Appendix E –

Environmental Assessment

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GFA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND, TAI LAM CHUNG, TUEN MUN

ENVIRONMENTAL ASSESSMENT

Date	**May 2025**
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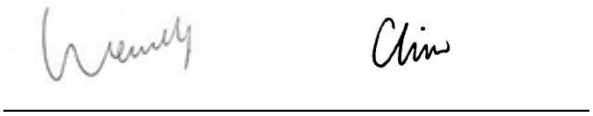
Signed	
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CHAPTERS

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APPENDICES

1. INTRODUCTION

1.1 Background

1.1.1 The Application Site mainly falls in the Comprehensive Development Area ("CDA") zone at various lots in D.D. 385 and adjoining government land at Tai Lam Chung according to the approved So Kwun Wat Outline Zoning Plan ("OZP") No. S/TM-SKW/15 gazetted under section 9(1)(a) of the Town Planning Ordinance. A previous application for the Application Site was approved in March 2002 (Planning Application No. A/TM-SKW/32).

1.1.2 The Application Site comprises four different portions, including (i) Private Residential Portion i.e. Development Site; (ii) Formation Sites for Village Housing; (iii) Reserved Site for Public Facilities including a public car park, a relocated public toilet, a public refuse collection point and a public open space/ children's playground; and (iv) Provision / Modification of Village Road, Pedestrian Access to Wong Uk Tsuen and Pedestrian Route to Burial Ground.

1.1.3 To support the current planning application which involves minor relaxation of gross floor area and building height restrictions, Ramboll Hong Kong Limited is commissioned by the Applicant to conduct the Environmental Assessment (EA).

1.1.4 This EA report will only focus on the proposed residential building blocks of the Development Site while the formation sites for village housings remain unchanged as in approved planning application.

1.2 Application Site and its Environs

1.2.1 The Application Site is located in Tai Lam Chung Valley to the south of Tai Lam Chung Tsuen and the east of Hong Kong Customs College. Two villages, Wu Uk Tsuen and Wong Uk Tsuen, are positioned to the southwest and east of the Application Site, respectively. **Figure 1.1** shows the location of the Application Site and its environs.

1.3 Development Site

1.3.1 The Development Site consist medium to high-rise building blocks and houses (7 residential towers from 6 to 23 storeys above 1 level of basement carpark and 17 houses) with associated clubhouse facilities. There are altogether 2,670 units. The maximum building height of proposed scheme is about 84.0mPD. The master layout plan and sections of the Development Site are shown in **Appendix 1.1**.

1.3.2 The tentative completion year of the Development Site is 2030.

1.4 Concurrent Project

1.4.1 Concurrent projects in the vicinity of the Project are identified. The implementation of individual project would be subject to further development and subsequent actions of the respective project proponent.

Route 11 (Section between Yuen Long and North Lantau)

1.4.2 Route 11 would be a strategic highway to provide the third vehicular access to Lantau in addition to the existing Lantau Link (LL) and the Tuen Mun-Chek Lap Kok Link (TM-CLKL). The location of Route 11 is shown in **Figure 1.2**. The construction phase of the Route 11 near Tai Lam Chung, including construction of explosive magazines, tunnels, viaducts, interchanges and ventilation buildings, will be tentatively commenced in 2026 Q1 and completed in 2033 Q4 which has an overlap of the construction period. The potential cumulative impacts during its construction and operational phases were evaluated in the EIA report.

Developments of Tuen Mun East and Adjacent Green Belt Cluster

1.4.3 The land use planning for potential sites in Tuen Mun East is still under planning during the preparation of this EA report. No details of the development are available.

1.5 Environmental Appraisal of the Development Site

Noise - Road Traffic Noise

1.5.1 The nearby carriageways such as Tai Lam Chung Road, Luen Hong Lane and some village roads may impose potential road traffic noise impact on the Development Site. Practical noise mitigation measures would be recommended where required. The details will be discussed in **Section 2**.

Noise - Industrial Noise

1.5.2 According to site survey, fixed noise sources are identified within 300m of the Development Site. Therefore, an industrial noise impact assessment has been conducted (refer to **Section 3**).

Air Quality

1.5.3 According to site survey conducted in June 2024, no chimney or industrial activity is identified within 200m of the Development Site.

1.5.4 With respect to the potential vehicular emission impact, a qualitative air quality impact assessment has been conducted (refer to **Section 4**) to recommend the necessary air buffer distance from the nearest road to the Development Site according to HKPSG.

1.5.5 During the construction phase, the potential air quality impacts would be mainly caused by the air emissions generated during construction activities. A qualitative air quality impact assessment for construction phase is prepared and will be discussed in **Section 4**.

1.5.6 Furthermore, two on-site Sewerage Treatment Plants (STPs) will be provided in the Development Site, the potential odour impacts arising from the STPs should be addressed in **Section 4**.

Water Quality

1.5.7 For the construction and operation phase, potential water quality impact arising from the Application Site on the Water Sensitive Receiver in the vicinity (i.e. 500m) of the site boundary of Application Site will be discussed in **Section 5**. Practical mitigation measures should be recommended, where necessary, to reduce the potential water quality impacts in order to control the residual impacts to acceptable levels.

Waste Management

1.5.8 Potential waste management issues in connection with construction and operation of the Project will be discussed in **Section 6**. It also recommends mitigation measures to alleviate impacts, where necessary.

Hazard Review of Potentially Hazardous Installations in the vicinity

1.5.9 A review has been conducted to identify any Potentially Hazardous Installations (PHIs) in the vicinity and whether their Consultation Zones (CZs) would overlap with the Project. The details will be discussed in **Section 7**.

2. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

2.1.1 This section is prepared to address road traffic noise impact on the noise sensitive uses of the Development Site and to recommend mitigation measures where practicable to attenuate the impact.

2.2 Assessment Criteria

2.2.1 Noise standards are recommended in the HKPSG for planning against possible noise impact from road traffic.

2.2.2 The Development Site includes domestic dwellings and clubhouse. Clubhouse will be provided with centralized air conditioning system with proper insulation and will not rely on openable window for ventilation. Domestic dwellings will rely on openable window for ventilation. According to the guidelines, the maximum noise level from road traffic, measured in terms of L_{10} (1-hr), is recommended to be 70 dB(A) at typical facades of new dwellings.

2.3 Assessment Methodology

2.3.1 The methodology involves the prediction of future noise impacts on Noise Sensitive Receivers (NSRs) arising from traffic flows on existing and future road carriageways in the vicinity of the Development Site.

2.3.2 The U.K. Department of Transport's procedure "Calculation of Road Traffic Noise" was applied to predict the hourly L_{10} noise level generated from road traffic at selected representative facades (NSRs) of the Development Site. The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact.

2.3.3 Based on the tentative completion year of the development (Year 2030), traffic forecast for the Year 2045 on the road carriageways in the vicinity of the Development Site, which has the maximum traffic projection within 15 years from the completion of the Development Site, was provided by AECOM (the project traffic consultant) for prediction of the worst-case traffic noise impact. The projected traffic flows and vehicle composition of the road carriageways provided by the project traffic consultant are shown in **Appendix 2.1.**

2.3.4 Reply from Transport Department (TD) on the methodology adopted for the traffic forecast and the confirmation letter from traffic consultant on the validity of the traffic data will be provided when available.

2.3.5 As shown in **Appendix 2.1**, it is noted that the AM peak has a higher traffic flow and % of heavy vehicle of all roads within 300m assessment area except road L6, L7 and L8 with little traffic volume difference. Therefore, only AM peak traffic flow and its % heavy vehicle is assessed in road traffic noise impact assessment.

2.4 Road Characteristics

2.4.1 In this assessment, all roads are assumed as impervious surface with a speed limit of 50km/hr. The information on traffic volume and percentage of heavy vehicle using these roads is shown in **Appendix 2.1**.

2.5 Noise Sensitive Receivers

2.5.1 Residential dwellings with openable windows/ doors for prescribed ventilation purposed, are selected as noise sensitive receivers (NSRs). The assessment points of NSRs are taken 1.2m above the floors and 1m away from the facades of openable

windows (which would be used for ventilation purpose). Locations of planned NSRs for the road traffic noise impact assessment are shown in **Figure 2.1**.

2.6 Assessment Results under Base-case Scenario

2.6.1 The predicted road traffic noise impacts on the planned NSRs for the Base-case Scenario were assessed. The predicted noise levels for the Development Site is summarised in **Table 2.1** and shown in **Appendix 2.2**. The assessment results indicated that the predicted noise levels at all NSRs comply with the noise criteria as stipulated in Table 4.1 of the Chapter 9 of the HKPSG road traffic noise standards (i.e. 70dB(A)). The future residents would not be subject to any adverse road traffic noise impact.

Table 2.1 Predicted Road Traffic Noise Assessment Result – Base-case Scenario

Total Number of Exceedances	0
Predicted Maximum Noise Level, dB(A)	65
% of Compliance	100

3. INDUSTRIAL NOISE IMPACT ASSESSMENT

3.1 Introduction

3.1.1 The aim of this study is to assess potential noise impacts on the Proposed Development arising from the existing fixed noise sources. Practicable noise mitigation measures would be recommended when necessary.

3.2 Assessment Criteria

3.2.1 In accordance with the Hong Kong Planning Standards and Guidelines (HKPSG), and reference has been made to the "Technical Memorandum For The Assessment Of Noise From Places Other Than Domestic Premises, Public Places Or Construction Sites" (IND-TM) issued under the NCO, the airborne noise shall comply with theAcceptable Noise Level (ANL), which depends on the Area Sensitive Rating (ASR).

3.2.2 According to the IND-TM, four (4) types of areas are defined and including: Rural Area, Low Density Residential Area, Urban Area and Area Other Than Those Above. The Application Site is located in Tai Lam Chung, Tuen Mun area and village houses were observed. No Influencing Factor (IF) is situated within 300m of the Application Site. Therefore, the NSRs of the Proposed Development are identified as "Area Other Than Those Above" and assigned with an ASR of "B". The corresponding Acceptable Noise Levels (ANLs), in Leq (30min)dB(A), during day & evening-time and night-time periods are shown in **Table 3.1**.

Table 3.1 Acceptable Noise Level (ANL), dB(A)

Area Sensitivity Rating (ASR) In Relevant Time Periods	Acceptable Noise Level (ANL), Leq(30mins) dB(A)
	ASR B
Day (0700 to 1900 hours)	65
Evening (1900 to 2300 hours)	
Night (2300 to 0700 hours)	55

3.3 Identification of Fixed Noise Sources

Site Inspection

3.3.1 Desktop studies and several stie visits have been conducted to identify the potential fixed noise sources within 300m assessment area. According to the observation during site visits, 9 potential fixed noise sources are identified and discussed in **Table 3.2**. Their locations and photo records are shown in **Figure 3.1**.

Table 3.2 Potential Fixed Noise Source

Potential Fixed Noise Sources	Description
S1 – Car Garage 克仔車房	An open parking area with repairing workshops are observed during the site visits. The measured noise level for S1 is 51.0 dB(A) with about 11m from the repairing activities while the background noise for S1 is 60dB(A) due to the aircraft noise. No noticeable noise from the S1 is observed.

	In view of the small scale of repairing workshop, the fixed noise caused by repairing activities are minimal.
S2 - Car Garage 金龍汽車	An open parking area with repairing workshops are observed during the site visits. The measured noise level for S2 is 50.7 dB(A) with about 18m from the repairing activities while the background noise for S2 is 58.5dB(A) due to the aircraft noise. No noticeable noise from the S2 is observed. In view of the small scale of repairing workshop, the fixed noise caused by repairing activities are minimal.
S3 – Warehouse 家雄物流有限公司	The warehouse used as open storage. No loading and unloading activities are observed. The access to the open storage area is denied.
S4 – Open Storage Area near Luen Tai Street	The access to the open storage area is denied. Containers are observed outside the open storage area. No loading and unloading activities are observed.
S5 – Open Space Carpark	An open parking area with no repairing activities nor repairing workshop are found during site visit.
S6 – Wai Lan Rehabilitation Centre	Based on the desktop review and site survey, it is confirmed that no fixed noise sources were identified.
S7 – Tai Lam Chung Fire Station	The PA system at Tai Lam Chung Fire Station was used as emergency need. Therefore, it is not identified as fixed noise source. The reply from Fire Services Department is shown in **Appendix 3.2**.
S8 – Tai Lam Chung C&E School Substation	The measured noise level for S9 is 52.3 dB(A) with about 5m from the substation while the background noise for S9 is 53dB(A) due to the noise from road traffic. Therefore, the fixed noise due to Tai Lam Chung C&E School Substation is not expected.
S9 – Firing Range at Hong Kong Customs College	Noise survey is rejected by Hong Kong Customs College. The reply from Hong Kong Customs College is shown in **Appendix 3.2**. Based on the desktop review and site survey, the firing range is enclosed and no noticeable noise is observed.

3.3.2 As discussed in **Table 3.2**, it is anticipated that fixed noise impact is minimal and hence the future residents would not be subject to adverse fixed noise impact.

3.3.3 The fixed noise sources within the Application Site (e.g. ventilation system, the exhaust and the control of emission of oily fume and cooling odour of the commercial use of the Proposed Development may have potential fixed noise impact on the NSRs of the Proposed Development or the surrounding NSRs. The design of these future noise sources should follow the requirements of the HKPSG such that the NCO should be met so that the surrounding NSRs would not be subject to adverse noise impact. Mitigation measures (such as enclosure and acoustic louvre) may be required to be considered during the detailed design.

4. QUALITATIVE AIR QUALITY IMPACT ASSESSMENT

4.1 Introduction

4.1.1 This section examines the potential air quality and odour impacts that could arise from the construction phase and operation phase of the Proposed Development.

4.2 Relevant Legislations, Standards and Guidelines

4.2.1 The following legislation and regulations provide the standards and guidelines for evaluation of air quality and odour impacts and the type of works that are subject to air pollution and odour control:

- Air Pollution Control Ordinance (APCO) (Cap. 311) and the Air Quality Objectives (AQO)
- Air Pollution Control (Construction Dust) Regulation
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation
- Air Pollution Control (Fuel Restriction) Regulation
- Recommended Pollution Control Clauses for Construction Contracts
- Development Bureau Technical Circular (Works) No.13/2020, Timely Application of Temporary Electricity and Water Supply for Public Works Contracts and Wider Use of Electric Vehicles in Public Works Contracts (DEVB TC No. 13/2020)
- Development Bureau Technical Circular (Works) No.1/2015, Emissions Control of NRMM in Capital Works Contracts of Public Work (DEVB TC No. 1/2015)
- Control of Air Pollution in Car Parks (ProPECC PN 2/96)
- Hong Kong Planning Standards and Guidelines (HKPSG)
- Criteria for Evaluating Air Quality Impact and Hazard to Life (Annex 4 of the EIAO-TM)
- Guidelines for the Design of Small Sewage Treatment Plants
- Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places
- Control of Oily Fume and Cooking Odour from Restaurants and Food Business
- Practice Note for Control of Air Pollution in Semi-Confined Public Transport Interchanges (ProPECC PN1/22)

Air Pollution Control Ordinance (CAP 311)

4.2.2 To achieve as soon as reasonably practicable and to maintain thereafter to safeguard the health of the community, a set of Air Quality Objectives (AQOs) is established under the Air Pollution Control Ordinance (Cap. 311). The current set of AQOs that came into effect on 1 January 2022 is presented in **Table 4.1**.

Table 4.1 Current Hong Kong Air Quality Objectives

Pollutants	Average Time	Standard [i] (μg/m³)	No. of exceedances allowed
SO_2	10-min	500	3
	24-Hour	50	3
RSP (PM_{10}) [ii]	24-Hour	100	9
	Annual	50	NA
FSP ($PM_{2.5}$) [iii]	24-Hour	50	35
	Annual	25	NA
NO_2	1-Hour	200	18
	Annual	40	NA
Ozone (O_3)	8-Hour	160	9
Carbon Monoxide (CO)	1-Hour	30,000	0
	8-Hour	10,000	0
Lead (Pb)	Annual	0.5	NA

Notes:

[i] All measurements of the concentration of gaseous air pollutants, i.e. sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.

[ii] Respirable suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 10 μm or less.

[iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5 μm or less.

4.2.3 It shall be noted that the Air Pollution Control (Amendment) Bill 2024 (Amendment Ordinance) for tightening five AQOs (namely 24-hour AQO for SO_2, annual and 24-hour AQOs for RSP and annual and 24-hour AQOs for FSP) and adding three new objectives for 24-hour NO_2, peak season of O_3 and 24-hour CO have been published in the gazette on 15 November 2024. The new AQOs will be effective on 11 April 2025. The new AQOs is summarised in **Table 4.2** below. Considering the programme of this project, the new AQOs will be adopted for the air quality impact assessment.

Table 4.2 New Hong Kong Air Quality Objectives (AQOs)

Pollutants	Average Time	Standard [i] (μg/m3)	No. of exceedances allowed
SO_2	10-min	500	3
	24-Hour	40	3
RSP (PM_{10}) [ii]	24-Hour	75	9
	Annual	30	NA
FSP ($PM_{2.5}$) [iii]	24-Hour	37.5	18
	Annual	15	NA
NO_2	1-Hour	200	18
	24-Hour	120	9
	Annual	40	NA
Ozone (O_3)	8-Hour	160	9
	Peak Season	100	NA
Carbon Monoxide (CO)	1-Hour	30,000	0
	8-Hour	10,000	0
	24-Hour	4,000	0
Lead (Pb)	Annual	0.5	NA

Notes:
[i] All measurements of the concentration of gaseous air pollutants, i.e. sulphur dioxide, nitrogen dioxide, ozone and carbon monoxide, are to be adjusted to a reference temperature of 293 Kelvin and a reference pressure of 101.325 kilopascal.
[ii] Respirable suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 10 μm or less.
[iii] Fine suspended particulates mean suspended particles in air with a nominal aerodynamic diameter of 2.5 μm or less.
[iv] Shaded cell in orange denotes the proposed new AQOs.

Air Pollution Control (Construction Dust) Regulation

4.2.4 Made under Section 43 of the APCO, this Regulation defines notifiable and regulatory works for achieving the purpose of dust control for a number of activities. The Regulation requires that any notifiable work shall give advance notice to EPD, and the Contractors shall ensure that the notifiable and regulatory works are carried out in accordance with the Schedule of the Regulation. Dust control and suppression measures are also provided in the Schedule.

4.2.5 The proposed construction works for the proposed Project are both regulatory and notifiable works due to activities including material stockpiling and dusty material handling as potential sources of fugitive dust emissions as detailed under Parts I to IV of the Schedule on Dust Control Requirements.

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

4.2.6 The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, which aims to control emissions from non-road mobile machinery (NRMMs) to improve air quality, became effective on 1 June 2015. NRMMs include non-road vehicles, as well as mobile machines and equipment (regulated machines) such as crawler cranes, excavators and air compressors.

4.2.7 Under the regulation, regulated machines have to comply with the Stage IIIA emission standards of the European Union (EU). It also requires all regulated machines sold or leased for use in Hong Kong to bear an approval or exemption label issued to them by the EPD, started from 1 September 2015. It restricts specified activities and locations including construction sites, designed waste disposal facilities and specified processes to use only NRMMs that bear an approval or exemption label issued to them by the EPD, with effect from 1 December 2015.

Air Pollution Control (Fuel Restriction) Regulation

4.2.8 The Air Pollution Control (Fuel Restriction) Regulation was enacted in 1990 to impose legal control on the type of fuels allowed for use and their sulphur contents in commercial and industrial processes to reduce sulphur dioxide (SO2) emissions. In June 2008, the Regulation was amended to tighten the control requirements of liquid fuels.

Practice Note on Control of Air Pollution in Car Parks

4.2.9 This practice notes include air quality guidelines required for the protection of public health and factors that should be considered in the design and operation of car parks in order to achieve the required air quality. The limits for air pollutants as recommended by the practice notes are summarised in **Table 4.3**.

Table 4.3 Limits of Air Pollutant Concentrations Inside Car Parks

Air Pollutant	Average Time	Maximum Concentration (µg/m3) [i]	Parts Per Million (ppm)
Carbon Monoxide (CO)	5 minutes	115,000	100
Nitrogen Dioxide (NO_2)	5 minutes	1,800	1

Notes:

*[i] *All limits are expressed as at reference conditions of 298K and 101.325kPa.*

Hong Kong Planning Standards and Guidelines (HKPSG)

4.2.10 Potential air quality impacts associated with the surrounding road carriageways and chimney emission from industrial stack shall be evaluated in accordance with the guidelines set out in the HKPSG.

4.2.11 Table 3.1 of Chapter 9 of the HKPSG provides the broad guidelines for locating open spaces close to potentially polluting uses, viz. road traffic. The recommended buffer distances are reproduced in **Table 4.4**.

Table 4.4 Recommended Minimum Buffer Distance from Roads

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Road and Highways	Type of Road		
	Trunk Road and Primary Distributor	> 20 m	Active and passive recreation uses
		3 – 20 m	Passive recreational uses
		< 3 m	Amenity areas
	District Distributor	> 10 m	Active and passive recreational uses
		< 10 m	Passive recreational uses
	Local Distributor	> 5 m	Active and passive recreational uses
		< 5 m	Passive recreational uses
	Under Flyovers	-	Passive recreational uses

Source:HKPSG Chapter 9 Table 3.1: Guidelines on Usage of Open Space Site

4.2.12 Table 3.1 of Chapter 9 of the HKPSG also provides the broad guidelines for locating open spaces close to potentially polluting uses, viz. industrial chimneys emissions. The recommended buffer distances are reproduced in **Table 4.5**.

Table 4.5 Recommended Minimum Buffer Distance from Industrial Chimneys

Pollution Source	Parameter	Buffer Distance	Permitted Uses
Industrial Areas	Difference in Height between Industrial Chimney Exit and the Site		
	< 20 m	> 200 m	Active and passive recreation uses
		5 – 200 m	Passive recreational uses
	20 m – 30 m (*)	> 100 m	Active and passive recreational uses
		5 – 100 m	Passive recreational uses
	30 m – 40 m	> 50 m	Active and passive recreational uses
		5 – 50 m	Passive recreational uses
	> 40 m	10 m	Active & Passive recreational uses

Notes:

(i) In situations where the height of chimneys is not known, use the set of guidelines marked with an asterisk for preliminary planning purpose and refine as and when more information is available.

(ii) The buffer distance is the horizontal, shortest distance from the boundary of the industrial lot, the position of existing chimneys or the edge of road kerb, to the boundary of open space sites.

(iii) The guidelines are generally applicable to major industrial areas but NOT individual large industrial establishment which are likely to be significant air pollution sources. Consult EPD when planning open spaces close to such establishments.

(iv) Amenity areas are permitted in any situation.

Source:HKPSG Chapter 9 Table 3.1: Guidelines on Usage of Open Space Site

Criteria for Evaluating Air Quality Impact and Hazard to Life (Annex 4 of the EIAO-TM)

4.2.13 Annex 4 stipulates the criteria for evaluating air quality impacts. This includes meeting the Air Quality Objectives and other standards established under the Air Pollution Control Ordinance, as well as meeting the hourly Total Suspended Particulate concentration of 500 μg/m3 and the 5-second average odour concentration of 5 odour units (ou).

Guidelines for the Design of Small Sewage Treatment Plants

4.2.14 The guideline serves as the design reference of the sewage treatment plants for a private development up to 2,000 population.

Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places

4.2.15 The guideline provides measures to minimise nuisance caused by the burning of joss paper It also provides the guideline on design, building or installing the joss paper furnaces and air pollution control equipment.

Control of Oily Fume and Cooking Odour from Restaurants and Food Business

4.2.16 This note provides guidance to the owners and operator of restaurants and food business on the application of the best practical control measures to minimize the air emissions and preventing air pollution.

Practice Note for Control of Air Pollution in Semi-Confined Public Transport Interchanges (ProPECC PN1/22)

4.2.17 This Practice Note sets out the air quality guidelines inside PTIs and outlines the major considerations and guidance for the design and management of PTIs to ensure proper

design, operation and maintenance of mechanical ventilation systems in semi-confimed PTIs to minimize the air emissions.

4.3 Existing Air Quality in Tuen Mun District

4.3.1 The nearest air quality monitoring station (AQMS) to the Subject Site is the Tuen Mun AQMS. The five most recent years of air quality monitoring data, 2019 to 2023, from this station are summarized in **Table 4.6**. According to the AQMS monitoring data presented in **Table 4.6**, exceedance in annual average NO_2 and O_3 concentration are recorded.

Table 4.6 Air Quality Monitoring Data at Tuen Mun AQMS

Air Pollutant	Averaging Time	AQO[a] [b]	Concentration Level (μg/m³)				
			2019	2020	2021	2022	2023
RSP	10th Highest 24-hour	100 (9)	89	84	87	65	76
	Annual	50	41	34	36	32	34
FSP	36th Highest 24-hour	50 (35)	42	35	35	33	33
	Annual	25	24	20	19	18	19
NO_2	19th Highest hour	200 (18)	166	166	172	128	160
	Annual	40	**47**	40	**44**	39	40
SO_2	4th Highest 10-Min	500 (3)	45	98	22	29	23
	4th Highest 24-hour	50 (3)	12	10	9	11	7
O_3	10th Highest 8-hour	160 (9)	**203**	**166**	**161**	**195**	155
CO	1st Highest hour	30000 (0)	2050	1650	1720	1480	1370
	1st Highest 8-hour	10000 (0)	1758	1513	1450	1345	1143

Notes:
a. The measured concentrations are benchmarked against the prevailing AQOs.
b. Numbers in brackets is the number of exceedances allowed per year.
c. Bolded values exceed the relevant AQO.
d. Data extracted from EPD's Smart Air Modelling Platform (SAMP)

4.3.2 Apart from the air quality monitoring data, EPD has released a set of background levels from "Pollutants in the Atmosphere and their Transport over Hong Kong", PATH model (PATHv3.0). As the tentative completion year of the Proposed Development is 2030, the PATH background concentrations in Year 2030 has been reviewed. The hourly background concentrations of pollutants of the year of 2030 in Grid 25, 38 is summarized in **Table 4.7**. With respect to the future background air quality predicted by PATH v3.0 in **Table 3.5**, all values are below the relevant AQOs except O_3.

Table 4.7 Year 2030 Background Annual Average Concentrations of the Air Pollutants from PATH v3.0

Pollutant	Averaging Time	AQO	Data Summary	Concentration Level (µg/m³)[(b)]
				Grid 25,38
RSP	24-hour	100 (9)	10th	51
			Exceedance	0
	Annual	50	-	19
FSP	24-hour	50 (35)	36th	25
			Exceedance	0
	Annual	25	-	12
NO_2	1-hour	200 (18)	19th	95
			Exceedance	0
	Annual	40	-	25
SO_2	10-Min	500 (3)	4th	29
			Exceedance	0
	24-hour	50 (3)	4th	7
			Exceedance	0
O_3	8-Hour	160 (9)	10th	**174**
			Exceedance	17
CO	1-Hour	30000 (0)	1st	516
			Exceedance	0
	8-Hour	10000 (0)	1st	487
			Exceedance	0

(a) Bolded values exceed the relevant AQO
(b) Data extracted from EPD's Smart Air Modelling Platform (SAMP)

4.4 Potential Impacts of Development Site – Operation Phase

Review on Industrial Emission

4.4.1 The assessment area of 200m from the Development Site is shown in **Figure 4.1**. On site survey was conducted in June 2024 to verify the presence of chimneys. There were no chimney or industrial activities identified within 200m from the Development Site. As such, it is anticipated that the Development Site would not be subject to unacceptable industrial emission impact.

Review on Vehicular Emission

4.4.2 The Development Site is mainly bounded by the village roads to the south and northwest, and Proposed Access Road to the west. The road classification of the nearby road network provided by project traffic consultant is shown in **Appendix 4.1**.

4.4.3 As presented in **Appendix 4.1**, some village roads nearby the Development Site are classified as "Feeder Road". It is noted that no specific buffer distance for "Feeder Road" is recommended in the HKPSG. According to the Transport Planning & Design Manual published by TD, "Feeder Road" defines the road connecting villages or more remote settlements to Rural Roads. **Appendix 2.1** also shows the traffic flow of these village roads (i.e. Road L2, L4, L6, L7 and L8) which only contain 10 to 38 vehicles in peak hour. In views of the road classification and extremely low traffic flow of these village roads and 5m buffer distance recommended, the impact of vehicular emission is minor.

4.4.4 There is a Proposed Access Road within the Development Site which classified as "Rural Road" as shown in **Appendix 4.1**. As advised by the Project Architect, some portions of the Proposed Access Road are EVA and hence no buffer distance shall be applied. As the Proposed Assess Road is connecting to the village roads with low traffic flow, it is classified as "Local Distributor" and 5m buffer distance is recommended for the non-EVA portions of the Proposed Access Road. For Luen Hong Lane and Tai Lam Chung Road which are classified as "Feeder Road" with traffic flow of 322 to 730 vehicles in peak hour under the Transport Planning and Design Manual (TPDM) prepared by Transport Department. To be conservative, they are deduced as "Local Distributor" which are under Urban Road Types in the TPDM and 5m buffer distance is recommended. For Castle Peak Road, 10m buffer distance is adopted for a conservative approach.

