



**Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories
Environmental Assessment Report**

Prepared for:
Right Fortune Investment Limited

17 July 2026

Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Environmental Assessment Report

Prepared for
Right Fortune Investment Limited

For and on behalf of
EnviroSolutions & Consulting

Ben RIDLEY
Managing Director, Hong Kong & GBA

ESC Project No. J24.00706.HK.01
Deliverable No. D01
Revision No. 2.2

File Location

[https://envirosc.sharepoint.com/teams/newsharepoint/shared documents/new sharepoint/05.jobs/j24.00706.hk.01 s12a hsk rche/06. deliverables/ea report rev 2.2/ea report rev 2.2.docx](https://envirosc.sharepoint.com/teams/newsharepoint/shared%20documents/new%20sharepoint/05.jobs/j24.00706.hk.01%20s12a%20hsk%20rche/06.deliverables/ea%20report%20rev%202.2/ea%20report%20rev%202.2.docx)

Rev.	Description	Prepared	Reviewed	Approved	Date
0	Draft Report	AL	PL	AW	28/03/2025
0.1	Draft Report	ALW	DL	AW	29/09/2025
0.2	Draft Report	ALW	DL	AW	17/10/2025
0.3	Draft Report	ALW	DL	AW	20/10/2025
1	Draft Report	ALW	DL	AW	15/01/2026
1.1	Draft Report	ALW	DL	AW	23/03/2026
2	Draft Report	ALW	DL	AW	23/04/2026
2.1	Draft Report	ALW	DL	AW	03/06/2026
2.2	Draft Report	ALW	DL	AW	17/07/2026

Distribution ☐ Internal ☒ Confidential ☐ Public

This report has been prepared by EnviroSolutions & Consulting Limited with all reasonable skill, care, and diligence within the terms of the Contract with Client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with Client. We disclaim any responsibility to Client and others in respect or any matters outside the scope of the above. This report is confidential to Client and we accept no responsibility of whatsoever nature to any third parties to whom this report, or any part thereof, is made known.

CONTENTS

1	INTRODUCTION	1-1
1.1	Project Background	1-1
1.2	Site Description	1-1
1.3	Project Description	1-1
1.4	Objectives of the Report	1-1
2	AIR QUALITY	2-1
2.1	Environmental Legislation and Standards	2-1
2.2	Identification of Air Sensitive Receiver (“ASRs”)	2-3
2.3	Air Quality Impact during Construction Phase	2-3
2.4	Mitigation Measures	2-5
2.5	Air Quality Impact during Operation Phase	2-7
2.6	Conclusion	2-8
3	NOISE.....	3-1
3.1	Environmental Legislation and Standards	3-1
3.2	Noise Impact of Construction Phase	3-3
3.3	Noise Impact of Operation Phase	3-5
3.4	Road Traffic Noise Impact During Operation	3-7
3.5	Conclusion	3-12
4	WATER QUALITY	4-1
4.1	Environmental Legislation and Standards	4-1
4.2	Identification of Water Control Zone (“WCZ”) and Water Sensitive Receiver (“WSR”)	4-2
4.3	Review of Water Quality Impact	4-2
4.4	Mitigation Measures	4-3
4.5	Conclusion	4-5
5	WASTE MANAGEMENT	5-1
5.1	Environmental Legislation and Standards	5-1
5.2	Potential Impacts	5-1
5.3	Mitigation Measures	5-9
5.4	Conclusion	5-11
6	LAND CONTAMINATION.....	6-1
6.1	Environmental Legislation and Standards	6-1
6.2	Assessment Methodology	6-1
6.3	Site Appraisal	6-1
6.4	Conclusion	6-3
7	CONCLUSIONS AND RECOMMENDATIONS	7-1

APPENDICES

Appendix A	PROJECT LAYOUT
Appendix B	CORRESPONDENCE WITH TD
Appendix C	TRAFFIC FORECAST IN 2046
Appendix D	PREDICTED ROAD TRAFFIC NOISE LEVEL (BASE CASE)
Appendix E	ACOUSTIC WINDOW REFERENCE FROM PROPECC PN 5/23
Appendix F	NOISE REDUCTION PERFORMANCE OF THE PROPOSED ACOUSTIC WINDOW (BAFFLE TYPE)
Appendix G	PREDICTED ROAD TRAFFIC NOISE LEVEL (MITIGATION CASE)
Appendix H	LOCATION OF MITIGATION MEASURES IMPLEMENTED
Appendix I	HISTORICAL AERIAL PHOTOGRAPHS
Appendix J	SITE SURVEY PHOTOGRAPHS AND SITE WALKOVER CHECKLISTS
Appendix K	CORRESPONDENCE WITH EPD AND FSD

FIGURES

Figure 1-1	Site Location and Its Environs	1-2
Figure 2-1	500m Assessment Area and Location of Representative ASRs	2-10
Figure 2-2	Buffer Distance Requirement from the Surrounding Roads and Indicative Location of Carpark Exhaust Outlet	2-11
Figure 2-3	Location of Other Potential Vehicular Emission Sources and Chimneys within 500m Assessment Area	2-12
Figure 3-1	300m Assessment Area	3-13
Figure 3-2	Shortest distance between the Project Site Boundary to the Light Rail	3-14
Figure 3-3	Indicative alignment from the Feasibility Study on GTS	3-15
Figure 3-4	Shortest distance between the Project Site Boundary to the Tai Tao Substation	3-16
Figure 3-5	Location of Noise Assessment Points for Road Traffic Noise Impact on RCHE G/F	3-17
Figure 3-6	Location of Noise Assessment Points for Road Traffic Noise Impact on RCHE 1/F to 5/F	3-18
Figure 3-7	Location of Noise Assessment Points for Road Traffic Noise Impact on Residential Towers A & B	3-19
Figure 4-1	Water Sensitive Receivers within 500m from the Site Boundary	4-6

TABLES

Table 2-1	Hong Kong Air Quality Objectives	2-1
Table 2-2	HKPSG Recommended Buffer Distances for Roads	2-2
Table 2-3	HKPSG Recommended Buffer Distances for Industrial areas / chimneys	2-2
Table 2-4	Identified Representative ASRs	2-3
Table 2-5	Tentative Plant Inventory for Key Construction Activities	2-4
Table 3-1	Acceptable Noise Levels for Fixed Noise Source	3-2
Table 3-2	Summary of Road Traffic Noise Standards	3-2
Table 3-3	Construction Noise Criteria for Non-Restricted Hours	3-2
Table 3-4	Summary of Road Traffic Noise Impact Assessment Results for RCHE and Residential Towers	3-8
Table 3-5	Locations of the Proposed Acoustic Windows (Baffle Type)	3-9
Table 3-6	Locations of the Proposed Fixed/Lockable/Maintenance Windows	3-10
Table 3-7	Summary of Predicted Traffic Noise Levels at NAPs in Mitigated case	3-11
Table 4-1	Identified Water Sensitive Receivers	4-2
Table 5-1	Total Estimated Inert C&D Materials Generated During Construction	5-3
Table 5-2	Total Estimated Non-Inert C&D Materials Generated During Construction	5-5
Table 5-3	Estimation of Wastes to be Generated During Construction Phase	5-7
Table 6-1	Historical Land Uses of the Project Site	6-2

1 INTRODUCTION

1.1 Project Background

1.1.1 EnviroSolutions & Consulting Ltd (“ESC”) has been engaged to prepare this Environmental Assessment (“EA”) report to support a rezoning application under Section 12A (“S12A”) of the *Town Planning Ordinance* (“TPO”) to amend the zoning of the Site at Lot Nos. 2188 & 398RP in D.D. 121, Hung Shui Kiu, New Territories (“the Site”) under the Approved Tong Yan San Tsuen Outline Zoning Plan (“OZP”) No. S/YL-TYST/14.

1.1.2 The Site occupies an area of approx. 2,138m² and is currently zoned “Comprehensive Development Area” (“CDA”) and “Green Belt” (“GB”) on the Approved OZP gazetted on 20 August 2021. The Applicant proposed to rezone the Site to “Residential (Group A)4” (“R(A)4”) to facilitate a Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) (“the Proposed Development”).

1.2 Site Description

1.2.1 The Site location and its environs are shown in **Figure 1-1**. The uses surrounding the site include:

- To the North: Fui Sha Wai South Road and Hung Tin Road
- To the East: Temporary structures and Tai Tao Tsuen
- To the South and West: Low-rise residential developments (i.e. Uptown, the Woodsville and the Woodside), and temporary structures

1.3 Project Description

1.3.1 The site area will be approximately 2,138m². The layout plans of the Proposed Development is shown in **Appendix A**, or can be referred to Appendix 1 of Planning Statement, including:

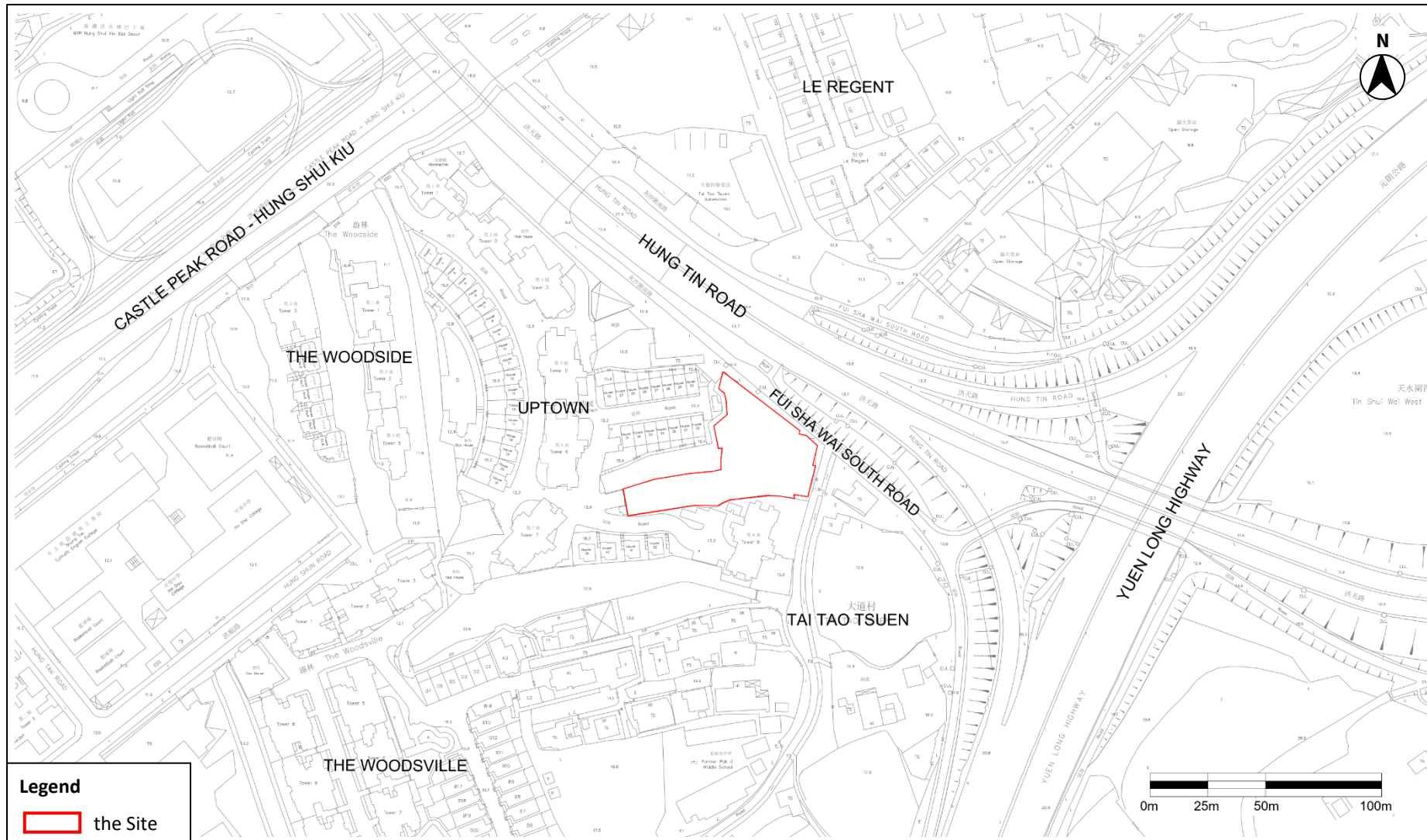
- A 7-storey RCHE
- Two 6-storey residential buildings atop the RCHE
- Provision of private open spaces
- Car parking spaces

1.4 Objectives of the Report

1.4.1 The objectives of this EA Report are to:

- Assess the potential environmental impacts arising from the operation of the Proposed Development, in terms of air quality, noise, water quality, waste management and land contamination, with respect to the guidance for environmental considerations provided in Chapter 9 Environmental of the Hong Kong Planning Standards & Guidelines (HKPSG).
- Recommend appropriate measures to mitigate any impacts if necessary.

Figure 1-1 Site Location and Its Environs



2 AIR QUALITY

2.1 Environmental Legislation and Standards

Air Quality Objectives

- 2.1.1 The *Air Pollution Control Ordinance* (“APCO”) stipulates the Air Quality Objectives (“AQOs”) shown in **Table 2-1**.

Table 2-1 Hong Kong Air Quality Objectives

POLLUTANT	AVERAGING TIME	CONCENTRATION LIMIT ^[Note 1] ($\mu\text{g}/\text{m}^3$)	NUMBER OF EXCEEDANCES ALLOWED
Sulphur Dioxide (“SO ₂ ”)	10-minute	500	3
	24-hour	40	3
Respirable Suspended Particulates (“RSP” or “PM ₁₀ ”) ^[Note 2]	24-hour	75	9
	Annual	30	Not applicable
Fine Suspended Particulates (“FSP” or “PM _{2.5} ”) ^[Note 3]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen Dioxide (“NO ₂ ”)	1-hour	200	18
	24-hour	120	9
	Annual	40	Not applicable
Ozone (“O ₃ ”)	8-hour	160	9
	Peak season	100	Not applicable
Carbon Monoxide (“CO”)	1-hour	30,000	0
	8-hour	10,000	0
	24-hour	4,000	0
Lead (“Pb”)	Annual	0.5	Not applicable

Notes:

1. All measurements of the concentration of gaseous air pollutants, i.e. SO₂, NO₂, O₃ and CO, are to be adjusted to a reference temperature of 293 Kelvin 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.

Air Pollution Control (Construction Dust) Regulation

- 2.1.2 The *Air Pollution Control (Construction Dust) Regulation* enacted under Section 43 of the APCO, provides definition of notifiable and regulatory works to make sure that appropriate dust control requirements have been properly put in place so that dust emissions for various construction activities will be controlled.

- 2.1.3 The Regulation requires that the contractor shall give advance notice to the Environmental Protection Department (“EPD”) for any notifiable work^[Ref.# 1] and shall conform to the Schedule of the Regulation when conducting notifiable and regulatory works, and further implement dust control and suppression measures.

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

- 2.1.4 This Regulation comes into force on June 2015 and mandates that all Non-road Mobile Machinery (“NRMM”), unless they are exempted, shall meet the prescribed emission standards. All regulated machines sold or leased for use in Hong Kong that are approved or exempted must bear a proper label in a prescribed format issued by EPD.

Hong Kong Planning Standards and Guidelines (“HKPSG”)

- 2.1.5 Chapter 9 Environment in HKPSG recommends buffer distances for roads as summarised in **Table 2-2**.

Table 2-2 HKPSG Recommended Buffer Distances for Roads

POLLUTION SOURCE	TYPE OF ROAD	BUFFER DISTANCE	PERMITTED USES
Road and Highways	Trunk Road and Primary Distributor	>20m	Active and passive recreational use
		3 – 20m	Passive recreational use
		<3m	Amenity areas
	District Distributor	>10m	Active and passive recreational use
		<10m	Passive recreational uses
	Local Distributor	>5m	Active and passive recreational use
		<5m	Passive recreational use
	Under Flyovers	-	Passive recreational use

Source: Table 3.1 of Chapter 9 Environment of HKPSG

- 2.1.6 Chapter 9 of the HKPSG also recommends buffer distances for Industrial areas / chimneys as summarised in **Table 2-3**.

Table 2-3 HKPSG Recommended Buffer Distances for Industrial areas / chimneys

POLLUTION SOURCE	DIFFERENCE IN HEIGHT BETWEEN INDUSTRIAL CHIMNEY EXIT AND THE SITE	BUFFER DISTANCE	PERMITTED USES
Industrial Area	<20m	>200m	Active and passive recreational use
		5 – 200m	Passive recreational use
	20 – 30m	>100m	Active and passive recreational use
		5-100m	Passive recreational use

¹ As stipulated by the regulation, notifiable works include site formation, reclamation, demolition of a building, work carried out in any part of a tunnel that is within 100m of any exit to the open air, construction of the foundation or a building, construction of the superstructure of a building and road construction work.

POLLUTION SOURCE	DIFFERENCE IN HEIGHT BETWEEN INDUSTRIAL CHIMNEY EXIT AND THE SITE	BUFFER DISTANCE	PERMITTED USES
	30 – 40m	>50m	Active and passive recreational use
		5 – 50m	Passive recreational use
	>40m	>10m	Active and passive recreational use

Source: Table 3.1 of Chapter 9 Environment of HKPSG

2.2 Identification of Air Sensitive Receiver (“ASRs”)

- 2.2.1 The first layer ASRs within 500m assessment area closest from the Site have been identified. The assessment area of 500m from the site boundary and location of the representative ASRs are shown in **Figure 2-1** and summarised in **Table 2-4**.

Table 2-4 Identified Representative ASRs

ASR ID	DESCRIPTION	LAND USE	DISTANCE TO SITE BOUNDARY, m	ASSESSMENT HEIGHT, mPD
A01	Uptown House 38	Residential	2	~15.4
A02	The Woodside Tower 3	Residential	132	~15.4
A03	The Woodsville A1	Residential	67	~19.1
A04	Village House No.13	Residential	63	~12.9
A05	Village House No.143	Residential	75	~10.8
A06	Shung Tak Catholic English College	Educational	124	~12.1
A07	Proposed Development (i.e. this Project)	Residential	N/A	

2.3 Air Quality Impact during Construction Phase

- 2.3.1 Dust generated from various construction activities and exhaust emissions from construction machinery and vehicles are the major sources of air quality impacts during the construction phase. Construction activities such as excavation, stockpiling, earth moving, and the transfer or handling of dusty materials may give rise to fugitive dust emissions. However, as the Proposed Development does not involve basement construction and deep excavation is not required, the extent of excavation works and the will be limited.

- 2.3.2 Based on the best available information at this stage, it is assumed that the site area (approximately 2,138m²) would be the active workfront area and used for estimating the quantities of excavated materials in a conservative approach. Thus, approx. 12,915 tonnes of inert C&D materials (comprising 8,620 tonnes from the Site Formation & Foundation Stage and 4,295 tonnes from the Superstructure Stage) are estimated to be generated over the 4-year construction period as outlined in **Section 2.3.5**. Without a detailed construction program in current stage, it is assumed that the Site Formation Stage & Foundation Stage would last for 12 months (6 working days per week), resulting in an average generation of approximately 30 tonnes of excavated materials per day (i.e. 8,620 / (6 x 4 x 12) days). For the Superstructure Stage, assuming a duration of 36 months (6 workdays per week),

approximately 5 tonnes of excavated materials will be generated per day on average (i.e. 4,295 / (6 x 4 x 36)) days. Assuming an average dump truck capacity of 15 tonnes, it is estimated that about 2 truck trips per day and 1 truck trip per day will be required for material removal during the Site Formation & Foundation Stage and Superstructure Stage respectively. Given the relatively low frequency of daily truck trips, the potential air quality impact arising from the operation of dump trucks is expected to be insignificant.

2.3.3 Based on the best available information, a tentative plant inventory of Powered Mechanical Equipment (PME) for the Proposed Development is summarized in **Table 2-5**. Under the worst-case scenario, it is assumed that one to two units of each PME type may operate concurrently on-site to support different construction activities.

Table 2-5 Tentative Plant Inventory for Key Construction Activities

KEY CONSTRUCTION ACTIVITIES	POSSIBLE PME REQUIRED		ASSUMED QUANTITY
Site Clearance / Formation	- Dump Truck - Lorry with crane/grab - Generator - Air Compressor - Submersible Water Pump	- Excavator - Breaker - Road Roller - Soil Compactor	A maximum of 2 units of each PME are assumed operating concurrently at this stage on-site
Foundation / Piling Works	- Dump Truck - Lorry with crane/grab - Generator - Air Compressor - Submersible Water Pump - Welding Machine - Excavator	- Piling Machine - Bored Piling Machine - Rotator/ Oscillator - Reverse Circulation Drill (RCD) - Concrete Lorry Mixer - Concrete Pump - Breaker	A maximum of 2 units of each PME are assumed operating concurrently at this stage on-site
Construction of Superstructure	- Dump Truck - Lorry with crane/grab - Generator - Air Compressor - Submersible Water Pump	- Tower Crane - Mobile Crane - Welding Machine - Bar bender and cutter (electric) - Concrete Lorry Mixer - Concrete Pump - Vibratory Poker - Breaker, hand-held - Drill/grinder, hand-held (electric) - Saw, circular, wood	A maximum of 2 units of each PME are assumed operating concurrently at this stage on-site

2.3.4 Emissions from Powered Mechanical Equipment (PME) and construction vehicles would mainly comprise nitrogen oxides (NO_x), respirable suspended particulates (RSP) and other combustion-related pollutants. The *Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation* regulates emissions from non-road mobile machinery (NRMM) used in

construction activities. To minimize exhaust emissions during the construction phase, only approved NRMM should be used as far as practicable. In addition, construction plant and equipment should be connected to the mains electricity supply where practicable, and the use of diesel generators and diesel-powered equipment should be avoided as far as practicable. The engines of construction plant and equipment should also be switched off when not in use to avoid unnecessary idling emissions. Furthermore, all dusty materials will be properly covered or wetted on-site, and other dust suppression measures and good site practices recommended in paragraph 2.4.2 will be implemented as far as practicable.

- 2.3.5 Considering the small number of PME anticipated to operate concurrently on-site, the limited daily quantity of excavated material requiring handling and transportation, the low frequency of dump truck movements, and the implementation of the recommended mitigation measures, adverse air quality impacts during the construction phase are not anticipated.
- 2.3.6 The operation of the Proposed Development is estimated to commence in 2031, with a tentative construction period from 2028 to 2031. Based on the best available information from the Town Planning Board, a concurrent project involving a Proposed Residential Development at Tong Yan San Tsuen (Application No. Y/YL-TYST/9), located approximately 280m from the Project Site, has been identified. As the detailed construction programme is yet to be confirmed, the potential for overlapping construction works will be reviewed at a later stage when more information is available. With the implementation of the dust control measures in accordance with the Air Pollution Control (Construction Dust) Regulation, the adverse cumulative air quality impact during the construction phase is not anticipated. The location of the concurrent project is shown in Figure 2-1.
- 2.3.7 Furthermore, the Widening of Yuen Long Highway (Section between Lam Tei and Tong Yan San Tsuen) is situated in closest approximately 20m to the Project Site. The scheme is currently under study with a target commissioning date in 2033. As the detailed construction programme is yet to be confirmed, the potential for overlapping construction works will be reviewed at a later stage when more information is available. Similarly, for another Proposed Residential Development (Application No. Y/YL-TYST/10) located approximately 325m from the Project Site, will also be evaluated for the overlapping period of the construction phase in later stage when more information is available. In general, potential cumulative air quality impacts from these projects can be managed through the implementation of dust control measures in accordance with the Air Pollution Control (Construction Dust) Regulation. Also, it is recommended to maintain a close liaison with the contractors of concurrent projects to avoid overlapping of heavy or dusty construction works where practicable. Therefore, the adverse cumulative air quality impact during the construction phase is not anticipated.

2.4 Mitigation Measures

Construction Phase

- 2.4.1 The *Air Pollution Control (Construction Dust) Regulation* stipulated a number of air quality control measures. With these good practices, air quality impact arising from construction activities can be controlled, and therefore adverse impact on air quality is not expected.
- 2.4.2 The following good practices and air quality control measures shall be implemented during the construction phase to control the air quality impact on the air sensitive uses:

- Hard paving surface on open area, regular spraying water on exposed site surfaces and unpaved roads to reduce dust emissions, particularly during dry weather.
- Before, during and immediately after any excavation or earth moving operation, the working site shall be sprayed with water to keep the surface wet.
- Spraying water frequently for extra dusty areas and areas close to ASRs.
- Any stockpile of dusty materials shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and three sides, or sprayed with water so as to maintain the entire surface wet.
- Before loading, unloading or transfer any dusty materials, wet the dusty materials as far as practicable.
- Before, during and immediately after uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures, the working area shall be watered so as to maintain the entire surface wet.
- All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from the site clearance) that may generate dust particles shall be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides within a day of demolition.
- Tarpaulin covering of all dusty vehicles loads transported to, from and between site locations.
- Vehicle washing facilities including a high-pressure water jet shall be provided at every discernible or designated vehicle exit point. The area for vehicle washing and the section of the road between the washing facilities and the exit point shall be paved with concrete, bituminous materials or hardcore.
- At least 3.5m high hoarding from ground level shall be provided along site boundary where adjoins a road, streets or accessible to other public premises except for a site entrance or exit. For the portion of the site boundary in the vicinity of ASR1 to ASR6, site hoarding higher than 3.5m above ground should be erected as far as practicable to minimise any potential air quality impact on these ASRs.
- Where possible, wet the surface of façade grinding work.
- Equip vacuum cleaner on grinder for façade grinding work to collect dusty particles where possible.
- Main haul road shall be kept wet by spraying water. Imposition of speed controls for vehicles on site haul roads and confine haulage and delivery vehicles to designated roadways inside the site.
- A portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit shall be kept clear of dusty materials.
- Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from the ASRs.
- Every stock of more than 20 bags of cement or dry Pulverised Fuel Ash (“PFA”) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and three sides.

- For the construction site cleanliness and tidiness, the Works Branch Development Bureau Technical Circular (Works) No. 8/2010 Enhanced Specification for Site Cleanliness and Tidiness should be followed as far as possible.
- Using exempted NRMMS should be avoided and only NRMMS approved by the EPD shall be used during the construction phase.
- Electrified NRMMS shall be used as far as practicable to minimize local emissions.
- Electricity power supply shall be prioritized for construction equipment to minimize the reliance on diesel-powered machinery as far as possible.

2.5 Air Quality Impact during Operation Phase

Chimney Emission

- 2.5.1 A site visit was conducted on 9 January 2025 to identify air pollution sources in the vicinity of the Site. No chimney was found within 200m from the Site during the site visit. The buffer distance between industrial chimneys and air sensitive uses of the Proposed Development recommended in Table 3.1 of Chapter 9 in HKPSG is fulfilled in this case. As no active/heavy industrial operation during the site visit, adverse I/R interface problem is not anticipated. Although through desktop review, two chimneys were observed at around 360m and 400m away from the Project Site within the 500m assessment area, **buffer distance requirements recommended in Table 3.1 of Chapter 9 in HKPSG can be fulfilled for these two chimneys**, no adverse air quality impact is anticipated. Therefore, no adverse air quality impact from chimney emission is expected.

Vehicular Emission from Open Road

- 2.5.2 Hung Tin Road, Fui Sha Wai South Road and an unnamed access road are the major roads in the vicinity of the Site as shown in **Figure 2-2**. With reference to the *Annual Traffic Census (“ATC”) 2024* published by the Transport Department (“TD”), Hung Tin Road is classified as District Distributors (“DD”). Table 3.1, Chapter 9 of HKPSG recommends a minimum buffer distance of 10m between DD and air sensitive uses, which has been adopted for Hung Tin Road.
- 2.5.3 Fui Sha Wai South Road and the unnamed access road are not listed in the *ATC 2024*. Thus, TD was contacted for advice on the road types of these two roads. According to the TD’s reply dated 28 August 2025, TD has no comments for Fui Sha Wai South as a Local Distributor (“LD”) and the unnamed access road as a Feeder Road. Given that the Feeder Road only serves localized traffic with low volume and minimal heavy vehicle percentage, its emission impact is expected to be limited. Accordingly, a 5m buffer distance is adopted, which is considered to be sufficient for these road types in accordance with HKPSG chapter 9 Table 3.1. The enquiry letter and reply from TD are attached in **Appendix B**.
- 2.5.4 It should be noted that the internal road within the Proposed Development will serve as Emergency Vehicular Access (EVA) only, therefore, buffer distance requirement is not applicable to this road section. As illustrated in **Figure 2-2**, most of the site area could satisfy the buffer distances of Hung Tin Road, Fui Sha Wai South Road and the unnamed access road. As shown in **Figure 2-2**, for Hung Tin Road, there shall be no air-sensitive use including openable window, fresh air intake or recreational use in open space located within the buffer zone. And for the Fui Sha Wai South Road and Unnamed Access Road, although some portion

of the building block encroaches into their buffer zones, confirmation has been sought from client that no air-sensitive use including openable window, fresh air intake or recreational use in open space located within the buffer zones. As such, adverse air quality impact from vehicular emission on the Site is not anticipated.

Other Potential Vehicular Emission Sources

- 2.5.5 Through desktop review, a bus terminus located near Hung Fuk Shopping Centre, which to the northwest of the Project Site is observed. The distance between the bus terminus to the nearest project site boundary is around 385m as shown in **Figure 2-3**. With sufficient distance to the Project Site, potential adverse air quality impact arising from the emission of the bus terminus is not anticipated.
- 2.5.6 A total of nine existing carparks, comprising both open and multi-storey facilities, were identified within the 500m Assessment Area as shown in **Figure 2-3**. The closest carpark is situated approximately 300m northwest of the Project Site. Due to the considerable buffer distance, adverse air quality impact from these existing carparks on the proposed sensitive uses is not anticipated.
- 2.5.7 Furthermore, a planned carpark area is proposed on the ground floor within the Project Site. The **indicative location of the exhaust air outlets is shown in Figure 2-2. It** should be located as far as possible from nearby air-sensitive use to prevent any potential air nuisance in the future design. In addition, the design and operation of the carpark shall follow EPD’s ProPECC PN 2/96 (Control of Air Pollution in Car Parks). Thus, the emissions will be properly controlled in accordance with the guidelines and adverse air quality impact is not anticipated.

Odour Impact

- 2.5.8 Based on the site visit conducted on 9 January 2025, no odour smell was detected around the Project Site, although the Pun Chun Sauce & Preserved Fruit Factory was identified as a potential odour source. Given that the factory is situated at a substantial distance of over 400m to the Project Site, odour emissions are expected to be significantly diluted and dispersed before reaching the Site. Considering the **separation distance between the Project Site and the Pun Chun factory fulfilling the buffer distance requirements recommended in** Section 3.3.9 of Chapter 9 in HKPSG, and the lack of offensive odour recorded during site visit, the adverse odour impact from the Pun Chun factory on the Project Site is not anticipated.
- 2.5.9 Furthermore, a planned Refuse Collection Point (i.e. RCP) is proposed on the ground floor within the Project Site. The design and operation of the RCP is for the exclusive use of the Proposed Development, and is designed as a fully enclosed structure in accordance with the CAP. 123H Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations and PNAP APP-35. Thus, the odour emissions will be properly controlled in accordance with the guidelines and adverse odour impact is not anticipated.

2.6 Conclusion

- 2.6.1 With the implementation of the recommended mitigation measures and good site practices, adverse impacts associated with air quality during the construction phase is not anticipated.

- 2.6.2 During operation phase, no adverse air quality impact on the Site from chimney, vehicular and odour emissions are anticipated with the sufficient buffer distance provided between air pollution sources and the Site boundary.
- 2.6.3 Overall, no adverse air quality impacts are anticipated during the construction and operation phases of the Proposed Development.

