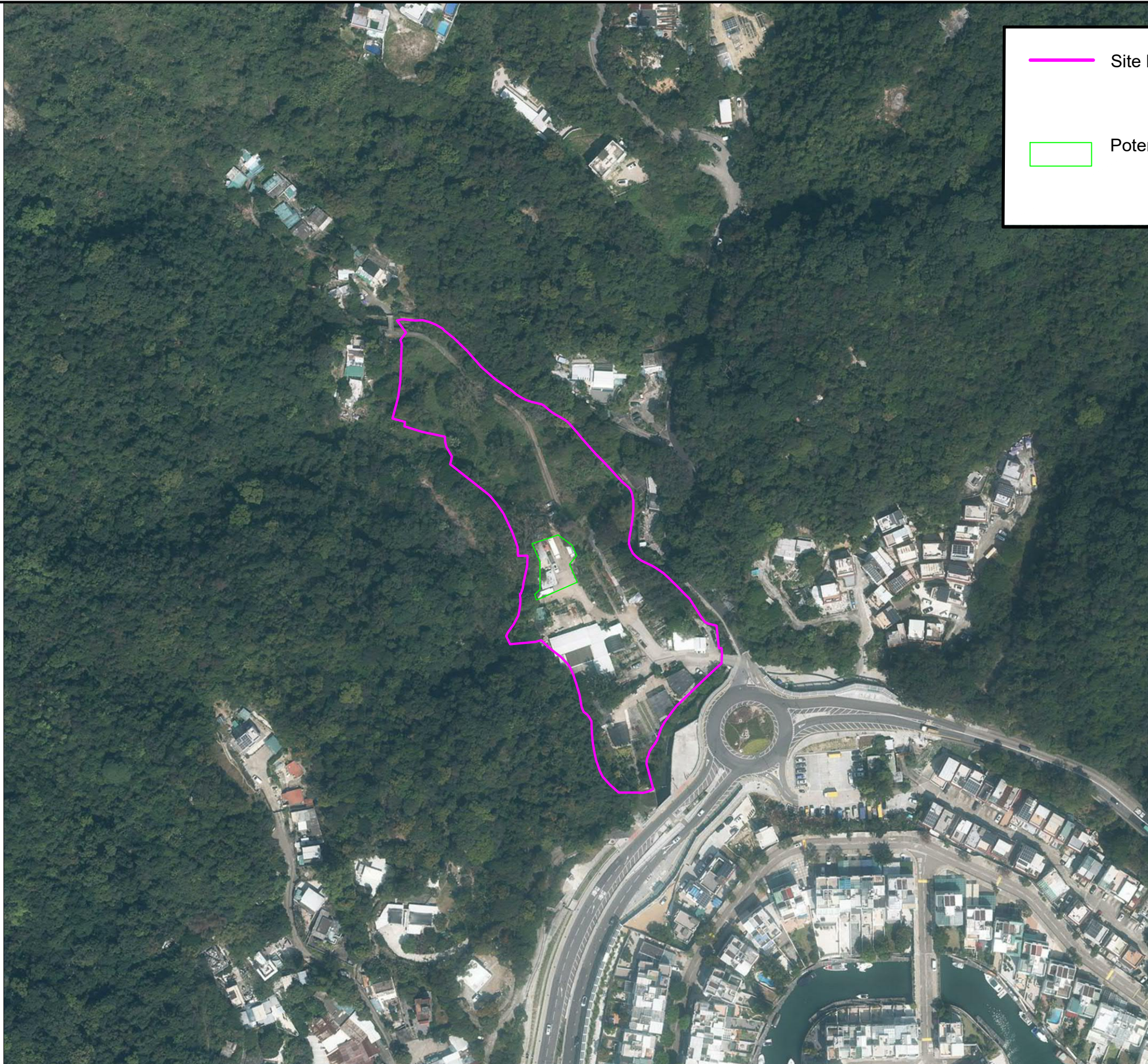
The Government of Hong Kong Sp



— Site Boundary

□ Potentially contaminated area

SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-



— Site Boundary

□ Potentially contaminated area



**Year:** 2023    **Photo no.:** 2023\_E194257C  
**Description:** No major change was observed on the Site, while the construction of the roundabout next to the it was completed.

SCALE	1:2000 @ A3	DATE	17 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-1
		REV	-

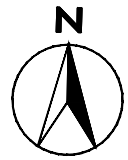
---

---

**APPENDIX 7-2**  
**PHOTO RECORD FOR SITE WALKOVER**

---

---

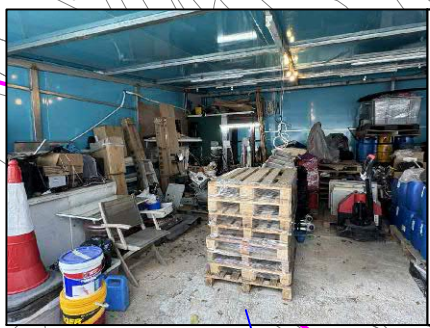


— Site Boundary

□ Potentially contaminated area



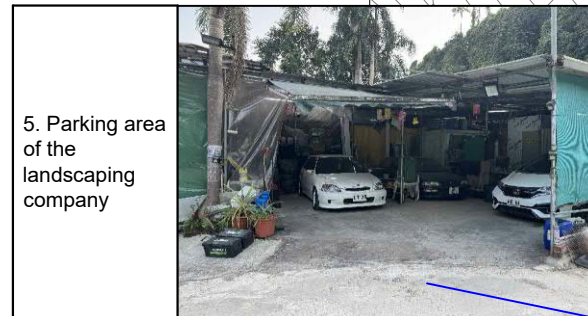
6. Plant products for commercial use.



7. Temporary structure for storage use.



9. Temporary storage area of construction materials inside the assessment site.



5. Parking area of the landscaping company



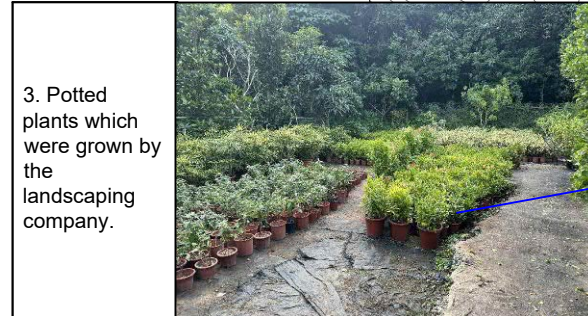
8. Another parking area of the landscaping company.



4. Substrates which were used and stored.



2. Forklift was used by the landscaping company.



3. Potted plants which were grown by the landscaping company.



1. Nullah at the entrance of the site



Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung

**Photo record for site-walkover**

SCALE	1:1000 @ A3	DATE	31 December 2024
CHECK	KC	DRAWN	TC
JOB No.	IA24143	DRAWING No.	Appendix 7-2
		REV	-

# Appendix F

## Drainage Impact Assessment

**Application for Amendment of Plan under Section 12A of the  
Town Planning Ordinance (Cap. 131) to Rezone the  
Application Site from "Green Belt" and Area Shown as  
"Road" to "Residential (Group C)5" for Proposed Residential  
Development at Various Lots in D.D. 210 and Adjoining  
Government Land, Pak Wai, Sai Kung**

**(HT21130)**

**Drainage Impact Assessment**

**July 2025**

Drainage Consultant:

---

**何田顧問工程師有限公司**

**HO TIN & ASSOCIATES**

**CONSULTING ENGINEERS LIMITED**

香港九龍官塘鴻圖道26號威登中心12樓1201-3室

電話:2895 2238 圖文傳真:2890 8872 電郵:admin@hotin.com.hk

Rooms 1201-3, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Tel : 2895 2238 Fax : 2890 8872 E-mail : admin@hotin.com.hk

---

## **1. Background**

1.1 Ho Tin & Associates Consulting Engineers Limited (HTA) has been appointed by the client to prepare a Drainage Impact Assessment (DIA) Report in support of an Application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung.

## **2. The Subject Site and Proposed Development**

2.1 The subject site is currently zoned "Green Belt" and shown as "Road" on the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12 (the OZP). It is located in the northwest side of Marina Cove on the opposite side of Hiram's Highway at Pak Wai, Sai Kung. To its east is Hing Keng Shek Road at the uphill area. It is currently occupied by botanical gardens, temporary structures and an access road. A site location plan is shown in **Figure D1**.

2.2 It is proposed to change the land use of the subject site to "Residential (Group C)5" with a plot ratio of 0.6 and maximum building heights of 4 storey (excluding basements). The proposed rezoning development covers a site area of about 12,692m<sup>2</sup> with a total GFA of about 7,615.2m<sup>2</sup>. The designed total population is about 360 persons, and a total of 10 nos. of management staff is presumed in the sewage estimation.

## **3. Existing Drainage Conditions of the Site**

3.1 The subject site is in elongated shape in general and is located within a valley having a principle major axis between the northwest and the southeast. There is an existing stream course running along its boundary from the northern end to the southern end. Surface runoff in the existing stream course is collected into an existing twin 2500 x 2500 box culvert with a gradient of 1 in 200 which conveys the flow and discharges into the Marina Cove on the opposite side of Hiram's Highway. A copy of as-built plan showing existence of the aforementioned box culvert is reproduced as **Figure D2** in this report.

3.2 The subject site is currently occupied by botanical gardens, temporary structures and an access road. It is generally hard paved (refer to **Plate No. 1** and **2**). The existing site levels slope gently downward from about +6.5mPD at the north to about +4.1mPD at the south. The level of the section of Hiram's Highway in front of the subject site is at about +7.3mPD.

3.3 The subject site is at elevations relatively lower than its surroundings and abuts on an existing stream course along its boundary from the northern end to the southern end. Surface runoff from the area to its east is intercepted by the existing stream course without entering into the subject site. Surface runoff from the area to its west would flow toward the subject site before flowing into the existing stream course. The existing drainage flow paths and catchment areas of the concerned area are shown in **Figure D3**.

3.4 Colour photos (locations of the photo taken shown in **Figure D1**) showing the existing drainage conditions in the vicinity are shown in the following:

	
<p>Plate No. 1 – Existing conditions of the subject site (1)</p>	<p>Plate No. 2 – Existing conditions of the subject site (2)</p>
	
<p>Plate No. 3 – Existing watercourse running underpassing the subject site entrance</p>	<p>Plate No. 4 – Existing watercourse running along the southeastern site boundary</p>
	
<p>Plate No. 5 – Enlarged width of the existing watercourse outside the southern tip of the subject site</p>	<p>Plate No. 6 – Existing twin 2500x2500mm box culvert receiving flows of the existing watercourse at the downstream area of the subject site</p>

#### **4. Proposed Drainage Works**

- 4.1 Peripheral channels with catchpits will be constructed to intercept all surface runoff running across the subject site boundary. Surface runoff of the subject proposed development will be collected by the proposed channel system. Underground drainage will be used within the subject site boundary only when necessary. The flows inside the channels/drainage will be discharged via a terminal manhole with desilting trap (details refer to DSD Standard Drawing No. DS 1091) into the existing watercourse near the southeastern boundary of the subject site (refer to the above **Plate No. 4**), and from which the water is conveyed to the further downstream into an existing twin 2500x2500mm box culvert running underpassing Hiram's Highway into the Marina Cove (refer to the above **Plate No. 6**).
- 4.2 Having taken into account of the existing baseflow along the natural stream channel, the narrowest section of the existing watercourse into which the subject site would discharge its flow is about 5.0m (wide) x 2m (deep) in size (refer to the above **Plate No. 4**).
- 4.3 Assessment criteria is based on the recommendation set out in the Stormwater Drainage Manual (Fifth edition, Jan 2018) (SDM) and its Corrigendum Nos. 1/2022, 1/2024 and 2/2024 issued by DSD. Design Return Period of 200 years is being adopted.

#### **Design Assumptions**

Design return period = 200 years (suitable of 'Urban Drainage Trunk Systems')

It is assumed that building platforms of the existing village houses occupy 10% of the remaining area of the catchment, i.e. excluding the area of the subject site, such that,

runoff coefficient = 0.95 (for concrete/asphalt – the subject site area and 10% of the remaining area of the catchment)  
0.35 (for grassland (heavy soil), steep – 90% of the remaining area of the catchment)

#### **Catchment Area**

The subject site is located near the outlet of a catchment below Sam Fai Tin to the northwest side of Marina Cove at Sai Kung. The catchment consists of heavily vegetated valleys with village houses scattering on the plateaus near the lower portion of the catchment. There would be no change in the existing catchment boundary and area after the proposed development. Since the subject site is currently generally hard paved (refer to the above paragraph 3.2), the overall paved and unpaved areas and drainage conditions of the catchment before and after the subject development are basically the same.

At present, the concerned catchment consists of a main discharge route of which its lower reach runs along the northeast boundary of the subject site. The main discharge route would be undisturbed after the subject development. The major change in the drainage path within the concerned catchment area is that the flow from the subject site would be conveyed to the downstream via engineered channels instead of overland flows.