4.4.5 In accordance with Table 3.1 as stipulated in the HKPSG, the minimum buffer distance required between roads and open spaces are followed. **Figure 4.2** shows the buffer distance from the nearest kerb side of concerned roads to the Development Site. As shown in **Figure 4.2**, a small northwestern portion of T1 and some southeast portion of T3 of the Development Site would fall within the above-mentioned 5m buffer zone. There will be no air sensitive uses including openable window, fresh air intake of mechanical ventilation nor open space for outdoor recreational activities, such as outdoor swimming pool, outdoor fitness zone, landscape garden, outdoor family deck, outdoor terrace, and children play area within the buffer zones. Therefore, the Development Site satisfies the minimum buffer distance requirement and no adverse vehicular emissions impact is anticipated, subject to no air sensitive uses shall be located within the buffer zones. Since no air sensitive uses shall be located within the buffer zones, the future residents and occupants of Development Site will not be subjected to insurmountable vehicular emission impact.

4.4.6 As shown in **Figure 1.2**, Route 11 is within the 500m assessment area from the Development Site Boundary. With reference to the Figures 3.6b, 3.7b, 3.8b, 3.9b, 3.10b and 3.11b from the EIA report of Route 11 (Section between Yuen Long and North Lantau) – Investigation (AEIAR-255/2023), there are no exceedance on the concentration of cumulative 19th highest 1-hour NO2 , annual NO2, 10th highest 24-hour RSP, annual RSP, 19th highest 24-hour FSP and annual FSP around our Development Site. Hence, the air quality impact from the Route 11 is not expected.

4.5 Review on Impact from Proposed Carpark

4.5.1 Basement carpark has been proposed for the Development Site. As advised by Project Traffic Consultant, it is predicted that there will not be more than 457 parking spaces with 10 loading and unloading parking spaces. The air quality inside the basement carpark shall satisfy the air pollutant standards as recommended by the ProPECC PN 2/96 Control of Air Pollution in Car Parks. Therefore, the mechanical ventilation system and layout the basement carpark shall be properly designed. Furthermore, the exhaust outlet of the mechanical ventilation system of the basement carpark shall also be designed by facing away from the air sensitive uses to ensure not to cause a nuisance to the occupants/ residents of the air sensitive uses including the surrounding developments and the Development Site. As the Project is still under initial design stage, the location of the exhaust outlet of the mechanical ventilation system is not available yet. Impact from proposed carpark shall be reviewed again during the later stage to ensure no adverse air quality impact to the nearby air sensitive uses.

4.6 Review on Potential Odour Impact from Proposed On-site Sewage Treatment Plants

4.6.1 Sewage generated by the Development Site is proposed to be handled by two on-site sewage treatment plants (STPs) with design capacity of 881 m^3/day and 1,408 m^3/day. The design of STPS will refer to EPD's "Guidelines for the Design of Small Sewage Treatment Plants". The proposed STPs are a fully enclosed facility located underneath Tower 1 and Tower 5. The location of the proposed STPs is shown in **Appendix 4.2**. At this planning application stage, no information is available for the location of exhaust of the proposed STPs and it will be further reviewed during the detailed design stage. Nevertheless, the exhaust of the proposed STPs would be designed by facing away from the air sensitive uses to ensure not causing a nuisance to the occupants/ residents of the air sensitive uses including the surrounding developments and the Development Site. The potential locations of the exhausts of the proposed STPs and its distance to the ASRs are shown in Figure 4.3 Potential Locations of the exhausts of the STPs is shown in **Figure 4.3**.

4.6.2 In order to minimize the potential odour nuisance, the mechanical ventilation system of the STPs will be connected to an odour removal system. The mechanical ventilation system would extract the potentially odorous air within the STPs to the odour removal system during the operation of the STPs. The odour removal system can achieve removal efficiency of 99.5% (see **Appendix 4.3** for reference). With the adoption of odour removal system, it is anticipated that the surroundings ASRs will not be subject to unacceptable odour impact from the operation of the proposed STPs.

4.6.3 As discussed above, there is no detailed information of the proposed STPs in this preliminary design stage. However, an odour impact assessment will be submitted during detailed design stage once the design of the two STPs is available to identify the removal efficiency required for the two STPs. The odour assessment criterion of 5 OU based on an averaging time of 5 seconds shall be met or no adverse odour impact shall be ascertained for all nearby ASRs including the air-sensitive uses of the Development Site such as residential towers located on top of the proposed STPs.

4.6.4 A desktop review of Application for Amendment of Plan under S12A of the Town Planning Ordinance (Cap. 131), to Rezone the Application Site from "Green Belt" and "Government, Institution or Community" to "Residential (Group B) 9", for Proposed Residential Development and Social Welfare Facilities at Lot Nos. 164 RP, 175 and 232 RP in D.D. 354, and Adjoining Government Land in Yau Kom Tau, Tsuen Wan has been conducted to compare against committed STP which have similar design capacity (~2142 m3/day). The STP in Yau Kom Tau indicated that odour impacts could be properly controlled and no adverse odour impacts would be anticipated.

4.6.5 Apart from the adoption of odour removal system, regular maintenance would be carried out to ensure the odour removal efficiency is maintained at/above the design requirement.

4.6.6 The following regular maintenance process are also proposed:

- Sludge should be removed regularly to prevent accumulation of odourous gas;
- Regular inspection with measurement of odour concentration at the exhaust should be conducted to check for leakage of odourous gas and the efficiency of the odour removal system. In case of odour leakage or malfunctioning of the odour removal system and if there is any odour complaint the STPs, the Application shall carry out investigation and take appropriate remediation actions to avoid causing any odour nuisance to the nearby ASRs;

- Maintain the removal efficiency of screenings and grits by flushing the screens and grit sump regularly to prevent blockage;
- Screenings, grits and worn filters should be stored in sealed containers inside the STPs and during removal for disposal;
- Replace worn activated carbon filter/bio trickling filter to maintain the odour removal efficiency at 99.5%;
- Clean all the tanks with water regularly;
- Store and handle the screening waste inside a fully enclosed structure to avoid odour nuisance;
- No odorous materials shall be stockpiled overnight at the site;
- Maintain negative pressure inside the facility to prevent foul air from flowing out;
- Inhibit the generation of odour compound in liquid phase or removal of the odour compound formed in liquid phase by elevating the pH or providing oxygen source;
- Maximize the sewage flow velocity in sewers;
- Develop a good housekeeping program for the sewage collection systems to prevent the development of anaerobic conditions.

4.6.7 Sludge tankers will be used to transport the sludge. The tanker will park at the basement carpark near the STPS and sludge will be pumped by coupling. The odourous gas will be confined within the STP which will be kept under negative pressure. The gas will be drawn to a deodouring system for treatment before release into the atmosphere. As the transfer process will be carried out in enclosed environment and in low frequency, no odour impact is expected on the ASRs during handling of the sludge.

4.6.8 With adequate odour removal system and regular maintenance and subject to further review/ odour impact assessment during the detailed design stage, the odour impact due to the operation of the STPs would not be insurmountable.

4.7 Review on Potential Odour Impact from Relocated Public Refuse Collection Point and Public Toilet

4.7.1 Refuse collection point (RCP) and public toilet will be relocated. The design of RCP will refer to Planning Department's Hong Kong Planning Standards and Guidelines Chapter 9 Environment – Section 6 Waste Management and the requirement on mechanical ventilation and air purifying facilities will refer to APP-35 of "Practise Note for Authorised Persons and Registered Structural Engineers (PNAP 98)" issued by the Building Department. For public toilet, the design of public toilet will refer to the FEHD's Standard Features for Public Toilets. The location of the RCP and public toilet is shown in **Figure 4.4**. As discussed above, there is no detailed information of the proposed relocated RCP and public toilet in this preliminary design stage. However, after following the design criteria of RCP and public toilet, it is anticipated the odour impact from relocated public refuse collection point and public toilet is minimal.

4.8 Review on Potential Air Quality Impact from Shrine

4.8.1 Potential odour impact from the existing shrine could be related to the incense activity. However, based on the observation during site visit, the incense furnace is small and

no joss paper burning is carried out. Therefore, no air quality impact from shrine is anticipated.

4.9 Review on Potential Air Quality Impact from Oily Fume and Cooking Odour

4.9.1 F&B areas will be provided within the Development Site. Exhaust hoods and grease trap will be provided and the air change rate for the F&B area will be designed according to the standard of kitchen as stipulated in Building Department's Practice Note for Authorized Persons (PNAP). Potential odour emissions will be minimised as far as practicable. The following considerations recommended in EPD's Control of Oil Fume and Cooling Odour from Restaurant and Food Business shall be taken into account in the detailed design when positioning the exhaust outlets:

- Locate the outlet at such a place where the ventilation is good and the emissions from them can be adequately dispersed without hindrance
- Provide sufficient separation distance from any sensitive receptor in the vicinity so that the emissions will not cause, or contribute to, an odour nuisance or other type of air pollution to the public
- Ensure the emissions from the exhaust system will be directed vertically upwards, unless it can be demonstrated by an environmental professional that other direction is more advantageous in preventing emissions from causing air pollution problems
- Ensure that emissions from the exhaust system will not be restricted nor deflected by, for example, the use of plates or caps

4.10 Potential Impact Arising from Development Site – Construction Phase

4.10.1 During the construction phase of the Development Sites, there may be potential air quality impacts upon the nearby air sensitive receivers (ASRs). The representative ASRs represent existing and planned ASRs during construction phase among all Development Sites are identified and listed in **Table 4.8** and their locations are shown in **Figure 4.5**.

Table 4.8 Distance of the ASRs from the Application Site Boundary

ASR IDs	Descriptions	Distance from the Application Site Boundary (m)
A1	Future Village Housing	0
A2	Future Village Housing	0
A3	Future Village Housing	0
A4	Future Village Housing	0
A5	Wong Uk Tsuen No. 50	9
A6	Tai Lam Fa Yuen	1

A7	Wu Uk Tsuen No. 63C	32
A8	Tai Lam Chung Tsuen Children's Playground	10
A9	Basketball Court	131
A11	Tai Lam Chung Road Children's Playground	37
A12	Wong Uk Tsuen No. 41	6
A13	Luen On Sun Tsuen No.15	6

Identification of Potential Emissions

4.10.2 Fugitive dust and air emission from construction vehicles and machinery will be the potential major source of air quality impact during the construction phase. Significant emissions are not anticipated from the criteria pollutants – NO_2, SO_2, and CO, etc. as only a limited number of diesel/ petroleum fuelled machinery would be operated at the Subject Site. Besides, the Subject Site is located at an area where supply of electricity is available. Therefore, it is anticipated that the number of diesel/ petroleum fuelled machinery operated at the Subject Site can be minimized as practically as possible with the use of electric construction machinery. Moreover, under the Air Pollutant Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted non-road mobile machineries (including mobile generator, air compressor, crawler crane, bulldozer, etc.) with a proper label are allowed to be used in the construction site, which would meet the prescribed emission standards and requirement. According to the requirements stipulated in the Air Pollution Control (Fuel Restriction) Regulation and its amendment, using liquid fuel with a sulphur content of less than 0.005% by weight (such as Ultra Low Sulphur Diesel) for the equipment should be fulfilled to control the SO_2 and PM emissions. Travelling of the dump trucks is another potential source of air emission of construction. At this planning application stage, there is no detailed information on the construction program or amount of excavated material to be handled. However, it is anticipated that the volume of excavated materials to be handled would be about 131,130 m^3. The period of excavation is anticipated to be around 2 years. There is likely to be around 39 dump trucks per day (assuming each truck can carry 15 tones and there is around 270 working days per year) during the site formation stage of the Development Site. Watering the haul road and the site once per hour would be implemented to minimize the potential dust emission during the travelling of the dump trucks within the site. Moreover, air quality impact due to construction shall be reviewed at the later stage.

4.10.3 As mentioned in **Section 1.4**, the concerned concurrent project (i.e. Route 11) has the potential to cause cumulative fugitive dust and air emission impact as its planned construction periods overlap with that of this Project. However, the location of Route 11 is far from the Development Site with the distance of about 340m. Also, for the concurrent project, proper mitigation measures including watering frequently and good site practice will be implemented to ensure that their construction activities would not cause adverse construction dust impact. Therefore, adverse cumulative construction dust impact arising from construction activities of the concurrent project are not anticipated.

Mitigation Measures for Fugitive Dust and Air Emission

4.10.4 Since paved roads are already existing within the Subject Site, it is expected that the construction dust to be generated by vehicle movement within the Subject Site are limited. Air emission mostly arises from construction activities and can be effectively suppressed by incorporating proper mitigation measures into work procedures through contractual clauses with reference to EPD's Recommended Pollution Control Clauses for Construction Contracts, where applicable, good site management, and close monitoring by the resident engineers. The contractor shall be required to follow the requirements of the Air Pollution Control (Construction Dust) Regulations for demolition and construction of the project. With the adaptation of good practices, it is expected that air emission of construction dust can be kept at an acceptable level. Mitigation measures including but not limited to the followings with respect to demolition, infrastructure construction of a building should be implemented as appropriate.

In the case of demolition works:

- The area at which demolition work takes place shall be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the demolition activities so as to maintain the entire surface wet;
- For any wall of the building to be demolished that abuts or fronts upon a street, service lane or other open area accessible to the public, impervious dust screens or sheeting shall be used to enclose the whole wall to a height of at least 1m higher than the highest level of the structure being demolished;
- Any dusty materials remaining after a stockpile is removed shall be wetted with water and cleared from the surface of roads or streets.

In the case of infrastructure construction works/ site formation/ excavation/ earthworks:

- Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting shall be provided to enclose the scaffolding from the ground floor level of the building;
- Any skip hoist for material transport shall be totally enclosed by impervious sheeting;
- Any relevant requirements set outs in Parts III and IV of Air Pollution Control (Construction Dust) Regulations shall be met;
- Vehicle washing facilities including a high pressure water jet shall be provided at every discernible or designated vehicle exit point;
- Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4 m high from ground level shall be provided along the entire length of that portion of the site boundary except for a site entrance or exit;
- Locate all the dusty activities away from any nearby ASRs as far as practicable;
- Erect higher hoarding at the locations with ASRs in immediate proximity to the project site boundary;
- Avoid using exempted non-road mobile machineries;
- Consider connecting construction plant and equipment to mains electricity supply and avoid use of diesel generators and diesel-powered equipment as far as practicable.

The additional dust mitigation measures are described below:

Monitoring and Auditing

4.10.5 Monitoring and auditing program will be implemented to ensure that mitigation measures are in place and there is no adverse air quality impact arising from the construction activities of the Proposed Redevelopment on the nearby ASRs during the construction phase.

General Site Management

4.10.6 Appropriate working methods should be devised and arranged to minimise air emissions and to ensure any installed control system and/or measures are operated and/or implemented in accordance with their design merits. No free falling of construction debris should be allowed, which should be let down by hoist or enclosed tunnel to the ground.

4.10.7 A high standard of housekeeping shall be maintained. Any piles of materials accumulated on or around the work areas shall be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas shall be carried out in a manner to minimize air emissions. Prior to cleaning, the materials should be handled properly to prevent fugitive dust emission. Any exposed earth shall be properly treated by compacting or hydro seeding, within 6 months after the last construction activity.

4.10.8 Frequent mist/ water spraying should be applied on dusty areas. The frequency of spraying will depend upon local conditions such as rainfall, temperature, wind speed and humidity. The amount of water spraying should be just enough to dampen the material without over-watering which could result in surface water runoff.

Material Stockpiling and Handling

4.10.9 The amount of stockpiling should be minimised where possible. Construction material or debris should be covered and stored inside enclosed areas. Other control measures such as enclosed or semi-enclosed windboard should be used, where applicable, to minimise dust emission. Regular watering is needed at areas such as storage piles, where there could be potential dust emission.

Dust Emissions from Site Traffic

4.10.10 Dust emission from construction traffic is generated predominantly from the travelling of dump trucks. Areas within the Subject Site where there are regular vehicle movements should have a hard surface. Speed controls at an upper limit of 10km/hr should be imposed and their movements should be confined to designated roadways within the Subject Site. All dusty vehicle loads should have side and tail boards covered by tarpaulin extending at least 300mm over the edges. Wheel-wash troughs and hoses should be provided at exit points of the Subject Site.

4.10.11 "Recommended Pollution Control Clauses for Construction Contracts" is available on the EPD website which set out the recommended air pollution control measures to be implemented by the contractor(s) during the construction stage of the Project.

4.10.12 With the adoption of good practices, it is expected that construction air quality impact can be minimized.

5. WATER QUALITY

5.1 Introduction

5.1.1 This section presents the water quality impact assessment for the construction and operational phases of the Project. Potential impacts have been identified and their significance on the Water Sensitive Receivers (WSRs) evaluated. The location of these WSRs can be referred to **Figure 5.1**. Appropriate mitigation measures and good site practices are recommended, where necessary, to reduce the potential water quality impacts in order to control the residual impacts to acceptable levels.

5.2 Environmental Legislation, Standards and Guidelines on Construction Phase Water Quality Impact

5.2.1 Construction activities may induce potential water quality impact due to the discharge of the effluent generated from the construction site. Effluent discharges from construction site are subject to control under the Water Pollution Control Ordinance and the Technical Memorandum Standards for Effluents Discharged in Drainage and Sewerage Systems, Inland and Coastal Water issued by EPD. Information in the ProPECC PN2/23 Construction Site Drainage will also be considered to provide some basic environmental guidelines for handling and disposal of construction site discharges.

5.3 Construction Phase Water Quality Impacts

5.3.1 Site construction activities will inevitably have the potential to generate wastewater. As such works should be carried out in such a manner as to minimize potential impacts on the water quality. Pollution sources could include:

- Construction runoff and drainage;
- Sewage effluent from construction site; and
- Liquid spillage, e.g. oil, diesel and solvents etc.

Construction Runoff and Drainage

5.3.2 Construction runoff contains increased loads of sediments, other suspended solids and contaminants. Potential sources of pollution include runoff and erosion from the site surfaces, drainage channels; bentonite slurries and other grouting materials, concrete washout and drainage from dust suppression sprays, fuel, oil and lubricants from construction vehicles and other equipment.

5.3.3 Sufficient silt removal facilities should be installed to settle out sediment prior to discharge. Such facilities shall be properly designed in accordance with guidelines from the Civil Engineering and Development Department (CEDD) to achieve the desired mitigating effect. Typically, a detention time not less than 5 minutes for maximum design flow of inlet should achieve adequate sediment removal. Channels or earth berm or sand bag barriers should be provided on site to properly direct surface runoff to such silt removal facilities. Sediment traps, channels and manholes should be maintained and the deposited silt and grit should be removed on regular basis so that potential impacts on WSR can be minimized.

Sewage Effluent from Construction Site

5.3.4 Water pollution due to site facilities e.g. toilets could be source of pollution if appropriate measures are not implemented properly in respect of storage and discharge.

5.3.5 In this construction site, portable chemical toilets will be provided. Chemical toilets should be provided at a minimum rate of about 1 per 50 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals. Sewage generated from the construction workforce will be contained in chemical toilets and be tanked away. Therefore, no adverse water quality impact is anticipated on WSR.

Liquid Spillage

5.3.6 To prevent spillage of fuel oils or other polluting fluids at sources, it is recommended that all the stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by bunds.

5.3.7 "Recommended Pollution Control Clauses for Construction Contracts" (RPCC) also recommends appropriate wastewater control measures to be implemented at the construction site by the contractor. The RPCC is available on EPD website.

5.3.8 The quality of the discharge wastewater should meet the standards specified in the Technical Memorandum – Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters. The above proposed mitigation measures and control measures should be implemented and an environmental monitoring and audit should be carried out to ensure the effectiveness of the proposed mitigation measures and subsequently ensure the water quality of the nearby water sensitive receivers would not be adversely affected by the construction of the project.

5.4 Best Management Practices (BMPs) for Stormwater Discharge

5.4.1 The BMPs given in the ProPECC PN 2/23 shall be implemented in controlling water pollution during the whole construction phase to minimize the impact on WSR. The main practices provided in the above-mentioned document (i.e. ProPECC PN 2/23) are also summarized in the following paragraphs which should be implemented by the contractor during the construction phase, where practicable:

- High loading of suspended solids (SS) in construction site runoff will be prevented through proper site management by the contractor;

- The boundary of critical work areas will be surrounded by ditches or embankment. Accidental release of soil or refuse into the adjoining lands should be prevented by the provision of site hoarding or earth bunds, etc. at the site boundary. These facilities should be constructed in advance of the site formation works and roadworks;

- Consideration will be given to plan construction activities to allow the use of natural topography of the Project Site as a barrier to minimize uncontrolled non-point discharge of construction runoff;

- Temporary ditches, earth bunds should be provided to facilitate controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps and sedimentation basins. Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas;

- Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 2/23 should be installed at the construction site for collecting surface runoff;

- Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the contractor, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly;

- Slope exposure should be minimized where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporarily exposed slope surfaces or stockpiles with tarpaulin or the like;

- Haul roads should be protected by crushed rock, gravel or other granular materials (i.e. hard paved) to minimize discharge of contaminated runoff;

- Slow down water run-off flowing across exposed soil surfaces;

- Plant workshop/ maintenance areas should be bonded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations;

- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;

- Construction works should be programmed to operate in dry seasons and minimize soil excavation works where practicable during the rainy days;

- Chemical stores will be contained (bonded) to prevent any spills from contact with water bodies. All fuel tanks and/ or storage areas should be provided with locks and be sited on hard surface;

- Chemical waste arising from the Project Site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation;

- Drainage facilities must be adequate for the controlled release of storm flows.

- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicle leaves the work site;

- Section of the road between the wheel washing bay and the public road will be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.

- Bentonite slurries, if any to be generated, shall be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to meet the respective applicable effluent standards for discharges into sewers, storm drains or the receiving waters.

5.5 Potential Operation Phase Water Quality Impacts

5.5.1 According to the major operation phase activities in the Proposed Development, the key potential water quality impact is due to the surface runoff and treated effluent discharge from the Proposed Development.

5.5.2 The management and mitigation strategy of the potential water quality impact is addressed below, with appropriate environmental control measures recommended.

5.5.3 Best practices as stated in ProPECC PN 1/23 "Drainage Plans Subject to Comment by the Environmental Protection Department" shall be followed. It states out the handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers during the operation phase. Some examples of the recommendations listed in the ProPECC PN 1/23 are as below.

- Drainage in covered carparks should be connected to foul sewers via petrol interceptors.
- Disposal of commercial and industrial wastewater by injection into the ground (e.g. by soakaway pits) is normally not allowed.
- All wastewater collected from a restaurant kitchen, including that from basins, sinks and floor drains, should be discharged via a grease trap capable of providing at least 20 minutes retention during peak flow.

5.6 Surface Runoff Discharge/ Stormwater Discharge

5.6.1 During operation, the irrigation runoff and surface runoff during rainfall events, which is known as non-point source of pollution, may be the cause potential water quality impact. Fallen leaves, particles, litter from open areas, which is a source of organic and nutrient pollutants, can be washed into the drainage system during heavy rainfall if it is not properly controlled. Pollutants, contributed by non-point source are often bound or adsorbed onto particles, thus an effective stormwater management system will be required for the removal of pollution sources prior to rainstorm and the provision of degritting/screening facilities will be required for sediment collection. As the particles settle out, the associated pollutants will also settle out and removed from stormwater.

5.6.2 Under normal condition, runoff carrying pollutants will not be generated in low rainfall intensity, but increased runoff may occur during heavy rainfall condition. The first flush flow would carry most of the pollutants and the subsequent overland flow generated from rainstorms is expected to be uncontaminated. Thus, prevention of "first flush" pollution in stormwater runoff will be an effective way in controlling pollution at source and to abate pollutants.

5.6.3 Relevant assessment on the total peak flow of stormwater of the Proposed Development and the capacity of proposed drainage system are provided in a separate Drainage Proposal.

5.7 Sewage Effluent from Proposed Development

5.7.1 As there is no existing public sewerage system in the vicinity of the proposed development, it is proposed to construct two private sewage treatment plants at the East Wing and South Wing of the development site, respectively to treat sewage generated from each portion of the development site. The detail of the sewage treatment plants are discussed in the Appendix G Sewerage Impact Assessment of the Section 16 Planning Application for Section 16 Planning Application for Proposed Amendments to An Approved Comprehensive Residential Development Scheme and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun. It is expected that the operation of the proposed development would not cause operational phase water quality impact.

5.8 Implementation of Best Management Practices (BMPs)

5.8.1 Surface runoff can be controlled by good drainage design and implementation of BMPs. The Proposed Development shall adopt the following BMPs.

Runoff Control

5.8.2 Site drainage system of the development shall be reviewed regularly in such way that surface runoff shall be directed towards the internal access road. If necessary, additional paved U-channels with screening facilities shall also be provided along the edge of Proposed Development to avoid uncontrolled spillage of runoff.

Prevention of Pollution at Source

5.8.3 Regular cleaning and sweeping of road surface/ open areas is suggested so as to minimize exposure of pollutants to stormwater. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm.

5.8.4 With the above measures, the amount of pollutants at source has been largely reduced/ avoided as far as possible so that the impact on WSR would not be adverse.

Devices for Removal of Pollutants

5.8.5 In addition to the above, screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system as well as at upstream location of the u-channels. It is expected that most of the large substances in stormwater runoff would be removed with such devices so as to prevent it from entering the drainage system. Road gullies with standard design should be incorporated during the detailed design to remove particles present in stormwater runoff.

5.8.6 In the event of emergency (e.g. car accident) where there is a major spillage of oil, chemical or fuel, dispersants or firefighting foam, etc., a system of contaminant bunding will be implemented as appropriate.

Management Measures

5.8.7 Good management measures such as regular cleaning and sweeping of road surface/ open areas is suggested. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm.

5.8.8 Stormwater gullies and ditches provided among the Proposed Development will be regularly inspected and cleaned by the property management company.

5.8.9 With the removal of pollutants, the pollution levels from stormwater would be much reduced, and given the stochastic nature of non-point source pollution and the proposed management measures, there will be no significant impact expected on WSR.

5.8.10 With appropriate management measures in place, the risk of untreated sewage effluent discharge to North Western Control Zone due to emergency events is considered to be negligible.

6. WASTE MANAGEMENT

6.1 Introduction

6.1.1 This section presents an assessment of the potential waste management issues in connection with construction and operation of the Project. The options for waste minimization, reuse, recycling, collection, transport and disposal of wastes arising from the construction and demolition work have been examined. Where appropriate, procedures for waste reduction and management are considered and environmental control measures for avoiding and minimising the potential impacts are recommended.

6.1.2 Recommended Pollution Control Clauses for Construction Contracts published by Environmental Protection Department would be implemented during the construction phase of the proposed development. Waste generated from the Proposed Development would be properly controlled and adverse waste management would not be anticipated.

6.2 Relevant Legislation, Standards & Guidelines

6.2.1 In carrying out the assessment, reference has been made to the following relevant Hong Kong legislation governing waste management and disposal. Directly relevant legislation include:

1. The Waste Disposal Ordinance (Cap. 354) and subsidiary legislation such as the Waste Disposal (Chemical Waste) (General) Regulation, and the Waste Disposal (Clinical Waste) (General) Regulation, set out requirements for the storage, handling and transportation of all types of wastes;
1. Dumping at Sea Ordinance (Cap. 466) regulating marine disposal of sediment;
2. Land (Miscellaneous Provisions) Ordinance (Cap 28);
3. Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisance Regulation – control of disposal of general refuse.

6.2.2 Other relevant documents and guidelines that are applicable to waste management and disposal include:

4. PNAP 243 ADV-19 - Construction and Demolition Waste
5. PAH Chapter 4 - Management Framework for Disposal of Dredged/ Excavated Sediment (Subsumed from ETWB TCW No.34/2002);
6. Development Bureau Technical Circular (Works) No. 8/2010 - Enhanced Specification for Site Cleanliness and Tidiness
7. ETWB TCW No. 22/2003A - Additional Measures to Improve Site Cleanliness and Control Mosquito Breeding on Construction Sites;
8. Development Bureau Technical Circular (Works) No. 6/2010 - Trip-ticket System for Disposal of Construction and Demolition Materials;
9. WBTC No. 19/2001 - Metallic Site Hoardings and Signboards;
10. Works Bureau Technical Circular No. 12/2000 - Fill Management;
11. Works Branch Technical Circular No. 2/93 - Public Dumps; and
12. Works Branch Technical Circular No. 2/93B - Public Filling Facilities;
13. Project Administration Handbook for Civil Engineering concerning Management of Construction and Demolition Materials Including Rock;

6.3 Identification and Evaluation of Potential Waste Impact during Construction Phase

6.3.1 The construction activities to be carried out for the proposed Project would generate a variety of wastes that can be divided into distinct categories based on their composition and ultimate method of disposal. The identified waste types include:

- Construction and Demolition (C&D) materials;
- Chemical waste; and
- General refuse.

C&D Materials

6.3.2 C&D materials comprise mainly of unwanted materials, including surplus materials arising from excavations that are generated from the works (e.g. site clearance, site formation works, excavation work for basement). Inert soft C&D materials comprise of soil, sand, clay, slurry, etc., while hard C&D materials comprise of crushed concrete, asphalt, rock, etc. The amount of non-inert C&D materials generated during site clearance would be minor (as there is little vegetation at the Subject Site). C&D materials may comprise different types of materials, including:

- Non-inert C&D materials (e.g. bamboo, timber, paper, metal, glass, plastic, packaging wastes, etc.) decompose and are not suitable for land reclamation. Non-inert C&D materials should be reused or recycled as far as possible. For those non-inert C&D materials that cannot be reused or recycled should be disposed of at landfill as last resort;
- Inert C&D materials do not decompose (e.g. soil, rock debris, rubble earth, concrete, etc.) and is suitable to reuse as filling materials for land reclamation and site formation. Inert C&D materials could be reused on-site as filling materials. For those inert C&D materials that cannot be reused should be disposed at a Public Fill Reception Facilities.

6.3.3 The general waste management strategy is to avoid waste generation in the first place. Should it be unavoidable, reduction and segregation at-source should be exercised as far as practicable, and recycling and reuse should be adopted at the same time to salvage all the recyclable and reusable materials as much as possible.