Figure 2-1 500m Assessment Area and Location of Representative ASRs

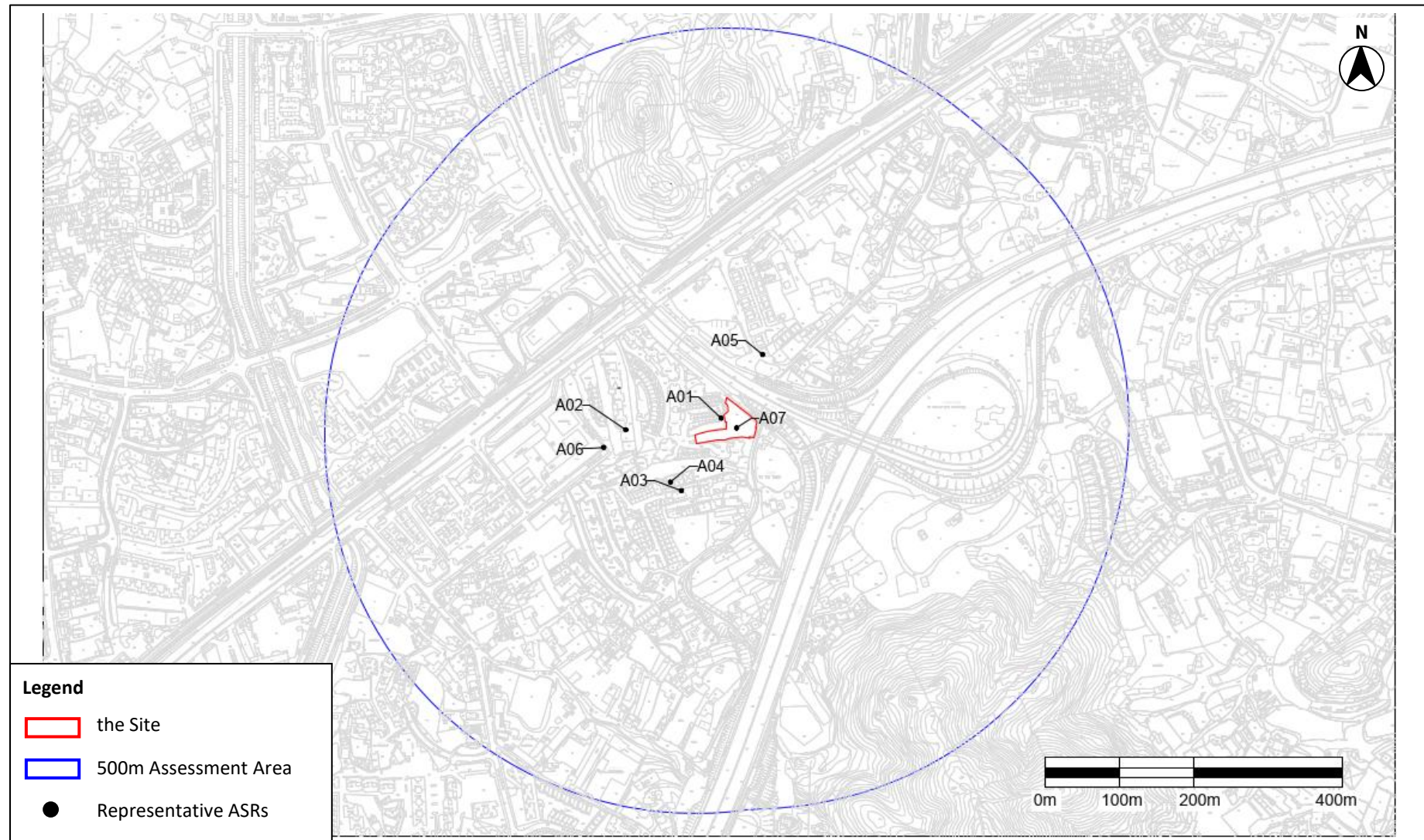


Figure 2-2 Buffer Distance Requirement from the Surrounding Roads and Indicative Location of Carpark Exhaust Outlet

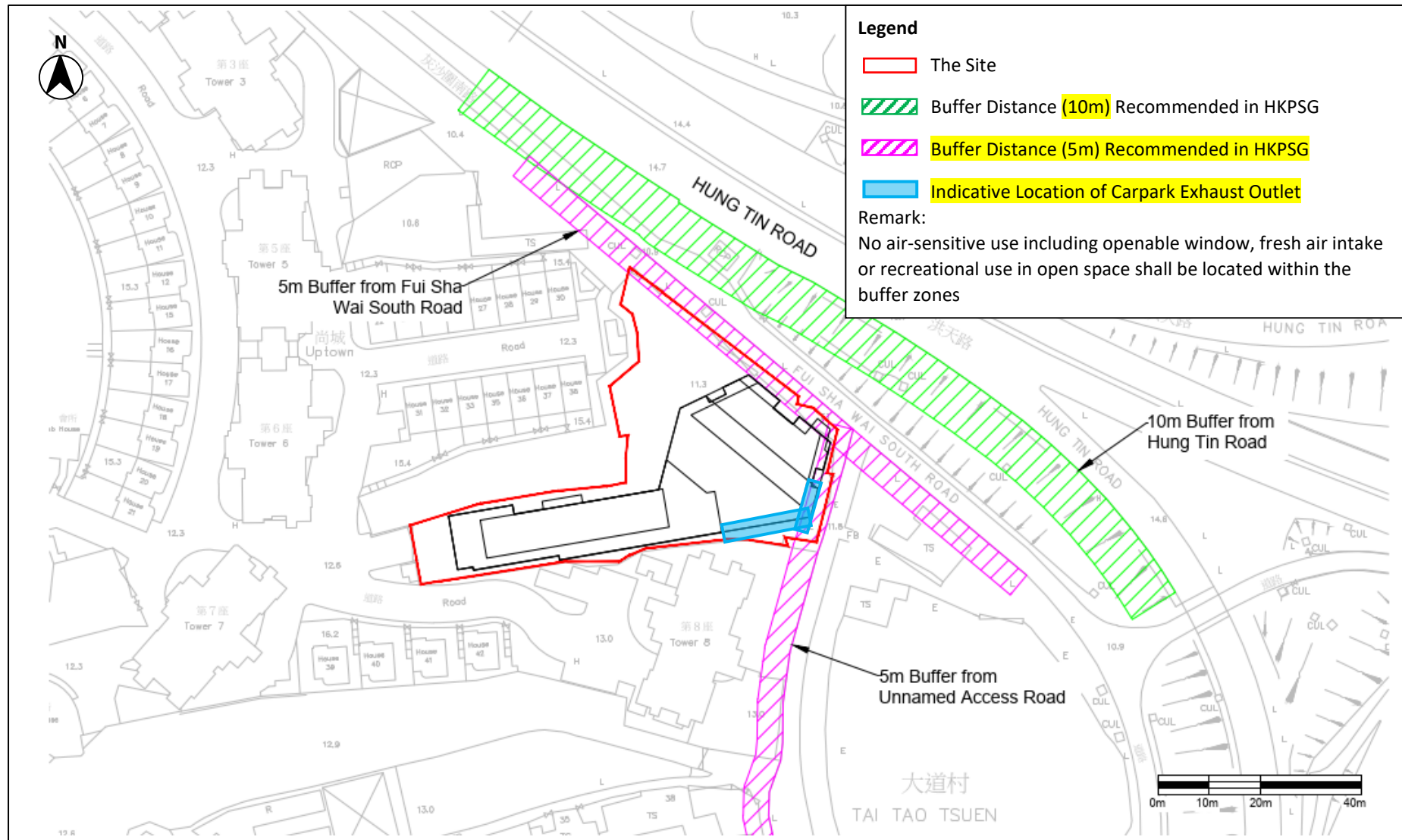
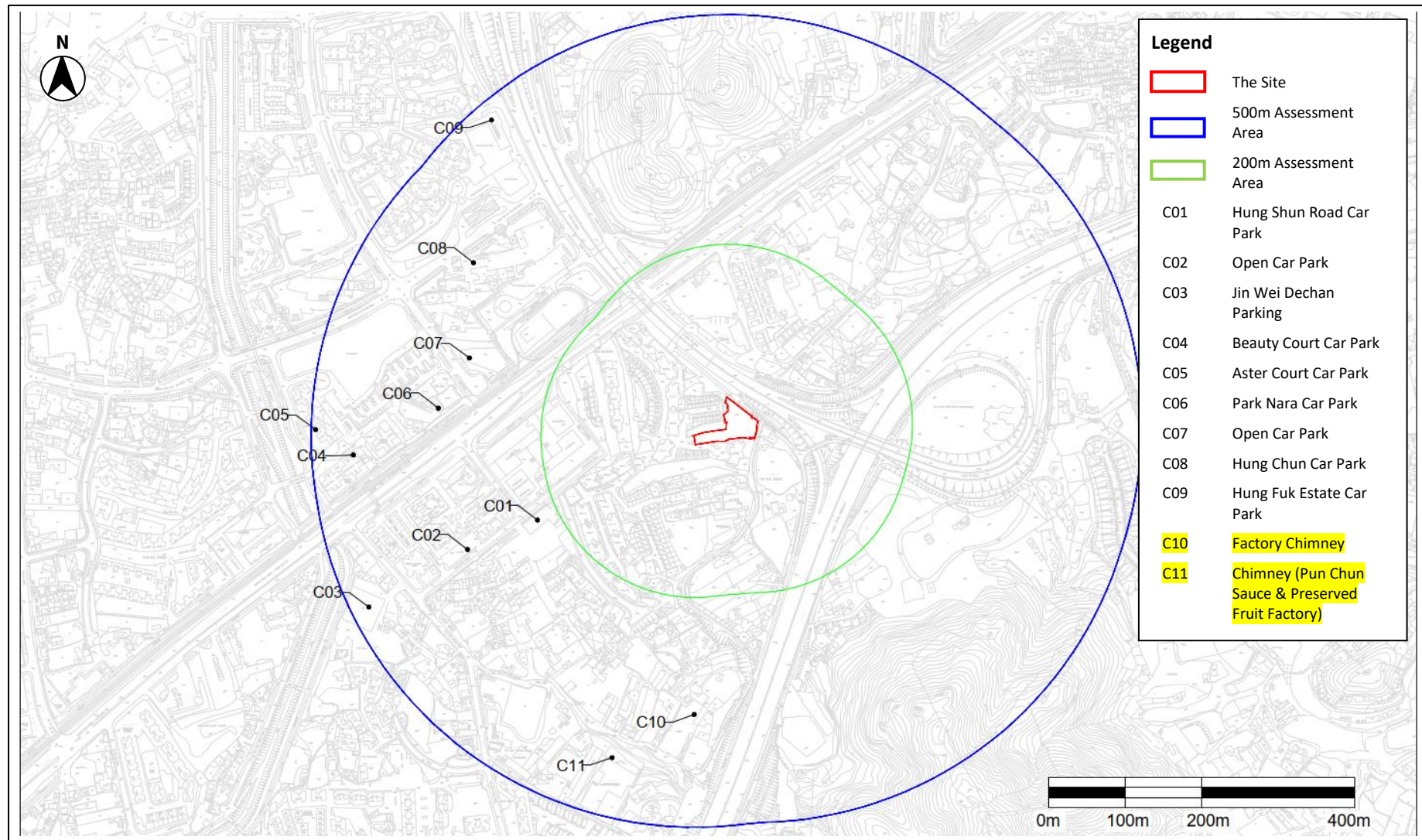


Figure 2-3 **Location of Other Potential Vehicular Emission Sources and Chimneys** within 500m Assessment Area



3 NOISE

3.1 Environmental Legislation and Standards

3.1.1 The principal legislation controlling environmental noise impact is the *Noise Control Ordinance* (“NCO”). In addition, some other key environmental legislation and standards applicable to noise control in Hong Kong are as follows:

- Hong Kong Planning Standards and Guidelines (“HKPSG”)
- Professional Persons Environmental Consultative Committee Practice Notes (“ProPECCPNs”) including
 - Application of Sound Insulation in Residential Buildings to Reduce Noise Transmission Between Units (“ProPECC PN 3/23”)
 - Planning of Residential Developments Against Road Traffic Noise (“ProPECC PN 4/23”)
 - Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact (“ProPECC PN 5/23”)
 - Minimizing Noise from Construction Activities (“ProPECC PN1/24”)

NCO (Cap. 400)

3.1.2 The *Noise Control Ordinance* (“NCO”) is the main piece of legislation controlling environmental noise impact. Subsidiary regulations and Technical Memoranda (“TMs”) enacted under NCO, provide detailed control criteria, measurement procedures and other technical matters. The TMs of NCO include:

- TM on Noise from Percussive Piling (“PP-TM”)
- TM on Noise from Construction Work other than Percussive Piling (“GW-TM”)
- TM on Noise from Construction Work in Designated Area (“DA-TM”)
- TM for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (“IND-TM”)

3.1.3 According to Plan No. EPD/AN/NT-01 for Yuen Long, Tin Shui Wai, Mai Po, Shek Kong and Kwu Tung on EPD Website, the Site entirely situates into Designated Area (“DA”) and so the DA-TM is applicable to this Project.

3.1.4 Besides, construction activities are limited by the following requirement stipulated in the NCO:

- Hand-held breakers having a mass of above 10kg and any air compressor capable of supplying compressed air at 500kPa or above must be fitted with Noise Emission Label (“NEL”) issued under the Noise Control (Hand-held Percussive Breakers) Regulation and Noise Control (Air Compressors) Regulation.
- Construction Noise Permit (“CNP”) shall be applied by the Contractor from EPD for any percussive piling at any time or any other construction activities conducted within restricted hours (for all days 7pm to 7am the next day and at all times on General Holidays including Sundays) as defined in NCO.

- 3.1.5 For fixed plant noise during operation phase, the requirements of IND-TM shall be complied with. Table 2 of IND-TM (recreated in **Table 3-1**) stipulates the day, evening and night time Acceptable Noise Levels (“ANLs”) for Noise Sensitive Receivers (“NSRs”) which considered the Influencing Factors (“IFs”) to determine the corresponding Area Sensitive Rating (“ASR”) in accordance with the IND-TM.

Table 3-1 Acceptable Noise Levels for Fixed Noise Source

TIME PERIOD	ANL, dB(A)		
	ASR “A”	ASR “B”	ASR “C”
Day (0700 to 1900 hours)	60	65	70
Evening (1900 to 2300 hours)			
Night (2300 to 0700 hours)	50	55	60

HKPSG

- 3.1.6 The noise criteria for planned fixed source shall follow the requirements of Table 4.1 of Chapter 9 of HKPSG:
- 5 dB(A) below the appropriate ANLs shown in Table 2 of IND-TM, and
 - The prevailing background noise levels
- 3.1.7 Road traffic noise standards for the following uses relying on opened windows for ventilation are recommended in Table 4.1 of Chapter 9 in HKPSG, recreated in **Table 3-2**.

Table 3-2 Summary of Road Traffic Noise Standards

USES	NOISE CRITERIA $L_{10}(1-HR)$ (dB(A))
All domestic premises including temporary housing accommodation	70
Hotels and hostels	70
Offices	70
Educational institutions including kindergartens, child care centres and all others where unaided voice communication is required	65
Places of public worship and courts of law	65
Diagnostic rooms and wards of hospitals, clinics, convalescences and residential care homes for the elderly	55

ProPECC PN 1/24 – Minimising Noise from Construction Activities

- 3.1.8 The noise arising from construction activities (other than percussive piling) during non-restricted hours (7am to 7pm from Monday to Saturday, not including Sunday and general holidays) should be minimized and not exceed the noise criteria as shown in **Table 3-3**. Besides the noise criteria, ProPECC PN 1/24 also recommends control measures for construction noise impact during non-restricted hours.

Table 3-3 Construction Noise Criteria for Non-Restricted Hours

NOISE SENSITIVE USE	L_{eq} (30min) NOISE CRITERIA BETWEEN 0700 AND 1900 ON ANY DAY NOT BEING A SUNDAY OR GENERAL HOLIDAY
All domestic premises Temporary housing accommodation Hostels Convalescences homes Homes for the aged	75 dB(A)
Places of public worship Courts of law Hospitals and medical clinics	70 dB(A)
Educational institutions (including kindergartens and nurseries)	70 dB(A) (65 dB(A) during examinations)

ProPECC PN 4/23 – Planning of Residential Developments Against Road Traffic Noise

- 3.1.9 The project proponent shall conduct a Road Traffic Noise Impact Assessment to ensure road traffic noise standards are met. According to the HKPSG, the road traffic noise standard for domestic premises is 70 dB(A) L_{10} (1hr). ProPECC PN 4/23 also recommends mitigation measures to be incorporated, if necessary, to meet the HKPSG’s standards.

ProPECC PN 5/23 – Application of Innovative Noise Mitigation Design in Planning Private Residential Developments against Road Traffic Noise Impact

- 3.1.10 ProPECC PN 5/23 provides some Innovative Mitigation Designs, such as Acoustic Window and Enhanced Acoustic Balcony, to help reduce traffic noise impact on private residential developments, as well as guidelines on calculation of noise reduction performance of these Innovative Mitigation Designs.

3.2 Noise Impact of Construction Phase

- 3.2.1 Various construction activities such as excavation, piling, etc. will be the key noise sources generated during the construction phase. In particular, the use of Powered Mechanical Equipment (“PME”) and the vehicle movement within the Site are the major noise sources.
- 3.2.2 Construction should be carried out during non-restricted hours as far as practicable. The mitigation measures recommended in ProPECC PN 1/24 should be implemented where applicable. In addition, the following measures and on-site practices are recommended in order to minimise the potential construction noise impacts as far as practicable:
- The Contractor shall devise, arrange methods of working and carry out the Works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
 - Quality Powered Mechanical Equipment (QPME) and quieter construction methods should be adopted as far as practicable.
 - Use of Non-percussive pile driving methods such as hydraulic press-in method, vibration or jacking method for installing or extracting sheet piles as far as practicable.

- Use of Non-percussive equipment such as hydraulic crusher, sawing, coring machines etc. for demolition and concrete breaking work.
 - Close all hoods, cover panels and inspection hatches of powered mechanical plant such as generators, air compressors etc. during operation.
 - Provide noise dampening materials inside and outside refuse chutes during building construction.
 - Fit mufflers or silencers, and dampening layer with steel collars to hand-held pneumatic breakers.
 - Use of non-explosive chemical expansion agents instead of explosive chemicals or expansive compounds.
 - 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.
 - Noisy equipment and noisy activities should be located as far away from the NSRs as far as practicable.
 - Provide an acoustic screen or enclosure shield the public or NSR from the noisy activities.
- 3.2.3 If PME is required for any construction work during restricted hours, a CNP shall be applied for as specified in the NCO. The GW-TM can be referred to for the noise criteria and assessment procedures for obtaining a CNP.
- 3.2.4 In addition, the EPD's Recommended Pollution Control Clauses (“RPCC”) for Construction Contracts should be incorporated in the relevant works contract. The RPCC are generally good engineering practices to minimize inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements as summarised as follows:
- The Contractor shall observe and comply with the NCO and its subsidiary regulation.
 - The Contractor shall ensure that all plant and equipment to be used on the Site are properly maintained in good operating condition and noisy construction activities shall be effectively sound-reduced by means of silencers, mufflers, acoustic linings and shields, acoustic sheds or screen or other means, to avoid disturbance to nearby noise sensitive receivers.
 - For carrying out any construction work other than percussive piling during the time period from 0700 to 1900 hours on any day not being a general holiday (including Sundays), the Contractor shall comply with the following requirements.
 - The noise level measured at 1m from most affected external façade of the nearby noise sensitive receivers from the construction works alone during any 30-minute period shall not exceed an equivalent sound level (“ L_{eq} ”) of 75dB(A).
 - The noise level measured at 1m from most affected external façade of the nearby schools from the construction works alone during any 30-minute period shall not exceed L_{eq} of 70dB(A) [65dB(A) during school examination period]. The Contractor shall liaise with the schools and/or the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract.

- Should the limits stated in the above be exceeded, the construction shall stop and shall not recommence until appropriate measures acceptable to the Engineer that are necessary for compliance have been implemented.
 - The Contractor shall adopt, where necessary and practicable, the use of quieter construction equipment and/or methods when carrying out the construction works, including demolition works, foundation works, site formation works, road opening works during restricted hours.
 - Before commencement of any work, the Engineer may require the methods of working, plant equipment and sound-reducing measures to be used on the Site to be made available for trial demonstration inspection and approval to ensure that they are suitable for the project.
 - The Contractor shall devise, arrange methods of working and carry out the Works in such a manner so as to minimise noise impacts on the surrounding environment, and shall provide experienced personnel with suitable training to ensure that these methods are implemented.
 - Notwithstanding the requirements and limitations set out in the bullet above and subject to compliance with the second and fifth bullet above, the Engineer may upon application in writing by the Contractor, allow the use of equipment and the carrying out of any construction activities for any duration provided that the Engineer is satisfied with the application which, in Engineer’s opinion, is considered to be of absolute necessity and adequate noise insulation has been provided to the schools to be affected, or of emergency nature, and not in contravention with the NCO in any respect.
 - The Contractor shall, when necessary, apply for a construction noise permit in accordance with the Noise Control (General) Regulations prior to the commencement of the relevant part(s) of the works, display the permit as required and provide a copy to the Engineer.
 - Measures that are to be taken to protect adjacent schools and adjacent noise sensitive receivers, if necessary, shall include, but not be limited to, adequate noise barriers. The barriers shall be of substantial construction and designed to reduce transmission of noise. The location and details of the barriers shall be submitted to the Engineer for approval before works commence adjacent to schools and other NSRs.
- 3.2.5 With the implementation of the aforementioned mitigation measures, adverse construction noise impact is not anticipated.

3.3 Noise Impact of Operation Phase

Existing Railway Noise Source

- 3.3.1 Based on the site visit carried out on 9 January 2025 and the desktop study in the vicinity of the Site, a section of Light Rail was observed as a potential source of railway noise. The assessment area of 300m from the site boundary is shown in **Figure 3-1**. The Light Rail is situated in a distance of approximately 187 meters northwest of the Project Site as shown in **Figure 3-2**.
- 3.3.2 In view of the separation distance between the Light Rail tracks and the Project Site, noise impact arising from the Light Rail operations is expected to be insignificant. Therefore, adverse railway noise impact from the Light Rail to the Project Site is not anticipated. It is also noted that railway noise from the Light Rail was not noticeable in the vicinity of the Site.

Planned Transit Noise Source

- 3.3.3 Based on the desktop study, the Project Site is a part of the future development of “The smart and green mass transit system (SGMTS) project in Hung Shui Kiu/Ha Tsuen and Yuen Long South New Development Areas”. With the best available information, including the Hung Shui Kiu New Development Area EIA report, the proposed alignment for the SGMTS is situated approximately 200 meters from the Project Site. The indicative alignment from the Feasibility Study on GTS is shown in **Figure 3-3**.
- 3.3.4 Considering the separation distance mentioned above, noise generated from the future SGMTS is expected to be minimal. With incorporate noise mitigation measures into the SGMTS design, adverse noise impact from the planned SGMTS of the Project Site is not anticipated.

Existing Fixed Noise Sources

- 3.3.5 Site visit was carried out on 9 January 2025 to identify any potential fixed plant noise in the vicinity of the Site. Based on the site visit and the desktop study, the premises within 300m assessment area include residential buildings, schools, open storage areas and the Tai Tao Tsuen Substation. During the site visit, the background noise was observed to be dominated by road traffic noise. In contrast, the fixed noise from the Tai Tao Tsuen Substation was not noticeable at the Site.

Tai Tao Tsuen Substation

- 3.3.6 The Tai Tao Tsuen Substation is situated approximately 58 meters north of the Project Site as shown in **Figure 3-4**. Site survey revealed that there was no significant noise emitted from Tai Tao Tsuen Substation, and operation noise from this Substation was not noticeable at the Project Site. Hence, adverse fixed noise impacts arising from the operation of Tai Tao Tsuen Substation to the Proposed Development is not anticipated.
- 3.3.7 Besides, given that barriers were provided between the outdoor equipment (e.g. Transformer) and the background noise was dominated by road traffic noise, adverse fixed noise impact from the Substation to the Project Site is not anticipated.

Planned On-Site Fixed Noise Sources

- 3.3.8 Most of the M&E equipment installed in the Proposed Development including water pumps, Fire Services (“FS”) pumps, emergency generators and lift machines will be installed in plant rooms and will be enclosed with louvres installed at the openings. Outdoor split-type air conditioners will likely be the only outdoor fixed plants. The SWL of outdoor split-type air conditioners is generally minimal. Therefore, no adverse noise impact arising from enclosed M&E equipment and the outdoor split-type air conditioners is anticipated.
- 3.3.9 Quiet air conditioning system will be selected as far as practicable. Outdoor air conditioning units will be located away from the nearest NSRs to minimise noise impact on the NSRs closest to the Proposed Development. Noise control measures recommended in the *Good Practice on Ventilation System Noise Control* should, where applicable, be implemented at ventilation facilities in order to minimise noise generation. Some good practices include:

- If practicable, equipment should be installed in a plant room with thick walls, behind a large enough obstruction or as far as practicable from the receivers.
- Equipment maintenance should be scheduled regularly to ensure that equipment is properly operated in order to maintain a controlled level of noise and vibration and prevent noise emissions from equipment from increasing over time.
- Erect a barrier or partial enclosure between the plant and nearby residential buildings to block direct line of sight between noise source and NSRs.
- Complete enclosure with silencers at condenser fan outlets and at air inlets of the enclosure should be provided so as to contain and absorb the noise from the chiller when there are noise sensitive receivers nearby.
- If the floor underneath is an NSR, floating floor can be installed to reduce noise transmission through the floor slab.
- Fan speed should be slowed down during non-rush hours, duct openings should be directed away from NSRs.
- Air discharge point of fans should be equipped with silencers so as to absorb noise generated from the fan.
- If practicable, fabricate a complete enclosure to contain and absorb noise energy radiated by the source.

3.3.10 With the provision of the above measures, no adverse noise impact from the operation of the Proposed Development is anticipated.

3.4 Road Traffic Noise Impact During Operation

3.4.1 The Site is surrounded by several major roads, including Hung Tin Road, Yuen Long Highway and Castle Peak Road. Road traffic activities could cause potential adverse noise impact on the NSRs of the Proposed Development. **Figure 3-1** shows the nearby road networks within the 300m assessment area.

Noise Prediction Methodology

3.4.2 Road traffic noise levels during peak hour have been predicted using computer noise modelling software “NoiseMap Enterprise”, which follows the prediction procedures of the *Calculation of Road Traffic Noise* (“CRTN”) published by the UK Department of Transport, as recommended in Chapter 9 of HKPSG.

Traffic Forecast

3.4.3 Operation of the Proposed Development will tentatively commence in 2031. The assessment year was determined to be year 2046 (i.e. the operation year 2031 + maximum traffic projection within 15 years upon the population intake of the development). Traffic forecast data adopted in the TNIA was based on the projected peak hourly traffic flow in 2046. All road sections within 300m of the Site have been considered. The traffic forecast data is shown in **Appendix C**.

Noise Sensitive Receivers for Traffic Noise Impact Assessment

- 3.4.4 The Proposed Development consists of planned NSRs at the RCHE and residential blocks above. All noise sensitive rooms will be provided with prescribed windows for natural ventilation in accordance with the *Building (Planning) Regulations, Cap 123* (“B(P)R”). The noise standards stipulated in the HKPSG are applicable to noise sensitive uses which rely on open windows for ventilation. Thus, the Noise Assessment Points (“NAPs”) for noise sensitive uses are assigned to these prescribed windows.
- 3.4.5 For residential use, noise sensitive uses such as dining rooms, living rooms and bedrooms of the residential units will be NSRs of the TNIA. NAPs are located 1m from the façade of opened windows and 1.2m above the floor of NAPs as shown on **Figure 3-5** to **Figure 3-7**.

Assessment Result - Base case (Unmitigated noise scenario)

- 3.4.6 The traffic noise level at the NAPs of the Proposed Development shall comply with the criterion of 70dB(A) recommended in Chapter 9 of HKPSG. The predicted road traffic noise levels are detailed in **Appendix D** and summarised in **Table 3-4**.

Table 3-4 Summary of Road Traffic Noise Impact Assessment Results for RCHE and Residential Towers

BLOCK	ROOM ¹	NAP	NOISE CRITERIA L ₁₀ (1 HR) dB(A)	PREDICTED MAXIMUM NOISE LEVEL L ₁₀ (1 HR) dB(A)	COMPLIANCE
RCHE (G/F)	Multi-Purpose Room / Rehabilitation Area	RCHE_GF_01; RCHE_GF_05	70	65	Y
	Small Group Activity Room	RCHE_GF_02 to RCHE_GF_04		61	Y
RCHE (1/F – 5/F)	Dormitory	RCHE_TYP_01 to RCHE_TYP_08; RCHE_TYP_10 to RCHE_TYP_16; RCHE_TYP_19 to RCHE_TYP_25;	70	76	N
	Sick / Isolation / Quiet Room ²	RCHE_TYP_09	70	58	Y
	Sick / Isolation / Quiet Room Cum End-of-Life Care Room ²	RCHE_TYP_17	70	72	N
Tower A	Living Unit A1 to Living Unit A6	TYP_A_01 to TYP_A_14	70	78	N
Tower B	Living Unit B1 to Living Unit B6	TYP_B_01 to TYP_B_13	70	74	N

Note:

1. This table only includes the NSRs rely on openable window for ventilation.
2. It is confirmed with client these room is only served for infection control purpose which does not include diagnostic purpose.

- 3.4.7 It is noted that noise exceedance is not expected at the G/F of RCHE with the noise criterion of L₁₀(1 hr) 70 dB(A). For the NAPs “RCHE_TYP_18” on 1/F to 5/F and rooms on the 6/F of

the RCHE, it is confirmed that those rooms does not rely on openable window for ventilation, RCHE_TYP_18 is exempted for the assessment, and no NAPs were assigned for RCHE 6/F.

Assessment Result - Mitigation Case

3.4.8 In order to mitigate the noise exceedance regarding to the traffic noise impact, acoustic window and fixed/lockable/maintenance window have been adopted in this assessment.

Acoustic Window (Baffle Type)

3.4.9 To mitigate the noise exceedance for the NAPs, the adopted acoustic window design references to the *ProPECC PN 5/23 on Possible design of “Acoustic Window (Baffle Type)” for 8m² and 18m² habitable rooms* in **Appendix E**. The type and specification of the acoustic window (baffle type) applied in the rooms with noise exceedances are summarized in **Table 3-5** below.

3.4.10 Since the acoustic windows for NAPs RCHE_TYP_22 and RCHE_TYP_25 are at an approximate 60° horizontal incident angle to the dominant line source (Hung Tin Road), a noise reduction ranging from 8 dB(A) to 9.5 dB(A) could be provided based on the room dimension and provision of Sound Absorption Materials (SAM). Acoustic windows applied to other NAPs would be treated as parallel to the dominant line source, which can provide a noise reduction ranging from 6 dB(A) to 8.5 dB(A) based on the room dimension and provision of SAM.

3.4.11 The noise reduction values will be adjusted according to the actual room sizes of the affected NSRs to determine the Relative Noise Reduction. The detailed Noise Reduction Performance of the Proposed Acoustic Window (Baffle Type) is shown in **Appendix F**.