Catchment area of the narrowest section of the existing watercourse (including the subject site area) (refer to **Figure D3**) =  $(12,692 + 43,736 + 854,721)\text{m}^2 = 911,149\text{m}^2$

**Time of Concentration**

Brandy-Williams method is used in calculation of the time of concentration. The surface runoff will flow into the existing watercourse and be conveyed to the existing twin 2500x2500mm box culvert.

$$H = (389 - 2)/1800 \times 100 = 21.50,$$

$$\begin{aligned} \text{then, time of concentration } t_d &= 0.14465L / (H^{0.2}A^{0.1}) \\ &= 0.14465 \times 1800 / (21.50^{0.2} \times 911,149^{0.1}) = 35.74 \text{ min.} \end{aligned}$$

**Design Rainfall Intensity**

The corresponding runoffs under rainfall intensity for various return period are worked out with reference to Rational Method. Brandy-Williams method is used in calculation of the time of concentration. A uniformly distributed rainfall with an intensity is determined by the Intensity-Duration-Frequency. With referenced to Table 3a - Storm Constants for different return periods of HKO Headquarters in the Corrigendum No. 1/2024 of SDM, the rainfall profiles are derived based on the following equation:

$$i = a / (t_d + b)^c$$

- where i = extreme mean intensity in mm/hr
- t<sub>d</sub> = duration in minutes (t<sub>d</sub> ≤ 240)
- a, b, c = storm constants given in the table below

**Table 2 : Storm Constants**

Return Period (years)	200
a	508.8
b	3.46
c	0.322

the rainfall intensity for 1 in 200 years return period i = 156.14 mm/hr

A 16.0% rainfall increase has to be adopted in the hydraulic calculation to cater for effects due to climate change and further 12.1% rainfall increase due to design allowance anticipated in end 21st Century as suggested in the item (e), (k) and (n) in the Corrigendum No. 1/2022 of SDM.

Hence, the revised rainfall intensity for 1 in 200 years return period i = 156.14 x 1.16 x 1.121 = 203.04 mm/hr

**Estimated Increase in Surface Runoff**

The runoff is estimated by Rational Method.

The runoff coefficient of the subject site area is conservatively taken as 0.95 and that of the remaining area of the same catchment is collectively taken as 0.35 with reference to the recommended values given in "Stormwater Drainage Manual" published by DSD.

$$\begin{aligned} \text{Estimated runoff for 1 in 200 years } Q &= C \times i \times A / (3600 \times 1000) \\ &= (0.95 \times (12,692 + 10\% \times 898,457) + 0.35 \times 90\% \times 898,457) \times 203.04 / (3600 \times 1000) \\ &= 21.46 \text{ m}^3/\text{s} \end{aligned}$$

#### **Assessment of Adequacy of the 5m (wide) x 2m (deep) Section of the Existing Watercourse**

Manning Equation is adopted in evaluating capacity of the existing watercourse, such that  $Q = A \times R^{2/3} \times S_f^{1/2} / n$

Adopting  $n = 0.050$  (natural stream channel, winding some pools and shoals, clean, some weeds and stones under bad condition), and  $S_f = 1/1000$ , then  $Q = (5 \times 2) \times (2+5+2)^{2/3} \times (0.001)^{1/2} / 0.050 = 27.36 \text{ m}^3/\text{s}$

Capacity of the 5m x 2m section of the existing watercourse =  $27.36 \text{ m}^3/\text{s} > 21.46 \text{ m}^3/\text{s}$ , therefore acceptable. The existing watercourse is capable to convey the estimated flow and will not flood.

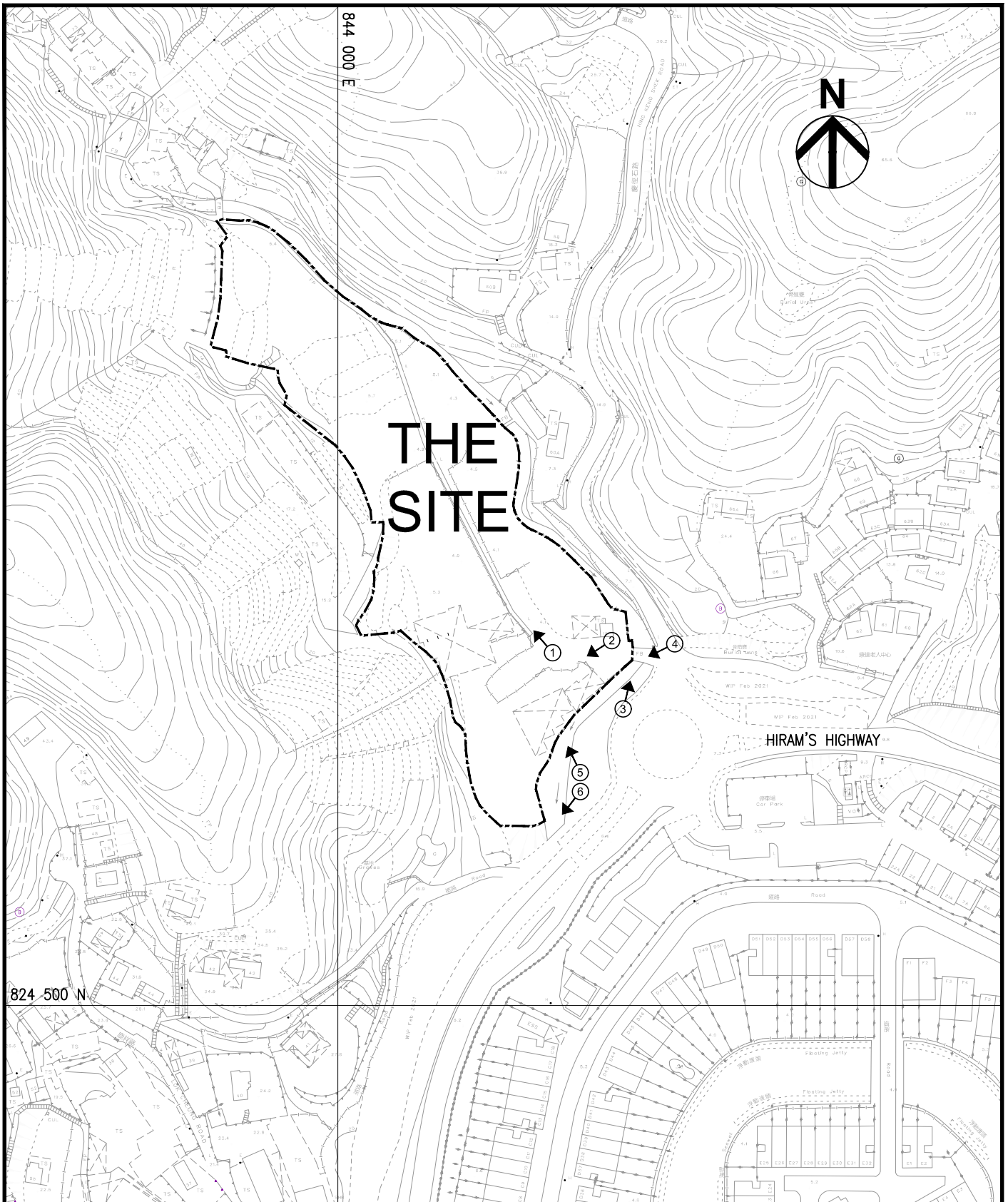
- 4.4 It is envisaged to have no insurmountable technical problems in the detailed drainage design which will be submitted to relevant government departments for approval at the later stage.
- 4.5 The applicant is committed to obtain all necessary consents from the relevant government departments and lot owners, where necessary, in constructing the proposed drainage provisions outside the subject site boundary after this application is approved.
- 4.6 The subject proposed development would not alter the existing drainage conditions of the area and the surface runoff of the subject proposed development would be properly collected and conveyed to an appropriate discharge point. No blockage of any existing flow paths would occur. The proposed stormwater drainage management plan is shown in **Figure D4**.

## **5. Blue-green Concept Provisions**

- 5.1 Aiming at improvement of the sustainability and resilience of Hong Kong's drainage system, application of blue-green drainage infrastructure which facilitates the infiltration of rainfall and the process of natural filtering to reduce the quantity and improve the quality of runoff, will be considered under the subject proposed development. Tentatively, green roofs, porous pavements and rainwater harvesting facilities will be recommended for consideration. The harvested water, if appropriate or after treatment, will be used for toilet flushing, drip irrigation, sprayed irrigation, water features, car washing and street cleansing, etc.

## **6. Conclusion and Recommendations**

- 6.1 The subject development will be for a proposed residential development. The subject site area is now occupied by botanical gardens, temporary structures and an access road with an existing watercourse running from the northwest to the southeast along the eastern boundary of the subject site. The existing watercourse collects surface runoff from the subject site at present and will be maintained after the proposed development. Stability of the banks of the watercourses will be assessed and upgrading works will be proposed if necessary at the later detailed design stage to ensure safety of the public.
- 6.2 Peripheral channels with catchpits will be constructed to intercept all surface runoff running across the subject site boundary. A comprehensive channel system will be constructed within the subject proposed development and to convey the collected flows via a terminal manhole with desilting trap to the existing watercourse to the south of the subject site. The existing watercourse will convey its flow into a twin 2500x2500mm box culvert running underpassing Hiram's Highway into the Marina Cove. The additional flow incurred by the subject development would not overload the existing watercourse. Detailed drainage design, including blue-green drainage facilities, will be submitted to relevant government departments for approval at the later stage. No insurmountable technical problems is envisaged.
- 6.3 The subject proposed development will not alter the existing drainage conditions of the area.
- 6.4 Besides, the applicant will obtain all necessary consents from the relevant government departments and lot owners, where necessary, for constructing the proposed drainage provisions outside the subject site boundary after this application is approved. In conclusion, the subject development with implementation of the proposed drainage works will not cause any adverse drainage impacts onto the area.



**LEGEND:**

- SUBJECT SITE BOUNDARY
- (N) → LOCATION OF PHOTO TAKEN (N-PLATE No.)

**PROJECT** APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

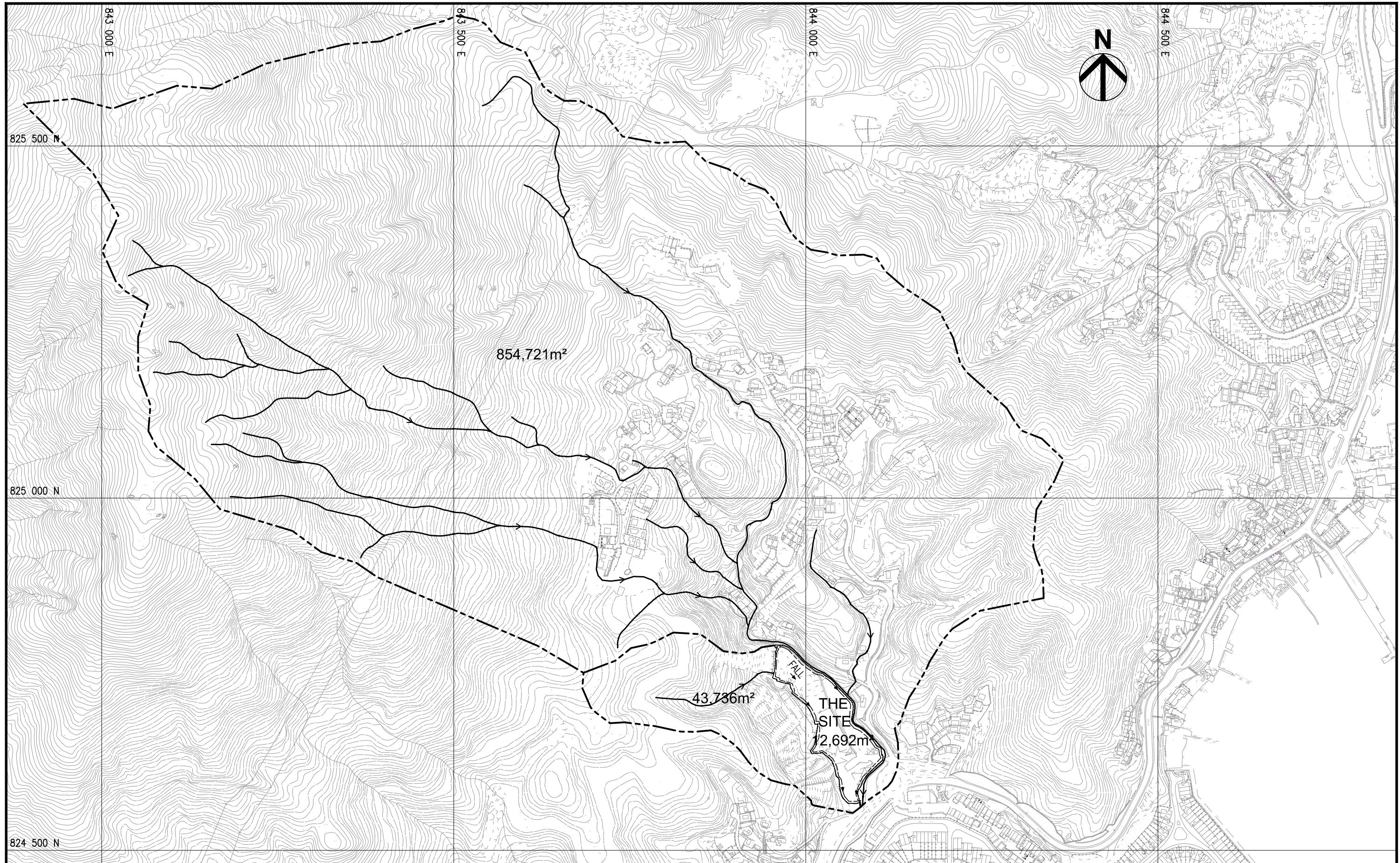
**何田顧問工程師有限公司**  
**HO TIN & ASSOCIATES**  
**CONSULTING ENGINEERS LIMITED**

**TITLE**  
 SITE LOCATION PLAN

**SCALE**  
 1 : 2000 - A4

**DRAWING No.**  
 FIGURE D1





LEGEND:

- SUBJECT SITE BOUNDARY
- CATCHMENT BOUNDARY
- DRAINAGE PATH (BEFORE AND AFTER THE SUBJECT DEVELOPMENT)
- └─▶─ PROPOSED INTERNAL DRAINAGE OF THE SUBJECT DEVELOPMENT

