

Annex A

Environmental Assessment

Prepared by

Ramboll Hong Kong Limited

**S16 FOR PROPOSED FILLING OF PONDS FOR
PERMITTED INNOVATION AND TECHNOLOGY HUB
(INCLUDING PERMITTED CARGO HANDLING AND
FORWARDING FACILITIES, CREATIVE INDUSTRIES, EATING
PLACE, FLAT (STAFF QUARTERS ONLY), INDUSTRIAL USE,
INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS
INDUSTRIES, OFFICE, PUBLIC UTILITY INSTALLATION,
RESEARCH, DESIGN AND DEVELOPMENT CENTRE, SHOP AND
SERVICES, WAREHOUSE (EXCLUDING DANGEROUS GOODS
GODOWN))
AT LOT 764 RP (PART) IN D.D. 99, SAN TIN, YUEN LONG,
N.T.**

ENVIRONMENTAL ASSESSMENT STUDIES REPORT

Date **December 2025**

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Project Reference **TPCTK400EI00**

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1. INTRODUCTION

1.1 Background and Objectives

- 1.1.1 The site is located at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, New Territories (the subject site). The proposed development is intended to foster the Innovation and Technology (I&T) development in the San Tin Technopole and become a large-scale pioneer base for low-altitude cross-boundary interface between Hong Kong and mainland China.
- 1.1.2 The subject site, covering an area about 163,181 sqm, falls within an area zoned "Other Specified Uses" annotated "Innovation and Technology" ("OU(I&T)") on the Approved San Tin Technopole Outline Zoning Plan (OZP) No. S/STT/2 gazetted on 20.9.2024. According to the Notes of the OZP, the applied uses of the proposed development are all Column 1 uses of the "OU(I&T)" zone, which is always permitted. However, since the Application Site previously fell within the "Other Specified Uses" annotated "Comprehensive Development and Wetland Enhancement Area" zone on the Approved San Tin OZP No. S/YL-ST/8, any filling of ponds, including that to effect a change of use to any of the Column 1 or 2 uses, requires planning permission from the Town Planning Board.
- 1.1.3 The planning application proposed filling of ponds for permitted innovation and technology hub (including permitted cargo handling and forwarding facilities, creative industries, eating place, flat (staff quarters only), industrial use, information technology and telecommunications industries, office, public utility installation, research, design and development centre, shop and services, warehouse (excluding dangerous goods godown)).
- 1.1.4 An Indicative Development Scheme ("IDS") of the proposed redevelopment is provided in **Appendix 1.1**. The traffic forecast for traffic noise impact assessment purpose is provided by the Project Traffic Consultant – MVA Hong Kong Limited.
- 1.1.5 This Environmental Assessment Studies (EAS) is prepared in support of the S16 Planning Application. The intention of this EAS is to demonstrate that there are no unacceptable adverse environmental impacts as a result of the development under application.

1.2 Site Location and its Environs

- 1.2.1 As provided in **Section 1.1.2**, the subject site falls primarily within an area zoned "OU(I&T)", on the Approved San Tin Technopole Outline Zoning Plan (OZP) No. S/STT/2. The location of the subject site is shown in **Figure 1.1**.
- 1.2.2 The subject site is located at an area with ponds, village houses, open storage sites, vehicle repair workshops and vacant lands nearby. As shown in the approved OZP S/STT/2, a planned Road (L13) runs along southeast boundary of the subject site.
- 1.2.3 The Application Site is located within the project boundary of the future San Tin Technopole, in which the planning theme of the locality is to foster I&T development in Hong Kong. With reference to Revised Recommended Outline Development Plan (RODP) provided in *Figure 2.1* of approved Environmental Impact Assessment Report for the San Tin / Lok Ma Chau Development Node (AEIAR-261/2024), as extracted in **Appendix 1.2**, the areas surround the site to the southwest, northwest and northeast are planned for Innovation and Technology development with the planned San Tin Western Main Drainage Channel running along southwest of the application site. A planned Road (L13) is running adjacent to Application Site along its southeast boundary. To the further east of site separated by the planned road L13 are existing

village settlements such as Tsing Lung Tsuen, San Lung Tsuen, Fan Tin Tsuen, On Lung Tsuen and Yan Shau Wai.

1.3 Proposed Development

- 1.3.1 The proposed development includes seven 12-storey I&T blocks, three 19-storey commercial and staff quarter blocks, one 9-storey data centre, one 3-storey visitors and education centre, one 2-storey cooling centre and one 2-storey sub-station. As summarised in **Table 1.1** below. The ground floors of the I&T blocks will also allow relocation of existing logistics operations affected by land resumption of San Tin Technopole. The total Gross Floor Area (GFA) is about 691,498 sqm.

Table 1.1 Key Development Parameters

Item	Proposed
I&T Blocks (7 nos)	G/F: Warehouse; Testing Area for modern logistics / low-altitude economy operations 1/F to 2/F: Industrial Floors for operation and testing areas for modern logistics / low-altitude economy operations 3/F to 6/F: R&D labs 7/F to 11/F: R&D Offices
Commercial and Staff Blocks (4 nos)	G/F to 1/F: Commercial Uses (shops, supermarkets, restaurants) 2/F to 18/F: Staff Quarters
Automatic Parking System / Parking Centre	G/F to 1/F: Automatic Parking System 2/F to 8/F: Data Centre
Visitor and Education Centre & GIC Facilities	Public utility installations such as cooling center (2-storey) and substation (2-storey) Visitor and education center (3-storey)

- 1.3.2 The staff quarters at commercial and staff blocks will require natural ventilation. Other noise sensitive uses, including R&D labs and offices, will be provided with mechanical ventilation and do not rely on opened window for ventilation. The setback from openings and fresh air intakes of development to the adjacent planned Road L13 as well as internal road is at least 5m.
- 1.3.3 To facilitate energy conservation and better control of potential noise emission, majority of cooling capacity of the development will be centralized and provided from the 2-storey cooling centre.
- 1.3.4 No pond filling works will not be carried out prior to the commencement of construction of the ecologically enhanced fishponds at the planned Sam Po Shue Wetland Conservation Park (SPS WCP). In view of the detailed design for the first phase SPS

WCP will be completed in 2026/27, with construction of the park commencing immediately thereafter, it is expected that the proposed pond filling will be commenced in 2028 and the tentative completion year of proposed I&T hub development is around **year 2033**.

1.4 Appraisal of Environment Impact

- 1.4.1 As discussed in **Section 1.2.3**, the proposed I&T hub is located within project boundary of future San Tin Technopole and within planned areas for Innovation and Technology development in AEIAR-261/2024. The tentative operation year of proposed development is around year 2033.
- 1.4.2 Currently, there's existing open storage yards and car repairing workshops and logistic centre along Castle Peak Road as shown in **Figure 1.2**.
- 1.4.3 Based on the site visit on 12 November 2025, there are no active chimneys within 200m from the subject site. The planned road L13 is the classified as local road, and the relevant HKPSG buffer distance for vehicular emission is 5m from its road kerb.
- 1.4.4 The identified noise sources in the vicinity of the subject site includes road traffic noise from nearby road network, and car repairing workshops from the surrounding area.

2. ROAD TRAFFIC NOISE IMPACT ASSESSMENT

2.1 Introduction

- 2.1.1 This road traffic noise impact assessment is prepared to address road traffic noise impact on the noise sensitive uses of the proposed development and recommend mitigation measures where practicable to attenuate the impact.

2.2 Assessment Criteria

- 2.2.1 Noise standards are recommended in Chapter 9, "Environment", of the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against possible noise impact from road traffic, railway and aircrafts. According to the guidelines, the maximum allowable road traffic noise level, measured in terms of L10(1 hr), at 1m away from openable window for ventilation for all domestic premises like the proposed development is recommended to be 70 dB(A).

2.3 Assessment Methodology

- 2.3.1 The assessment concerns the prediction of L10 (1-hour) traffic noise level at Noise Sensitive Receivers (NSRs) of the proposed development due to the projected traffic flow on the adjacent major road networks for year **2048**, which is considered as the worst case scenario within 15 years upon completion of the proposed development in year 2033. The PM peak hour traffic is higher than that in AM and was thus adopted for assessment as worst-case scenario. Traffic noise will be predicted using the model "RoadNoise", which has been used before in other similar NIA studies. The model has fully incorporated the procedures and methodology documented in "Calculation of Road Traffic Noise (CRTN)" (1988) published by the U.K. Department of Transport.
- 2.3.2 The subject site is affected by the road traffic noise from the nearby road network, such as the planned Road L13 and Castle Peak Road – San Tin Section. The road section within the 300m noise study area is shown in **Appendix 2.1**.
- 2.3.3 Traffic flow was predicted by the Project Traffic Consultant – MVA Hong Kong Limited. The information on traffic volume and percentage of heavy vehicle using these roads is attached in **Appendix 2.1**. The traffic forecast will be submitted to the Transport Department (TD) for comment, and TD's endorsement will be provided once it is available.
- 2.3.4 The predicted noise levels were then compared with the HKPSG noise criterion for assessing the impact. Practicable environmental mitigation measures have been recommended, where necessary.

2.4 Noise Sensitive Receivers (NSRs)

- 2.4.1 As discussed in **Section 1.3.2**, the staff quarter of proposed development will require natural ventilation. Other noise sensitive uses, including R&D labs and offices, visitors and education centre will be provided with mechanical ventilation and do not rely on opened window for ventilation.
- 2.4.2 A number of NSRs, which represent the opening of the staff quarter for prescribed ventilation purpose are selected for the assessment as they are likely to be impacted by traffic noise. All assessment points are taken at 1.2m above the floor level and 1m away from the facade opening of rooms with noise sensitive use (living rooms and bedrooms). **Figure 2.1** shows the location of the selected NSRs for road traffic noise impact assessment.

2.5 Assessment Result under Base Case Scenario

- 2.5.1 Modelling layout for Road Traffic Noise Impact Assessment is provided in **Appendix 2.2**. **Appendix 2.3** shows the predicted road traffic noise impacts on the selected NSRs at base case scenario. Noise exceedances are found with a maximum noise level of **71 dB(A)** under base case scenario.

2.6 Use of Noise Mitigation Measures

- 2.6.1 In view of predicted traffic noise exceedance above, noise mitigation measures are considered. Innovative noise mitigation measures are being explored in recent years. According to EPD's website regarding innovative noise mitigation design and measures (<http://www.epd.gov.hk/epd/Innovative/greeny/eng/index.html>), different balconies and special design window systems have been implemented in public rental housing, private residential and hostel developments. In King Tai Court project, baffle type acoustic window is adopted for the residential dwellings with road traffic noise sound attenuation of about 4 to 8 dB(A) (i.e. additional noise reduction indoors when compared with case using conventional window; or the relative insertion loss of acoustic window and conventional window).

Consideration of Innovative Noise Mitigation Designs (INMD) in Practice Note (PN)

- 2.6.2 In the "Practice Note on Application of Innovative Noise Mitigation Designs in Planning Private Residential Developments against Road Traffic Noise Impact" in ProPECC PN 5/23 (PN), different configurations of Innovative Noise Mitigation Designs (INMD) in form of acoustic window and enhanced acoustic balcony are suggested. The configurations are listed out in **Table 2.1** and **Table 2.2** below.

Table 2.1 Key Parameters of Acoustic Window (Baffle Type) of the Reference Case in PN and the Associated Noise Reduction Effects

Type	Parameters ^[1]					RNR ^[2] in dB(A), Orientation ^[3]			
	Room Area, sqm	Inner Opening, sqm	Outer Opening, sqm	Overlapping Length, mm	Gap width between panels, mm	Parallel	30°-60°	30° + 1.5m fin	60° + 1.5m fin
PN_8sqm	8	0.5046	0.522	≥100	100 - 175	6.0	7.0	8.0	9.0
PN_18	18	1.125	1.125			7.0	8.0	9.0	10.0

[1] No other ventilation opening should be provided at the same room at noise exceedance location(s)

[2] RNR: Noise attenuation in terms of Relative Noise Reduction (RNR); Further reduction of 1.5dB(A) with application of Sound Absorptive Material (SAM) with Noise Reduction Coefficient (NRC) of not less than 0.7 applied at top and outer opening side of mullion.

[3] Orientation: Horizontal Angle to Dominant Line Source

Table 2.2 Key Parameters of Enhanced Acoustic Balcony (Baffle Type) of the Reference Case in PN and the Associated Noise Reduction Effects

Type	Parameters								RNR ^[2] in dB(A), Orientation ^[3]	
	Room Area, sqm	Min. Balcony Width, sqm	Min. Balcony Depth, mm	Min. Parapet Height ^[4] , mm	Inner Openi ng, sqm	Outer Openi ng, sqm	Min. Overla pping Length, mm	Gap Width, mm	Paral lel	30°- 60°
EAB_PN_14	14	1440	1300	1450	2.265	2.541	100	100	8.0	11.0
EAB_PN_18	18	2055	1300		2.541	2.541			9.0	11.0

[1] No other ventilation opening should be provided at the same room at noise exceedance location(s)

[2] RNR: Noise attenuation in terms of Relative Noise Reduction (RNR); Further reduction of 1.5dB(A) with application of Sound Absorptive Material (SAM) with Noise Reduction Coefficient (NRC) of not less than 0.7 applied at top and outer opening side of mullion.

[3] Orientation: Horizontal Angle to Dominant Line Source

[4] In addition to solid parapet, **full height side** wall is provided on one side of balcony

Use of Acoustic Window with reference to PN 5/23

- 2.6.3 Predicted traffic noise level at some NSRs exceeded assessment criteria and are upto 71 dB(A) (i.e. 1 dB(A) noise exceedance). The sizes of these habitable rooms are about 12 sqm. Acoustic Window design would be referenced on configuration **PN_18** as listed in **Table 2.1** above, with sliding panel provided behind openable side-hung window at a gap width of 100mm, with overlapping length not less than 100mm and outer opening area will be limited to not more than **1.12 sqm**. For ease of reference, this configuration would be abbreviated as "**PN_18**" in this document.

Room Size Adjustment

- 2.6.4 It is understood that the room size will affect the sound attenuation performance of the acoustic window (baffle type), therefore, further adjustment is needed by using the equation " $10 \times \log (R_{ref}/R_{design})$ ", where R_{ref} and R_{design} refer to the area of the room of the reference case respectively. In addition, for conservative approach, the corrected noise level would not be greater than the reference case even the room size of the Proposed Development is larger than the reference case.

Relative Noise Reduction

- 2.6.1 The RNR evaluated for **PN_18** for abovementioned NSRs are presented in **Appendix 2.4**. For conservative purpose, the assumed noise reduction will be not higher than the predicted noise exceedance of 1 dB(A) in this assessment. Schematic diagram of INMD proposed are illustrated in **Appendix 2.5**. **Figure 2.2** indicates the location of proposed noise mitigation measures, i.e. those NSRs with predicted noise exceedance under the worst-case scenario.

- 2.6.2 In view of above, noise reduction of not less than 1 dB(A) is considered achievable. For conservative purpose, the assumed noise reduction will be not higher than the predicted noise exceedance level in this assessment.

2.7 Assessment Result of the Mitigated Scenario

- 2.7.1 The traffic noise impacts on the NSRs under mitigated scenario of the worst case scenario were predicted and provide in **Appendix 2.4**.
- 2.7.2 With the noise mitigation measures proposed, the Proposed Development would comply with the HKPSG road traffic noise standard criteria of 70 dB(A) (100% compliance).

3. FIXED NOISE SOURCE IMPACT ASSESSMENT

3.1 Assessment Criteria

- 3.1.1 Noise assessments will normally be conducted in accordance with the "Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites" (IND-TM), published under the Noise Control Ordinance (NCO). The appropriate Acceptable Noise Level (ANL) can be determined based on the Area Sensitivity Rating (ASR). There are 4 types of area described in the IND-TM which are summarised in **Table 3.1**.

Table 3.1 Area Sensitivity of NSRs

Type of Area Containing NSR	Degree to which NSR is affected by Influencing Factors (IFs)		
	Not Affected	Indirectly Affected	Directly Affected
I. Rural area, including country parks, or village type developments	A	B	C
II. Low density residential area consisting of low-rise or isolated high- rise developments	A	B	C
III. Urban area	B	C	C
IV. Area other than those above	B	B	C

- 3.1.2 As discussed in **Section 2.4.1**, the staff quarters of the proposed I&T Hub will rely on opened window for ventilation and representative Noise Sensitive Receivers (NSRs) are selected for fixed noise source impact assessment as indicated in **Figure 3.1** and summarized in **Table 3.2** below. R&D labs, offices, visitor and education centre will be provided with mechanical ventilation and does not rely on opened window for ventilation and they are not selected as representative NSRs.

Table 3.2 Representative Noise Sensitive Receivers for industrial noise

NSRs		Type of Area Containing	Degree to which NSR is affected by Influencing Factors (IFs)	Identified ASR (Area Sensitivity Rating)
N01	Village House at Sun Lung Village	I. Rural area, including country parks, or village type developments	Not Affected	A
N11, N12	Staff Quarters of the Proposed Development	IV. Area other than those above	Not Affected	B

Notes: In any event, the Area Sensitivity Rating and the ANLs adopted in this report are only indicative and they are used for assessment only. Noise from fixed noise sources is controlled under the NCO. Therefore, the Noise Control Authority shall determine the noise impact on the basis of prevailing legislation and practices being in force, and taking into account of contemporary conditions/ situation of adjoining land uses.

Where the noise under investigation is being received within a building from a noise source located on or within the same or an adjoining building such that the noise is transmitted primarily through the structural elements of the building or buildings, the appropriate ANL

shall be 10 dB(A) less than the relevant ANL as shown above. A similar adjustment should be made to the relevant ANL if the point of assessment is at an internal location of a building in which the NSR is located.

- 3.1.3 The Acceptable Noise Level (ANL) for the proposed development is tabulated in **Table 3.3**

Table 3.3 Identified Area Sensitivity Rating and Acceptable Noise Level of NSRs in the subject site

Noise Sensitive Receivers (NSR)	Directly/ Indirectly Affected/ Not Affected	Area Sensitivity Rating (ASR)	Acceptable Noise Level (ANL)	
			Day and evening (0700 – 2300 hrs)	Night (2300 – 0700 hrs)
N01	Not Affected	A	60	50
N11, N12	Not Affected	B	65	55

3.2 Fixed Noise Sources and Impact Evaluation

Existing Noise Sources

- 3.2.1 A number of potential noise sources was identified to the south of Application Site located along Castle Peak Road – San Tin Section, including vehicle repair workshops and recycling station, as shown in **Figure 3.1**. Based on site observation on 12 November 2025, dominant noise climate along Application Site boundary was road traffic noise and operational noise from abovementioned potential noise sources were not noticeable. According to the operators of the vehicle repair workshops and recycling operators, the operation hours of these sources are within day time period (07:00 to 19:00 hours) only. Site visit photo and findings (operation hours) are provided in **Appendix 3.1**.
- 3.2.2 According to the layout design, the noise sensitive use which rely on opened window for ventilation, i.e. staff quarters, were located to the northern portion of Site which are more than 300m away from the abovementioned potential noise sources. In view of the operation nature of the potential noise sources, site observation and separation distance to noise sensitive use, no adverse noise impact is envisaged at the staff quarters due to operation of the existing potential noise sources.

Planned Noise Sources

- 3.2.3 There will be typical building equipment (i.e. pump room, transformer rooms, lift machine room, emergency generator rooms etc.) associated with sound emission from proposed building blocks. Besides, there is a planned 2-storey substation building as well as a 2-storey cooling centre building where majority of cooling equipment will be centralised there.
- 3.2.4 MVAC and E&M plants, such as pump units, transformers, emergency generator and lift machines, are not yet designed in this early stage. All E&M plants will be placed at enclosed plant rooms. The ventilation louvres, mechanical ventilation intakes or

exhausts of MVAC equipment and E&M plant rooms will be treated by silencers and enclosures as required.

- 3.2.5 The choice of equipment and the requirement of noise control measures, such as acoustic treatments by silencers and enclosures, will be determined during detailed design stage to ensure that the noise level at potentially affected NSRs will comply with the HKPSG noise criteria. The cumulative noise impact on nearby NSRs shall comply with statutory requirement under Noise Control Ordinance stipulated in IND-TM. For the design of plant noise control treatment, the plant noise shall be controlled and designed to meet the HKPSG requirement, i.e. 5 dB below ANL or the prevailing background noise level, whichever is the lower. The prevailing background noise levels shall be determined at detailed design stage, before construction commencement, for determining the planning criteria. The design requirement for the compliance to HKPSG criteria will be stated in the tender specification. The Contractor shall be responsible for the design of MVAC and E&M plants and associated mitigation measures.

Planned Substation

- 3.2.6 A substation is planned near the southeast boundary of site next planned road L13. The minimum separation from the substation to the nearest existing NSR at Sun Lung Tsuen (N01) is 295m. The minimum separation from the substation to planned staff quarters is 127m and partially screened by the planned 8-storey data centre in-between. Equipment inventory is not available at this stage of study. With the 2-storey building structure, any equipment with potential noise impact such as transformers and switchgears can be housed inside concrete envelop or semi-enclosed transformer base. Adverse noise impact due to the substation operation is not envisaged.

Planned Cooling Centre

- 3.2.7 Majority of cooling capacity of the development will be centralized and provided from the 2-storey cooling centre. There will be chilling equipment such as air-cooled chillers and cooling towers which are considered as potential noise sources. The equipment sound emission data and details are not available at this early stage. 24-hour operation of cooling centre is assumed in this study. The nearest existing NSR to the cooling centre is N01 (Sun Lung Tsuen) which is separated by not less than 300m horizontal distance and no adverse noise impact is envisaged.
- 3.2.8 To the northeast of cooling centre, there is planned commercial and staff quarter blocks located at 153m horizontal distance under the indicative development scheme. The inventory and quantity of noise emitting equipment of cooling centre are not available at this early stage of study. Based on design criteria (ANL-5) of $L_{eq,30min}$ 55 dB(A) at the night-time, accounting a 6 dB(A) tonality correction as conservative and 3 dB(A) façade reflection. The maximum allowable sound power level (SWL) from the cooling centre is preliminarily evaluated with respect to the design criteria, distance correction, tonality correction and façade correction which is 98 dB(A) (i.e. 55 dB(A) + 20 (153)+8 -6-3). This is conservative evaluation and the partial screening provided by the data centre building is yet to be considered.
- 3.2.9 With reference to typical sound power levels of ventilation equipment provided in "Code of Practice on Ventilation System Noise Control" (the "CoP") published by the Environmental Protection Department, typical sound power levels of air-cooled chillers and water-cooling towers ranged from 100 to 109 dB(A) as well as 96 to 105 dB(A) respectively. The overall sound emission due to chillers and cooling towers of the cooling centre may impose potential noise exceedance to design criteria without use of mitigation measures. Standard noise mitigation measures, such as noise barriers, acoustic enclosures with silencers, shall be allowed in the design of the cooling centre such that the level of the intruding noise at the façade of the nearest sensitive use comply with the noise criteria under HKPSG.