6.3.4 Inert C&D materials should be re-used on-site (e.g for backfilling) if it is practical and/or disposed of at public filling area or other CEDD designated public fill reception facilities. Non-inert C&D materials (i.e. C&D waste) should be re-used or recycled. For those that cannot be reused or recycled, they should be disposed of at designated landfill sites as last resort.

6.3.5 The Contractor(s) should be responsible for ensuring that all on-site wastes will be collected by approved waste collectors and appropriate measures should be undertaken to minimise adverse impacts to the surrounding environment, such as dust generation. The Contractor(s) must also ensure that all necessary waste disposal permits have been obtained before actions.

6.3.6 Prior to disposal of non-inert C&D materials, it is recommended that wood, steel, glass and other metals will be collected separately for re-use and/or recycling and inert C&D materials utilized as fill materials to minimize the quantity of waste to be disposed of at the Public Fill Reception Facilities and landfill.

General Refuse

6.3.7 Throughout the construction stage, the workforce would generate general refuse comprising food scraps, waste paper, empty containers, etc. Release of general refuse into watercourses or marine waters should not be permitted as introduction of these wastes is likely to have detrimental effects on water quality in the area. Effective collection of site wastes would be required to prevent waste materials being blown around by wind, flushed or leached into the marine environment, and odour nuisance. The work sites may also attract pests and vermin if the waste storage area is not well maintained and cleaned regularly. Disposal of refuse at sites other than approved waste transfer or disposal facilities can also result in similar impacts. The number of work force to be employed for the Project is around 20. Based on the generation rate of 0.65kg/person/day, the estimated total refuse generated per day (maximum) would be about 13kg/day.

6.3.8 Recyclable materials (i.e. paper, plastic bottles and aluminium cans) will be collected separately for recycling, in order to reduce the amount of general refuse to be disposed into the landfill. Adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. The non-recyclable refuse will be placed in bags and stored in enclosed containers, and disposed of on a daily basis to the designated landfill. Given that the quantity of general refuse to be disposed will be small, no adverse impact on the operation of these waste disposal facilities is anticipated. With the implementation of the recommended waste management practices at the site, adverse environmental impacts would not arise from the storage, handling and transportation of refuse.

6.3.9 Preliminary quantity estimation of construction waste involved and disposal method is summarised in the **Table 6.1** below.

Table 6.1 Summary of Estimated Construction Waste and Disposal Method

Waste Material Type		Estimated Quantity Generated	Disposal Method
Inert C&D Materials	Excavation	~131,130 m^3	To be reused or recycled on site or in other projects; and delivered to Public Fill Reception Facilities for other beneficial reuse
	Construction of New Buildings/Structures	~7,500 m^3	
Non-inert C&D Materials	Excavation	~7,500 m^3	To be reused, recycled or disposed of at landfill as the last resort
	Construction of New Buildings/Structures	~1,200 m^3	
Chemical Waste	-	Less than hundred litres /month (preliminary estimate)	For treatment at licensed facilities
General Refuse	-	13kg/day (preliminary estimate, assuming there are 20 workers at any one time with generation rate of 0.65kg per worker per day)	Disposal to landfill

6.4 Waste Disposal and Mitigation Measures

6.4.1 Waste generated by construction activities should be properly sorted and certain waste management requirements must be followed to minimize the impacts arising because of the generation, storage, handling, transport and disposal of wastes. Good site management and control can prevent the generation of significant amounts of "mixed waste". For unavoidable wastes, reuse, recycling and optimal disposal are most practical when segregation occurs on the construction site, categorized as follows:

- Inert C&D materials for reuse on-site or delivering to Public Fill Reception Facilities for beneficial reuse at other projects;
- Non-inert C&D materials for reuse or recycle or disposal at landfill as last resort;
- Chemical waste for treatment at licensed facilities; and
- General refuse for disposal at landfill.

C&D Material

6.4.2 Proper storage and site practices should be adopted to minimize the damage to, or contamination of, C&D materials that may reduce their recyclability and suitability for disposal in public fill reception facilities. The inert C&D materials shall be reused in earth filling, reclamation or site formation works. The non-inert C&D materials shall be reused or recycled and, as the last resort, disposed of at landfills.

6.4.3 Appropriate measures should also be employed to minimize windblown litter and dust during transportation by either covering trucks with tarpaulin or transporting wastes in enclosed containers. Waste should only be disposed at licensed sites. Resident site staff and the contractors should develop procedures to ensure that illegal disposal of waste does not occur. In addition, waste storage areas within the Project should be well maintained and cleaned regularly to prevent cross-contamination. The disposal of inert C&D materials and non-inert C&D materials to public fill reception facilities/sorting facilities respectively through a trip-ticket system, while general refuse will be disposed of at landfill.

Chemical Waste

6.4.4 Chemical and oily wastes generated from the construction activities, vehicle and plant maintenance should be disposed of as chemical waste in strict compliance with the Waste Disposal (Chemical Waste) (General) Regulations.

General Refuse

6.4.5 For general refuse, mitigation measures should include provision of a collection area where waste can be sorted, stored and loaded prior to removal from the site during construction phase.

6.4.6 In additional, with the implementation of the recommended mitigation measures in the "Recommended Pollution Control Clauses for Construction Contracts" available in EPD website, the potential environmental impacts resulting from the storage, handling and transportation of inert C&D materials, non-inert C&D materials, chemical wastes and general site wastes would be minimal. Below are the examples of the relevant measures:

Waste Minimisation

- The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall 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. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management.
- The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate.
- The reuse and recycling of waste shall be practised as far as possible.
- The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites).
- The Contractor shall use a trip ticket system for the disposal of C&D materials to any designated public filling facility and/or landfill.

Waste Nuisance Control

6.4.7 The Contractor shall not permit any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Site onto any adjoining land or allow any waste matter (or refuse) which is not part of the final product from waste processing plants to be deposited anywhere within the Site (or onto any adjoining land). He shall arrange removal of such matter from the site (or any building erected or to be erected thereon) in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection.

Chemical Waste Control

- The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation.
- The Contractor shall apply for registration as chemical waste producer under the Waste Disposal (Chemical Waste) (General) Regulation when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation.

6.5 Identification and Evaluation of Potential Impact during Operational Phase

6.5.1 During operational phase of the proposed development, since the uses is residential only, disposal of chemical, livestock and clinical waste are not anticipated. Instead, general waste is anticipated to be the major type of waste generated during the operation of the proposed development.

6.5.2 Release of general refuse into watercourses or marine waters should not be permitted as introduction of these wastes is likely to have detrimental effects on water quality in the area. Effective collection of site wastes is suggested to prevent waste materials being blown around by wind, flushed or leached into the marine environment, and odour nuisance.

General Refuse

6.5.3 With the implementation of the *Producer Responsibility Scheme on Waste Electrical and Electronic Equipment* (WPRS), the amount of domestic electrical waste being disposed would not be significant as customers are encouraged to contact the WEEE recycling firm for the recycling of electrical equipment. The disposal of electrical equipment and its impact is not anticipated to be significant.

6.5.4 For other general waste such as metal, paper, plastic and glass, recycling bins for each type of wastes will be placed at prominent locations such as areas near lobby to reduce waste disposal amount. Also, the waste collection frequency is recommended to be at least once a day to reduce chances of hygiene issue.

6.5.5 For wastes such as leftover, an adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. Also, leftover will be placed in bags and stored in enclosed containers, and disposed of on a daily basis to the designated landfill. In addition, the project proponent is recommended to deliver leftover generated to Organic Resources Recovery Centre (ORRC) or installation of food waste recycling machines for composting treatment, etc. Therefore, the chances of odour nuisance and hygiene issue are reduced.

6.5.6 As the generation rate of the general refuse at the proposed development is anticipated to be similar to those of the domestic use in Hong Kong, the impact from the waste disposal of the operational phase is anticipated to be insignificant with the implementation of the above measures.

6.6 Environmental Monitoring & Audit Requirements

6.6.1 The foregoing assessment has concluded that proper handling, storage, collection, transportation and disposal of waste materials generated during construction of the Project will not give rise to significant impacts to nearby sensitive receivers.

6.6.2 Whilst no specific environmental monitoring requirements are considered necessary, it is recommended that during the construction phase, site inspections and supervisions of waste management procedures and auditing of the effectiveness of implemented mitigation measures should be undertaken on a regular basis.

6.6.3 These tasks shall be scheduled in a Waste Management Plan ("WMP") to be prepared by the contractor and updated regularly. The WMP shall be submitted to the Architect/Engineer for approval. A summary of the site audits shall be presented in the monthly EM&A reports.

6.7 Conclusion and Recommendation

6.7.1 The potential impacts of wastes arising from the construction and operation of the Proposed Development have been assessed. The construction activities will generate a variety of wastes including materials from site clearance, excavated materials, construction wastes, chemical and general refuse.

6.7.2 Recommended Pollution Control Clauses for Construction Contracts published by Environmental Protection Department would be implemented during the construction phase of the proposed development.

6.7.3 With the recommended waste management practices put in place, no unacceptable impacts associated with waste management during the construction and operation phase are envisaged.

7. HAZARD REVIEW OF POTENTIALLY HAZARDOUS INSTALLATIONS IN THE VICINITY

7.1.1 A review has been conducted to identify any Potentially Hazardous Installations (PHIs) in the vicinity and whether their Consultation Zones (CZs) would overlap with the Proposed Development.

7.1.2 Tai Lam Chung No.2 Chlorination Station (TLCCS) is located to the northwest of Tai Lam Correctional Institution (see **Figure 7.1**). A part of northern portion of the Development Site falls within the 1km CZ of TLCCS. However, it must be noted that all proposed residential blocks of the Development Site are outside the 1km CZ of TLCCS as the previously approved planning application (A/TM-SKW/32) did. It is therefore considered that the Development Site would not be subject to any significant hazard impact due to the operation of TLCCS. No quantitative risk assessment is therefore conducted.

7.1.3 Furthermore, as stated in the approved Route 11 (Section between Yuen Long and North Lantau) EIA report (EIA-297/2023), the liquid chlorine store will no longer be required after Q2 of 2024 based on the latest information provided by WSD. Therefore, it is anticipated that TLCCS will be ready to be de-listed from PHI and a quantitative risk assessment would not be required.

8. CONCLUSION

8.1.1 As discussed in **Section 1.1**, a previous application for the proposed MLP amendment for the same Application Site was approved in March 2002 (Planning Application No. A/TM-SKW/32). This EA report will only focus on the proposed residential building blocks of the Development Site to support the proposed amendment scheme and minor relaxation of GFA and building height restrictions.

8.1.2 The key environmental issues associated with both operation and construction phase of the Development Site are qualitatively discusses in this report.

Road Traffic Noise

8.1.3 A road traffic noise impact assessment has been carried out for the Development Site. The assessment results indicated that the predicted noise levels at all NSRs comply with the noise criteria as stipulated in the HKPSG. The future residents would not be subject to adverse road traffic noise impact.

Fixed Noise

8.1.4 Desktop studies and several stie visits have been conducted to identify the potential fixed noise sources within 300m assessment area. The future residents would not be subject to adverse fixed noise impact.

8.1.5 The fixed noise sources within the Application Site (e.g. ventilation system, the exhaust and the control of emission of oily fume and cooling odour of the commercial use of the Proposed Development may have potential fixed noise impact on the NSRs of the Proposed Development or the surrounding NSRs. The design of these future noise sources should follow the requirements of the HKPSG such that the NCO should be met so that the surrounding NSRs would not be subject to adverse noise impact. Mitigation measures (such as enclosure and acoustic louvre) may be required to be considered during the detailed design. As such, it is anticipated that Development Site would not be subject to any adverse fixed noise impact.

Air Quality

8.1.6 There is no chimney or industrial activity identified within 200m from the site boundary of Development Site. As such, it is anticipated that Development Site would not be subject to any adverse industrial emission impact.

8.1.7 No air sensitive uses shall be located within the buffer zones, the future occupants of the Development Site and the existing air sensitive receivers will not be subject to adverse vehicular emission impact.

8.1.8 With reference to EPD Guidelines for the Design of Small Sewage Treatment Plants for the necessary design and control measures for the proposed sewage treatment works and subject to further review/ odour impact assessment during the detailed design stage, adverse odour impact is not anticipated.

8.1.9 Air quality impact from the proposed carpark shall be further reviewed in the later stage to ensure no adverse air quality impact to the nearby air sensitives uses.

Water Quality

8.1.10 With appropriate management measures in place, the risk of untreated sewage effluent discharge to North Western Control Zone due to emergency events is considered to be negligible.

Waste

8.1.11 The potential impacts of wastes arising from the construction and operation of the Proposed Development have been assessed. The construction activities will generate a variety of wastes including materials from site clearance, excavated materials, construction wastes, chemical and general refuse.

8.1.12 Recommended Pollution Control Clauses for Construction Contracts published by Environmental Protection Department would be implemented during the construction phase of the proposed development.

With the recommended waste management practices put in place, no unacceptable impacts associated with waste management during the construction and operation phase are envisaged.

Hazard Review of Potentially Hazardous Installations in the vicinity

8.1.13 Tai Lam Chung No.2 Chlorination Station (TLCCS) is identified as a potentially hazardous installation in the vicinity of the Development Site. As all proposed residential blocks of the Development Site are outside the 1km consultation zone of TLCCS, it is therefore considered that the Development Site would not be subject to any significant hazard impact due to the operation of TLCCS. Furthermore, based on the latest information provided by WSD, the liquid chlorine store will no longer be required after Q2 of 2024. Therefore, it is anticipated that TLCCS will be ready to be de-listed from PHI and a quantitative risk assessment would not be required.

8.1.14 The environmental assessment study confirms the Proposed Development would be acceptable in environmental terms.

Figures

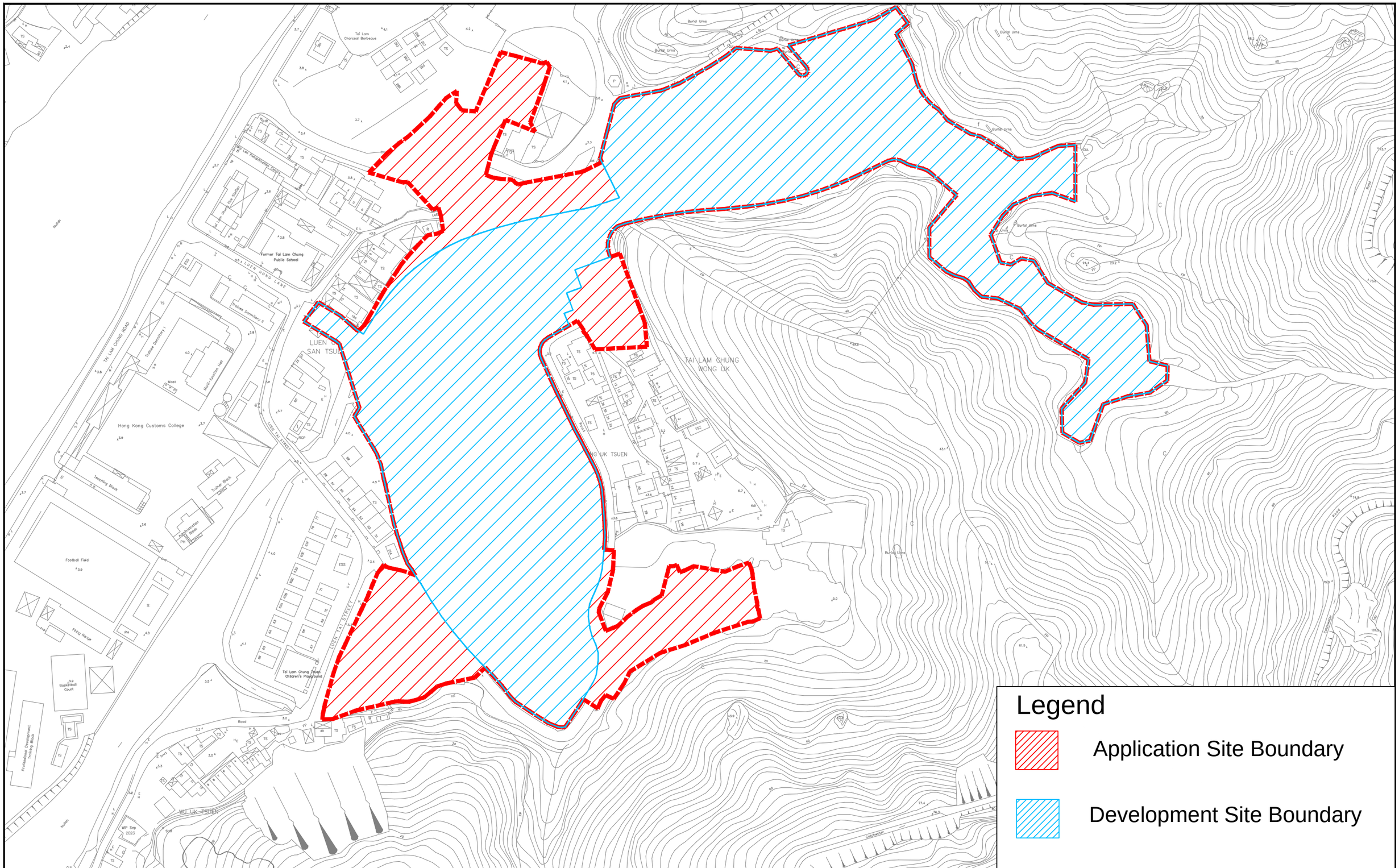

Figure: 1.1

Title: The Location of the Subject Site and its Environs

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

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Checked by:	TC
Rev.:	1.0
Date:	Sep 2024

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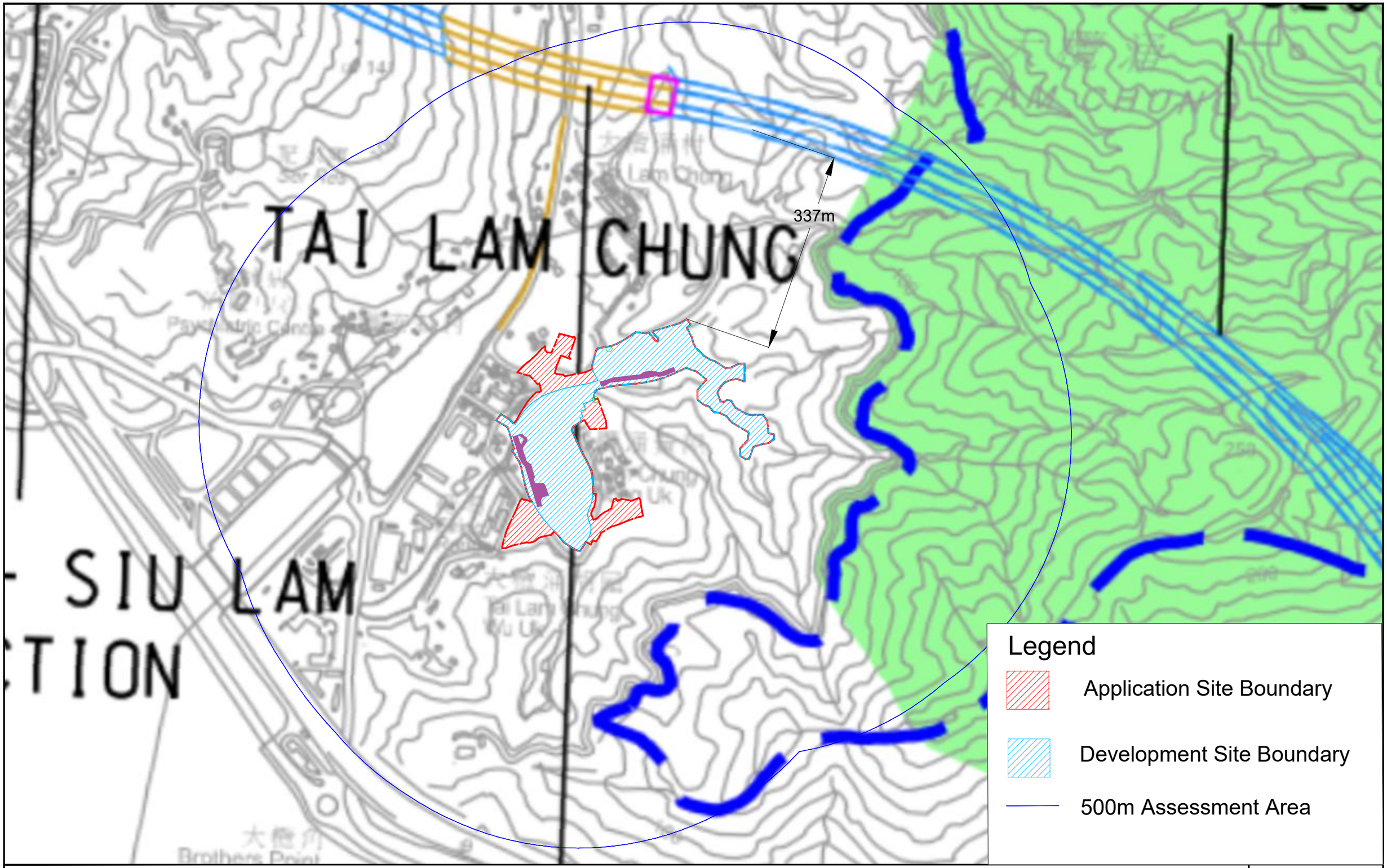

Figure: 1.2		
Title: Location of Concurrent Project- Route 11 (Section between Yuen Long and North Lantau)		Drawn by: SC Checked by: TC
Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun		Rev.: 1.0 Date: Sep 2024

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TAI LAM CHUNG

大欖涌
黃屋
TAI LAM CHUNG
WONG UK

聯新村
LUEN SAN TSUEN

黃屋村
WONG UK TSUEN

T1
T2
T3
T4
T5
T6

H1 H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14 H15 H16 H17

Legend

- Application Site Boundary
- Development Site Boundary
- Representative Noise Sensitive Receivers

Figure:	2.1a
Title:	Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (Overall)
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

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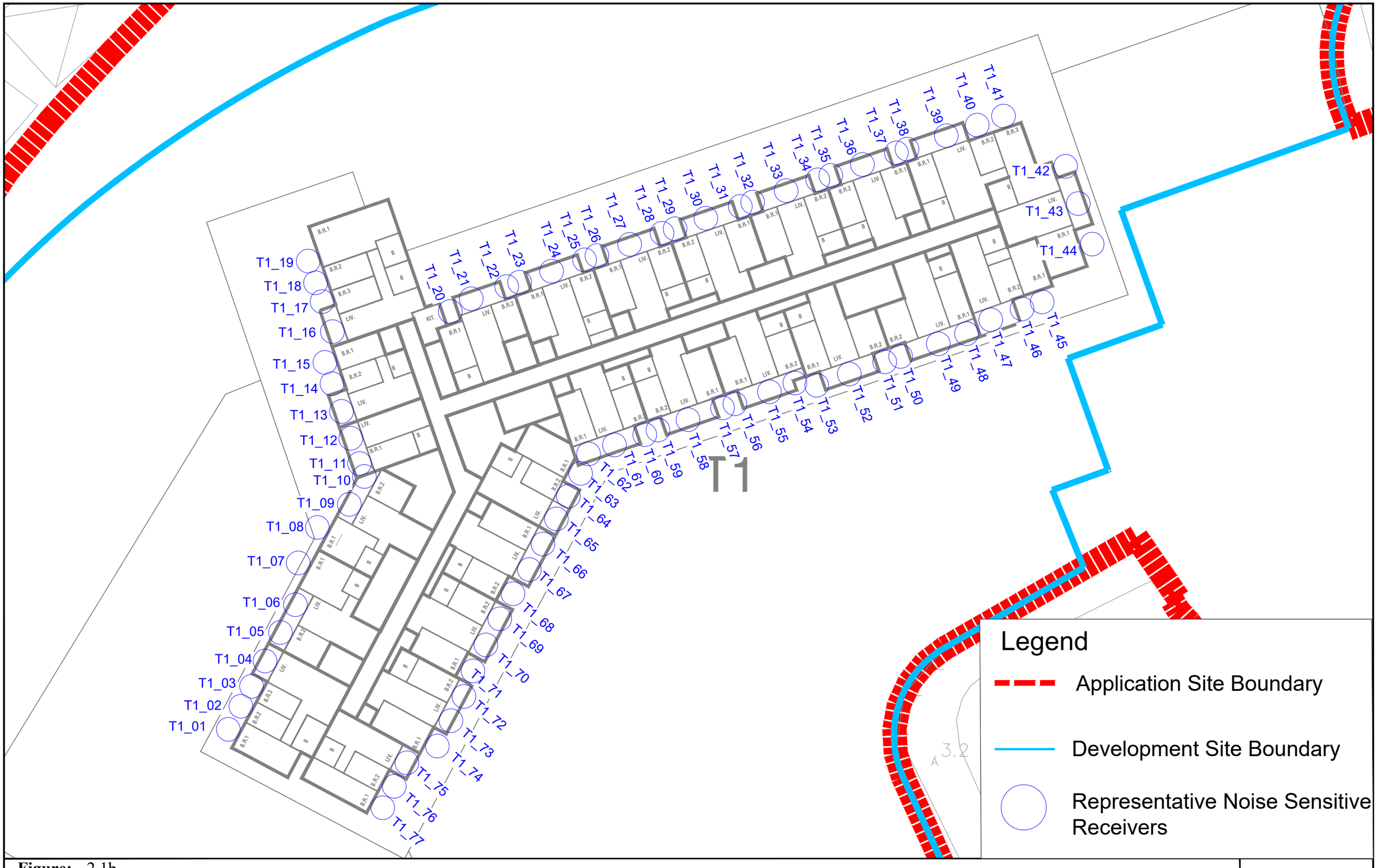

Figure:	2.1b	
Title:	Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T1)	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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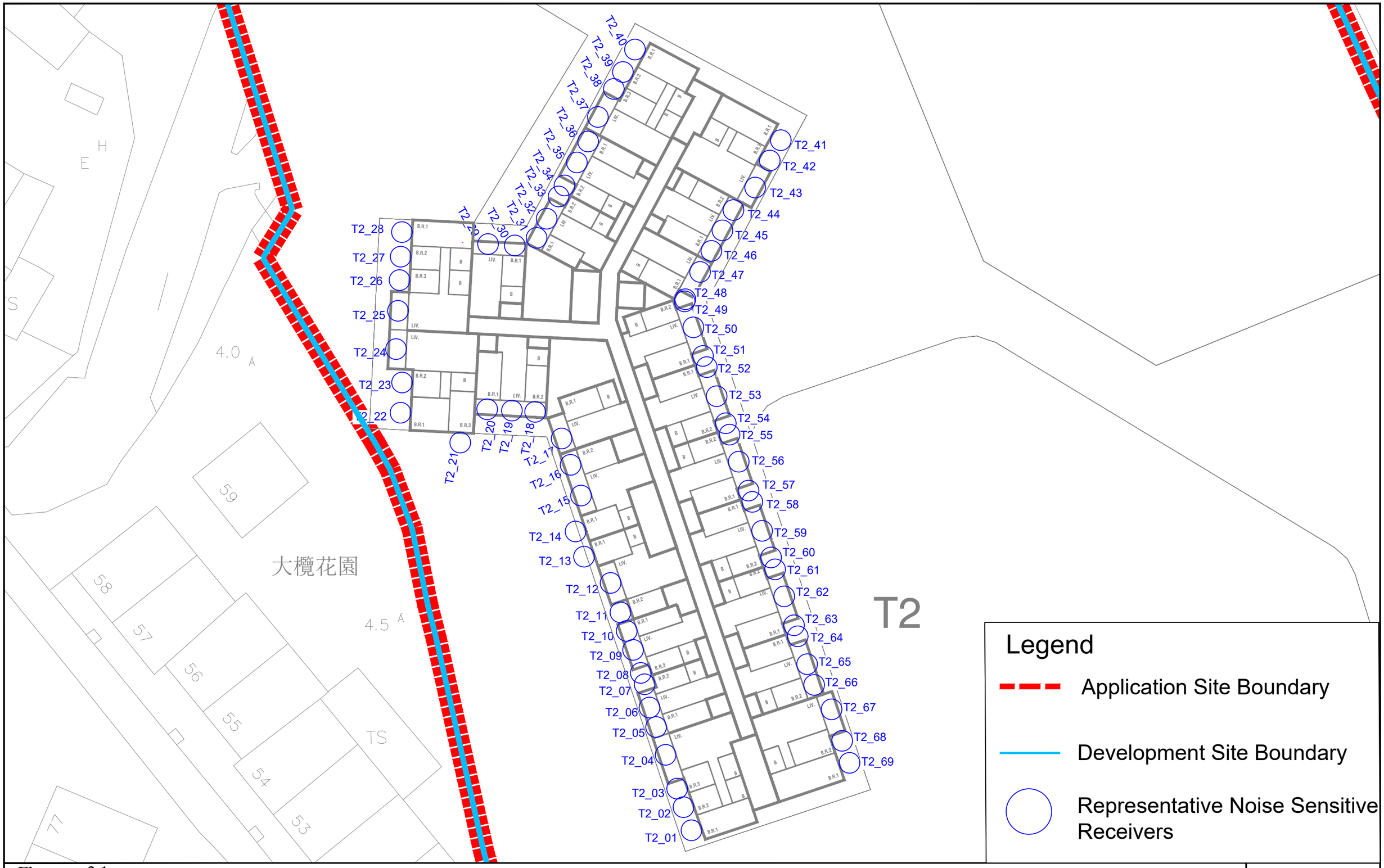