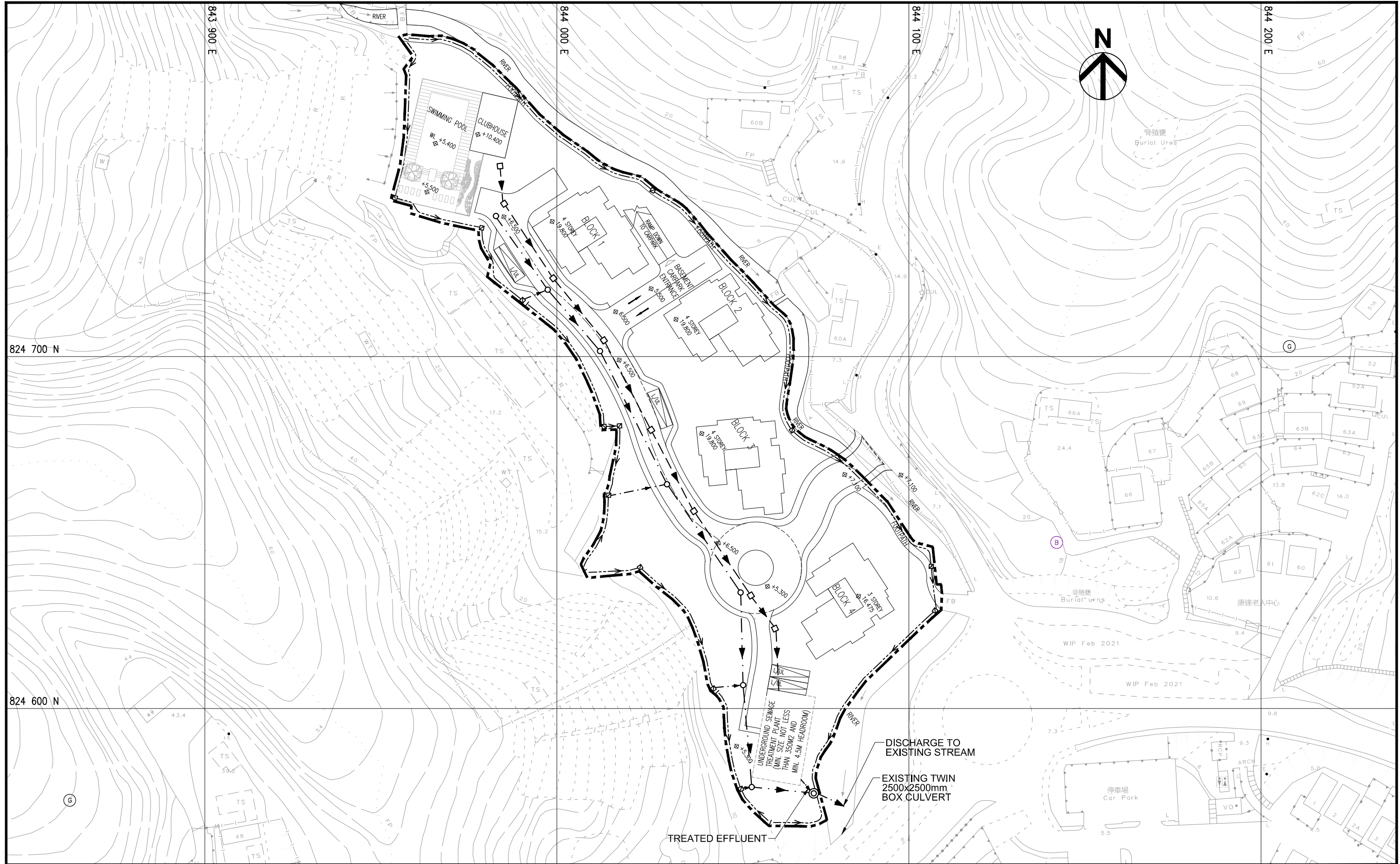
PROJECT APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

TITLE EXISTING DRAINAGE FLOW PATHS AND CATCHMENT AREAS

何田顧問工程師有限公司  
**HO TIN & ASSOCIATES**  
 CONSULTING ENGINEERS LIMITED

SCALE  
 1 : 5000 - A3

DRAWING No.  
 FIGURE D3



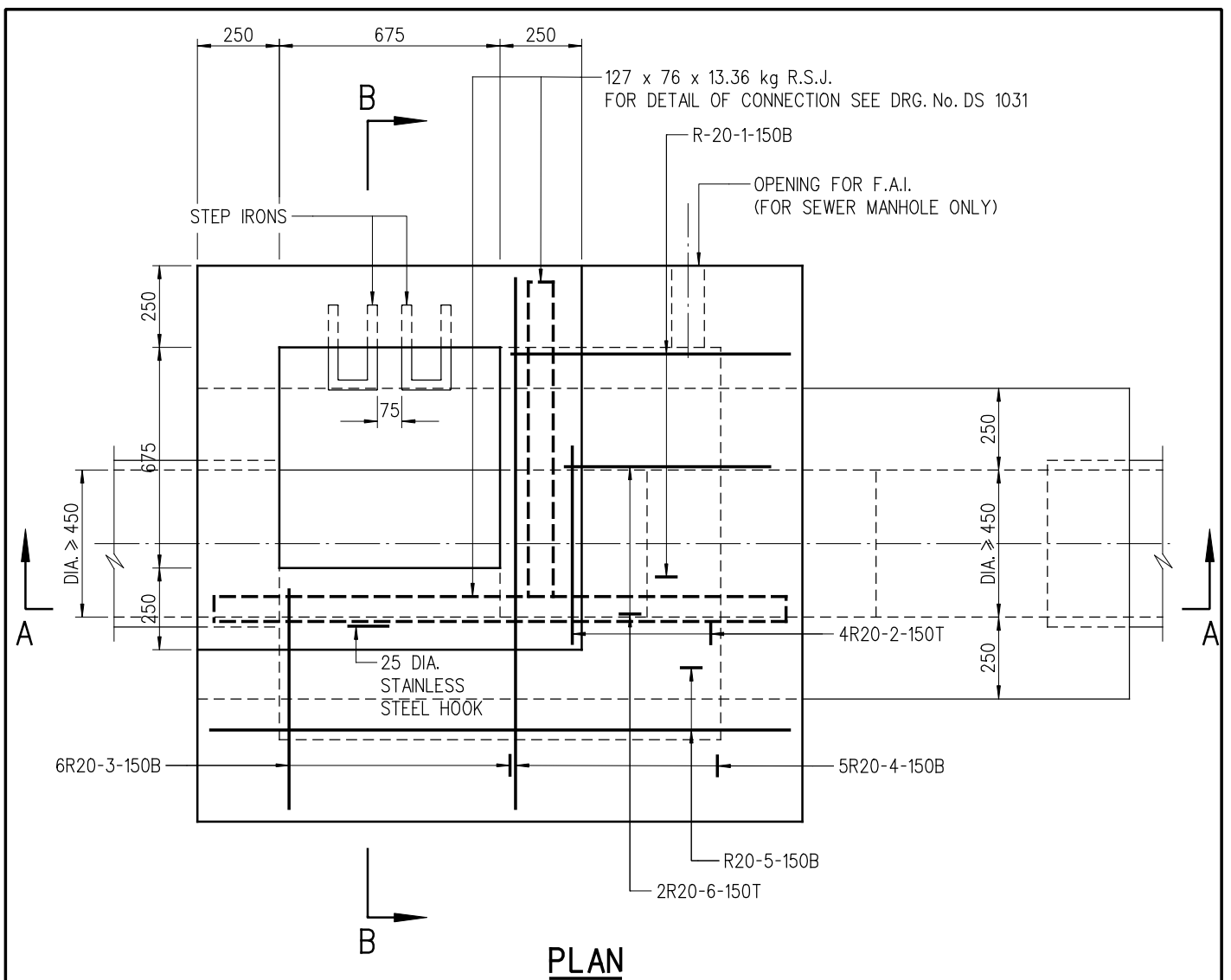
LEGEND:	
	SUBJECT SITE BOUNDARY
	PROPOSED GROUND LEVEL
	PROPOSED STORMWATER TERMINAL MANHOLE
	PROPOSED STORMWATER DRAIN & MANHOLE
	PROPOSED U-CHANNEL & CATCH PIT
	PROPOSED SEWER & MANHOLE

PROJECT APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

TITLE **STORMWATER DRAINAGE MANAGEMENT PLAN**

何田顧問工程師有限公司  
**HO TIN & ASSOCIATES**  
 CONSULTING ENGINEERS LIMITED

SCALE 1 : 1000 - A3  
 DRAWING No. **FIGURE D4**



**PLAN**

**NOTES:**

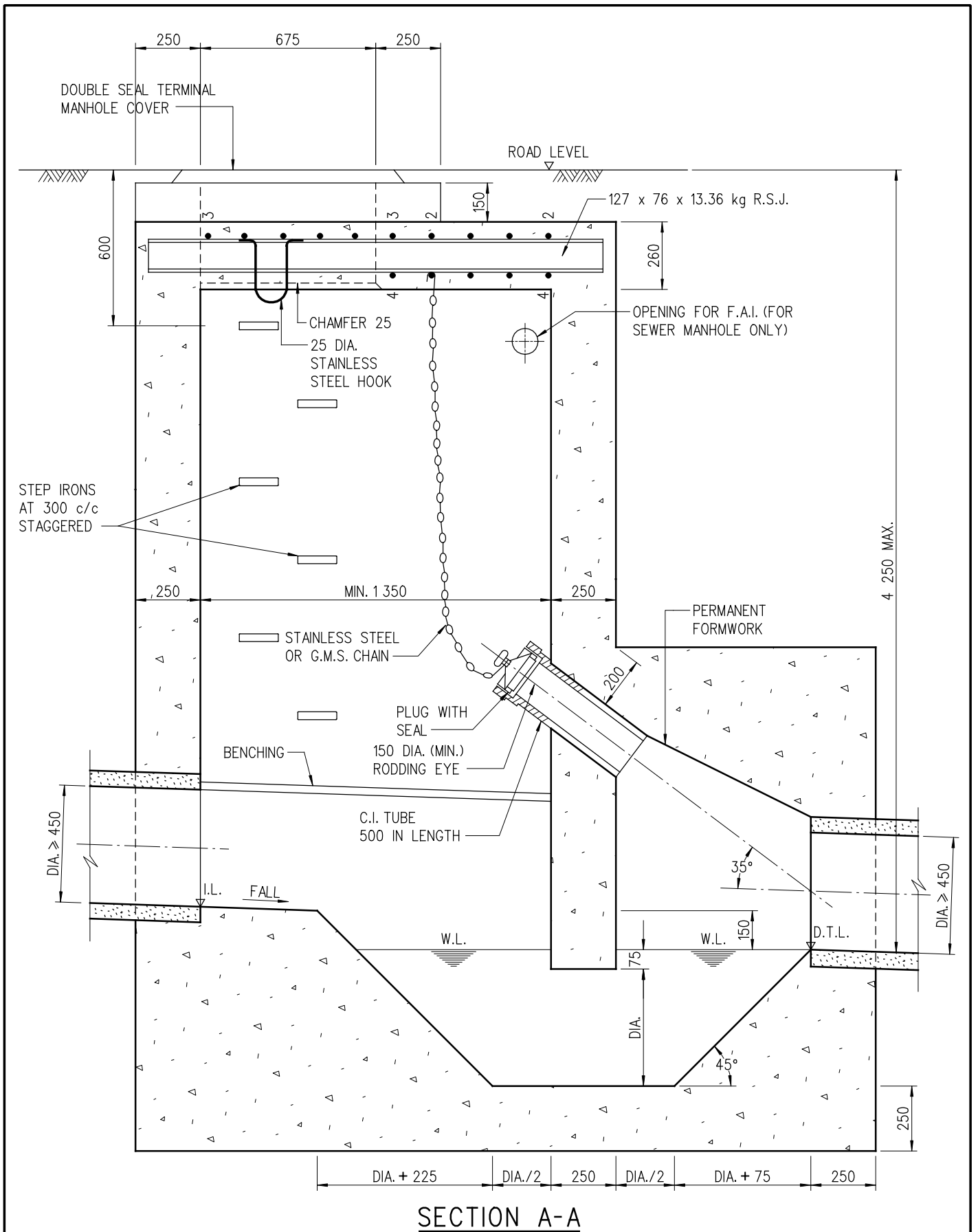
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. NOTATION OF : THE SEQUENCE OF DESCRIPTION OF IDENTIFICATION MARKS ON DRAWINGS FOR STEEL REINFORCING BARS REINFORCEMENT FOR CONCRETE WORK IS AS FOLLOWS (NUMBER, TYPE, SIZE, MARK, SPACING, LOCATION OR COMMENT)
3. B DENOTES GRADE 500B RIBBED REINFORCEMENT.
4. R DENOTES GRADE 250 PLAIN REINFORCEMENT.
5. PIPE DIAMETER : EQUAL OR GREATER THAN 450 mm
6. NORMAL RANGE : 1 750 TO 4 250 mm (MEASURED FROM ROAD LEVEL TO LOWEST INVERT) OF DEPTH
7. USED IN : STORMWATER DRAIN AND SEWER
8. JUNCTION : POSITION OF JUNCTION TO BE DETERMINED IN EACH INDIVIDUAL CASE. CHANNELS IMMEDIATELY UNDER ACCESS TO MANHOLE SHOULD BE AVOIDED.
9. TOP TREATMENT : SEE DRAWING No. DS 1032
10. STEP IRON : SEE DRAWING No. DS 1043
11. FOUNDATION : FOUNDATION OF MANHOLE VARIES WITH SITE CONDITION. THEREFORE, IT SHOULD BE DETERMINED ON SITE BY THE ENGINEER.
12. CONCRETE MIX : GRADE 30/20
13. DIAMETER OF F.A.I. NORMALLY 100 mm
14. MINIMUM COVER AT END OF BARS 40 mm
15. COVER AND FRAME NOT SHOWN ON PLAN FOR CLARITY.