- 3.2.10 With reference to the "CoP", noise reduction upto 10 dB(A) is achievable by use of barrier or partial enclosure while noise reduction upto 30 dB(A) is achievable by use of complete enclosure with silencers. In addition, the direct line-of-sight from the proposed 2-storey cooling centre to the 18-storey commercial and staff quarter blocks will be partially screened by an 8-storey data centre block in-between subjected to building layout design in detailed design stage. The openable windows of the staff quarters are already avoided from directly facing the planned cooling centre. Therefore, with standard noise mitigation measures adopted and careful building design, no insurmountable noise impact due to the cooling centre operation is anticipated.

3.3 Conclusion

- 3.3.1 The noise sensitive use of proposed development is located of consideration distance (more than 300m) from existing noise sources. No adverse fixed noise impact is anticipated at the proposed development.
- 3.3.2 The choice of equipment and the requirement of noise control measures, such as acoustic treatments by silencers and enclosures, will be determined during detailed design stage to ensure that the noise level at potentially affected NSRs will comply with the HKPSG noise criteria. The design requirement for the compliance to HKPSG criteria will be stated in the tender specification. In view of the considerable separation allowed in the layout design, there would be no insurmountable noise impact from fixed noise sources of proposed Development to nearby noise sensitive receivers.

4. AIR QUALITY IMPACT ASSESSMENT

4.1 Introduction

- 4.1.1 The assessment qualitatively assesses the potential air quality impacts during construction phase and operational phase of the proposed development. For the operational phase, the impact due to the vehicular emissions from the surrounding roads and other possible emissions upon the sensitive receivers of the Proposed Development have been reviewed and compared the design with the recommended buffer distance in the Hong Kong Planning Standards and Guidelines (HKPSG). The potential odorous emission from the proposed development is also addressed.

4.2 Construction Phase Air Quality Impact

- 4.2.1 Demolition and construction works will induce potential fugitive dust and gaseous emissions. Individual environmental impacts during construction (including demolition) of the project have been qualitatively addressed in this section.

Legislation

- 4.2.2 Assessment criteria for aerial emission is based on the Hong Kong's Air Quality Objectives (AQOs), and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM) for controlling air pollutants. The prevailing AQOs, effective since 11 April 2025, is summarised in **Table 4.1** below and adopted for the air quality impact assessment.

Table 4.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit [i] ($\mu\text{g}/\text{m}^3$)	Number of exceedances allowed
Sulphur dioxide (SO_2)	10-minute	500	3
	24-hour	40	3
Respirable suspended particulates (PM_{10}) [ii]	24-hour	75	9
	Annual	30	Not applicable
Fine suspended particulates ($\text{PM}_{2.5}$) [iii]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen dioxide (NO_2)	1-hour	200	18
	24-hour	120	9
	Annual	40	Not applicable
Ozone (O_3)	8-hour	160	9
	Peak Season	100	Not applicable
Carbon monoxide (CO)	1-hour	30,000	0
	8-hour	10,000	0
	24-hour	4000	0
Lead (Pb)	Annual	0.5	Not applicable

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 10µm or less.
- [iii] Fine suspended particulates means suspended particles in air with a nominal aerodynamic diameter of 2.5µm or less.

Air Sensitive Receivers

- 4.2.3 There are villages, warehouse, factories, office and shops located within the 500m from the Subject Site, which are considered as representative Air Sensitive Receivers (ASRs). These representative ASRs are identified as shown in **Figure 4.1** and **Table 4.2** below.

Table 4.2 Representative Air Sensitive Receivers

Ref	Air Sensitive Receiver	Type	Shortest Distance from the Subject Site
A01	Customs Detector Dog Division Lok Ma Chau Dog Base	Office	496m
A02	Department of Health (Outbound) Office	Office	488m
A03	Yan Sau Wai	Village	269m
A04	Fan Tin Tsuen	Village	249m
A05	San Lung Tsuen	Village	145m
A06	Office of Chin Tai Logistics	Office	141m
A07	Garage	Factory	312m
A08	Hop Yick Sand Storage and Environment Recycling Station for Construction Waste	Factory	316m
A09	Mai Po Lung	Village	352m
A10	Northbound Travel for Hong Kong Vehicles Inspection San Tin Service Center	Factory	258m
A11	Falling Car Washing	Shop	282m
A12	Yau Kee Wheel and Battery	Shop	205m

Construction Air Quality

- 4.2.4 The application includes the pond filling for development of I&T hub. The future development comprises of I&T blocks, commercial and staff quarter blocks, data centre, visitors and education centre, cooling centre and sub-station. The I&T hub development occupies an area of about 163,181 sqm in total. The development includes earthworks (backfilling), foundation and basement construction and superstructure works. The tentative earthwork area, is estimated to be about 132,000 sqm. Yet, it shall be noted that final works areas are subjected to further site investigations and detailed construction design at later stage. Subjected to site investigation findings and

foundation design, pond filling is expected while no excavation or minimal excavation is expected at the moment. The design formation level is +6.0mPD and there is 644,600 m³ of estimated fill material which will be imported from off-site, subject to further site investigations. According to the tentative programme, construction period is planned from January 2028 to December 2033, i.e. 60 months. There is tentatively 18 months for earthworks. Based on 7m³ per truck and 12 working hour per day, there will be less than 18 trip of dump truck per hour travelling to and from the work site.

- 4.2.5 Fugitive dust and gaseous emissions will be the major potential source of air quality impact during the construction phase of the proposed development. Under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation, only approved or exempted non-road mobile machineries (including mobile generator, air compressor, excavator, crawler crane, bulldozer, and etc.) with a proper label are allowed to be used in the construction site. In addition, dust potentially generated as a result of the concreting works for the construction of superstructure, floor slab, etc. would be insignificant as the concrete would be pre-mixed and transferred to the Subject Site by concrete lorry mixer. In view of the scale of work as abovementioned, it is anticipated that not more than 25 mechanical equipment such as excavator, dump truck, piling rig, mobile crane, concrete lorry mixer will be used simultaneously at the work site, adverse air quality impact is not anticipated during the construction state with mitigation measures in place.
- 4.2.6 The pond filling works will not be carried out prior to ecological enhancement at planned Sam Po Shue Wetland Conservation Park. The tentative pond filling and site formation works is expected for 18 months from Jan 2028 to June 2029 and the tentative completion of the development is Dec 2033.
- 4.2.7 The project is part of I&T development in the San Tin Technopole. The Application Site is within "Northwest" of the development of San Tin / Lok Ma Chau Development Node (ST/LMC Dev) with reference to AEIAR-261/2024. Concurrent period is expected for the proposed development and the development of ST/LMC Dev. Based on AEIAR-261/2024, the "North" and "Northwest" of ST/LMC Dev are within 500m of the Application Site.
- 4.2.8 With reference to the Preliminary Construction and Population Intake Schedule and Tentative Construction Programme in Appendix 2.1 and Appendix 2.2 of AEIAR-261/2024, majority of site formation works of the "North" and Northwest" of ST/LMC Dev would be completed in 1st quarter of year 2028, while there will be continued site formation for road works and site development works. Extracted programme information of AEIAR-261/2024 is provided in **Appendix 4.1** and summarised in **Table 4.3** below.

Table 4.3 Potential Concurrent Project

Project	Details	Concurrent Period ^[1]
"North" of ST/LMC Dev	Site Formation works	Q1 2028
	Site Development and Road works	Q1 2028 to Q1 2033
"Northwest" of ST/LMC Dev	Site Formation works	Q1 2028
	Site Development and Road works	Q1 2028 to Q1 2031

Notes:

[1] Based on Preliminary Construction and Population Intake Schedule and Tentative Construction Programme in Appendix 2.1 and Appendix 2.2 of AEIAR-261/2024

- 4.2.9 The major construction dust and gaseous emission would be from earthworks of the Application Site and 18 months have been allowed in the tentative programme. As the Application Site is part of the I&T development in the San Tin Technopole, concurrent construction with ST?LMC Dev is expected. Based on the abovementioned information, the expected concurrent period of earthworks of the Application site with site formation of majority of ST/LMC Dev in the vicinity is estimated to be about a quarter (i.e. Q1 2028) only. It is recommended that the future Contractor of the proposed development to closely liaise with concurrent projects to avoid cumulative air quality nuisance on nearby ASRs due to construction by programme arrangement of major dust and gaseous emission activities.
- 4.2.10 With abovementioned close liaison of concurrent projects, implementation of mitigation measures recommended in **Section 4.2.11** to **Section 4.2.21**, and that the separation from the subject site to the nearest ASR is more than 140m, significant additional adverse air quality impact is not expected.

Mitigation Measures for Fugitive Dust and Gaseous Emission

- 4.2.11 With the implementation of sufficient suppression measures as stipulated under the APCO, Air Pollution Control (Construction Dust) regulation (Cap 311R) and good site practices (as detailed in **Section 4.2.16** to **4.2.19** below), fugitive dust and gaseous emission arising from the earthworks, etc. can be effectively suppressed through contractual clauses and close enforcement of the resident engineers. The Contractor(s) shall be required to follow the requirements of the Air Pollution Control (Construction Dust) Regulation which requires notification before carrying out demolition works or construction works and to adopt control measures while carrying out demolition activities or construction activities.
- 4.2.12 To mitigate potential air quality impacts, all control measures recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, shall be implemented. Relevant control measures include:
- The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet;
 - Restricting heights from which materials are to be dropped, as far as practicable to minimise the fugitive dust arising from unloading/ loading;
 - Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels. However, all spraying of materials and surfaces should avoid excessive water usage;
 - Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle;
 - For hoarding along site boundary, height of not less than 2.4 m high from ground level to be adopted where appropriate;
 - Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides;
 - All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet; and

- To reduce the traffic induced dust dispersion and re-suspension, the travelling speed of vehicles within the site should be controlled.

4.2.13 In addition, emission control during the construction phase shall be carried out in accordance with the requirements of the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation. The emissions of non-road mobile machinery (NRMMS) include mobile machines and vehicles powered by internal combustion engines used primarily off-road. All NRMMS operating on-site which are subject to the emissions control of the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation shall be approved/exempted (as the case may be) and affixed with the requisite approval/exemption labels. To mitigate potential air quality impact, exempted NRMMS shall be avoided as far as practicable.

4.2.14 Appropriate exhaust emissions controls should also be adopted as required under Air Pollution Control (Fuel Restriction) Regulation. Electric power supply shall be provided for on-site machinery as far as practicable and diesel generators shall be avoided to minimize the gaseous and Particulate Matter (PM) emissions.

4.2.15 The recommended mitigation measures for protection of nearby ASRs are described below:

Good Site Management

4.2.16 Good site management is important in reducing potential air quality impacts to an acceptable level. As a general guide, the contractor(s) shall maintain a high standard of housekeeping to prevent fugitive dust emissions. Loading, unloading, handling and storage of fuel, demolished debris and wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission.

4.2.17 Appropriate working methods should be devised and arranged to minimise dust 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 debris should be allowed. Debris should be lowered by a hoist to the ground, preferably with an enclosed tunnel.

4.2.18 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 that does not generate fugitive dust emissions. Prior to cleaning, the materials should be handled properly to prevent fugitive dust emission.

4.2.19 Frequent mist 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 mist spraying should be just enough to dampen the materials without over-watering, which could result in surface water runoff.

Dust Emissions from Site Traffic

4.2.20 Dust emission from construction traffic is generated predominantly from the travelling of waste removal lorries. 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.

4.2.21 "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.

4.2.22 With the adoption of good practices, adverse air quality impact during the construction stage is not anticipated.

4.3 Operational Phase - Vehicular Emissions Impact

4.3.1 The potential impact due to vehicular emissions from road traffic have been considered. Planned Road L13 is the major road segments close to the Project. In accordance with the HKPSG, the buffer distance between roads kerb and permitted uses is given in Table 3.1 of Chapter 9 of HKPSG.

4.3.2 The planned Road L13 is local road, according to the Table 3.1 of Chapter 9 of HKPSG, the recommended buffer distance is >5m for Local Distributor.

4.3.3 The indicative development plans layout showing the buffer distances from road kerbs is provided in **Figure 4.1**. The setback of the building façade to planned Road L13 is 10m, i.e. from the balcony edge to the kerb side of road is at least 5m. The setback of building façade of staff quarters to internal roads is 9m, i.e. from the balcony edge to the kerb side of road is at least 5m. The relevant HKPSG vehicular buffer distance is complied.

4.3.4 The fresh air intake location for the non-domestic portions (i.e. IT Blocks, Commercial uses of Commercial and Staff Blocks, Visitor and Education Centre & GIC Facilities) will be determined in the detailed design stage. However, the relevant HKPSG buffer distance would be fulfilled. The relevant figure is shown in **Figure 4.1**.

4.3.5 The buffer distances between the subject site and the nearby roads will comply with the recommended requirements; as such, it is considered that the Proposed Development would not be subject to unacceptable vehicular emission impact.

4.3.6 For the proposed carpark, ProPECC PN2/96 on Control of Air Pollution in Car Parks will be followed.

4.4 Operational Phase - Industrial Chimney Emissions Impact

4.4.1 Regarding the industrial chimney emissions, there is no active chimney nor odour emission source identified within 200m from the subject site based on the site visit carried on 12th November 2025.

4.5 Conclusion

4.5.1 The Application is for pond filling for I&T Hub development. The minimum buffer distances between road kerbs complied with for the staff quarters and the fresh air intake of other uses will be located outside the relevant HKPSG buffer distance. Therefore, no vehicular impact is anticipated.

4.5.2 Based on site visit, there is no active chimney within 200m from the Subject Site.

4.5.3 In conclusion, there will be no air sensitive use, openable windows or fresh air intake within the buffer zone and hence no potential adverse air quality impact is expected

for the proposed development with respect to traffic flow and operation of nearby industrial chimneys.

- 4.5.4 With the adoption of good practices, adverse air quality impact during the construction stage is not anticipated.

5. WASTE MANAGEMENT IMPLICATIONS

5.1 Introduction

- 5.1.1 This section reviews the types of waste that will arise during the construction and operation phases of the Project.

5.2 Environmental Legislation and Guidelines

- 5.2.1 References have been made to the following relevant Hong Kong legislation governing waste management and disposal. Directly relevant legislations include:

- The Waste Disposal Ordinance (Cap. 354) and subsidiary legislations, such as the Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C), set out requirements for the storage, handling and transportation of all types of wastes; Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N), set out the charges for public fill, sorting and landfill.
- Land (Miscellaneous Provisions) Ordinance (Cap 28);
- Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisance Regulation – control of disposal of general refuse;

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

- Project Administration Handbook for Civil Engineering Works (PAH).
- ETWB TCW No. 22/2003A - Additional Measures to Improve Site Cleanliness and Control Mosquito Breeding on Construction Sites;
- ETWB Technical Circular (Works) No. 19/2005 - Environmental Management on Construction Sites;
- DEVB TC(W) No.8/2010 - Enhanced Specification for Site Cleanliness and Tidiness (supersedes WBTC No.6/2002 and ETWB TCW No.6/2002A);
- Works Branch Technical Circular No. 2/93 - Public Dumps;
- Works Branch Technical Circular No. 2/93B - Public Filling Facilities;
- Works Bureau Technical Circular No. 12/2000 - Fill Management;
- Development Bureau Technical Circular (Works) No. 06/2010 - Trip-ticket System for Disposal of Construction and Demolition Materials;
- Practice Note for Authorized Persons and Registered Structural Engineers – Construction and Demolition Waste (PNAP ADV – 19) issued by the Buildings Department;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
- A Guide to the Chemical Waste Control Scheme;
- Code of Practices and Guidelines for Asbestos Control and Handling; and
- ProPECC PN2/97 Handling of Asbestos Containing Materials in Building
- Works Branch Technical Circular (WBTC) No. 32/92, The Use of Tropical Hard Wood on Construction Site
- WBTC No. 19/2001 - Metallic Site Hoardings and Signboards;
- WBTC No. 12/2002, Specification Facilitating the Use of Recycled Aggregates
- Monitoring of Solid Waste in Hong Kong 2023;
- Relevant guidelines posted by EPD through EPD's website (https://www.epd.gov.hk/epd/english/environmentinhk/waste/manage_facility/y_park.html) and Y Park's website (<https://www.ypark.hk/zh-hant/>); and

- Guidelines on "Yard Waste Reduction and Treatment" issued by Development Bureau; and
- "Development Bureau Technical Circular (Works) No. 4/2020 Tree Preservation".

5.3 Impact Assessment

Construction Phase

- 5.3.1 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 handling. These activities include earthworks (pond filling), foundation, superstructure construction, building services installations and landscaping works. No or minimal excavation is expected, subjected to site investigation findings. The identified waste types include:
- Construction and demolition (C&D) materials, comprising inert and non-inert materials, from the construction works;
 - Sediment from foundation works, subjected to site investigation findings
 - chemical waste from any maintenance of construction plant and equipment;
 - asbestos-containing materials (ACM), if any; and
 - general refuse from the workforce
- 5.3.2 It is recommended that different types of wastes should be segregated, stored, transported and disposed of separately in accordance with EPD's required procedures. Inert C&D materials (or public fills) such as soil, rock, concrete, etc. should be re-used on-site as filling materials or off-site as public fill at public fills reception facilities. The non-inert C&D materials (or C&D waste) such as timber, yard waste, paper, etc. should be reused or recycled as far as possible. Landfill disposal should be considered as the last resort for waste handling.
- 5.3.3 C&D materials and sediment may be generated during construction. Suitable inert C&D material will be reused on-site (e.g. for backfilling) as far as practicable and surplus inert C&D material will be delivered to Public Fill Reception Facilities for beneficial reuse. Non-inert C&D material from excavation and other works should be handled in accordance with **Section 5.3.2**.
- 5.3.4 In case that sediment layer identified on-site, non-excavation ground improvement technique, such as Deep-Cement-Mixing (DCM), will be considered to avoid / minimize volume of sediment to be mucked-out / excavated during foundation works as practicable. Any mucked-out / excavated sediment (e.g. from foundation works) is proposed to be stabilized / solidified by mixing with cement so that mixture is suitable for reuse on-site. As there's no basement construction under the indicative development scheme, significant excavation of sediment is not anticipated and it is expected that all sediment excavated / mucked out, if any, will be stabilized / solidified as abovementioned for reuse on-site. In case there are inevitable need for marine disposal of sediment, "*Administrative Guidance – Management Framework for Disposal of Dredged/ Excavated Sediment*" shall be followed for testing and classification for determining the disposal arrangement for sediment and marine dumping permits shall be applied in accordance with Dumping at Sea Ordinance (Cap. 466). All handling of mucked-out / excavated sediment shall comply with the Waste Disposal Ordinance.
- 5.3.5 The clearance/pruning of existing vegetation to facilitate site access and site formation works will generate timber material and yard waste. These material shall be handled in accordance with the principles of reduce, reuse, and recycle (3Rs). The following guidelines shall be taken into account when handling yard waste:

- Relevant guidelines posted by EPD through EPD's website (https://www.epd.gov.hk/epd/english/environmentinhk/waste/manage_facility/ypark.html) and Y Park's website (<https://www.ypark.hk/zh-hant/>); and
- Guidelines on "Yard Waste Reduction and Treatment" issued by Development Bureau; and
- "Development Bureau Technical Circular (Works) No. 4/2020 Tree Preservation".

5.3.6 Specifically, to minimize the generation of yard waste, the project proponent shall:

- Avoid unnecessary removal or excessive pruning of trees. Preserve trees in their original locations and implement tree transplanting when on-site preservation is not feasible.
- Segregate various types of yard waste and shred wood to facilitate reuse and recycling.
- Reuse yard waste on-site for a variety of purposes (e.g., decomposition and composting, recreational and decorative uses, and mulching in planting areas, etc.).
- Identify recycling options (e.g. delivery to Y-park) for yard waste that cannot be directly reused on-site.
- Where yard waste generation is unavoidable, sorting of yard waste for recycling and reuse on-site should always be prioritized. Yard waste shall be separated from C&D material to facilitate recycling, such as delivering them to YPARK so as to minimize the quantity of waste to be disposed of at the landfill site. Where appropriate, the Contractor should be responsible to cut and shred the yard waste in order to meet the collection requirement of the recycling outlet for processing. Disposal of yard waste directly at landfills should only be regarded as the last resort when no alternatives are available.

5.3.7 The amount of chemical waste that will be generated from the construction work will depend on the Contractor's on-site maintenance practices and the number of mechanical plant and vehicles used on-site. Regarding the nature of the construction activities involved, chemical waste such as lubricating oil or solvent generated are not expected to be in large quantity. It is preliminarily estimated that less than 50L/month and hence approximately 3m³ of chemical waste will be generated during a tentative 60-month construction period. The amount of chemical waste to be generated shall be quantified in the Waste Management Plan (WMP) as part of the Environmental Management Plan (EMP) to be prepared by the Contractor in the construction stage.

5.3.8 The Contractor is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.

5.3.9 Chemical wastes should be handled in accordance with the "*Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*" and should be collected by licensed chemical waste collectors for subsequent disposal and appropriate treatment at licensed waste disposal facilities, for example the Chemical Waste Treatment Facility Centre in Tsing Yi. Mitigation and control requirements for chemical waste are provided in the "*Recommended Pollution Control Clauses for Construction Contracts*" available in EPD website mentioned the handling, storage and disposal of chemical wastes. Recommended key control measures are listed below:

Containers used for storage of chemical wastes should:

- Be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- Have a capacity of less than 450L unless the specifications have been approved by the EPD; and
- Display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations.

The storage area for chemical wastes should:

- Be clearly labelled and used solely for the storage of chemical waste;
- Be enclosed on at least 3 sides;
- Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest;
- Have adequate ventilation;
- Be covered to prevent rainfall entering (water collected within the bund must be tested and disposed of as chemical waste, if necessary); and
- Be arranged so that incompatible materials are appropriately separated.

Chemical waste should be disposed of:

- Via a licensed waste collector; and
- To a facility licensed to receive chemical waste, such as the CWTC which also offers a chemical waste collection service and can supply the necessary chemical waste storage containers.

With good management and site particles, adverse environmental impacts should not result.