Figure:	2.1c	
Title:	Location of Planed Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T2)	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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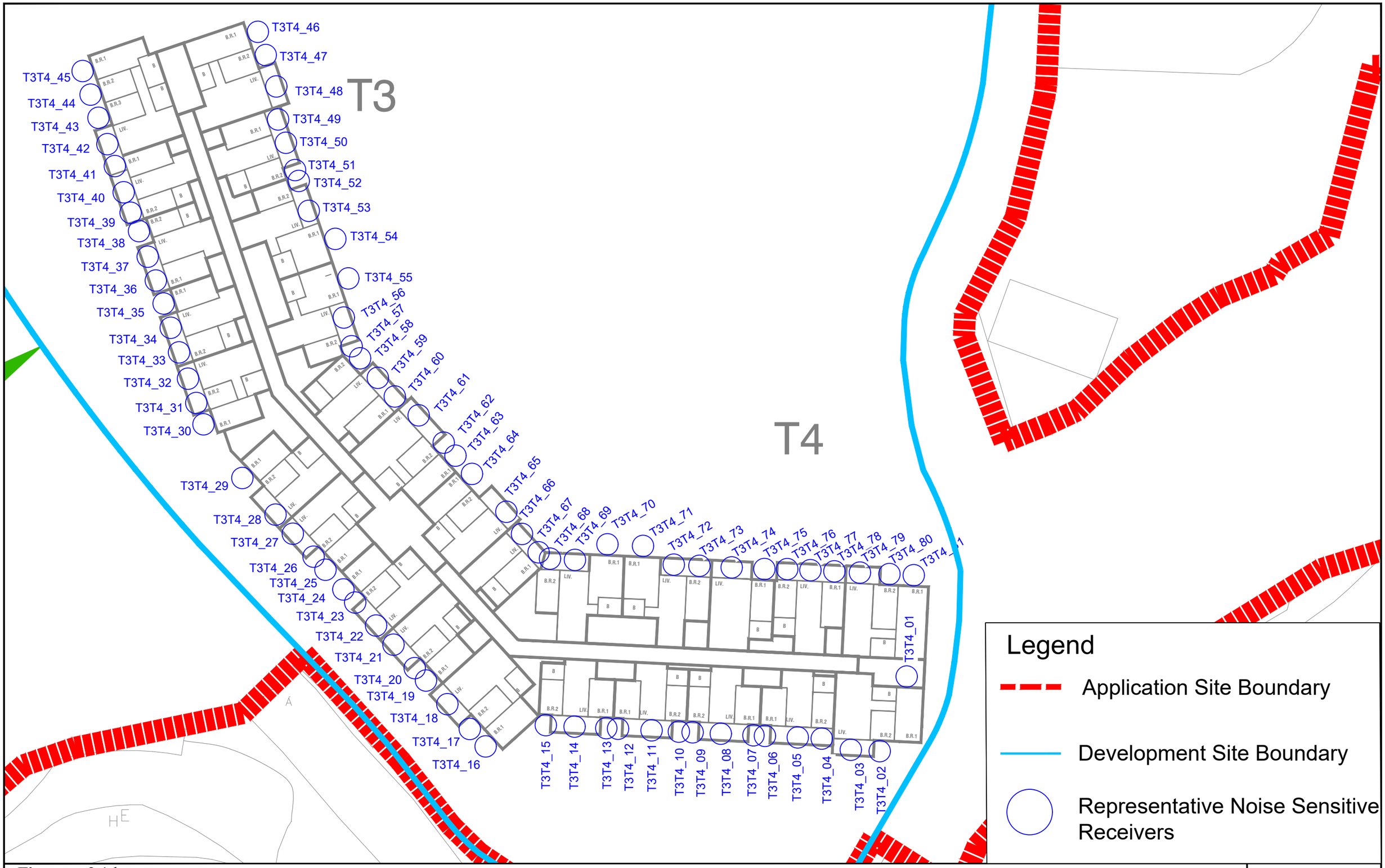

Figure:	2.1d	
Title:	Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T3 & T4)	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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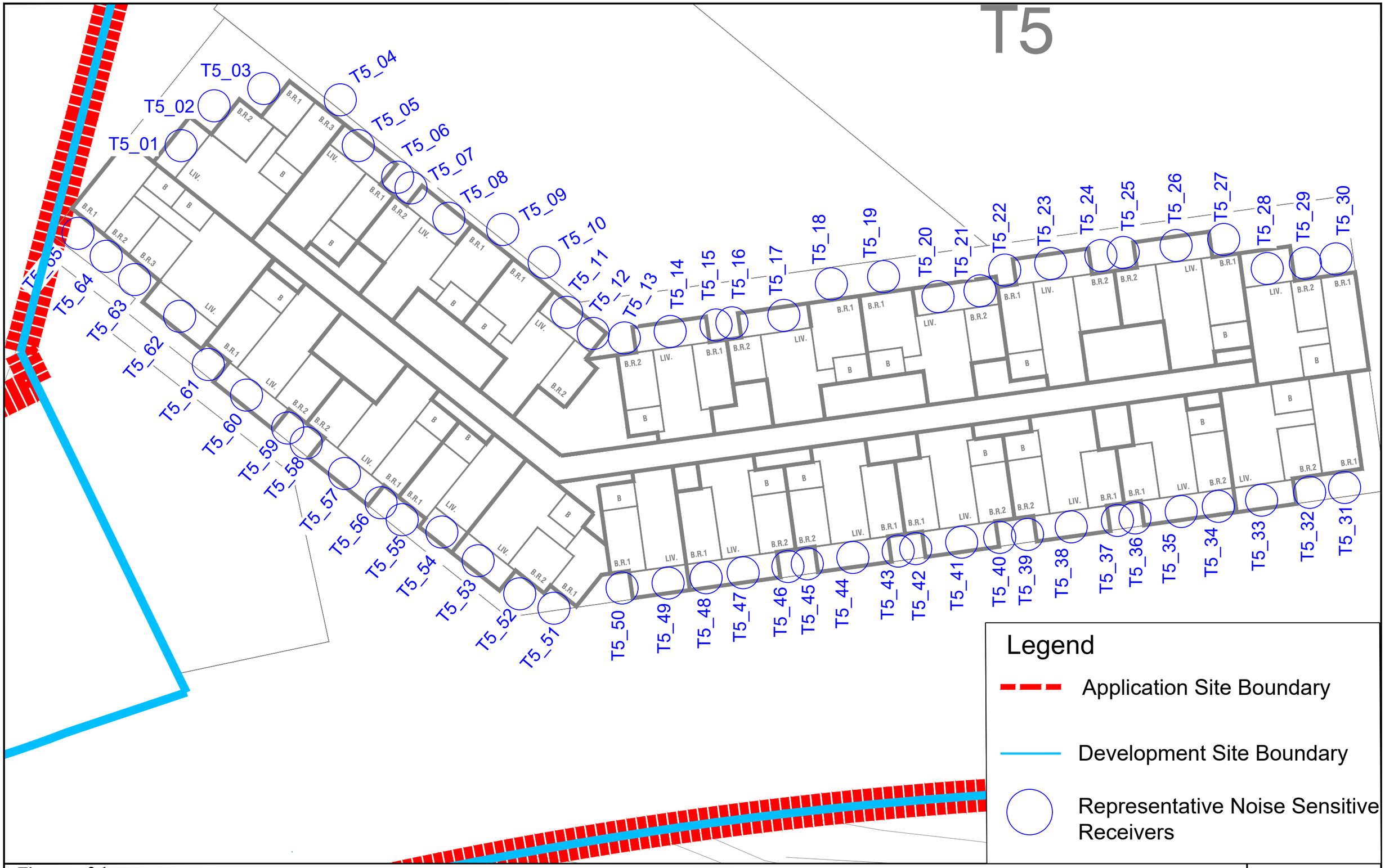

Figure: 2.1e

Title: Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T5)

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

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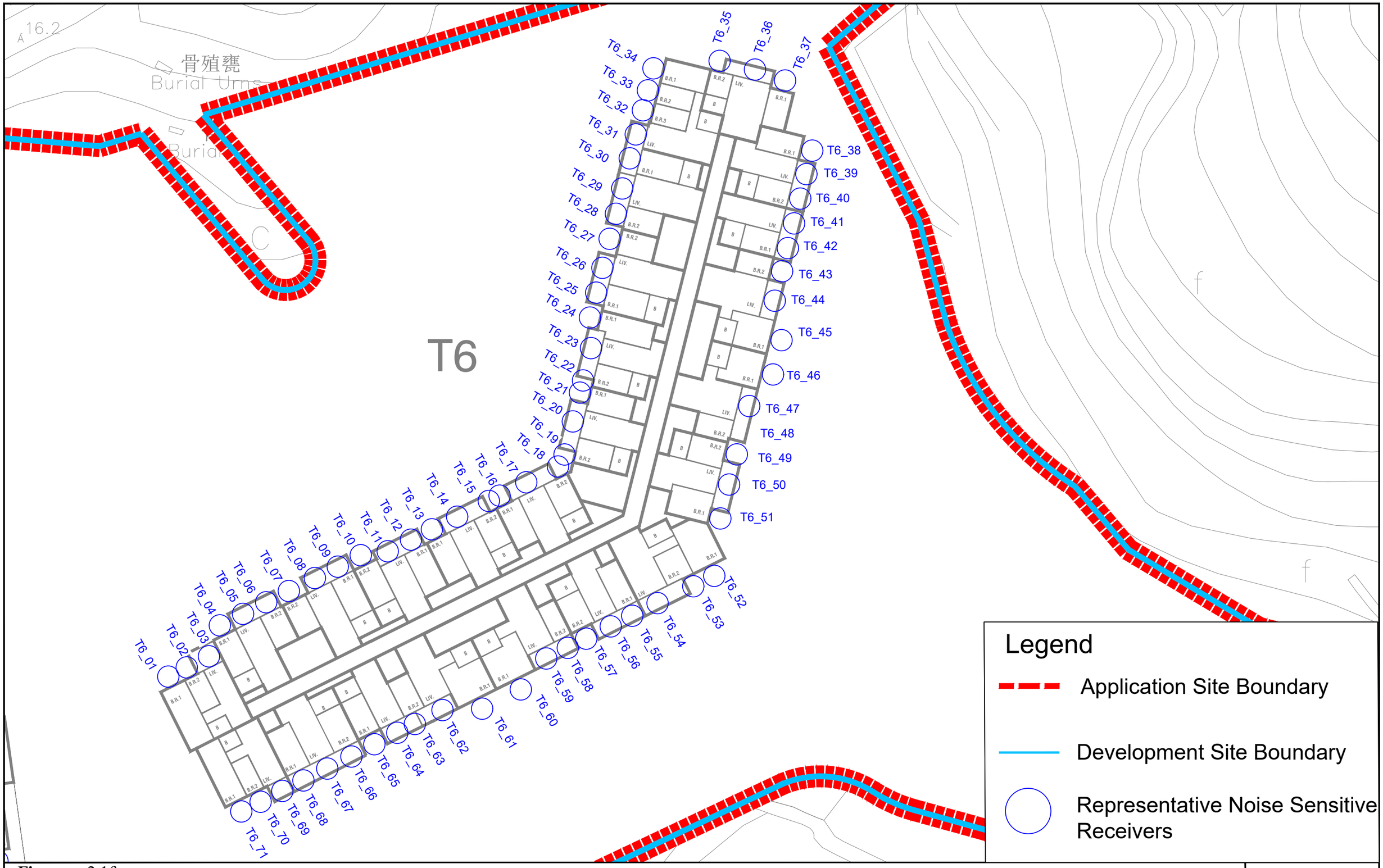

Figure:	2.1f	
Title:	Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T6)	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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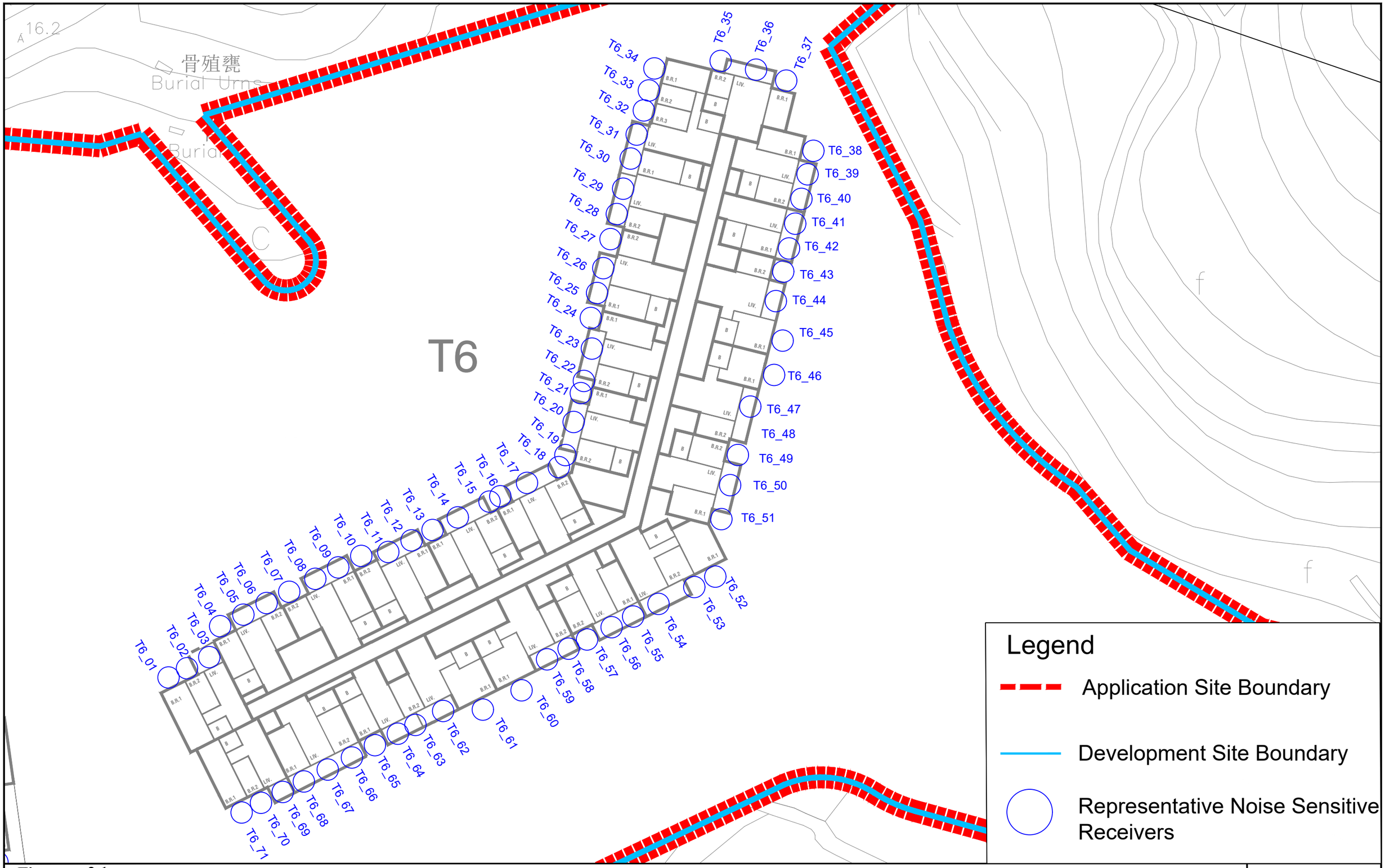

Figure:	2.1g	
Title:	Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T6)	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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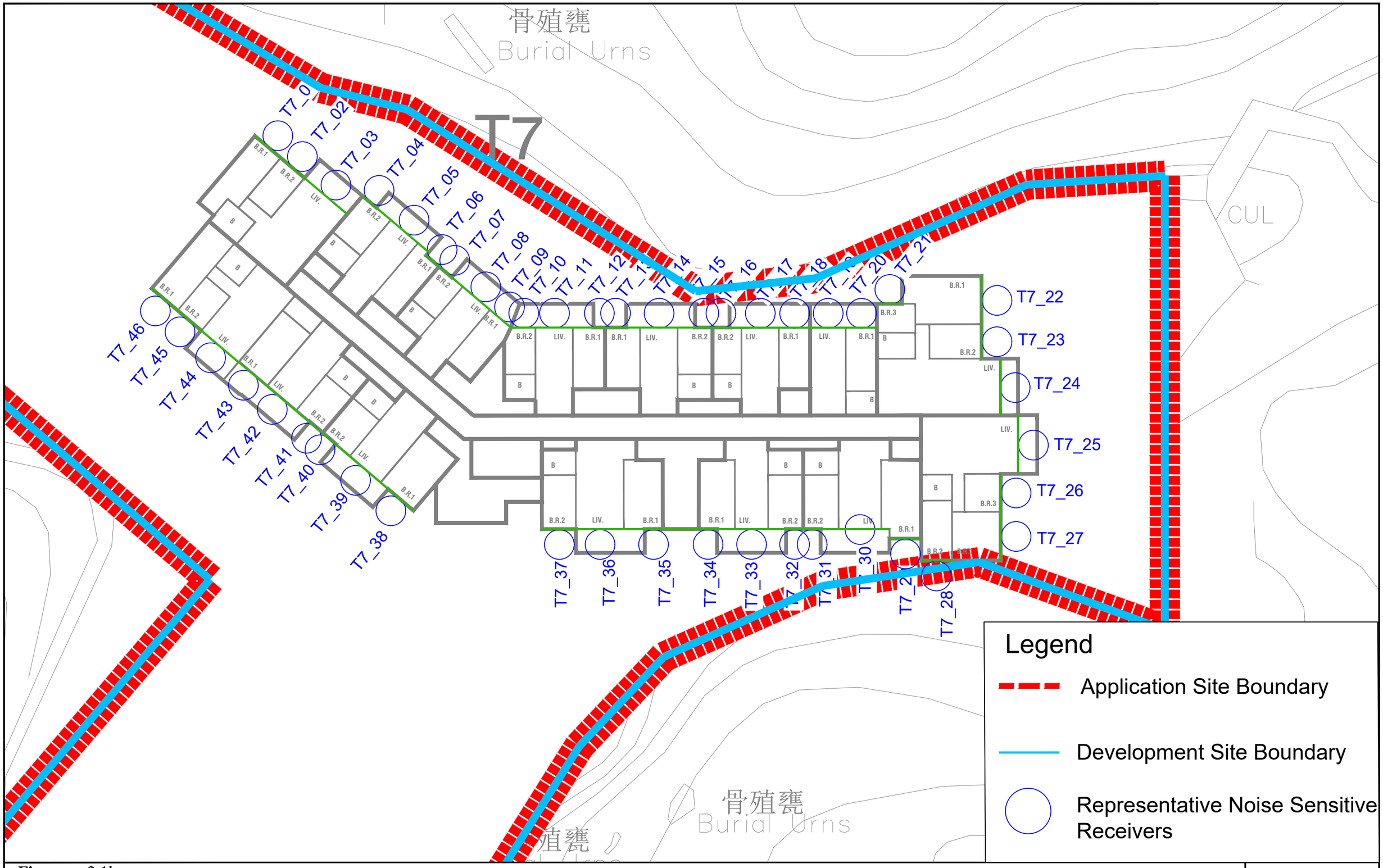

Figure: 2.1h

Title: Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (T7)

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

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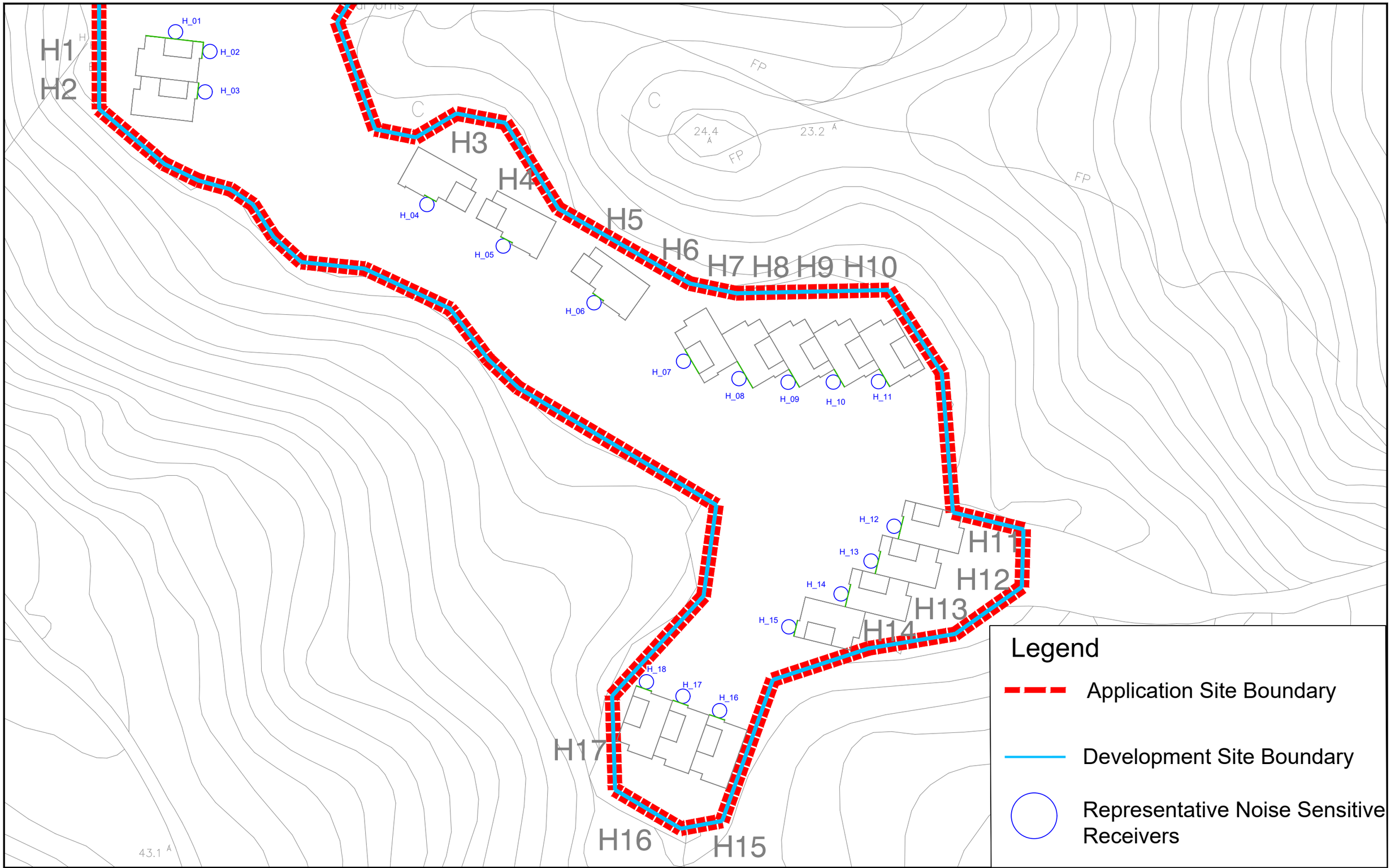

Figure: 2.1i

Title: Location of Planned Noise Sensitive Receiver for Road Traffic Noise Impact Assessment (H1 to H 17)

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

Drawn by:	SC
Checked by:	TC
Rev.:	1.0
Date:	Sep 2024

Q:\Projects\SHKTMTLCEI01\05 Assessments\02 Noise\02 Traffic\TNIA_250114.dwg

S1 Car Garage

S2 Car Garage

S3 Warehouse

S4 Open Storage Area

S5 Open Parking Area

S6 Wai Lan Rehabilitation Centre

S7 Tai Lam Chung Fire Station

S8 Tai Lam Chung C&E School Substation

S9 Firing Range at Hong Kong Customs College

300m

Legend

- Application Site Boundary
- Development Site Boundary
- 300m Assessment Area (from Development Site Boundary)
- Location of Potential Fixed Noise Sources

Figure: 3.1

Title: 300m Assessment Area, Location and Photos of Potential Fixed Noise Sources

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

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Figure 3.1 – Photo Records of Potential Fixed Noise Sources

S1	Car Garage 克仔車房 
S2	Car Garage 金龍汽車 

Figure 3.1 – Photo Records of Potential Fixed Noise Sources

S3	Warehouse 家雄物流有限公司 
S4	Open Storage Area near Luen Tai Street 

Figure 3.1 – Photo Records of Potential Fixed Noise Sources

S5	Open Space Carpark 
S6	Wai Lan Rehabilitation Centre 

Figure 3.1 – Photo Records of Potential Fixed Noise Sources

S7	Tai Lam Chung Fire Station 
S8	Tai Lam Chung C&E School Substation 

Figure 3.1 – Photo Records of Potential Fixed Noise Sources

S9	Firing Range at Hong Kong Customs College 

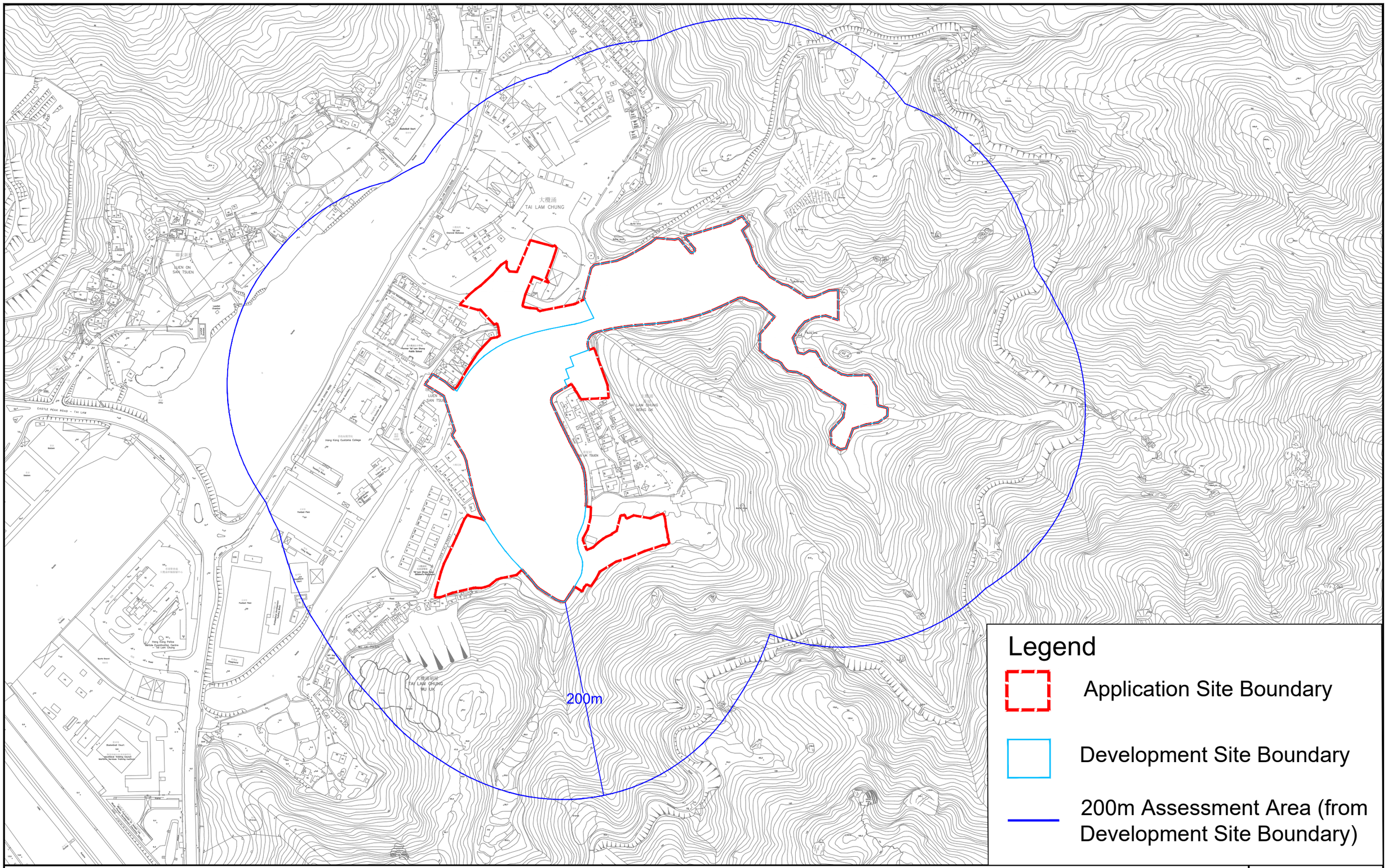

Figure: 4.1

Title: 200m Assessment Area from the Site Boundary of Subject Site for Qualitative Air Quality Impact Assessment