	NEW ISSUE	ORIGINAL SIGNED	13.1.2016
REV.	DESCRIPTION	SIGNATURE	DATE

**TERMINAL MANHOLE  
TYPE T2\_1**

**DRAINAGE SERVICES DEPARTMENT**

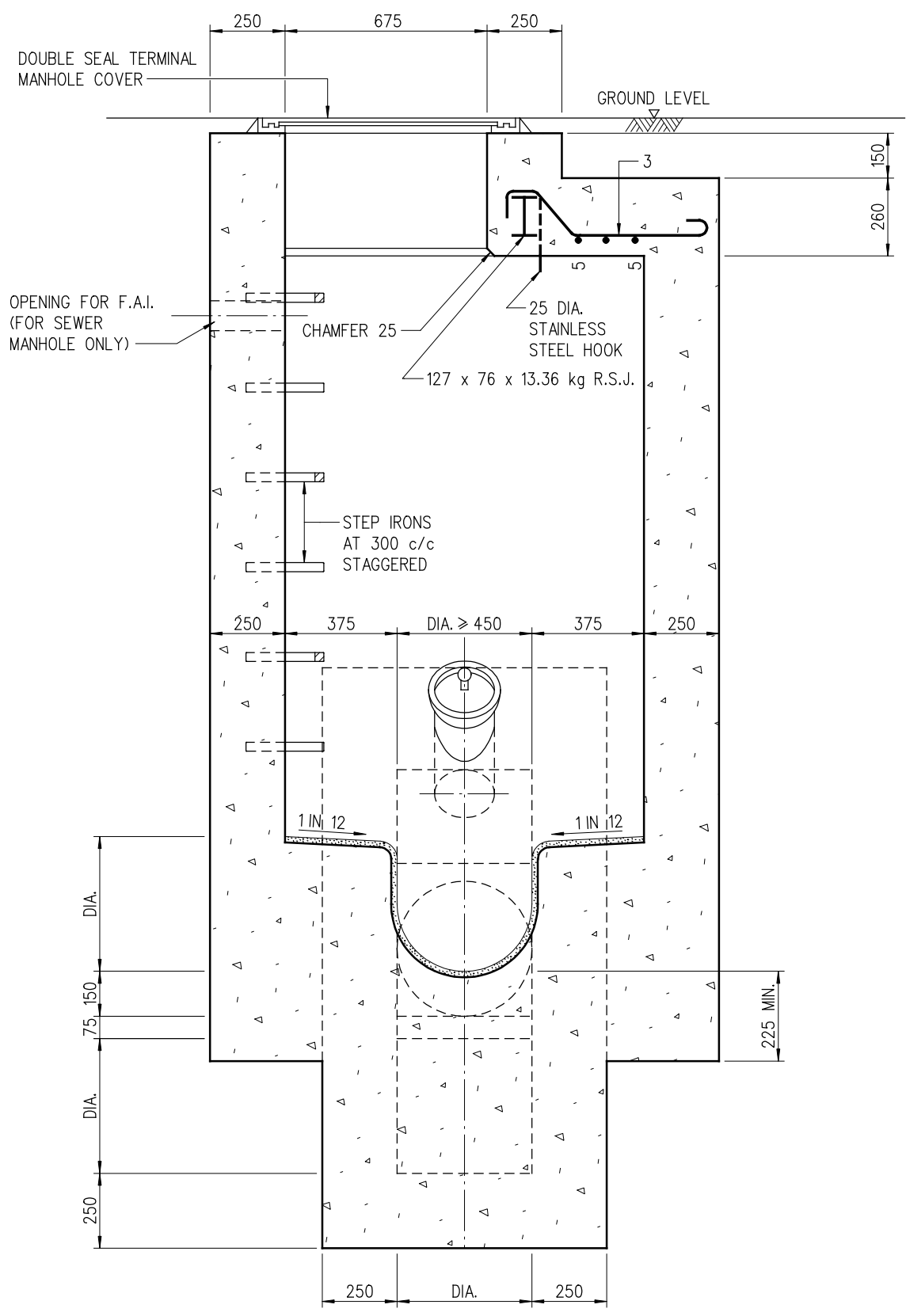
REFERENCE	DRAWING No.
SCALE	<b>DS 1091</b> ( SHEET 1 OF 3 )
1 : 20	



SECTION A-A

TERMINAL MANHOLE  
TYPE T2\_1

	NEW ISSUE	ORIGINAL SIGNED	13.1.2016
REV.	DESCRIPTION	SIGNATURE	DATE
REFERENCE		DRAWING No.	
SCALE		DS 1091	
1 : 20		( SHEET 2 OF 3 )	



**SECTION B-B**

**TERMINAL MANHOLE  
TYPE T2\_1**

	NEW ISSUE	ORIGINAL SIGNED	13.1.2016
REV.	DESCRIPTION	SIGNATURE	DATE
<b>DRAINAGE SERVICES DEPARTMENT</b>			
REFERENCE	DRAWING No.		
SCALE	DS 1091		
	( SHEET 3 OF 3 )		

## Appendix G

### Sewage Treatment and Disposal Proposal Report

**Application for Amendment of Plan under Section 12A of the Town  
Planning Ordinance (Cap. 131) to Rezone the Application Site from  
"Green Belt" and Area Shown as "Road" to "Residential (Group  
C)5" for Proposed Residential Development at Various Lots in D.D.  
210 and Adjoining Government Land, Pak Wai, Sai Kung**

**(HT21130)**

**Sewage Treatment and Disposal Proposal (STDP) Report  
(rev. 2)**

**July 2025**

Sewerage & Sewage Treatment Consultant:

---

**何田顧問工程師有限公司**  
**HO TIN & ASSOCIATES**  
CONSULTING ENGINEERS LIMITED  
香港九龍官塘鴻圖道26號威登中心12樓1201-3室  
電話:2895 2238 圖文傳真:2890 8872 電郵: admin@hotin.com.hk  
Rooms 1201-3, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong  
Tel: 2895 2238 Fax: 2890 8872 E-mail: admin@hotin.com.hk

---

## **Content**

1. Introduction
2. General Site Description and the Subject Proposed Development
3. Existing Sewerage System
4. Proposed Sewage Disposal Arrangement
5. Design Sewage Flows and Criteria
6. Estimated Peak Sewage Flows
7. Proposed Sewage Treatment
8. Conclusion

## **FIGURES**

Figure S1	Site Location Plan
Figure S2	Proposed Sewerage Management Plan

## **TABLES**

Table 1	Unit Flow Factors for Domestic Flows
Table 2	Unit Flow Factors of Commercial Flows from General Operation
Table 3	Peaking Factors, P (Extracted from GESF)
Table 4	Estimated Sewage Flow from Swimming Pool
Table 5	Summary of Estimated Sewage from the Subject Proposed Development

## **List of Abbreviations**

EPD	Environmental Protection Department
GESF	EPD's Report No. EPD/TP 1/05 - Guidelines for Estimating Sewage Flows for Sewerage Infrastructure Planning
GDSSTP	EPD's Guidelines for the Design of Small Sewage Treatment Plants
HTA	Ho Tin & Associates Consulting Engineers Limited
OZP	Outline Zoning Plan
ADWF	Average Dry Weather Flow
PDWF	Peak Dry Weather Flow

## **1. Introduction**

- 1.1 Ho Tin & Associates Consulting Engineers Limited (HTA) has been appointed by the client to prepare a Sewage Treatment and Disposal Proposal (STDP) Report in support of an application for Amendment of Plan under Section 12A of the Town Planning Ordinance (Cap. 131) to Rezone the Application Site from "Green Belt" and Area Shown as "Road" to "Residential (Group C)5" for Proposed Residential Development at Various Lots in D.D. 210 and Adjoining Government Land, Pak Wai, Sai Kung.
- 1.2 This report presents a technically feasible STDP for the subject proposed residential development under application.
- 1.3 The objectives of this STDP are to:-
- indicate any changes/increase in the sewage flow due to the subject proposed development scheme under application;
  - assess any potential sewage impacts of the subject proposed development on the existing sewerage facilities; and
  - propose mitigation measures and sewage treatment and disposal proposal to avoid any potential adverse environmental impact.
- 1.4 The scope of this STDP includes:-
- general site description;
  - identification of existing sewerage facilities for the concerned area;
  - estimation of sewage flow of the subject proposed development;
  - feasibility of connection with existing public sewerage facilities; and
  - proposal of sewage treatment and disposal to cater for sewage flow generated by the subject proposed development if found necessary.

## **2. General Site Description and the Subject Proposed Development**

- 2.1 The subject site is currently zoned "Green Belt" and area shown as "Road" on the Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12 (the OZP). It is located in the northwest side of Marina Cove on the opposite side of Hiram's Highway at Pak Wai, Sai Kung. It is currently occupied by botanical gardens, temporary structures and an access road. A site location plan is shown in **Figure S1**.

- 2.2 It is proposed to change the land use of the subject site to "Residential (Group C)5" with a plot ratio of 0.6 and maximum building heights of 4 storey (excluding basements). The proposed rezoning development covers a site area of about 12,692m<sup>2</sup> with a total GFA of about 7,615.2m<sup>2</sup>. The designed total population is about 360 persons, and a total of 10 nos. of management staff is presumed in the sewage estimation.
- 2.3 The proposed vehicular ingress/egress point of the subject site abuts on the west side of Hing Keng Shek Road after exit from the roundabout of Hiram's Highway at Pak Wai.

### **3. Existing Sewerage System**

- 3.1 At present, there is no existing public sewers in the subject area or its vicinity.

### **4. Proposed Sewage Disposal Arrangement**

- 4.1 Since there is no existing public sewers in the concerned area for connection, discharging sewage generated by the subject proposed development into public sewers is not feasible at least by the time of anticipated occupation of the subject proposed development. Therefore, an on-site sewage treatment plant is required until connection to public sewers can be carried out.
- 4.2 The subject site falls within Port Shelter catchment area where tidal flow is restricted. The subject proposed development shall be equipped with suitable on-site sewage treatment facility with treatment standards to handle the sewage generated from the proposal.
- 4.3 Sewage from the residential flats will be collected and carried down to the ground level via downpipes. Branch sewerage will be laid close to the blocks to receive sewage flows from the downpipes directly. The branch sewerage will then discharge into the trunk sewerage which will be laid running underneath the main access road. The trunk sewerage will collect and convey all sewage generated by the subject proposed development to an on-site sewage treatment plant located at the west of the subject site. A proposed sewerage management plan is shown in **Figure S2**.

- 4.4 All future treated effluent discharge shall comply with the Water Pollution Control Ordinance (Cap. 358). A licence granted under the Water Pollution Control Ordinance should be obtained before a new discharge is commenced.
- 4.5 All collected sewage will be treated in the proposed sewage treatment plant. The treated effluent shall comply with the mandatory standards and requirements in the TM-DSS, and will be discharged into the proposed stormwater drainage system of the subject proposed development and from which be discharged to the existing watercourse outside the subject site.

## **5. Design Sewage Flows and Criteria**

### **5.1 General Criteria**

- 5.1.1 The sewage flow generated from the subject proposed development for assessing sewers is estimated in accordance with the EPD's report No. EPD/TP 1/05 – "Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning" (GESF) and the Sewerage Manual Part 1 published by DSD (SM). For proposed on-site sewage treatment plant (STP), EPD's Guidelines for the Design of Small Sewage Treatment Plants (GDSSTP) is adopted.

### **5.2 Design Population**

- 5.2.1 It is explicitly stated in the subject planning application statement that the design population will be about 360 persons plus 10 management staff. These design parameters are adopted in this STDP.

### **5.3 Unit Flow Factors**

- 5.3.1 Unit flow factors as recommended in the Table T-1 and T-2 in GESF and Appendix 2 in GDSSTP are adopted to estimate the total sewage flow generated from the subject proposed development.
- 5.3.2 The unit flow factors for domestic flows adopted for this study are summarized in **Table 1** below.

**Table 1 : Unit Flow Factors for Domestic Flows**

Development Type	Unit	Unit Flow Factor (m <sup>3</sup> /day)
Private R3	Person	0.370

5.3.3 The unit flow factors for commercial flows, i.e. from the management staff, adopted in this study are summarized in **Table 2** below.

**Table 2 : Unit Flow Factors (UFF) of Commercial Flow from General Operation (referenced to GESF's Table T-2)**

Description	Specific Trades	Unit (per)	Unit Flow Factors (m <sup>3</sup> /day)
Commercial Employee	Not applicable	Employee	0.080
Commercial Activities	J11 (Community, Social and Personal Services)	Employee	0.200

*Remark: A total of 0.280 m<sup>3</sup> per unit/day is same as the design flow rate for Services (shops etc.), i.e. 280 l/employee/day, recommended in GDSSTP.*

## 5.4 Peaking Factors

5.4.1 In this assessment, contributing population is calculated as follows:

$$\begin{aligned} \text{Contributing Population} &= (\text{Calculated total average flow} / 0.27) \text{ persons} \\ &= 153.54 / 0.27 = 569 \text{ persons} \end{aligned}$$

5.4.2 The contributing population is <1,000, and the proposed sewers of the subject development would be newly constructed hence infiltration and inflow in the sewerage system would be negligible. Therefore, a peaking factor of 6 as given in Table T-5 in the GESF and listed in below **Table 3** is applicable for the design of internal sewers of the subject development.

**Table 3 : Peaking Factors, P (Extracted from GESF)**

Population Range for sewers	Peaking Factor (including stormwater allowance) for facility with existing upstream sewerage	Peaking Factor (excluding stormwater allowance) for facility with new upstream sewerage
<1,000	8	6

5.4.3 For STP, with reference to GDSSTP, the design peaking factor would be

- 6 for population equal to or under 1,000
- 4 for population over 1000 but not less than that based on 1000 population.