- 5.3.10 The workers in the construction site and the site office will generate a variety of general refuse which requires disposal. It consists mainly of food waste, aluminum cans, waste paper etc. Since the information on the number of workers on-site is not available at this preliminary stage, a maximum of 150 workers working simultaneously and a waste generation rate of about 0.65 kg per worker per day are assumed. It is estimated that the daily amount of general refuse that would be generated is in the order of 98 kg.
- 5.3.11 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.
- 5.3.12 The Contractor(s) should be responsible for ensuring that waste is collected by approved waste collectors and appropriate measures are taken to minimise adverse impacts to the surrounding environment, such as dust generation. The Contractor(s) must also ensure that all necessary waste disposal permits are obtained.
- 5.3.13 The mitigation measures for construction phase are recommended based on the waste management hierarchy principles. Recommendations of (i) good site practices, (ii) waste reduction measures, (iii) waste collection, storage and transportation, (iv) Handling of Excavated C&D Material (v) On-site Sorting of C&D Materials and (v) Transportation of C&D Materials are described in following sub-sections.
- (i) Good Site Practices
- Implementation of the recommended mitigation measures in the "*Recommended Pollution Control Clauses for Construction Contracts*" available in EPD website, to

minimise 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.

- The Contractor is required to prepare a Waste Management Plan (WMP) including areas described in PNAP ADV-19 and submit to the Project Proponent for agreement.
- The Contractor is required to nominate approved personnel, such as a site manager, to be responsible for good site practices, and making arrangements for collection of all wastes generated at the site and effective disposal to appropriate facilities.
- Training of site personnel in proper waste management and chemical waste handling procedures.
- The Contractor is required to maintain records of quantities of waste generated, recycled and disposed.
- Provision of sufficient waste and recyclable collection points and arrange regular collection for disposal and recycling/reuse.
- Covering material during heavy rainfall.
- Locating stockpiles to minimise potential air quality, water quality and visual impacts; and

(ii) Waste Reduction Measures

- Segregation and storage of different types of waste in different containers to enhance reuse or recycling of materials and their proper disposal. Recyclable materials such as paper, metal (e.g. cans), plastic and glass. Recyclable wastes shall be segregated from non-recyclable waste to be stored in enclosed bins or compaction units. Recyclable material shall be collected in appropriate frequency to ensure no over stacking of recyclable wastes.
- Separate labelled bins shall be provided to segregate aluminium cans from other general refuse generated by the work force, and to encourage collection of by individual collectors;
- Any unused chemicals or those with remaining functional capacity shall be recycled.
- The Contractor is encouraged to use recycled aggregates where appropriate
- Maximizing the use of reusable steel formwork to reduce the amount of C&D material. The excavated fill material shall be used on-site as backfill material as far as possible.
- For site hoardings and signboards, if applicable, all component should be specified in metal (using bolt and nut jointing method wherever possible) to reduce generation of C&D waste. Reference should be made to WBTC No. 19/2001.
- Sort out demolition debris and excavated materials from demolition works to recover reusable / recyclable portions (i.e. soil, rock, broken concrete, etc.);
- Inert C&D materials (or public fills) such as soil, rock, concrete, etc. should be re-used on-site as filling materials or off-site as public fill at public fills reception facilities.

- non-inert C&D materials (or C&D waste) such as timber, yard waste, paper, etc. should be reused or recycled as far as possible. Specific measures to minimize generation of yard waste shall also refer to **Section 5.3.6**
- Minimize over ordering of concrete, mortars and cement grout by doing careful check before ordering.
- Proper storage and site practices to minimise the potential for damage or contamination of construction materials.
- Non-excavation ground improvement technique is recommended for consideration as required to avoid / minimise excavation of sediment as far as practicable
- Any excavated sediment is proposed to be stabilized / solidified by mixing with cement so that mixture to be reused on-site.

(iii) Waste Storage, Collection and Transportation

- Provision of appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers.
- Non-inert C&D materials such as top soil should be handled and stored well to ensure secure containment of the materials;
- Ensuring that waste is collected by approved waste collectors and appropriate measures are taken to minimise adverse impacts to the surrounding environment.
- A reputable waste collector should be employed by the contractor to remove general refuse from the site on a daily basis in general.
- Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors, if applicable
- The Contractor is required to register as a chemical waste producer if chemical wastes would be produced from the construction activities;
- The Contractor is required to separate chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility. Specific mitigation measures for handling of chemical waste shall also refer to **Section 5.3.9** to **Section 5.3.9**

(iv) Excavated C&D Materials;

- Inert C&D materials should be temporarily stored on-site for use as backfill where practicable. Surplus inert C&D materials should be delivered to Public Fill Reception Facilities (PFRFs).
- Inert C&D materials should be properly covered with tarpaulin or similar impervious sheeting to prevent dust nuisance and site runoff.

(v) On-site Sorting of C&D materials

- Prior to disposal of non-inert C&D materials, it is recommended that wood, steel, glass and other metals shall be separated for re-use and/or recycling; while Inert C&D materials shall be utilized as fill materials to minimise the quantity of waste to be disposed of to the landfill.

- The Contractor shall designate area for temporary storage of C&D materials in site layout and allocate space for on-site sorting as far as practicable.
- The Contractor shall be required via contractual requirement to implement a trip-ticket system with reference to DEVB TCW No. 06/2010 to ensure that the disposal of C&D materials is properly documented and verified.
- With reference to the DEVB TCW No. 6/2010, the Authorized Person (AP) shall write to the Public Fill Committee (PFC) through Fill Management Section of Civil Engineering and Development Division (CEDD) to request a designated disposal ground for incorporation into tender documents.
- The Contractor shall be prohibited from disposing of C&D materials to place other than the designated disposal ground, and any alternative disposal ground proposed by the Contractor shall comply with requirement in the DEVB TCW No. 6/2010 and approved by the Authorized Person (AP) in prior.
- The Contractor shall be required to install video recording system to monitor the vehicular exit/entrance of the site and checking the disposal records provided by disposal grounds against survey records routinely, if applicable.

(vi) Transportation of C&D Materials

- All dump trucks engaged on-site for delivery of inert and non-inert C&D material from the site to the designated disposal location, including PFRFs, landfill etc., should be equipped with Global Positioning System (GPS) or equivalent system for tracking and monitoring of their travel routings and parking locations by the Contractor to prohibit illegal dumping and landfilling of materials; and
- The data collected by GPS or equivalent system should be recorded properly to check and analyze the travel routing and parking locations of dump trucks engaged on site
- In order to avoid dust impacts, any vehicle leaving a works area carrying inert or non-inert C&D materials should have their load covered up before leaving the construction site

Operation Phase

- 5.3.14 The major portion of solid waste arising from the development will be municipal solid waste, as well as chemical waste from maintenance activities (e.g. building services) and lab operations. The storage and handling of such waste may give rise to adverse environmental effects.

Municipal Solid Waste

- 5.3.15 According to the Monitoring of Solid Waste in Hong Kong 2023 prepared by EPD, the domestic waste disposal per capita per day was 0.89 kg while the recovery rate of domestic waste was 21%. The domestic waste generation rate is calculated 1.127 kg per capita per day ($0.89 / (1-21\%)$). The commercial and industrial disposal rate per capita per day was 0.55 per capita per day, while the recovery rate for commercial and industrial waste was 46%. The commercial waste generation is calculated 1.0 kg per capita per day.
- 5.3.16 By applying these figures to the projected maximum estimated population after occupation of the development, approximately 26.7 ton of municipal solid waste (including 7.6 ton of domestic waste and 19.1 ton of commercial and industrial waste)

would be generated from the proposed development per day, detailed estimation is provided in **Appendix 5.1**.

- 5.3.17 Municipal solid waste generation from the development will be collected and removed regularly by an appointed party. Waste separation and recycling will be implemented, where practicable. General refuse and non-recyclables will be stored in enclosed bins and disposed offsite on a regular basis for avoidance of pest and odour nuisance. Recycling bins for recyclable materials (including aluminium can, waste paper, glass bottles and plastic bottles) will be transported off-site for recycling on a regular basis. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

Chemical Waste

- 5.3.18 Chemical waste would be generated from maintenance activities (e.g. building services) and R&D lab operations. Chemical waste such as paints, lubricants and used batteries may be generated. This waste may pose environmental, health and safety hazards. Measures as stipulated in the Waste Disposal (Chemical Waste) (General) Regulation and the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste should be strictly followed for the handling and disposal of chemical waste. The quantity of chemical waste to be generated during the operation is expected to be small and in the order of a few cubic metres per month.
- 5.3.19 Should any chemical waste be generated, the operator should register with EPD as a chemical waste producer. Chemical waste (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible. For chemical waste that cannot be recycled, they are readily accepted for disposal of at the CWTC in Tsing Yi. This chemical waste should be collected periodically in drum- type containers by licensed chemical waste collectors. Provided that the handling, storage and disposal of chemical waste are in accordance with these requirements, adverse waste management implications, including the potential hazards, air and odour emissions, noise, wastewater discharge, ecology and public transport, associated with handling, storage and disposal of chemical waste during the operation phase of the Project are not expected.

5.4 Conclusion

- 5.4.1 Provided that the identified waste arising from the construction works are handled, transported and disposed of using approved methods and that the recommended good site practices are adhered to, adverse environmental impacts are not anticipated.
- 5.4.2 Waste will be removed regularly by an appointed party. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

6. WATER QUALITY IMPACT ASSESSMENT

6.1 Introduction

6.1.1 The subject site is located at San Tin Technopole of the Northern Metropolis. Within the 500m study area of the subject site, there are Water Sensitive Receivers (WSRs), such as ponds, semi-natural or modified water course, conservation area and mitigated wetlands as shown in **Figure 5.1** and summarised in **Table 6.1** below. Potential Water Quality Impact (WQI) of the construction and operation phases of the Proposed Development is addressed in the following section.

Table 6.1 Water Sensitive Receivers within 500m Study Boundary

WSR ID ^[1]	Description	Nature
P-N3	Continuous pond area at Sam Po Shue within WCA ^[2]	Ponds
P-N4	Continuous pond area at Sam Po Shue within WCA ^[2] (to south of P-N3)	Ponds
P-N5	Continuous pond area at San Tin within WCA ^[2]	Ponds
P-N6	Continuous pond area at San Tin within WBA ^[2]	Ponds
P-N7	Continuous pond area at San Tin within WBA ^[2]	Ponds
P-N13	Southern of Tsing Lung Tsuen	Ponds
WC-N3	San Tin Eastern Main Drainage Channel (STEMDC)	Modified watercourse
WC-N7	Sam Po Shue	Semi-natural watercourse
WC-N8	San Tin Western Main Drainage Channel (STWMDC)	Semi-natural watercourse
WC-N8a	Tsing Lung Tsuen (TLT) drainage channel, near Castle Peak Road – San Tin Section	Modified Watercourse
WC-N8b	Near Castle Peak Road – San Tin Section	Modified Watercourse
WC-N9	In Mai Po	Semi-natural watercourse
WC-N11	Hop Shing Wai	Semi-natural watercourse
WC-N14	Northeast of San Tin Stormwater Pumping Station	Modified watercourse
WC-N15	Near Fan Tin Tsuen	Semi-natural watercourse
WC-N15a	Along San Tin Tsuen Road	Modified watercourse
CA-N1	Conservation Area	Conservation Area
MW-N1	Along STEMDC	Mitigation wetland
MW-N2	Flood storage pond adjacent to San Tin Tsuen Road	Pond
MW-N3	Lotus Pond at San Tin, west of Tsing Lung Tsuen	Mitigation wetland

Notes:

[1] Reference is made to AEIAR-261/2024

[2] WCA: Wetland Conservation Area; WBA: Wetland Buffer Area

6.2 Project Construction Phase

- 6.2.1 The management and mitigation strategy of the wastewater generated from the construction work of the proposed development should be addressed and implemented. Environmental control measures have been proposed if considered necessary to reduce and minimize the identified water quality impacts on WSRs.

6.3 Relevant Legislation, Standards and Guidelines for Construction Phase

Water Pollution Control Ordinance (Cap.358)

- 6.3.1 The Water Pollution Control Ordinance (Cap. 358), in existence since 1980, is the major legislation relating to the protection and control of water quality in Hong Kong. According to the Ordinance and its subsidiary legislation, Hong Kong waters are divided into ten water control zones (WCZ). Corresponding statements of Water Quality Objectives (WQO) are stipulated for different water regimes (marine waters, inland waters, bathing beaches subzones, secondary contact recreation subzones and fish culture subzones) in each of the WCZ based on their beneficial uses. The assessment area is located within the Deep Bay WCZ.

ProPECC PN 1/94

- 6.3.2 The other relevant guideline is the Professional Persons Environmental Consultative Committee Practice Note 1/94 "Construction Site Drainage" (ProPECC PN 1/94) which provides guidelines for the handling and disposal of construction discharges. This ProPECC Note is generally applicable for control of site runoff and wastewater generated during the construction of the Project.

ProPECC PN 5/93

- 6.3.3 Another relevant guideline is the Professional Persons Environmental Consultative Committee Practice Note 5/93 "Drainage Plans subject to Comment by the Environmental Protection Department" (ProPECC PN 5/93) which provides guidelines for the drainage plan of the construction site. This ProPECC Note is generally applicable for control of discharge of storm drains, foul sewers, drainage of commercial and industrial wastewater. Also, the control of sewage treatment and disposal is stipulated in this ProPECC.

Technical Memorandum

- 6.3.4 Besides setting the WQOs, the WPCO controls effluent discharging into the WCZs through a licensing system. The Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS) issued under Section 21 of the WPCO gives guidance on the permissible effluent discharges based on the type of receiving waters (foul sewers, storm water drains, inland and coastal waters). The limits given in the TM control the physical, chemical and microbial quality of effluents. Under the TM, effluents discharged into the sewerage system and the inshore and marine waters of the WCZ are subject to standards for particular volumes of discharge. These standards are defined by EPD and specified in licence conditions for any discharge within a WCZ. Any effluent discharge during the construction and operation of the Project would be required to comply with the required discharge standards.

6.4 Potential Impacts during the Construction of the Project

- 6.4.1 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 adverse impacts on the water quality. Apart from general construction activities, pollution sources could include:

- Construction site runoff including spillage from ponds and general construction activities;
- Sewage generated by construction workforce; and
- Potential accidental spillage of chemicals, e.g. oil, diesel and solvents etc.

General Construction Activities

6.4.2 All works for proposed development are land-based with essential pond filling works. The land-based construction works and pond filling may have the potential to cause water pollution. If the pond stored water is not properly drained out prior to pond filling, there's potential of water spillage causing runoff with high concentration of suspended solids to nearby WSRs. Various types of construction activities would generate wastewater. These include general cleaning and polishing, wheel washing, dust suppression sprays and utility installation, which would contain high concentrations of suspended solids. Without proper control, these could lead to increase in suspended solids level in the neighbouring storm drain and WSRs.

6.4.3 Adoption of the guidelines and good site practices for handling and disposal of construction discharges as part of the construction site management practices (as given in **Section 6.5**) would minimise the potential impacts.

Construction Site Runoff

6.4.4 Construction Site surface runoff contains high levels 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.

6.4.5 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 sandbag 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.

Sewage Effluent from Construction Workforce

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

6.4.7 In this construction site, portable chemical toilets will be provided. According to "Reference Materials on Construction Site Welfare, health and safety measures" Section 5.6.10, chemical toilets should be provided at a minimum rate of about 1 per 25 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. It is anticipated construction workforce would not cause adverse water quality impact after implementation of all recommended measures.

Liquid Spillage

6.4.8 To prevent spillage of chemicals, including fuel, solvents, oils and lubricants, it is recommended that all stocks should be stored within proper containers and sited at sealed and paved areas, preferable surrounded by bunds.

- 6.4.9 "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.
- 6.4.10 The quality of any effluent discharges from the construction site should meet the standards specified in the Technical Memorandum – Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.

6.5 Mitigation Measures during the Construction of the Project

- 6.5.1 The site practices outlined in ProPECC PN 1/94 Construction Site Drainage should be implemented as far as practicable to minimise the potential water quality impacts from various construction activities and construction site runoff.
- 6.5.2 The Contractor is required to apply to the EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression sprays, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase, monitoring works should be carried out in accordance with the discharge license.

Removal / Filling of Ponds and Wet Areas

- 6.5.3 The water of ponds would probably sediment laden with certain level of pollutants and nutrients. Spillage of pond water to nearby water course and water bodies shall be avoided. All ponds to be removed should be isolated and not connected to existing watercourse and the water inside ponds will be drained out prior to any filling, excavation or construction of the areas.
- 6.5.4 Direct dumping of drained water from ponds to nearby water courses or water bodies shall not be allowed. The drained water shall be temporarily stored in appropriate storage tanks or containers for reuse-on-site as far as practicable and any surplus water should be treated and tinkered away for disposal at Sewage Treatment Works in compliance with Technical Memorandum for Effluents Discharged into Drainage and Sewerage System, Inland and Coastal Waters (TM-DSS). Dewatering or ponds shall be carried out in dry seasons as possible so as to minimise the quantity of drained water.

Polluted Water from Excavated Material

- 6.5.5 Excavated materials such as sediment would be of high water content and which are of certain level of pollution or nutrient concentration. Mitigation measures for handling and disposal of excavated materials and sediment shall refer to **Section 5.3**. No direct disposal of excavated materials into stormwater drainage system and nearby water bodies would be allowed.

Groundwater from Contaminated Areas, Contaminated Site Run-off and Wastewater from Decontamination

- 6.5.6 Any excavated contaminated material and exposed contaminated surface shall be properly housed or covered to avoid generation of contaminated runoff. Open stockpiling of contaminated materials should not be allowed. Any contaminated runoff or wastewater generated from land decontamination process should be properly collected and diverted to wastewater treatment facilities (WTF) as necessary. The WTF shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited

substances (e.g. total petroleum hydrocarbon) to an undetectable range. All treated effluent from wastewater treatment system shall meet relevant requirements stipulated under TM-DSS and either discharged into foul sewers or tinkered away for proper disposal.

- 6.5.7 No direct discharge of groundwater from contaminated areas should be adopted. Prior to any excavation works within the potentially contaminated areas, the baseline groundwater quality in these areas should be reviewed based on the past relevant site investigation data and any additional groundwater quality measurements to be performed with reference to "*Guidance Note for Contaminated Land Assessment and Remediation*" and the review results should be submitted to EPD for examination. If the review results indicated that the groundwater to be generated from the excavation works would be contaminated, this contaminated groundwater should be either properly treated or properly recharged into the ground in compliance with the requirements of the TM-DSS. If wastewater treatment is to be deployed for treating the contaminated groundwater, the wastewater treatment unit shall deploy suitable treatment processes (e.g. oil interceptor / activated carbon) to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent from the wastewater treatment plant shall meet the requirements as stated in the TM-DSS and should be either discharged into the foul sewers or tankered away for proper disposal.
- 6.5.8 If deployment of wastewater treatment is not feasible for handling the contaminated groundwater, groundwater recharging wells should be installed as appropriate for recharging the contaminated groundwater back into the ground. The recharging wells should be selected at places where the groundwater quality will not be affected by the recharge operation as indicated in Section 2.3 of TM-DSS. The baseline groundwater quality should be determined prior to the selection of the recharge wells and deposit a working plan to EPD prior to recharge. Pollution levels of groundwater to be recharged shall not be higher than pollutant levels of ambient groundwater at the recharge well. Groundwater monitoring wells should be installed near the recharge points to monitor the effectiveness of the recharge wells and to ensure that no likelihood of increase of groundwater level and transfer of pollutants beyond the site boundary. Prior to recharge, free products should be removed as necessary by installing the petrol interceptor. The Contractor should apply for a discharge licence under the WPCO through the Regional Office of EPD for groundwater recharge operation or discharge of treated groundwater.

Wheel Washing Water

- 6.5.9 The wheels of all vehicles should be washed before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable. Wash water should be recycled whenever possible to minimise the generation of wastewater and should have sand and silt removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.
- 6.5.10 Accumulation of Solid Waste Debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering nearby storm drains and inland watercourses. Stockpiles of cement and other construction materials should be kept covered when not being used.
- 6.5.11 Rubbish and litter from construction sites should also be collected and disposed offsite on a regular basis to prevent spreading of rubbish and litter from the site area.

Construction Site Runoff

6.5.12 Exposed soil surfaces should be covered by a tarpaulin or similar material during rainstorms to prevent the washing away of construction materials into any drainage system, watercourses and inshore water. Other measures which are proposed to be implemented before, during, and after rainstorms, as appropriate, are summarized in ProPECC PN 1/94. The surface run-off from construction sites as detailed below shall also be incorporated into the Construction Site Drainage Management Plan where practicable as an integral part of good practice:

- Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/ silt removal facilities such as sand traps, silt traps and sediment basins. Channels or earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided where necessary.
- Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff.
- Silt removal facilities, channels and manholes should be maintained, and the deposited silt and grit should be removed regularly, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly.
- Construction work should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation of soil could not be avoided in these months, temporarily exposed surfaces should be covered, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds.
- 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 with tarpaulin or the like.
- Earthworks final surfaces should be well compacted, and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed. Also, appropriate drainage like intercepting channels should be provided when necessary.
- Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.
- Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
- Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm runoff from getting into foul sewers. Discharge of surface runoff into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.
- Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast and actions to be taken during or after rainstorms.
- Drainage facilities must be adequate for the controlled release of storm flows.

- High loading of suspended solids in construction site runoff should be prevented through proper site management by the contractor.
- Haul roads should be protected by crushed rock, gravel or other granular materials (i.e. hard paved) to minimize discharge of contaminated runoff.

Accidental Spillage

- 6.5.13 Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. Common chemical cabinets would be used to store the fuel tanks and other chemical substances in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal. Chemical wastes should be properly stored, collected and treated for compliance with the requirements set out in the Waste Disposal Ordinance and its subsidiary Waste Disposal (Chemical Waste)(General) Regulation. The relevant requirements are as follow:
- Storage in large containers only with the approval of the Director of Environmental Protection.
 - Labelling of every container should be in proper format.
 - Storage area for the containers should have adequate space and associated features such as at least 3 sides of wall, roof and ventilation system.
 - During waste collection and delivery, waste producer and collector should follow the requirement for the trip ticket.
- 6.5.14 Drainage serving an open oil filling point, if any, should be connected to storm drains via a petrol interceptor with peak storm bypass, if present.

Sewage

- 6.5.15 Temporary sanitary facilities, such as sufficient chemical toilets, should be employed in the works areas. The toilet facilities should be more than 30 m away from any watercourses. A licensed contractor would be responsible for the cleaning and maintenance of the chemical toilets on a regular basis. The number of the temporary sanitary facilities required for the construction sites would be subject to later detailed design, the capacity of the chemical toilets, and contractor's site practices.
- 6.5.16 Notices would be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction of the Project. Regular environmental audit on the construction site would be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.
- 6.5.17 Provided that sewage is not discharged directly into storm drain or inland waters and temporary sanitary facilities are used and properly maintained, and subject to the adoption of good site practice and the proper implementation of recommendation under this Section by the contractor, no adverse water quality impact will be anticipated.

Groundwater

- 6.5.18 According to ProPECC PN 1/94, groundwater pumped out of wells etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction, if any, should be discharged into storm drains after the removal of silt in silt removal facilities.