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

Drawn by:	SC
Checked by:	TC
Rev.:	1.0
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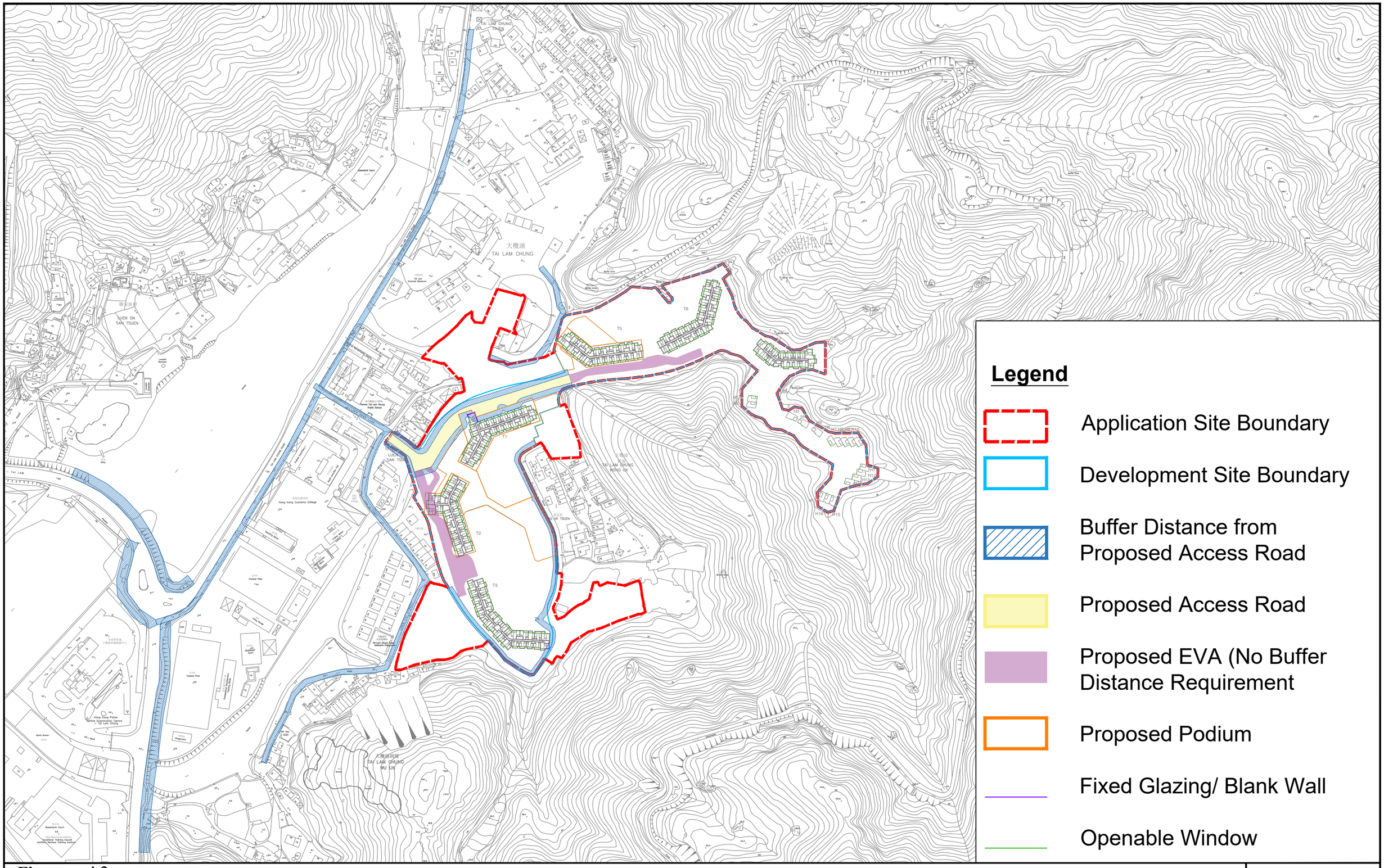

Figure:	4.2	
Title:	Minimum Buffer Distance Required between Roads and Active Open Spaces	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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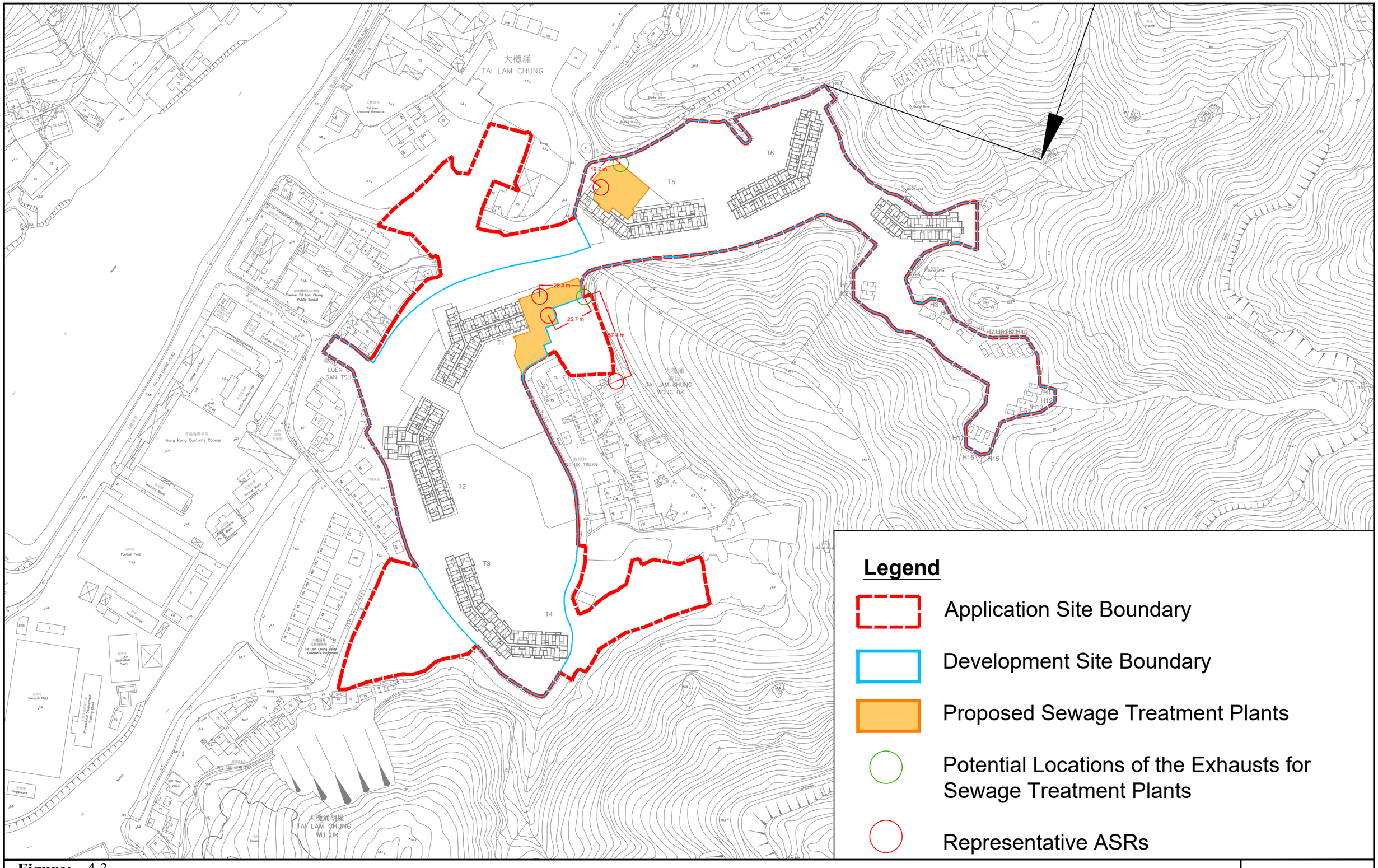

Figure: 4.3

Title: Separation Distance between Exhaust of Proposed Sewage Treatment Plants and Surrounding ASRs

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

Drawn by:	SC
Checked by:	TC
Rev.:	1.0
Date:	Sep 2024

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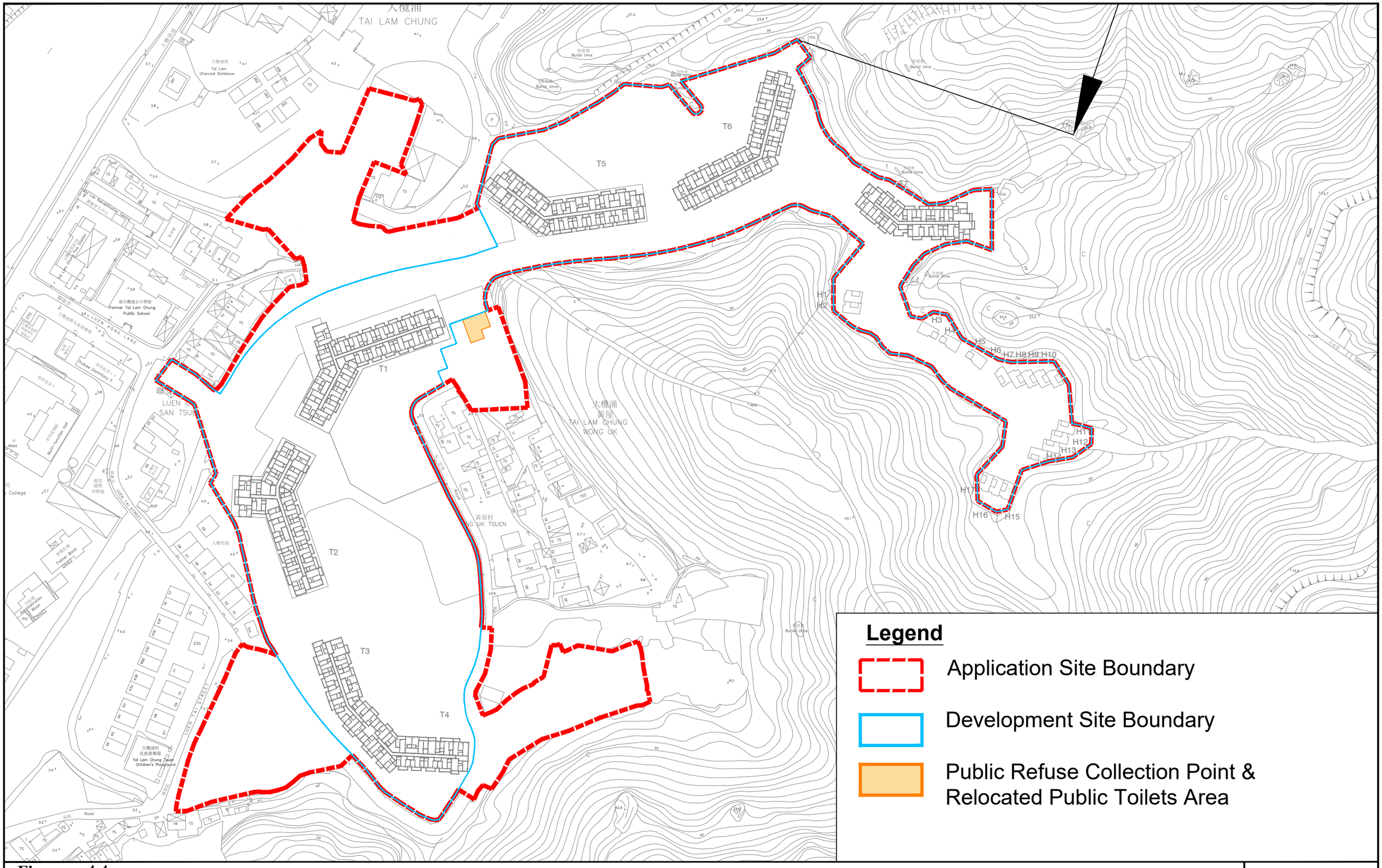

Figure: 4.4

Title: Location of Public Refuse Collection Point & Relocated Public Toilets Area

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

Drawn by:	SC
Checked by:	TC
Rev.:	1.0
Date:	Sep 2024

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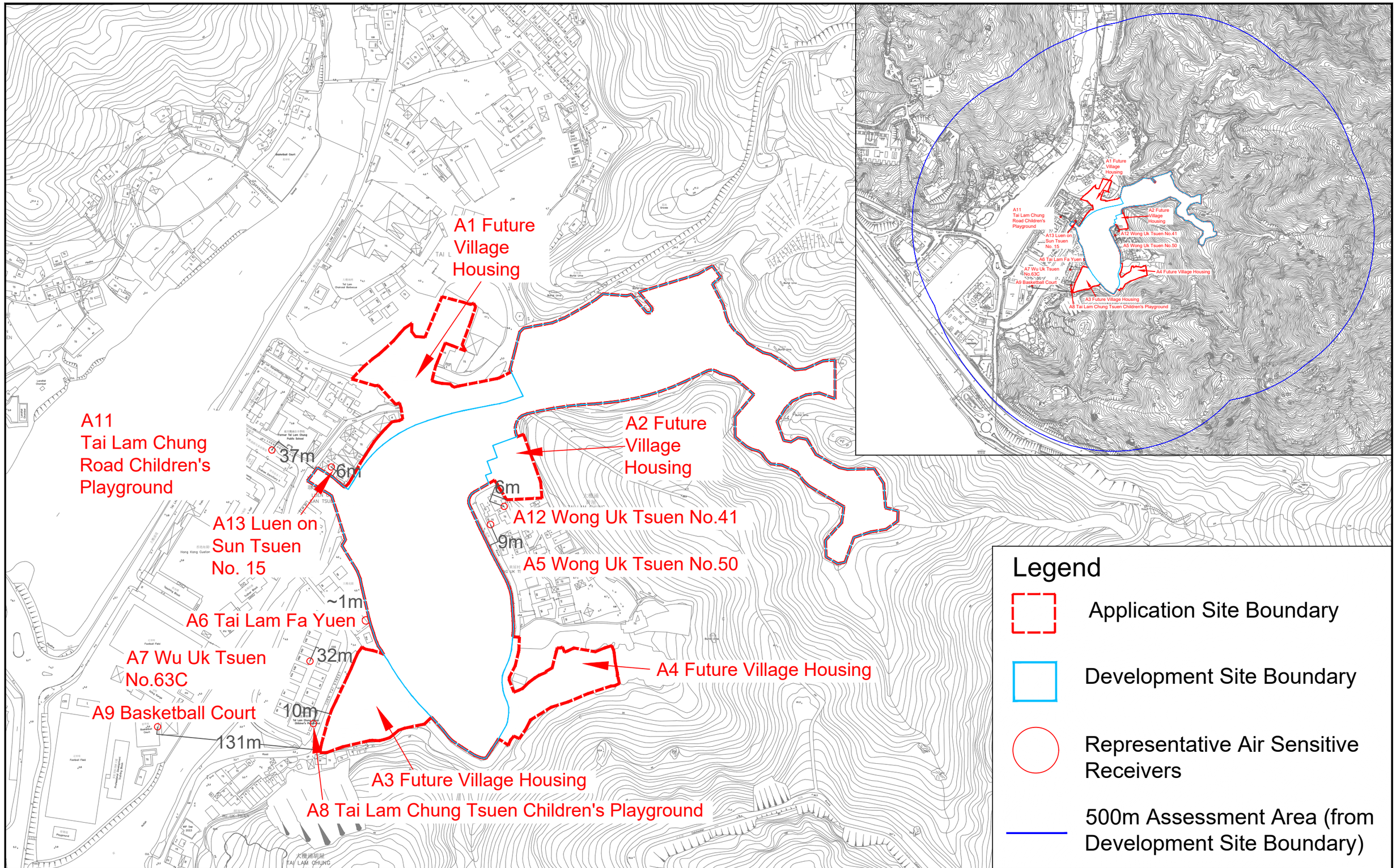

Figure:	4.5	
Title:	Location of Representative Air Sensitive Receivers During Construction Phase	Drawn by: SC Checked by: TC
Project:	Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun	Rev.: 1.0 Date: Sep 2024

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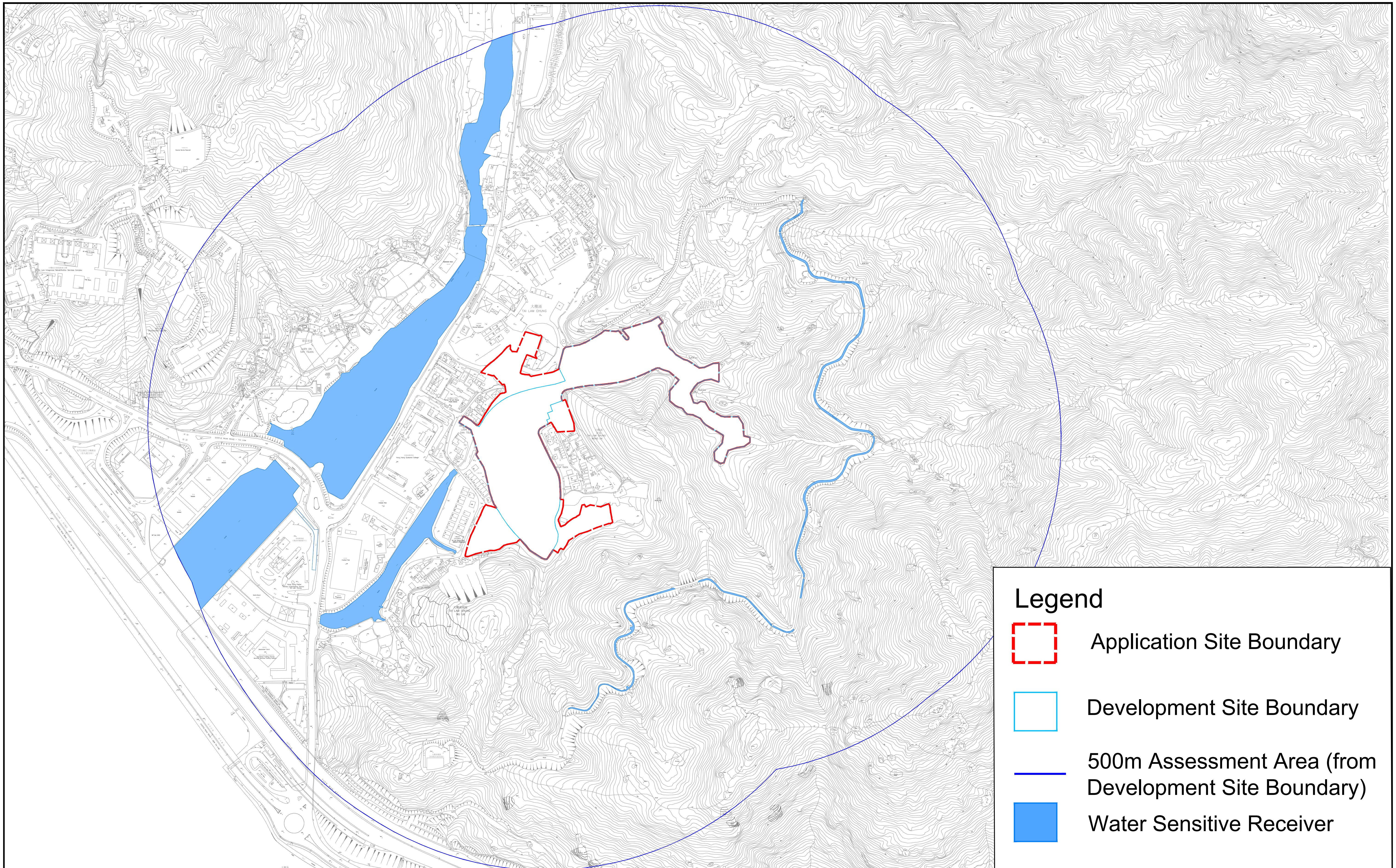

Figure: 5.1

Title: 200m Assessment Area from the Site Boundary of Subject Site for Water Quality Impact Assessment and Water Quality Sensitive Receiver

Project: Section 16 Planning Application for Proposed Amendments to a Comprehensive Residential Development Scheme (Previously Approved under Application No. A/TM-SKW/32-1) and Minor Relaxation of GFA and Building Height Restrictions at Various Lots in D.D. 385 and adjoining Government Land, Tai Lam Chung, Tuen Mun

Drawn by:	SC
Checked by:	TC
Rev.:	1.0
Date:	Sep 2024

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Appendix 1.1 Master Layout Plan and Section of the Development Site

N

Note:
- All spot levels marked on the building structures refer to the main roof levels
- All levels, blockings and building structures are subject to detailed design
- No. of storeys marked on plan refers to total no. of storeys above ground, excluding transfer plate

Legend

- Application Site Boundary
- Development Site Boundary
- Drainage Reserve
- Reserved Site for Public Facilities
- Formation Site for Village Housing
- Formation of the Future Public Roads
- Covered Walkway
- Residential
- Private Garden
- Landscape Area (Covered or Uncovered)
- Podium
- EVA / Driveway
- Management Facility

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Title

Indicative Master Layout Plan

Rev.	Date
SK02	MAY 2025
Scale	Figure
N/A	01

N

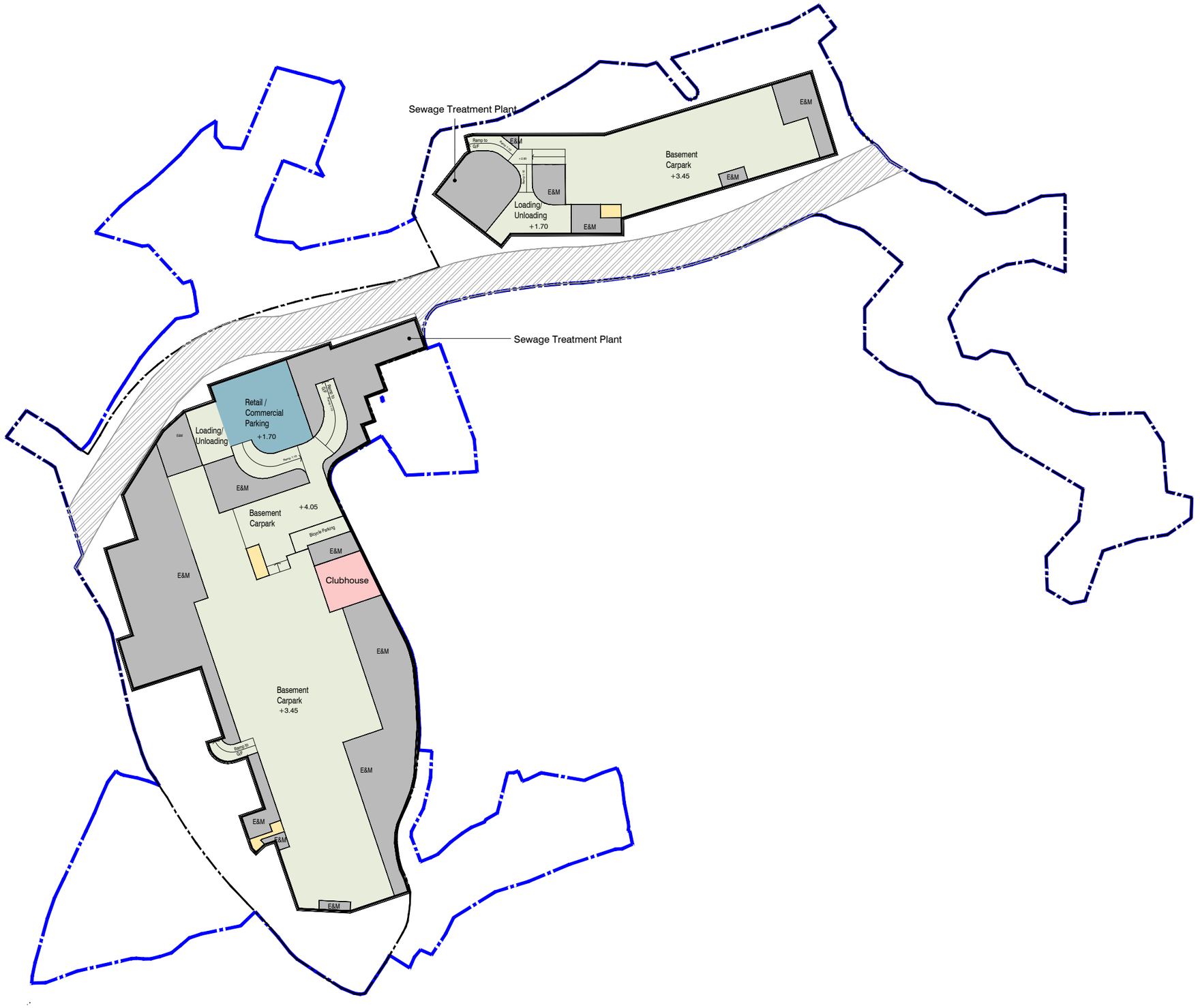
Note:

- Retail / Commercial use includes 'Shop and Services', 'Eating Place', 'School' (nursery / kindergarten / language, computer, commercial or tutorial schools / technical institutes / other types of schools providing interests and hobby related courses for subjects such as arts, ballet and etc.), 'Place of Entertainment' and 'Place of Recreation, Sports or Culture'.

- The carparking layout is for indicative purpose only and is subject to detailed design

Legend

- Application Site Boundary
- Development Site Boundary
- Drainage Reserve
- Clubhouse
- Retail / Commercial Parking
- Carpark / Driveway
- E&M & Circulation Area
- Residential Lobby / Carpark Lobby



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Title

Indicative Basement Layout Plan

Rev.	Date
SK02	MAY 2025
Scale	Figure
N/A	02

N

Note:

- Retail / Commercial use includes 'Shop and Services', 'Eating Place', 'School' (nursery / kindergarten / language, computer, commercial or tutorial schools / technical institutes / other types of schools providing interests and hobby related courses for subjects such as arts, ballet and etc.), 'Place of Entertainment' and 'Place of Recreation, Sports or Culture'.
- All levels, blockings and building structures are subject to detailed design
- No. of storeys marked on plan refers to total no. of storeys above ground, excluding transfer plate

Legend

- Application Site Boundary
- Development Site Boundary
- Drainage Reserve
- Reserved Site for Public Facilities
- Formation Site for Village Housing
- Formation of the Future Public Roads
- Residential
- Private Garden
- Landscape Area (Covered or Uncovered)
- Clubhouse
- Retail / Commercial
- Covered Transport Lay-by
- EVA / Driveway
- E&M
- Management Facility
- Residential Lobby / Carpark Lobby

Sewage Treatment Plant
Public Refuse Collection Point & Relocated Public Toilets Area
Public Open Space
Shrine
Public Car Park
Public Children Playground
Sewage Treatment Plant
Covered Landscape
Indoor Pool
Passageway Leading to Adjacent Burial Ground
Passageway Leading to Adjacent Burial Ground
HOUSE 1 - HOUSE 17
T3
T4
T6
T7
H1 H2 H3 H4 H5 H6 H7 H8 H9 H10 H11 H12 H13 H14 H15 H16 H17
EVA
+8.15
+8.00
+6.00
+7.55
+3.60
+10.00
+11.50
RAMP 1:20
RAMP 1:12.5
RAMP 1:10

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Title

Indicative Ground Floor Plan

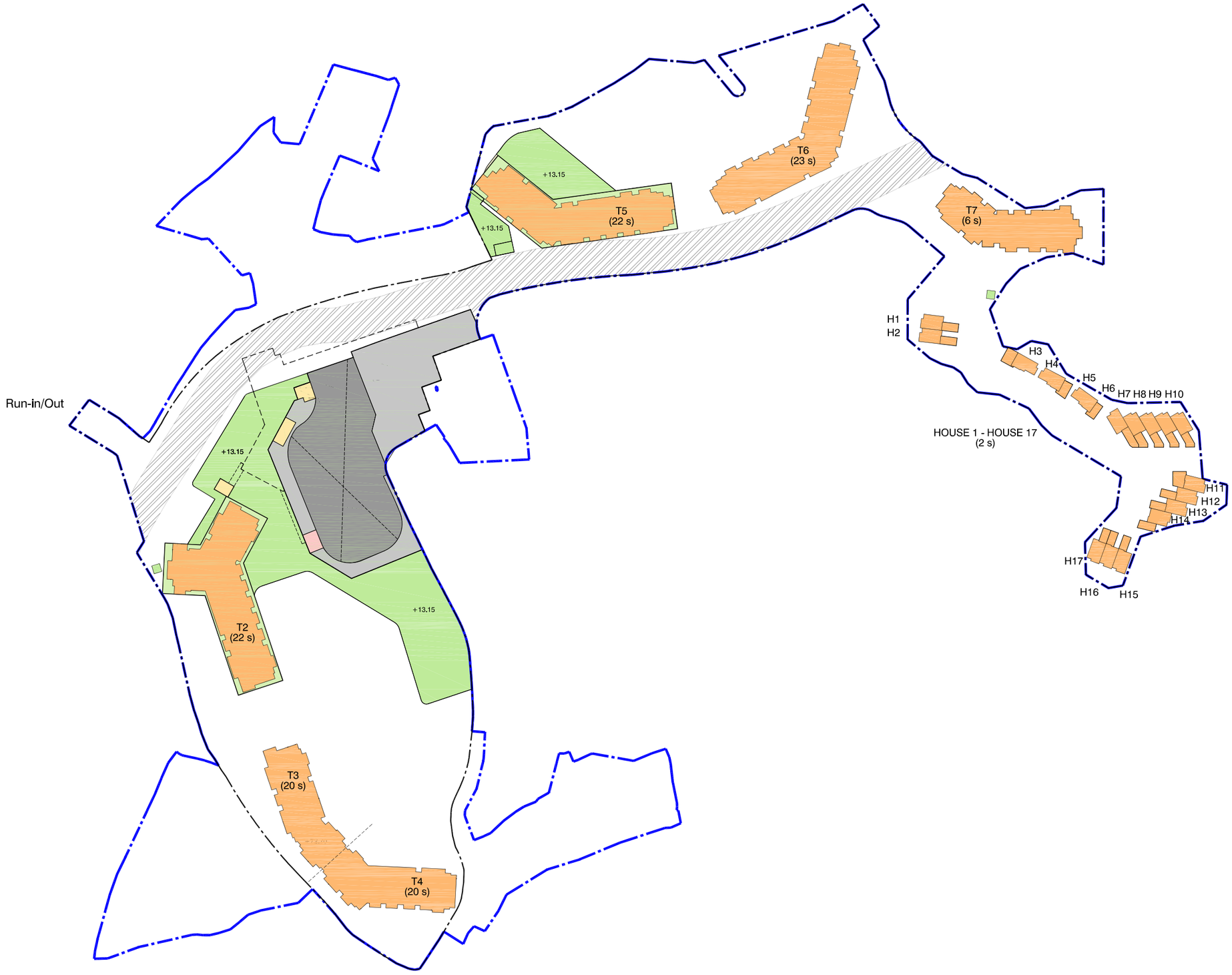
Rev.	Date
SK02	MAY 2025
Scale	Figure
N/A	03