## 6. Estimated Peak Sewage Flows

6.1 The design population of the proposed development is about 360 persons plus 10 employee. Tentatively, a 15m x 25m x 1.2m (average water depth) swimming pool is proposed. An instantaneous peak discharge flow of sewage generated from the backwashing is estimated to be approximately 0.2025 l/s in accordance with the general operation of backwashing as shown in **Table 4** below.

**Table 4 : Estimated Sewage Flow from Swimming Pool**

Description	
Pool Area	15m x 25m = 375 m <sup>2</sup>
Pool Depth	1.2 m
Pool Volume	375 x 1.2 = 450.0m <sup>3</sup>
Turnover Rate	6 hrs
Surface Loading Rate of Filter	25 m <sup>3</sup> /m <sup>2</sup> /hr
Filter Areas Required	450.0 / 6 / 25 = 3.000 m <sup>2</sup>
Backwash Duration	7 min/day
Backwash Flow Rate	50 m <sup>3</sup> /m <sup>2</sup> /hr
Design Flow of Swimming Pool	50 x 3.000 x 7 / 60 = 17.500 m <sup>3</sup> /day (0.2025 l/s)

6.2 The estimated total sewage flow generated from the proposed development are summarized in **Table 5** below.

**Table 5 : Summary of Estimated Sewage from the Subject Proposed Development**

Development Type	Population (number of people)	Unit Flow Factors (m <sup>3</sup> /day)	Catchment Inflow Factors	Peaking Factor	ADWF <sup>(1)</sup> (m <sup>3</sup> /s)	PDWF <sup>(2)</sup> (m <sup>3</sup> /s)
Domestic	360	0.370	Referenced to para. 10.1	6	0.001542	0.009252

J11 (Community, Social and Personal Services)	10	0.280	of the GESF – ‘not applicable to new catchments which are deemed to be free from misconnec- tions and pipe defects’	6	0.000032	0.001920
Swimming Pool	/	10.500		/	0.000203	0.000203
				Total	0.001777 (153.54 m <sup>3</sup> /day)	0.011375

Notes:

- (1) ADWF – Average dry weather flow, which is equivalent to population x unit flow factor x catchment inflow factor / (60 x 60 x 24)
- (2) PDWF – Peak dry weather flow, which is equivalent to ADWF x Peaking Factor

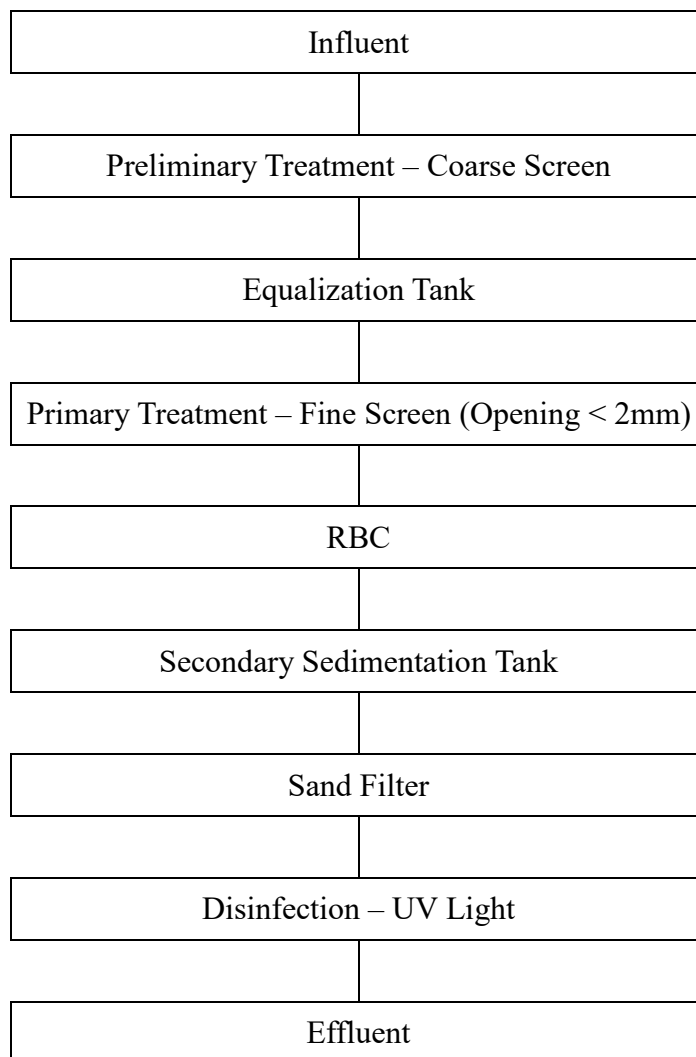
6.3 The peak total sewage generated from the subject proposed development is estimated to be 0.011375 m<sup>3</sup>/s (i.e. 11.38 l/s).

## **7. Proposed Sewage Treatment**

- 7.1 It is proposed to construct an on-site secondary sewage treatment plant (STP) as an interim measure to cater for the sewage generated from the subject proposed development. The plant will be abandoned after connection to public sewer is possible and acceptable to the authority. The STP will only be decommissioned after the sewer connection is satisfactorily completed.
- 7.2 The treated effluent will be discharged into the existing watercourse via the proposed stormwater system of the subject development. Effluent discharge will comply with the standards stipulated in the TM-DSS and be discharged into proposed stormwater drainage system.
- 7.3 Incoming sewage will pass through a coarse screen before discharging into the equalization tank. The sewage will be pumped to the fine screen chamber to prevent any sizeable solid and minimize the organic solid content into the RBC system. The mixed liquor will then be discharged to the final sedimentation tank. Sludge from the sedimentation tanks will be dewatered by mechanical dewatering unit such as filter press. The dewatering sludge will then be disposed off by land burial to the designated site by a

licensed contractor. The secondary treated sewage will pass the sand filter before disinfection process is carried out.

7.4 A flow chart of the proposed sewage treatment system is given below:



7.5 It is realized that on-site sewage treatment plants shall only be the last resort for any sewage treatment and disposal proposal, i.e. whenever sewer connection is not practicable. The pumping station within STP shall be capable of delivering the sewage from the development to the public sewer, when available, and the STP can then be abandoned when public sewer is available. It is envisaged to have no technical problem on sewage treatment process design.

7.6 The communal treatment plant serving the whole development is proposed to be located at the southern end near the entrance of the subject site. Sewage after treatment will be

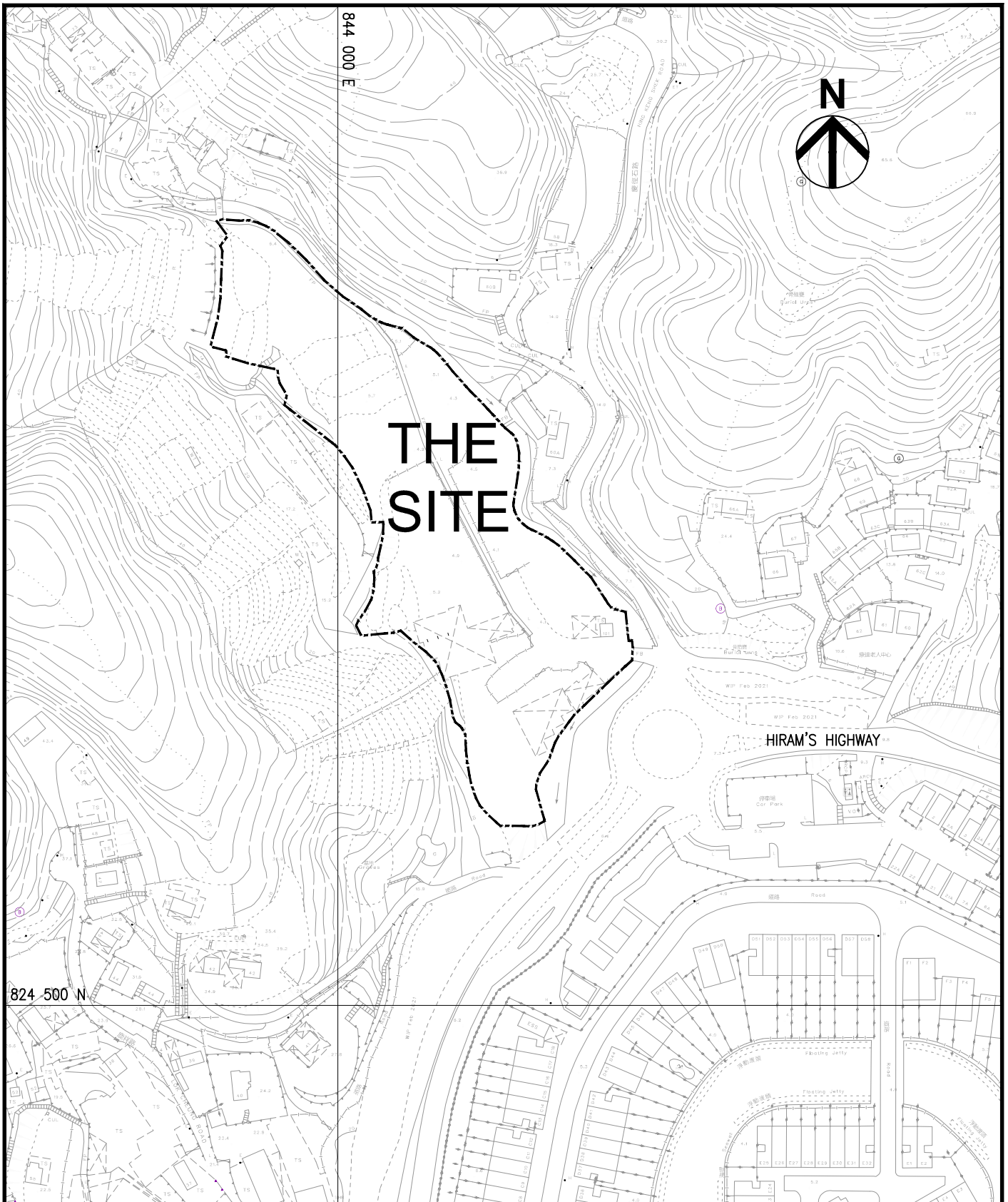
discharged into the stormwater drainage of the subject site and from with the flow will be discharged via a stormwater terminal manhole into the existing watercourse running along the southern boundary of the subject site. The location of the STP has been selected with due consideration given to minimization of potential sewer, odour, noise and safety problems to the residents. The design standards and criteria will comply with the latest version of "Guidelines for the Design of Small Sewage Treatment Plants" published by EPD.

- 7.7 If on-site STP is to be constructed, the following action will be taken in order to avoid possible nuisance:
- (a) The STP shall be fully enclosed by a concrete structure and equipped with deodorizing units at the ventilation and exhaust system.
  - (b) Ventilation exhaust pipes will be taken to roof level and away from neighbouring premises. It is recognized that odour from sewage treatment plants mainly originates from bad management. Fresh sewage is odourless and it is important that sewage should not be allowed to be accumulated in the inlet works which must be hosed down as frequent as possible to prevent any accumulation of sewage solids that will eventually become septic.
  - (c) The other source of odour in treatment plants is the sludge dewatering house. Odour will result from the exposed storage of sludge and the accumulation of sludge particles on floors which turn septic. Hence, the sludge dewatering house must be kept clean at all times and sludge storage bags be tied up as soon as they are full or drums be covered.
  - (d) All openable windows for ventilation, fresh air intake, and other planned outdoor locations for air sensitive uses of the proposed development should be located outside of the buffer regions to avoid potential air quality impact.
  - (e) Noise should not be problem since the selection of units will avoid the use of motors of high revolution. Air blowers too, will not be used. Instead, quiet machines such as submersible pumps and ejectors will be favoured. Particular attention shall be paid to the selection of exhaust fans and the design of intake and exhaust grills to prevent whistling noises.

## **8. Conclusion**

- 8.1 Sewage generated from the proposed development will be properly treated by an on-site sewage treatment plant. The treated effluent will be discharged to nearby watercourse.

- 8.2 All future treated effluent discharge shall comply with the Water Pollution Control Ordinance (Cap. 358). A licence granted under the Water Pollution Control Ordinance should be obtained before a new discharge is commenced.
- 8.3 In conclusion, the subject proposed development would not impose any adverse sewerage impact.