Boring and Drilling Water

- 6.5.19 According to ProPECC PN 1/94, water used in ground boring and drilling for site investigation or rock/soil anchoring should as far as practicable be recirculated after

sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.

Bentonite Slurries

- 6.5.20 According to ProPECC PN 1/94, bentonite slurries used in diaphragm wall and bore-pile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.
- 6.5.21 If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewers, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.

6.6 Monitoring and Audit Requirements

- 6.6.1 Water quality impacts on the identified WSRs during the construction of the Project can be readily mitigated through implementation of standard mitigation measures and good housekeeping practices. Adverse water quality impact is not expected during construction of the Project. Water quality monitoring and audit is considered not necessary during the construction of the Project. However, regular site inspections should be taken to inspect the construction activities and works area in order to ensure the recommended mitigation measures are properly implemented

6.7 Potential Impacts and Mitigation Measures during Operation of the Project

- 6.7.1 As mentioned in **Section 6.1.1**, there are WSRs within the 500m study area of the proposed development, the management and mitigation strategy of the wastewater generated from the operation of the proposed development should be addressed and implemented.

6.8 Relevant Legislation, Standards and Guidelines for Operation Phase

- 6.8.1 The ProPECC PN 5/93, Drainage Plans subject to Comments by Environmental Protection Department, provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers, as discussed at **Section 6.3.3**. The design of site drainage and disposal of site effluents generated within the proposed development area should follow the relevant guidelines and practices as given in the ProPECC PN 5/93.

6.9 Storm Water Discharge

- 6.9.1 During operation, the surface runoff during rainfall events which is known as non-point source of pollution would be the only 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 the removal of pollution sources prior to rainstorm and the provision of degritting/ screening facilities that collect sediment. As particles settle out, the associated pollutants will also settle out (then removed from stormwater).
- 6.9.2 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.

6.10 Best Management Practices (BMPs) for Stormwater Discharge

6.10.1 Surface runoff can be controlled by good drainage design and implementation of BMPs. The proposed development has adopted the following BMPs:

- Erosion Control

If uncontrolled, exposed surfaces may contribute to sediment laden in stormwater runoff and cause water pollution. The proposed development site is either hard paved or covered by landscaping area with appropriate planting species in order to eliminate any exposed surface.

- Prevention of "First Flush" Pollution

Appropriate drainage system will be constructed for the proposed development in order to control its surface runoff. During detailed design, site drainage system of the development will be designed in such way that surface runoff from the proposed development will be directed towards the internal surface drains, where appropriate drainage system with control facilities will be proposed. Additional paved U-channels with screening facilities will also be provided along the edge of the development site to avoid uncontrolled spillage of runoff.

- Devices for Removal of Pollutants

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. 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 and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff.

6.11 Summary

6.11.1 Water quality impacts from construction are associated with the general construction activities, construction site run-off and sewage effluent from construction workforce, while the water quality impacts from operation are associated with normal urban surface runoff only. Potential water quality impacts can be controlled by implementing the recommended mitigation measures. With the implementation of mitigation measures, no adverse water quality impact on the identified WSRs is anticipated.

7. LAND CONTAMINATION

7.1 Objective

- 7.1.1 With reference to the EIA Report on the First Phase Development of the New Territories North – San Tin/ Lok Ma Chau Development Node (AEIAR-261/2024) (Hereinafter called the “EIA Report”) conducted by Civil Engineering and Development Department (CEDD) in 2024, the potentially contamination sources identified in the EIA Report are within the Subject Site of this Supplementary Land Contamination Review.
- 7.1.2 According to the EIA Report, part of the Subject Site is identified as potentially contaminated site. The area that is within our Subject Site and identified as potentially contaminated site is shown in **Figure 7.1**.
- 7.1.3 The objective of this section is to assess the potential land contamination impact of the Subject Site.

7.2 Guidelines

- 7.2.1 This chapter has been prepared following the guidance and steps outlined in the guidelines published by EPD listed below:
- Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management (RBRGs) (Guidance Manual), dated April 2023;
 - Guidance Note for Contaminated Land Assessment and Remediation (Guidance Note), dated April 2023; and
 - Practice Guide for Investigation and Remediation of Contaminated Land (Practice Guide), dated April 2023.

7.3 Review of Aerial Photographs and Historical Land Use

- 7.3.1 The development history of the Subject Site was reviewed using aerial photos covering the period 1963 – 2024. The aerial photos are presented in **Appendix 7.1** and the historical land use is summarized in **Table 7.1**.

Table 7.1 Historical Land Use

Period/ Year	Photo No.	Flying Height (ft.)	Site Description	Off-site Land Use
1963	1963-9967	3900	The Subject Site was a natural terrain.	North, South, West: Natural Terrain is observed. East: Natural Terrain is observed. Village houses are observed.
1973	07880R	12500	No significant change in land use in comparison with 1963.	North, East, South, West: No significant change in land use in comparison with 1963.
1983	50277	4000	The land use was changing to fishpond	North, East, South, West: The land use was changing to fishpond.
1993	A36427	4000	Containers/ trailer yards are observed at the south-west portion of the Subject Site. The	North, East, South: The surroundings are changed to fishponds.

Period/ Year	Photo No.	Flying Height (ft.)	Site Description	Off-site Land Use
			remaining portions are changed to fishponds.	West: Containers/ trailer yards are observed.
2003	CW51263R	4000	No significant change in land use in comparison with 1993.	North, East, South, West: No significant change in land use in comparison with 1993.
2013	CW100909 R	8000	No significant change in land use in comparison with 2003.	North, East, South, West: No significant change in land use in comparison with 2003.
2024	E219578C, E219579C	3000	No significant change in land use in comparison with 2013.	North, East, West: No significant change in land use in comparison with 1993. South: Some area is reclaimed.
<u>Summary</u> The site was/ is mainly a fishpond with the southwest portion occupied as storage.				

7.4 Findings in previous EIA

7.4.1 As mentioned in **Section 7.1.1**, EIA Report on the First Phase Development of the New Territories North – San Tin/ Lok Ma Chau Development Node (AEIAR-261/2024) was reviewed. Relevant sections from the EIA report are extracted and provided in **Appendix 7.2**.

7.4.2 Relevant findings from the EIA reports are summarized in the following sections.

EIA Report - the First Phase Development of the New Territories North – San Tin/ Lok Ma Chau Development Node (AEIAR-261/2024)

7.4.3 During the site observation, trailer and long vehicle parking was observed. Stacking containers storage was observed on site. Potential vehicle workshop and suspected refuelling was observed in aerial photo. Chemical waste producer record (No.088-094) indicated vehicle maintenance works undertaken on site. The possible contaminating activities may include release of oils and fuels and lubricants from vehicles, vehicle and equipment maintenance and refuelling the use of chemicals and solvents in maintenance activities.

7.5 Review of Environmental Information from Government Departments

7.5.1 The following departments of the Government of the Hong Kong Special Administration Region (HKSAR) were enquired on the availability of landuse status and records of land contamination and/or spillage for the Application Site. The replies correspondences are shown in **Appendix 7.3**.

Table 7.2 Departmental Replies Summary

Department	Departmental Ref	Date	Summary
Environmental Protection Department	N/A	4 December 2025	No record of spillage or leakage of chemicals within the Subject Site for the past 10 years.

Department	Departmental Ref	Date	Summary
Fire Services Department	Pending	Pending	Pending

Information from Departments of the Government of the HKSAR

- 7.5.2 The registry of chemical waste producers will be provided once available.

7.6 Site Inspection and Observation

- 7.6.1 Site inspection to the Subject Site was conducted in November 2025. The relevant photo record is shown in **Appendix 7.4**. The site walkover checklist is supplement in **Appendix 7.5**.
- 7.6.2 Southern portion of the Subject Site is currently occupied as industrial activities, including storage and car repairing (See **Photo 5** and **Photo 6**). Oil drum is observed near the car repairing workshop (See **Photo 6**). The possible contaminating activities may include release of oils and fuels and lubricants from vehicles, vehicle and equipment maintenance and refuelling the use of chemicals and solvents in maintenance activities. Therefore, potential land contamination is expected.
- 7.6.3 Site re-appraisal, Contamination Assessment Plan (CAP) and Contamination Assessment Report (CAR), if necessary, will be conducted and prepared in later stage after land acquisition. Remediation Action Plan (RAP) and Remediation Report (RR), if necessary, will also be prepared in the later stage to address all potential land contamination issues. No development works shall be commenced prior to EPD's agreement of the CAR or RR, if remediation is required.

7.7 Conclusion

- 7.7.1 A site appraisal, in the form of desktop review and site walkover, had been carried out in November 2025 to identify the past and current potentially contaminating land uses within the Application Site. Based on the desktop study and site appraisal, potential land contamination activities, such as car repairing. There is possibility of land contamination from potential spillage of fuel / lubricants at car repair workshop.
- 7.7.2 Upon land acquisition, a site re-appraisal should be conducted for the whole Application Site to review the latest landuse and site conditions and assess the land contamination potential prior to the preparation of a CAP. Site investigation and laboratory analysis should be proposed in the CAP.
- 7.7.3 It is recommended that a Contamination Assessment Plan (CAP) to be prepared by a land contamination specialist to further review of previous land information, identify potential locations of land contamination and propose sampling and testing strategy for site investigations and laboratory analysis. It should be noted that the CAP shall be approved by EPD prior to the commencement of the site investigation.
- 7.7.4 Upon approval of the CAP, the Project Proponent should conduct a land contamination assessment accordingly. The site investigation results and findings should be presented in a Contamination Assessment Report (CAR). Based on the site investigation results, if land contamination is confirmed with reference to the relevant Risk-Based Remediation Goals (RBRG) levels promulgated by the EPD, a Remediation Action Plan (RAP) shall be prepared to formulate the remediation methods and mitigation measures and no construction works or development should be carried out prior to EPD's agreement of the CAR or RR, if remediation is required

- 7.7.5 With implementation of above land contamination assessment procedures and remediation as required, potential contamination in existing soil would be treated and no insurmountable land contamination issue is anticipated.

8. CONCLUSION

- 8.1.1 The Application proposes filling of ponds for permitted innovation and technology hub (including permitted cargo handling and forwarding facilities, creative industries, eating place, flat (staff quarters only), industrial use, information technology and telecommunications industries, office, public utility installation, research, design and development centre, shop and services, warehouse (excluding dangerous goods godown)). In order to confirm the environmental acceptability of the Application, Noise Impact Assessment, Air Quality Impact Assessment, Waste Management Implication Assessment, Water Quality Impact Assessment and Land Contamination Review were carried out to examine the impacts associated with the Proposed Development.

Noise

- 8.1.2 With the noise mitigation measures proposed, the Proposed Development would comply with the HKPSG road traffic noise standard criteria of 70 dB(A) (100% compliance).
- 8.1.3 The noise sensitive use of proposed development is located more than 300m from existing noise sources. No adverse fixed noise impact is anticipated at the proposed development. The choice of equipment and the requirement of noise control measures of the proposed development will be determined during detailed design stage to ensure that the noise level at potentially affected NSRs will comply with the HKPSG noise criteria. The design requirement for the compliance to HKPSG criteria shall be stated in the tender specification. In view of the considerable separation allowed in the layout design, there would be no insurmountable noise impact from fixed noise sources of proposed Development to nearby noise sensitive receivers.

Air

- 8.1.4 No air sensitive uses, including openable windows and fresh air-intake of ventilation system, will be located within the vehicular emission buffer zone. Therefore, it is anticipated that the future residents would not be subject to unacceptable vehicular emission impact.
- 8.1.5 Based on site visits, there is no active chimney identified operating within 200m from the Development Site and therefore, significant chimney emission impact upon the proposed development is not anticipated. The Development Site would not be subject to insurmountable industrial emission impact.

Waste

- 8.1.6 Provided that the identified waste arising from the construction works are handled, transported and disposed of using approved methods and that the recommended good site practices are adhered to, adverse environmental impacts are not anticipated.
- 8.1.7 Waste will be removed regularly by an appointed party. Provided that the environmental control measures are properly implemented, no adverse environmental impact would be anticipated with respect to solid waste management.

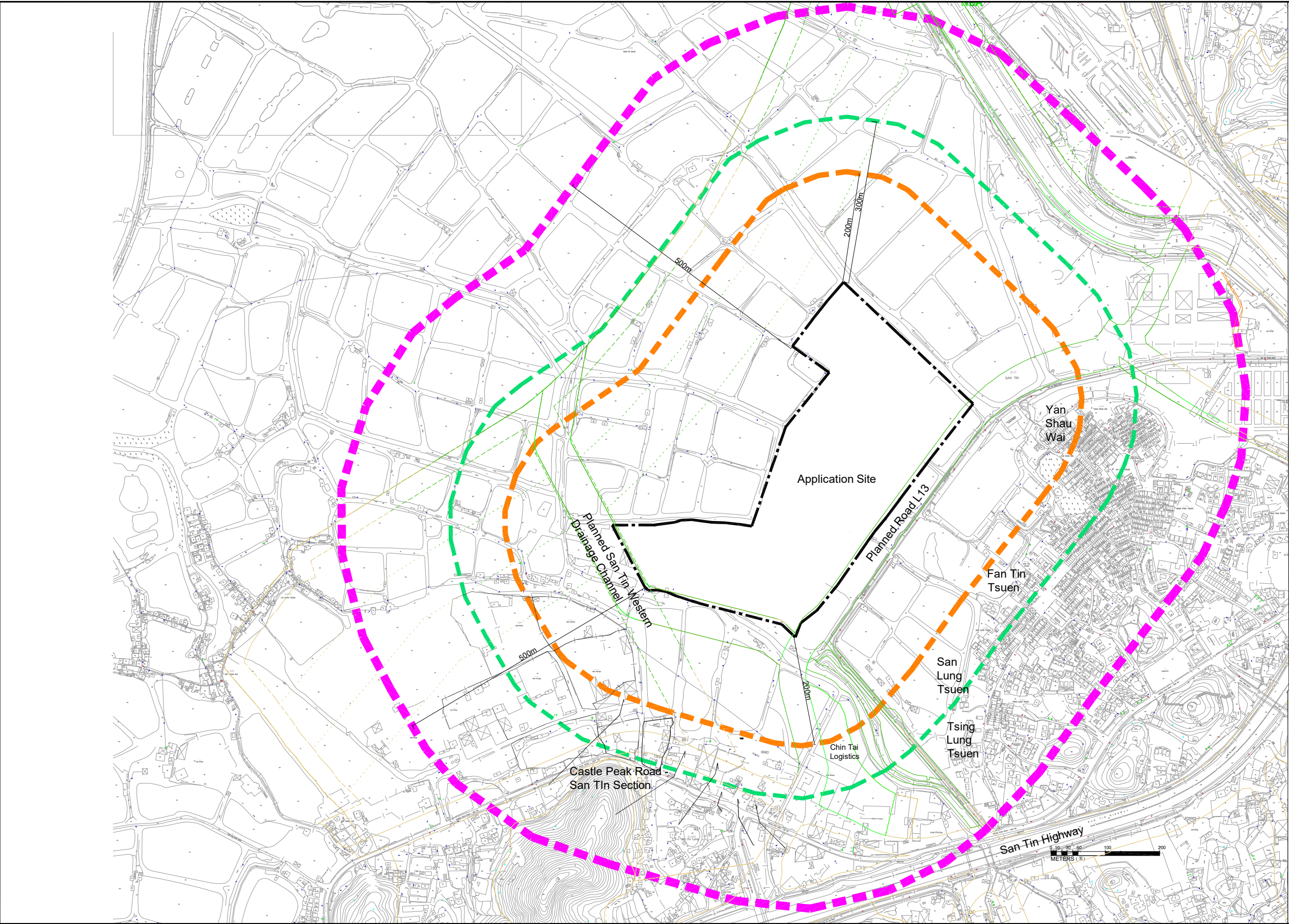
Water

- 8.1.8 Water quality impacts from construction are associated with the general construction activities, construction site run-off and sewage effluent from construction workforce, while the water quality impacts from operation are associated with normal urban surface runoff only. Potential water quality impacts can be controlled by implementing the recommended mitigation measures. With the implementation of mitigation measures, no adverse water quality impact on the identified WSRs is anticipated.

Land Contamination

- 8.1.9 A site appraisal, in the form of desktop review and site walkover, had been had been carried out in November 2025 to identify the past and current potentially contaminating land uses within the Application Site. Based on the desktop study and site appraisal, potential land contamination activities, such as car repairing. There is possibility of land contamination from potential spillage of fuel / lubricants at car repair workshop.
- 8.1.10 Upon land acquisition, a site re-appraisal should be conducted for the whole Application Site to review the latest landuse and site conditions and assess the land contamination potential prior to the preparation of a CAP. Site investigation and laboratory analysis should be proposed in the CAP.
- 8.1.11 CAP and CAR, if necessary, will be conducted and prepared in later stage after land acquisition. RAP and Remediation Report RR, if necessary, will also be prepared in the later stage to address all potential land contamination issues. No development works shall be commenced prior to EPD's agreement of the CAR or RR, if remediation is required.
- 8.1.12 With implementation of above land contamination assessment procedures and remediation as required, potential contamination in existing soil would be treated and no insurmountable land contamination issue is anticipated.
- 8.1.13 The environmental assessment study confirms the acceptability of the proposed development from environmental point of view.

Figures



Legend:

-  Application Boundary
-  200m Study Boundary
-  300m Study Boundary
-  500m Study Boundary

Figure: 1.1

Title: Site Location Plan

Project: S16 Planning Application (No. A/STT/26)

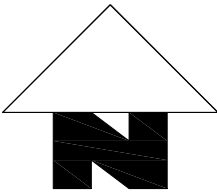
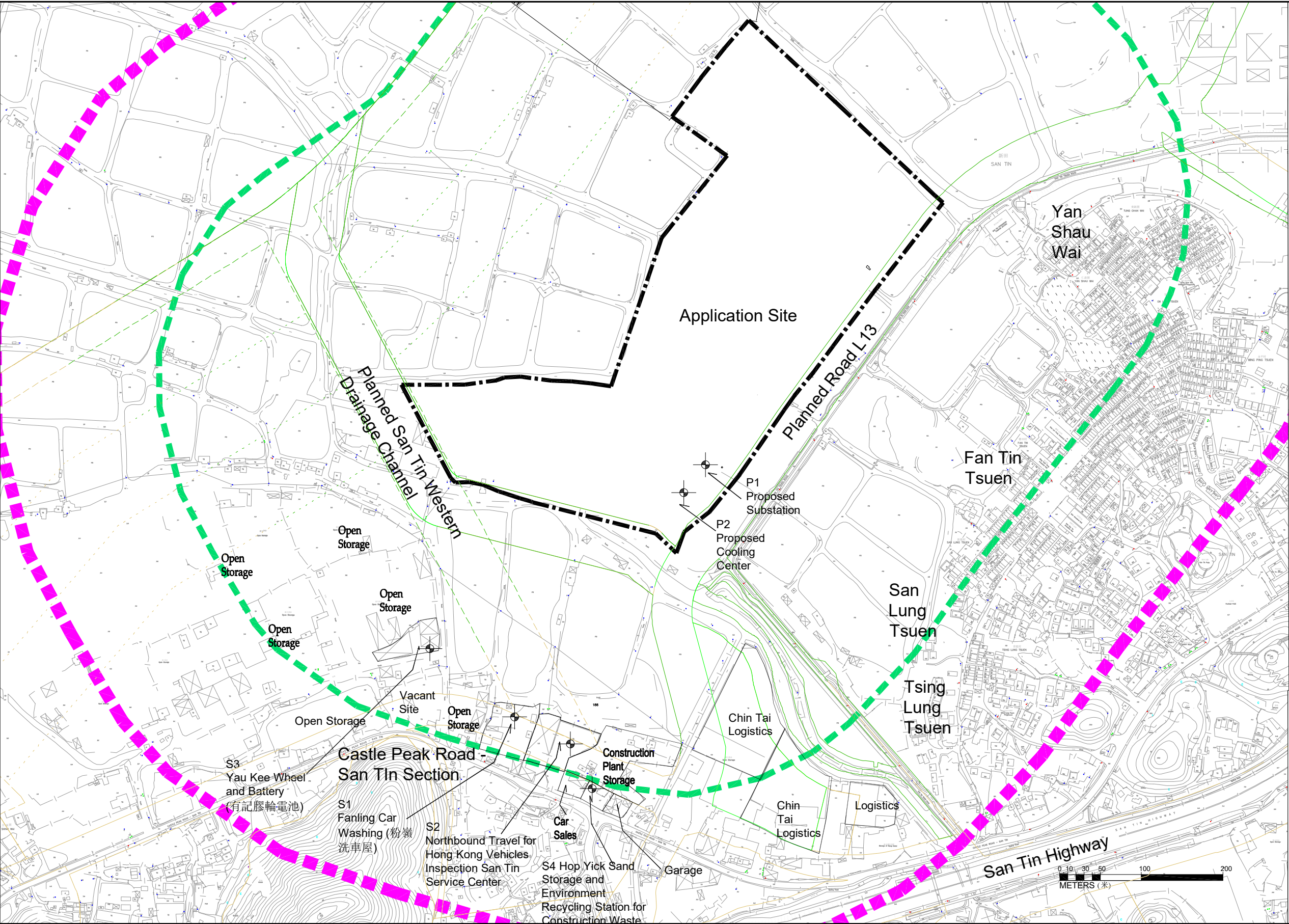
RAMBOLL