N

Note:
- All levels, blockings and building structures are subject to detailed design
- No. of storeys marked on plan refers to total no. of storeys above ground

Legend

- Application Site Boundary
- Development Site Boundary
- Drainage Reserve
- Residential
- Landscape Area (Covered or Uncovered)
- Clubhouse
- Covered Transport Lay-by
- E&M
- Podium
- Residential Lobby / Carpark Lobby



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Title

Indicative First Floor Plan

Rev.	Date
SK02	MAY 2025
Scale	Figure
N/A	04

Appendix 2.1 Year 2045 Traffic Forecast for Road Traffic Noise Impact Assessment

Tai Lam Chung S16 - TRAFFIC FORECAST FOR NOISE IMPACT ASSESSMENT

Index	Road Link	Post Speed (km/hr)	Road Type	Direction	Year 2045 design			
					AM		PM	
					Total Veh	%HV	Total Veh	%HV
L1	Tai Lam Chung Road	50	Rural Road	Two-way	311	18%	252	12%
L2	Village Road	50	Feeder Road	Two-way	11	15%	11	11%
L3	Tai Lam Chung Road	50	Rural Road	Two-way	322	18%	263	12%
L4	Village Road	50	Feeder Road	One-way	58	10%	41	10%
L5	Luen Hong Lane	50	Feeder Road	Two-way	408	18%	294	23%
L6	Village Road	50	Feeder Road	Two-way	16	18%	21	35%
L7	Village Road	50	Feeder Road	Two-way	38	18%	41	35%
L8	Village Road	50	Feeder Road	Two-way	22	18%	21	35%
L9	Tai Lam Chung Road	50	Rural Road	Two-way	730	18%	558	18%
L10	Castle Peak Road - Tai Lam	50	Rural Road	Two-way	763	32%	597	30%
L11	Castle Peak Road - Tai Lam (To Bus Stop)	50	Rural Road	One-way	48	100%	38	100%
L12	Castle Peak Road - Tai Lam	50	Rural Road	Two-way	329	37%	280	32%
L13	Proposed Access Road	50	Feeder Road	Two-way	166	10%	107	10%
L14	Proposed Access Road	50	Feeder Road	Two-way	194	23%	135	29%
L15	Village Road	50	Feeder Road	One-way	58	10%	41	10%
L16	Village Road	50	Feeder Road	Two-way	11	15%	11	11%
L17	Proposed Access Road	50	Feeder Road	Two-way	360	17%	243	21%

ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:

LEGEND:

SITE BOUNDARY

LOCATION INDEX

N

TAI LAM CHUNG

SIU LAM ROAD

HONG FAI ROAD

CASTLE PEAK ROAD – TAI LAM

TAI LAM CHUNG ROAD

CASTLE PEAK ROAD – NEW TAI LAM

TUEN MUN ROAD

CASTLE PEAK ROAD

BROTHERS POINT
(TAI LAM KOK)

300m

Village Road

Village Road

Proposed Access Road

Proposed Access Road

Village Road

Village Road

Village Road

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Plot File by: chancwa 28/2/2025
PATH: C:\Users\chancwa\OneDrive - AECOM\JOB BACKUP\60281828\TIA\FIGURE 1.dgn

AECOM

PROJECT
項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND (LOT TO KNOWN AS TMTL NO. 417), TAI LAM CHUNG, TUEN MUN

CLIENT
業主

SUN HUNG KAI REAL ESTATE AGENCY LTD. 新鴻基地產代理有限公司

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核對

STATUS
階段

SCALE 比例
A3 1 : 6000

DIMENSION UNIT 尺寸單位

KEY PLAN
索引圖

PROJECT NO. 項目編號
60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱
NIA INDEX PLAN

SHEET NUMBER
圖紙編號
FIGURE 1

Appendix 2.2 Road Traffic Noise Impact Assessment Result – Base-case Scenario

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T1

Floor	mPD	T1_01	T1_02	T1_03	T1_04	T1_05	T1_06	T1_07	T1_08	T1_09	T1_10	T1_11	T1_12	T1_13	T1_14	T1_15	T1_16	T1_17	T1_18	T1_19	T1_20	T1_21	T1_22	T1_23	T1_24	T1_25	T1_26	T1_27	T1_28	T1_29	T1_30	T1_31	T1_32	T1_33	T1_34	T1_35
1	**20.3**	62	63	63	63	63	63	63	63	60	59	59	59	60	60	60	60	60	61	61	50	51	52	52	53	53	53	53	53	53	53	53	53	53	54	54
2	**23.5**	64	64	64	64	64	64	65	65	64	63	63	63	64	64	64	63	64	64	64	54	55	56	56	57	57	57	57	57	57	57	57	57	57	57	58
3	**26.7**	65	65	65	65	65	65	65	65	64	64	64	64	64	64	64	64	64	64	65	56	57	58	58	59	59	59	59	59	59	59	59	59	59	59	59
4	**29.9**	65	65	65	65	65	65	65	65	65	64	64	65	65	65	65	64	64	65	65	59	60	60	61	61	61	61	61	61	61	61	61	61	61	61	61
5	**33.0**	65	65	65	65	65	65	65	65	65	64	64	65	65	65	65	64	65	65	65	61	62	62	62	63	63	63	63	63	63	63	63	63	63	63	63
6	**36.2**	65	65	65	65	65	65	65	65	65	64	64	65	65	65	65	65	65	65	65	61	62	63	63	63	63	63	63	64	64	64	64	64	64	64	64
7	**39.4**	65	65	65	65	65	65	65	65	65	64	64	65	65	65	65	64	65	65	65	62	62	63	63	63	63	63	64	64	64	64	64	64	64	64	64
8	**42.6**	65	65	65	65	65	65	65	65	65	64	64	64	65	65	65	64	65	65	65	62	62	63	63	63	63	63	64	64	64	64	64	64	64	64	64
9	**45.8**	65	65	65	65	65	65	65	65	65	64	64	65	65	65	65	64	65	65	65	61	62	63	63	63	63	63	64	64	64	64	64	64	64	64	64
10	**49.0**	64	64	64	65	65	65	65	65	64	64	64	64	65	65	65	64	64	65	65	61	62	62	63	63	63	63	63	63	63	63	63	64	63	64	64
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12	**55.3**	64	64	64	64	64	64	65	64	64	64	64	64	64	65	65	64	64	65	65	61	61	62	62	62	63	63	63	63	63	63	63	63	63	63	63
13	**58.5**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	64	64	65	65	61	61	62	62	62	63	63	63	63	63	63	63	63	63	63	63
14	**61.7**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	65	60	61	62	62	62	62	62	63	63	63	63	63	63	63	63	63
15	**64.9**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	65	60	61	62	62	62	62	62	63	63	63	63	63	63	63	63	63
16	**68.1**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	60	61	61	61	62	62	62	62	62	62	63	63	63	63	63	63
17	**71.3**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	60	61	61	61	62	62	62	62	62	62	62	62	62	62	62	62
18	**74.4**	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	65	60	60	61	61	61	62	62	62	62	62	62	62	62	62	62	62
19	**77.6**	64	64	64	64	64	64	64	64	64	63	64	64	64	64	64	64	64	64	64	60	60	61	61	61	62	62	62	62	62	62	62	62	62	62	62
20	**80.8**	63	64	63	64	64	64	64	64	63	63	63	64	64	64	64	64	64	64	64	60	60	61	61	61	61	62	62	62	62	62	62	62	62	62	62
Max Noise Level		**65**	**65**	**65**	**65**	**65**	**65**	**65**	**65**	**65**	**64**	**64**	**65**	**65**	**65**	**65**	**65**	**65**	**65**	**65**	**62**	**62**	**63**	**63**	**63**	**63**	**63**	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**	**64**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T1_36	T1_37	T1_38	T1_39	T1_40	T1_41	T1_42	T1_43	T1_44	T1_45	T1_46	T1_47	T1_48	T1_49	T1_50	T1_51	T1_52	T1_53	T1_54	T1_55	T1_56	T1_57	T1_58	T1_59	T1_60	T1_61	T1_62	T1_63	T1_64	T1_65	T1_66	T1_67	T1_68	T1_69	T1_70	T1_71	T1_72	T1_73	T1_74	T1_75	T1_76	T1_77
1	**20.3**	54	54	53	53	53	53	47	45	44	40	38	38	38	38	38	37	37	37	36	36	36	36	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	36	37	37	42
2	**23.5**	57	57	57	57	57	57	50	49	48	42	42	41	41	41	40	40	40	38	38	38	38	38	38	37	37	37	37	37	37	37	37	37	37	37	37	37	37	38	38	38	38	45
3	**26.7**	59	59	59	59	59	59	51	50	49	44	43	43	43	42	42	41	41	39	39	39	39	39	39	38	38	38	38	38	38	38	38	38	38	38	38	39	39	39	39	39	39	47
4	**29.9**	61	61	61	61	61	61	53	51	50	45	44	44	44	43	43	42	42	40	39	39	39	40	40	39	39	38	38	38	38	38	38	39	39	39	39	39	39	39	39	39	39	47
5	**33.0**	63	63	63	63	62	62	55	53	51	45	45	45	44	44	43	43	42	40	39	39	40	40	41	40	39	39	38	38	38	39	39	39	39	39	39	39	39	39	39	39	39	48
6	**36.2**	64	64	63	63	63	63	55	53	52	45	45	45	45	44	43	43	42	41	40	39	40	40	41	40	40	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	48
7	**39.4**	64	64	64	63	63	63	56	54	52	46	45	45	45	44	43	43	43	41	40	39	40	41	42	41	40	40	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	48
8	**42.6**	64	64	64	63	63	63	56	54	53	46	46	45	45	45	44	43	43	41	40	39	40	41	42	41	41	40	40	40	39	39	39	39	39	39	39	39	39	40	39	40	40	48
9	**45.8**	64	64	64	63	63	63	57	54	53	46	46	46	45	45	44	43	43	41	40	39	40	41	42	42	41	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	49
10	**49.0**	63	63	63	63	63	63	57	54	53	47	46	46	46	45	44	44	43	41	40	40	41	41	42	42	42	41	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	49
11	**52.2**	63	63	63	63	63	63	57	55	53	47	47	46	46	45	44	44	43	41	41	40	41	41	42	42	42	41	41	41	40	40	40	40	40	40	40	40	40	40	40	40	40	49
12	**55.3**	63	63	63	63	63	63	57	55	53	47	47	46	46	45	44	44	43	41	41	40	41	41	42	42	42	42	41	41	41	40	40	40	40	40	40	40	40	40	40	40	40	49
13	**58.5**	63	63	63	63	63	62	57	55	53	47	47	46	46	45	44	44	43	42	41	40	41	41	42	42	42	42	41	41	41	41	41	41	40	40	40	40	40	40	40	40	40	50
14	**61.7**	63	63	63	63	62	62	57	55	53	47	46	46	46	45	44	44	43	42	41	40	41	41	42	42	42	42	41	41	41	41	41	41	41	41	40	40	40	41	40	40	40	50
15	**64.9**	63	63	63	62	62	62	57	55	54	47	46	46	46	45	44	44	43	42	41	40	41	41	42	42	42	42	42	42	41	41	41	41	41	41	41	40	41	41	41	41	41	50
16	**68.1**	63	63	62	62	62	62	57	55	54	46	46	46	46	45	44	44	43	42	41	40	41	41	42	42	42	42	42	42	42	41	41	41	41	41	41	41	41	41	41	41	41	50
17	**71.3**	62	62	62	62	62	62	57	55	54	46	46	46	46	45	44	44	43	42	41	40	41	41	42	42	42	42	42	42	42	42	42	41	41	41	41	41	41	41	41	41	41	50
18	**74.4**	62	62	62	62	62	62	57	55	54	46	46	46	46	45	45	44	43	42	41	41	41	41	42	43	43	43	42	42	42	42	42	42	42	42	41	41	41	41	41	41	41	50
19	**77.6**	62	62	62	62	62	62	57	55	54	46	46	46	46	45	45	44	44	43	42	41	42	42	43	43	43	43	43	43	43	43	43	43	42	42	42	42	42	42	42	42	42	51
20	**80.8**	62	62	62	62	62	62	57	55	54	47	46	46	46	46	45	45	44	43	43	43	43	43	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	51
Max Noise Level		**64**	**64**	**64**	**63**	**63**	**63**	**57**	**55**	**54**	**47**	**47**	**46**	**46**	**46**	**45**	**45**	**44**	**43**	**43**	**43**	**43**	**43**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**51**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T2

Floor	mPD	T2_01	T2_02	T2_03	T2_04	T2_05	T2_06	T2_07	T2_08	T2_09	T2_10	T2_11	T2_12	T2_13	T2_14	T2_15	T2_16	T2_17	T2_18	T2_19	T2_20	T2_21	T2_22	T2_23	T2_24	T2_25	T2_26	T2_27	T2_28	T2_29	T2_30	T2_31	T2_32	T2_33	T2_34	T2_35
1	**15.2**	56	56	56	55	55	55	54	54	54	54	54	54	54	55	55	54	53	46	45	44	56	60	60	61	61	62	63	64	59	62	62	62	63	63	62
2	**18.4**	57	57	57	57	57	56	56	56	56	56	56	56	56	56	56	56	54	48	46	45	57	62	62	63	63	64	64	64	60	63	63	63	64	64	63
3	**21.6**	58	58	58	58	58	57	57	57	57	57	57	57	57	57	57	57	55	49	46	45	58	63	63	63	63	64	64	64	60	63	63	63	63	63	63
4	**24.8**	59	59	59	58	58	58	58	58	58	58	58	58	58	58	58	58	56	50	46	45	58	63	63	63	64	64	64	65	60	63	63	63	64	64	63
5	**28.0**	59	59	59	59	59	59	59	59	59	59	59	59	59	59	58	58	57	50	46	45	59	63	63	63	64	64	64	65	60	63	63	63	64	64	64
6	**31.2**	60	60	59	59	59	59	59	59	59	59	59	59	59	59	59	58	57	50	46	46	59	63	63	64	64	64	64	65	60	63	63	63	64	64	64
7	**34.4**	60	60	60	60	60	59	59	59	59	59	59	59	59	59	59	59	58	50	47	46	59	63	63	64	64	64	64	65	60	62	63	63	63	63	64
8	**37.6**	60	60	60	60	60	60	60	59	59	59	59	59	59	59	59	59	58	50	47	46	59	63	63	64	64	64	64	64	60	62	62	63	63	63	63
9	**40.8**	60	60	60	60	60	60	60	60	59	59	59	59	59	59	59	59	58	50	47	46	60	63	63	64	64	64	64	64	60	62	62	63	63	63	63
10	**44.0**	60	60	60	60	60	60	60	60	60	60	59	59	59	59	59	59	58	50	47	46	60	63	63	64	64	64	64	64	59	62	62	63	63	63	63
11	**47.2**	60	60	60	60	60	60	60	60	60	60	60	59	60	60	59	59	58	50	47	46	60	63	63	63	64	64	64	64	59	62	62	62	63	63	63
12	**50.4**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	50	47	46	60	63	63	63	64	64	64	64	59	62	62	62	63	63	63
13	**53.6**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	50	47	46	60	63	63	63	63	64	64	64	59	61	62	62	63	63	63
14	**56.8**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	50	47	46	60	63	63	63	63	64	64	64	59	61	61	62	63	63	63
15	**60.1**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	51	47	46	60	63	63	63	63	64	64	64	59	61	61	62	62	63	63
16	**63.3**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	51	47	46	60	63	63	63	63	64	64	64	59	61	61	62	62	62	63
17	**66.5**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	51	47	46	60	63	63	63	63	63	64	64	58	61	61	62	62	62	63
18	**69.7**	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	59	58	51	47	46	60	63	63	63	63	63	64	64	58	61	61	62	62	62	63
19	**72.9**	60	60	60	60	60	60	60	60	60	60	60	59	60	60	59	59	58	51	47	46	60	63	63	63	63	63	63	64	58	61	61	61	62	62	63
20	**76.1**	60	60	60	60	60	60	60	60	60	60	60	59	60	60	59	59	58	51	48	46	60	63	63	63	63	63	63	64	58	61	61	61	62	62	62
21	**79.3**	60	60	60	60	60	60	60	60	60	60	60	59	60	60	59	59	58	51	49	48	60	63	63	63	63	63	63	63	58	61	61	61	62	62	62
Max Noise Level		**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**59**	**59**	**58**	**51**	**49**	**48**	**60**	**63**	**63**	**64**	**64**	**64**	**64**	**65**	**60**	**63**	**63**	**63**	**64**	**64**	**64**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T2_36	T2_37	T2_38	T2_39	T2_40	T2_41	T2_42	T2_43	T2_44	T2_45	T2_46	T2_47	T2_48	T2_49	T2_50	T2_51	T2_52	T2_53	T2_54	T2_55	T2_56	T2_57	T2_58	T2_59	T2_60	T2_61	T2_62	T2_63	T2_64	T2_65	T2_66	T2_67	T2_68	T2_69
1	**15.2**	62	61	61	61	60	39	39	39	39	39	40	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	42	42	42	42	43	43	44
2	**18.4**	63	62	62	62	61	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	43	45
3	**21.6**	63	63	62	62	62	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	43	44
4	**24.8**	63	63	63	63	63	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	43	44
5	**28.0**	64	64	64	64	64	40	40	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	43	44
6	**31.2**	64	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	43	43	43	43	44
7	**34.4**	64	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	43	43	43	43	44
8	**37.6**	64	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
9	**40.8**	64	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
10	**44.0**	64	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
11	**47.2**	63	64	64	64	64	40	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
12	**50.4**	63	63	63	64	64	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
13	**53.6**	63	63	63	63	64	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	43	43	43	44
14	**56.8**	63	63	63	63	64	40	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	43	43	43	44
15	**60.1**	63	63	63	63	63	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	43	43	43	44
16	**63.3**	63	63	63	63	63	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	43	43	43	44
17	**66.5**	63	63	63	63	63	40	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	43	43	43	44
18	**69.7**	63	63	63	63	63	40	40	40	40	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	42	43	43	43	44
19	**72.9**	63	63	63	63	63	41	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42	42	42	42	42	43	43	43	43	44
20	**76.1**	63	63	63	63	63	42	41	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	43	43	43	43	43	43	43	43	43	44	44
21	**79.3**	63	63	63	63	63	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	45	45	45	45	45
Max Noise Level		**64**	**64**	**64**	**64**	**64**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**44**	**45**	**45**	**45**	**45**	**45**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

No. of Units with Exceedance:	0
Compliance Level:	100.0%
Max. Noise Level:	65

Noted:

Noise level exceed stardand of 70 dB(A)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T3T4

Floor	mPD	T3T4_01	T3T4_02	T3T4_03	T3T4_04	T3T4_05	T3T4_06	T3T4_07	T3T4_08	T3T4_09	T3T4_10	T3T4_11	T3T4_12	T3T4_13	T3T4_14	T3T4_15	T3T4_16	T3T4_17	T3T4_18	T3T4_19	T3T4_20	T3T4_21	T3T4_22	T3T4_23	T3T4_24	T3T4_25	T3T4_26	T3T4_27	T3T4_28	T3T4_29	T3T4_30	T3T4_31	T3T4_32	T3T4_33	T3T4_34	T3T4_35	T3T4_36	T3T4_37	T3T4_38	T3T4_39	T3T4_40
1	8.7	56	55	55	54	54	54	54	54	54	54	54	54	54	54	53	58	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	58	58	58	58	58	58	58	58
2	11.9	56	55	55	54	54	54	54	54	54	54	54	54	54	53	53	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	58	58	58	58	58	58
3	15.1	55	55	55	54	54	54	54	54	54	54	54	54	53	53	53	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
4	18.3	55	55	54	54	54	54	54	54	54	54	54	53	53	53	53	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
5	21.5	55	54	54	54	54	54	54	54	53	53	53	53	53	53	53	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59
6	24.7	55	54	54	54	54	53	53	53	53	53	53	53	53	53	52	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	59	60
7	27.9	55	54	54	53	53	53	53	53	53	53	53	53	53	52	52	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	60	60	60
8	31.1	54	54	53	53	53	53	53	53	53	53	53	52	52	52	52	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	59	59	59	60	60	60
9	34.3	54	53	53	53	53	53	53	53	52	52	52	52	52	52	52	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	59	59	59	60	60	60	60	60
10	37.5	54	53	53	52	52	52	52	52	52	52	52	52	52	52	51	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	59	60	60	60	60	60	60	60	60
11	40.7	53	53	53	52	52	52	52	52	52	52	52	52	52	51	51	58	58	58	58	58	58	58	58	58	59	59	59	59	59	60	60	60	60	60	60	60	60	60	60
12	43.9	53	52	52	52	52	52	52	52	52	52	52	51	51	51	51	58	58	58	58	58	58	58	58	58	59	59	59	59	60	60	60	60	60	60	60	60	60	60	60
13	47.1	53	52	52	52	52	52	52	52	52	51	51	51	51	51	51	58	58	58	58	58	58	58	58	58	59	59	59	59	60	60	60	60	60	60	60	60	60	60	60
14	50.3	53	52	52	52	51	51	51	51	51	51	51	51	51	51	50	58	58	58	58	58	58	58	58	58	59	59	59	59	60	60	60	60	60	60	60	60	60	60	60
15	53.5	52	52	52	51	51	51	51	51	51	51	51	51	51	51	50	58	58	58	58	58	58	58	58	58	59	59	59	59	60	60	60	60	60	60	60	60	60	60	60
16	56.7	52	52	51	51	51	51	51	51	51	51	51	51	51	50	50	58	58	58	58	58	58	58	58	58	58	59	59	59	60	60	60	60	60	60	60	60	60	60	60
17	59.9	52	51	51	51	51	51	51	51	51	51	51	50	50	50	50	58	58	58	58	58	58	58	58	58	58	58	59	59	59	60	60	60	60	60	60	60	60	60	60
18	63.1	52	51	51	51	51	51	51	51	51	51	51	50	50	50	50	58	58	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	60	60	60	60	60	60	60
19	66.3	52	51	51	51	51	51	51	51	51	51	51	50	50	50	50	58	58	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	60	60	60	60	60	60
Max Noise Level		**56**	**55**	**55**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**54**	**53**	**58**	**58**	**58**	**58**	**58**	**58**	**59**	**59**	**59**	**59**	**59**	**59**	**59**	**59**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T3T4_41	T3T4_42	T3T4_43	T3T4_44	T3T4_45	T3T4_46	T3T4_47	T3T4_48	T3T4_49	T3T4_50	T3T4_51	T3T4_52	T3T4_53	T3T4_54	T3T4_55	T3T4_56	T3T4_57	T3T4_58	T3T4_59	T3T4_60	T3T4_61	T3T4_62	T3T4_63	T3T4_64	T3T4_65	T3T4_66	T3T4_67	T3T4_68	T3T4_69	T3T4_70	T3T4_71	T3T4_72	T3T4_73	T3T4_74	T3T4_75	T3T4_76	T3T4_77	T3T4_78	T3T4_79	T3T4_80	T3T4_81
1	8.7	58	58	58	58	57	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	48	49	48	48	48	50	50	50	51	51	51	52	52	52	53	54
2	11.9	58	58	58	58	58	46	46	46	46	46	47	47	47	47	47	47	47	47	47	47	48	48	48	48	48	48	48	48	48	50	50	50	51	51	51	51	52	52	53	54
3	15.1	59	58	58	58	58	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	48	48	48	48	50	50	50	51	51	51	51	52	52	53	54
4	18.3	59	59	59	59	59	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	48	48	48	48	49	50	50	50	51	51	51	51	52	53	54
5	21.5	59	59	59	59	59	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	48	47	49	50	50	50	50	50	51	51	51	52	52	53
6	24.7	60	60	60	60	59	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	47	47	49	50	50	50	50	50	51	51	51	52	52	53
7	27.9	60	60	60	60	60	46	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	48	48	48	48	48	47	47	49	49	49	50	50	50	50	51	51	51	52	53
8	31.1	60	60	60	60	60	46	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	47	48	48	48	48	47	47	49	49	49	49	50	50	50	50	51	51	52	53
9	34.3	60	60	60	60	60	46	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	47	48	48	47	47	47	49	49	49	49	49	50	50	50	50	51	51	52
10	37.5	60	60	60	60	60	46	46	46	46	46	46	46	46	46	47	46	46	46	47	47	47	47	47	47	47	47	47	46	48	49	49	49	49	49	50	50	50	50	51	52
11	40.7	60	60	60	60	60	46	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	47	46	48	48	49	49	49	49	49	49	50	50	51	52
12	43.9	60	60	60	60	60	46	45	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	47	47	47	47	46	48	48	48	49	49	49	49	49	50	50	51	51
13	47.1	60	60	60	60	60	46	45	46	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	47	47	46	46	48	48	48	48	49	49	49	49	49	50	51	51
14	50.3	60	60	60	60	60	46	45	45	45	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	47	46	46	48	48	48	48	48	48	49	49	49	50	51	51
15	53.5	60	60	60	60	60	46	45	45	45	45	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	46	46	47	48	48	48	48	48	48	49	49	49	50	50
16	56.7	60	60	60	60	60	46	45	45	45	45	45	45	46	46	46	46	46	46	46	46	46	46	46	46	47	47	46	46	46	47	48	48	48	48	48	48	48	49	49	50
17	59.9	60	60	60	60	60	46	45	45	45	45	45	45	46	46	46	46	46	46	46	46	46	46	46	46	46	47	46	46	45	47	48	47	48	48	48	48	48	49	49	50
18	63.1	60	60	60	60	60	46	45	45	45	45	46	46	46	46	46	46	46	46	46	46	46	46	46	46	47	46	46	46	46	47	48	47	48	48	48	48	48	49	49	50
19	66.3	60	60	60	60	60	46	46	46	46	46	46	46	46	46	47	46	46	47	47	47	47	47	47	47	47	47	47	46	46	47	48	48	48	48	48	48	48	48	49	50
Max Noise Level		**60**	**60**	**60**	**60**	**60**	**46**	**46**	**46**	**46**	**46**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**47**	**48**	**48**	**48**	**48**	**48**	**48**	**49**	**48**	**48**	**48**	**50**	**50**	**50**	**51**	**51**	**51**	**52**	**52**	**52**	**52**	**53**	**54**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

No. of Units with Exceedance:	0
Compliance Level:	100.0%
Max. Noise Level:	60

Noted:

Noise level exceed stardand of 70 dB(A)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T5