**THE  
SITE**

HIRAM'S HIGHWAY

824 500 N

844 000 E

LEGEND:

----- SUBJECT SITE BOUNDARY

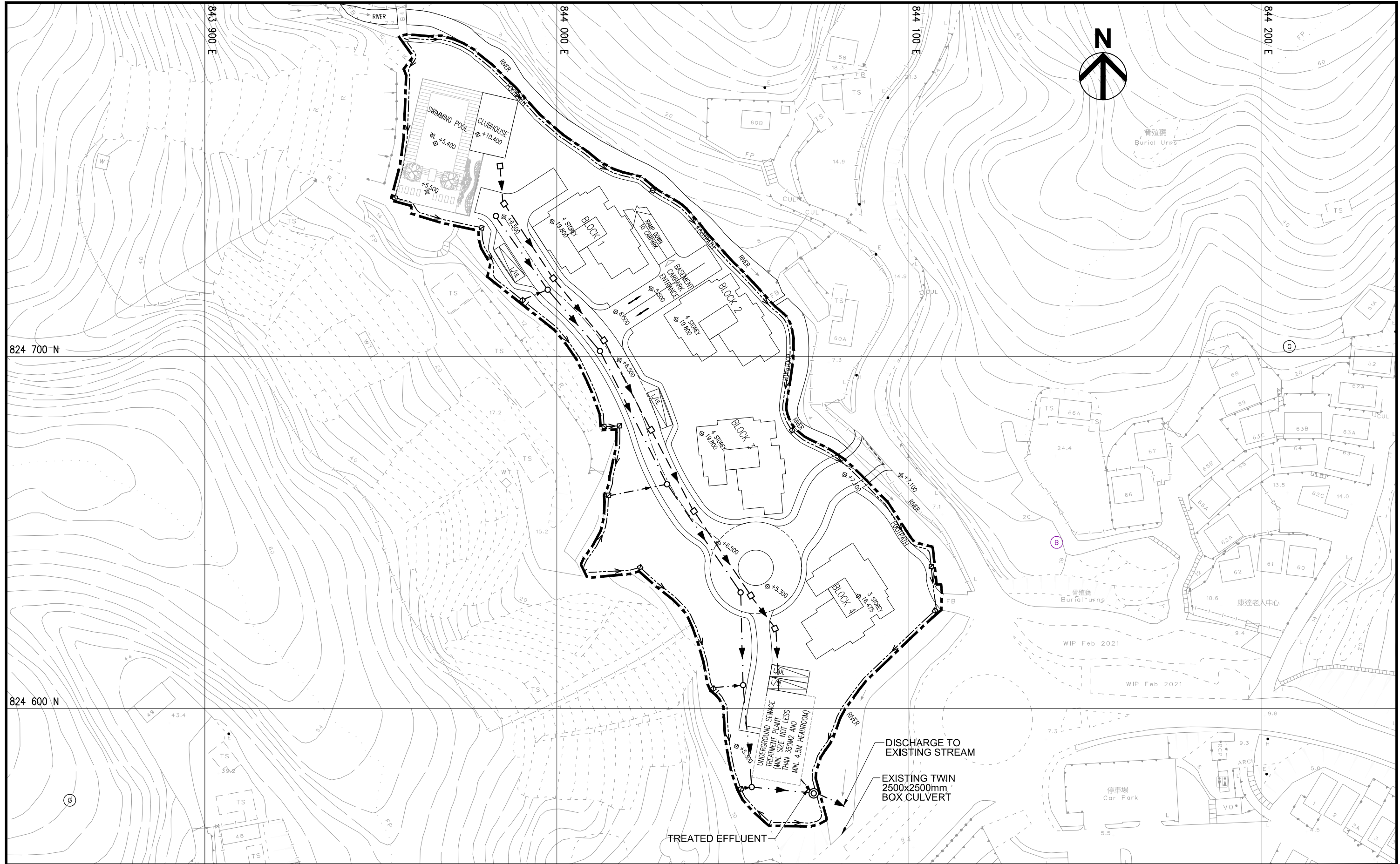
PROJECT APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

**何田顧問工程師有限公司**  
**HO TIN & ASSOCIATES**  
CONSULTING ENGINEERS LIMITED

TITLE  
SITE LOCATION PLAN

SCALE  
1 : 2000 - A4

DRAWING No.  
FIGURE S1



LEGEND:

- |  |                       |  |                                      |
|--|-----------------------|--|--------------------------------------|
|  | SUBJECT SITE BOUNDARY |  | PROPOSED STORMWATER TERMINAL MANHOLE |
|  | PROPOSED GROUND LEVEL |  | PROPOSED STORMWATER DRAIN & MANHOLE  |
|  |                       |  | PROPOSED U-CHANNEL & CATCH PIT       |
|  |                       |  | PROPOSED SEWER & MANHOLE             |

PROJECT APPLICATION FOR AMENDMENT OF PLAN UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (CAP.131) TO REZONE THE APPLICATION SITE FROM "GREEN BELT" AND AREA SHOWN AS "ROAD" TO "RESIDENTIAL (GROUP C)5" FOR PROPOSED RESIDENTIAL DEVELOPMENT AT VARIOUS LOTS IN D.D.210 AND ADJOINING GOVERNMENT LAND, PAK WAI, SAI KUNG

TITLE SEWERAGE MANAGEMENT PLAN

何田顧問工程師有限公司  
**HO TIN & ASSOCIATES**  
 CONSULTING ENGINEERS LIMITED

SCALE  
 1 : 1000 - A3

DRAWING No.  
 FIGURE S2

# Appendix I

## Water Demand Assessment

## Water Demand Assessment

The fresh water and flushing water demands for the proposed development are estimated based on the residential population and land of use of the Site. The breakdowns of the demand projection are presented in below table.

Development Type	Population Head/ Area (m <sup>2</sup> )	Freshwater				Flushing Water			
		Unit Demand	Service Trade	Water Demand	10% contingency	Unit Demand	Water Demand	10% contingency	
		(m3/ head/ day)	(m3/ head/ day)	(m3/ day)	(m3/ day)	(m3/ head/ day)	(m3/ day)	(m3/ day)	
Domestic	360	0.39	0.05	158.40	174.24	0.07	25.2	27.72	
Clubhouse	6	0.28	--	1.68	1.85	0.07	0.42	0.46	
Swimming Pool	--	--	--	337.5	--	--	--	--	
Irrigation	1523.04	--	0.07	106.61	117.27	--	--	--	
				Total	604.19	630.86	--	25.62	28.18
				Total Fresh Water Demand (Excl. FS)	659.04				
Fire Service	--	--	--	6000	--	--	--	--	
				Total Fresh Water Demand (Incl. FS)	6,659.04				

It is prepared in accordance with WSD's DI No.1309 and Manual of Mainlaying Practice 2012.

The fire-fighting requirement for residential zone is 6000m<sup>3</sup>/d according to Departmental Instruction No.1309, WSD

# Appendix H

## Geotechnical Planning Review Report

**GEOTECHNICAL PLANNING REVIEW REPORT (GPRR)**

**FOR**

**APPLICATION FOR AMENDMENT OF PLAN**

**UNDER SECTION 12A OF THE TOWN PLANNING ORDINANCE (Cap.131)**

**TO REZONE THE APPLICATION SITE**

**FROM “GREEN BELT” AND AREA SHOWN AS “ROAD”**

**TO “RESIDENTIAL (GROUP C) 5”**

**FOR**

**PROPOSED RESIDENTIAL DEVELOPMENT AT**

**VARIOUS LOTS IN D.D. 210 AND ADJOINING GOVERNMENT LAND**

**PAK WAI, SAI KUNG**

## **CONTENTS**

- 1. Introduction**
- 2. Site Location and Description**
  - 2.1 Site Location
  - 2.2 Existing Features
- 3. The Proposed Development**
- 4. Existing Information**
  - 4.1 Ground Investigation Information
  - 4.2 Layout of Existing Utilities
  - 4.3 Layout of Existing Building Structure
- 5. Ground Conditions**
  - 5.1 Topography
  - 5.2 Geology
  - 5.3 Groundwater Condition
- 6. Proposed Works**
  - 6.1 Proposed Ground Investigation Works
  - 6.2 Proposed Works on Existing Features
  - 6.3 Proposed Works on Natural Terrain
  - 6.4 Proposed Foundation Works
  - 6.5 Proposed Site Formation, Excavation and Lateral Support Works
  - 6.6 Construction Method & Sequence
- 7. Impacts on Adjacent Premises/Geotechnical Features**
- 8. Conclusion**

## **LIST OF FIGURES**

- Figure 1      Site Location Plan  
Figure 2      Master Layout Plan  
Figure 3      Diagramatic Section

## **APPENDICES**

- Appendix A    Information of Existing Slopes/Retaining Walls  
Appendix B    Existing Boreholes Information

## 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.

The development involved the construction of four blocks of 3 to 4 storey residential building with carparking podium.

The geotechnical review is prepared under the supervision of Registered Geotechnical Engineer, Wong Wai Yi 0151939, in accordance with the requirement set out in PNAP-APP25 (PNAP 78). 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 captioned site locates in a valley opposing Pak Wai in Sai Kung, The total area of the site is about 12,692m<sup>2</sup>. The elevation of the site is about +4.5 – 7.5mPD. A site location plan is attached in Figure 1.

### 2.2 Existing Features

According to the Slope Information System, there are two existing features (slope or retaining wall) within site boundary and four close to the site. The feature is listed as follow :

Feature No.	Type	Location	Responsibility	Height	Angle	Length
7SE-D/C 154	Slope	West	Land D	4.0 m	35	40 m
7SE-D/C 153	Slope	West	Land D	3.5 m	75	60 m
7SE-D/C 163	Slope	West	Land D	9.0 m	45	45 m
7SE-D/F 46	Slope	West	Land D	5.0 m	35	40 m
7SE-D/FR 70	Wall	West	Highway	1.0 m	58	90 m
	Slope	West	Highway	4.0 m	140	30 m
7SE-D/R 54	Wall	East	Land D	4.4 m	30	85 m

Location plan & basic information of the features are attached in Appendix A. The available information indicates that the slope shall be in good condition.

A natural terrain is located at the west of the site.

### **3. THE PROPOSED DEVELOPMENT**

The development involved the construction of residential development of four blocks of 3 to 4 storey residential building with one-level basement carpark. The schematic master layout plan and diagrammatic section of the proposed new building are given in Figure 2 and Figure 3.

### **4. EXISTING INFORMATION**

#### **4.1 Ground Investigation Information**

Two boreholes carried out by Enpack (HK) Ltd. In 2001 BH8 and BH9 were found within the site, information is given in Appendix B.

#### **4.2 Layout of Existing Utilities**

Enquiries shall be made to various utility companies for the layout of existing utilities adjacent to the site. A waterpipe laid along the existing footpath to be diverted before the site formation work.

#### **4.3 Layout of Existing Building Structure**

There is one temporary structure of concrete building in the lot and this will be demolished during the development.

## 5. **GROUND CONDITIONS**

### 5.1 **Topography**

The elevation of site is about +4.5 – 7.5mPD. The site can be accessed via Access road from Hiram's Highway. The total area of the site is about 12,692m<sup>2</sup>.

### 5.2 **Geology**

From the two boreholes information, the site would be covered by a layer of fill/ alluvium/ residual soil of 2m to 6m thick. Underneath the fill/ alluvium/ residual soil there would be a layer of grade V to IV TUFF. Grade III or better grade of Tuff be found at a depth of 3m to 6m below existing ground level.

#### Soil Properties

##### FILL

Fill generally consists of light brown, sandy silt.

##### ALLUVIUM

Alluvium generally consists of firm, greyish brown, silt or clayey sand, locally sandy or silty clay.

##### TUFF

Tuff was classified as weak to strong, light yellowish brown, highly to slightly decomposed, coarse ash crystal.

### 5.3 **Groundwater Condition**

Based on the available ground investigation information, highest water table may be at about 2m below existing ground level.

## **6. PROPOSED WORKS**

### **6.1 Proposed Ground Investigation Works**

The proposed Ground Investigation works for the site area at D.D.210, Sai Kung for the proposed development will include drilling of 7 vertical drillholes with installation of 3 standpipe / piezometer inside the site. Sampling of soil/rock material and testing will be proposed to determine the soil/rock properties.

### **6.2 Proposed Works on Existing Features**

There are 2 existing features within the site and 4 outside site boundary but close to the site.

The stability of existing features within or close to the site (including any unregistered features) to be affected or being affected by the development during site formation 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.

### **6.3 Proposed Works on Natural Terrain**

There is one natural terrains with an angular elevation of >20 degrees overlooking the development site. The natural terrain shall be studied in the detailed design stage.

It is proposed to set back the building line of the proposed development at a distance of 10m to 15m from the site boundary, is about 15m to 20m from the toe of the natural terrains to reduce potential risk of the natural terrain.

#### **6.4 Proposed Foundation Works**

The proposed development comprises four blocks of 3 to 4 storey residential building with one level of basement carpark. The available ground investigation information indicates that the rockhead level, defined as weathering grade III or better rock with total core recovery greater than 85%, or a firm stratum such as grade IV rock, may be encountered on average at a level about 3m to 6m below the existing ground. As the loading from the building is comparatively general, mini pile or pre-boring socket H-piles are considered to be feasible foundation options for the proposed building. In case the rock head level is shallow or the bearing capacity is checked to be adequate, footing foundation shall be an alternative. The proposed foundation scheme of the development shall have minimal effect or impact to the stability of all slopes (man-made & natural terrains), retaining walls and existing building or structures within or in vicinity to the lot. Detailed foundation design will be submitted separately when the proposed ground investigation works are completed. Stability of all existing slopes (man-made & natural terrains) and retaining wall (including unregistered features) within or in vicinity to the lot affecting or being affected by the development during demolition & construction shall be assessed & remedial works shall be carried out if found necessary.

#### **6.5 Proposed Site Formation, Excavation and Lateral Support Works**

Since the proposed building platform is similar to existing ground level of the site, site formation works are considered to be minimal. For the construction of footing / pile cap, open excavation, sheet pile / pipe pile / soldier pile wall with walings and struts are considered to be feasible scheme to retain excavation depth. The choice of scheme of temporary support shall be subject to detail assessment. Stability of all existing 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 shall be assessed & remedial works shall be carried out if found necessary. The detailed design of the works will be submitted separately.

## **6.6 Construction Method & Sequence**

Monitoring points 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 H-pile installation.

Obstruction during pipe 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 pipe piles / socket H-pile 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.