Drawn by: TL

Checked by: TW

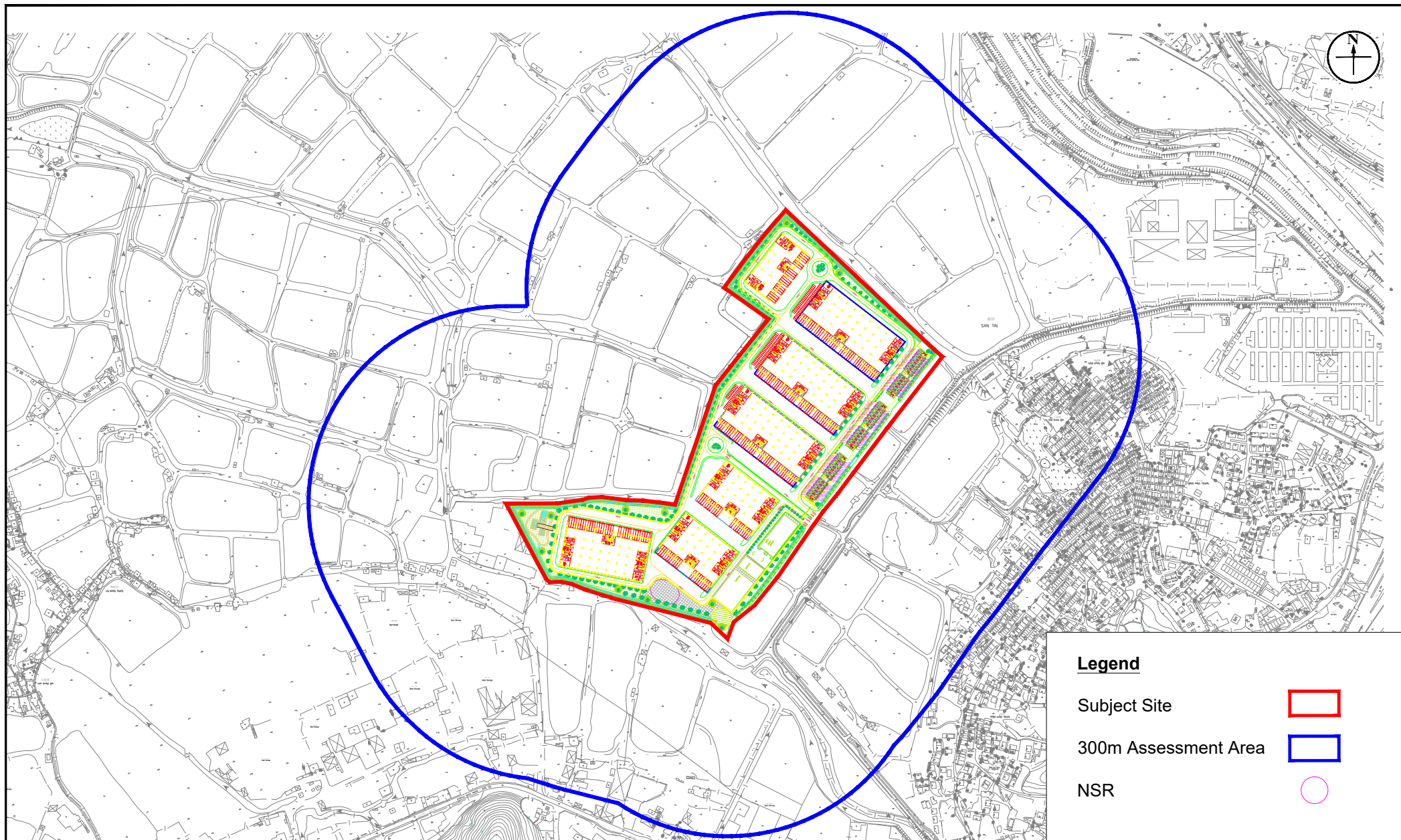
Rev.: 1.0

Date: Nov 2025



- Legend:
-  Application Boundary
 -  300m Study Boundary
 -  500m Study Boundary

Figure: 1.2	
Title: Environs of Application Site	Drawn by: TL
Project: S16 Planning Application (No. A/STT/26)	Checked by: TW
	Rev.: 1.0
	Date: Nov 2025



Legend

Subject Site



300m Assessment Area



NSR



Figure: 2.1a

Title: Location of Representative Noise Sensitive Receivers (Overall)

Project: Proposed Filling of Ponds in for Permitted Innovation and Technology Hub at Lot 764 RP (Part) in D.D. 99, San Tin , Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Nov 2025

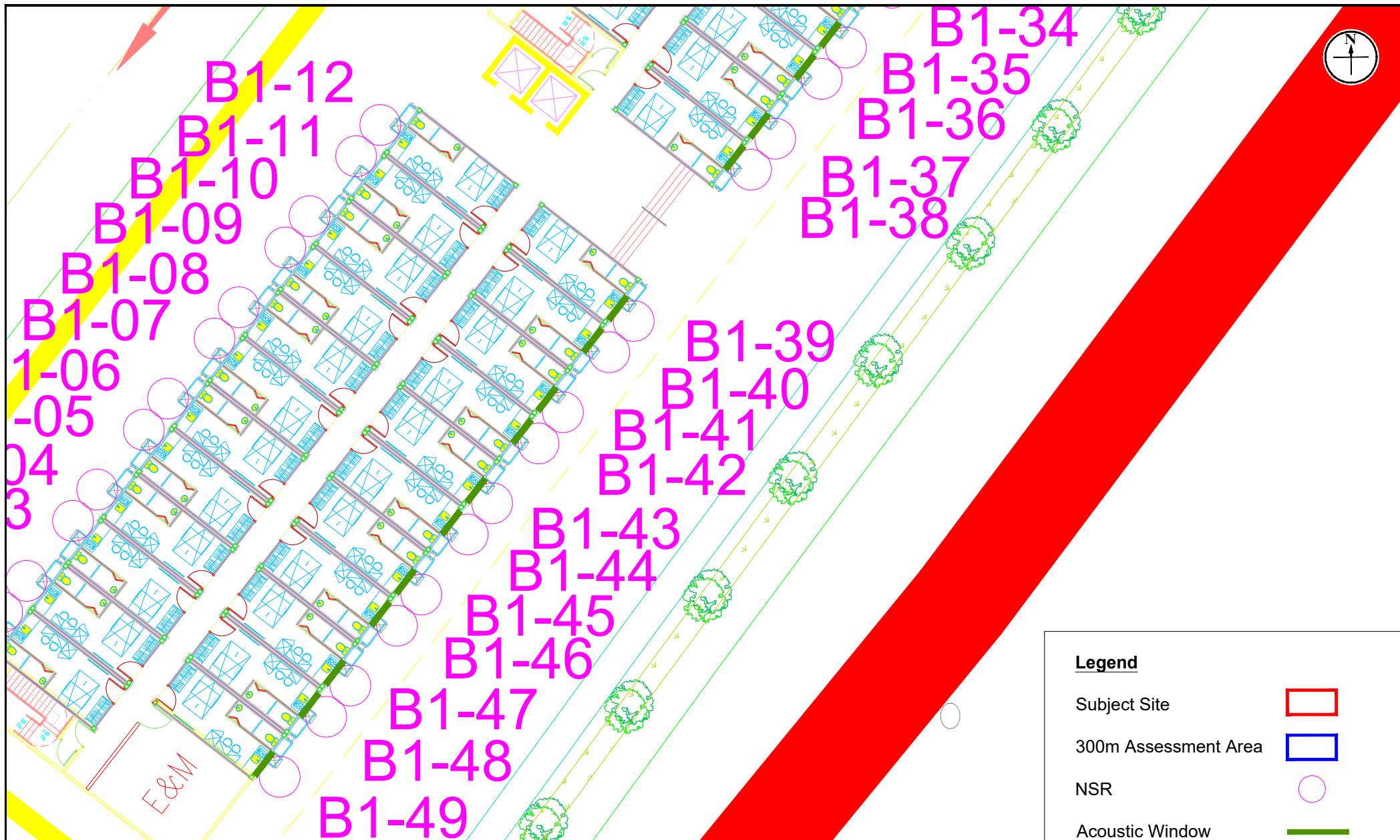


Figure: 2.2

Title: Proposed Noise Mitigation Measures (Block 1)

Project: Proposed Filling of Ponds in for Permitted Innovation and Technology Hub at Lot 764 RP (Part) in D.D. 99, San Tin , Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Nov 2025

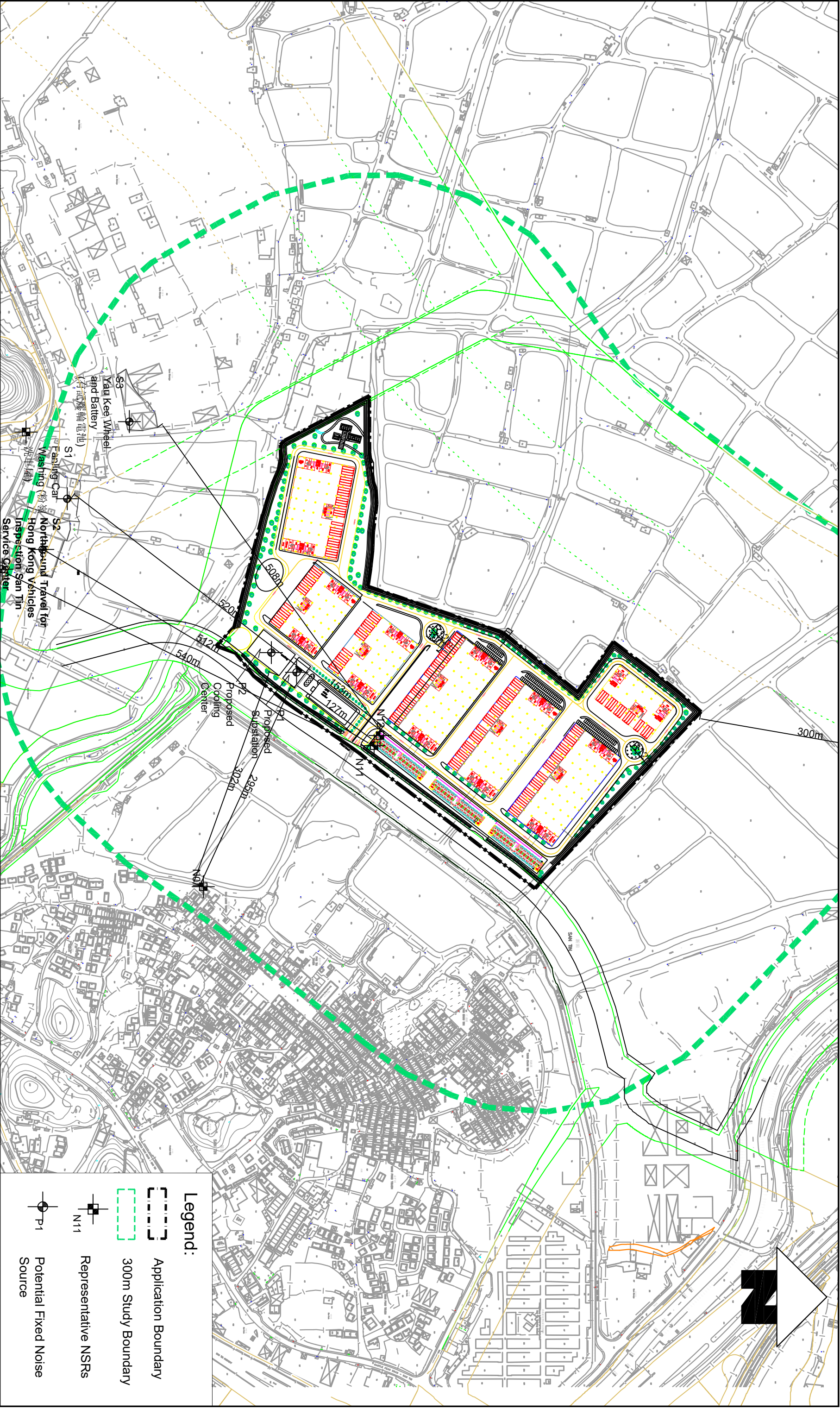


Figure: 3.1

Title: Representative NSRs for Fixed Noise Source Impact Assessment and Potential Fixed Noise Sources

Project: S16 Planning Application (No. A/STT/26)

RAMBOLL	
Drawn by: TL	
Checked by: TW	
Rev.: 1.0	
Date: Nov 2025	

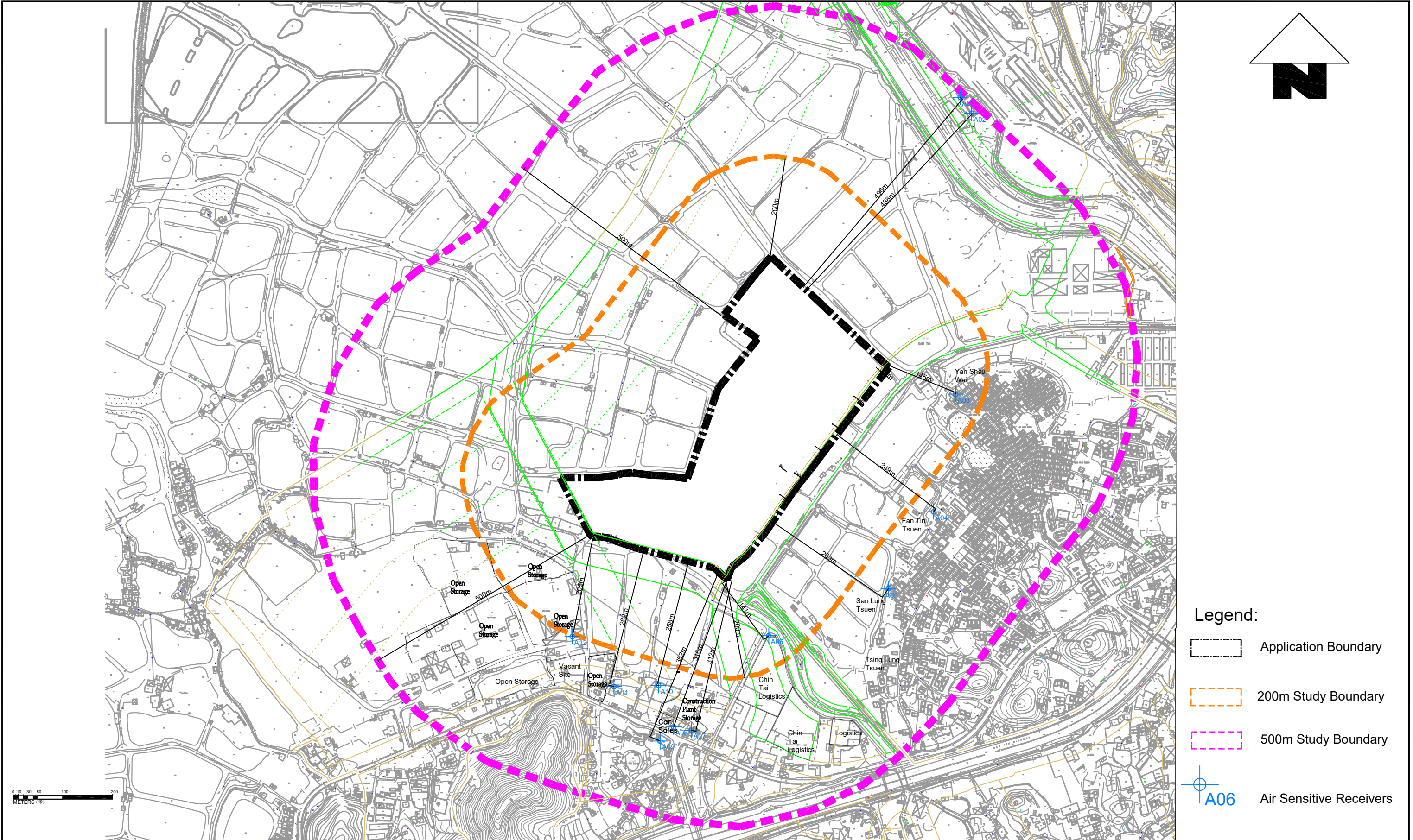
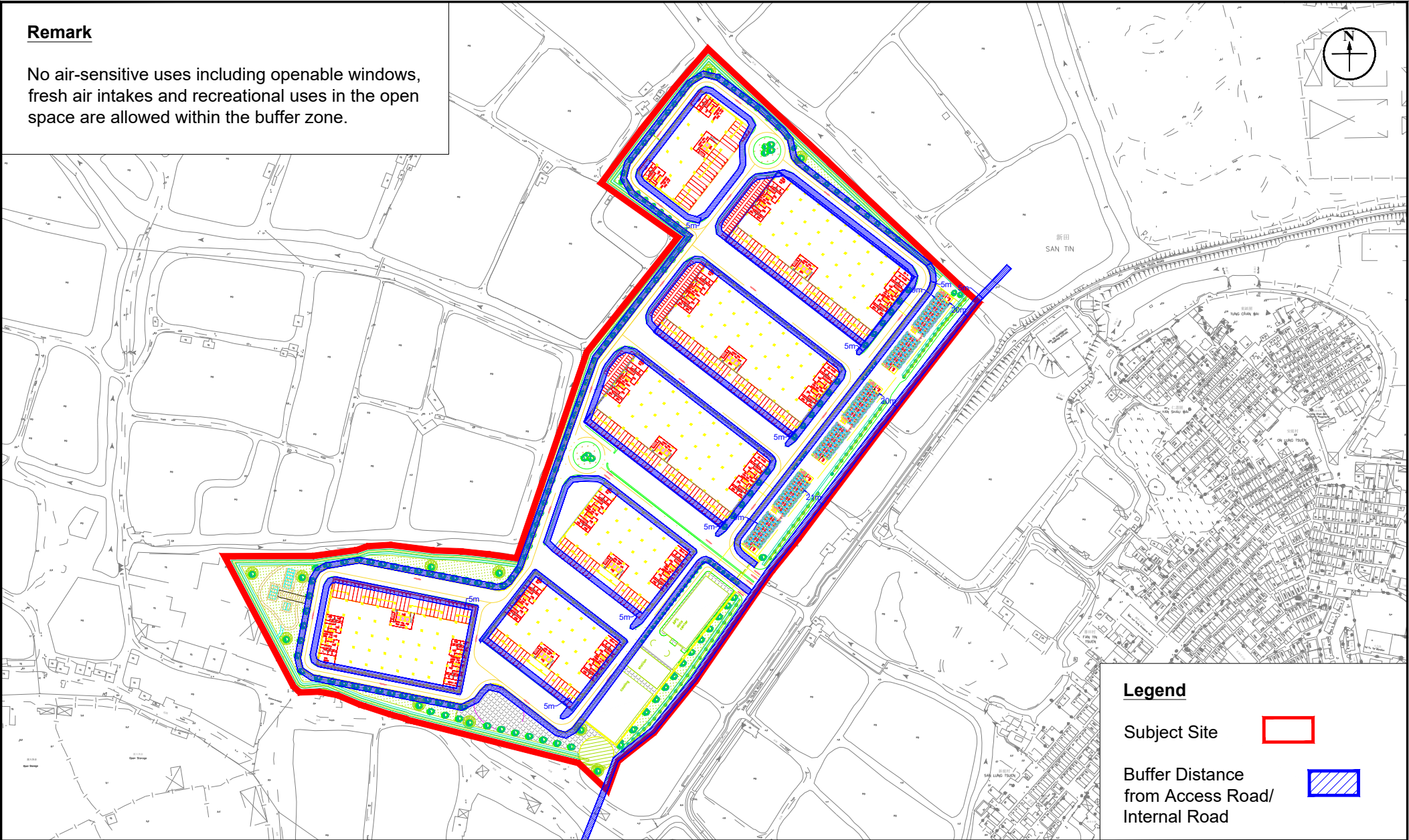


Figure: 4.1		
Title: 500m Study Boundary and ASRs in the Vicinity	Drawn by: TL	
	Checked by: TW	
Project: S16 Planning Application (No. A/STT/26)	Rev.: 1.0	
	Date: Nov 2025	

Remark

No air-sensitive uses including openable windows, fresh air intakes and recreational uses in the open space are allowed within the buffer zone.



Legend

Subject Site



Buffer Distance
from Access Road/
Internal Road



Figure: 4.2a

Title: Minimum Buffer Distance Required from the Kerb Side of Carriageways (Overall)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Nov 2025

Remark

No air-sensitive uses including openable windows, fresh air intakes and recreational uses in the open space are allowed within the buffer zone.

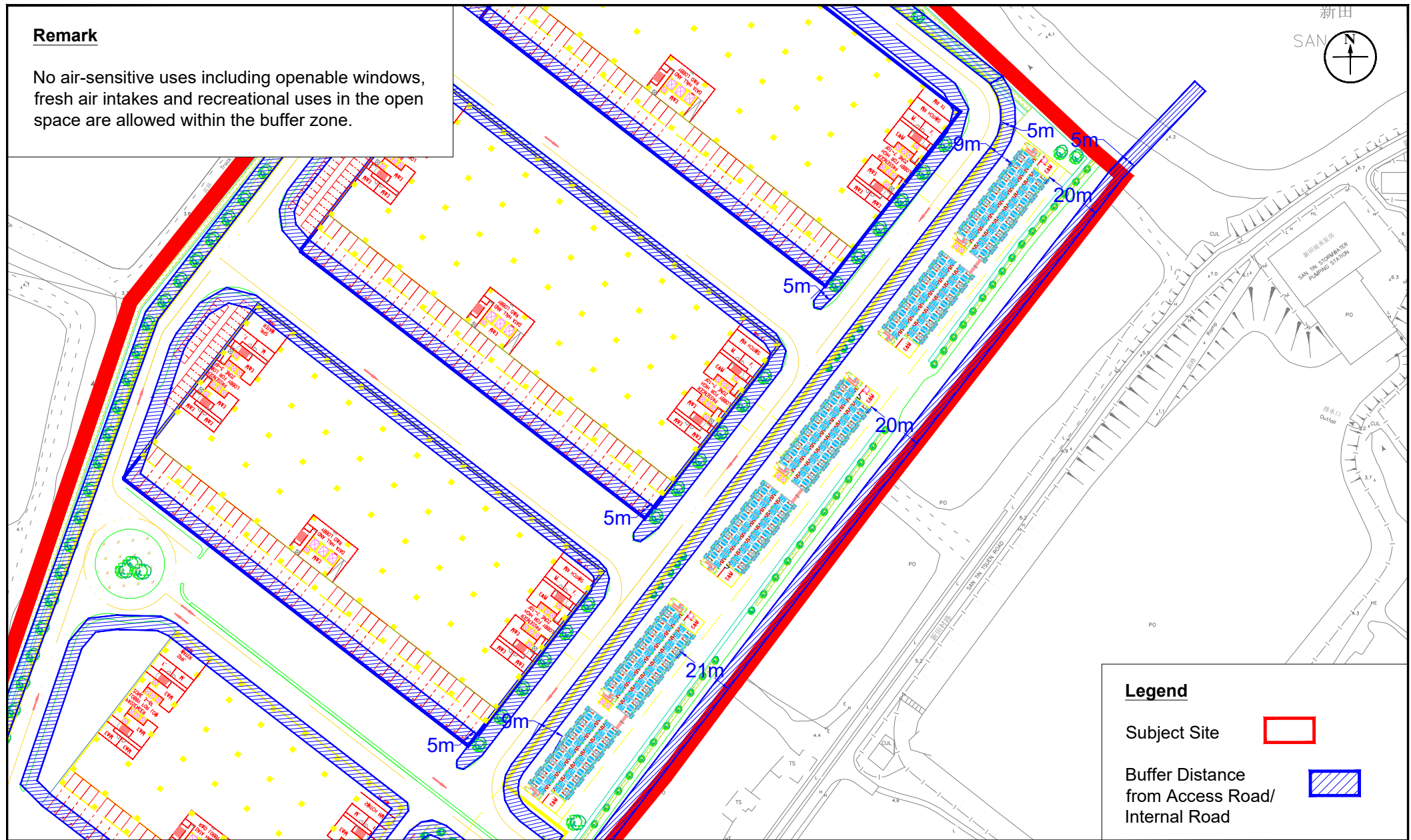


Figure: 4.2b

Title: Minimum Buffer Distance Required from the Kerb Side of Carriageways (Zoomed for Staff Quarter)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Nov 2025