Floor	mPD	T5_01	T5_02	T5_03	T5_04	T5_05	T5_06	T5_07	T5_08	T5_09	T5_10	T5_11	T5_12	T5_13	T5_14	T5_15	T5_16	T5_17	T5_18	T5_19	T5_20	T5_21	T5_22	T5_23	T5_24	T5_25	T5_26	T5_27	T5_28	T5_29	T5_30	T5_31	T5_32
1	**15.7**	51	53	52	50	37	46	46	46	48	48	35	43	47	47	47	48	48	48	48	47	47	48	48	48	48	48	48	47	47	47	46	46
2	**18.9**	52	53	53	51	39	47	47	48	49	49	36	45	48	49	49	50	50	50	50	49	49	49	49	49	49	49	49	48	49	49	47	47
3	**22.2**	52	54	54	51	40	47	48	48	50	49	37	45	49	49	50	50	50	50	50	50	50	50	50	50	50	50	49	48	49	49	47	47
4	**25.4**	52	54	54	51	41	48	48	48	50	49	38	46	49	49	50	50	50	50	50	50	50	50	50	50	50	50	50	48	49	49	48	48
5	**28.7**	52	54	54	52	42	48	48	48	50	50	39	46	49	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	50	50	49	48
6	**31.9**	53	55	54	52	42	48	48	49	50	50	39	46	49	50	50	50	50	51	50	50	50	50	50	50	50	50	50	49	50	50	49	49
7	**35.2**	53	55	55	52	43	48	48	49	50	50	40	46	49	50	50	50	51	51	51	51	51	51	50	50	50	50	50	49	50	50	49	49
8	**38.4**	53	55	55	52	43	48	48	49	50	50	40	46	49	50	50	50	51	51	51	51	51	51	51	51	51	50	50	49	50	50	49	49
9	**41.7**	54	55	55	52	44	48	49	49	50	50	40	47	49	50	50	51	51	51	51	51	51	51	51	51	51	51	51	49	50	50	50	50
10	**44.9**	54	56	55	52	44	48	49	49	50	50	41	47	49	50	50	51	51	51	51	51	51	51	51	51	51	51	51	49	51	51	50	50
11	**48.2**	54	56	56	52	45	49	49	49	50	50	41	47	49	50	50	51	51	51	51	51	51	51	51	51	51	51	51	49	51	51	50	50
12	**51.5**	54	56	56	53	45	49	49	49	50	50	41	47	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	49	51	51	50	50
13	**54.7**	54	56	56	53	45	49	49	49	50	50	42	47	50	50	51	51	51	51	52	51	51	51	51	51	51	51	51	49	51	51	50	50
14	**58.0**	54	56	56	53	45	49	49	49	50	50	42	47	50	50	51	51	51	51	52	51	51	51	51	51	51	51	51	50	51	51	50	50
15	**61.2**	54	56	56	53	46	49	49	49	51	50	42	48	50	50	51	51	51	52	52	52	52	52	52	51	52	52	52	50	51	51	50	50
16	**64.5**	54	56	56	53	46	49	49	50	51	50	42	48	50	50	51	51	51	52	52	52	52	52	52	52	52	52	52	50	51	51	50	50
17	**67.7**	54	56	56	53	46	49	49	50	51	50	43	48	50	50	51	51	51	52	52	52	52	52	52	52	52	52	52	50	51	51	50	50
18	**71.0**	54	56	56	53	46	49	49	50	51	50	43	48	50	50	51	51	51	52	52	52	52	52	52	52	52	52	52	50	51	51	50	50
19	**74.2**	54	57	56	53	46	49	50	50	51	51	43	48	50	50	51	51	51	52	52	52	52	52	52	52	52	52	52	50	51	51	50	50
20	**77.5**	54	57	56	53	47	49	50	50	51	51	44	48	50	51	51	51	51	52	52	52	52	52	52	52	52	52	52	50	52	51	50	50
21	**80.7**	54	57	56	53	47	50	50	50	51	51	45	48	50	51	51	51	51	52	52	52	52	52	52	52	52	52	52	50	52	52	50	50
Max Noise Level		**54**	**57**	**56**	**53**	**47**	**50**	**50**	**50**	**51**	**51**	**45**	**48**	**50**	**51**	**51**	**51**	**51**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**50**	**52**	**52**	**50**	**50**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T5_33	T5_34	T5_35	T5_36	T5_37	T5_38	T5_39	T5_40	T5_41	T5_42	T5_43	T5_44	T5_45	T5_46	T5_47	T5_48	T5_49	T5_50	T5_51	T5_52	T5_53	T5_54	T5_55	T5_56	T5_57	T5_58	T5_59	T5_60	T5_61	T5_62	T5_63	T5_64	T5_65
1	**15.7**	46	46	46	46	46	46	47	47	47	47	47	47	47	47	46	46	45	42	50	51	55	55	56	56	57	58	58	58	59	58	59	59	60
2	**11.9**	47	47	47	47	47	47	47	47	48	48	48	48	48	48	48	47	47	42	52	54	56	57	57	58	58	59	59	59	59	59	59	60	60
3	**15.1**	47	47	47	48	48	48	48	48	48	48	48	48	48	48	48	48	48	43	53	55	56	57	57	58	58	58	59	59	59	59	59	60	60
4	**18.3**	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49	49	49	43	54	55	56	57	57	57	58	58	59	59	59	59	59	60	60
5	**21.5**	48	48	48	49	49	49	49	49	49	49	49	49	50	50	50	50	50	43	54	55	56	56	57	57	58	58	58	59	59	59	59	60	60
6	**24.7**	49	49	49	49	49	49	49	49	49	50	50	50	50	50	50	50	50	44	55	55	56	57	57	57	58	58	58	59	59	59	59	60	60
7	**27.9**	49	49	49	49	49	49	50	50	50	50	50	50	50	51	50	50	50	44	55	55	56	57	57	57	58	58	58	59	59	59	59	60	60
8	**31.1**	49	49	49	50	50	50	50	50	50	50	50	51	51	51	51	51	51	44	55	56	56	57	57	57	58	58	58	59	59	59	59	60	60
9	**34.3**	50	50	50	50	50	50	50	50	50	50	50	51	51	51	51	51	51	44	55	56	56	57	57	57	58	58	58	59	59	59	59	60	60
10	**37.5**	50	50	50	50	50	50	50	50	50	51	51	51	51	51	51	51	51	44	55	56	56	57	57	57	58	58	58	59	59	59	59	60	60
11	**40.7**	50	50	50	50	50	50	50	50	51	51	51	51	51	51	51	51	51	44	55	56	56	57	57	57	58	58	58	59	59	59	59	60	60
12	**43.9**	50	50	50	50	50	50	50	50	51	51	51	51	51	51	51	51	51	43	56	56	56	57	57	57	58	58	58	59	59	59	59	60	60
13	**47.1**	50	50	50	50	50	50	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	60	60	60
14	**50.3**	50	50	50	50	50	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	59	60	60
15	**53.5**	50	50	50	50	50	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	59	60	60
16	**56.7**	50	50	50	50	51	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	59	60	60
17	**59.9**	50	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	59	60	60
18	**63.1**	50	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	59	59	59	59	60	60
19	**66.3**	50	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	58	59	59	59	60	60
20	**77.5**	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	51	50	43	56	56	57	57	57	57	58	58	58	58	59	59	59	60	60
21	**80.7**	51	50	51	51	51	51	51	51	51	51	51	51	51	51	51	51	50	44	56	56	57	57	57	57	58	58	58	58	59	59	59	60	60
Max Noise Level		**51**	**50**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**44**	**56**	**56**	**57**	**57**	**57**	**58**	**58**	**59**	**59**	**59**	**59**	**59**	**60**	**60**	**60**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

No. of Units with Exceedance:	0
Compliance Level:	100.0%
Max. Noise Level:	60

Noted:

Noise level exceed stardand of 70 dB(A)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T6

Floor	mPD	T6_01	T6_02	T6_03	T6_04	T6_05	T6_06	T6_07	T6_08	T6_09	T6_10	T6_11	T6_12	T6_13	T6_14	T6_15	T6_16	T6_17	T6_18	T6_19	T6_20	T6_21	T6_22	T6_23	T6_24	T6_25	T6_26	T6_27	T6_28	T6_29	T6_30	T6_31	T6_32	T6_33	T6_34	T6_35
G	9.5	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	49	48
1	13.0	49	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49	49	48
2	16.2	49	49	49	49	49	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49	49	49	49	48
3	19.4	49	49	49	49	49	49	49	49	49	49	49	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49	49	49	49	49	49	49	48
4	22.6	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	48	48	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	48
5	25.9	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	48
6	29.1	49	49	49	50	50	50	50	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	50	50	50	50	50	48
7	32.3	50	50	50	50	50	50	50	50	50	50	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	50	50	50	50	50	50	50	50	49
8	35.6	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49	49	49	49	49	49	49	49	50	50	50	50	50	50	50	50	50	50	50	50	49
9	38.8	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	49
10	42.0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	51	51	51	49
11	45.2	51	50	50	51	51	51	51	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	51	51	51	51	51	51	49
12	48.5	51	51	51	51	51	51	51	51	51	51	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	51	51	51	51	51	51	51	51	49
13	51.7	51	51	51	51	51	51	51	51	51	51	51	51	51	50	50	50	50	50	50	50	50	50	50	51	51	51	51	51	51	51	51	51	51	51	49
14	54.9	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	50	50	50	50	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	49
15	58.2	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	50
16	61.4	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	50
17	64.6	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	50
18	67.9	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	52	50
19	71.1	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	52	50
20	74.3	51	51	51	52	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	52	52	50
21	77.5	52	51	51	52	52	52	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	52	52	52	50
22	80.8	52	51	51	52	52	52	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	52	52	52	52	52	52	52	52	52	50
Max Noise Level		**52**	**51**	**51**	**52**	**52**	**52**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**51**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**52**	**50**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T6_36	T6_37	T6_38	T6_39	T6_40	T6_41	T6_42	T6_43	T6_44	T6_45	T6_46	T6_47	T6_48	T6_49	T6_50	T6_51	T6_52	T6_53	T6_54	T6_55	T6_56	T6_57	T6_58	T6_59	T6_60	T6_61	T6_62	T6_63	T6_64	T6_65	T6_66	T6_67	T6_68	T6_69	T6_70	T6_71
G	9.5	47	45	26	26	26	26	26	26	26	26	26	26	26	26	26	26	36	36	36	36	36	36	34	32	37	37	37	37	37	37	37	38	38	47	49	50
1	13.0	47	45	26	26	26	26	26	26	26	26	26	26	26	26	26	26	36	36	36	37	37	37	35	34	37	37	38	38	38	38	38	38	38	46	49	49
2	16.2	47	46	26	26	26	26	26	26	26	26	26	26	26	26	26	26	37	37	37	37	37	37	36	35	38	38	38	38	38	39	39	39	39	46	48	49
3	19.4	47	46	26	26	26	26	26	26	26	26	26	26	26	26	26	26	37	37	37	38	38	38	37	35	38	38	39	39	39	39	39	39	39	45	48	49
4	22.6	47	46	26	26	26	26	26	26	26	26	26	26	26	26	26	26	38	38	38	38	38	38	37	36	39	39	39	39	39	39	39	39	40	45	48	48
5	25.9	47	46	26	26	26	26	26	26	26	26	26	26	26	26	26	26	38	38	38	38	38	39	38	36	39	39	39	39	40	40	40	40	40	45	48	48
6	29.1	47	46	26	26	26	26	26	26	26	26	26	26	26	26	26	26	38	39	39	39	39	39	38	37	39	40	40	40	40	40	40	40	40	45	48	48
7	32.3	48	47	26	26	26	26	26	26	26	26	26	26	26	26	26	26	39	39	39	39	39	39	39	37	40	40	40	40	40	40	40	40	40	45	48	48
8	35.6	48	47	26	26	26	26	25	25	26	26	26	26	26	26	26	26	39	39	39	39	39	40	39	37	40	40	40	40	40	40	41	41	41	45	48	49
9	38.8	48	47	26	26	26	25	25	25	25	26	26	26	26	26	26	26	39	39	39	40	40	40	39	37	40	40	40	41	41	41	41	41	41	45	48	49
10	42.0	48	47	26	26	26	25	25	25	25	26	26	26	26	26	26	26	39	40	40	40	40	40	40	37	40	41	41	41	41	41	41	41	41	45	48	49
11	45.2	48	47	26	26	26	25	25	25	25	26	26	26	26	26	26	26	40	40	40	40	40	40	40	38	41	41	41	41	41	41	41	41	42	45	48	49
12	48.5	48	48	26	26	26	25	25	25	25	26	26	26	26	26	26	26	40	40	40	40	40	40	40	38	41	41	41	41	41	41	41	42	42	45	48	49
13	51.7	48	48	25	26	26	25	25	25	25	25	25	26	26	26	26	26	40	40	40	40	40	41	40	38	41	41	41	41	41	41	42	42	42	45	48	49
14	54.9	49	48	25	25	26	25	25	25	25	26	26	26	26	26	25	26	40	40	40	40	41	41	40	38	41	41	41	41	41	41	42	42	42	45	49	49
15	58.2	49	48	25	25	25	25	25	25	25	25	25	25	25	25	25	25	40	40	40	41	41	41	40	38	41	41	41	41	41	42	42	42	42	45	49	49
16	61.4	49	48	25	25	25	25	25	25	25	25	25	25	25	26	25	25	40	40	40	41	41	41	41	38	41	41	41	41	41	42	42	42	42	45	49	49
17	64.6	49	48	25	25	25	25	25	25	25	25	25	25	26	26	25	25	40	40	41	41	41	41	41	38	41	41	41	41	42	42	42	42	42	45	49	49
18	67.9	49	48	25	25	25	25	25	25	25	25	25	25	25	25	25	25	40	41	41	41	41	41	41	38	41	41	41	41	42	42	42	42	42	45	49	49
19	71.1	49	48	26	26	26	26	26	26	26	26	26	26	26	26	26	26	40	41	41	41	41	41	41	38	41	41	41	41	42	42	42	42	42	45	49	49
20	74.3	49	48	28	28	28	28	28	28	28	28	28	28	28	28	28	28	41	41	41	41	41	41	41	38	41	41	41	42	42	42	42	42	42	45	49	49
21	77.5	49	49	30	30	30	30	30	30	30	30	30	30	30	30	30	30	41	41	41	41	41	41	41	39	41	42	42	42	42	42	42	42	42	45	49	50
22	80.8	49	49	35	35	35	35	35	35	35	35	35	35	35	35	35	35	41	41	42	42	42	42	42	40	42	42	42	42	42	42	42	43	43	45	49	50
Max Noise Level		**49**	**49**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**35**	**41**	**41**	**42**	**42**	**42**	**42**	**42**	**40**	**42**	**42**	**42**	**42**	**42**	**42**	**42**	**43**	**43**	**47**	**49**	**50**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - T7

Floor	mPD	T7_01	T7_02	T7_03	T7_04	T7_05	T7_06	T7_07	T7_08	T7_09	T7_10	T7_11	T7_12	T7_13	T7_14	T7_15	T7_16	T7_17	T7_18	T7_19	T7_20	T7_21	T7_22	T7_23	T7_24	T7_25	T7_26	T7_27	T7_28	T7_29	T7_30	T7_31	T7_32	T7_33	T7_34	T7_35
1	11.7	22	22	22	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	22	20	20	20	20	20	20	43	43	20	44	44	44	44	44
2	15.3	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	23	20	20	20	20	20	20	43	43	21	44	44	44	44	44
3	18.9	23	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24	24	24	23	23	25	22	22	22	22	22	22	43	44	22	44	44	44	44	44
4	22.5	25	25	25	26	25	25	26	26	26	26	26	27	27	27	27	27	27	27	27	27	28	24	24	24	24	24	24	43	44	24	44	44	44	44	44
5	26.1	30	30	30	31	30	30	30	30	30	31	31	32	32	32	32	32	32	32	32	32	33	29	29	29	29	29	29	44	44	28	44	44	44	44	45
Max Noise Level		**30**	**30**	**30**	**31**	**30**	**30**	**30**	**30**	**30**	**31**	**31**	**32**	**32**	**32**	**32**	**32**	**32**	**32**	**32**	**32**	**33**	**29**	**29**	**29**	**29**	**29**	**29**	**44**	**44**	**28**	**44**	**44**	**44**	**44**	**45**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Floor	mPD	T7_36	T7_37	T7_38	T7_39	T7_40	T7_41	T7_42	T7_43	T7_44	T7_45	T7_46
1	15.2	44	44	46	46	46	47	47	47	48	48	48
2	18.4	44	44	46	46	46	47	47	47	48	48	48
3	21.6	44	44	46	46	46	47	47	47	48	48	48
4	24.8	45	45	46	46	47	47	47	47	48	48	48
5	28.0	45	45	46	46	47	47	47	47	47	48	48
Max Noise Level		**45**	**45**	**46**	**46**	**47**	**47**	**47**	**47**	**48**	**48**	**48**
Exceedance		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

No. of Units with Exceedance:	#REF!
Compliance Level:	100.0%
Max. Noise Level:	52

Noted:

Noise level exceed stardand of 70 dB(A)

Predicted Road Traffic Noise (L10, dB(A)) at Representative Noise Assessment Points (NAPs) (AM Peak)

Base Case - H1 to H2

Floor	mPD	H_01	H_02	H_03
1	9.2	42	24	24
2	13.8	42	28	27
Max Noise Level		42	28	27
Exceedance		0	0	0

Base Case - H3 to H5

Floor	mPD	H_04	H_05	H_06
1	11.2	40	39	39
2	15.8	40	39	39
Max Noise Level		40	39	39
Exceedance		0	0	0

Base Case - H6 to H18

Floor	mPD	H_07	H_08	H_09	H_10	H_11	H_12	H_13	H_14	H_15	H_16	H_17	H_18
1	12.7	39	35	34	33	33	37	35	34	35	31	31	35
2	17.3	39	35	34	34	33	37	35	34	36	31	32	36
Max Noise Level		39	35	34	34	33	37	35	34	36	31	32	36
Exceedance		0	0	0	0	0	0	0	0	0	0	0	0

No. of Units (all Towers):	2670
No. of Units with Exceedance:	0
Compliance Level:	100.0%
Max. Noise Level:	65

Noted:

Noise level exceed stardand of 70 dB(A)

Appendix 3.1 Reply from the Government

Sally Chiu

From: cpb_fstn_1@hkfsd.gov.hk
Sent: Tuesday, 14 January 2025 11:13 pm
To: Sally Chiu
Cc: cpb_fstn@hkfsd.gov.hk
Subject: Re: Fw: PA and Fire Alarm System at Tai Lam Chung Fire Station

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Sally CHIU,

Please be informed the use of PA system at Tai Lam Chung Fire Station was due to emergency need. In responding to emergency, there is a genuine need to use PA system to disseminate information to Station personnel to take immediate response. Rest assured that we would strike a balance between our operational need and to minimize the noise nuisance that may be caused to the environment.

Should you have further enquiries please contact the undersigned or duty officer of Tai Lam Chung Fire Station at 2451 5199.

Best Regards,

(LEE Ho-tin)
for Station Commander of Tai Lam Chung Fire Station
Fire Services Department
Tel: 2451 5199
Fax: 2404 1143

From: CPBFStn/FSD/HKSARG
To: CPBFStn1/FSD/HKSARG@FSD
Date: 14/01/2025 08:06
Subject: Fw: PA and Fire Alarm System at Tai Lam Chung Fire Station

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----- Forwarded by CPBFStn/FSD/HKSARG on 14/01/2025 08:05 -----

From: "Sally Chiu" <SHLCHIU@ramboll.com>
To: "cpb_fstn@hkfsd.gov.hk" <cpb_fstn@hkfsd.gov.hk>
Cc: "Tony Cheng" <tcheng@ramboll.com>, "Kyle Kam" <KYLEKAM@ramboll.com>
Date: 13/01/2025 15:58
Subject: PA and Fire Alarm System at Tai Lam Chung Fire Station

---

Dear Sir/ Madam,

We are commissioned by Sun Hung Kai Read Estate Agency Limited to access the environmental impact of the Proposed Development at Tai Lam Chung. The location plan of the Proposed Development is attached in **Fig 1.1** for your reference.

In order to prepare the Environmental Assessment Report of the Proposed Development, we would like to confirm whether the PA systems and fire alarm at Tai Lam Chung Fire Station are used only in case of emergency. If the alarm is not just for emergency, we would like to conduct a noise survey and grateful if you can provide the contact information for our onward arrangement.

We would be much appreciated it if you can reply to us by 22 Jan 2025.

Should you have any queries, please do not hesitate to contact the undersigned. We thank you in anticipation for your help in the matter.

Kind regards
Sally Chiu
Assistant Environmental Consultant
D +852 3465 2827
shlchiu@ramboll.com
Ramboll Hong Kong Limited

Sally Chiu

From: leo_wc_lee@customs.gov.hk
Sent: Monday, 27 January 2025 11:59 am
To: Sally Chiu
Cc: vicky_kk_cheng@customs.gov.hk; jimmy_koo@customs.gov.hk; ryan_oh_ng@customs.gov.hk; customsenquiry@customs.gov.hk; Tony Cheng; Wendy Tin; Kyle Kam
Subject: RE: 轉寄: Noise Survey for Firing Range at Tai Lam Chung

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Chiu,

Thank you for your clarification. However, we could not accede to the request having considered the ambit of the survey.

Should you have further enquiries, please do not hesitate to contact us again.

Best Regards,

Leo W C LEE
Inspector
Hong Kong Customs College
Customs and Excise Department
Tel.: 2257 8035
Fax: 2449 2570

From: "Sally Chiu" <SHLCHIU@ramboll.com>
To: "leo_wc_lee@customs.gov.hk" <leo_wc_lee@customs.gov.hk>
Cc: "\"S[T]\"@Not_For_Reply_From_Internet.hksarg.hk" <"S[T]"@Not_For_Reply_From_Internet.hksarg.hk>, "\"AS[T]\"@Not_For_Reply_From_Internet.hksarg.hk" <"AS[T]"@Not_For_Reply_From_Internet.hksarg.hk>, "vicky_kk_cheng@customs.gov.hk" <vicky_kk_cheng@customs.gov.hk>, "jimmy_koo@customs.gov.hk" <jimmy_koo@customs.gov.hk>, "ryan_oh_ng@customs.gov.hk" <ryan_oh_ng@customs.gov.hk>, "customsenquiry@customs.gov.hk" <customsenquiry@customs.gov.hk>, "Tony Cheng" <tcheng@ramboll.com>, "Wendy Tin" <WENDYTIN@ramboll.com>, "Kyle Kam" <KYLEKAM@ramboll.com>
Date: 21/01/2025 11:30
Subject: RE: 轉寄: Noise Survey for Firing Range at Tai Lam Chung

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Dear Leo,

Thank you for your reply.

We received the comment from Environmental Protection Department (EPD) on our Environmental Assessment Report.

"For fixed noise, the EA report indicated there was no change in potential industrial noise sources in the vicinity, and the conclusion of industrial noise impact assessment in approved planning application remained valid. However, the previous application was conducted in year 2002. It is noticed from map that a number of existing fixed noise sources such as **Hong Kong Customs College with shooting range**, garages, workshops, open storages sites, electricity substation, fire station etc. are located within 300m assessment area of the proposed

development. As the layout has been updated and 22 years passed, an industrial or fixed noise impact assessment on existing noise source is considered necessary. Nevertheless, the future fixed noise sources will also be controlled under the NCO."

Therefore, we would like to conduct a Noise Survey at the shooting range of Hong Kong Customs College to obtain the noise level produced during the use of firing range.

The duration of the Noise Survey depends on the number of weapon types. There will be 5 measurement points for each weapon type. Therefore, it is predicted that each weapon type has to measure for about 50 to 60 minutes. Photo record is also needed for our submission.

Attached is the example for the Noise Survey from the Project Profile for Proposed Range at Pillar Point Valley Landfill.

Grateful if you can reply to us whether the Noise Survey is allowed by 28 Jan 2025.

Should you have any queries, please do not hesitate to contact the undersigned. Thank you.

Kind regards

Sally Chiu

Assistant Environmental Consultant

D +852 3465 2827

shlchiu@ramboll.com

Ramboll Hong Kong Limited

From: leo_wc_lee@customs.gov.hk <leo_wc_lee@customs.gov.hk>
Sent: Monday, January 20, 2025 12:31 PM
To: Sally Chiu <SHLCHIU@ramboll.com>
Cc: "S[T]"@Not_For_Reply_From_Internet.hksarg.hk; "AS[T]"@Not_For_Reply_From_Internet.hksarg.hk; vicky_kk_cheng@customs.gov.hk; jimmy_koo@customs.gov.hk; ryan_oh_ng@customs.gov.hk; customsenquiry@customs.gov.hk
Subject: Re: 轉寄: Noise Survey for Firing Range at Tai Lam Chung

Dear Ms. Chiu,
We note your request for conducting a noise survey inside our premises.
To facilitate a thorough assessment of your proposal, we kindly request you to provide further details (e.g. scope of the Noise Survey, Personnel Information, Proposed Timeline and Duration, etc.) for our reference.
Should you have any queries, please do not hesitate to contact us. Thank you.

Best regards,

Leo W C LEE
Acting Senior Inspector
Hong Kong Customs College
Customs and Excise Department
Tel.: 2257 8035
Fax: 2449 2570

----- Forwarded by Customs Enquiry/CUSTOMS/HKSARG on 14/01/2025 12:07 -----

From: "Sally Chiu" <SHLCHIU@ramboll.com>
To: "customsenquiry@customs.gov.hk" <customsenquiry@customs.gov.hk>
Cc: "Tony Cheng" <tcheng@ramboll.com>, "Kyle Kam" <KYLEKAM@ramboll.com>
Date: 13/01/2025 17:14
Subject: Noise Survey for Firing Range at Tai Lam Chung

Dear Sir/ Madam,

We are commissioned by Sun Hung Kai Read Estate Agency Limited to access the environmental impact of the Proposed Development at Tai Lam Chung. The location plan of the Proposed Development is attached in **Fig 1.1** for your reference.

From the Geoinfo Map, potential sound emission source, firing range, is identified at your premises. In order to prepare the Environmental Impact Assessment of the Proposed Development, a noise survey nearby the firing range to obtain the sound emission information would be required. If such a noise survey is welcomed, grateful if you can provide the contact information for our onward arrangements.

In case a noise survey is not allowed, it would be grateful if you can provide the below information for planning purpose:

- Operation Hours (e.g. 0800 to 1900)

We would be much appreciated it if you can reply to us by 22 Jan 2025.

Should you have any queries, please do not hesitate to contact the undersigned. We thank you in anticipation for your help in the matter.

Kind regards

Sally Chiu

Assistant Environmental Consultant
D +852 3465 2827

shlchiu@ramboll.com

Classification: Confidential

Classification: Confidential[附件檔 "App B_Details of Noise Survey.pdf" 已被 Leo WC LEE/CUSTOMS/HKSARG 刪除]

Disclaimers:
_____

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Appendix 4.1 Road Classification of Nearby Road Network

Sally Chiu

From: Louis Ho Ting HON <hotinghon@td.gov.hk>
Sent: Thursday, 27 March 2025 2:46 pm
To: Lei, Gary
Cc: Yeung, David; Raymond Tak Chi LEUNG
Subject: Re: Proposed Amendments to an Approved Comprehensive Residential Development Scheme and Minor Relaxation of Gross Floor Area and Building Height Restrictions at TMTL 417, Tai Lam Chung, Tuen Mun
Attachments: Annex A.pdf

Dear Gary,

TD have no further comment on the road classification of Castle Peak Road - Tai Lam, Tai Lam Chung Road and Luen Hong Lane, and note the road classification of village road.

Regards,
Louis HON
E/SD2, TENTW, TD
Tel: 2399 2427

From: "Lei, Gary" <Gary.LEI@aecom.com>
To: "Louis Ho Ting HON" <hotinghon@td.gov.hk>
Cc: "Yeung, David" <David.Yeung@aecom.com>, "Raymond Tak Chi LEUNG" <raymondleung@td.gov.hk>
Date: 20/03/2025 11:09
Subject: Re: Proposed Amendments to an Approved Comprehensive Residential Development Scheme and Minor Relaxation of Gross Floor Area and Building Height Restrictions at TMTL 417, Tai Lam Chung, Tuen Mun

---

Dear Louis,

Further to your comment dated 11 March 2025 and our subsequent tel-conversation on 13 March 2025, please find below updated table of road type assumption for your review and further consideration.

Road Link	Road Name	Road Type	Reference / Justification
L1 , L3 , L9	Tai Lam Chung Road	Feeder Road	There is no road type found in neither ATC nor XPMS for Tai Lam Chung Road. According to TPDM Vol.2 Chapter 3.2, the definition of Feeder Road is connecting villages or more remote settlements to Rural Road. In view of the road network, Tai Lam Chung Road is the connection road of Tai Lam Chung village area with bounded Rural Road (Castle Peak Road - Tai Lam), Tai Lam Chung Road should be considered as **Feeder Road** under TPDM definition. The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L5	Luen Hong Lane	Feeder Road	There is no road type found in neither ATC nor XPMS for Luen Hong Lane. According to TPDM Vol.2 Chapter 3.2, the definition of Feeder Road is connecting villages or more remote settlements to Rural Road. In view of the road network, Luen Hong Lane is bounded Feeder Road (Tai Lam Chung Road) and the road type classification should be equal or lower class than the bounded road, Luen Hong Lane should be considered as **Feeder Road** under TPDM definition. The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L2 , L4 , L6 – L8 , L13 – L16	Village Road	Feeder Road	There is no road type found in neither ATC nor XPMS for the concerned Village Road. According to TPDM Vol.2 Chapter 3.2, the definition of Feeder Road is connecting villages or more remote settlements to Rural Road. In view of the road network, the village road is bounded Feeder Road (Luen Hong Lane) and the road type classification should be equal or lower class than the bounded road, Village Road should be considered as **Feeder Road** under TPDM definition. The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L10 – L12	Castle Peak Road - Tai Lam	Rural Road	According to Annual Traffic Census, Castle Peak Road - Tai Lam is classified as **Rural Road**(ATC Station 5657). The relevant information in **Annex A SK3** for reference.

We would be grateful if you would furnish us your comments/confirmation on the above road type assumption at your earliest convenience.

Should you have any queries, please feel free to call me at 3856 5421.

Best regard,

Gary Lei
Traffic & Transport Planning
Land Supply / Municipal
D +852-3856-5421
gary.lei@aecom.com

AECOM
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138 Shatin Rural Committee Road,
Shatin, New Territories, Hong Kong
T +852-3922-9000
aecom.com

From: Louis Ho Ting HON <hotinghon@td.gov.hk>
Sent: Tuesday, March 11, 2025 7:04 PM
To: Lei, Gary <Gary.LEI@aecom.com>
Cc: Yeung, David <David.Yeung@aecom.com>; Raymond Tak Chi LEUNG <raymondleung@td.gov.hk>
Subject: Re: Proposed Amendments to an Approved Comprehensive Residential Development Scheme and Minor Relaxation of Gross Floor Area and Building Height Restrictions at TMTL 417, Tai Lam Chung, Tuen Mun

Dear Gary,

Please note that the Castle Peak Road - Tai Lam could be classified as Rural Road according to ATC Report. Tai Lam Chung Road and Luen Hong Lane could be classified as Feeder Road.

The village road stated in your email are not public road under TD's management. TD is not in position to comment on their road type.

Regards,
Louis HON
E/SD2, TENTW, TD
Tel: 2399 2427

From: "Lei, Gary" <Gary.LEI@aecom.com>
To: "Louis Ho Ting HON" <hotinghon@td.gov.hk>
Cc: "Yeung, David" <David.Yeung@aecom.com>
Date: 04/03/2025 14:29
Subject: Proposed Amendments to an Approved Comprehensive Residential Development Scheme and Minor Relaxation of Gross Floor Area and Building Height Restrictions at TMTL 417, Tai Lam Chung, Tuen Mun

---

Dear Louis,

We are the traffic consultant of the captioned project.

We refer to EPD's comment regarding seeking TD confirm the road type on the concerned roads for the captioned project.

The concerned roads together with the assumption are listed in below.