Table 3-5 Locations of the Proposed Acoustic Windows (Baffle Type)

BLOCK	ACOUSTIC WINDOW LOCATION	NAP	REF. TYPE OF ACOUSTIC WINDOW	WITH/ WITHOUT SAM	ADJUSTED RELATIVE NOISE REDUCTION dB(A)
RCHE	Dormitory 4 (5/F)	RCHE_TYP_16	PN 5/23, 18 m ²	Without	4.2
	Sick/ Isolation/ Quiet Room cum End-of-Life Care Rm (4/F to 5/F)	RCHE_TYP_17	PN 5/23, 8 m ²	Without	5.0
	Dormitory5 (4/F to 5/F)	RCHE_TYP_19	PN 5/23, 18 m ²	Without	7.0
	Dormitory 6 (3/F to 5/F)	RCHE_TYP_20	PN 5/23, 18 m ²	Without	4.7
	Dormitory7 (2/F to 5/F)	RCHE_TYP_21	PN 5/23, 18 m ²	Without	3.5
	Dormitory 8 (2/F to 5/F)	RCHE_TYP_22	PN 5/23, 18 m ²	Without	4.0
	Dormitory 9 (2/F to 5/F)	RCHE_TYP_25	PN 5/23, 18 m ²	With	4.1
	Dormitory 9			Without	2.6

BLOCK	ACOUSTIC WINDOW LOCATION	NAP	REF. TYPE OF ACOUSTIC WINDOW	WITH/ WITHOUT SAM	ADJUSTED RELATIVE NOISE REDUCTION dB(A)
	(1/F)				
	Dormitory 10 (2/F to 5/F)	RCHE_TYP_03	PN 5/23, 18 m ²	Without	3.3
	Dormitory 11 (3/F to 5/F)	RCHE_TYP_05	PN 5/23, 18 m ²	Without	4.2
	Dormitory 12 (3/F to 5/F)	RCHE_TYP_06	PN 5/23, 18 m ²	Without	2.4
Tower A	Living Unit A1 (11/F to 12/F)	TYP_A_14	PN 5/23, 18 m ²	With	6.4
	Living Unit A1 (7/F to 10/F)			Without	4.9
	Living Unit A2 – B.R. 1 (12/F)	TYP_A_11	PN 5/23, 8 m ²	Without	4.6
	Living Unit A2 – B.R. 2 (7/F to 12/F)	TYP_A_13	PN 5/23, 8 m ²	Without	6.0
	Living Unit A5 – B.R. 2 (7/F to 12/F)	TYP_A_04	PN 5/23, 8 m ²	Without	6.0
	Living Unit A5 – B.R. 1 (11/F to 12/F)	TYP_A_06	PN 5/23, 8 m ²	Without	4.6
	Living Unit A6 (10/F to 12/F)	TYP_A_03	PN 5/23, 18 m ²	With	6.4
	Living Unit A6 (7/F to 9/F)			Without	4.9
Tower B	Living Unit B6 (8/F to 12/F)	TYP_B_01	PN 5/23, 8 m ²	Without	4.1
	Living Unit B6 (7/F to 12/F)	TYP_B_12	PN 5/23, 18 m ²	Without	6.3

Fixed/Lockable/Maintenance Window

- 3.4.12 For the rooms where acoustic window are installed, the side windows shall be locked/fixed to ensure the validity of the estimated noise attenuation. Note that fixed/lockable/maintenance windows should normally be closed and are only opened by a specific key for maintenance such as cleaning purposes only. Furthermore, fixed/lockable/maintenance window can also be applied to NAPs with side windows as a mitigation measure to the noise exceedances. The locations of fixed/lockable/maintenance windows are summarised in **Table 3-6** below.

Table 3-6 Locations of the Proposed Fixed/Lockable/Maintenance Windows

BLOCK	FIXED/LOCKABLE/MAIN TENANCE WINDOW LOCATION	NAP	IMPLEMENTED FLOOR
RCHE	Dormitory 8	RCHE_TYP_23	2/F to 5/F
	Dormitory 9	RCHE_TYP_24	1/F to 5/F
		RCHE_TYP_01	
		RCHE_TYP_02	
	Dormitory 10	RCHE_TYP_04	1/F to 5/F
Tower A	Living Unit A1	TYP_A_01	7/F to 12/F
	Living Unit A2	TYP_A_12	7/F to 12/F
	Living Unit A5	TYP_A_05	7/F to 12/F
	Living Unit A6	TYP_A_02	7/F to 12/F
Tower B	Living Unit B1	TYP_B_11	7/F to 12/F
	Living Unit B6	TYP_B_13	7/F to 12/F
	Living Unit B5	TYP_B_02	9/F to 12/F

3.4.13 With the implementation of the acoustic windows (baffle type) and fixed/lockable/maintenance windows as mitigation measures, the predicted traffic noise levels at all NSRs at the RCHE and residential blocks are found to comply with the noise criterion of L_{10} (1 hr) 70 dB(A). The predicted maximum road traffic noise levels are summarised in **Table 3-7** and detailed in **Appendix G**. The location of the mitigation measures implemented are detailed in **Appendix H**.

Table 3-7 Summary of Predicted Traffic Noise Levels at NAPs in Mitigated case

BLOCK	ROOM	NAP	NOISE CRITERIA L_{10} (1 HR) dB(A)	PREDICTED MAXIMUM NOISE LEVEL L_{10} (1 HR) dB(A)	EXCEEDANCE
RCHE (1/F – 5/F)	Dormitory	RCHE_TYP_01 to RCHE_TYP_08; RCHE_TYP_10 to RCHE_TYP_16; RCHE_TYP_19 to RCHE_TYP_25;	70	70	N
	Sick / Isolation / Quiet Room Cum End-of-Life Care Room	RCHE_TYP_17	70	70	N
Tower A	Living Unit A1 to Living Unit A6	TYP_A_01 to TYP_A_14	70	70	N
Tower B	Living Unit B1 to Living Unit B6	TYP_B_01 to TYP_B_13	70	70	N

3.5 Conclusion

- 3.5.1 No adverse noise impact due to construction of the Proposed Development is anticipated given that the noise mitigation measures recommended in **paragraph 3.2.4** are implemented.
- 3.5.2 For operation phase, desktop review and site visit were carried out to identify any potential railway noise and fixed noise sources in the vicinity of the Site. A potential existing railway noise source (Light Rail) was observed approximately 187m northwest of the Project Site, and a part of the future planned potential railway noise source (SGMTS) was noted approximately 200m from the Project Site. Given that the Light Rail noise was not noticeable in the vicinity of the Site and the separation distance of the existing Light Rail and Planned SGMTS, no adverse railway noise impact is expected. The Tai Tao Tsuen Substation was identified as a potential fixed noise source. Given that other NSRs are closer to the Substation compared to the Project Site, no adverse fixed noise impact is expected.
- 3.5.3 Since most of the M&E equipment will be installed in plant rooms and will be enclosed with louvres installed at the openings, no adverse noise impact is anticipated from this equipment. For the outdoor split-type air conditioners, their noise is considered minimal and will not cause adverse noise impacts. With the implementation of the noise mitigation measures recommended in **paragraph 3.3.5**, no adverse noise impact from M&E equipment is anticipated.
- 3.5.4 Road traffic noise impact assessment has been conducted for the noise sensitive uses requiring openable window for ventilation. Based on the results for the Base Case, the predicted noise levels at RCHE (1/F – 5/F) and residential units at Tower A and B would exceed the noise criterion of L_{10} (1 hr) 70 dB(A) stipulated in Chapter 9 of HKPSG. With the implementation of the acoustic windows (baffle type) and fixed/lockable/maintenance windows, the road traffic noise levels at all NAPs are predicted to comply with the noise criterion. Thus, no adverse road traffic noise impact is anticipated.
- 3.5.5 Therefore, no adverse noise impacts are anticipated during the construction and operation phases of the Indicative Development scheme.
- 3.5.6 To ensure full compliance with the relevant noise criteria, the Applicant shall undertake a detailed Noise Impact Assessment (NIA) based on the finalized building layout during the detailed design stage. The detailed NIA shall be submitted to the Authority for approval prior to commencement of construction works.

Figure 3-1 300m Assessment Area

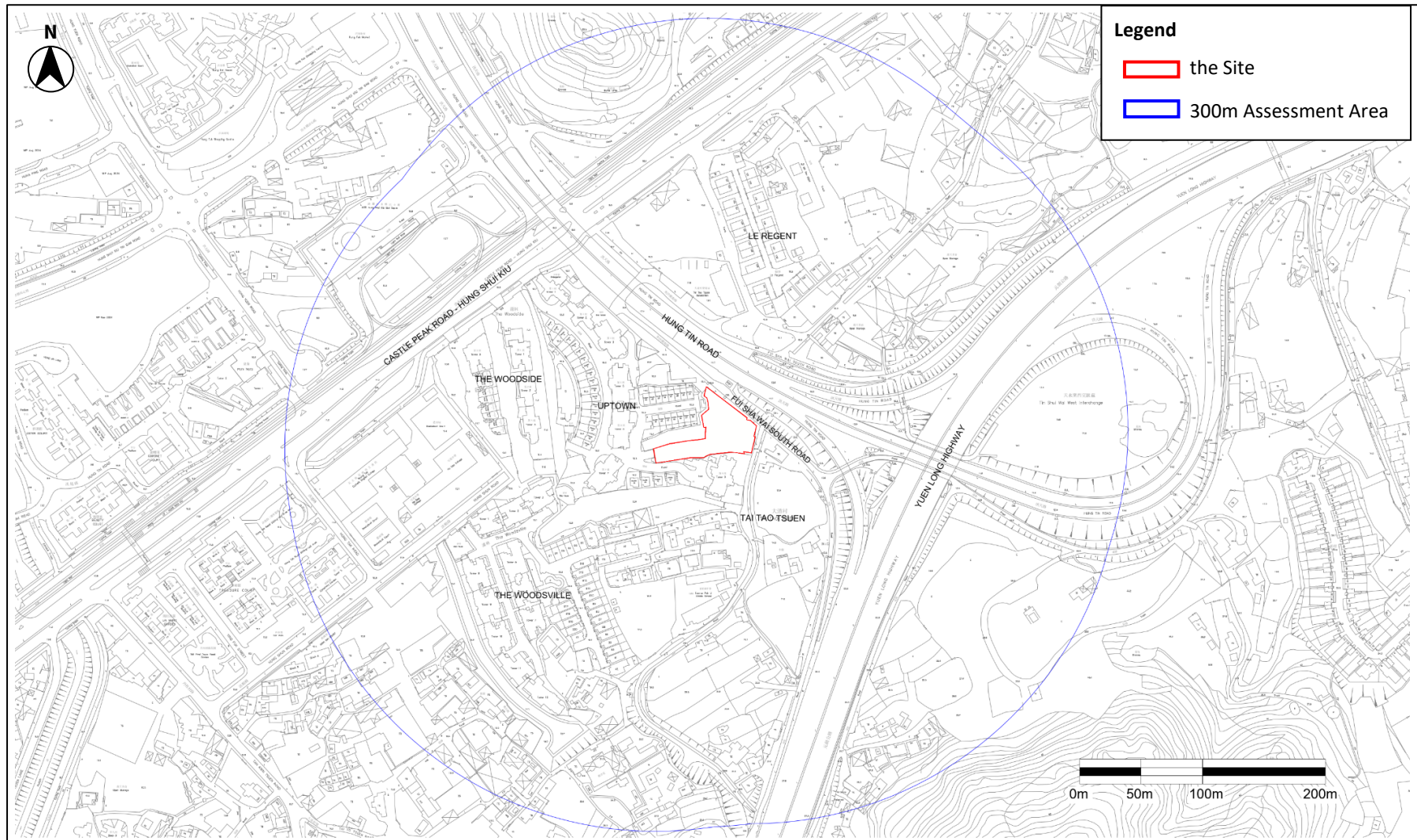


Figure 3-2 Shortest distance between the Project Site Boundary to the Light Rail

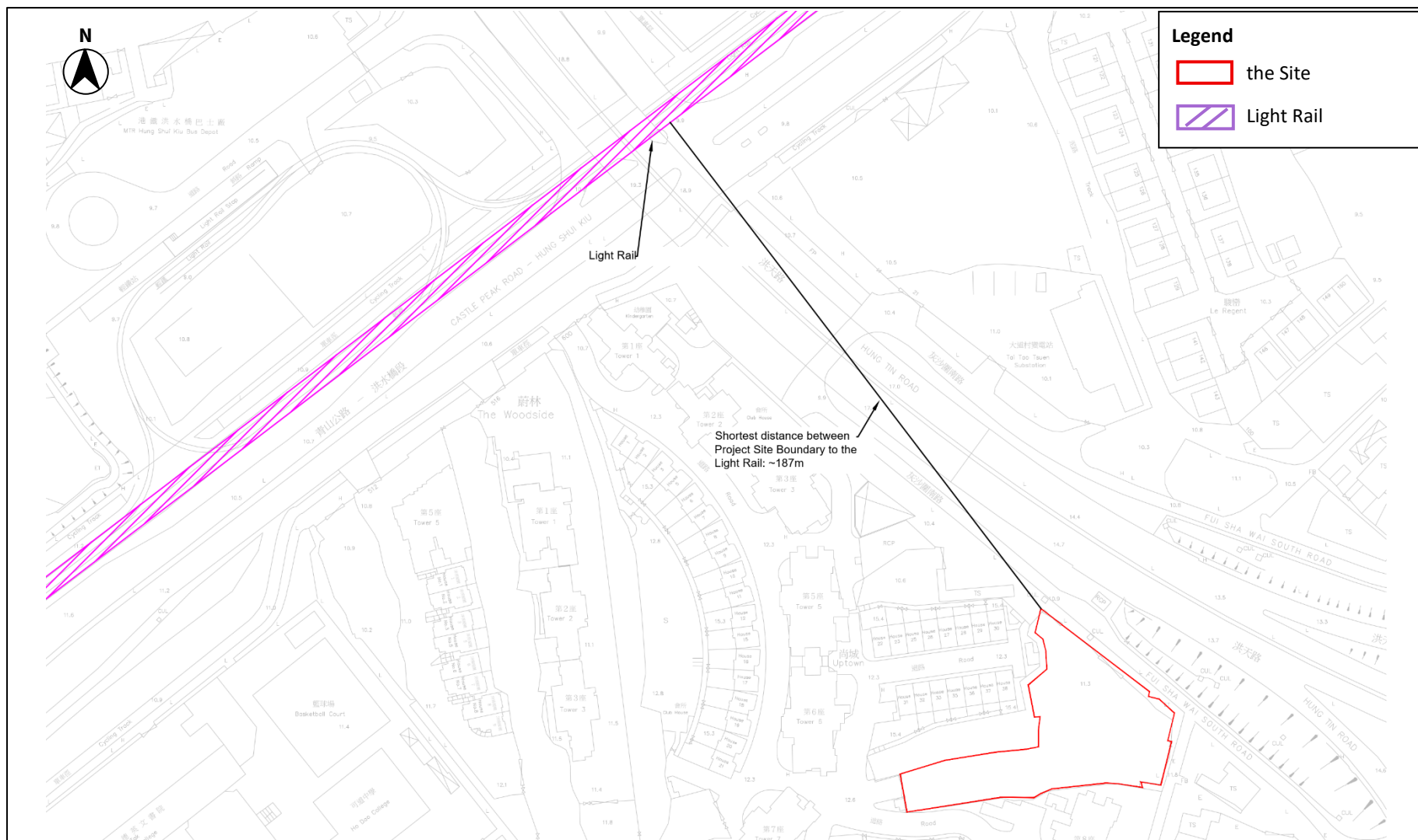
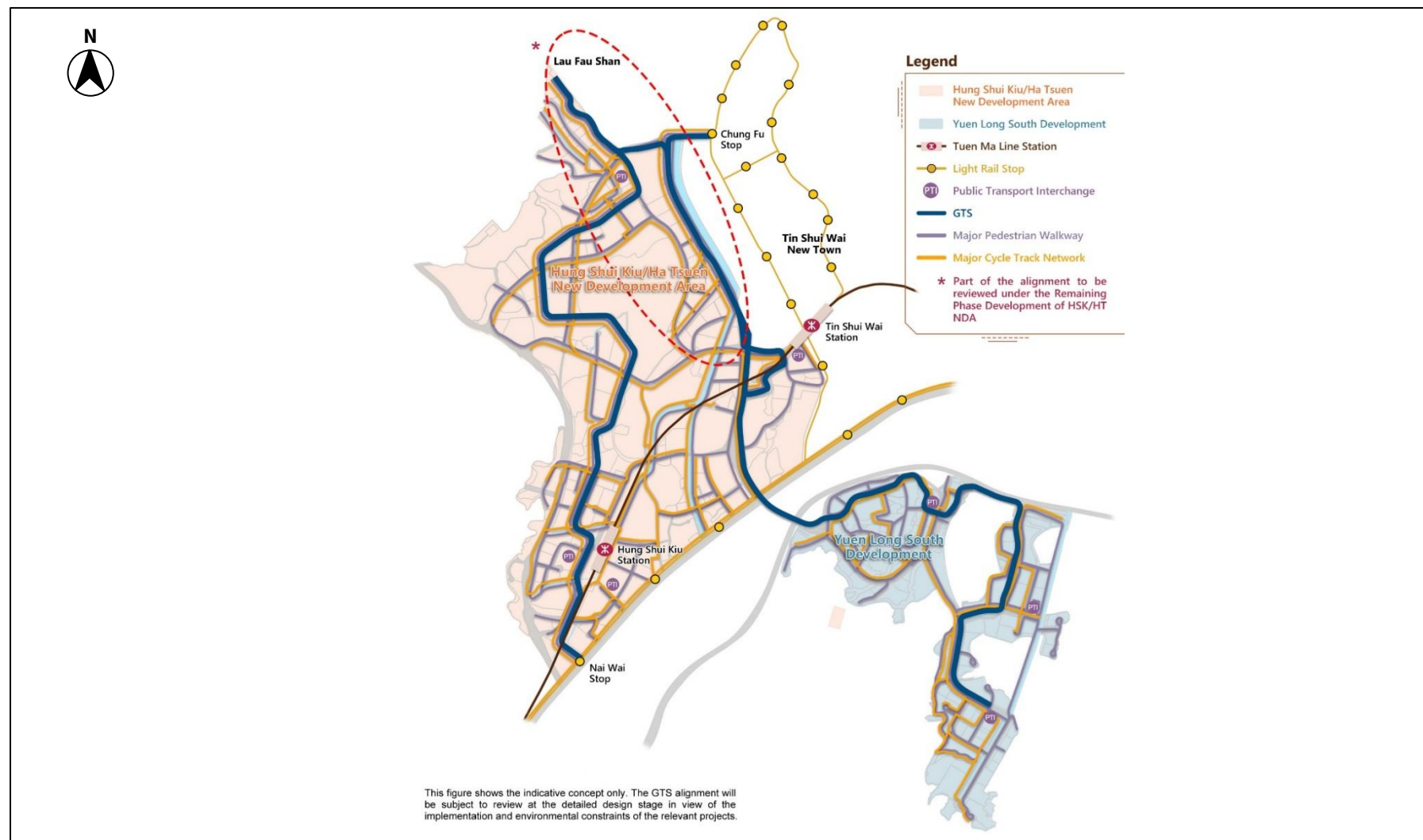


Figure 3-3 Indicative alignment from the Feasibility Study on GTS



Note: Figure 3.3 (Indicative alignment from the Feasibility Study on GTS) was refer to <https://www.hskhtgts.hk/en/>

Figure 3-4 Shortest distance between the Project Site Boundary to the Tai Tao Substation

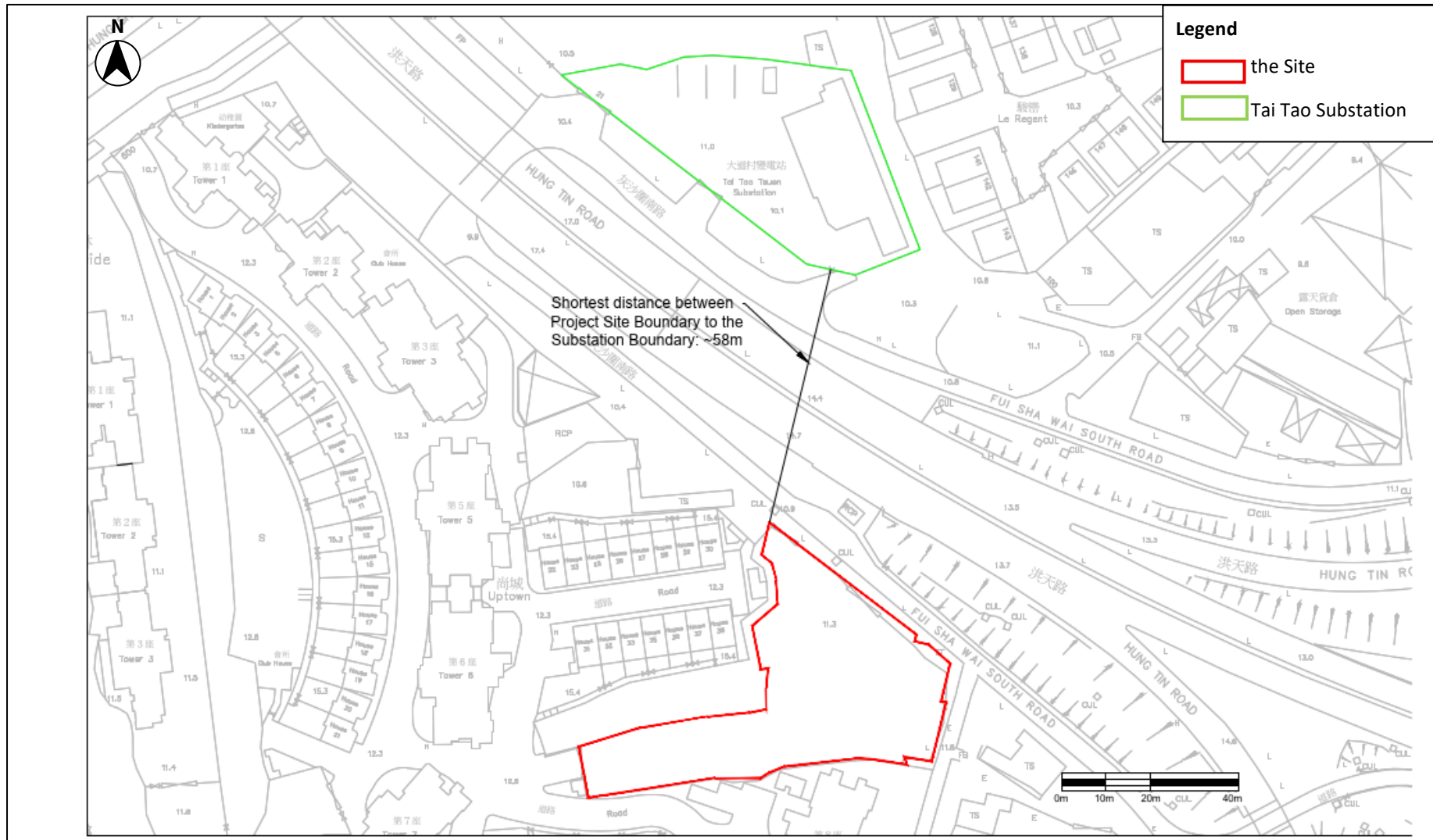


Figure 3-5 Location of Noise Assessment Points for Road Traffic Noise Impact on RCHE G/F

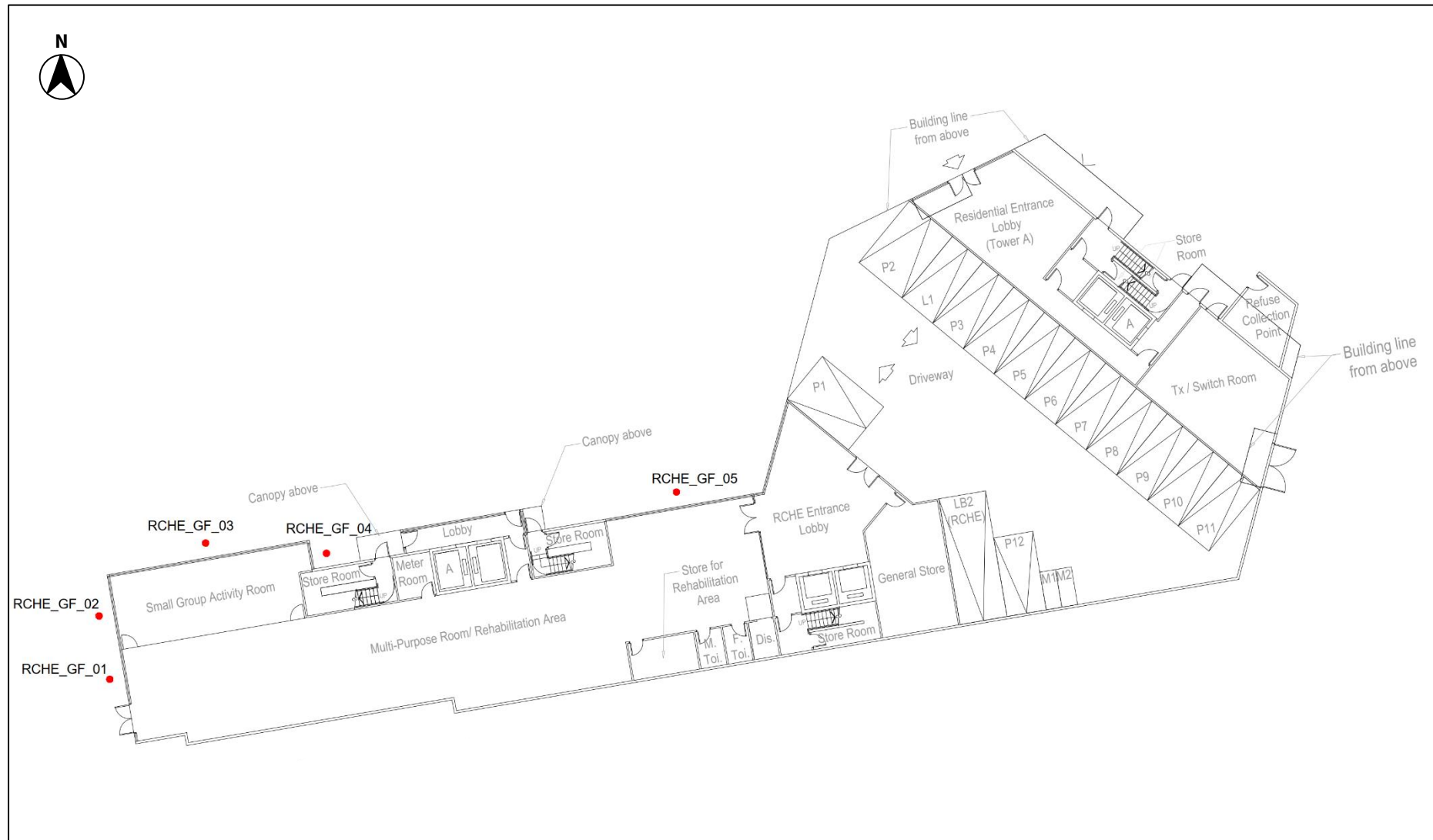


Figure 3-6 Location of Noise Assessment Points for Road Traffic Noise Impact on RCHE 1/F to 5/F

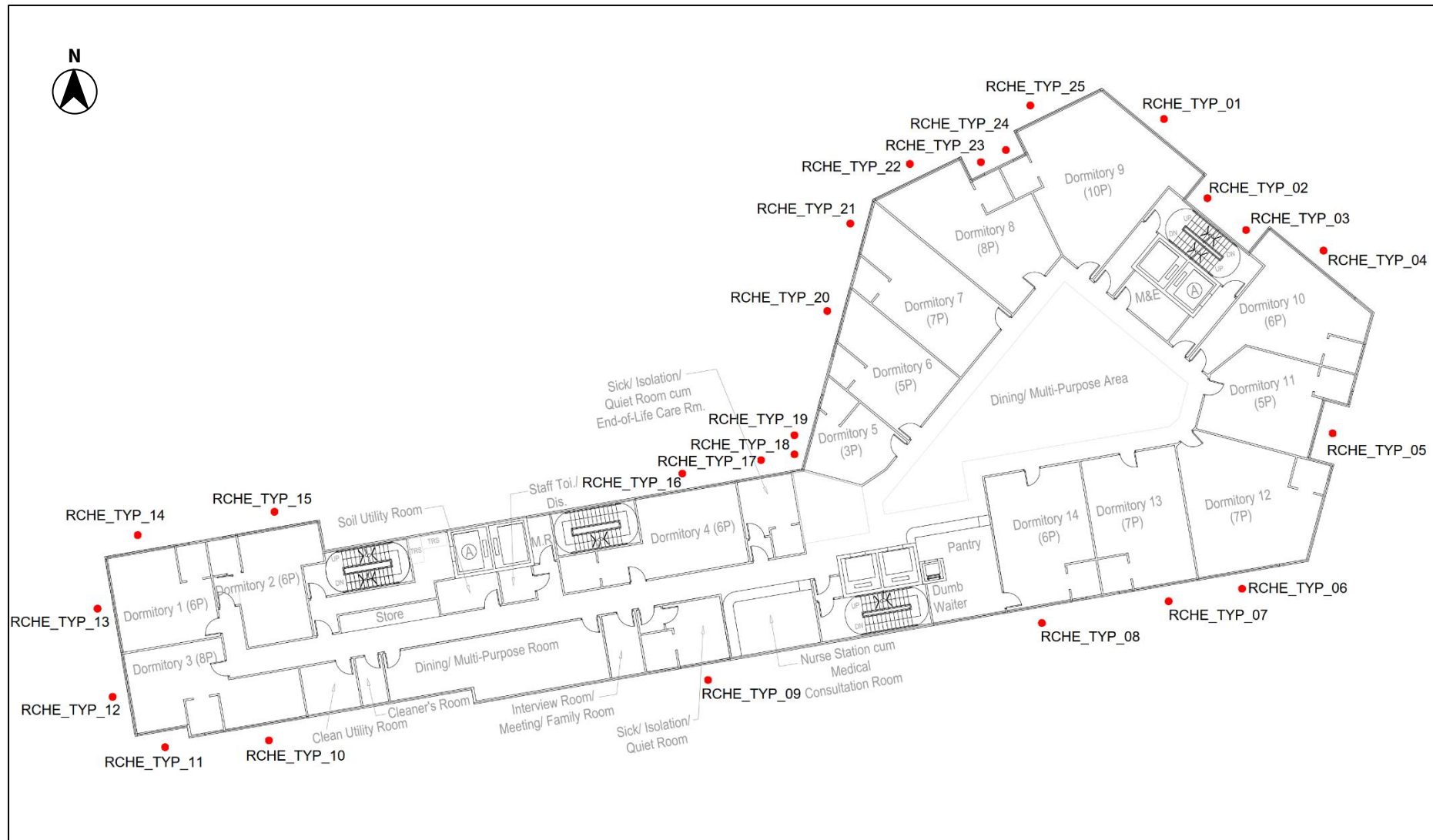
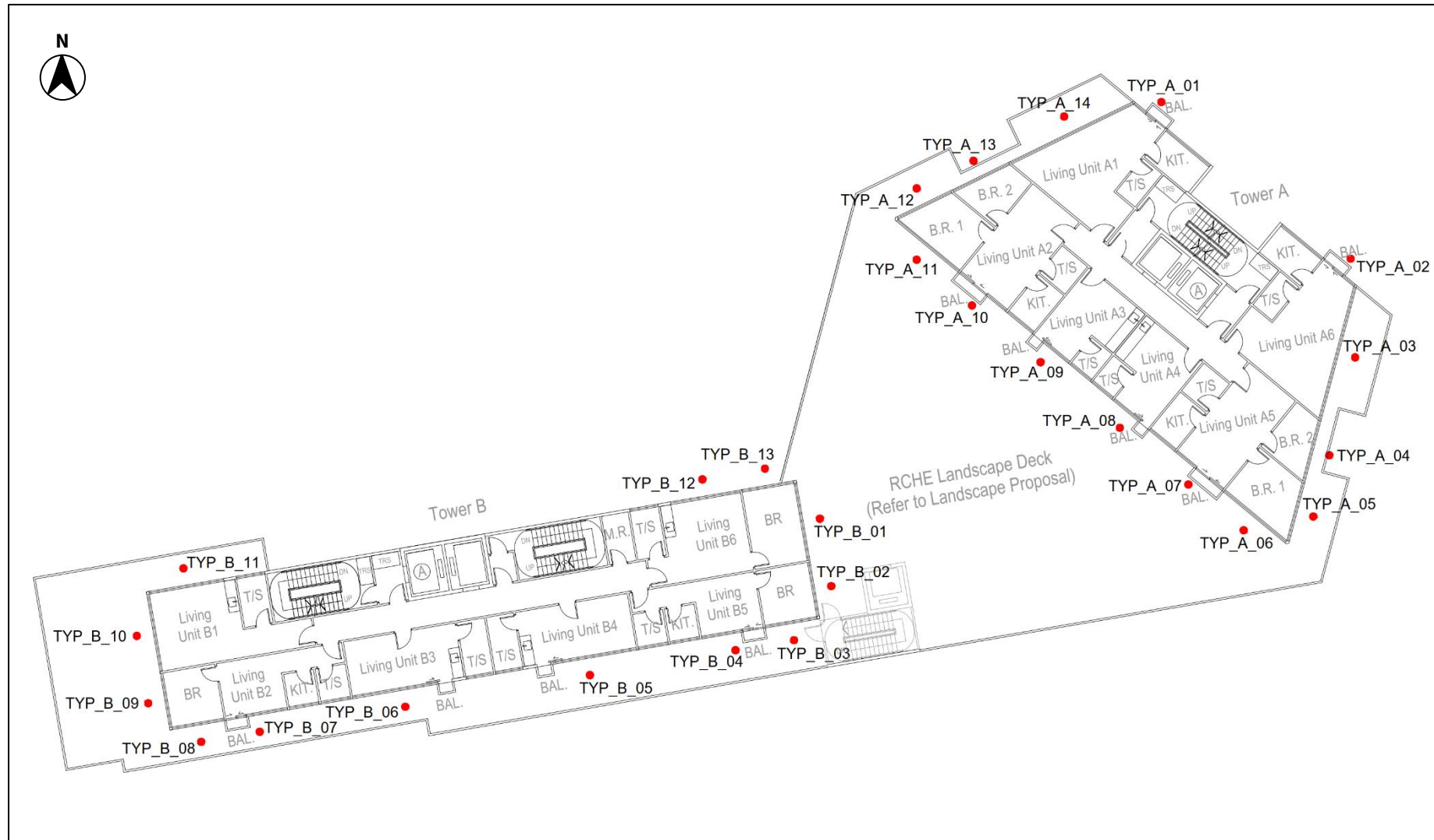


Figure 3-7 Location of Noise Assessment Points for Road Traffic Noise Impact on Residential Towers A & B



4 WATER QUALITY

4.1 Environmental Legislation and Standards

Water Quality Control Ordinance (Cap. 358)

- 4.1.1 The *Technical Memorandum – Standards for Effluent Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters* (“WPCO-TM”) is issued under Section 21 of the *Water Pollution Control Ordinance* (“WPCO”). All discharges into government sewerage systems, marine and inland waters are required to comply with the standards stipulated in the WPCO-TM.