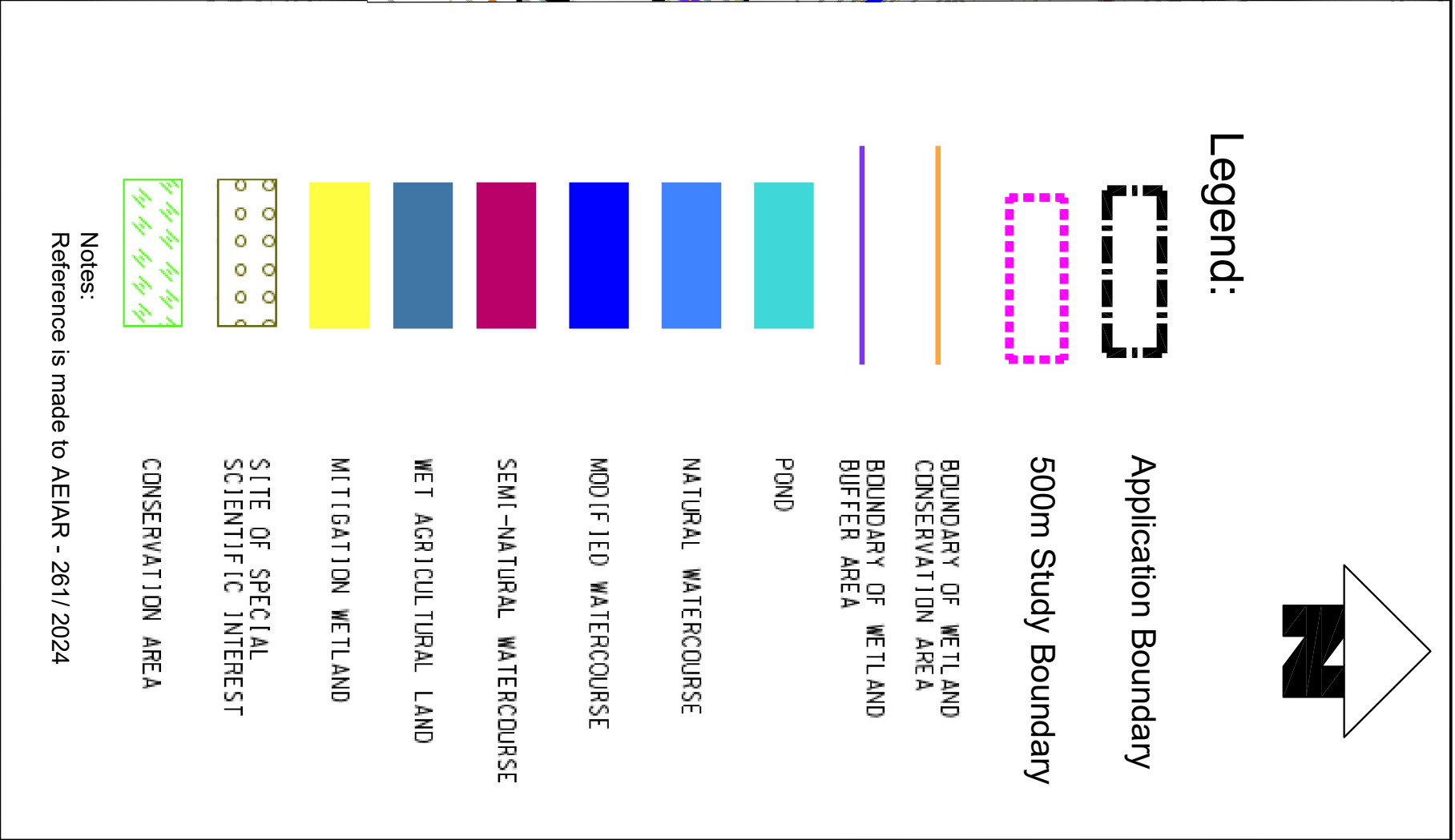
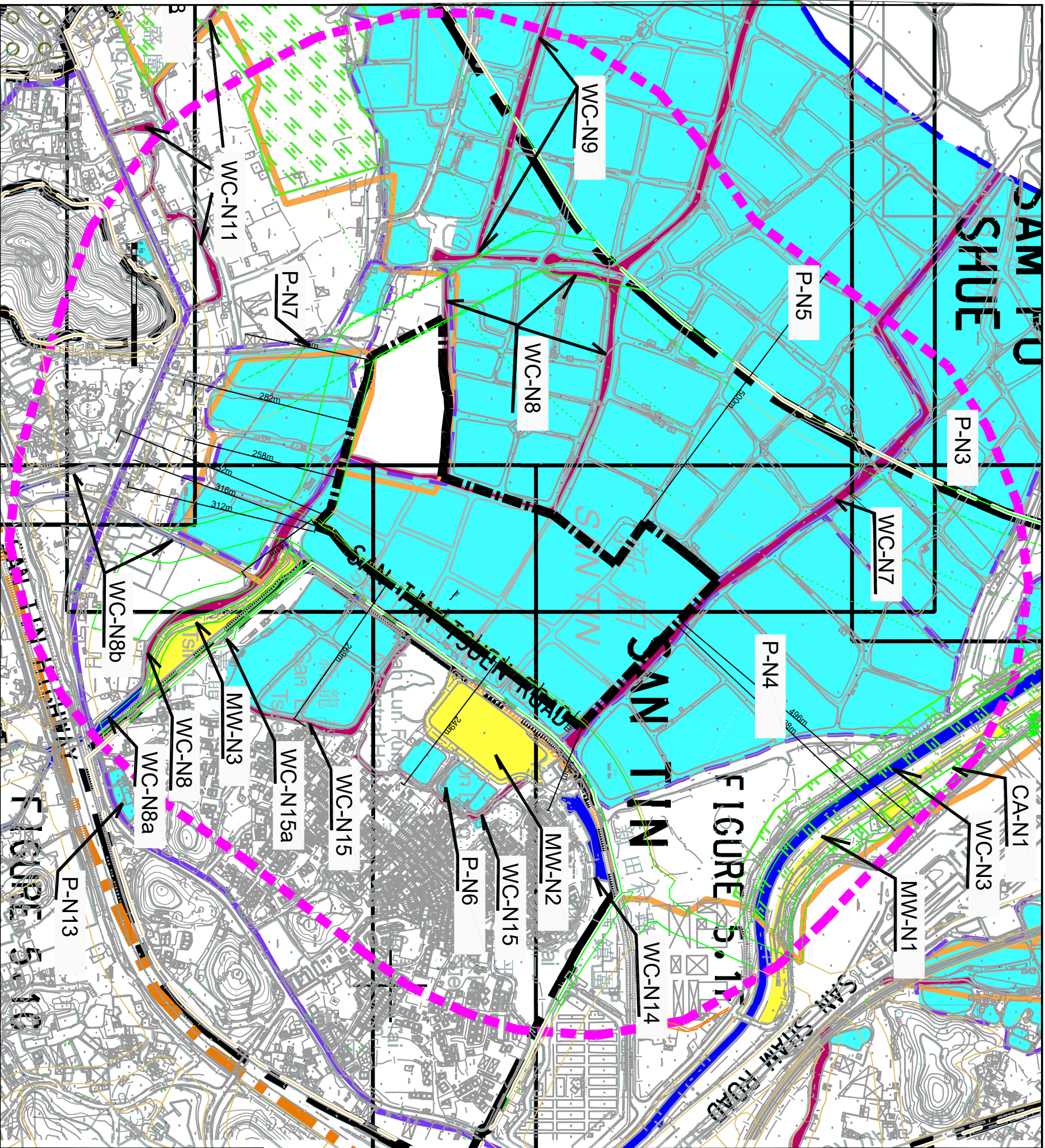


Figure: 6.1

Title: Water Sensitive Receivers and 500m Study Boundary

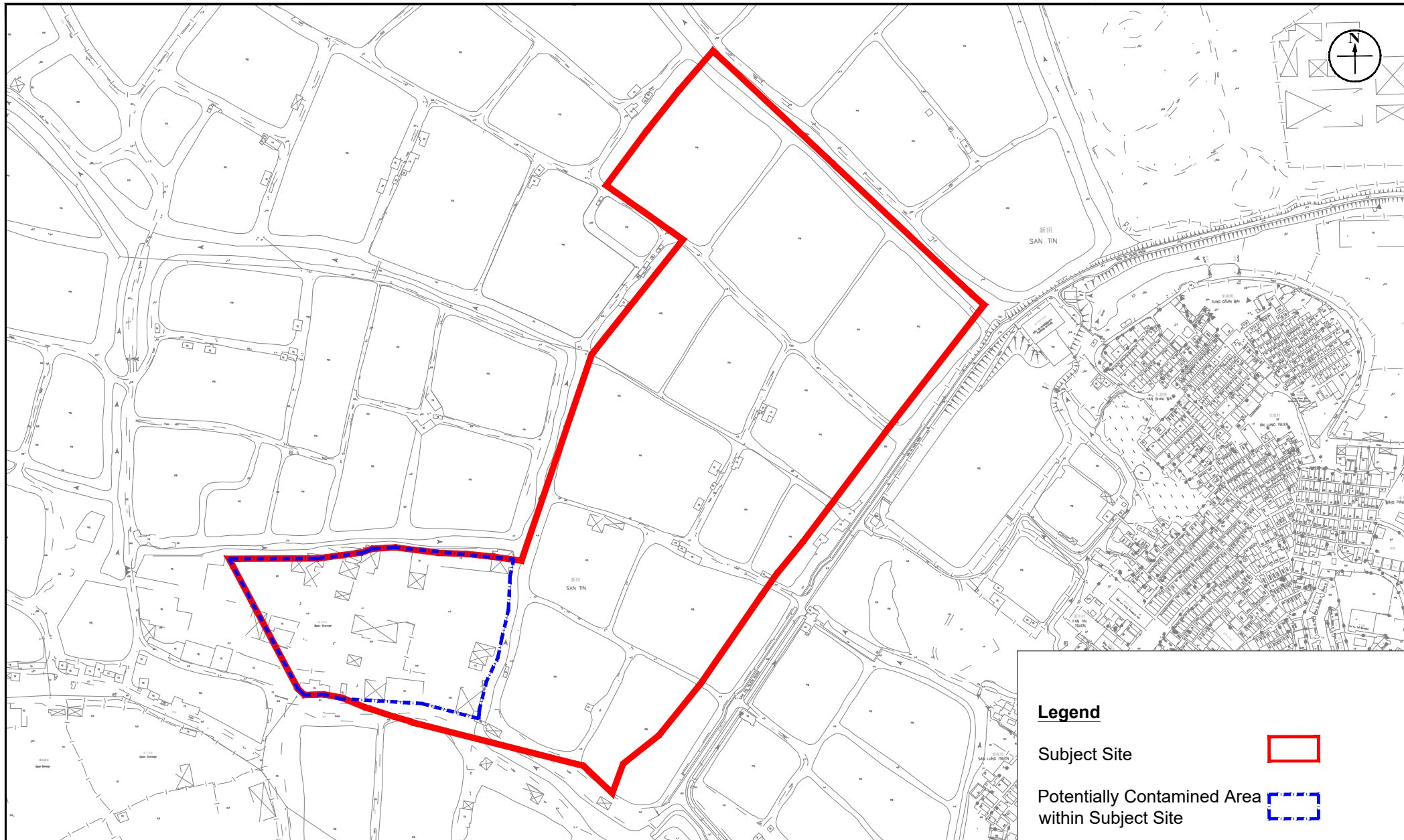
Project: S16 Planning Application (No. A/STT/26)

Drawn by: TL

Checked by: TW

Rev.: 1.0

Date: Nov 2025



Legend

Subject Site



Potentially Contaminated Area
within Subject Site



Figure: 7.1

Title: Potentially Contaminated Area within Subject Site

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

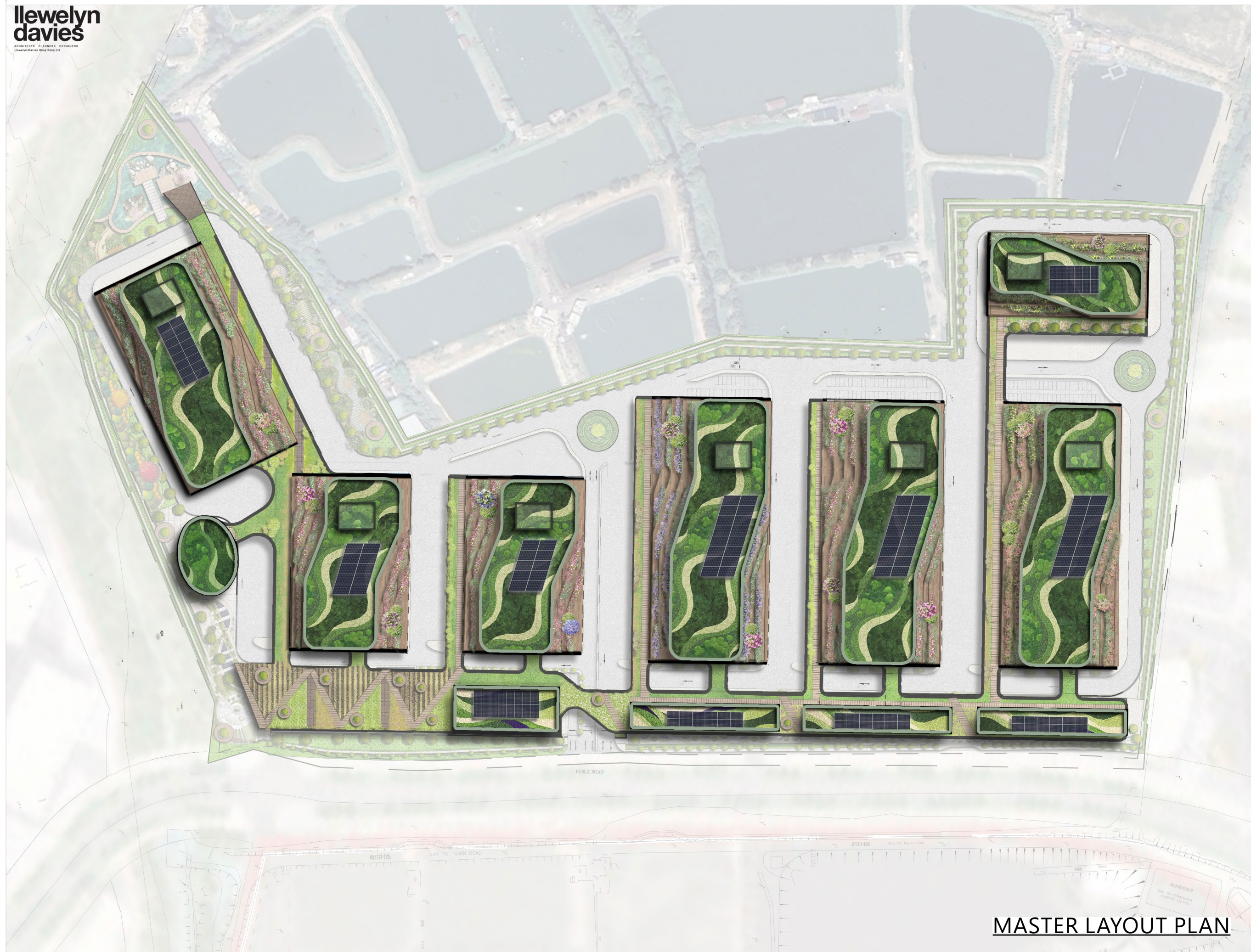
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Rev.: 1.0

Date: Dec 2025

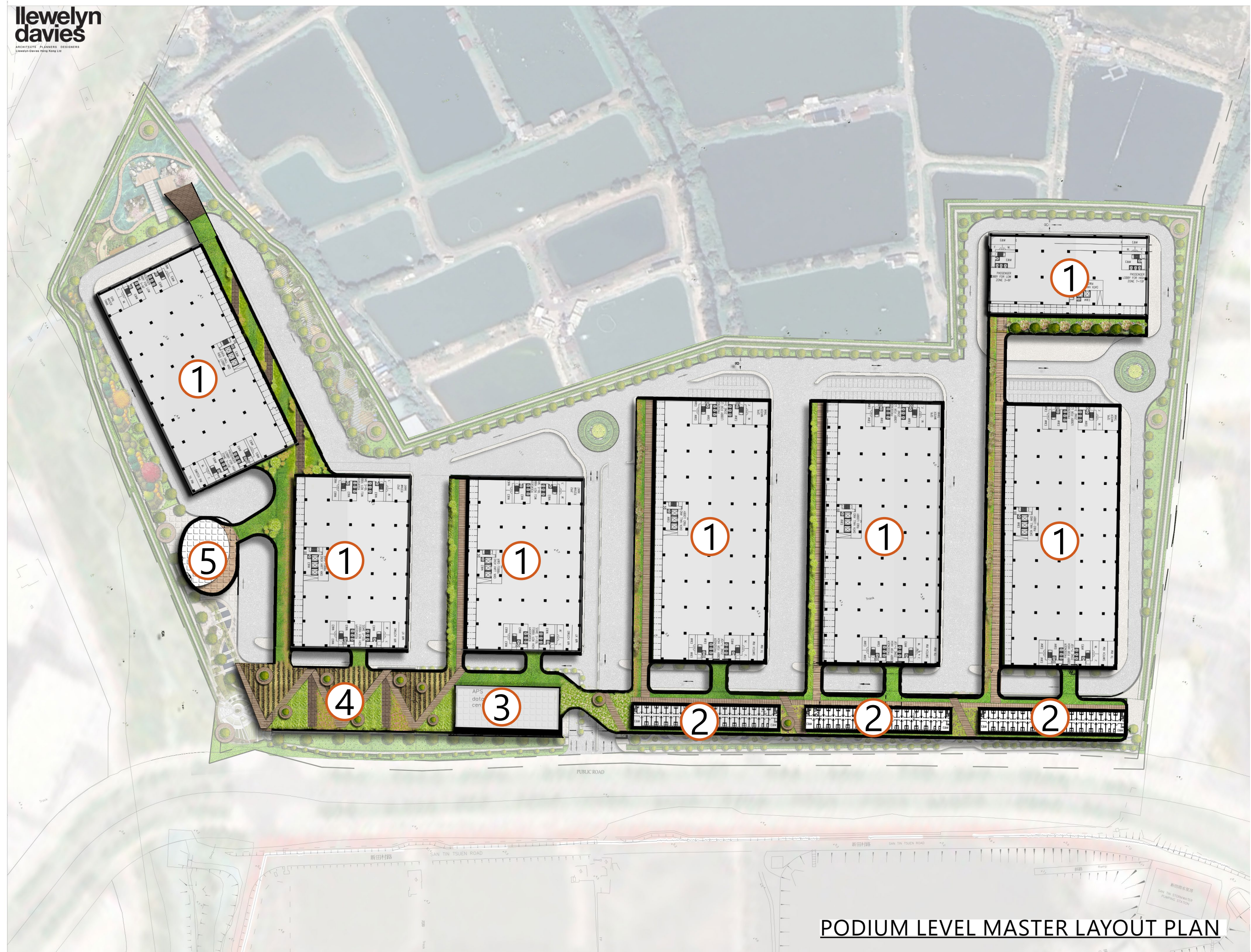
Appendix 1.1

Indicative Development Scheme



MASTER LAYOUT PLAN

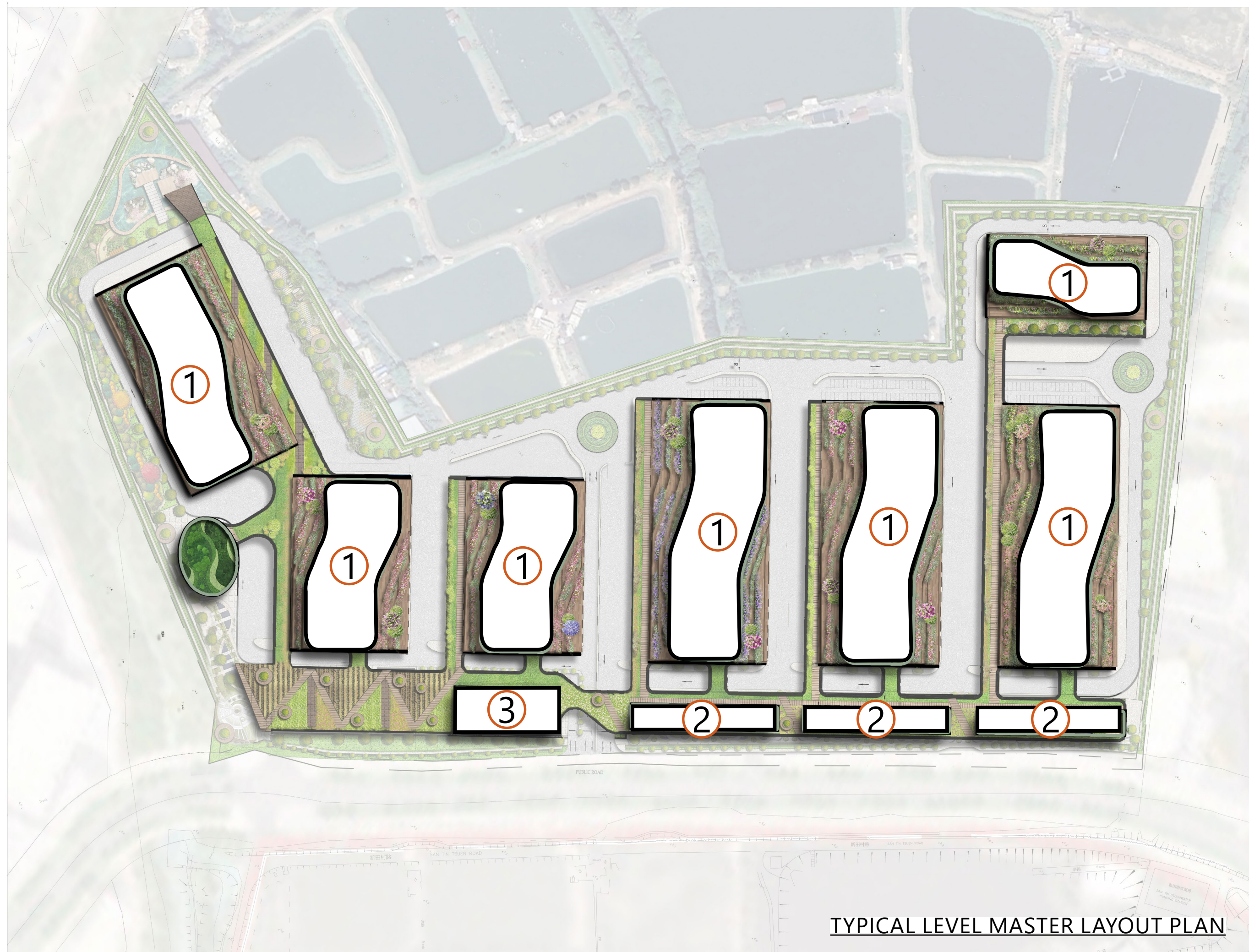




LEGEND

- ① Industrial Floor
- ② Ancillary Office
- ③ DATA Center
- ④ Rice Field
- ⑤ Education Classroom