Road Link	Road Name	Road Type	Reference / Justification
L1 , L3 , L9	Tai Lam Chung Road	Rural Road	According to TPDM Vol.2 Chapter 3.2, the definition of Rural Road is connecting the smaller centres with major road networks. In view of the road network, Tai Lam Chung Road is a connection road between Castle Peak Road - Tai Lam / Tuen Mun Road with Tai Lam Chung village house area. Therefore, Tai Lam Chun Road is considered as **Rural Road.** The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L5	Luen Hong Lane	Feeder Road	According to TPDM Vol.2 Chapter 3.2, the definition of Feeder Road is connecting villages or more remote settlements to Rural Road. In view of the road network Luen Hong Lane is considered as **Feeder Road** which connected with village with bounded Rural Road (Tai Lam Chung Road). The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L2 , L4 , L6 – L8 , L13 – L16	Village Road	Feeder Road	According to TPDM Vol.2 Chapter 3.2, the definition of Feeder Road is connecting villages or more remote settlements to Rural Road. In view of the road network, the village road is considered as **Feeder Road** which connected with village with bounded Rural Road (Tai Lam Chung Road) via Feeder Road (Luen Hong Lane). The relevant TDPM clause is extracted in **Annex A SK2** for reference.
L10 – L12	Castle Peak Road - Tai Lam	Rural Road	Although the road type of Castle Peak Road - Tai Lam is not specified in ATC, the concerned road section is bounded by Tuen Mun Road - Siu Lam INT slip roads, which are classified as Rural Road in ATC (ATC Station 5857). In view of the above, Castle Peak Road - Tai Lam is considered as **Rural Road**. The relevant information in **Annex A SK1** for reference.

We would be grateful if you would furnish us your comments/confirmation on the above road type assumption at your earliest convenience.

Should you have any queries, please feel free to call me at 3856 5421.

Best regard,

Gary Lei
Traffic & Transport Planning
Land Supply / Municipal
D +852-3856-5421
gary.lei@aecom.com

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Shatin, New Territories, Hong Kong
T +852-3922-9000
aecom.com

ISO A1 594mm x 841mm

Project Management Initials: Designer: Checked: Approved:

LEGEND:
SITE BOUNDARY
LOCATION INDEX

N

TAI LAM CHUNG

SIU LAM ROAD
HONG FAI ROAD
CASTLE PEAK ROAD – TAI LAM
TAI LAM CHUNG ROAD
CASTLE PEAK ROAD – NEW TAI LAM
TUEN MUN ROAD
CASTLE PEAK ROAD

300m

BROTHERS POINT
(TAI LAM KOK)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Plot File by: chancwa 28/2/2025
PATH: C:\Users\chancwa\OneDrive - AECOM\JOB BACKUP\60281828\TA\FIGURE 1.dgn

AECOM

PROJECT
項目

SECTION 16 PLANNING APPLICATION FOR PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND (LOT TO KNOWN AS TMTL NO. 417), TAI LAM CHUNG, TUEN MUN

CLIENT
業主

SUN HUNG KAI REAL ESTATE AGENCY LTD. 新鴻基地產發展有限公司

CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
www.aecom.com

SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 修改說明	CHK. 核核

STATUS
狀態

SCALE 比例
A3 1 : 6000

DIMENSION UNIT 尺寸單位

KEY PLAN
索引圖

PROJECT NO. 項目編號
60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱
NIA INDEX PLAN

SHEET NUMBER
圖紙編號
ANNEX A SK1

3.2 Road Types

3.2.1 Rural Road Types

3.2.1.1 Trunk Roads - Roads connecting the main centres of population. High capacity roads with no frontage access or development, pedestrians segregated, widely spaced grade-separated junctions, and 24 hour stopping restrictions.

3.2.1.2 Rural Roads - Roads connecting the smaller centres of population or popular recreation areas with major road networks. Frontage access should be limited wherever possible and junction design whilst not necessarily grade separated should be of a high capacity standard.

3.2.1.3 Feeder Roads - Roads connecting villages or more remote settlements to Rural Roads.

3.2.2 Urban Road Types

3.2.2.1 Trunk Roads - Roads connecting the main centres of population. High capacity roads, with no frontage access or development, segregation of pedestrians, widely spaced grade-separated junctions, and 24 hour stopping restrictions.

3.2.2.2 Primary Distributor - Roads forming the major network of the urban area. Roads having high capacity junctions, though may be at-grade, segregated pedestrian facilities wherever possible and frontage access limited if not entirely restricted, and 24 hour stopping restrictions.

3.2.2.3 District Distributors - Roads Linking Districts to the Primary Distributor Roads. High capacity at-grade junctions, with peak hour stopping restrictions and parking restrictions throughout the day.

3.2.2.4 Local Distributors - Roads within Districts linking developments to the District Distributor Roads.

3.2.3 Expressway

3.2.3.1 Roads are designated as Expressways under the Road Traffic (Expressway) Regulations. An expressway may be formed from a trunk road or a primary distributor road. Details of Expressway standards are contained in Chapter 6 of this Volume.

ATC 2023 Appendix B-45 - Annex A SK3

Appendix B - AADT of Counting Stations - ordered by Station Nos.

Stn. No.	Stn. Type	Road Type	Road Name	From	To	AADT 2022	AADT 2023	Change of 2023 as % of 2022
5629	C	DD	Tai Lin Pai Rd	Kwai Cheong Rd	Kwai On Rd	18,870 *	19,500 *	+3.4
5630	C	DD	Wo Yi Hop Rd	Cheung Wing Rd	Ngong Hom Rd	22,820 *	22,840 *	+0.1
5631	C	DD	Sha Tsui Rd	Chung On St	Kwu Hang Rd	14,490 *	14,980 *	+3.4
5632	C	DD	Yeung Uk Rd	Texaco Rd	Ma Tau Pa Rd	21,200 *	21,920 *	+3.4
5633	C	DD	Chung On St	Castle Peak Rd - Tsuen Wan	Tsuen Wan Market St	6,060 *	6,260 *	+3.4
5634	C	DD	Texaco Rd	124 Texaco Rd	Yeung Uk Rd	71,520 *	73,930 *	+3.4
5635	C	DD	Shek Wai Kok Rd	Shek On St	Cheung Pei Shan Rd	10,770 *	11,130 *	+3.4
5636	C	DD	Tai Tong Rd	Hop Yick Rd	Kau Yuk Rd	13,200 *	13,510 *	+2.4
5637	C	DD	Kau Yuk Rd	Tai Tong Rd	Yuen Long Hong Lok Rd	13,540 *	13,860 *	+2.4
5638	C	DD	Yuen Long On Ning Rd	Kik Yeung Rd	Tai Kiu Rd	13,470 *	13,780 *	+2.4
5639	C	DD	Yuen Long Main Rd	Ma Miu Rd	Kik Yeung Rd	18,400 *	18,830 *	+2.4
5640	C	DD	Lung Mun Rd	Wu Shan Rd	Wu Chui Rd	12,600 *	12,890 *	+2.4
5641	C	DD	Tsun Wen Rd	Shek Pai Tau Rd	Pui To Rd	15,850 *	16,230 *	+2.4
5642	C	DD	Castle Peak Rd - Castle Peak Bay	Hoi Wing Rd	Tuen Hing Rd	16,420 *	16,810 *	+2.4
5643	C	DD	Pui To Rd FO <N503> over Tuen Mun Rd	Ramp from Tuen Mun Rd	Ramp to Tuen Mun Rd	22,870 *	23,410 *	+2.4
5644	C	DD	Tuen Hing Rd FO <N432> over Tuen Mun Rd	Ramp from Tuen Mun Rd	Ramp to Tuen Mun Rd	18,200 *	18,630 *	+2.4
5645	C	DD	Sui Wo Rd	Fo Tan Rd	Access rd to Sui Wo Court	14,870 *	14,880 *	+0.1
5646	C	DD	Kwong Fuk Rd	Wan Tau St	Po Heung St	13,710 *	14,040 *	+2.4
5647	C	DD	Tsing Lun Rd	Tsing Chung Koon Rd	Lam Tei INT	13,450 *	13,770 *	+2.4
5648	C	DD	Lung Sum Ave	Tin Ping Rd	San Hong St	14,560 *	14,910 *	+2.4
5649	C	DD	Tuen Mun Heung Sze Wui Rd	Wong Chu Rd	Tuen Hing Rd	23,980 *	24,550 *	+2.4
5650	C	DD	Yuen Long Main Rd	Yuen Long On Lok Rd	Tai Tong Rd	24,210 *	24,780 *	+2.4
5651	C	LD	Hing Fong Rd & Kwai Hing Rd	Wo Tong Tsui St	Tai Wo Hau Rd	7,490 *	7,740 *	+3.4
5652	C	LD	Wah Yiu Rd	Lai Chi Ling Rd	Castle Peak Rd-Kwai Chung	6,550 *	6,770 *	+3.4
5653	C	LD	Ching Hong Rd	Chung Mei Rd	Tsing Yi Rd	12,700 *	13,130 *	+3.4
5654	C	LD	Wu Shan Rd	Lung Mun Rd	Wu King Rd	7,380 *	7,550 *	+2.4
5655	C	LD	Ching Hong Rd	Tsing Yi Rd W	Chung Mei Rd	13,230 *	13,680 *	+3.4
5656	C	EX	Fanling Highway	Fan Kam Rd	Lok Ma Chau Rd	61,050 *	64,880 *	+6.3
5657	C	RR	Castle Peak Rd - Sham Tseng, Tsing Lung Tau & Tai Lam	Sham Tseng	Siu Lam	13,140 *	13,440 *	+2.4

*** AADT estimated by Growth Factor**

Castle Peak Road - Tai Lam is classified as **Rural Road**

Appendix 4.2 Location of Proposed Sewage Treatment Plants (STPs)

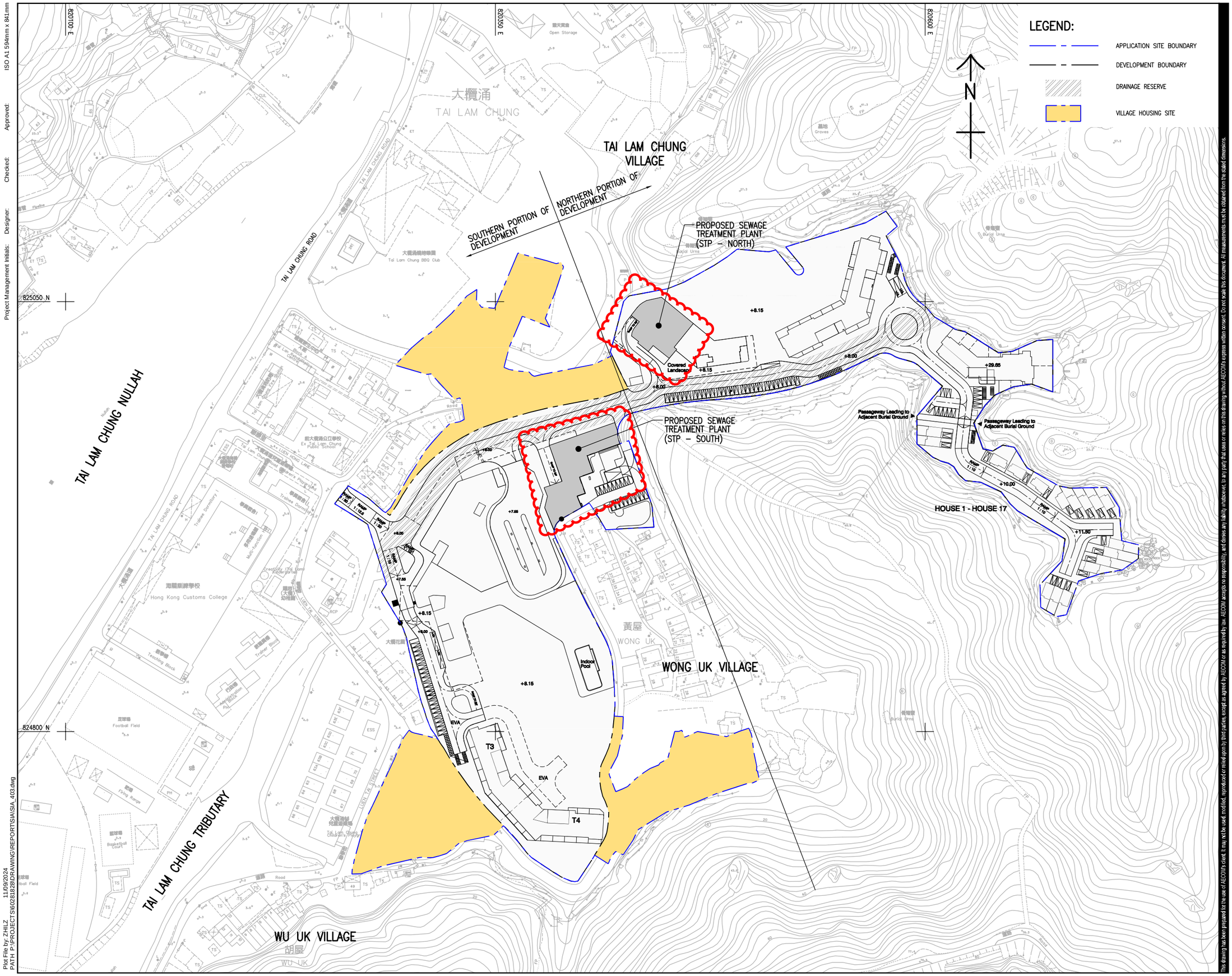
ISO A1 594mm x 841mm

Approved:

Checked:

Designer:

Project Management Initials:



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AECOM

PROJECT
項目

PROPOSED AMENDMENTS TO AN APPROVED COMPREHENSIVE RESIDENTIAL DEVELOPMENT SCHEME AND MINOR RELAXATION OF GROSS FLOOR AREA AND BUILDING HEIGHT RESTRICTIONS AT VARIOUS LOTS IN D.D. 385 AND ADJOINING GOVERNMENT LAND (LOT TO BE KNOWN AS TMTL NO. 417), TAI LAM CHUNG, TUEN MUN

CLIENT
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CONSULTANT
工程顧問公司

AECOM Asia Company Ltd.
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SUB-CONSULTANTS
分判工程顧問公司

ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 核對

STATUS
階段

SCALE 比例
A1 1 : 1000

DIMENSION UNIT 尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO. 項目編號
60281828

CONTRACT NO. 合約編號

SHEET TITLE
圖紙名稱

PROPOSED SEWAGE TREATMENT PLANT LOCATION PLAN

SHEET NUMBER
圖紙編號

60281828/SIA/403

Appendix 4.3 Reference of Odour Removal System

SGS Hong Kong Ltd.
Retail & Supply Support Division

5F – 8/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong
Tel : (852) 2364 2272 (Main)
Fax: (852) 2362 4647 (General Inquiry)
(852) 2363 3127 (Toys, Hardlines)
(852) 2334 2461 (Calibration)
(852) 2334 7827 / 2764 3276 (Textile & Footwear)
(852) 2766 3778 (Electrical)
(852) 2334 9085 (Chemical, Environmental, Food & Petroleum)
(852) 2603 7577 (Health Care & Pharmaceutical)

Test Report

No. 2006664/EV Date : Apr 24 2003

SGS Job No. : 1039377

Report on the performance test of one Deodouring Unit installed at Ha Tsuen Sewage Treatment Plant. The performance of the unit is expressed as the hydrogen sulphide removal efficiency. The sampling of hydrogen sulphide was conducted on 8 April 2003.

1. Sampling and Analytical Methodologies

1.1. Testing Required

To inject hydrogen sulphide into the air duct of the Deodouring Unit, perform hydrogen sulphide sampling and testing for the Deodouring Unit and in turn to determine the hydrogen sulphide removal efficiency.

1.2. Injection of Hydrogen Sulphide

An aliquot of 6N hydrochloric acid was added to sodium sulphide contained in a flask drop by drop. Hydrogen sulphide generated from the reaction was passed to the air duct of the Deodouring Unit through a chemical inert tubing.

2. Testing Date / 3 Test Results

Pleas refer to the following page(s).

****

Singed for and on behalf of
SGS Hong Kong Ltd.

JESSICA LEUNG
SECTION MANAGER

SGS Hong Kong Ltd.
Retail & Supply Support Division

5F – 8/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong
Tel : (852) 2364 2272 (Main)
Fax: (852) 2362 4647 (General Inquiry) (852) 2334 7827 / 2764 3276 (Textile & Footwear)
(852) 2363 3127 (Toys, Hardlines) (852) 2766 3778 (Electrical)
(852) 2334 2461 (Calibration) (852) 2334 9085 (Chemical, Environmental, Food & Petroleum)
(852) 2603 7577 (Health Care & Pharmaceutical)

1. Sampling and Analytical Methodologies (Cont'd)

1.3 Sampling and Analytical Methods for Hydrogen Sulphide

The sampling and analytical methodologies were based on ISC 3rd ed. 701 "Determination of Hydrogen Sulphide Content of the Atmosphere" in Methods of Air Sampling and Analysis.

Hydrogen sulphide gas was collected simultaneously at the specified inlet and outlet of the Deodouring Unit. A sampling train consisted of a sampling probe, a midget impinger containing cadmium hydroxide (STRactan 10 was added to the cadmium hydroxide slurry prior to sampling to minimize the photo-decomposition of cadmium sulphide precipitate) and a Gilian personal air sampler was employed for air sampling. A measured volume of air was aspirated through the cadmium hydroxide solution in the midget impinger at a flow rate of about 2.0 LPM. The sampling lasted for about 10 minutes. The sulphide in the air was precipitated as cadmium sulphide. The flow rates of the samplers were calibrated by a Gilian Calibrator before and after sampling. Duplicate sampling was conducted for the Deodouring Unit. Air temperature of the sampling location was measured by calibrated Anritherm Model HL620 Thermocouple Thermometer.

Samples were stored in an ice box (i.e. about 4 degree C) and sent to laboratory immediately. The collected sulphide was determined in the laboratory by Spectrophotometric measurement of the methylene blue produced by the reaction of the sulphide with a strongly acid solution of N, N-dimethyl-p-phenylenediamine and ferric chloride.

1.4 Determination of Hydrogen Sulphide Removal Efficiency

The removal efficiency of hydrogen sulphide (H_2S) of the Deodouring Unit was calculated according to the following equation.

Removal efficiency %

$$=\{1-\frac{H_2S\ concentration\ at\ outlet,\ ppb}{H_2S\ concentration\ at\ inlet,\ ppb}\}\times 100\%$$

2. Testing Date

The laboratory testing was conducted on 8 April 2003

****

SGS Hong Kong Ltd.
Retail & Supply Support Division

5F – 8/F, Metropole Square, 2 On Yiu Street, Siu Lek Yuen, Shatin, N.T., Hong Kong
Tel : (852) 2364 2272 (Main)
Fax: (852) 2362 4647 (General Inquiry) (852) 2334 7827 / 2764 3276 (Textile & Footwear)
(852) 2363 3127 (Toys, Hardlines) (852) 2766 3778 (Electrical)
(852) 2334 2461 (Calibration) (852) 2334 9085 (Chemical, Environmental, Food & Petroleum)
(852) 2603 7577 (Health Care & Pharmaceutical)

3. Test Results

Location of the Deodouring Unit :

Ha Tsuen Sewage Treatment Plant – Deodouring Unit (Model No.: KEE 11.4-MS)

Sampling period : 8 April 2003 (1520 - 1530)

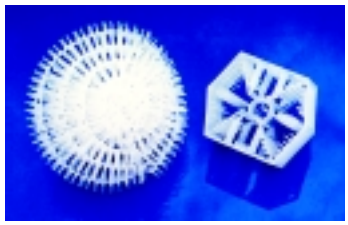
		Hydrogen Sulphide	
Sampling Position	Air Temperature (°C)	Concentration (ppb)	Removal Efficiency (%)
Inlet	30.7	28,000	--
Outlet	30.7	< 0.1	99.5

*** End of Report ***

Low Profile Multi-Stage Scrubber

Standard Features :

- Very high removal efficiency, low pressure drop
- Multi-stage scrubbing packed beds



- High efficiency packing
- High efficiency mist eliminator
- Separate recycle pump sets with piping and valves
- Chemical dosage system
- FRP centrifugal fan

Kestner Engineering Pump Division

For more than 60 years Kestner Engineering has been producing full range of centrifugal pumps featuring advanced hydraulic design and corrosive, temperature resistance. They are available in many metals and plastics materials.

Mixertech Division

Mixertech has been offering customized mixers for mixing and blending industries for over 50 years.

Air Pollution Control Division

In 1995, Kestner Engineering Co., Ltd acquired DJM with 14 year experience in design, manufacture and installation of scrubbers and other air pollution control systems. Since then Kestner has been supplying professional, high quality scrubbers and services to the industries. Our quality assurance policy conforms to BS5750 Parts 1 and 2.

Typical Applications

- Odor control in sewage treatment work, rendering plant, refuse transfer station, refuse collection station, kitchen, pulp and paper...etc.
- Fume exhaust from chemical, pharmaceutical, food / agriculture, laboratory, semi-conductor, electronic...etc.
- Emergency gas exhaust for chlorine, ammonia, sulfur dioxide plants...etc.
- Particulate filtration for chemical plant, incinerator, production plant...etc.

Product Range

Kestner design, manufacture full range of air pollution control systems :

- Cross Flow Packed Bed Scrubber
- Low Profile Multi-Stage Scrubber
- Horizontal Multi-Throat Venturi Scrubber
- Vertical Packed Bed Scrubber
- High Energy Venturi Scrubber
- Bio Scrubber

WET SCRUBBER

Cross Flow Packed Bed Scrubber

Standard Features :

- High removal efficiency, low pressure drop
- Low profile FRP construction with packed bed
- High efficiency packing
- High efficiency mist eliminator
- Recycle pump set with piping and valves
- Chemical dosage system
- FRP centrifugal fan

Kestner Group

The Kestner group was started in 1908 to design and manufacture chemical plant, with continuous focus on product development, quality control and services, Kestner has developed into a professional engineering group :

Kestner Engineering Plastics Division

Kestner Engineering "Keeglas" fiberglass product has been providing unique solution to corrosive resistant, high temperature applications in chemical plant for over 40 years.

AN ANSWER
to
Air Pollution

KESTNER
Engineering Co. Limited

Bio Scrubber

Standard Features :

- High removal efficiency, low pressure drop
- Low foot print FRP construction with packed bed
- High efficiency packing
- High efficiency mist eliminator
- Recycle pump set with piping and valves
- Bacteriological culture solution
- FRP centrifugal fan

KESTNER
Engineering Co. Limited

Head office
Kestner Engineering Co., Ltd
Bredgar Road, Gillingham, Kent, ME8 6PN, England
Tel : +44 (0) 1634 386683
Fax : +44 (0) 1634 386684
Internet : www.kestner-eng.co.uk
www.mixertech.co.uk
E-mail : sales@kestner-eng.co.uk

Vertical Packed Bed Scrubber

Standard Features :

- High removal efficiency, low pressure drop
- Low foot print FRP construction with packed bed
- High efficiency packing
- High efficiency mist eliminator
- Recycle pump set with piping and valves
- Chemical dosage system
- FRP centrifugal fan

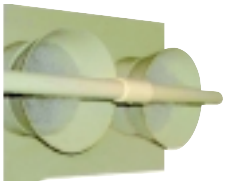
High Energy Venturi Scrubber

Standard Features :

- High particulate removal efficiency
- FRP/316SS construction with high energy venturi
- Cyclone separator
- High efficiency mist eliminator
- Recycle pump set with piping and valves
- Chemical dosage system
- FRP/316SS centrifugal fan

Horizontal Multi-Throat Venturi Scrubber

Standard Features :



- High particulate removal efficiency
- Low profile FRP/316SS construction

- High efficiency multi-throat venturi
- Small packed bed with high efficiency packing
- High efficiency mist eliminator
- Recycle pump set with piping and valves
- Chemical dosage system
- FRP/316SS centrifugal fan

Lennox Foundry Division

Established in 1908, Lennox Foundry produces more than 20 special alloys, and in addition to the foundry, the drawing office, pattern making and machine shop facilities export worldwide.

Metallic Wool Division

The metallic wool division specializes in the manufacture and supply of quality steel and non-ferrous wools.

SPECIFICATION FOR CROSS FLOW HORIZONTAL PACKED BED

1.0 General

1.1 Scrubber shall be of horizontal cross-flow packed bed type. Scrubber shall comprise packed section, demister section, recycle pump system, chemical feed system, exhaust fan, chemical tanks and local control panel.

1.2 Scrubber shall be designed in accordance with the latest issue of the following standards :
National Bureau of Standards "Voluntary Product Standards" PS15-69,
ASTM D3299 filament winding.

2.0 Performance requirement

2.1 The scrubber shall have odor removal efficiency min. 99% at 25 ppm H2S and higher concentration, the scrubber shall operate under inlet temperature ranged from 0 to 80 degree Celsius, 0-100% relative humidity.

3.0 Scrubber shell

3.1. The scrubber shell shall be constructed from fiberglass reinforced polyester resin (FRP). The resin shall be vinyl ester, Hetron 922 or equal.

3.2 (OPTIONAL) Flame retarding vinyl ester resin shall be used for exterior lay up, flame retarding standard shall be ASTM E-84 Class 1.

3.3 Exterior gel coat shall be applied on the surface of scrubber body, pigment and UV inhibitor shall be applied.

3.4 Access manholes for inspection, removal and maintenance of all internal parts shall be provided. Access manholes shall be provided with flat plate clear PVC. Lifting and hold down lugs shall be provided.

4.0 Packing section

4.1 The packing shall be supported by FRP support plates or FRP grating.

4.2 The liquid shall be distributed by spray type nozzles. Spray nozzle shall be constructed from polypropylene (PP), PVC or FRP. Spray nozzle shall be 120 degree wide angle, full cone type. Spray nozzles shall be positioned to achieve a uniform liquid distribution on the packing.

Bredgar Road, Gillingham, Kent ME8 6PN, England
Tel : +44 (0) 1634 386683 Fax : +44 (0) 1634 386684 E-mail : sales@kestner-eng.co.uk Internet : www.kestner-eng.co.uk

4.3 Packing shall be Lanpac 3.5" or equal, constructed from polypropylene.

5.0 Demister

5.1 Demister shall be able to remove 99% of mist particulate larger than 25 microns.

5.2 Demister shall sine-shaped blade type. The demister casing shall be constructed from FRP and the sine-shaped blade shall be polypropylene (PP), PVC or FRP.

6.0 Recycle pump system

6.1 Recycle pump system shall consist of duty and standby recycle pumps. The recycle pumps shall be direct coupled to a TEFC motor, single stage, vertical/horizontal end suction, corrosion resistant, centrifugal type. Pump shall be constructed from polypropylene (PP), chlorinated polyvinyl chloride (CPVC) or FRP.

6.2 The following accessories shall be included :
Pump inlet strainer, discharge pipe union, check valve, pressure gauge, pH/ORP probe housing.

7.0 Other accessories

7.1 Fresh water inlet, overflow pipe with air vent, drain pipe with drain valve shall be provided.

7.2 Water level indicator, level electrodes shall be provided.

7.3 All internal wetted bolts and fasteners, and all external bolts and fasteners including anchor bolts and flange bolts shall be stainless steel.

8.0 Scrubber exhaust fan

8.1 Scrubber fan shall be centrifugal, V-belt driven type. The fan casing, impeller shall be constructed from FRP, fan base shall be epoxy coated steel. Pulley, belts, bearing shall be provided.

8.2 (OPTIONAL) Fan casing shall be flame retardant to ASTM E-84 Class 1.

8.3 The bearings shall be heavy duty, ball type with minimum of 100,000 hours service life .

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8.4 Fan motor shall be suitable for 380 volts, 3 phase, 50 Hertz continuous 24 hour operation year round. The motor enclosure shall be light metal alloy or cast iron totally enclosed, conform to IP54 and class F insulation.

8.5 The motors shall be designed, constructed and tested in conformance with all the requirements of the applicable standards of the B.S. and I.E.C.

8.6. Fan casing drain, access door (optional) and flexible connectors shall be provided.

9.0 Chemical feed system

9.1 The chemical feed system shall comprise chemical storage tank and feed pump for each scrubbing chemical solution, piping and valves, and all necessary controls.

9.2 Chemical storage tanks shall be vertical flat bottom type made of transparent UV stabilized polyethylene or FRP. Chemical tanks shall be provided to store 25% NaOH and 15% NaOCL. Low level sensor probes shall be provided for each chemical storage tank.

9.3 Chemical metering pumps shall be solenoid - operated diaphragm pump for the type of weatherproof protection. The pumps shall be operated on 220V/single phase/50 cycles. Housing and liquid end shall be corrosion proof as well as dust and waterproof to protection Class IP65. Housing shall be constructed from UPVC and impeller shall be viton diaphragm.

9.4 Each scrubber shall be provided with pH and ORP probes for analyzing the contents in the scrubber sump. Each probe shall be supplied with an analyzer.

10.0 Local control panel

10.1 Local control panels constructed from a minimum 1.6 mm thick epoxy coated steel casing.

10.2 There shall be two modes of operation i.e. the auto-mode and manual mode. In auto-mode, the recycle pumps and the chemical dosing pumps shall be interlocked with the fan such that the fan will not be operative unless the recycle pump set is operating. In manual mode, the fan, recycle pumps, dosing pumps shall be operated by start/stop buttons at the local control panel.

10.3 Chemical feed pumps shall dose to maintain the desired concentration of the scrubbing liquid. NaOH shall be controlled with pH analyzer to maintain an optimal pH value while NaOCL shall be controlled with oxidation-reduction-potential (ORP) analyzer to maintain a ORP value.

10.4 Low level sensors in the water scrubber chamber shall be provided and installed to give audio and visual warning signals at the local control panels and to stop the circulating pumps during low water level condition.

10.5 Corrosion resistance low level sensors shall be provided and installed for each of the chemical tanks to give audio and visual warning signals at the local control panels during low chemical level condition.

10.6 The fan and pumps shall be operated by means of start/stop buttons at the local control panel.

10.7 The following minimum facilities shall be provided at the local control/starter panel :

Power on indication - green
Recycle pumps sequence selector
Start and stop push buttons for fan and pumps
Hour run meters for fan and pumps
Running (blue) and fault (red) indication for fan and pumps
Ammeters for fan and pumps
Low level alarms (red) for each chemical tank
Low level alarm (red) for the water scrubber sump

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