Construction Site Drainage, ProPECC PN2/24

- 4.1.2 With reference to *Professional Persons Environmental Consultative Committee* (“ProPECC”) *Practice Note Construction Site Drainage* (“ProPECC PN2/24”), various guidelines for the handling and disposal of construction site discharges are included. The guidelines include the use of sediment traps, wheel washing facilities for vehicles leaving the Site, adequate maintenance of drainage systems to prevent flooding, overflow, sewage collection and treatment, and comprehensive waste management (collection, handling, transportation, and disposal) procedures.

Drainage Plan subject to Comment by the Environmental Protection Department, ProPECC PN1/23

- 4.1.3 With reference to *ProPECC Practice Note Drainage Plan subject to Comment by the Environmental Protection Department – Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations* (“ProPECC PN1/23”), various guidelines for the pollution control for discharge to storm drains and foul sewers, such as the use of grease trap for wastewater from the restaurant kitchen, the use of silt removal facilities for open surface channel led to stormwater drains, etc., are included. The guidelines also include the requirements for submission of drainage plans.

Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works, ETWB TCW No. 5/2005

- 4.1.4 Various procedures, guidelines and precautionary mitigation measures were circulated in *Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works* (“ETWB TCW No. 5/2005”) to reinforce existing measures for protection of natural streams/rivers from construction works.

Hong Kong Planning Standards and Guidelines (“HKPSG”)

- 4.1.5 HKPSG provides various water quality management guidelines for potentially polluting uses such as effluent-producing industries, sewage collection and disposal, as well as some guidelines to minimise water quality impacts on sensitive uses

4.2 Identification of Water Control Zone (“WCZ”) and Water Sensitive Receiver (“WSR”)

- 4.2.1 The Site is situated in Deep Bay WCZ. With reference to Annex 14 of the *Technical Memorandum on Environmental Impact Assessment Process* (“EIAO-TM”), several inland water courses within the 500m assessment area were identified as potential WSRs through desktop study using topographic map of GeoInfo Map. The identified WSRs are listed in **Table 4-1** and shown in **Figure 4-1**. Potential water quality impacts during construction and operation phase are discussed below.

Table 4-1 Identified Water Sensitive Receivers

WSR ID	DESCRIPTION	TYPE	DISTANCE TO SITE BOUNDARY, m
W01	Watercourse to the northeast and southeast of the Site	Nullah	4
W02	Pond to the northeast of the Site	Freshwater fish pond	245
W03	Pond to the northeast of the Site	Freshwater fish pond	370
W04	Watercourse to the northeast of the Site	Nullah	472

4.3 Review of Water Quality Impact

Construction Phase

- 4.3.1 Muddy runoff from the Site may be generated during the construction phase, including filling activities, especially during the rainy season.
- 4.3.2 Wash water from vehicles and equipment; silt from any on-site stockpiles of soil, cement and grouting materials; and spillage of fuels, oil and lubricants from construction vehicles and plant, and sewage generated by construction workers are all potential sources of water quality impacts. Without proper mitigation measures in force, these sources could lead to increased amounts of suspended solids, grease and oil, pH, Biochemical Oxygen Demand (“BOD”), etc. in the drainage system.
- 4.3.3 Except for W01, most of the WSRs identified within the 500m assessment area are located at more than 200m away from the Site. Moreover, no construction works will be carried out on the nullah near the Site. Therefore, the identified WSRs would not be affected by the Project. With implementation of the recommended mitigation measures and good practices listed in **Section 4.4**, adverse water quality impacts from the Proposed Development on the WSRs are not anticipated.

Operation Phase

- 4.3.4 Majority of the sewage/wastewater generated during operation phase would be sewage and grey water from toilets, showers, sinks and kitchens from the residents and staff of the Proposed Development. The total Average Dry Weather Flow (ADWF) arising from the Proposed Development is estimated to be 202.55 m³/day. Sewage and wastewater generated from the Proposed Development will be discharged into public sewer under Castle Peak Road - Hung Shui Kiu and conveyed to Ha Tsuen Sewage Pumping Station. A separate Sewerage Impact Assessment (“SIA”) prepared by the Project Sewerage Consultant

concludes that there will be no adverse sewerage impact on the municipal sewerage system arising from the Proposed Development. Hence, no adverse water quality impact resulting from the operation of the Proposed Development is anticipated.

- 4.3.5 Runoff during rainstorms could wash sources of non-point/diffuse source pollution, including dust, tyre, scraps oil etc. into nearby watercourses. In order to minimise this pollution loading, silt/sand traps should be provided for the drainage systems and should be regularly cleaned and maintained.
- 4.3.6 As mentioned in **paragraph 4.3.3**, most of the identified WSRs are located at more than 200m from the Site. With implementation of the recommended mitigation measures and good site practices as listed in **Section 4.4**, adverse water quality impacts on the WSRs from the operation of the Proposed Development are not anticipated.

4.4 Mitigation Measures

Construction Phase

- 4.4.1 During construction phase, adequate capacity and number of portable toilets with adequate frequency for offsite disposal to be supplied, maintained and emptied by a licensed collector should be provided for construction workers.
- 4.4.2 The construction contractor shall follow good site practices and ensure proper implementation of the mitigation measures as specified in ProPECC PN 2/24 for construction site drainage. The key requirements are as follows:
- Surface run-off from construction sites should be directed into storm drains via suitable sand/silt removal facilities such as sand traps, silt traps and sediment basins. Temporary construction drainage or earth bunds or sand bag barriers should be provided on site to guide storm water to these silt removal facilities. Where needed, perimeter channels at site boundaries should be provided to stop storm run-off from outside the Site from washing across the Site. Catchpits and perimeter channels should be constructed before commencement of site formation works and earthworks.
 - Silt removal facilities, channels and manholes should be adequately maintained and cleared of deposited silt and grit regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.
 - Construction works should be scheduled so as to minimise soil excavation works during rainy reasons (generally from April to September). If soil excavation works could not be avoided in these months or at any time of year when rainstorms are likely, temporarily exposed slope surfaces should be covered by waterproof material (e.g. by tarpaulin), and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds, to prevent soil erosion. Intercepting channels should be provided along the edge of the excavation area to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the onset of a rainstorm.
 - Upon completion of earthworks, the resulting final surfaces should be well compacted, and the subsequent permanent works or surface protection works should be carried out immediately after the final surfaces are formed to minimise erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided when necessary.

- Measures should be taken to prevent rainwater from getting into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. If pumping of rainwater out from trenches is required, the effluent should be discharged into storm drains via silt removal facilities.
 - Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
 - 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. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.
 - All vehicles and plants should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable to wash off any mud or dirt and wash-water should have sand and silt settled out or removed before being discharged into storm water drains. The section of construction road between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.
 - Discharge of surface run-off into foul sewers shall be avoided to prevent overloading of the foul sewerage system.
 - Any chemical waste such as waste oil should be collected and stored at properly designed chemical waste storage area with reference to the requirements stipulated in the Waste Disposal Ordinance.
 - Water used in ground boring and drilling during site investigation or rock/soil anchoring should be treated by passing it through a sedimentation tank and re-used on site as far as practicable. Wastewater shall be discharged in storm drains via silt removal facility as a last resort.
 - Construction plants should be sited as far as practicable from watercourses to avoid adverse impact on the surface water.
 - Temporary storage area for equipment, chemicals, fuel and other materials should be located away from watercourses as far as practicable.
 - Proper shoring shall be implemented in order to avoid soil or mud to flow into nearby watercourses.
 - Any service shop and maintenance facilities should be located on hard standings within a bounded area with sumps and oil interceptors. Any vehicle maintenance work or equipment with the potential for leakage and spillage should only be done within areas equipped to control any discharges from leakage and spillage.
- 4.4.3 All site discharges should be treated as necessary in accordance with the terms and conditions of the Discharge License.
- 4.4.4 With the implementation of the good site practices, no adverse water quality impact during construction phase is anticipated.

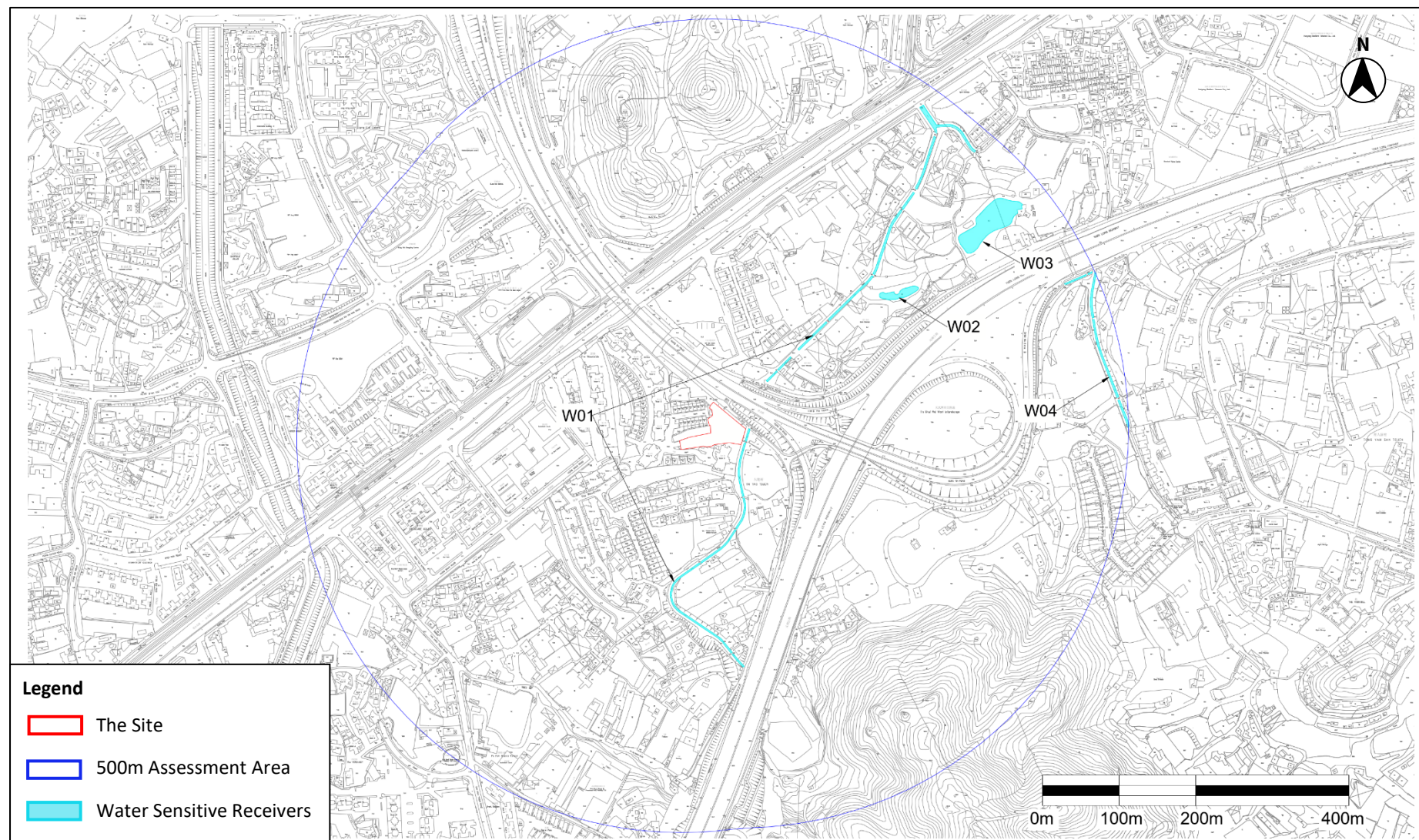
Operation Phase

- 4.4.5 Site drainage and disposal of site effluents generated from the Proposed Development should follow the ProPECC PN1/23 which provides some guidelines and practices for handling, treatment and disposal of various effluents.
- 4.4.6 During operation of the Proposed Development, sewage generated will be discharged into municipal sewerage system. In order to reduce pollution due to runoff, silt/sand traps should be provided for the drainage systems of open areas and should be regularly cleaned and maintained in accordance with ProPECC PN1/23. In addition, runoff should be controlled by best management practice. Thus, no adverse water quality impact from operation of the Proposed Development is anticipated.

4.5 Conclusion

- 4.5.1 During construction phase, portable toilets will be supplied for construction workers. With the implementation of the mitigation measures and good site practices mentioned in **paragraph 4.4.2**, adverse water quality impacts from in construction phase are not anticipated.
- 4.5.2 The Contractor shall apply for a Discharge Licence under the WPCO. All site discharges shall be treated in accordance with the terms and conditions of the Discharge Licence. Also, when handling the discharge from the Site, guidelines in ProPECC PN 2/24 should be also followed to minimize the water quality impact arising from the construction activities.
- 4.5.3 During operation phase, sewage and wastewater generated from toilets, showers and kitchens will be collected and discharged into the public sewerage system. The separate SIA Report prepared by the Project Sewerage Consultant has concluded that there will be no adverse sewerage impact on the municipal sewerage system arising from the Site.
- 4.5.4 Moreover, with the provision and maintenance of silt/sand traps in the drainage system, no adverse water quality due to runoff is expected.
- 4.5.5 Therefore, no adverse water quality impact is anticipated during construction and operation phases of the Proposed Development.

Figure 4-1 Water Sensitive Receivers within 500m from the Site Boundary



5 WASTE MANAGEMENT

5.1 Environmental Legislation and Standards

5.1.1 The key environmental legislation standards are as follows:

- The Waste Disposal Ordinance (Cap. 354) (“WDO”)
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C).
- Waste Disposal (Charges for Disposal of Chemical Waste) Regulation (Cap. 354J).
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N).
- Land (Miscellaneous Provisions) Ordinance (Cap. 28).
- Public Health and Municipal Services Ordinance (Cap.132BK) – Public Cleansing and Prevention of Nuisances Regulation
- Environmental, Transport and Works Bureau (“ETWB”) Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites.
- ETWB Technical Circular (Works) No. 22/2003A, Additional Measures to improve Site Cleanliness and Control Mosquito Breeding on Construction Sites.
- Development Bureau (“DevB”) Technical Circular (Works) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials.
- Civil Engineering and Development Department (“CEDD”) Technical Circulars (CEDD TC No. 11/2019), Management of Construction and Demolition Materials.
- Building Department Practice Notes for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Construction and Demolition Waste (ADV-19).
- Buildings Department Practice Notes for Authorised Persons, Registered Structural Engineers and Registered Geotechnical Engineers Waste Minimisation – Provision of Fitments and Fittings in New Buildings (APP-114).
- Buildings Department Practice Notes for Registered Contractors (PNRC 17), Control of Environmental Nuisance from Construction.
- CEDD Project Administration Handbook for Civil Engineering Works (“PAH”).

5.1.2 The handling, storage, transportation and disposal of chemical and clinical waste shall comply with the requirements stipulated in the following legislation and code of practice:

- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Waste Disposal (Clinical Waste) (General) Regulation (Cap. 354O);
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; and
- Code of Practice for the Management of Clinical Waste – Small Clinical Waste Producers

5.2 Potential Impacts

Construction Phase

5.2.1 The key potential waste sources during the construction phase are:

- Inert Construction and Demolition (“C&D”) materials (e.g. waste concrete, surplus soil, waste asphalt etc.)
- Non-inert C&D Waste (e.g. wood and plastics)
- Chemical wastes such as waste battery and waste lubricating oil from vehicles/plant maintenance
- General refuse generated by site workers

Inert C&D Materials

5.2.2 Inert C&D materials are those which do not decay or decompose, such as debris, rubble, earth and concrete, which makes them suitable for land reclamation and site formation.

5.2.3 The Site is currently vacant without any existing structures. No building demolition works is required for the Project. Therefore, no significant amount of inert C&D materials is anticipated during site preparation stage. The major source of inert C&D materials during construction phase will be site formation works and superstructure works for the Proposed Development.

Inert C&D Materials from Site Formation

5.2.4 Inert C&D materials may be generated during site formation stage, including site clearance, excavation or re-profile works. The Site area is approximately 2,138m² and about 90% of the site is paved, i.e. 1,923m². Assuming the paving density is 2,400 kg/m³ and the thickness of paving is 0.2m, approx. 923 tonnes (i.e. 1,923m² x 0.2m x 2.4 tonnes/m³) waste paving will be generated from the removal of paving.

5.2.5 The current elevation of the Site is around 11.3mPD. According to the Section Plans of the Proposed Development, the site formation level will remain unchanged. Moreover, no basement floor will be formed for the Proposed Development. Therefore, a large amount of inert C&D materials from deep excavation is not anticipated.

5.2.6 For the foundation works, it is assumed that the Site will be excavated to a depth of 2m. 4,276m³ (i.e. 2,138m² x 2m) of additional excavated materials is expected to be generated foundation construction and piling for new structures. With the density of 1,800kg/m³, approx. 7,697 tonnes of C&D materials will be generated.

Inert C&D Materials from Superstructure

5.2.7 Construction waste will also be generated during construction of the Proposed Development. This will comprise inert C&D materials, such as concrete waste, waste from blockwork and brickwork; and non-inert C&D materials (or C&D waste) from packaging waste and other non-inert wastes.

5.2.8 In accordance with Section 3.2 of A Guide for Managing and Minimizing Building and Demolition Waste published by the Hong Kong Polytechnic University in May 2001 (“the Guide”), it provides a “waste index” for building waste generation in Hong Kong based on the Gross Floor Area (“GFA”) of three different building types as follows:

- Private Housing Projects 0.250m³/m² GFA
- Government Housing Projects 0.174m³/m² GFA
- Commercial Office Projects 0.200m³/m² GFA

5.2.9 To provide a conservative estimate of building waste from the Proposed Development, the “waste index” for private housing project are adopted. However, as noted above, in addition to inert C&D materials, this “waste index” also include non-inert C&D materials (or C&D wastes), such as packaging waste and other wastes, and the Guide does not identify what proportion of building waste is inert C&D materials and what proportion is non-inert C&D materials (or C&D waste).

5.2.10 With reference to Plate 2.12 of EPD’s *Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2023*, 91% of construction wastes was either reused on-site or sent to the public fill reception facilities, implying that such construction wastes should be inert C&D materials. The proportion of inert C&D materials in the “waste index” can therefore be estimated by applying the Hong Kong-wide proportion of inert C&D materials in construction waste, i.e. 91%, to the “waste index” as follows:

$$\begin{aligned}\text{Waste Index}_{\text{Inert C\&D materials (Private Housing Projects)}} &= 0.91 \times 0.250\text{m}^3/\text{m}^2 \text{ GFA} \\ &= 0.2275\text{m}^3/\text{m}^2 \text{ GFA}\end{aligned}$$

5.2.11 The proportion of inert C&D materials of building waste from the Proposed Development with a GFA of about 10,489m², can therefore be estimated as follows:

$$\begin{aligned}\text{Building Waste} &= \text{Waste Index}_{\text{Inert C\&D materials (Private Housing Projects)}} \times \text{GFA} \\ &= 0.2275 \times 10,489 \\ &= 2,386\text{m}^3\end{aligned}$$

5.2.12 Assuming the density of inert C&D materials is 1.8 tonnes/m³, approx. 4,295 tonnes of building wastes would be generated by the Proposed Development.

5.2.13 **Table 5-1** summarises the total estimated inert C&D materials generated during construction stage.

Table 5-1 Total Estimated Inert C&D Materials Generated During Construction

INERT C&D MATERIAL TYPE	ESTIMATED INERT C&D MATERIAL GENERATION (TONNES)
STAGE: SITE FORMATION & FOUNDATION	
Removal of Paving	923
Excavated Materials	7,697
STAGE: CONSTRUCTION OF SUPERSTRUCTURE	
Building Waste	4,295
Total	12,915

5.2.14 In total, approx. 12,915 tonnes of inert C&D materials may be generated throughout the construction period. Assuming the construction period to be four years with six working days

a week and four weeks a month, the daily inert C&D material generation rate will be approx. 11.2 tonnes/day (i.e. 12,915 tonnes/ (6 x 4 x 48) days).

- 5.2.15 Inert C&D materials should be reused on-site as far as practicable. Good site practices and mitigation measures recommended in **Section 5.3** should be provided and implemented. Surplus inert C&D materials, if any, should be reused or recycled off-site as far as practicable. If there will still be any remaining materials, they should be delivered to public fill reception facilities, Fill Bank at Tuen Mun Area 38 and Fill Bank at Tseung Kwan O Area 137.
- 5.2.16 Most of the inert C&D materials generated from construction will be excavated materials and building waste. Since backfilling of excavated materials is not needed for construction, not much of the inert C&D materials will be re-used on site. Therefore, the 11.2 tonnes/day inert C&D material will be delivered to public reception facilities. The reuse of inert C&D materials in public fill reception facilities would be agreed with relevant authorities before delivery. Nonetheless, the reuse of inert C&D materials will be further explored in the later project stage.
- 5.2.17 With the provision and implementation of the recommended mitigation measures, no adverse waste impact from the handling or transportation of the inert C&D materials during construction of the Proposed Development is anticipated.

Non-Inert C&D Materials (or C&D Waste)

- 5.2.18 Non-inert C&D materials (or C&D waste) are those which can decompose such as bamboo, vegetation, packaging waste and other organic material which makes them unsuitable for land reclamation.
- 5.2.19 The major source of non-inert C&D material during construction will be removal of topsoil and vegetation during site formation and the non-inert C&D material component of building such as packaging waste.
- 5.2.20 Topsoil is the uppermost layer of soil capable of growing and supporting vegetation. The Site area is approximately 2,138m² and about 10% of the site is unpaved, i.e. 214m². Assuming the average depth of the topsoil is 0.25m and the density of topsoil is 1,600kg/m³, approx. 85.6 tonnes (i.e. 214m² x 0.25m x 1.6 tonnes/m³) topsoil will be generated during site formation works.
- 5.2.21 The building waste in the “waste index” provided in the Guide also includes inert C&D materials. Since Plate 2.12 of Waste Statistics for 2023 shows that in 2023, 9% of C&D waste was disposed of at landfills. The proportion of non-inert C&D materials (or C&D waste) in the “waste index” can be estimated by applying the Hong Kong-wide proportion of non-inert C&D materials (or C&D waste) in construction waste, i.e. 9%, to the “waste index” as follows:

$$\begin{aligned}\text{Waste Index}_{\text{Non-Inert C\&D materials (Private Housing Projects)}} &= 0.09 \times 0.250\text{m}^3/\text{m}^2 \text{ GFA} \\ &= 0.0225\text{m}^3/\text{m}^2 \text{ GFA}\end{aligned}$$

- 5.2.22 Given the total GFA of the Proposed Development is approx. 10,489m², Hence, the non-inert C&D materials (or C&D waste) components in building waste can therefore be estimated as follows:

$$\text{Building Waste} = \text{Waste Index}_{\text{Non-Inert C\&D materials (Private Housing Projects)}} \times \text{GFA}$$

$$= 0.0225 \times 10,489$$

$$= 236\text{m}^3$$

- 5.2.23 Assuming the density of non-inert C&D materials is 1.0 tonnes/m³, approx. 236 tonnes of building waste would be generated by the Proposed Development.

Table 5-2 Total Estimated Non-Inert C&D Materials Generated During Construction

NON-INERT C&D MATERIAL TYPE	ESTIMATED NON-INERT C&D MATERIAL GENERATION (TONNES)
STAGE: SITE FORMATION	
Topsoil	86
STAGE: CONSTRUCTION OF SUPERSTRUCTURE	
Building Waste	236
Total	322

- 5.2.24 In total, approx. 322 tonnes of non-inert C&D materials may be generated throughout the construction period. Assuming the construction period to be four years with six working days a week and four weeks a month, the daily non-inert C&D material generation rate will be approx. 0.3 tonnes/day (i.e. 322 tonnes/ (6 x 4 x 48) days).
- 5.2.25 Non-inert C&D materials generated during construction should be sorted on-site. Recyclable materials, such as metal, paper product, and plastics, should be collected by local recyclers for recycling. All non-inert C&D materials should be recycled as far as possible and landfill disposal should only be adopted as the last resort. The nearest disposal facility is West New Territories (“WENT”) Landfill. Disposal of C&D wastes of landfills would be agreed with relevant authorities.
- 5.2.26 It is expected that no more than 10% of the generated non-inert building waste can be recycled or reused. This means that the expected amount of non-inert C&D waste to be reused or recycled on-site is 32 tonnes at most.
- 5.2.27 If 10% C&D waste can be reused/recycled on-site, the surplus C&D waste mainly comprising building waste will be approx. 289 tonnes in total. Assuming the construction period to be 4 years with six working days a week and four weeks a month, the total daily C&D waste for disposal of at WENT Landfill would be approx. 0.3 tonnes/day (i.e. 289 tonnes/ (6 x 4 x 48) days).
- 5.2.28 Considering the above estimation, and with the implementation of waste handling measures mentioned above and control measures listed in **Section 5.3**, no adverse waste impact from the handling, transportation or disposal of non-inert C&D materials (or C&D waste) during construction of the Proposed Development is anticipated.

General Refuse

- 5.2.29 General refuse such as food scraps, waste paper, empty containers, etc. would be generated from workers during the construction phase.

5.2.30 The number of workers will depend on the contractor and the construction methods employed. According to the Applicant’s experience, the number of construction workers for the Proposed Development should be no more than 50 per day.

5.2.31 According to Plate 2.7 of Waste Statistics for 2023, the per capita domestic waste disposal rate in 2023 was 0.89kg/person/day. As stipulated in Appendix 2 of the same report, the waste generation defined as the sum of waste disposal and resource recovery (i.e., Generation = Waste Disposal + Resource Recovery). For a conservative approach to estimate the actual generation rate, a recovery rate of 21% for domestic waste in 2023 (as shown in Plate 2.3) has been adopted. The per capita generation rate of general refuse is derived as follow:

$$\begin{aligned}\text{Per Capita Generation Rate} &= \text{Disposal Rate}/(1 - \text{Recovery Rate}) \\ &= (0.89\text{kg/worker/day})/(1 - 0.21) \\ &= 1.13\text{kg/worker/day}\end{aligned}$$

Since every worker is expected to generate general refuse, the total general refuse generated by construction workers is estimated as follows:

$$\begin{aligned}\text{General Refuse/Day} &= \text{No. of workers/day} \times \text{per capita generation rate} \\ &= 50 \text{ workers} \times 1.13\text{kg/workers/day} \\ &= 56.5\text{kg/day}\end{aligned}$$

$$\begin{aligned}\text{Total General Refuse} &= \text{General Refuse/Day} \times \text{Construction Duration} \\ &= 56.5\text{kg/day} \times 6 \text{ days/week} \times 4 \text{ weeks/month} \times 48 \text{ months} \\ &= 65,088\text{kg or } 65\text{tonnes}\end{aligned}$$

5.2.32 General refuse generated during construction should be sorted on-site. Recyclable materials, such as metal, paper product and plastics should be collected by local recyclers for recycling. All general refuse should be recycled as far as possible and landfill disposal should only be adopted as the last resort.

5.2.33 According to Plate 3.2 of Waste Statistics for 2023, the recovery rate of domestic waste is approx. 21%. It is estimated that 21% of general refuse, i.e., approx. 13,668.5kg of general refuse, would be reused and recycled by the recyclers. The surplus general refuse of 51,419.5 kg would be sent to landfills, which is consistent with the per capita domestic waste disposal rate of 0.89 kg/person/day.

5.2.34 Given the above, with the implementation of mitigation measures mentioned above and listed in **Section 5.3**, no adverse waste impact from the handling, transportation or disposal of general refuse from workforce during construction of the Proposed Development is anticipated.