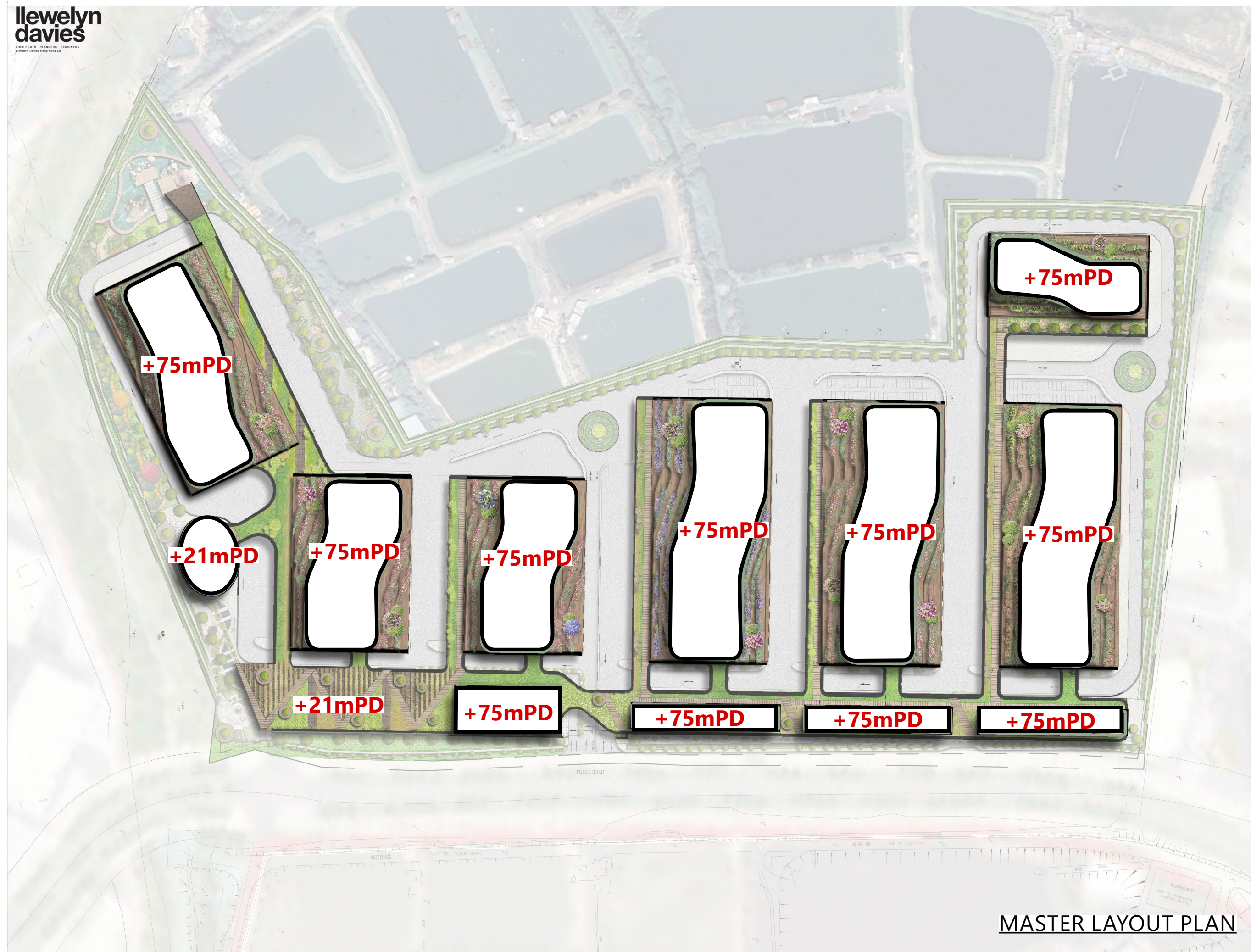
PODIUM LEVEL MASTER LAYOUT PLAN



LEGEND

- ① R&D LAB/
Office
- ② Staff Quarter
- ③ DATA Center

TYPICAL LEVEL MASTER LAYOUT PLAN



MASTER LAYOUT PLAN

Appendix 1.2
Extracted Information from AEIAR-261/2024

ISO A3 297 mm x 420mm
Approved:
Checked:
Designed:
Project Management Initials:
PLOT FILE BY: \$USERS
PATH: \$FILES

LEGEND

Project Boundary

Public Housing

Private Housing

Mixed Use

Village Type Development

Innovation and Technology

Logistics, Storage and Workshop

Other Specified Uses

Ventilation Building

Government, Institution or Community

Education

Open Space

Green Belt (with Permitted Burial Ground)

Amenity

Hong Kong-Shenzhen Innovation & Technology Park (Work In Progress)

Road

Non-building Area

Public Transport Interchange

Transport Interchange Hub

Commercial Vehicle Park

Performance Venues and Museum

Library

Indoor Sports Centre

Swimming Pool Complex

Market

Urban Farm

Flood Attenuation Facilities

EcoHub

Refuse Collection Point

Green Fuel Station

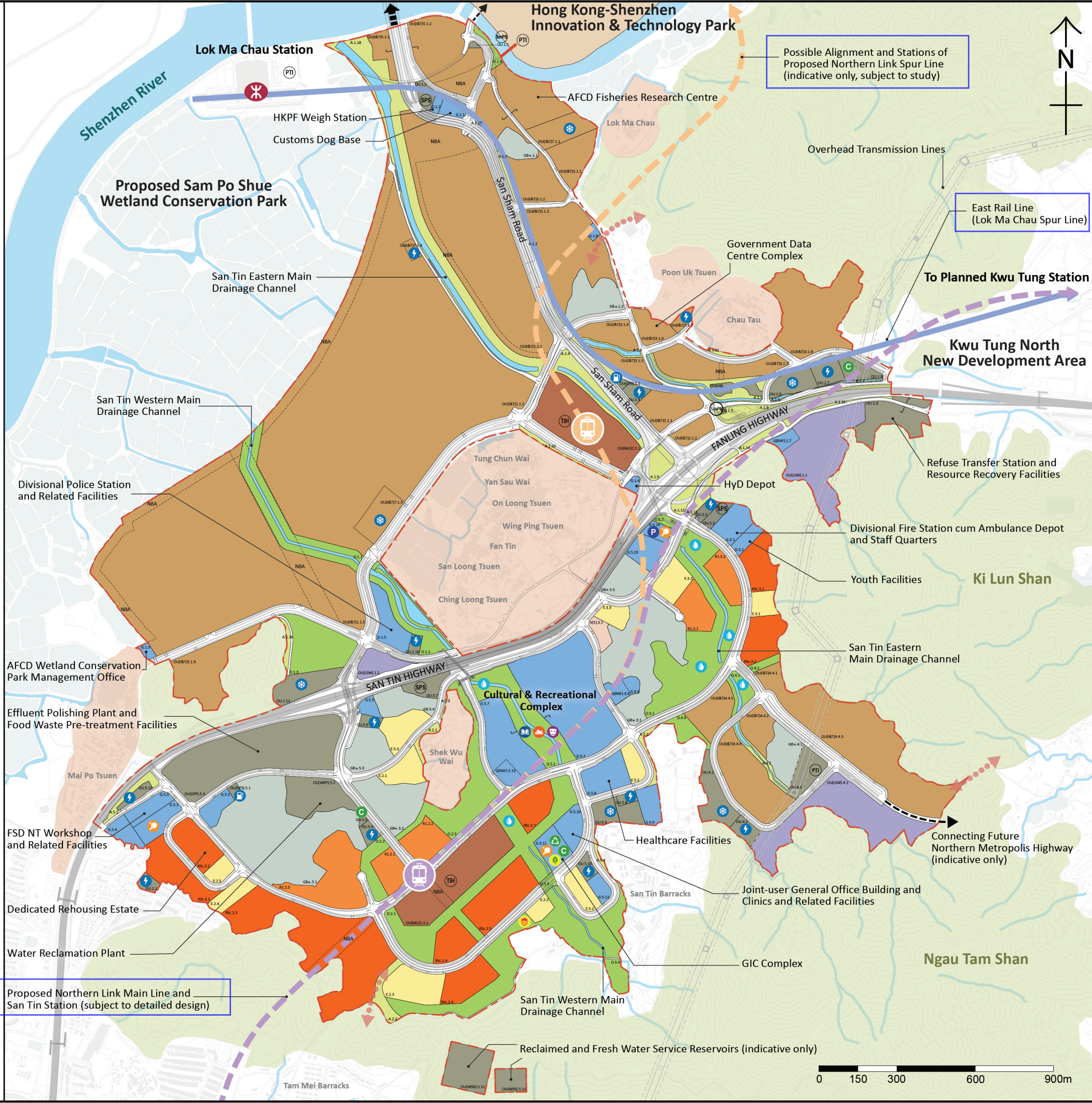
Electricity Substation

District Cooling System

Sewage Pumping Station

Stormwater Pumping Station

Nature Excursion



AECOM

PROJECT

FIRST PHASE DEVELOPMENT OF THE NEW TERRITORIES NORTH – SAN TIN / LOK MA CHAU DEVELOPMENT NODE – INVESTIGATION

CLIENT

CEDD

土木工程拓展署
Civil Engineering and Development Department

規劃署
Planning Department

CONSULTANT

AECOM Asla Company Ltd.
www.aecom.com

SUB-CONSULTANTS

分判工程師有限公司

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

STATUS

SCALE

A3 1:15000

DIMENSION UNIT

METRES

DATE

December 2023

KEY PLAN

索引圖

PROJECT NO.

60670882

AGREEMENT NO.

CE 20/2021

SHEET TITLE

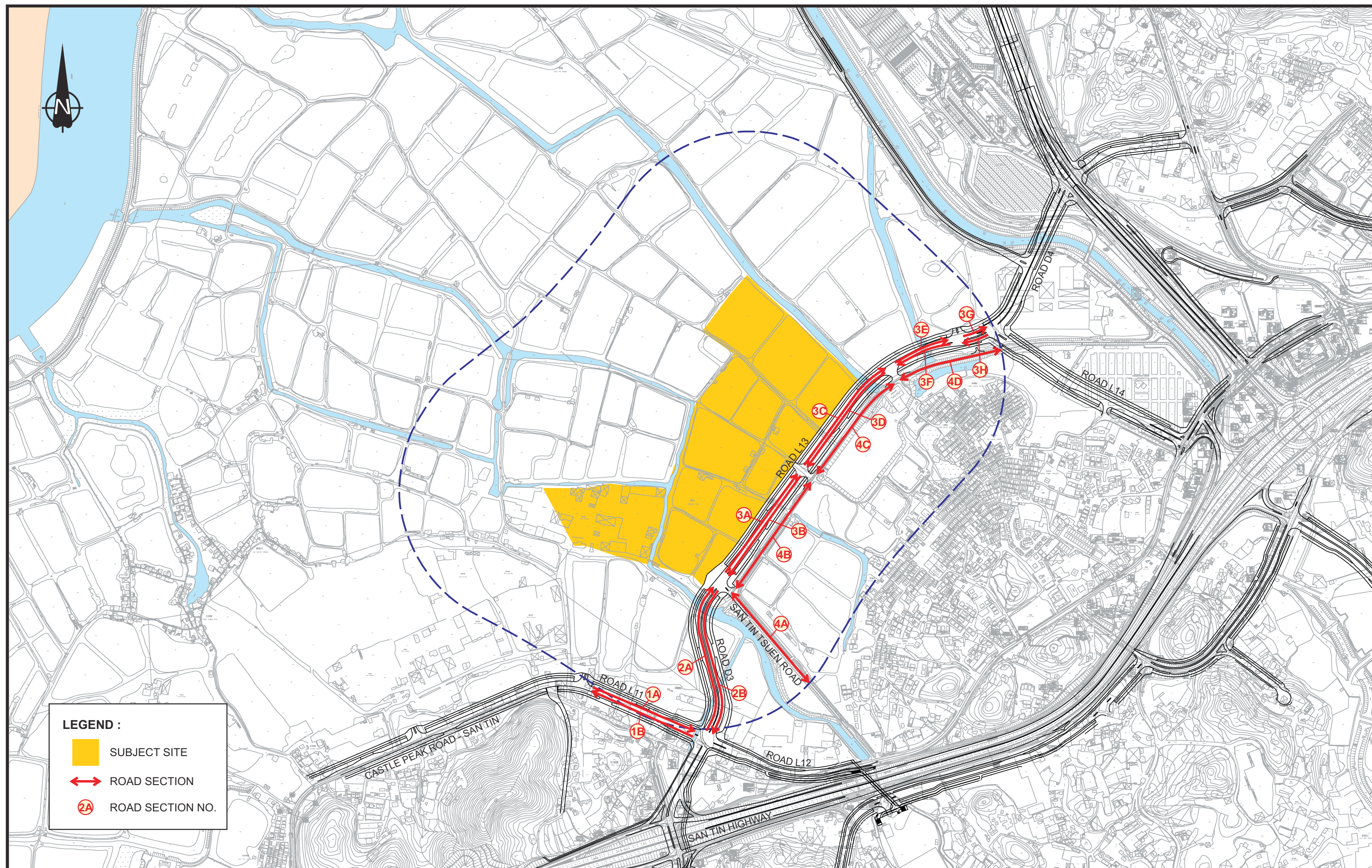
Revised Recommended Outline Development Plan

SHEET NUMBER

60670882/A34/FIGURE 2.1

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Appendix 2.1
Traffic Forecast for Year 2048



-	-	-	-	Project Title TRAFFIC CONSULTANCY SERVICES FOR S16 PLANNING APPLICATION (NO. A/STT/26), D.D.99, SAN TIN	Drawing Title ROAD LINK INDEX PLAN FOR NIA					
-	-	-	-							
-	-	-	-							
-	-	-	-							
Rev.	Description	Checked	Date		Designed TOM	Checked MYL	Scale NTS	Date NOV 2025	Drawing No. SK1	

Year 2048 AM Peak Traffic Forecast

Ref. No. * / (Direction)	Road Name	2048 Design AM Peak Traffic Flows (veh / hr) (round-up to nearest 10)	HV% #
1A(EB)	Road L11 (Eastbound)	600	22%
1B(WB)	Road L11 (Westbound)	470	27%
2A(NB)	Road D3 (Northbound)	1,070	26%
2B(SB)	Road D3 (Southbound)	610	24%
3A(NB)	Road L13 (Northbound)	700	21%
3B(SB)	Road L13 (Southbound)	660	22%
3C(NB)	Road L13 (Northbound)	160	26%
3D(SB)	Road L13 (Southbound)	130	25%
3E(NB)	Road L13 (Northbound)	160	26%
3F(SB)	Road L13 (Southbound)	130	25%
3G(NB)	Road L13 (Northbound)	590	27%
3H(SB)	Road L13 (Southbound)	460	28%
4A(2-way)	San Tin Tsuen Road (2-way)	110	22%
4B(2-way)	San Tin Tsuen Road (2-way)	40	12%
4C(2-way)	San Tin Tsuen Road (2-way)	40	12%
4D(2-way)	San Tin Tsuen Road (2-way)	40	12%

Year 2048 PM Peak Traffic Forecast

Ref. No. * / (Direction)	Road Name	2048 Design PM Peak Traffic Flows (veh / hr) (round-up to nearest 10)	HV% #
1A(EB)	Road L11 (Eastbound)	620	15%
1B(WB)	Road L11 (Westbound)	510	15%
2A(NB)	Road D3 (Northbound)	1,170	14%
2B(SB)	Road D3 (Southbound)	660	15%
3A(NB)	Road L13 (Northbound)	730	16%
3B(SB)	Road L13 (Southbound)	690	16%
3C(NB)	Road L13 (Northbound)	170	16%
3D(SB)	Road L13 (Southbound)	140	14%
3E(NB)	Road L13 (Northbound)	170	16%
3F(SB)	Road L13 (Southbound)	140	14%
3G(NB)	Road L13 (Northbound)	650	14%
3H(SB)	Road L13 (Southbound)	500	15%
4A(2-way)	San Tin Tsuen Road (2-way)	110	15%
4B(2-way)	San Tin Tsuen Road (2-way)	40	9%
4C(2-way)	San Tin Tsuen Road (2-way)	40	9%
4D(2-way)	San Tin Tsuen Road (2-way)	40	9%

Note:

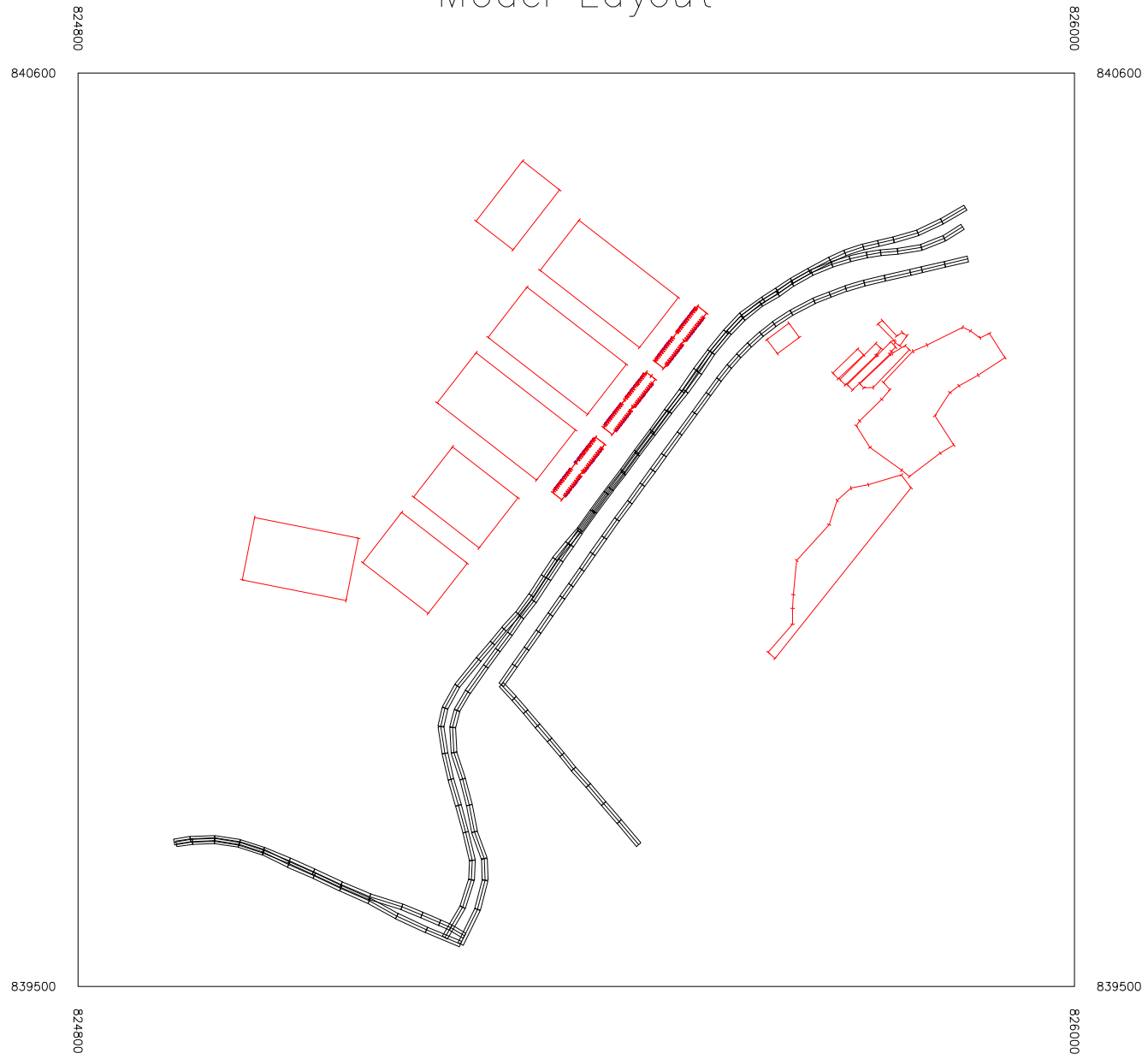
* Refer to SK1

Heavy vehicle (HV) percentage including the category of goods vehicles (GV) (comprise with vans, light goods vehicles (LGV), medium/heavy goods vehicles (MGV/HGV) and container trucks) and the category of public transport (PT) (comprise with public light buses (PLB), non-franchised buses (SPB) (including small coaches and large coaches) and franchised buses (FB))

Appendix 2.2

Modelling layout for Road Traffic Noise Impact Assessment

Model Layout



Appendix 2.3
Results of Road Traffic Noise Impact Assessment
(Base Scenario)

Base Case (Block 1)

[illegible]

Floor	2mD	B2-01	B2-02	B2-03	B2-04	B2-05	B2-06	B2-07	B2-08	B2-09	B2-10	B2-11	B2-12	B2-13	B2-14	B2-15	B2-16	B2-17	B2-18	B2-19	B2-20	B2-21	B2-22	B2-23	B2-24	B2-25	B2-26	B2-27	B2-28	B2-29	B2-30	B2-31
1	14.5	37	37	37	37	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	67	67	67	67	67
2	18.1	37	37	37	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	67	67	67	67	67
3	21.7	37	37	37	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	67	67	67	67	67
4	25.4	37	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	66	66	66	66	66
5	29.1	37	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	66	66	66	66	66
6	32.6	37	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	66	66	66	66	66
7	36.3	37	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	66	66	66	66	66
8	39.9	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	66	66	66	66	66
9	43.5	36	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	65	65	65	65	65
10	47.1	36	36	36	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	65	65	65	65	65
11	50.8	36	36	35	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	65	65	65	65	65
12	54.4	36	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	65	65	65	65	65
13	58.0	36	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	64	64	65	65	65
14	61.7	36	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	33	64	64	64	64	64
15	65.3	36	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	33	64	64	64	64	64
16	68.9	38	37	37	37	36	36	36	36	36	36	36	36	36	37	37	37	37	37	37	37	36	36	36	36	36	36	64	64			

Base Case (Block 3)

[illegible]

Appendix 2.4
Relative Noise Reduction (RNR) for
Innovative Noise Mitigation Measures (INMD) and
results of Road Traffic Noise Impact Assessment (Mitigated Scenario)