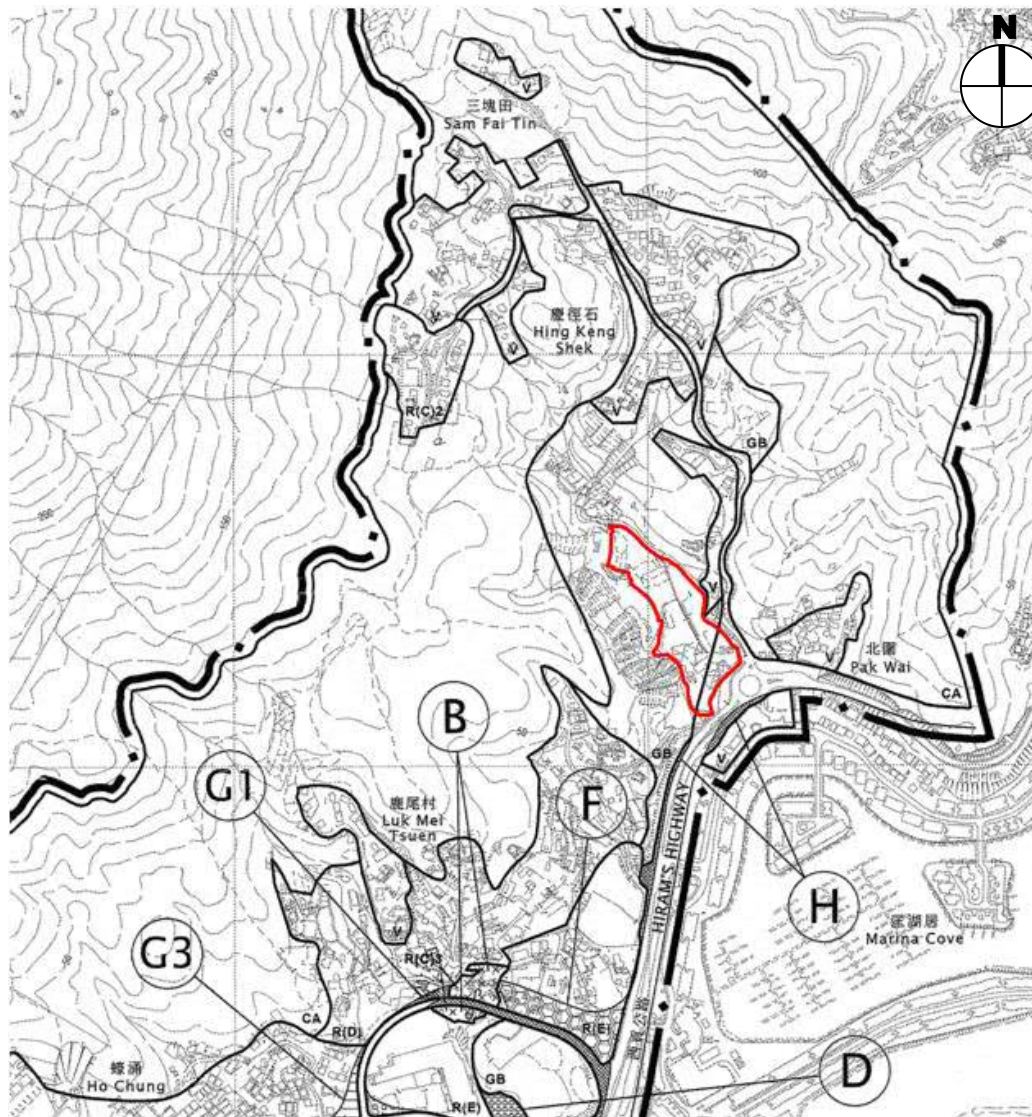
In addition, in order to ensure the adjacent premises will not be damaged by the proposed works, settlement monitoring stations, titling check points and building settlement pins will be proposed to be installed around the site. The movement of the adjacent premises will be monitored at these stations 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 recommendation are drawn:

- The proposed development as presented in the Master Layout Plan is considered as a geotechnical feasible scheme.
- Ground investigation works will be carried out within the proposed development site.
- Mini pile or socket H pile with pre-boring is considered to be feasible foundation options for the proposed development. Footing may be an alternative if the soil stratum at shallow level provides adequate bearing capacity.
- 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 minimize 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.
- Stability of the natural terrain affecting or being affected by the development permanently or temporarily during demolition & construction works shall be assessed & monitored. Mitigation works shall be proposed and carried out as necessary.

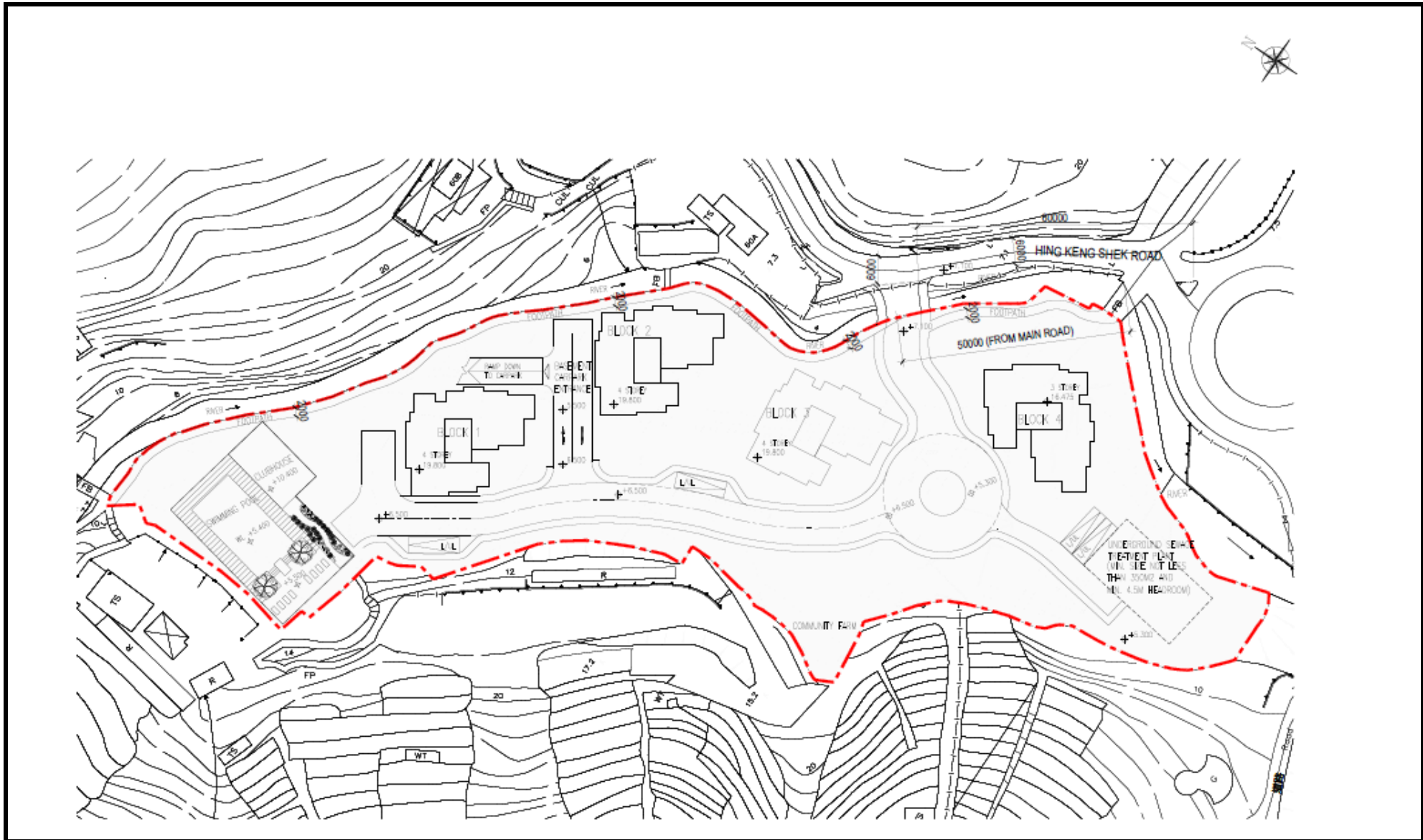
It is noteworthy to note that the works / proposal mentioned in this report are preliminary only at the planning stage and will be subjected to detailed study in the detail design stage under separate cover. Based on the current assessment, the proposed development is considered geotechnical feasible.



**Site Location Plan**

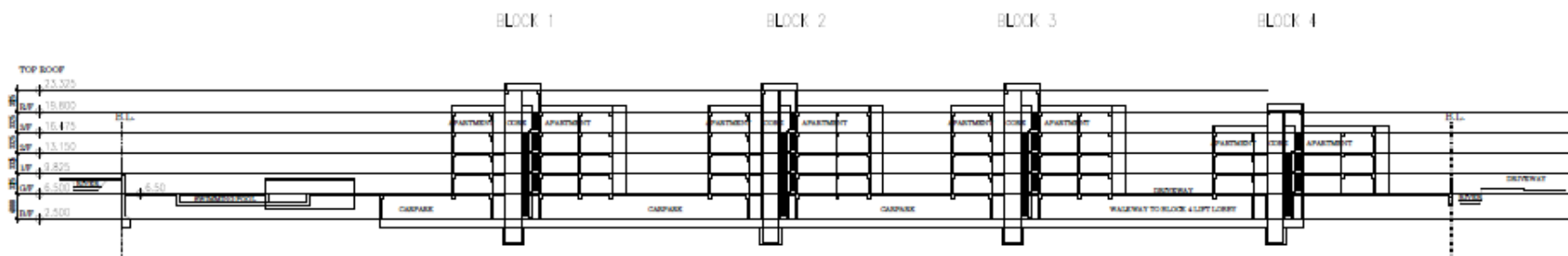
(Extracted from Draft Ho Chung Outline Zoning Plan No. S/SK-HC/12)

**Figure 1**



**Master Layout Plan**

**Figure 2**



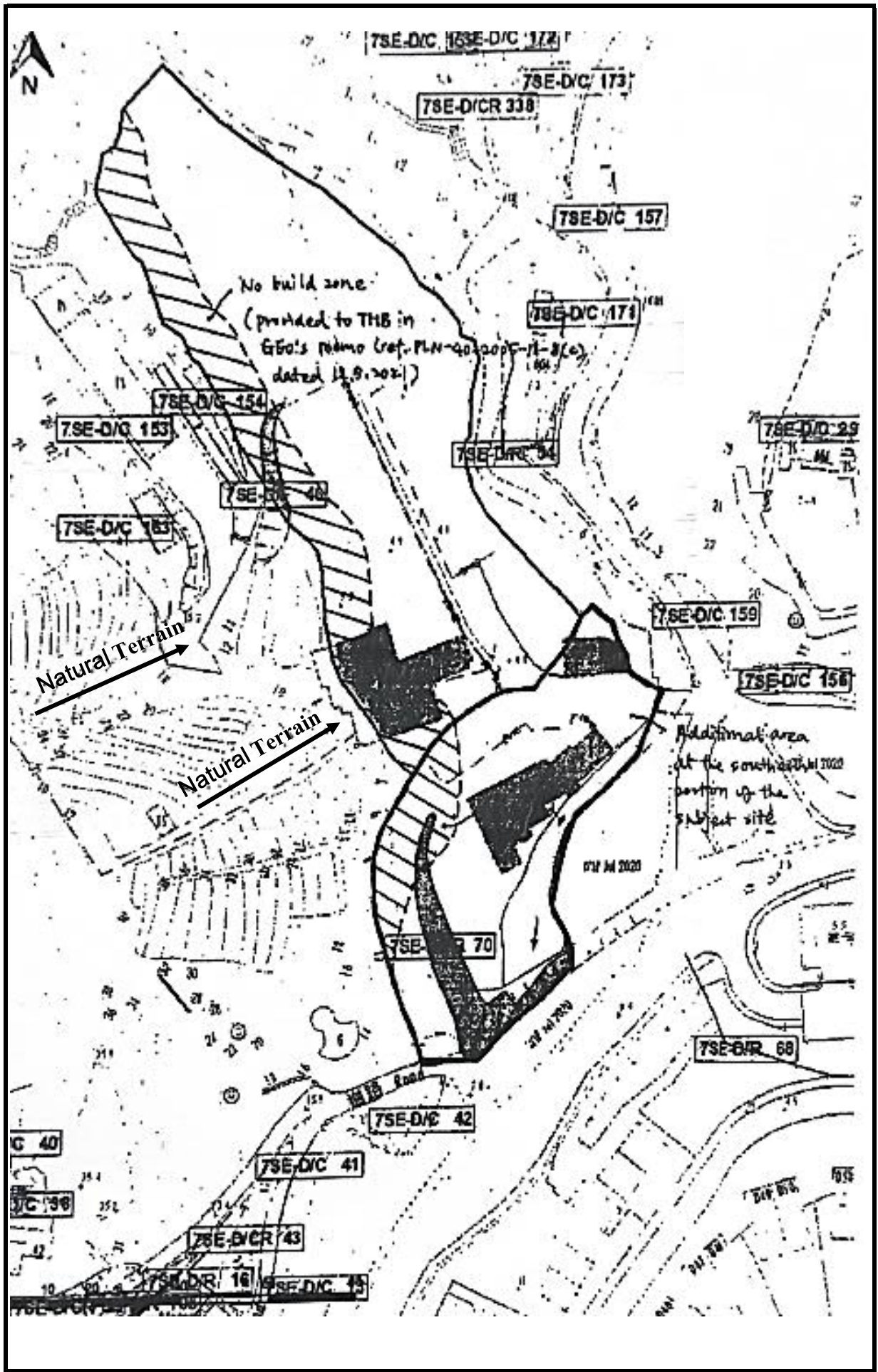
DIAGRAMATIC SECTION

**Diagrammatic Section**

**Figure 3**

## Appendix A

Information of Existing Slopes/ Retaining Walls





## BASIC INFORMATION

Location: Southern part of Hing Keng Shek Village, Sai Kung

Date of Formation: pre-1977

Date of Construction/  
Modification:

Approximate Coordinates: Easting : 844005 Northing : 824697

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Remote area or abandoned facilities

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: 3

Remarks: N/A

## SLOPE PART

(1) Max. Height (m): 4 Length (m): 35 Average Angle (deg): 40

## WALL PART

N/A



## BASIC INFORMATION

Location: Southern part of Hing Keng Shek Village, Pak Sha Wan

Date of Formation: pre-1977

Date of Construction/  
Modification:

Approximate Coordinates: Easting : 843982 Northing : 824693

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Remote area or abandoned facilities

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: 3

Remarks: N/A

## SLOPE PART

(1) Max. Height (m): 3.5 Length (m): 75 Average Angle (deg): 60

## WALL PART

N/A



## BASIC INFORMATION

Location: Southern part of Hing Keng Shek Village

Date of Formation: pre-1977

Date of Construction/  
Modification:

Approximate Coordinates: Easting : 843985 Northing : 824668

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Undeveloped green belt

Distance of Facility from Crest (m): 0

Facility at Toe: Lightly-used playground

Distance of Facility from Toe (m): 1

Consequence-to-life Category: 3

Remarks: TGN 15 case - provided by SP Division (31 MAR 2004)

## SLOPE PART

(1) Max. Height (m): 9 Length (m): 45 Average Angle (deg): 45

## WALL PART

N/A



## BASIC INFORMATION

Location: SOUTHERN PART OF HING KENG SHEK VILLAGE

Date of Formation: pre-1977

Date of Construction/  
Modification:

Approximate Coordinates: Easting : 844019 Northing : 824678

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Road/footpath with very low traffic density

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: 3

Remarks: N/A

## SLOPE PART

(1) Max. Height (m): 5 Length (m): 35 Average Angle (deg): 40

## WALL PART

N/A



**BASIC INFORMATION**

Location: Hiram's Highway

Date of Formation: post-1977

Date of Construction/  
Modification:

Approximate Coordinates: Easting : 844090 Northing : 824574

**CONSEQUENCE-TO-LIFE CATEGORY**

Facility at Crest: Road/footpath with heavy traffic density

Distance of Facility from Crest (m): 0

Facility at Toe: Horticulture garden

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 2

Remarks: N/A

**SLOPE PART**

(1) Max. Height (m): 4 Length (m): 140 Average Angle (deg): 30

**WALL PART**

(1) Max. Height (m): 2 Length (m): 58 Face Angle (deg): 90



## BASIC INFORMATION

Location: Hing Keng Shek Road, Sai Kung

Date of Formation: pre-1977

Date of Construction/  
Modification: 17-03-2010

Approximate Coordinates: Easting : 844072 Northing : 824698

## CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest: Cottage, licensed and squatter area

Distance of Facility from Crest (m): 3

Facility at Toe: Catchwater w/consequence on Group 5 facilities

Distance of Facility from Toe (m): 0

Consequence-to-life Category: 1

Remarks: N/A

## SLOPE PART

N/A

## WALL PART

(1) Max. Height (m): 4.4 Length (m): 30 Face Angle (deg): 85

## Appendix B

### Existing Boreholes Information





ENPACK (H.K.) LIMITED

Civil Engineers & Contractors  
Astoria Building, 8th floor, 34 Ashley Road  
Kowloon, Hong Kong

Tel : 23762121 Fax : 23769332



ISO 9002:1994  
Certificate No. F000021

# DRILLHOLE RECORD

HOLE NO. **BH 8**

CONTRACT NO. **GE/99/06**

SHEET **1** of **2**

PROJECT **PWP Item 4273DS-Port Shelter Sewerage Stage 3 Phase 3, Ho Chung and Pik Shui Sun Tsuen Sewerage, Ground Investigation**

METHOD <b>W+RC</b>		CO-ORDINATES		W.O. No <b>GE/99/06.59</b>									
MACHINE & No. <b>DR 77</b>		<b>E 844,049.46</b> <b>N 824,688.94</b>		DATE: <b>17/11/2001</b> to <b>19/11/2001</b>									
FLUSHING MEDIUM <b>WATER</b>		ORIENTATION <b>VERTICAL</b>		GROUND LEVEL <b>+4.15</b> mPD									
Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
17.11.01	PX							1 0.50					Loose, light yellowish brown (10YR 6/4), silty fine to medium SAND with some angular to subangular fine to medium gravel sized rock fragments. (ALLUVIUM)
2			32					2 1.00					
3			51					3 1.50					
4	PX HX		100				38blows	4 1.90 2.05	+2.10	2.05			Light grey (10R 7/1), angular to subangular fine to coarse GRAVEL sized moderately strong tuff fragments. (ALLUVIUM)
5	HX		41			NA		5 3.50	+0.65	3.50			Dark grey (5R 4/1), subangular fine to medium GRAVEL sized tuff fragments with a matrix of silty sand. (ALLUVIUM)
6		1.20m at 18:00	98	21	13	>20		6 3.95 4.10	+0.05	4.10			Light grey, angular to subangular medium to coarse GRAVEL with much cobble and occasional boulder sized moderately strong to strong tuff fragments. (ALLUVIUM)
17.11.01		1.10m at 08:00	98	32	10	10.0		T2-101	-1.00	5.15		III	Moderately strong, light grey to light yellowish brown, moderately decomposed coarse ash crystal TUFF. Joints are extremely closely occasionally very closely to closely spaced, rough, undulating and planar, extremely to very narrow, iron and manganese stained and clay infilled (<2-3mm), dipping at 60°-70° and subvertical.
19.11.01			98	32	10	>20		T2-101	-2.35	6.50		III/II	Moderately strong to strong, grey, moderately to slightly decomposed coarse ash crystal TUFF. Joints are closely, locally extremely to very closely spaced, rough, undulating and planar, extremely narrow, iron and manganese stained, kaolin infilled (<2mm), dipping at 60°-70° and subvertical.
7			100	80	47	5.0		T2-101					
8			100	67	44	NI		T2-101					
9						7.7		T2-101					From 8.90-9.45m : Non intact.
10								T2-101	-5.30	9.45		II	Strong, grey to dark grey, slightly decomposed coarse ash crystal TUFF.

- Small Disturbed Sample
- Piston Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe Tip

LOGGED **P. Barry**  
 DATE **20/11/2001**  
 CHECKED **J. Morrison**  
 DATE **22/11/2001**

REMARKS  
 1. Prior to drilling an inspection pit was excavated by hand to 1.50m depth.



ENPACK (H.K.) LIMITED

Civil Engineers & Contractors  
Asteria Building, 8th Floor, 34 Ashley Road  
Kowloon, Hong Kong  
Tel : 23762121 Fax : 23762222



ISO 9002 : 1994  
Certificate No. PQ00021

# DRILLHOLE RECORD

HOLE NO. **BH 8**

CONTRACT NO. **GE/99/06**

SHEET **2** of **2**

PROJECT **PWP Item 4273DS-Port Shelter Sewerage Stage 3 Phase 3, Ho Chung and Pik Shui Sun Tsuen Sewerage, Ground Investigation**

METHOD **W+RC**

CO-ORDINATES

W.O. No **GE/99/06.59**

MACHINE & No. **DR 77**

**E 844,049.46**

DATE: **17/11/2001** to **19/11/2001**

**N 824,688.94**

FLUSHING MEDIUM **WATER**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.15** mPD

Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
10			100	100	77								
11						NI 2.1		T2-101 ↑ 10.95					Joints are closely becoming medium spaced, planar, extremely narrow, kaolin coated and occasionally kaolin infilled (<2mm), dipping at 45°-55°, 60°-70° and subvertical. From 10.15-10.50m : Non intact.
12			100	90	73		T2-101 ↑ 12.45						
13			100	100	76		T2-101 ↑ 13.90						
14			100	100	89		T2-101 ↑ 14.80						
19.11.01		1.15m at 18:00							-10.65	14.80			
15													End of Investigation hole at 14.80m.
16													
17													
18													
19													
20													

	Small Disturbed Sample		Standard Penetration Test
	Piston Sample		In-situ Vane Shear Test
	U76 Undisturbed Sample		Permeability Test
	U100 Undisturbed Sample		Impression Packer Test
	Mazier Sample		Packer Test
	SPT Liner Sample		Piezometer Tip
	Water Sample		Standpipe Tip

LOGGED **P. Barry**  
 DATE **20/11/2001**  
 CHECKED **J. Morrison**  
 DATE **22/11/2001**

REMARKS



**ENPACK (H.K.) LIMITED**  
Civil Engineers & Contractors  
Antonia Building, 8th Floor, 34 Ashley Road  
Kowloon, Hong Kong  
Tel : 23762121 Fax : 23766252



# DRILLHOLE RECORD

HOLE NO. **BH 9**

CONTRACT NO. **GE/99/06**

SHEET **1** of **2**

PROJECT **PWP Item 4273DS-Port Shelter Sewerage Stage 3 Phase 3, Ho Chung and Pik Shui Sun Tsuen Sewerage, Ground Investigation**

METHOD **W+RC**

CO-ORDINATES

W.O. No **GE/99/06.59**

MACHINE & No. **DR 77**

**E 844,072.77**

DATE: **21/11/2001** to **22/11/2001**

**N 824,663.34**

FLUSHING MEDIUM **WATER**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.06** mPD

Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
21.11.01	PX												Soft to firm, yellowish brown (10YR 5/6) and light grey (10R 7/1), sandy SILT with some angular fine to coarse gravel sized weak to moderately strong tuff fragments. (FILL)
1								1 I.P. 0.50 2 I.P. 1.00 3 I.P. 1.50					
2			0				20blows	4 1.90 5 2.00					
3			100				21blows	6 2.45 7 2.50	+1.06	3.00		V	Extremely weak, red (10R 5/8) mottled yellowish brown, completely decomposed coarse ash crystal TUFF. (Firm to stiff, slightly sandy clayey SILT with occasional angular fine to medium gravel sized rock fragments)
4							(1, 2, 3, 4, 4, 4) N = 15	8 2.95 9 3.10					
5			100					10 4.00 11 5.00					
6							(2, 2, 3, 5, 5, 6) N = 19	12 5.65 13 5.95 14 6.00	-1.94	6.00		V/IV	Extremely weak to weak, light yellowish brown (2.5Y 6/4), completely to highly decomposed coarse ash crystal TUFF. (Sandy angular fine to coarse GRAVEL sized weak rock fragments)
7	PX							15 6.90 7.00	-2.94	7.00		III	Moderately strong, light yellowish brown, moderately decomposed highly micro fractured coarse ash crystal TUFF. Joints are extremely very closely spaced, rough, planar, extremely narrow, iron and manganese stained, dipping at 35°-45°, 60°-70° and subvertical.
8			95	30	0	>20		T2-101 7.50 T2-101 7.80	-3.94	8.00		III/II	Moderately strong to strong, grey, moderately to slightly decomposed coarse ash crystal TUFF. Joints are very closely to closely spaced, rough, undulating and planar, extremely to very narrow, iron and manganese stained, kaolin infilled (<2.3mm), dipping at 35°-45°, 60°-70° and subvertical. From 8.80-9.10m : Extremely closely spaced joints.
9			100	100	50	8.8		T2-101 8.80					
10			100	85	38								
			95	73	37	>20	6.7						

	Small Disturbed Sample		Standard Penetration Test
	Piston Sample		In-situ Vane Shear Test
	U76 Undisturbed Sample		Permeability Test
	U100 Undisturbed Sample		Impression Packer Test
	Mazier Sample		Packer Test
	SPT Liner Sample		Piezometer Tip
	Water Sample		Standpipe Tip

LOGGED **P. Barry**  
DATE **23/11/2001**  
CHECKED **J. Morrison**  
DATE **01/12/2001**

REMARKS  
1. Prior to drilling an inspection pit was excavated by hand to 1.50m depth.



**ENPACK (H.K.) LIMITED**

Civil Engineers & Contractors

Asteria Building, 6th floor, 34 Ashley Road  
Hongkong, Hong Kong

Tel : 23762121 Fax : 23762282



ISO 9002:1994  
Certificate No. PC00021

# DRILLHOLE RECORD

HOLE NO.

**BH 9**

CONTRACT NO. **GE/99/06**

SHEET

**2**

of

**2**

PROJECT **PWP Item 4273DS-Port Shelter Sewerage Stage 3 Phase 3, Ho Chung and Pik Shui Sun Tsuen Sewerage, Ground Investigation**

METHOD **W+RC**

CO-ORDINATES

W.O. No **GE/99/06.59**

MACHINE & No. **DR 77**

**E 844,072.77**

DATE: **21/11/2001** to **22/11/2001**

**N 824,663.34**

FLUSHING MEDIUM **WATER**

ORIENTATION **VERTICAL**

GROUND LEVEL **+4.06** mPD

Drilling Progress	Casing size	Water level (m) Shift start/end	T.C.R.(%)	S.C.R.(%)	R.Q.D.(%)	F.I.	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
11		0.30m at 18:00	100	91	53	1.7		T2-101	10.30				As sheet 1 of 2. From 10.30-10.40m : Non intact.
12		1.25m at 08:00	100	100	100			T2-101	11.45	-6.94		II	Strong, grey to dark grey, slightly decomposed coarse ash crystal TUFF. Joints are closely to medium spaced, rough, planar, extremely narrow, chlorite coated, dipping at 35°-45°, 60°-70° and subvertical.
13			100	100	70			T2-101	12.65				
14			100	100	59	5.5		T2-101	14.35				
15			100	92	54			T2-101	15.80				
16		1.23m at 18:00	100	92	54			T2-101	17.10	-13.04			
17													End of Investigation hole at 17.10m.
18													
19													
20													

- Small Disturbed Sample
- Piston Sample
- U76 Undisturbed Sample
- U100 Undisturbed Sample
- Mazier Sample
- SPT Liner Sample
- Water Sample
- Standard Penetration Test
- In-situ Vane Shear Test
- Permeability Test
- Impression Packer Test
- Packer Test
- Piezometer Tip
- Standpipe Tip

LOGGED P. Barry  
 DATE 23/11/2001  
 CHECKED J. Morrison  
 DATE 01/12/2001

REMARKS