Chemical Waste

Construction Phase

- 5.2.35 The maintenance and servicing of the construction plants and vehicles may generate a small amount of chemical waste, such as cleaning fluids, solvents, lubrication oil and fuels.
- 5.2.36 Chemical waste arising during the construction phase may pose environmental, health and safety hazards if not stored and disposed of appropriately as outlined in the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. The potential hazards include:
- Toxic effects on the construction workforce;
 - Adverse impact on air quality and water quality due to spills; and
 - Fire hazards.
- 5.2.37 Chemical waste may be generated any time throughout the construction phase of the Project. The amount of chemical waste that will arise from the construction activities will be highly dependent on the Contractor’s on-site maintenance activities and the quantity of plant and equipment utilised. With respect to the scale of the construction activities, it is anticipated that the quantity of chemical waste to be generated will be small. The chemical waste will be properly stored on site and will be collected by licensed chemical waste collectors regularly for disposal at the licensed chemical waste treatment facilities (i.e. Chemical Waste Treatment Centre (CWTC) in Tsing Yi). Reuse and recycle shall be prioritized, where disposal shall be the last resort for waste handling.
- 5.2.38 The Project Proponent or the contractor should register as a Chemical Waste Producer (CWP) with EPD. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C) to monitor all movements of chemical wastes which would be collected by licensed chemical waste collectors to a licensed facility for final treatment and disposal.
- 5.2.39 Provided that the chemical waste is properly stored, handled, transported and disposed of, no adverse environmental impact would result from a minimal quantity of chemical waste arising from the Project.

Summary of Waste Generated during Construction Phase

- 5.2.40 The type of waste and their estimated quantities generated during the construction phase are summarised in **Table 5-3**.

Table 5-3 Estimation of Wastes to be Generated During Construction Phase

WASTE TYPE	ESTIMATED QUANTITY (TONNES)	SOURCES OF WASTE	TREATMENT
INERT C&D MATERIAL			
Paving	923	Removal of paving	On-site reuse/recycle
Excavated material	7,697	Excavation	Off-site reuse/recycle
Building Waste	4,295	Superstructure Construction	Sent to public fill reception facilities
NON-INERT C&D MATERIAL			
Topsoil	86	Site clearance and	On-site sorting for

WASTE TYPE	ESTIMATED QUANTITY (TONNES)	SOURCES OF WASTE	TREATMENT
		formation	reuse/recycle
Building Waste	236	Superstructure Construction	Disposal of at landfill
OTHERS			
General Refuse	65	Construction staff	On-site sorting for reuse/recycle Disposal of at landfill
Chemical Waste	< 0.001	Maintenance of equipment	Disposal under regulatory control

Operation Phase

Domestic Waste

- 5.2.41 During operation phase, domestic waste from residents of the proposed residential development will be the major type of waste being generated. According to Waste Statistics for 2023, the most recent domestic waste disposal rate is 0.89 kg/person/day.
- 5.2.42 According to the Applicant, the number of residential units in the Proposed Development is 72. With reference to the Census and Statistics Department (CSD) statistics, the average household size for private permanent housing in Q1 2025 is 2.7 persons per flat (ppf). Thus, the estimated population of the proposed residential development is 195 (72 units*2.7 ppf), with the population of RCHE (450 persons), the total population of the Proposed Development will be 645 (i.e. 195 + 450). As a result, the total domestic waste to be generated every year is estimated to be approx. 266,030 kg or 266.03 tonnes (i.e. 645 persons x 1.13 kg/person/day x 365 days/year).
- 5.2.43 With reference to Plate 3.2 of Waste Statistics for 2023, the recovery rate of domestic waste and commercial waste is 21%. Therefore, it is estimated that 21% of domestic waste (i.e. 55,866kg in total, or 55.87 tonnes/year) could be reused and recycled.
- 5.2.44 The remaining domestic solid waste of 210.16 tonnes/year would be disposed of at a landfill managed by EPD.

Chemical Waste

- 5.2.45 Small amount of chemical waste (e.g. lubricant generated from maintenance of equipment) may be generated during operation when the need arises. The RCHE operator shall register as waste producer under the regulation of Cap. 354C before disposing any chemical waste.
- 5.2.46 All chemical waste should be segregated, labelled and stored in a compliant container within a designated area. The RCHE operator shall engage the service of licensed collectors to collect and transport chemical waste to designated waste treatment centre (i.e., Chemical Waste Treatment Centre “CWTC”) for proper disposal.
- 5.2.47 Provided that relevant legislation and code of practice are strictly followed during the handling, storage, transportation and disposal of chemical waste, no adverse environmental impact is anticipated.

Clinical Waste

- 5.2.48 Small amount of clinical waste (e.g. cartridges, ampoules, surgical dressings, swabs) may be generated during operation when the need arises.
- 5.2.49 Clinical waste should be managed under Cap. 354O and EPD’s Clinical Waste Control Scheme, and to segregate from general and chemical wastes. Used needles and sharps are classified as Group 1 clinical waste and should be stored safely in sharps box, before transferring to a disposal site. Colour of the sharps box should be either in yellow or a combination of yellow and white and sealed with proprietary closure. The RCHE operator shall engage the service of licensed collectors to collect and transport clinical waste to designated waste treatment centre (i.e., Chemical Waste Treatment Centre “CWTC”) for proper treatment and disposal.
- 5.2.50 Provided that relevant legislation and code of practice of management of clinical waste are strictly followed during the handling, storage, transportation and disposal of clinical waste, no adverse environmental impact is anticipated.
- 5.2.51 Since the remaining domestic waste will be collected on a daily basis, while both chemical and clinical waste will be collected on monthly basis by registered waste collectors and disposed of at landfill or designated waste treatment centre (i.e., CWTC), no adverse waste impacts from handling, transportation or disposal are anticipated. Nevertheless, domestic waste generation should be minimised by implementing the mitigation measures proposed in **Section 5.3**.
- 5.2.52 Overall, there should be no adverse waste impact from the handling, transportation or disposal of domestic waste during the operation of the Proposed Development.

5.3 Mitigation Measures

Construction Phase

- 5.3.1 Both contractual requirements and statutory requirements shall be followed for controlling waste management.
- 5.3.2 A Waste Management Plan (“WMP”) should be developed by the contractor and submitted to the Project Engineer/Architect for approval in accordance with ADV-19 before the commencement of any construction works. The WMP will aim to identify potential environmental impacts from the generation of waste at the Site; to recommend appropriate measures to handle, collect, sort, dispose of and recycle waste in accordance with requirements of the current regulations; and to categorise and permit segregation of C&D materials where practicable, such as sorting between inert and non-inert material, for disposal considerations i.e. public fill reception facilities/landfill.
- 5.3.3 The contractor should segregate waste with reference to the WMP prior to disposal. Waste should be properly collected and stored to prevent materials from being blown by wind, flushed or leached into nearby waters, or creating odour nuisance or pest and vermin problems. Good housekeeping practices should be adopted to ensure waste storage areas are well maintained and cleaned properly.
- 5.3.4 A trip-ticket system should be established in accordance with DevB TC(W) No. 6/2010 and the *Waste Disposal (Charges for Disposal of Construction Waste) Regulation* to monitor the

disposal of public fill and solid wastes at public fill reception facilities and landfills, which will prevent fly-tipping. A trip-ticket system should be included as one of the contractual requirements that the contractor shall implement.

- 5.3.5 Any excess recyclable construction materials such as bricks, plastics and metals should be reused and recycled as far as practicable to minimise the amount of waste being disposed of. Additional inert materials which are not recyclable such as concrete and asphalt should be treated as public fill, while non-inert materials which are not recyclable should be disposed of at the designated landfills.
- 5.3.6 General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the construction contractor to remove general refuse from the Site, separately from C&D materials. Preferably an enclosed and covered area should be provided to prevent materials from being blown by wind.
- 5.3.7 For chemical waste, the Contractor should follow the trip-ticket system of which the arrangement of production, collection and disposal in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation*.
- 5.3.8 In addition, the EPD’s RPCC for Construction Contract should be followed and incorporated in the relevant works contract. The RPCC are generally good engineering practices to minimise inconvenience and environmental nuisance to nearby residents and other sensitive receivers. The general requirements are as follows:
- The Contractor shall follow and comply with the WDO and its subsidiary legislation.
 - The Contractor shall seek the Engineer’s approval for a waste management plan with suitable mitigation measures including allocation of an area for waste segregation. The Contractor shall follow the waste management plan and ensure that the day-to-day site operations comply with the approved waste management plan.
 - The Contractor shall minimise the generation of waste from his work as far as practicable. Careful planning and good site management should be implemented to minimise generation of waste, and design and practices should be changed as necessary to avoid generation of waste as much as possible.
 - The Contractor shall sort and store different types of waste in different containers, skips or stockpiles to facilitate reuse / recycling of waste and, as the last resort, disposal at different outlets as appropriate.
 - Recyclable waste such as paper, cardboard, plastic and metal should be reused and recycled as far as practicable.
 - The Contractor shall ensure that C&D materials generated during the construction phase of the RCHE and the residential part are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt from the site formation and excavation works, etc shall be reused for earth filling, reclamation, site formation works, etc. within the Project Site as far as practicable, and sent to a Fill Bank as the last resort. The C&D waste which comprises metal, paper, glass, etc. shall be reused and recycled as far as practicable, and, as the last resort, disposal of at landfills.

- The Contractor shall record the amount of waste generated, recycled and disposed of (including the disposal sites). The records shall be properly kept and easily retrieved for inspection.
- The Contractor shall use a trip ticket system to monitor and ensure the disposal of C&D materials to any designated public fill reception facility and/or landfill.
- Workers will receive training about the concepts of site cleanliness and proper waste management procedure, including waste reduction, reuse and recycling.
- The Contractor shall not permit the discharge or disposal of sewage and untreated effluent containing sand, cement, silt or any other suspended or dissolved material, or any solid waste including refuse which is not part of the final product from waste processing plants respectively, from anywhere within the Site on to any adjoining land. Removal of such matter from the Site shall be arranged in a proper manner to the satisfaction of the Engineer in consultation with the EPD.
- If chemical waste is produced, the Contractor shall appoint register as a chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation, and properly store, label, package and collect chemical waste in accordance with the Regulation.

Operation Phase

- 5.3.9 The majority of waste generated during the operation of the Proposed Development will mainly comprise of domestic waste such as food waste, food packaging, paper, can, plastic bottles, etc., which shall be collected and stored in appropriate waste receptacles with a secure lid to minimise the potential adverse impact due to wind blowing away any waste and to improve hygiene. Recyclable and non-recyclable waste shall be regularly collected by licensed waste collectors and taken off-site for recycling or disposal, respectively. Besides, food waste will be collected separately for proper disposal, e.g., off-site treatment at Organic Resources Recovery Centre (“O Park”) or on-site treatment with food waste composting machines, etc. Furthermore, any chemical and clinical wastes generated shall be segregated from other waste streams and handled by licensed collectors in accordance with the relevant statutory requirements and control schemes.

5.4 Conclusion

- 5.4.1 With the development of WMP and the implementation of good site practices recommended therein, the waste generation (including inert and non-inert C&D materials, chemical waste, and general refuse) during construction phase can be greatly reduced. Provided that good engineering practices as recommended in **Section 5.3** will be followed, there should be no adverse impacts related to the management, handling and transportation of waste during the construction phase.
- 5.4.2 During the operation phase, the major type of waste generated will be domestic waste generated by the Proposed Development with minor chemical wastes and clinical wastes. Domestic waste will be collected on a daily basis, while both chemical and clinical waste will be collected on monthly basis by registered waste collectors and will be disposed at a landfill managed by EPD. Therefore, no adverse waste impacts from handling, transportation, or disposal are anticipated during operation.
- 5.4.3 With the implementation of the recommended mitigation measures, adverse waste impacts generated during the construction and operational phases of the Proposed Development are not anticipated.

6 LAND CONTAMINATION

6.1 Environmental Legislation and Standards

6.1.1 The following legislation, standards and guidelines were taken reference to for conducting the land contamination assessment:

- EPD Guidance Note for Contaminated Land Assessment and Remediation (Revised in April 2023)
- EPD Practice Guide for Investigation and Remediation of Contaminated Land (Revised in April 2023)
- Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management (Revised in April 2023)

6.2 Assessment Methodology

6.2.1 Land contamination assessment was done according to EPD’s guidelines. A typical land contamination assessment is done according to the following steps:

1. Carry out site assessment, including background information collection, to determine whether there is any potential for land contamination in the Site

6.2.2 In the case that potential land contamination issues are identified, a complete land contamination assessment with the following steps should be undertaken:

1. Design a site investigation (“SI”) strategy and prepare a Contamination Assessment Plan (“CAP”) for EPD’s approval
2. Upon EPD’s approval of the CAP, conduct SI according to the approved CAP
3. Upon completion of SI, interpret the results and prepare a Contamination Assessment Report (“CAR”) for EPD’s approval
4. Plan and design remediation strategy and prepare a Remediation Assessment Plan (“RAP”) for EPD’s approval
5. Carry out remediation works according to the approved RAP
6. Prepare a Remediation Report (“RR”) for EPD’s endorsement

6.3 Site Appraisal

6.3.1 Historical land uses review and site walkover have been conducted to identify any potential issues on land contamination from past and present land use activities at the Site.

Review of Historical Land Use

6.3.2 Aerial photographic records between Year 1963 and Year 2022 obtained from the Survey and Mapping Office (“SMO”) of Lands Department were reviewed. The Site was an agricultural land on or before 1963. In 1982, some temporary structures and village houses were identified within and nearby the Site, while the surrounding area was mainly agricultural lands, fish ponds and vacant land. In 1993, the Site has been converted to an open storage area with containers and sparse vegetation observed. In 2003, part of the Site

was used as open storage and the remaining area was vacant. In 2014, the entire Site was used as open storage with some temporary structures observed. The operator of open storage moved and the site became vacant in 2022. The historical land uses of the Site based on the aerial photographic records is summarised in **Table 6-1** and the aerial photographs are provided in **Appendix I**.

Table 6-1 Historical Land Uses of the Project Site

PHOTO ID	HISTORICAL LAND USES
1963_1963-8414	Agricultural land
1973_06054	Agricultural land
1982_42801	Temporary structures and village houses
1993_CN05966	Open storage with containers and sparse vegetation
2003_CW54027	Open storage and paved vacant land
2014_CW107934	Open Storage with temporary structures
2022_E148039C	Paved vacant land

Site Walkover

- 6.3.3 A site walkover was carried out on 9 January 2025 to understand the existing conditions of the Project Site and adjacent areas. As observed, the Site is mainly surrounded by road networks, residential buildings and some temporary structures. No suspected contamination potential was identified in the vicinity of the Site.
- 6.3.4 As observed during the site inspection, the Site is mainly paved with concrete with a part of unpaved ground with vegetation cover at the northeast of the Site. No suspected stains or stressed vegetation have been observed at the Site. As advised by the Applicant, the Site was previously used as an open storage for containers and construction materials. No chemicals and dangerous goods were stored on the Site. In general, no stains and land contamination activities were observed on the Site. As such, potential land contamination is not anticipated. The site walkover checklist and photos showing the existing site conditions are provided in **Appendix J**.

Dangerous Goods and Incident Records

- 6.3.5 Regional Office (North) of EPD was contacted to review if any record of registered Chemical Waste Producer (“CWP”) or accident spillage / leakage of chemical waste is related to the Site. According to EPD’s reply dated 14 March 2025, Regional Office (North) did not have any record of potential land contamination incident. The CWP register has been inspected at EPD Territory Control Office on 25 March 2025 and no record of CWP has been registered for the Site.
- 6.3.6 Moreover, the Fire Services Department (“FSD”) was also contacted to review any current / past licences for storage of Dangerous Goods (“DG”), registration of DG licence, fire incidents, spillage/leakage of DG etc., relating to the Site. According to FSD’s reply dated 20 February 2025, no DG licence was issued in respect of the Site, while one incident record of rubbish fire was recorded near Lamp Post No. FB5411 at Fui Sha Wai South Road, which was located outside the Site. As no CWP or DG license has been issued for the Site, and the incident of rubbish fire was not within the Site, it is considered that the fire incident does not have any

land contamination potential to the Site. The information request letters and replies from EPD and FSD are attached in **Appendix K**.

6.4 Conclusion

- 6.4.1 A desktop study of the past and present land-use of the Site was carried out. Based on historical records and the site walkover, no potential sources of land contamination were identified in the past and no existing land contamination issues were identified. As such, steps 1 to 6 of **paragraph 6.2.2** are not required. Hence, no adverse impact from the land contamination issue is anticipated and site investigation is considered not necessary.

7 CONCLUSIONS AND RECOMMENDATIONS

7.1.1 This EA has indicated that the Proposed Development will not generate any adverse environmental impacts during construction and operation phases, provided that all the recommended mitigation measures and good site practices are strictly implemented.

7.1.2 Specific conclusions for air quality, noise, water quality, waste management and land contamination are as follows:

Air Quality

7.1.3 With the implementation of the recommended mitigation measures and good site practices, adverse air quality impacts during construction phases are not anticipated.

7.1.4 During operation phase, no adverse air quality impact on the Site from chimney, vehicular and odour emissions are anticipated with the sufficient buffer distance provided between air pollution sources and the Site boundary.

7.1.5 Overall, no adverse air quality impact is anticipated during the construction and operation phases of the proposed development.

Noise

7.1.6 During construction phase, with the implementation of recommended noise mitigation measures, no adverse impact is anticipated.

7.1.7 A potential existing railway noise source (Light Rail) was observed within the vicinity of the Project Site during desktop review and site visit. Given that the Light Rail is approximately 187m northwest of the Project Site in shortest distance, and the railway noise was not noticeable in the vicinity of the Site, no adverse railway noise impact is expected.

7.1.8 A part of the future planned potential railway noise source (SGMTS) was noted within the vicinity of the Project Site. Based on the best available information, the proposed alignment is approximately 200m from the Project Site. Given this separation distance, adverse noise impact from the planned SGMTS is not anticipated.

7.1.9 A fixed noise source, Tai Tao Tsuen Substation, was identified within the vicinity of the Project Site during desktop review and site visit. Considering the observations from site visit, fixed noise from the operation of the Tai Tao Tsuen Substation was not noticeable. As such, adverse impact arising from its operation to the Proposed Development is not anticipated. fixed noise from Tai Tao Tsuen was not noticeable in vicinity of the Project Site.

7.1.10 Since most of the M&E equipment will be installed in plant rooms and will be enclosed with louvres installed at the openings, no adverse noise impact is anticipated. For the outdoor split-type air conditioners, as the noise is considered minimal and with the noise mitigation measures, no adverse noise impact is anticipated.

7.1.11 Road traffic noise impact on the Indicative Development scheme was assessed. Noise exceedances are predicted at RCHE (1/F – 5/F) and residential units at Tower A and B. With the mitigation measures including acoustic windows (baffle type) and fixed/lockable/maintenance windows, no adverse noise impact is anticipated.

7.1.12 Overall, no adverse noise impact is anticipated during the construction and operation phases of the Indicative Development scheme.

7.1.13 An updated Noise Impact Assessment Report will be submitted at a later stage under land lease mechanism, based on the latest design/layout of the proposed development to achieve full compliance with the noise criteria set out in the HKPSG.

Water Quality

- 7.1.14 During construction phase, water quality impacts will be properly controlled by implementing the good site practices recommended in **Section 4.4**. Portable toilets, when necessary, will be provided for construction workers on site. Provided these measures are implemented, adverse water quality impact is not anticipated during the construction phase. The Contractor shall apply for a Discharge Licence under WPCO and the effluent discharged from the construction site shall comply with the terms and condition of the Discharge Licence.
- 7.1.15 During operation phase, sewage and wastewater generated from toilets, showers and kitchens will be collected and discharged into the public sewerage system. The separate SIA Report prepared by the Project Sewerage Consultant has concluded that there will be no adverse sewerage impact on the municipal sewerage system arising from the Site.
- 7.1.16 Overall, no adverse water quality impact is anticipated during construction and operation phase of the Proposed Development.

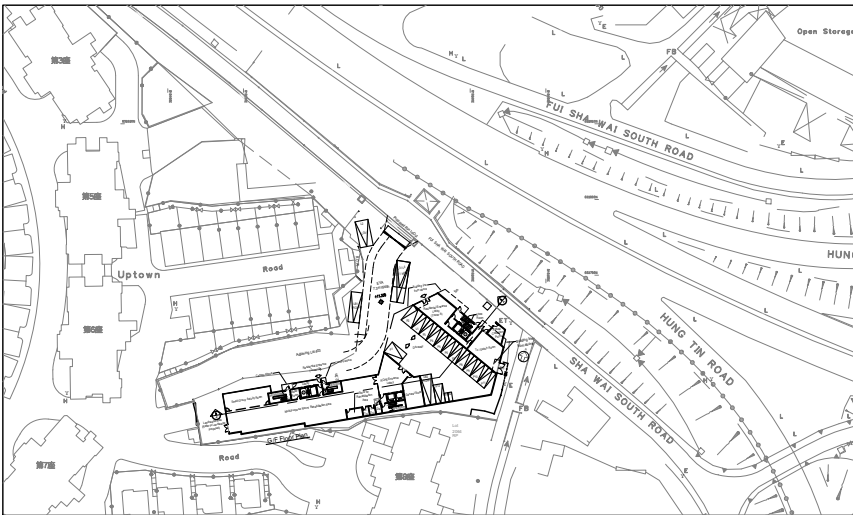
Waste Management

- 7.1.17 With the development of WMP and provision and implementation of the good site practices therein, the waste generation during construction phase will be reduced. Provided that good site practices are followed, no adverse impacts related to the management, handling and transportation of waste during construction phase is anticipated.
- 7.1.18 During operation phase, domestic waste, chemical wastes and clinical wastes produced by the Proposed Development will be the main concern with regard to waste generation. As domestic wastes will be collected on a daily basis, while both chemical wastes and clinical wastes will be collected on monthly basis, by registered collectors and will be disposed of at landfill or designated waste treatment centre (i.e., CWTC), it is concluded that no adverse waste impacts from handling, transportation or disposal are anticipated.
- 7.1.19 With the implementation of the recommended mitigation measures, adverse waste impacts generated during the construction and operation phases of the Proposed Development are not anticipated.

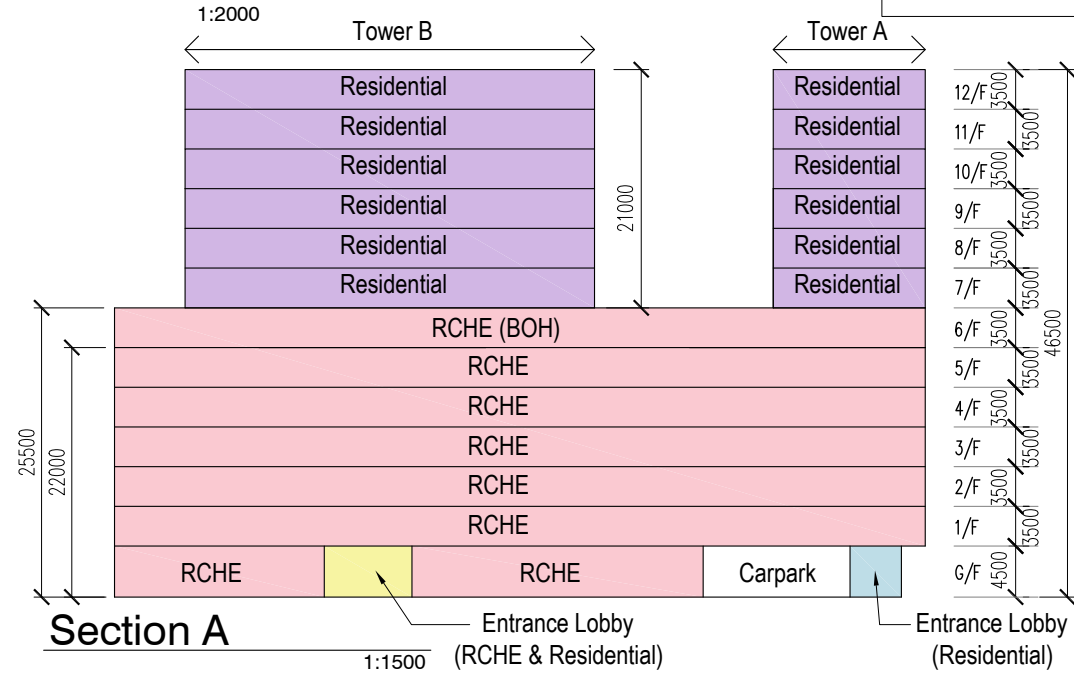
Land Contamination

- 7.1.20 A detailed investigation of the past and present land-use of the Site was carried out. Based on historical records and the site walkover, no potential sources of land contamination were identified in the past and no existing land contamination issues were identified. Hence, no adverse impact from the land contamination issue is anticipated and site investigation is considered not necessary.

Appendix A PROJECT LAYOUT



Site Plan



Section A

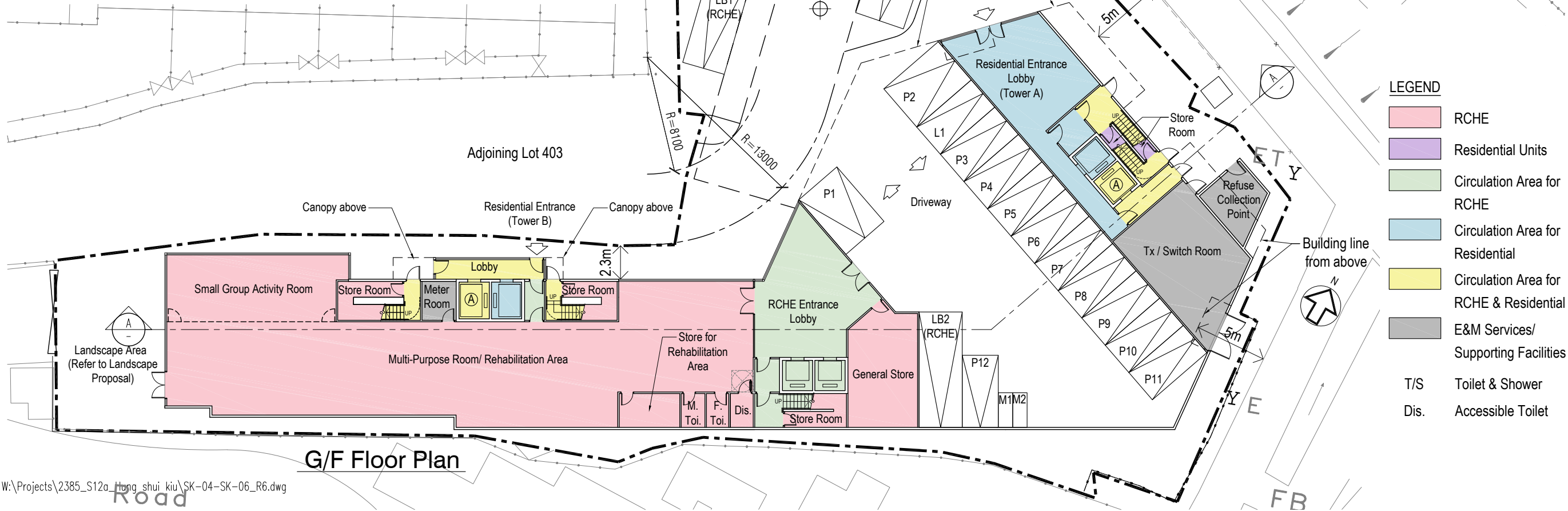
	RCHE(P)	Residential Towers				Carparking Space		
		Tower A (Units)		Tower B (Units)		Parking	Private Cars (5x2.5m)	12
G/F	-	-		-			Light Bus (8x3m)	2
1/F-5/F	90 x 5	-		-			Motocycles (2.4x1m)	2
6/F	-	-		-		Loading/ Unloading Bay	Private Car (5x2.5m)	1
7-12/F	-	Living Unit B1-B6 =6	x 6	Living Unit A1-A6 =6	x 6		LGV (7x3.5m)	2
Total Capacity	450	36		36			MHGV (11x3.5m)	1
		72				Total		20
Total Nos. of Rooms for RCHE		14 x 5 = 70						
Total Blocks for Residence		2						

PLOT RATIO & SITE COVERAGE CALCULATIONS (AREA UNDER BD)

Site Area	= 2138 S.M.
Class of Site	= A
Mean Street Level	= 11.30mPD
Height of Building Above Mean Street Level	= 46.5m
Building Height in mPD	= (11.30 + 46.5) = 57.80mPD
Permitted Domestic Site Coverage (Over 43m)	= 37%
Permitted Non-Domestic Site Coverage (Over 24m)	= 89%
Permitted Domestic Plot Ratio (Over 43m)	= 5.9
Permitted Non-Domestic Plot Ratio (Over 24m)	= 8
Proposed Domestic Site Coverage Calculation	= 569 S.M. / 2138 x 100% = 26.6% < 37%
Proposed Non-Domestic Site Coverage Calculation	= 1181 S.M. / 2138 x 100% = 55.2% < 89%
Proposed Total Non-Domestic GFA	= 6961 / 2138 = 3.256
Non-Domestic Plot Ratio	= 3.256 < 8
Permitted Domestic Plot Ratio (Residue Method)	= (8 - 3.256) / 8 x 5.9 = 3.499
Proposed Total Domestic GFA	= 3528 / 2138 = 1.650
Domestic Plot Ratio	= 1.650 < 3.499

GFA CALCULATION

Ground Floor (Tower A)	= 114 S.M. (Exclude Carpark & Tx / Switch Room)
Ground Floor (Tower B)	= 576 S.M.
First to Sixth Floor	= 1070 x 5 + 1035 = 6385 S.M.
Seventh to Twelfth Floor (Tower A & B)	= (282 + 287) x 6 = 3414 S.M. (Exclude Balconies)
Proposed Total Non-Domestic GFA	= 576 + 6385 = 6961 S.M.
Proposed Total Domestic GFA	= 114 + 3414 = 3528 S.M.



G/F Floor Plan

LEGEND

RCHE	RCHE
Residential Units	Residential Units
Circulation Area for RCHE	Circulation Area for RCHE
Circulation Area for Residential	Circulation Area for Residential
Circulation Area for RCHE & Residential	Circulation Area for RCHE & Residential
E&M Services/ Supporting Facilities	E&M Services/ Supporting Facilities
T/S	Toilet & Shower
Dis.	Accessible Toilet

rev.	date	description
0	09-07-2025	First Issue
1	14-07-2025	Revision 1
2	16-07-2025	Revision 2
3	21-07-2025	Revision 3
4	01-09-2025	Revision 4
5	05-09-2025	Revision 5
6	03-03-2025	Revision 6

project title

Section 12A Application for Proposed Rezoning from "Comprehensive Development Area" and "Green Belt" Zones to "Residential (Group A)4" Zone and To Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) and at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

drawing title

Ground Floor Plan

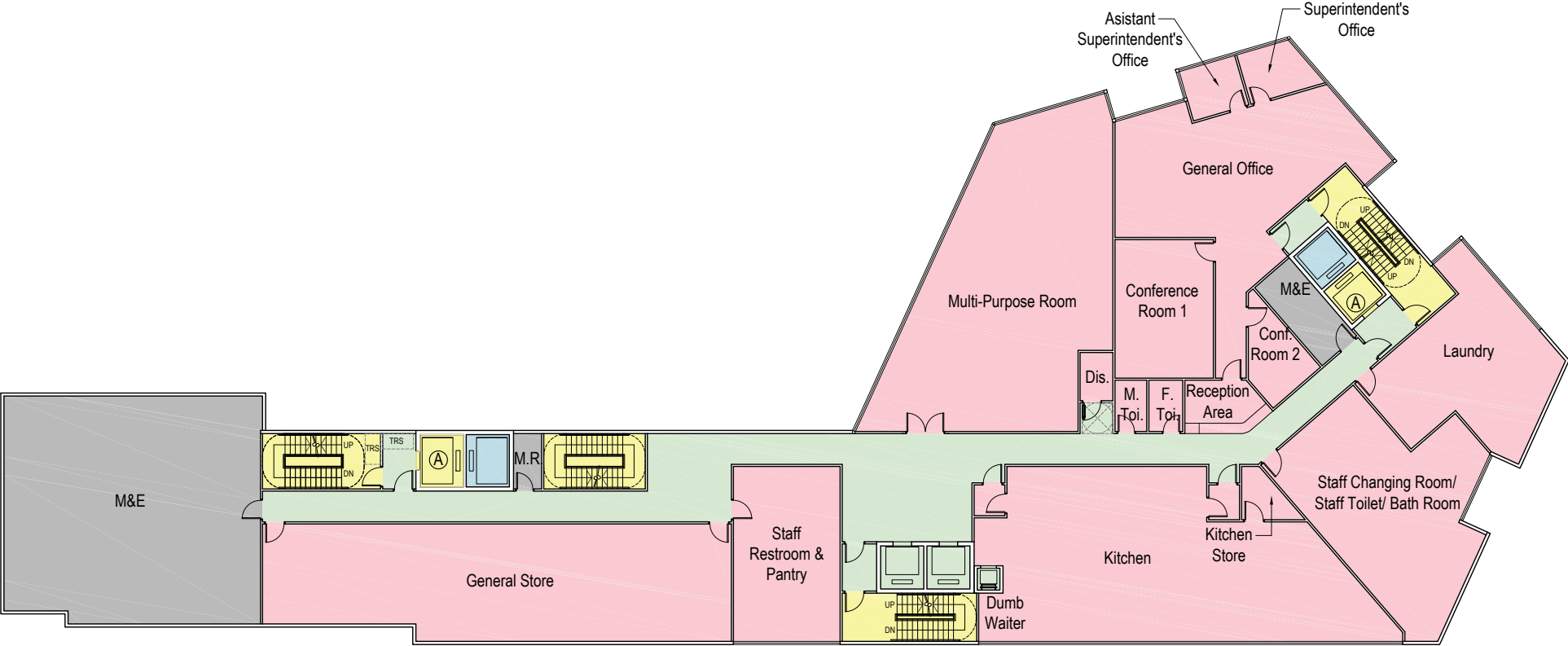
drawing no.

SK-04_rev.6

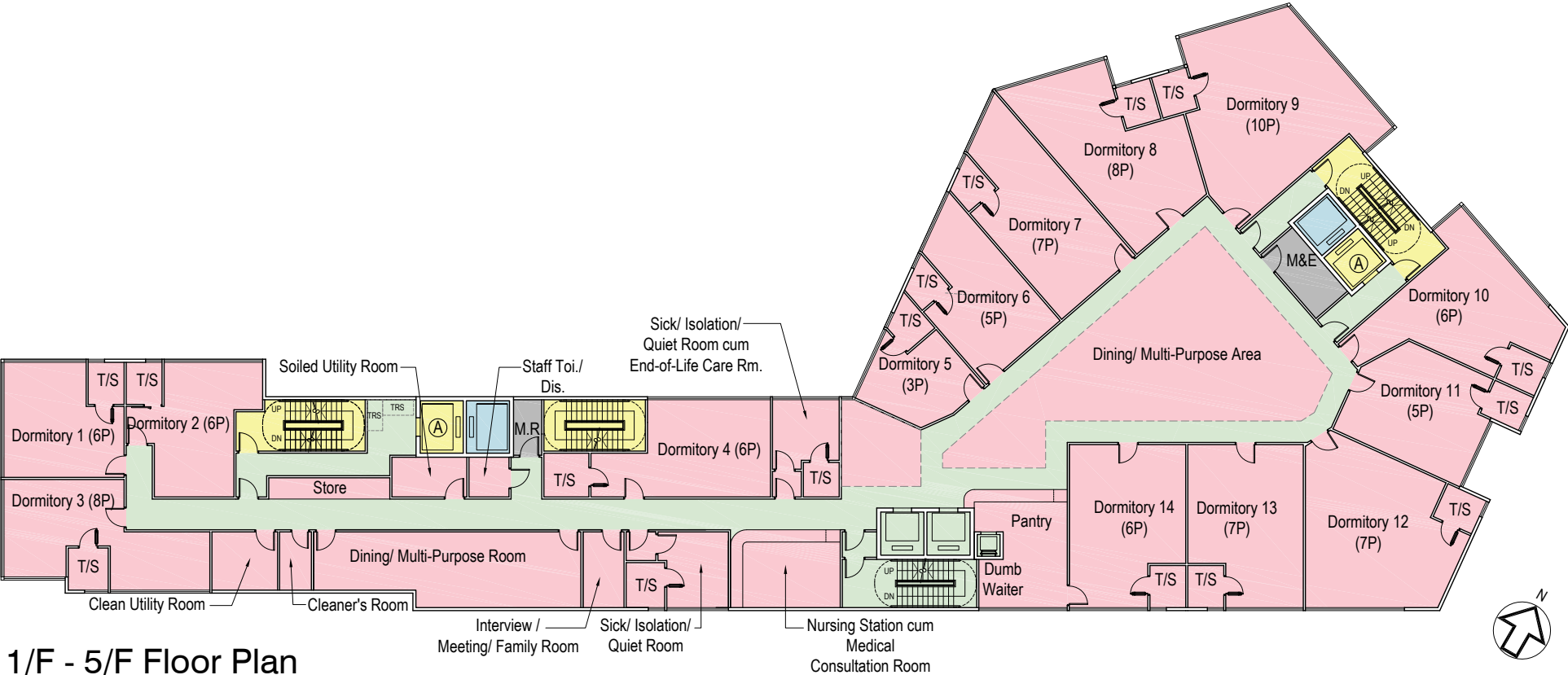
scale

1:300 @ A3

Threshold Consultants Limited
architecture & design



6/F Floor Plan



1/F - 5/F Floor Plan

W:\Projects\2385_S12a_Hung shui kiu\SK-04-SK-06_R6.dwg

SCHEDULE OF ACCOMMODATION FOR RESIDENTIAL CARE HOME FOR THE ELDERLY
(FOR 450 RESIDENTIAL CARE PLACES)

ITEM NO.	DESCRIPTION	NOFA (M²)	USABLE FLOOR AREA (M²)
		(PROPOSED 450 PERSONS)	
1	DORMITORY	2691.5	2691.5
2	ATTACHED BATHROOM/ SHOWER ROOM TO DORMITORY ROOM	AS APPROPRIATE	252.5
3	DINING/ MULTI-PURPOSE ROOM	989.2	989.2
4	PANTRY	AS APPROPRIATE	120
5	SMALL GROUP ACTIVITY ROOM	55.8	55.8
6	NURSING STATION CUM MEDICAL CONSULTATION ROOM	101.5	101.5
7	SICK/ ISOLATION/ QUIET ROOM	98.9	98.9
8	ACCESSIBLE TOILET CUM SHOWER ROOM ATTACHED TO EACH SICK/ ISOLATION/ QUIET ROOM	AS APPROPRIATE	35.5
9	REHABILITATION AREA	200	200
10	STORE FOR REHABILITATION AREA	10	10
11	END-OF-LIFE CARE ROOM	10.1	10.1
12	SOILED UTILITY ROOM	36	36
13	CLEANER'S ROOM	AS APPROPRIATE	22
14	LAUNDRY	55.4	55.4
15	KITCHEN & KITCHEN STORE	144.3	144.3
16	DUMB WAITER	AS APPROPRIATE	7.2
17	GENREAL STORE	162.8	162.8
18	CLEAN UTILITY ROOM	45	45
19	INTERVIEW/ MEETING/ FAMILY ROOM	37	37
20	REFUSE ROOM	AS APPROPRIATE	14
21	SUPERINTENDENT'S OFFICE	8	8
22	ASSISTANT SUPERINTENDENT'S OFFICE	7	7
23	GENERAL OFFICE	82.4	82.4
24	RECEPTION AREA	9.5	9.5
25	CONFERENCE ROOM	43.3	43.3
26	FEMALE/ MALE STAFF CHANGING ROOM AND REST ROOM CUM PANTRY	119.4	119.4
27	STAFF TOILET/ BATH ROOM	AS APPROPRIATE	19.5
28	TOILET FOR COMMUNAL USE A) FEMALE TOILET B) MALE TOILET C) ACCESSIBLE TOILET	AS APPROPRIATE	12
TOTAL		4907.1	5389.8
MAXIMUM OCCUPANTS PER FLOOR AREA (M²) = 4907.1 / 9.5 = 516 > 450 (PROPOSED TOTAL OCCUPANTS)			

rev.	date	description
0	09-07-2025	First Issue
1	14-07-2025	Revision 1
2	16-07-2025	Revision 2
3	21-07-2025	Revision 3
4	01-09-2025	Revision 4
5	05-09-2025	Revision 5
6	03-03-2025	Revision 6

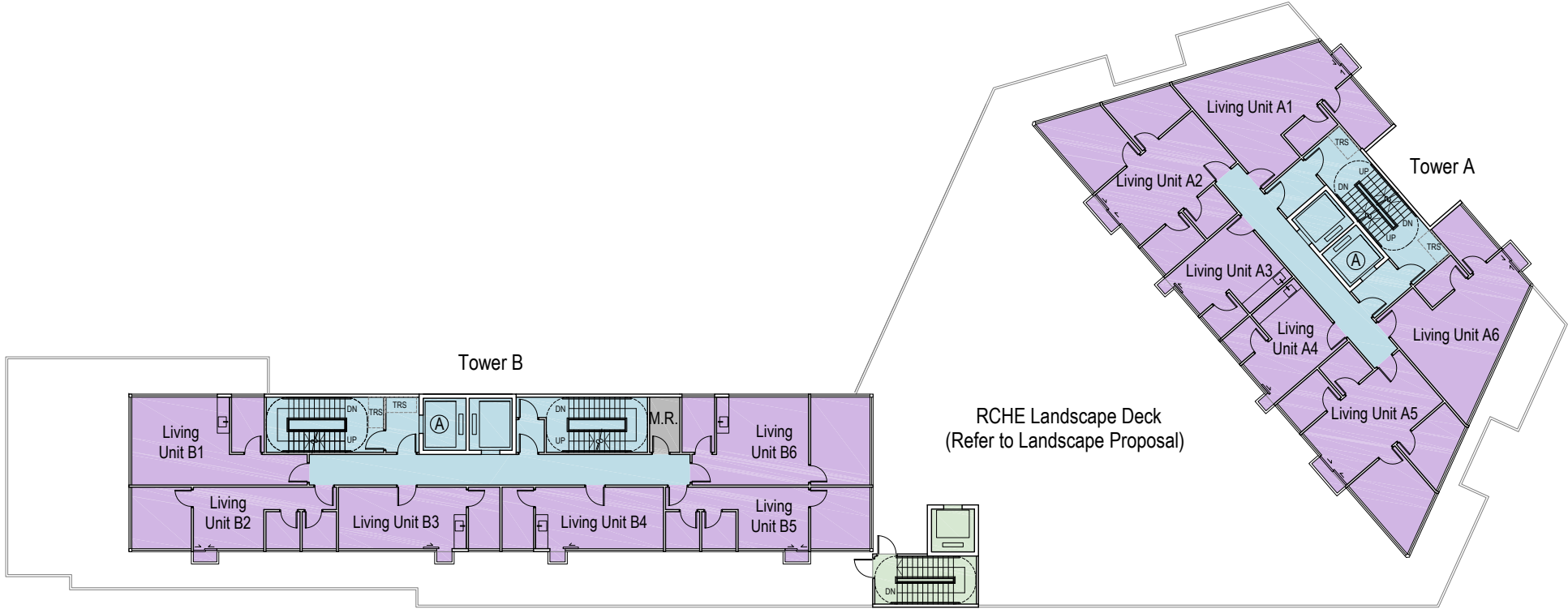
project title
Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and To Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) and at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

drawing title
1/F - 6/F Floor Plans

drawing no.
SK-05_rev.6

scale
1:300 @ A3





7/F - 12/F Floor Plan

rev.	date	description
0	09-07-2025	First Issue
1	14-07-2025	Revision 1
2	16-07-2025	Revision 2
3	21-07-2025	Revision 3
4	01-09-2025	Revision 4
5	05-09-2025	Revision 5
6	03-03-2025	Revision 6

project title
Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and To Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) and at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

drawing title
7/F - 12/F Floor Plans

drawing no.
SK-06_rev.6

scale
1:300 @ A3



Appendix B **CORRESPONDENCE WITH TD**

Alex Wong

From: Chi Wai IP <chiwaiip@td.gov.hk>
Sent: 2025年8月28日星期四 11:45
To: [REDACTED]
Cc: Forrest Wing Kai NG; [REDACTED]
Subject: Re: Fw: 回覆: Proposed Residential & RCHE Development at Hung Shui Kiu, Lot No. 2188 & 398RP in D.D. 121, and Surrounding Government Land

Dear Lillian,

We have no comments on your proposed road type for Fui Sha Wai South Road as a Local Distributor and the Unnamed Access Road as a Feeder Road for the noise assessment purposes of the subject development.

As remarks, please note the following:-

1. The concerned Unnamed Access Road is not managed by this department.
2. Fui Sha Wai South Road does not connect with Hung Tin Road.

Regards,
Louis IP
E/YLS, TE(NTW), TD
Tel: 2399 2565

From: Chi Wai IP/TD/HKSARG
To: Forrest Wing Kai NG/TD/HKSARG@TD
Date: 2025/08/04 下午 05:50
Subject: Fw: 回覆: Proposed Residential & RCHE Development at Hung Shui Kiu, Lot No. 2188 & 398RP in D.D. 121, and Surrounding Government Land
TENTW/EYLS

Dear Forrest,

The subject case is under your purview. Please follow up the case. Thanks.

Regards,
Louis IP
E/YLS, TE(NTW), TD
Tel: 2399 2565

----- Forwarded by Chi Wai IP/TD/HKSARG on 2025/08/04 下午 05:49 -----

From: [REDACTED]
To: "Chi Wai IP" <chiwaiip@td.gov.hk>
Cc: [REDACTED]
Date: 2025/04/29 下午 03:15
Subject: 回覆: Proposed Residential & RCHE Development at Hung Shui Kiu, Lot No. 2188 & 398RP in D.D. 121, and Surrounding Government Land

Dear Louis,

Justification of road types for the concerned road links are as follows for your consideration:

Fui Sha Wai South Road: According to TPDM Volume 2 Chapter 3.2, Local Distributors are defined as “Roads within Districts linking developments to the District Distributor Roads”. Fui Sha Wai South Road is a single-track (two-way) access road serving a low volume of traffic, linking developments like “Uptown” to the District Distributor Road (i.e. Hung Tin Road). Therefore, Fui Sha Wai South Road is considered to be a Local Distributor.

Unnamed Access Road: According to TPDM Volume 2 Chapter 3.2, “Feeder Roads are defined as “Roads connecting villages or more remote settlements to Rural Roads”. The Unnamed Access Road is a single-track (two-way) access road linking between Fui Sha Wai South Road to village of Tai Tao Tsuen and other rural area near Tai To Tsuen Road. While the Unnamed Access Road is serving a low volume of traffic, the concerned carriageway is considered as a Feeder Road.

Should there be any enquiries, please feel free to contact us.
Thank you.

Best Regards,

Lily LIN



寄件者: Chi Wai IP <chiwaiip@td.gov.hk>

寄件日期: 2025 年 4 月 28 日 10:44

收件者: [REDACTED]

副本: [REDACTED]

主旨: Re: Proposed Residential & RCHE Development at Hung Shui Kiu, Lot No. 2188 & 398RP in D.D. 121, and Surrounding Government Land

Dear Lily,

Grateful if you could provide the justification on your proposed road type for our further review.

Regards,

Louis IP

E/YLS, TE(NTW), TD

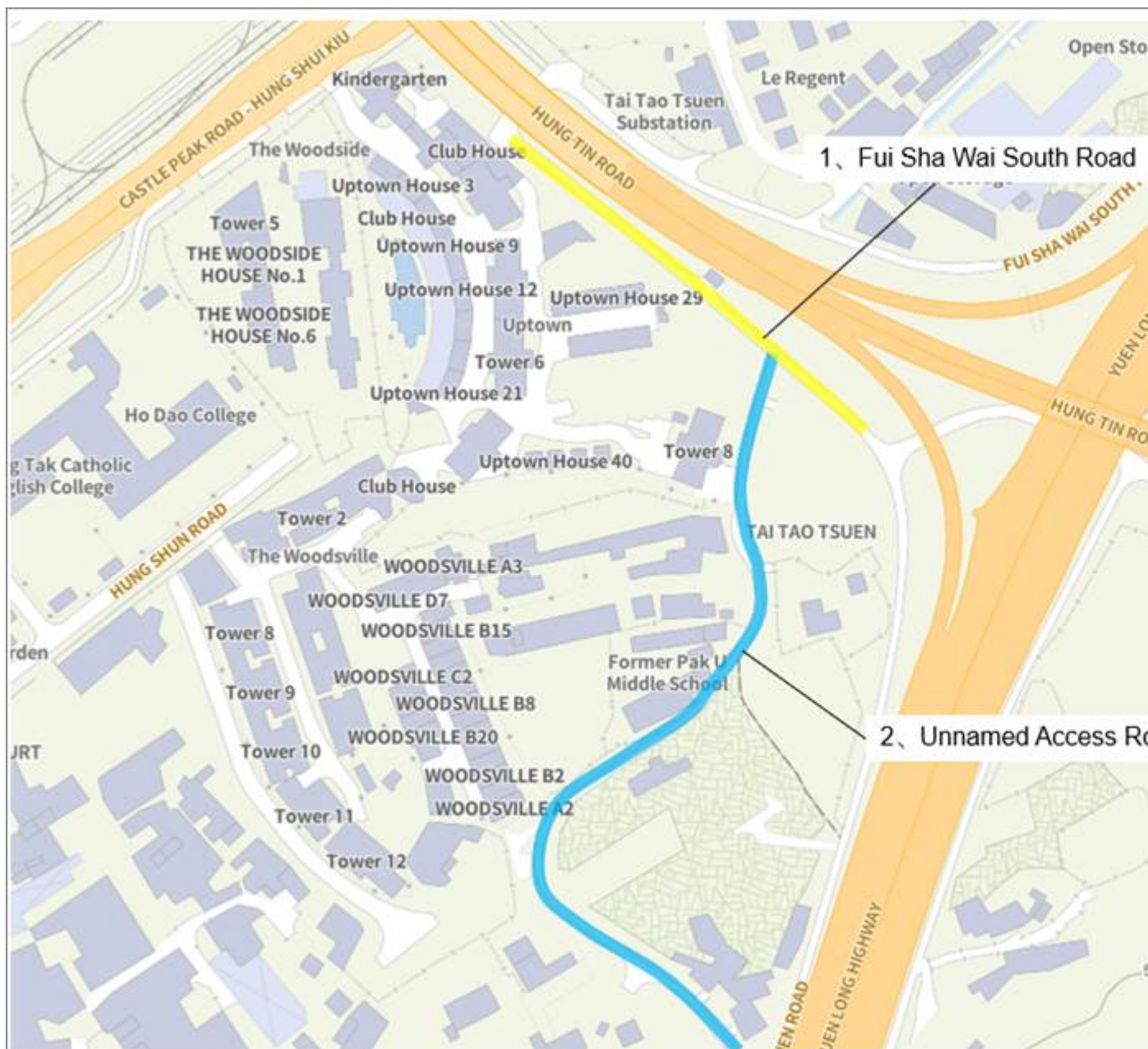
Tel: 2399 2565

From: [REDACTED]
To: <chiwaiip@td.gov.hk>
Cc: <wilsonkhman@td.gov.hk>, [REDACTED]
Date: 2025/04/02 下午 02:32
Subject: Proposed Residential & RCHE Development at Hung Shui Kiu, Lot No. 2188 & 398RP in D.D. 121, and Surrounding

Dear Mr. Ip,

We are the traffic consultant commissioned for the captioned project. We would like to seek your advice on the road types (not included and defined by ATC) presented in the table below, with their respective locations shown in the accompany figure, it would be grateful if you can let us have your confirmation / comment on the Road Types.

Road ID	Road Name	Section Between		Suggested Road Type
1	Fui Sha Wai South Road	Tai Tao Tsuen	Uptown	Local Distributor Road
2	Unnamed Access Road	Fui Sha Wai South Road	Cul-de-sac	Feeder Road



Should there be any enquiries, please feel free to contact us.
Thank you.

Best Regards,
Lily LIN

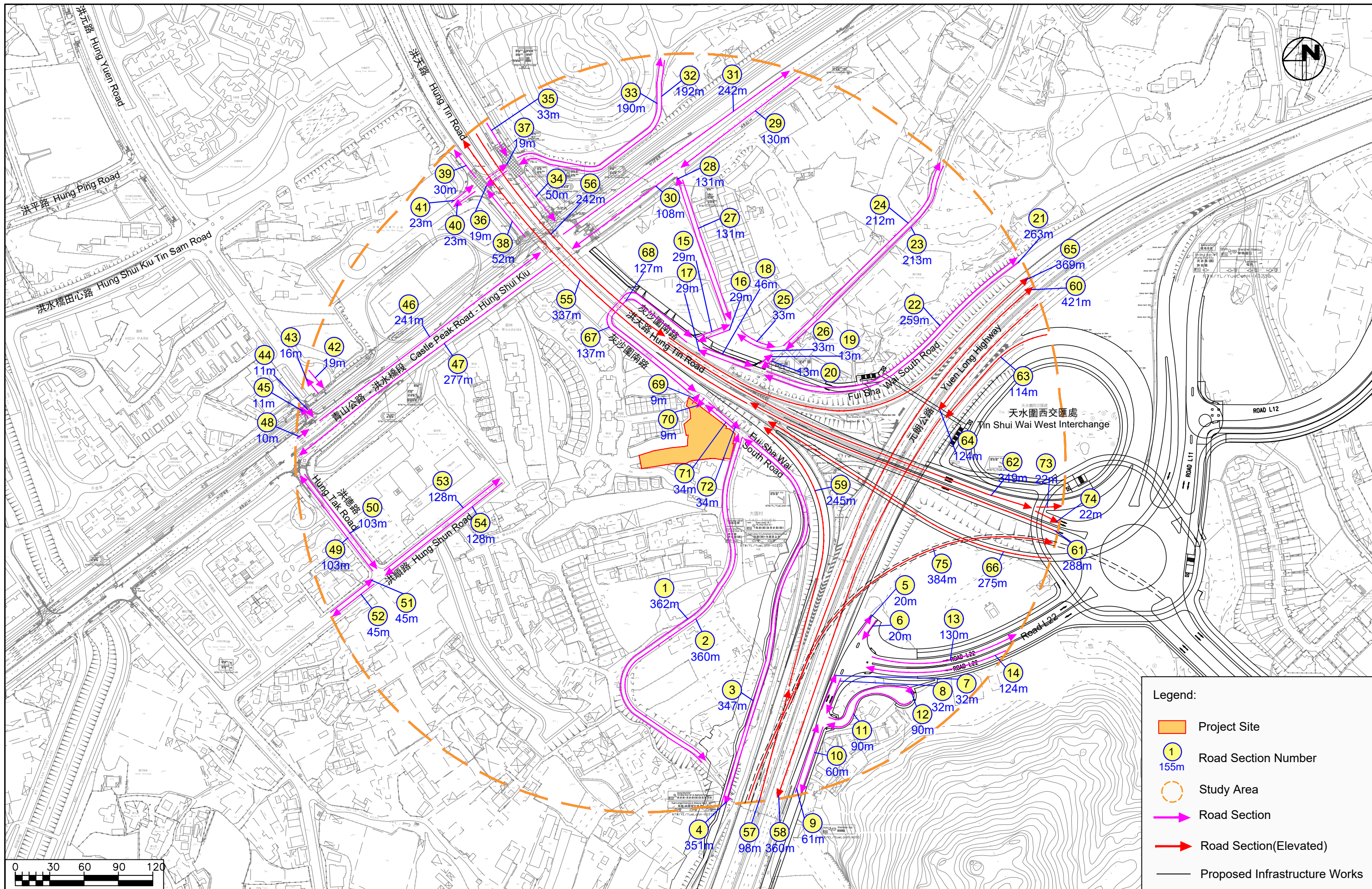


OZZO Technology (HK) Ltd.



Appendix C TRAFFIC FORECAST IN 2046

X:\Ozzo\83136_S12A for Proposed Residential and RCHE Development at Lot No 2188 & 398 RP in DD121 Hung Shui Kiu\Data\Wg\83136_Figure 1B.dwg 2026/05/11 11:03:12



Section 12A Application for Proposed Rezoning from "Comprehensive Development Area" and "Green Belt" Zones to "Residential (Group A)4" Zone and Amend the Notes of the Zone Applicable to the Site for Proposed Social Welfare Facility (Residential Care Home for the Elderly) and Residential Development (Senior Housing) at Lots 398 RP and 2188 in D.D. 121, Tai Tao Tsuen Hung Shui Kiu, New Territories

Key Plan for NIA (Noise Impact Assessment) Traffic Forecast

Date	Scale
11/05/2026	1:3000

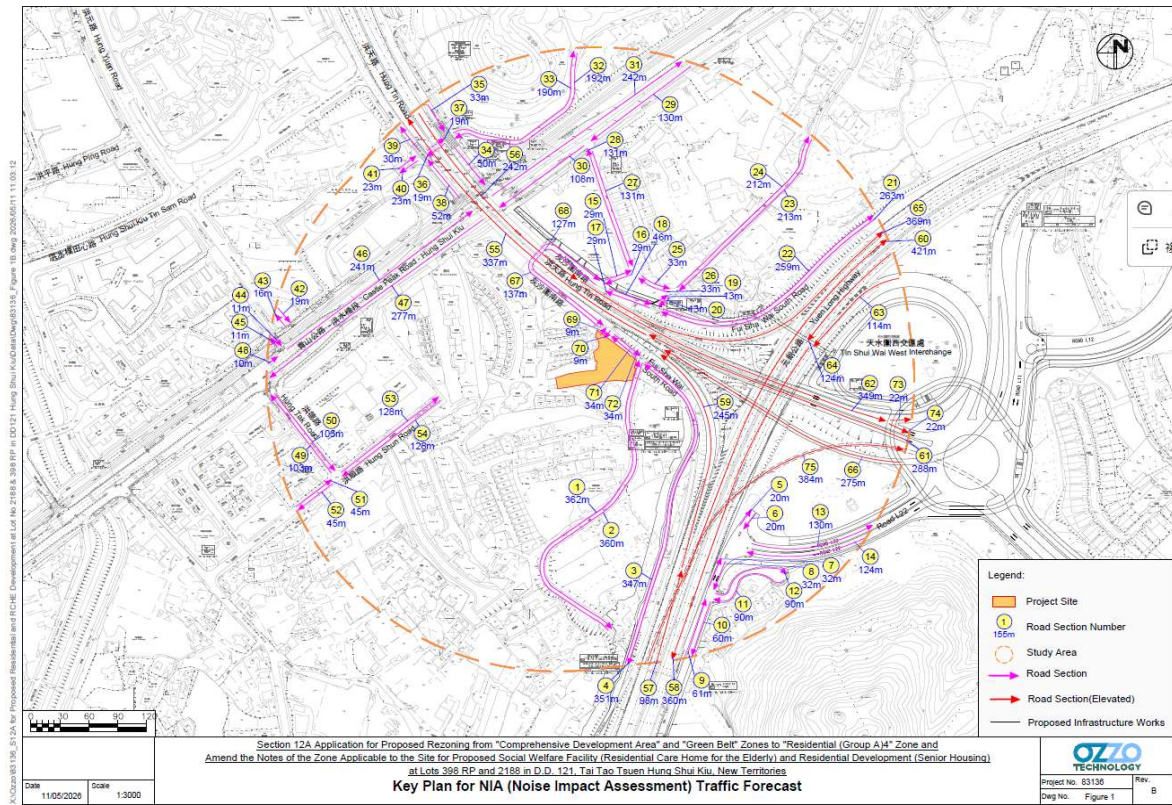


Project No. 83136
Dwg No. Figure 1

Rev.
B

2046 Peak Hour Traffic Forecast for Traffic Noise Impact Assessment

Road ID	Road Name	Section Between		Length (m)	AM Peak Hour		PM Peak Hour	
					Flow (veh/hr)	% HV	Flow (veh/hr)	% HV
1	Access Road	Cul-de-sac	Fui Sha Wai South Road	362	7	16.7%	5	25.0%
2	Access Road	Fui Sha Wai South Road	Cul-de-sac	360	4	33.3%	7	16.7%
3	Fui Sha Wai South Road	Tai To Tsuen Road	Access Road (near Uptown)	347	15	32.2%	21	10.3%
4	Fui Sha Wai South Road	Access Road (near Uptown)	Tai To Tsuen Road	351	9	34.5%	8	34.8%
5	Access Road	Road L22	Cul-de-sac	20	10	25.0%	10	20.0%
6	Access Road	Cul-de-sac	Road L22	20	10	25.0%	10	20.0%
7	Access Road	Access Road(near Yuen Long Highway)	Road L22	32	375	25.0%	300	20.0%
8	Access Road	Road L22	Access Road (near Yuen Long Highway)	32	375	25.0%	300	20.0%
9	Access Road	Tan Kwai Tsuen North Fresh Water Service Reservoir	Access Road (near Yuen Long Highway)	61	375	25.0%	300	20.0%
10	Access Road	Access Road (near Yuen Long Highway)	Tan Kwai Tsuen North Fresh Water Service Reservoir	60	375	25.0%	300	20.0%
11	Access Road	Open Storage	Access Road (near Yuen Long Highway)	90	10	25.0%	10	20.0%
12	Access Road	Access Road (near Yuen Long Highway)	Open Storage	90	10	25.0%	10	20.0%
13	Road L22	Access Road (near Yuen Long Highway)	Tin Shui Wai West Interchange	130	550	30.0%	350	20.0%
14	Road L22	Tin Shui Wai West Interchange	Access Road (near Yuen Long Highway)	124	450	30.0%	350	20.0%
15	Access Road	Fui Sha Wai South Road	Le Regent	29	30	27.8%	30	16.7%
16	Access Road	Le Regent	Fui Sha Wai South Road	29	11	48.3%	14	51.4%
17	Fui Sha Wai South Road	Open Storage	Tai Tao Tsuen Substation	29	5	100.0%	5	25.0%
18	Fui Sha Wai South Road	Tai Tao Tsuen Substation	Open Storage	46	1	100.0%	6	60.0%
19	Access Road	Fui Sha Wai South Road	Open Storage	13	1	100.0%	0	0.0%
20	Access Road	Open Storage	Fui Sha Wai South Road	13	2	100.0%	2	50.0%
21	Fui Sha Wai South Road	Fui Sha Wai South Road (near Forefront Cyber Centre)	Open Storage	263	2	100.0%	4	0.0%
22	Fui Sha Wai South Road	Open Storage	Fui Sha Wai South Road (near Forefront Cyber Centre)	259	0	0.0%	5	50.0%
23	Access Road	Le Regent	Open Storage	213	5	50.0%	5	25.0%
24	Access Road	Open Storage	Le Regent	212	4	33.3%	5	0.0%
25	Access Road	Tai Tao Tsuen Substation	Open Storage	33	4	0.0%	8	0.0%
26	Access Road	Open Storage	Tai Tao Tsuen Substation	33	6	20.0%	5	0.0%
27	Access Road	Castle Peak Road - Hung Shui Kiu	Le Regent	131	27	20.4%	38	31.8%
28	Access Road	Le Regent	Castle Peak Road - Hung Shui Kiu	131	49	24.3%	40	15.2%
29	Castle Peak Road - Ping Shan	Chinese Mission Seminary	Le Regent	130	1165	27.1%	1030	23.8%
30	Castle Peak Road - Hung Shui Kiu	Le Regent	Hung Tin Road (At grade)	108	1187	27.2%	1032	23.0%
31	ad - Hung Shui Kiu / Castle Peak R	Hung Tin Road (At grade)	Chinese Mission Seminary	242	1010	22.4%	876	23.4%
32	Access Road	Graves	Hung Tin Road (At grade)	192	8	0.0%	7	0.0%
33	Access Road	Hung Tin Road (At grade)	Graves	190	5	0.0%	1	0.0%
34	Hung Tin Road (At grade)	Access Road	Castle Peak Road - Hung Shui Kiu	50	688	18.3%	517	24.4%
35	Hung Tin Road (At grade)	Castle Peak Road - Hung Shui Kiu	Hung Shui Kiu Tin Sam Road	33	727	19.9%	558	28.7%
36	Hung Tin Road (At grade)	Hung Tin Road SB (At grade)	Hung Tin Road NB (At grade)	19	65	29.1%	59	12.0%
37	Hung Tin Road (At grade)	Hung Tin Road NB (At grade)	Hung Tin Road SB (At grade)	19	22	2.2%	19	12.4%
38	Hung Tin Road (At grade)	Castle Peak Road (Hung Shui Kiu)	MTR Hung Shui Kiu Bus Depot	52	767	23.1%	641	20.8%
39	Hung Tin Road (At grade)	MTR Hung Shui Kiu Bus Depot	Hung Shui Kiu Tin Sam Road	30	807	24.3%	683	20.3%
40	Access Road	Hung Tin Road NB (At grade)	MTR Hung Shui Kiu Bus Depot	23	5	25.0%	2	50.0%
41	Access Road	MTR Hung Shui Kiu Bus Depot	Hung Tin Road NB (At grade)	23	7	50.0%	5	50.0%
42	Hung Yuen Road	Park Nara	LRT (Hung Shui Kiu Station)	19	17	92.9%	9	50.0%
43	Hung Yuen Road	LRT (Hung Shui Kiu Station)	Park Nara	16	17	92.9%	9	50.0%
44	Access Road	Park Nara	Castle Peak Road - Hung Shui Kiu	11	48	7.3%	42	0.0%
45	Access Road	Castle Peak Road - Hung Shui Kiu	Park Nara	11	41	5.7%	26	13.6%
46	Castle Peak Road - Hung Shui Kiu	Access Road	Hung Tin Road (At grade)	241	1288	23.4%	1052	22.3%
47	Castle Peak Road - Hung Shui Kiu	Hung Tin Road (At grade)	Hung Tak Road	277	1410	24.1%	1098	24.5%
48	Castle Peak Road - Hung Shui Kiu	Shung Tak Catholic English College	Access Road	10	1281	23.5%	1036	23.7%
49	Hung Tak Road	Hung Shun Road	Castle Peak Road - Hung Shui Kiu	103	369	11.5%	207	11.4%
50	Hung Tak Road	Castle Peak Road - Hung Shui Kiu	Hung Shun Road	103	463	12.8%	312	21.6%
51	Hung Shun Road	Symphony Garden	Hung Tak Road	45	312	13.2%	184	11.6%
52	Hung Shun Road	Hung Tak Road	Symphony Garden	45	406	13.5%	294	23.3%
53	Hung Shun Road	Hung Tak Road	Cul-de-sac	128	93	5.1%	34	3.4%
54	Hung Shun Road	Cul-de-sac	Hung Tak Road	128	100	3.5%	35	6.7%
55	Hung Tin Road (Elevated)	Uptown	MTR Hung Shui Kiu Bus Depot	337	2265	30.0%	2992	20.0%
56	Hung Tin Road (Elevated)	MTR Hung Shui Kiu Bus Depot	Uptown	242	2643	30.0%	2956	20.0%
57	Yuen Long Highway	Manor Parc	Slip Road of Hung Tin Road	98	5117	30.0%	5559	25.0%
58	Yuen Long Highway	Tin Shui Wai West Interchange	Manor Parc	360	7425	25.0%	6558	15.0%
59	Hung Tin Road	Yuen Long Highway	Hung Tin Road (Elevated)	245	998	30.0%	1249	25.0%
60	Yuen Long Highway	Slip Road of Hung Tin Road	Tin Shui Wai West Interchange	421	4119	30.0%	4310	25.0%
61	Hung Tin Road (Elevated)	Tin Shui Wai West Interchange	Uptown	288	620	30.0%	385	20.0%
62	Hung Tin Road (Elevated)	Uptown	Tin Shui Wai West Interchange	349	1616	30.0%	1862	20.0%
63	Hung Tin Road	Tin Shui Wai West Interchange	Yuen Long Highway	114	1905	25.0%	1929	15.0%
64	Yuen Long Highway	Tin Shui Wai West Interchange	Slip Road of Hung Tin Road	124	5520	25.0%	4629	15.0%
65	Hung Tin Road	Uptown	Yuen Long Highway	369	1027	30.0%	1094	25.0%
66	Slip Road of Yuen Long Highway	Yuen Long Highway	Slip Road of Hung Tin Road	275	647	20.0%	1358	25.0%
67	Fui Sha Wai South Road	Access Road to Project Site	Tai Tao Tsuen Substation	124	25	18.9%	25	15.1%
68	Fui Sha Wai South Road	Tai Tao Tsuen Substation	Access Road to Project Site	124	11	37.8%	11	24.3%
69	Access Road	Project Site	Fui Sha Wai South Road	9	8	23.8%	18	23.8%
70	Access Road	Fui Sha Wai South Road	Project Site	9	9	23.8%	15	23.8%
71	Fui Sha Wai South Road	Access Road to Project Site	Access Road (near Uptown)	34	20	18.9%	23	15.1%
72	Fui Sha Wai South Road	Access Road (near Uptown)	Access Road to Project Site	34	11	37.8%	12	24.3%
73	Hung Tin Road (Elevated)	Slip Road of Hung Tin Road	Yuen Long Highway	22	1305	30.0%	1479	20.0%
74	Hung Tin Road (Elevated)	Slip Road of Hung Tin Road	Yuen Long Highway	22	311	30.0%	383	20.0%
75	Slip Road of Yuen Long Highway	Yuen Long Highway	Road L20	360	795	30.0%	870	20.0%



Appendix D

PREDICTED ROAD TRAFFIC NOISE LEVEL (BASE CASE)

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Block: RCHE (G/F - 5/F)
Scenario: Road Traffic Noise (2046 AM flow) - Base Case

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	RCHE (1/F - 5/F)											
				RCHE_TYP_01	RCHE_TYP_02	RCHE_TYP_03	RCHE_TYP_04	RCHE_TYP_05	RCHE_TYP_06	RCHE_TYP_07	RCHE_TYP_08	RCHE_TYP_09	RCHE_TYP_10	RCHE_TYP_11	RCHE_TYP_12
5/F	3.5	29.80	31.00	76	72	73	76	73	72	70	68	58	68	69	65
4/F	3.5	26.30	27.50	75	72	72	75	73	72	69	68	56	68	68	63
3/F	3.5	22.80	24.00	75	71	72	75	72	71	68	67	55	67	68	62
2/F	3.5	19.30	20.50	74		71	74	70	69	67	66	53	66	67	61
1/F	3.5	15.80	17.00	72	65	68	72	67	66	65	65	52	62	65	61
Criterion				70								70		70	

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	RCHE (1/F - 5/F)												
				RCHE_TYP_13	RCHE_TYP_14	RCHE_TYP_15	RCHE_TYP_16	RCHE_TYP_17	RCHE_TYP_18	RCHE_TYP_19	RCHE_TYP_20	RCHE_TYP_21	RCHE_TYP_22	RCHE_TYP_23	RCHE_TYP_24	RCHE_TYP_25
5/F	3.5	29.80	31.00	66	68	69	72	72	72	72	73	74	74	74	74	74
4/F	3.5	26.30	27.50	64	66	66	70	71	71	71	72	73	74	74	74	74
3/F	3.5	22.80	24.00	62	64	63	68	69	70	69	71	72	73	73	73	74
2/F	3.5	19.30	20.50	61	62	62	67	68	69	68	70	71	72	72	72	73
1/F	3.5	15.80	17.00	61	61	61	66	66	67	67	68	70	70	70	71	71
Criterion				70				70		70						

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	RCHE (G/F)				
				RCHE_GF_01	RCHE_GF_02	RCHE_GF_03	RCHE_GF_04	RCHE_GF_05
G/F	4.5	11.30	12.50	61	61	61	54	65
Criterion				70				

Note: Predicted noise level exceeded HKPSG Standard of 70 dB(A)
* Noise Assessment Point Level= Floor Slab Level +1.2m

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New

Block: Tower A - Residential & Tower B - Residential

Scenario: Road Traffic Noise (2046 AM flow) - Base Case

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	Tower A - Residential													
				TYP_A_01	TYP_A_02	TYP_A_03	TYP_A_04	TYP_A_05	TYP_A_06	TYP_A_07	TYP_A_08	TYP_A_09	TYP_A_10	TYP_A_11	TYP_A_12	TYP_A_13	TYP_A_14
12/F	3.5	54.3	55.5	77	78	76	76	76	71	70	70	69	69	71	74	75	76
11/F	3.5	50.8	52.0	77	78	76	76	76	71	70	69	68	68	70	74	75	75
10/F	3.5	47.3	48.5	77	77	76	75	75	70	69	68	68	67	70	74	75	75
9/F	3.5	43.8	45.0	77	77	75	75	75	69	68	68	67	66	70	74	75	75
8/F	3.5	40.3	41.5	77	77	75	75	74	69	68	67	66	66	70	74	74	75
7/F	3.5	36.8	38.0	77	77	74	74	74	67	65	64	64	63	67	73	74	74
Criterion				70	70	70	70	70	70	70	70	70	70	70	70	70	70
Max Noise Level, dB(A)				77	78	76	76	76	71	70	70	69	69	71	74	75	76
Compliance				N	N	N	N	N	N	Y	Y	Y	Y	N	N	N	N

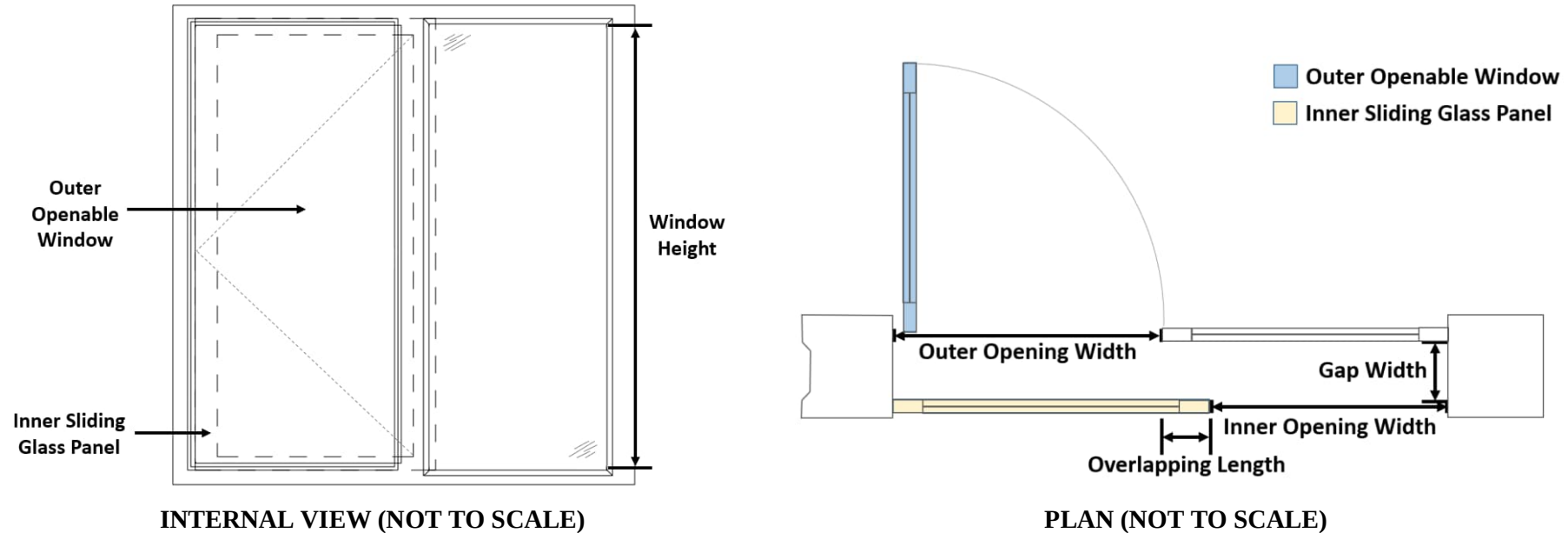
Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	Tower B - Residential												
				TYP_B_01	TYP_B_02	TYP_B_03	TYP_B_04	TYP_B_05	TYP_B_06	TYP_B_07	TYP_B_08	TYP_B_09	TYP_B_10	TYP_B_11	TYP_B_12	TYP_B_13
12/F	3.5	54.3	55.5	73	72	68	67	64	66	67	67	68	70	72	73	74
11/F	3.5	50.8	52.0	73	72	68	67	64	65	67	67	68	70	72	73	73
10/F	3.5	47.3	48.5	73	72	67	66	63	65	67	67	68	70	72	73	73
9/F	3.5	43.8	45.0	73	71	66	65	63	65	66	67	67	69	72	73	73
8/F	3.5	40.3	41.5	72	70	66	65	62	64	66	67	67	69	71	73	73
7/F	3.5	36.8	38.0	68	64	62	61	58	64	66	67	64	67	71	73	73
Criterion				70	70	70	70	70	70	70	70	70	70	70	70	70
Max Noise Level, dB(A)				73	72	68	67	64	66	67	67	68	70	72	73	74
Compliance				N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N

Note: Predicted noise level exceeded HKPSG Standard of 70 dB(A)

* Noise Assessment Point Level= Floor Slab Level +1.2m

Appendix E **ACOUSTIC WINDOW REFERENCE FROM PROPECC PN 5/23**

(I) Possible design of “Acoustic Window (Baffle Type)” for 8m² and 18m² habitable rooms (i.e. dining room, living room or bedroom)



Possible Designs of “Acoustic Window (Baffle Type)” for 8m ² and 18m ² rooms					
Room Size (m ²)	Room Dimensions (mm ³)	Inner Window Opening (mm ²)	Outer Window Opening (mm ²)	Overlapping Length (mm)	Gap Width (mm)
8	3200 (W) x 2500 (D) x 3400 (H)	580 (W) x 870 (H)	600 (W) x 870 (H)	≥ 100	100 to 175
18	5300 (W) x 3390 (D) x 3400 (H)	750 (W) x 1500 (H)	750 (W) x 1500 (H)	≥ 100	100 to 175

Notes:

a. These are feasible designs of AW(BT) for 8m² and 18m² rooms.

b. For optimum performance of noise reduction, the air gap should have a pane-to-pane overlapping length of ≥ 100mm and a gap width between 100mm and 175mm, with the inner sliding glass panel in a closed position. The window pane shall be ≥ 6mm in thickness.

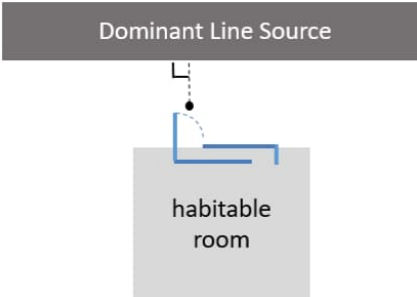
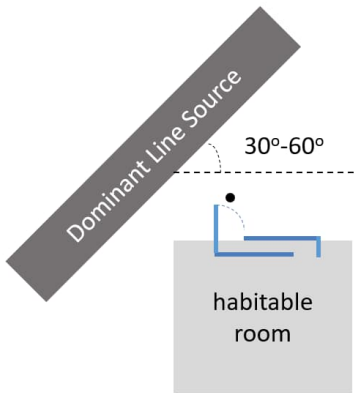
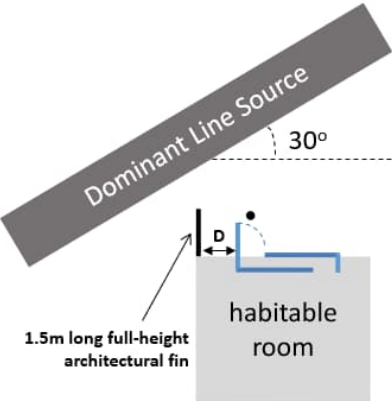
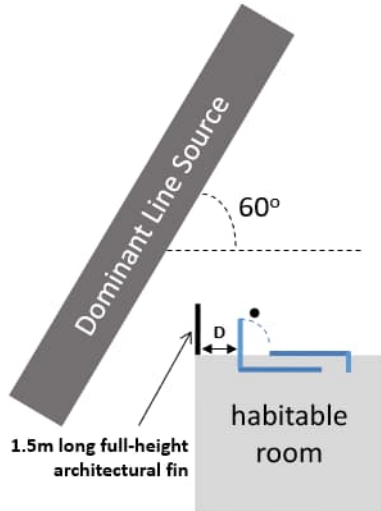
Table 1: Summary on RNR of Acoustic Window (Baffle Type) (for use in NIA) *Plan not to scale		Correction dB(A) L10(1hr)	
		8m ²	18m ²
	(a) Provision of AW(BT) parallel to dominant line source (whichever side the outer side-hung window is)	- 6.0	- 7.0
		- 7.5 (added SAM ¹)	- 8.5 (added SAM ¹)
	(b) Tilting the AW(BT) in (a) above to 30° - 60° horizontal incident angle to dominant line source (whichever side the outer side-hung window is)	- 7.0	- 8.0
		- 8.5 (added SAM ¹)	- 9.5 (added SAM ¹)
 D = Distance from architectural fin to nearest window frame should be at most 900mm.	(b1) If tilted AW(BT) is at 30° horizontal incident angle to dominant line source + 1.5m long full-height architectural fin² * AW(BT) + architectural fin should be considered as ONE package of noise mitigation measures. Outer side-hung window of AW(BT) and architectural fin should be installed at the side nearer to dominant line source.	- 8.0	- 9.0
		- 9.5 (added SAM ¹)	- 10.5 (added SAM ¹)

Table 1: Summary on RNR of Acoustic Window (Baffle Type) (for use in NIA) *Plan not to scale		Correction dB(A) L10(1hr)	
		8m ²	18m ²
 (b2) If tilted AW(BT) is at 60° horizontal incident angle to dominant line source + 1.5m long full-height architectural fin² * AW(BT) + architectural fin should be considered as ONE package of noise mitigation measures. Outer side-hung window of AW(BT) and architectural fin should be installed at the side nearer to dominant line source. D = Distance from architectural fin to nearest window frame should be at most 900mm.	- 9.0	- 10.0	
	- 10.5 (added SAM ¹)	- 11.5 (added SAM ¹)	
	Note 1: The additional Sound Absorptive Material (SAM) shall be of Noise Reduction Coefficient ≥ 0.7 and applied at top and outer opening side of mullion. The material of SAM is subject to the requirements of section 3 of Building (Construction) Regulation.		
	Note 2: The 1.5m long full-height architectural fin may be subject to the requirements for natural lighting and ventilation, gross floor area and site coverage under the B(P)R.		

Appendix F

NOISE REDUCTION PERFORMANCE OF THE PROPOSED ACOUSTIC WINDOW (BAFFLE TYPE)

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Noise Reduction Performance of the Proposed Acoustic Window (Baffle Type)

A Possible Design of AW(BT) for the Proposed Development						Reference Case								Correction factor ^[1]		Adjusted relative noise reduction, dB(A)	Mitigated?	
Room Type	Room floor size , m ²	Outer window opening, mm	Outer window opening, m ²	Overlapping length, mm	Gap width, mm	Type	Room floor size, m ²	Outer window opening, mm	Outer window opening, m ²	Overlapping length, mm	Gap width, mm	With SAM?	Relative noise reduction, dB(A)	Outer window opening correction, dB(A)	Room size correction, dB(A)		Yes/No/Partly	Remark
Dormitory 9 (RCHE_TYP_25)	63.035	1404 (W) x 2807 (H)	3.940	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	9.5	-5.44	0.00	4.1	Yes	
												No	8	-5.44	0.00	2.6	Partly	Only for 1/F
Dormitory 10 (RCHE_TYP_03)	41.875	1144 (W) x 2288 (H)	2.617	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-3.67	0.00	4.8	Yes	
												No	7	-3.67	0.00	3.3	Yes	
Dormitory 11 (RCHE_TYP_05)	33.969	1030 (W) x 2061 (H)	2.123	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-2.76	0.00	5.7	Yes	
												No	7	-2.76	0.00	4.2	Yes	
Dormitory 12 (RCHE_TYP_06)	52.476	1281 (W) x 2561 (H)	3.280	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-4.65	0.00	3.9	Yes	
												No	7	-4.65	0.00	2.4	Yes	
Dormitory 4 (RCHE_TYP_16)	34.239	1034 (W) x 2069 (H)	2.140	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-2.79	0.00	5.7	Yes	
												No	7	-2.79	0.00	4.2	Yes	
Sick/ Isolation/ Quiet Room cum End-of-Life Care Rm (RCHE_TYP_17)	10.194	652 (W) x 978 (H)	0.637	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	-1.01	0.00	6.5	Yes	
												No	6	-1.01	0.00	5.0	Yes	
Dormitory 5 (RCHE_TYP_19)	17.890	748 (W) x 1495 (H)	1.118	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	0.03	-0.03	8.5	Yes	
												No	7	0.03	-0.03	7.0	Yes	
Dormitory 6 (RCHE_TYP_20)	30.707	980 (W) x 1959 (H)	1.919	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-2.32	0.00	6.2	Yes	
												No	7	-2.32	0.00	4.7	Yes	
Dormitory 7 (RCHE_TYP_21)	40.040	1119 (W) x 2237 (H)	2.503	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-3.47	0.00	5.0	Yes	
												No	7	-3.47	0.00	3.5	Yes	
Dormitory 8 (RCHE_TYP_22)	45.213	1189 (W) x 2377 (H)	2.826	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	9.5	-4.00	0.00	5.5	Yes	
												No	8	-4.00	0.00	4.0	Yes	

Note:

[1] The correction of outer opening is calculated by $10 \cdot \log(A_{or}/A_o)$, where the A_o is the Area of the outer window opening of the proposed AW(BT) and A_{or} is the Area of the outer window opening of the reference case.

As a conservative approach, no room size correction is made if the room size of the proposed development is greater than that of the reference case.

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Noise Reduction Performance of the Proposed Acoustic Window (Baffle Type)

A Possible Design of AW(BT) for the Proposed Development						Reference Case								Correction factor ^[1]		Adjusted relative noise reduction, dB(A)	Mitigated?	
Room Type	Room floor size , m ²	Outer window opening, mm	Outer window opening, m ²	Overlapping length, mm	Gap width, mm	Type	Room floor size, m ²	Outer window opening, mm	Outer window opening, m ²	Overlapping length, mm	Gap width, mm	With SAM?	Relative noise reduction, dB(A)	Outer window opening correction, dB(A)	Room size correction, dB(A)		Yes/No/Partly	Remark
Living unit A1 (TYP_A_14)	29.105	954 (W) x 1907 (H)	1.819	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-2.09	0.00	6.4	Yes	Only for 7F to 10F
												No	7	-2.09	0.00	4.9	Partly	
Living unit A2 - B.R.1 (TYP_A_11)	11.130	681 (W) x 1021 (H)	0.696	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	-1.39	0.00	6.1	Yes	
												No	6	-1.39	0.00	4.6	Yes	
Living unit A2 - B.R.2 (TYP_A_13)	7.036	541 (W) x 812 (H)	0.440	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	0.60	-0.56	7.5	Yes	
												No	6	0.60	-0.56	6.0	Yes	
Living unit A5 - B.R.2 (TYP_A_04)	7.074	543 (W) x 814 (H)	0.442	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	0.57	-0.53	7.5	Yes	
												No	6	0.57	-0.53	6.0	Yes	
Living unit A5 - B.R.1 (TYP_A_06)	11.130	681 (W) x 1021 (H)	0.696	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	-1.39	0.00	6.1	Yes	
												No	6	-1.39	0.00	4.6	Yes	
Living unit A6 (TYP_A_03)	29.004	952 (W) x 1904 (H)	1.813	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-2.07	0.00	6.4	Yes	Only for 7F to 9F
												No	7	-2.07	0.00	4.9	Partly	
Living unit B6 - BR (TYP_B_01)	12.492	721 (W) x 1082 (H)	0.781	100	100mm - 175mm	PN 5/23, 8 m2	8.000	580 (W) x 870 (H)	0.505	100	175	Yes	7.5	-1.90	0.00	5.6	Yes	
												No	6	-1.90	0.00	4.1	Yes	
Living unit B6 (TYP_B_12)	21.150	813 (W) x 1626 (H)	1.322	100	100mm - 175mm	PN 5/23, 18 m2	18.000	750 (W) x 1500 (H)	1.125	100	175	Yes	8.5	-0.70	0.00	7.8	Yes	
												No	7	-0.70	0.00	6.3	Yes	

Note:

[1] The correction of outer opening is calculated by $10 \cdot \log(A_{or}/A_o)$, where the A_o is the Area of the outer window opening of the proposed AW(BT) and A_{or} is the Area of the outer window opening of the reference case.

As a conservative approach, no room size correction is made if the room size of the proposed development is greater than that of the reference case.

Appendix G **PREDICTED ROAD TRAFFIC NOISE LEVEL (MITIGATION CASE)**

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Block: RCHE (1/F - 5/F)
Scenario: Road Traffic Noise (2046 AM flow) - Mit Case

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	RCHE (1/F - 5/F)											
				RCHE_TYP_01	RCHE_TYP_02	RCHE_TYP_03	RCHE_TYP_04	RCHE_TYP_05	RCHE_TYP_06	RCHE_TYP_07	RCHE_TYP_08	RCHE_TYP_09	RCHE_TYP_10	RCHE_TYP_11	RCHE_TYP_12
5/F	3.5	29.80	31.00	[F/L/M]	[F/L/M]	70	[F/L/M]	69	70	70	68	58	68	69	65
4/F	3.5	26.30	27.50	[F/L/M]	[F/L/M]	69	[F/L/M]	69	69	69	68	56	68	68	63
3/F	3.5	22.80	24.00	[F/L/M]	[F/L/M]	69	[F/L/M]	68	68	68	67	55	67	68	62
2/F	3.5	19.30	20.50	[F/L/M]	[F/L/M]	67	[F/L/M]	70	69	67	66	53	66	67	61
1/F	3.5	15.80	17.00	[F/L/M]	[F/L/M]	68	[F/L/M]	67	66	65	65	52	62	65	61
Criterion				70								70		70	

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	RCHE (1/F - 5/F)												
				RCHE_TYP_13	RCHE_TYP_14	RCHE_TYP_15	RCHE_TYP_16	RCHE_TYP_17	RCHE_TYP_18	RCHE_TYP_19	RCHE_TYP_20	RCHE_TYP_21	RCHE_TYP_22	RCHE_TYP_23	RCHE_TYP_24	RCHE_TYP_25
5/F	3.5	29.80	31.00	66	68	69	68	67	/	65	68	70	70	[F/L/M]	[F/L/M]	70
4/F	3.5	26.30	27.50	64	66	66	70	66	/	64	67	70	70	[F/L/M]	[F/L/M]	70
3/F	3.5	22.80	24.00	62	64	63	68	69	/	69	66	69	69	[F/L/M]	[F/L/M]	70
2/F	3.5	19.30	20.50	61	62	62	67	68	/	68	70	68	68	[F/L/M]	[F/L/M]	69
1/F	3.5	15.80	17.00	61	61	61	66	66	/	67	68	70	70	70	[F/L/M]	69
Criterion				70				70		70						

Note:

- Acoustic Window (Baffle Type) - With Sound Absorptive Material (SAM)
- Acoustic Window (Baffle Type) - Without Sound Absorptive Material (SAM)
- [F/L/M] Fixed/Lockable/Maintenance window
- / Non-noise sensitive uses/ Uses that do not rely on openable window for ventilation

* Noise Assessment Point Level= Floor Slab Level +1.2m

Project: Section 12A Application for Proposed Rezoning from “Comprehensive Development Area” and “Green Belt” Zones to “Residential (Group A)4” Zone and to Amend the Notes of the Zone Applicable to the Site for Proposed Residential Development and Social Welfare Facility (Residential Care Home for the Elderly) at Lot Nos. 398 RP and 2188 in D.D. 121, Tai Tao Tsuen, Hung Shui Kiu, New Territories

Block: Tower A - Residential & Tower B - Residential

Scenario: Road Traffic Noise (2046 AM flow) - Mit Case

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	Tower A - Residential													
				TYP_A_01	TYP_A_02	TYP_A_03	TYP_A_04	TYP_A_05	TYP_A_06	TYP_A_07	TYP_A_08	TYP_A_09	TYP_A_10	TYP_A_11	TYP_A_12	TYP_A_13	TYP_A_14
12/F	3.5	54.3	55.5	[F/L/M]	[F/L/M]	70	70	[F/L/M]	67	70	70	69	69	66	[F/L/M]	69	69
11/F	3.5	50.8	52.0	[F/L/M]	[F/L/M]	69	70	[F/L/M]	66	70	69	68	68	70	[F/L/M]	69	69
10/F	3.5	47.3	48.5	[F/L/M]	[F/L/M]	69	69	[F/L/M]	70	69	68	68	67	70	[F/L/M]	69	70
9/F	3.5	43.8	45.0	[F/L/M]	[F/L/M]	70	69	[F/L/M]	69	68	68	67	66	70	[F/L/M]	69	70
8/F	3.5	40.3	41.5	[F/L/M]	[F/L/M]	70	69	[F/L/M]	69	68	67	66	66	70	[F/L/M]	68	70
7/F	3.5	36.8	38.0	[F/L/M]	[F/L/M]	69	68	[F/L/M]	67	65	64	64	63	67	[F/L/M]	68	69
Criterion				70	70	70	70	70	70	70	70	70	70	70	70	70	70
Max Noise Level, dB(A)				0	0	70	70	0	70	70	70	69	69	70	0	69	70
Compliance				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Floor	Floor Height (m)	Floor Level (mPD)	NAP Level (mPD)	Tower B - Residential												
				TYP_B_01	TYP_B_02	TYP_B_03	TYP_B_04	TYP_B_05	TYP_B_06	TYP_B_07	TYP_B_08	TYP_B_09	TYP_B_10	TYP_B_11	TYP_B_12	TYP_B_13
12/F	3.5	54.3	55.5	69	[F/L/M]	68	67	64	66	67	67	68	70	[F/L/M]	67	[F/L/M]
11/F	3.5	50.8	52.0	69	[F/L/M]	68	67	64	65	67	67	68	70	[F/L/M]	67	[F/L/M]
10/F	3.5	47.3	48.5	69	[F/L/M]	67	66	63	65	67	67	68	70	[F/L/M]	67	[F/L/M]
9/F	3.5	43.8	45.0	69	[F/L/M]	66	65	63	65	66	67	67	69	[F/L/M]	67	[F/L/M]
8/F	3.5	40.3	41.5	68	70	66	65	62	64	66	67	67	69	[F/L/M]	67	[F/L/M]
7/F	3.5	36.8	38.0	68	64	62	61	58	64	66	67	64	67	[F/L/M]	67	[F/L/M]
Criterion				70	70	70	70	70	70	70	70	70	70	70	70	70
Max Noise Level, dB(A)				69	70	68	67	64	66	67	67	68	70	0	67	0
Compliance				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note:

Acoustic Window (Baffle Type) - With Sound Absorptive Material (SAM)

Acoustic Window (Baffle Type) - Without Sound Absorptive Material (SAM)

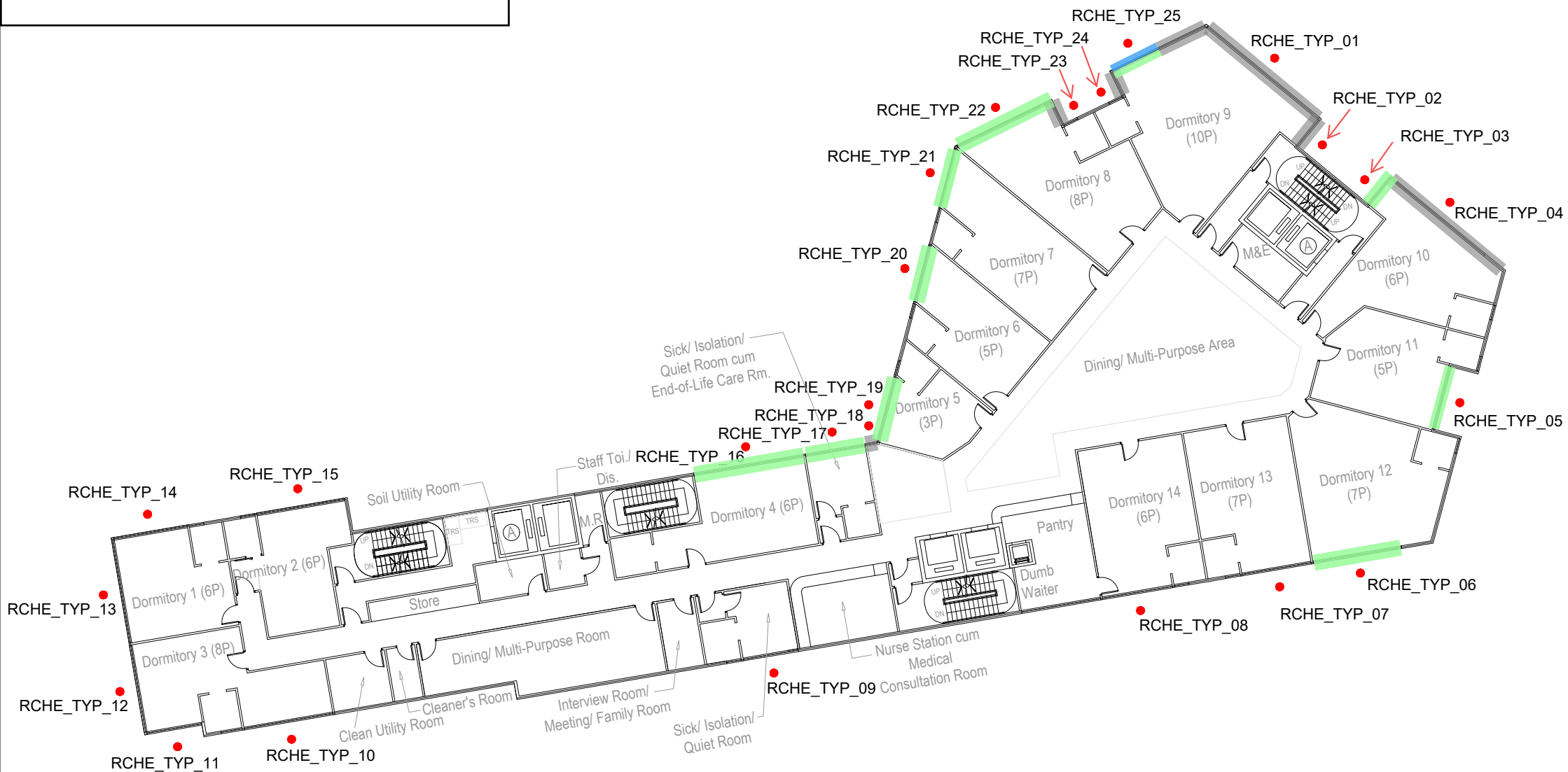
[F/L/M] Fixed/Lockable/Maintenance window

* Noise Assessment Point Level= Floor Slab Level +1.2m

Appendix H

LOCATION OF MITIGATION MEASURES IMPLEMENTED

Remark:
For the detail implementation floor of the mitigation
measures, please refer to **Appendix G**

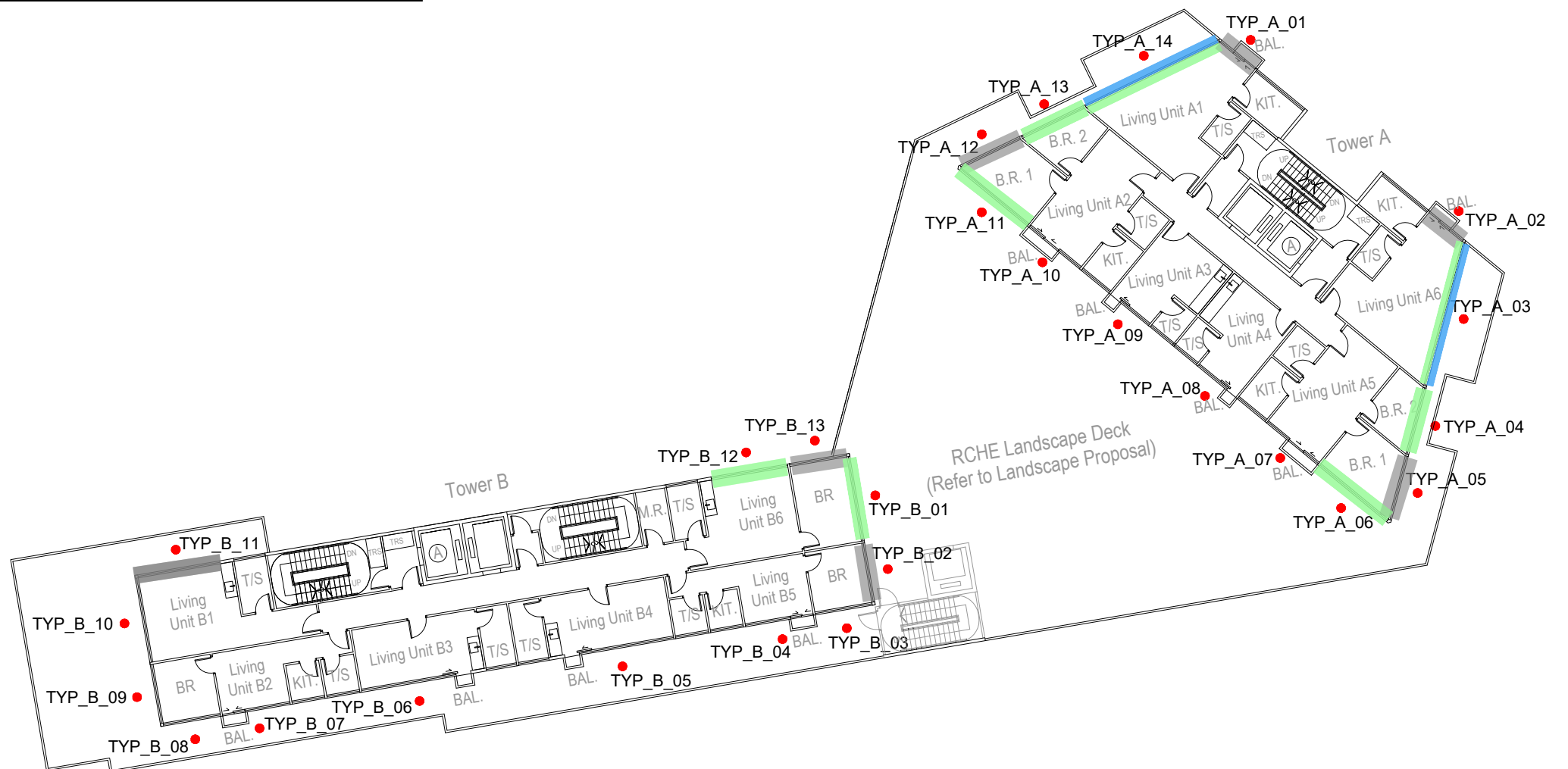


Note:

- Acoustic Window (Baffle Type) - With Sound Absorptive Material (SAM)
- Acoustic Window (Baffle Type) - Without Sound Absorptive Material (SAM)
- [F/L/M] Fixed/Lockable/Maintenance window
- / Non-noise sensitive uses/ Uses that do not rely on openable window for ventilation

* Noise Assessment Point Level= Floor Slab Level +1.2m

Remark:
For the detail implementation floor of the mitigation
measures, please refer to **Appendix G**



Note:

- Acoustic Window (Baffle Type) - With Sound Absorptive Material (SAM)
- Acoustic Window (Baffle Type) - Without Sound Absorptive Material (SAM)
- [F/L/M] Fixed/Lockable/Maintenance window
- / Non-noise sensitive uses/ Uses that do not rely on openable window for ventilation

* Noise Assessment Point Level= Floor Slab Level +1.2m

Appendix I HISTORICAL AERIAL PHOTOGRAPHS

Figure I-1 Aerial Photograph in Year 1963 (Photo No.: 1963-8414)

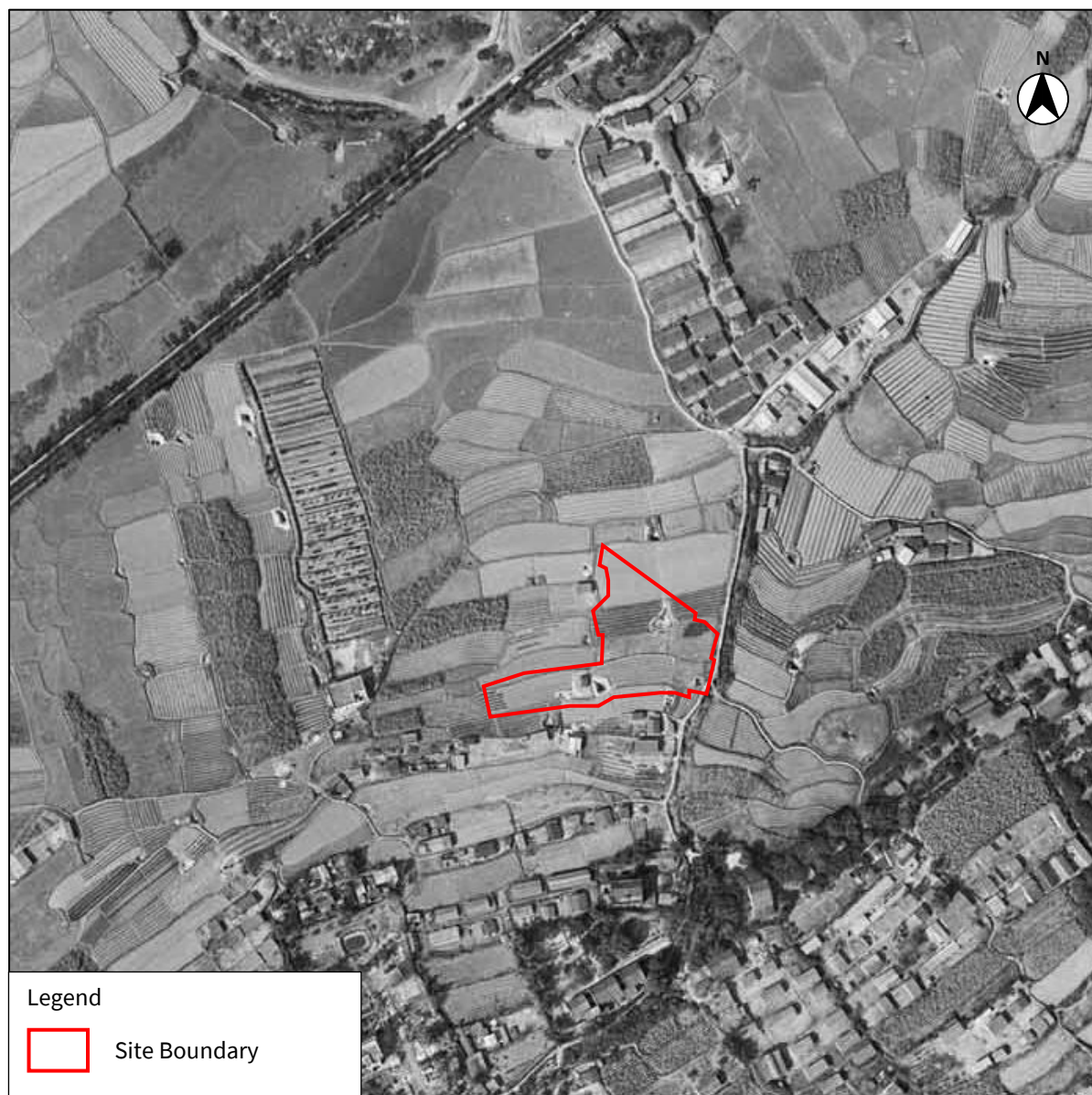


Figure I-2 Aerial Photograph in Year 1973 (Photo No.: 06054)

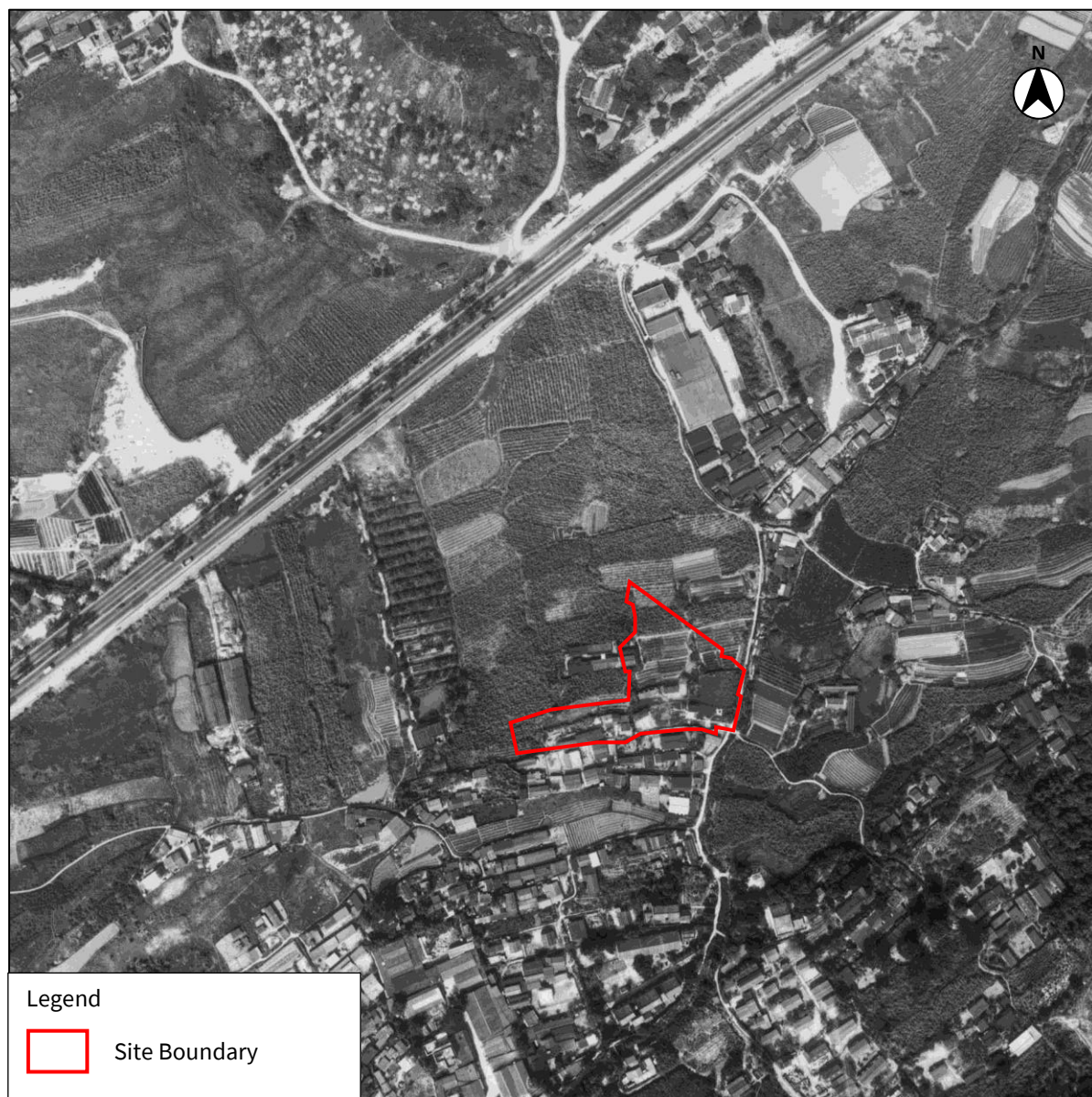


Figure I-3 Aerial Photograph in Year 1982 (Photo No.: 42801)

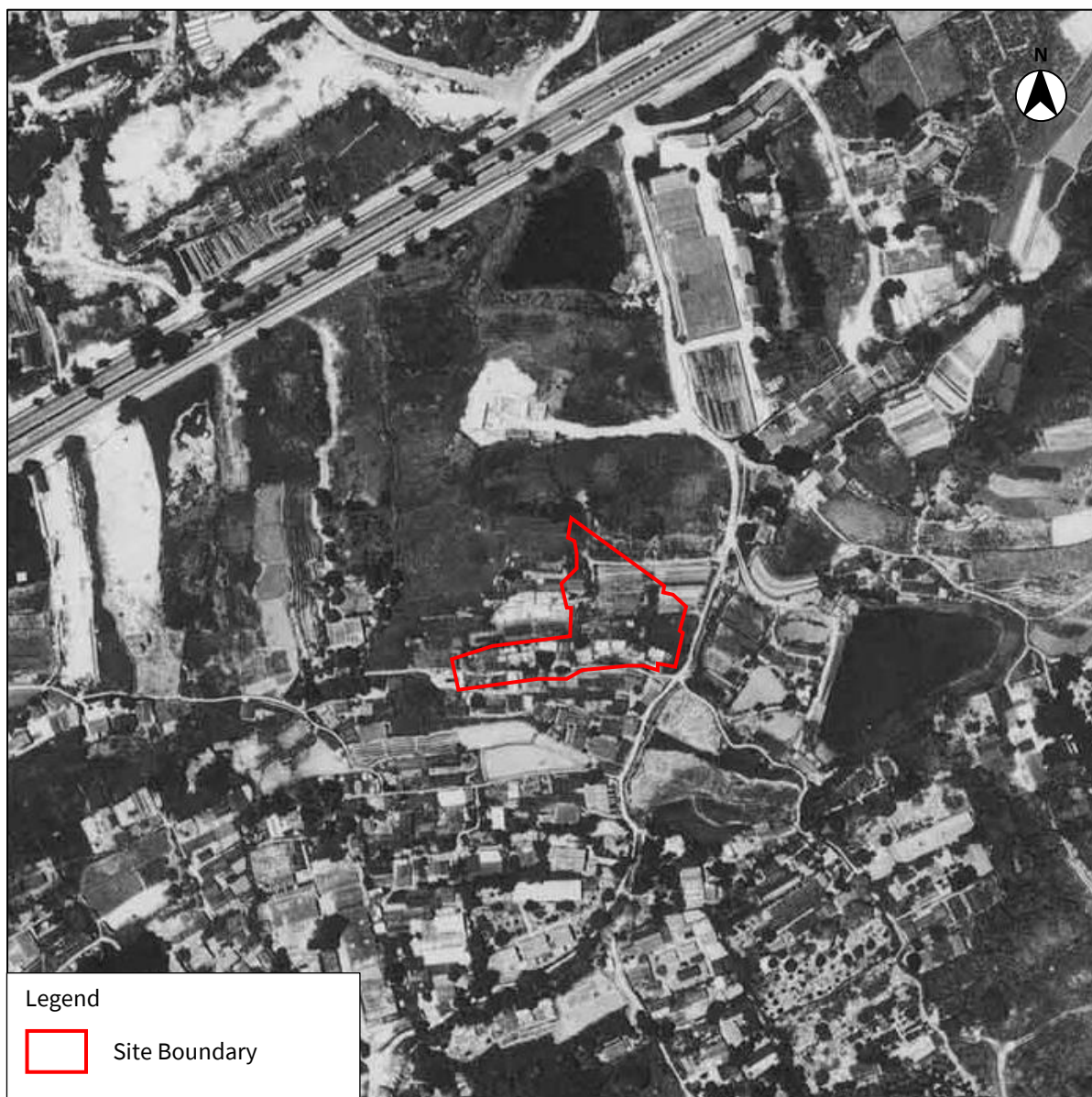


Figure I-4 Aerial Photograph in Year 1993 (Photo No.: CN05966)



Figure I-5 Aerial Photograph in Year 2003 (Photo No.: CW54027)



Figure I-6 Aerial Photograph in Year 2014 (Photo No.: CW107934)



Figure I-7 Aerial Photograph in Year 2022 (Photo No.: E148039C)



Appendix J

SITE SURVEY PHOTOGRAPHS AND SITE WALKOVER CHECKLISTS

Site Survey Photographs Taken on 9 January 2025



Site Walkover Checklist for Site Inspection on 09 January 2025

Annex C1

Site Walkover Checklist

GENERAL SITE DETAILS

SITE OWNER/CLIENT Right Fortune Investment Limited

PROPERTY ADDRESS Lots 2188 & 398 RP in D.D.121, Tai Tao Tsuen, Hung Shui Kiu, Yuen
Long, New Territories

PERSON CONDUCTING THE QUESTIONNAIRE

NAME Pinky LAM, Andy LAU

POSITION Consultant, Assistant Consultant

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME N/A

POSITION N/A

TELEPHONE N/A

SITE ACTIVITIES

Briefly describe activities carried out on site, including types of products/chemicals/materials handled.
Obtain a flow schematic if possible.

Number of employees: Full-time: _____

Part-time: _____

Temporary/Seasonal: _____

Maximum no. of people on site at any time: _____

Typical hours of operation: _____

Number of shifts: _____

Days per week: _____

Weeks per year: _____

Scheduled plant shut-down: _____

Detail the main sources of energy at the site:

Gas	Yes/No
Electricity	Yes/No
Coal	Yes/No
Oil	Yes/No
Other	Yes/No

SITE DESCRIPTION

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: about 2,200 m²

What area of the site is covered by buildings (%): 0 (no existing building structures on site)

Please list all current and previous owners/occupiers if possible. N/A

Is a site plan available? If yes, please attach. Yes/No

Are there any other parties on site as tenants or sub-tenants? Yes/No

If yes, identify those parties: _____

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Residential use, road networks

South: Residential use

East: Road networks

West: Residential use

Annex C1

Site Walkover Checklist

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.).

N/A

State the size and location of the nearest residential communities.

Private residential buildings (Uptown Houses at the immediate west and south of site.)

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or sites of special scientific interest?

N/A

Questionnaire with Existing/Previous Site Owner or Occupier

	Yes/No	Notes
1. What are the main activities/operations at the above address?	N/A	Currently vacant land
2. How long have you been occupying the site?	N/A	-
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	N/A	-
4. Prior to your occupancy, who occupied the site?	N/A	-
5. What were the main activities/operations during their occupancy?	Y	Open storage of containers and construction materials
6. Have there been any major changes in operations carried out at the site in the last 10 years?	N	-
7. Have any polluting activities been carried out in the vicinity of the site in the past?	N/A	-
8. To the best of your knowledge, has the site ever been used as a petrol filling station/car service garage?	N	-
9. Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	N	-
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	N	-
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	N	-
• Where do you store these chemicals?	N/A	-
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	N/A	-
13. Has the facility produced a separate hazardous substance inventory?	N/A	-
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details.)	N/A	-

	Yes/No	Notes
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	N/A	-
16. Do you have any underground storage tanks? (If yes, please provide details.)	N	-
• How many underground storage tanks do you have on site?		/
• What are the tanks constructed of?		
• What are the contents of these tanks?		
• Are the pipelines above or below ground?		
• If the pipelines are below ground, has any leak and integrity testing been performed?		
• Have there been any spills associated with these tanks?		
17. Are there any disused underground storage tanks?	N	-
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	N/A	-
19. How are the wastes disposed of?	N/A	-
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	N	-
21. Have any spills occurred on site? (If yes, please provide details.)	N/A	-
• When did the spill occur?		/
• What were the substances spilled?		
• What was the quantity of material spilled?		
• Did you notify the relevant departments of the spill?		
• What were the actions taken to clean up the spill?		
• What were the areas affected?		
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work/underground tanks (If yes, please provide details.)	N/A	-
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	N/A	-
24. Are there any known contaminations on site? (If yes, please provide details.)	N	-
25. Has the site ever been remediated? (If yes, please provide details.)	N	-

Annex C1

Site Walkover Checklist

Observations

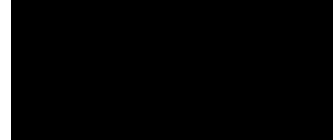
	Yes/No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	N/A	No chemicals were stored on site.
2. What are the conditions of the bund walls and floors?	N/A	The paved area was in good condition without cracks.
3. Are any surface water drains located near to drum storage and unloading areas?	N/A	No drum storage was found on site.
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	N/A	-
5. Is there a storage site for the wastes?	N/A	-
6. Is there an on-site landfill?	N/A	-
7. Were any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	N	-
8. Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	N	-
9. Are there any potential off-site sources of contamination?	N	-
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	N	-
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	N	-
12. Any noticeable odours during site walkover?	N	-
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	N	-

Appendix K **CORRESPONDENCE WITH EPD AND FSD**

Information Request to EPD



EnviroSolutions & Consulting Ltd
Solutions for Environment | Safety | Sustainability



Our Ref. J24.00706.HK.01/L00191/AW/PL

4 February 2025

Yuen Long West and San Tin - Regional Office (North)
Environmental Compliance Division
Environmental Protection Department
10th floor, Shatin Government Offices
No.1 Sheung Wo Che Road, Sha Tin
N.T., Hong Kong

By Email (hlai@epd.gov.hk)

Attention: Mr. LAI Ho Leung

Dear Sir

**Section 12A Planning Application for Proposed Residential and RCHE Development at Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories
Environmental Assessment - Information Request to EPD**

We have been appointed by Right Fortune Investment Limited as the Environmental Consultant to prepare an Environmental Assessment (“EA”) report for the captioned project. The location of the Site is shown in **Figure 1**. The contract for the consultancy service is also enclosed for your information.

To address the potential land contamination issue, we would appreciate if you could provide us with a list of records of Chemical Waste Producers Registration or incidents of chemical spillage/leakage, etc, related to the site if any, including the company name, type of chemical, location etc.

Should you have any enquiries regarding the above, please do not hesitate to contact our Pinky LAM on [REDACTED] or the undersigned on [REDACTED]

Yours faithfully
for and on behalf of ESC



Antony WONG
Country Manager, Hong Kong



EPD's Reply

From: hllai@epd.gov.hk
Sent: Friday, March 14, 2025 2:38 PM
To: Pinky Lam
Subject: Re: FW: J24.00706.HK.01 - Section 12A Planning Application for Proposed Residential and RCHE Development at Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories_Information Request to EPD

Dear Ms. Lam,

I refer to your email below about the captioned. Our reply is as below:-

(a) This Regional Office has no record of reported accidents of spillage / leakage of chemicals at the concerned site. You may also need to check with other parties / departments for such information as appropriate.

(b) For the register of Chemical Waste Producers, a registry is available at our Territory Control Office at Wan Chai. Please contact our Mr. KWAN, Senior Environmental Protection Inspector, at Tel : 2835 1027 for details;

Should you have any enquiry, you may contact me at 2158 5825.

Best Regards,
LAI Ho-leung, LEO
EPD, Tel :2158 5825

Best Regards,
LAI Ho-leung, LEO
EPD, Tel :2158 5825

From: "Pinky Lam" [REDACTED]
To: "hllai@epd.gov.hk" <hllai@epd.gov.hk>
Cc: "Antony" [REDACTED]
Date: 14/03/2025 12:17
Subject: FW: J24.00706.HK.01 - Section 12A Planning Application for Proposed Residential and RCHE Development at Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories_Information Request to EPD

Dear Mr. Lai,

As per our phone conversation, please find the email below regarding the information request for the captioned project.

Should you have any enquiries, please do not hesitate to contact me on [REDACTED] Thank you.

Regards,

Pinky LAM

Information Request to FSD



EnviroSolutions & Consulting Ltd
Solutions for Environment | Safety | Sustainability



Our Ref. J24.00706.HK.01/L00190/AW/PL

3 February 2025

Corporate Services Division
Corporate Strategy Command
Fire Services Department
9/F, Fire Services Headquarters Building
1 Hong Chong Road, Tsim Sha Tsui East
Kowloon, Hong Kong

By Email (ado_lad@hkfsd.gov.hk)

Attention: Mr. LAI Kin Man

Dear Sir

**Section 12A Planning Application for Proposed Residential and RCHE Development at Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories
Environmental Assessment - Information Request to FSD**

We have been appointed by Right Fortune Investment Limited as the Environmental Consultant to prepare an Environmental Assessment (“EA”) report for the captioned project. The location of the Site is shown in **Figure 1**. The contract for the consultancy service is also enclosed for your information.

To address the potential land contamination issue, we would appreciate if you could provide us with a list of records of dangerous goods license, fire incidents or incidents of dangerous goods spillage/leakage, etc, related to the site if any, including the company name, type of chemical, location etc.

Should you have any enquiries regarding the above, please do not hesitate to contact our Pinky LAM on [REDACTED] or the undersigned on [REDACTED]

Yours faithfully
for and on behalf of ESC



Antony WONG
Country Manager, Hong Kong



FSD's Reply

From: SSO SD LAD/FSD <sso_lad_sd@hkfsd.gov.hk>
Sent: Thursday, February 20, 2025 8:43 AM
To: Pinky Lam
Cc: ADO SD LAD/FSD; OE8 CS/FSD
Subject: FW: J24.00706.HK.01 - Section 12A Planning Application for Proposed Residential and RCHE Development at Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories_Information Request to FSD
Attachments: (23)_Pt.57_reply_incident_appendix A.pdf

Our reference: (23) in FSD GR 6-5/4 R Pt. 57

Your reference: J24.00706.HK.01/L00190/AW/PL

Dear Ms. LAM,

**Section 12A Planning Application for
Proposed Residential and RCHE Development at
Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories
Request for Information of Dangerous Goods & Incident Records**

I refer to your email of 3.2.2025 regarding the captioned request and reply below in response to your questions:-

1. No Dangerous Goods Licence was issued in respect of the captioned address.
2. A total of 1 incident record was found at the subject location. Please refer to Appendix A for details.

If you have further questions, please feel free to contact the undersigned.

Best regards,

FU Wang-chi
Assistant Divisional Officer (Legal Affairs and Discipline) Special Duty (Acting)
Corporate Services Division
Fire Services Department

Tel.: 2733 7896

Disclaimer:

Appendix A

Section 12A Planning Application for
Proposed Residential and RCHE Development at
Lots 2188 & 398 RP in D.D. 121, Hung Shui Kiu, New Territories
Request for Information of Dangerous Goods & Incident Records

No.	Date	Type of Incident	Address
1.	28/5/2023	Rubbish Fire	Near Lamp Post No. FB5411 of Fui Sha Wai Couth Road



EnviroSolutions & Consulting Ltd

Solutions for Environment | Safety | Sustainability



Accountability

We understand the importance of being accountable to each other and our clients.



Passion

We are completely passionate about providing practical solutions and outcomes that deliver for our clients.



Insight

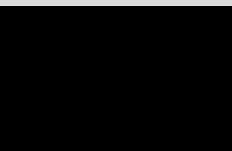
We work in an environment that encourages and values insight as a critical quality which informs our decisions and our clients and supports practical solutions and project delivery.



Integrity

We behave with respect and honesty toward each other, our clients and our stakeholders.

EnviroSolutions & Consulting Ltd



Email: 

Website: 