RNR adopted for all NSR with traffic noise exceedance

Project Case							Corrections			Reference Reduction				
NSR	Room	Room Area	Maximum Predicted Noise Level	Overlap / Gap ^[1]	Required OOA <= ^[3]	Provided OOA ^[4]	Room Area	Opening Area	Max RNR ^[5]	Config	Room Area	OOA ^[2]	Overlap / Gap ^[1]	Noise Reduction ^[5]
		sqm	L10,peak hr, dB(A)	mm/mm	sqm	sqm	dB(A)	dB(A)	dB(A)		sqm	sqm	mm/mm	dB(A)
B1-35	LIV	14.70	70.6	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-36	LIV	14.70	70.6	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-37	LIV	14.70	70.7	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-38	LIV	14.70	70.8	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-39	LIV	14.70	71.0	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-40	LIV	14.70	71.0	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-41	LIV	14.70	71.1	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-42	LIV	14.70	71.1	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-43	LIV	14.70	71.1	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-44	LIV	14.70	71.1	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-45	LIV	14.70	71.1	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-46	LIV	14.70	71.2	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-47	LIV	14.70	71.2	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-48	LIV	14.70	71.2	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0
B1-49	LIV	14.70	71.2	100 / 100	1.13	0.36	-0.88	0.00	6.1	PN_18	18	1.13	100 / 100	7.0

- [1] **Gap / Overlap** Gap: Gap Width between interior sliding panel and exterior glazing, or between exterior glazing; Overlap: Overlapping Length
- [2] **OOA** Outer Opening Area
- [3] **Required OOA** The area of ventilation opening required under Building (Planning) Regulations and BEAM Plus requirements as advised by Project Architect
- [4] **Provided OOA** The maximum OOA provided in design, complying with prescribed ventilation opening requirement under Building (Planning) Regulations.
- [5] **RNR** *Relative Noise Reduction* - For NSRs proposed with Noise Mitigation Measures (NMM), the presented noise level is not the actual noise level at the external façade after the application of NMM, and these noise level are only the equivalent noise level at 1m from the external facade after accounting the reduction in noise levels inside the flat offered by proposed NMM.
Max RNR: The maximum allowable RNR in subject case, taken into account the room area correction and opening area

Predicted Road Traffic Noise Level (dB(A)) at Representative Sensitive Receptors (Based on Year 2048 Traffic Forecast)

Noise Mitigation Measures (Specification (Table 1))

Receptor	018 (m/s)	B1-01	B1-02	B1-03	B1-04	B1-05	B1-06	B1-07	B1-08	B1-09	B1-10	B1-11	B1-12	B1-13	B1-14	B1-15	B1-16	B1-17	B1-18	B1-19	B1-20	B1-21	B1-22	B1-23	B1-24	B1-25	B1-26	B1-27	B1-28	B1-29	B1-30	B1-31
1	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	18.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Receptor	2048 (dB)	B1-32	B1-33	B1-34	B1-35	B1-36	B1-37	B1-38	B1-39	B1-40	B1-41	B1-42	B1-43	B1-44	B1-45	B1-46	B1-47	B1-48	B1-49
1	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
2	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
3	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
4	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
5	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
6	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
7	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
8	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
9	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
10	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
11	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
12	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
13	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
14	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
15	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
16	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
17	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
18	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
19	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1
20	18.5	-	-	-	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1	20.1

Schedule of Acoustic Windows / Acoustic Mitigation			DB(A)
1, 2, 3	Acoustic Windows / Mitigation Measures	100%	0%

Remarks:
See Table 2 & 3, as there are no recommendations, Acoustic Windows / Acoustic Mitigation is not applicable.

Predicted Road Traffic Noise [L₁₀(1h) dB(A)] at Representative Sensitive Receivers (Based on Year 2048 Traffic Forecast)
Relative Noise Reduction Adopted (Block 1)

Floor	NSR mPD	B1-01	B1-02	B1-03	B1-04	B1-05	B1-06	B1-07	B1-08	B1-09	B1-10	B1-11	B1-12	B1-13	B1-14	B1-15	B1-16	B1-17	B1-18	B1-19	B1-20	B1-21	B1-22	B1-23	B1-24	B1-25	B1-26	B1-27	B1-28	B1-29	B1-30	B1-31
2	14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	18.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	21.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	25.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	29.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	32.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	36.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	39.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	43.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	47.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	50.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	54.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	58.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	61.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	65.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	68.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	72.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Floor	mPD	B1-32	B1-33	B1-34	B1-35	B1-36	B1-37	B1-38	B1-39	B1-40	B1-41	B1-42	B1-43	B1-44	B1-45	B1-46	B1-47	B1-48	B1-49
2	14.5	-	-	-	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.6	0.8	0.8	0.8
3	18.1	-	-	-	0.1	0.1	0.2	0.3	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
4	21.7	-	-	-	-	-	0.1	0.1	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6
5	25.4	-	-	-	-	-	-	-	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
6	29.0	-	-	-	-	-	-	-	-	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
7	32.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	0.1
8	36.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	39.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	43.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	47.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	50.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	54.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	58.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	61.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	65.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	68.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	72.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Schedule of Acoustic Window / Acoustic Balcony	
PN_18	Acoustic Window (Ref.: PN 5/23), Room area: 18sqm

Remark:
For Blocks 2 & 3, as there are no exceedances, Acoustic Window/ Acoustic Balcony is not applicable.

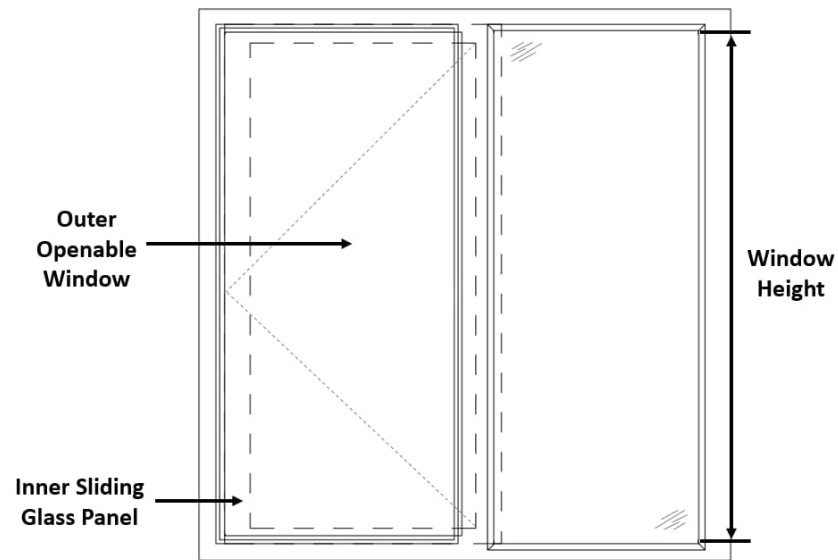
[illegible]

Schedule of Acoustic Window / Acoustic Balcany	
PN 12	Acoustic Window (Balc. PN 5/23), Room area: 18sqm
Max Noise Level (dB(A)) =	70
Total no. of Exceedance =	0
Total no. of units =	2499
% Compliance =	100%

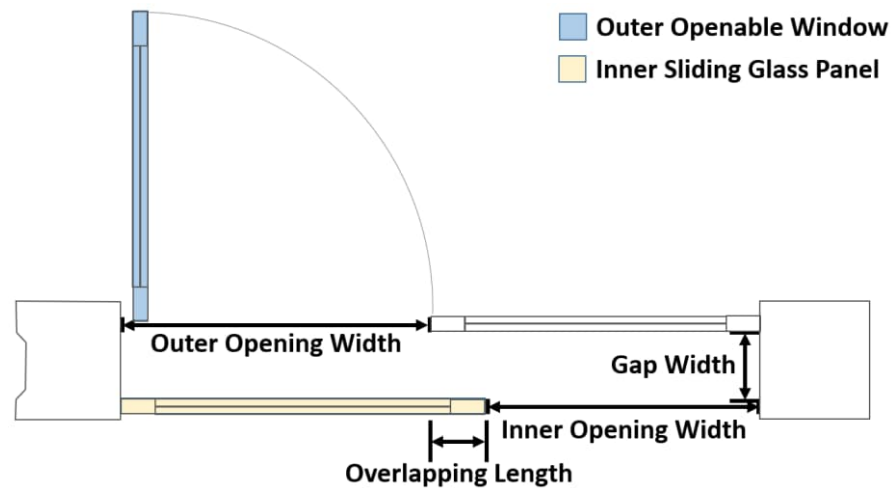
For Blocks 2 & 3, as there are no exceedances, Acoustic Window/ Acoustic Balcony is not applicable

Appendix 2.5
Schematic Diagram of INMD Proposed

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



INTERNAL VIEW (NOT TO SCALE)



PLAN (NOT TO SCALE)

Possible Designs of “Acoustic Window (Baffle Type)” for 8m² and 18m² rooms

Room Size (m ²)	Room Dimensions (mm ³)	Inner Window Opening (mm ²)	Outer Window Opening (mm ²)	Overlapping Length (mm)	Gap Width (mm)
8	3200 (W) x 2500 (D) x 3400 (H)	580 (W) x 870 (H)	600 (W) x 870 (H)	≥ 100	100 to 175
18	5300 (W) x 3390 (D) x 3400 (H)	750 (W) x 1500 (H)	750 (W) x 1500 (H)	≥ 100	100 to 175

Notes:

- These are feasible designs of AW(BT) for 8m² and 18m² rooms.
- For optimum performance of noise reduction, the air gap should have a pane-to-pane overlapping length of ≥ 100mm and a gap width between 100mm and 175mm, with the inner sliding glass panel in a closed position. The window pane shall be ≥ 6mm in thickness.

Reference for proposed Acoustic Window "PN_18"

Appendix 3.1
Site Survey Records

Site Visit Photos



Left: Open Storage along Castle Peak Road



Right: Vacant Site along Castle Peak Road



Left: Open Storage along Castle Peak Road



Right: Castle Peak Road – San Tin Section



Left: Fanling Car Washing

Operation Hour: 09:00 to 18:30, Car Washing by high pressure water jet

Right: Vehicle Sale / Open Storage



Proposed Filling of Ponds in for Permitted Innovation and Technology Hub
at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T



Left: Northbound Travel Hong Kong Vehicle Repair, Registration Area, operation hours: 09:00 to 17:00

Right: Northbound Travel Hong Kong Vehicle Repair, Vehicle Repair Area, operation hours: 09:00 to 17:30, Car Repair inside covered area



Left: Hop Yick Sand Storage and Environment Recycling Sttion for Construction Waste (along Castle Peak Road about 324m to southwest of site)

Right: Construction Plant Storage



Left: Tsing Lung Tsuen

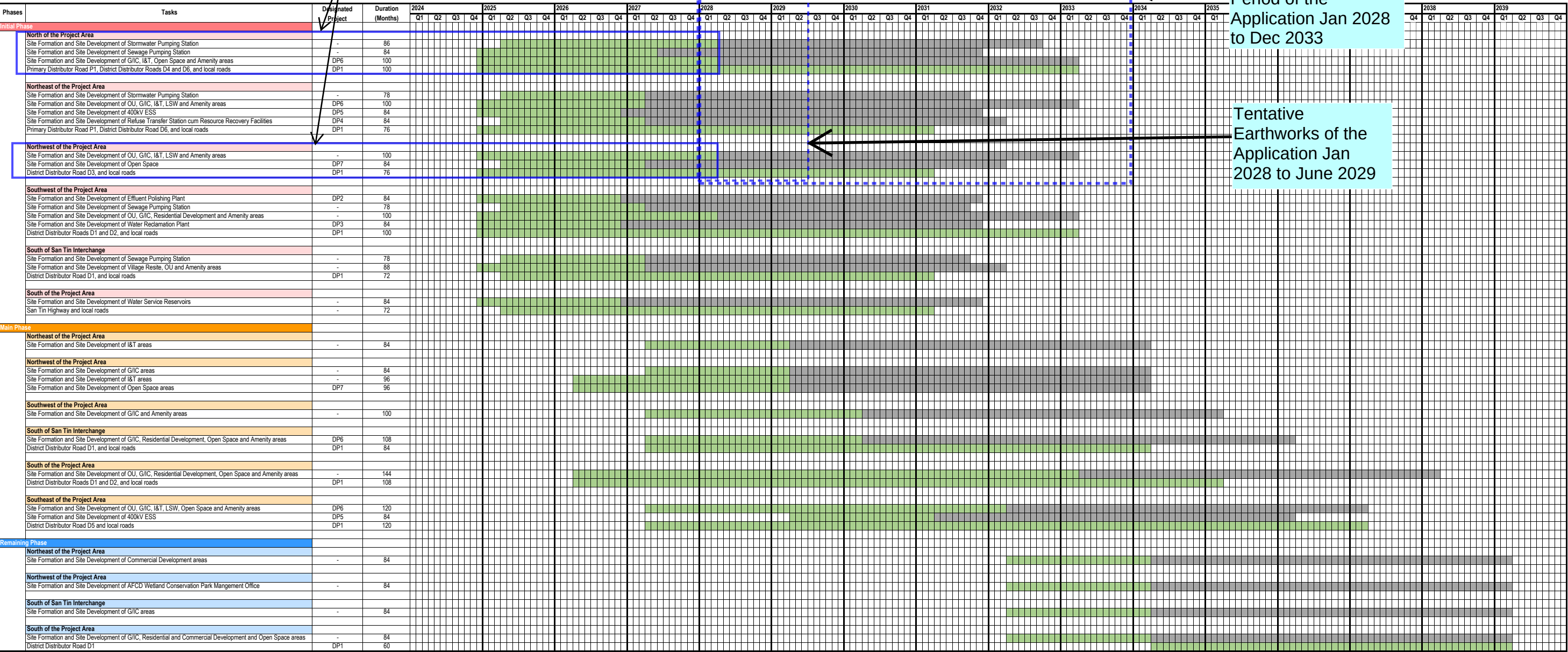
Right: San Lung Tsuen

Appendix 4.1

Extracted Programme Information of AEIAR-261/2024

"North" and "Northwest" of ST/LMC Dev are within 500m of Application Site

Appendix 2.2 Tentative Construction Programme

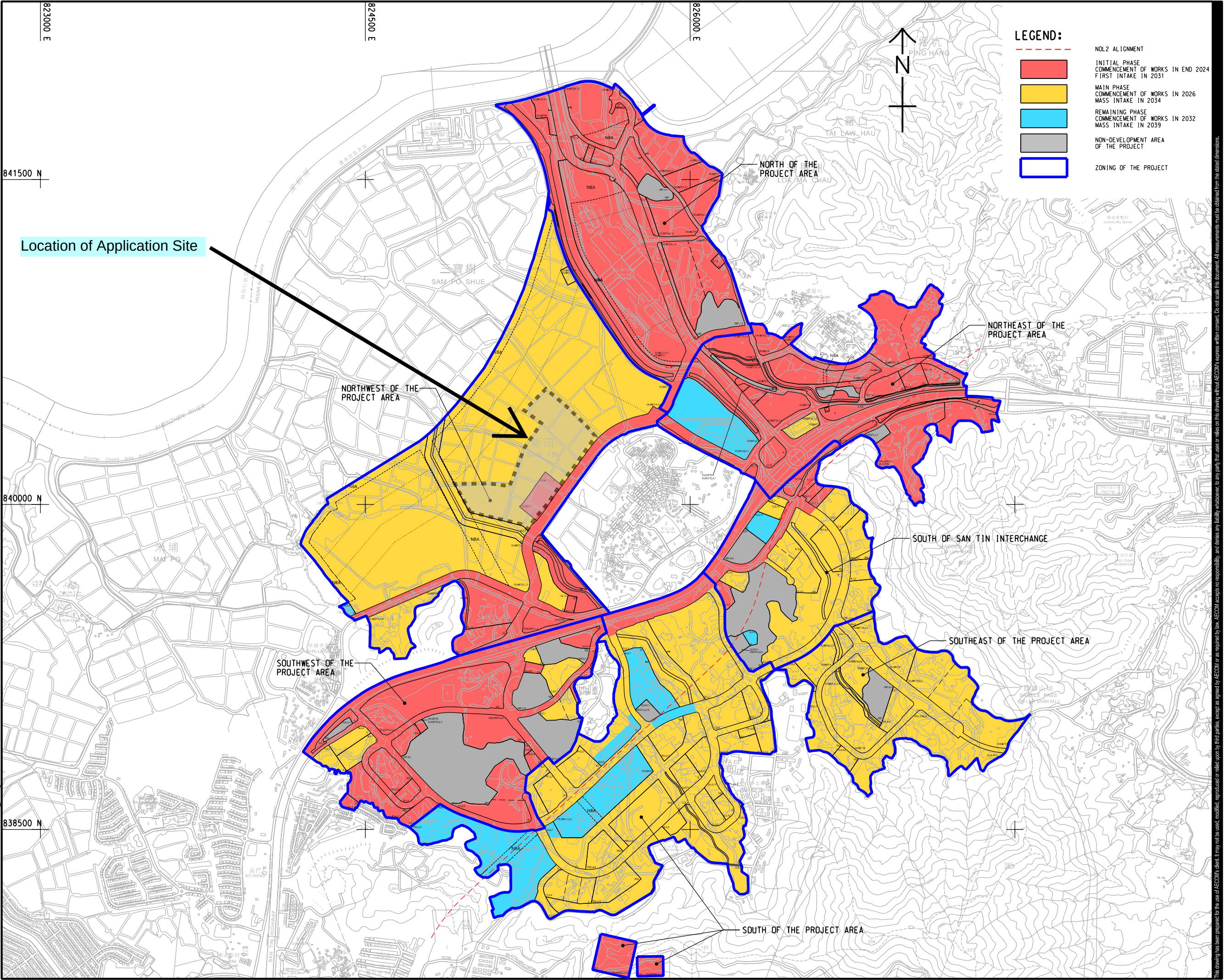


Tentative Construction Period of the Application Jan 2028 to Dec 2033

Tentative Earthworks of the Application Jan 2028 to June 2029

Legend: Site Formation Site Development

ISO A1 594mm x 841mm
Approved:
Checked:
Designer:
Project Management Initials:
Plot File by: RenS
2023/11/14
PATH P:\PROJECTS\60670882\DRAWING\REPORT\A34\A34_371.dgn



PROJECT
項目
FIRST PHASE DEVELOPMENT OF
THE NEW TERRITORIES NORTH –
SAN TIN / LOK MA CHAU
DEVELOPMENT NODE –
INVESTIGATION

CLIENT
業主
 土木工程拓展署
Civil Engineering and
Development Department
 規劃署
Planning Department

CONSULTANT
土庫顧問公司
AECOM Asia Company Ltd.
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SUB-CONSULTANTS
分判工程師有限公司

ISSUE/REVISION			
修訂	日期	描述	校核

STATUS
階段

SCALE
比例
A3 1 : 16000

DIMENSION UNIT
尺寸單位
METRES

KEY PLAN
索引圖

PROJECT NO.
項目編號
60670882

AGREEMENT NO.
協議編號
CE 20/2021

SHEET TITLE
圖紙名稱
PRELIMINARY CONSTRUCTION AND
POPULATION INTAKE SCHEDULE

SHEET NUMBER
圖紙編號
60670882/A34/APPENDIX 2.1

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Appendix 5.1
Estimation Municipal Solid Waste Generation

Estimation of Commercial & Industrial Waste Generation

Building	Proposed Uses	GFA	CIFSUS [1]	Workers	Workers	Remarks
		sqm, about	Refrenced Economic Activities (ref: CIFSUS)	number per 100sqm GFA	Estimate	
I&T Block	Warehouse and Testing Area	56198	Storage	0.4	225	
	Modern Logistics / Low-altitude Economy	107890	Storage	1.4	1510	
	R&D Labs	200068	Manufacturing	2.3	4602	
	R&D Offices	219240	Financial, Insurance, Real Estate & Business Services	5.5	12058	
Commercial and Staff Quarter Block	Commercial (shops, supermarkets)(assume 70%)	9387	Retail Trade	3.5	329	
	Commercial (restaurants)(assume 30%)	4023	Restaurants	5.1	205	
Automatic Parking System . Data Centre	Automatic Parking System	16290		0	0	Unmanned in general except property Management Staff
	assume 5% GFA for property management staff	814.5	Financial, Insurance, Real Estate & Business Services	5.5	45	
	Data Centre	11403		0	0	
	assume 5% GFA for property management staff	570.2	Financial, Insurance, Real Estate & Business Services	5.5	31	Unmanned in general except property Management Staff
Visitor and Education Centre & GIC Facilities	Cooling Centre	3904		0	0	Unmanned in general
	sub-station	1430		0	0	Unmanned in general
	Visitor and Education Centre	2121	Community, Social & Personal Services	3.3	70	
Total Estimated Workers					19075	

Per capita disposal Rate
kg / person / day
Recovery Rate
%
Per Capita Generation Rate
kg / person / day

0.55 Commercial & Industrial
46% Commercial & Industrial Waste
1.0 Disposal Rate / (1 - Recovery Rate)

Wasate Generation Rate (Non-Domestic) ton / day

19.1 Estimated Workers x Per Capita Generation Rate

- Notes
- [1] CIFSUS: Commercial and Industrial Floor Space Utilization Survey

[2] Plate 2.7, Monitoring of Soil Waste 2023

Estimation of Domestic Waste Genertion

Number of Units on Typical Floor
Number of Storey for each Sstaff Quarter Block
Number of Staff Quarter Block
Total Number of Staff Quarter Units
Average Household Size
Domestic Population Estimation
Domestic Waste Disposal Rate
Recovery Rate of Domestic Waste
Domestic Waste Generation Rate
Domestic Waste Generation

49 units
17 Storeys
3 Blocks
2499 Units
2.7 persons per Unit
6747.3 Persons
0.89 kg / person / day
21% percentage
1.127 kg / person / day
7.6 ton / day

Yuen Long District, 2024 (https://www.censtatd.gov.hk/en/web_table.html?id=130-06806#)

Monitoring of Solid Waste 2023
Monitoring of Solid Waste 2023
Disposal Rate / (1 - Recovery Rate)
Generation Rate x Domestic Population

Appendix 7.1 Aerial Photos



Appendix: 7.1a

Title: Aerial Photo (1963 - Ref No. 1963-9967)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Appendix: 7.1b		RAMBOLL	
Title: Aerial Photo (1973 - Ref No. 07880R)		Drawn by: SC	
		Checked by: TW	
Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.		Rev.: 1.0	
		Date: Dec 2025	



Legend

Subject Site



Appendix: 7.1c

Title: Aerial Photo (1983 - Ref No. 520277)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Legend

Subject Site



Appendix: 7.1d

Title: Aerial Photo (1993 - Ref No. A36427)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Legend

Subject Site



Appendix: 7.1e

Title: Aerial Photo (2003 - Ref No. CW51263R)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

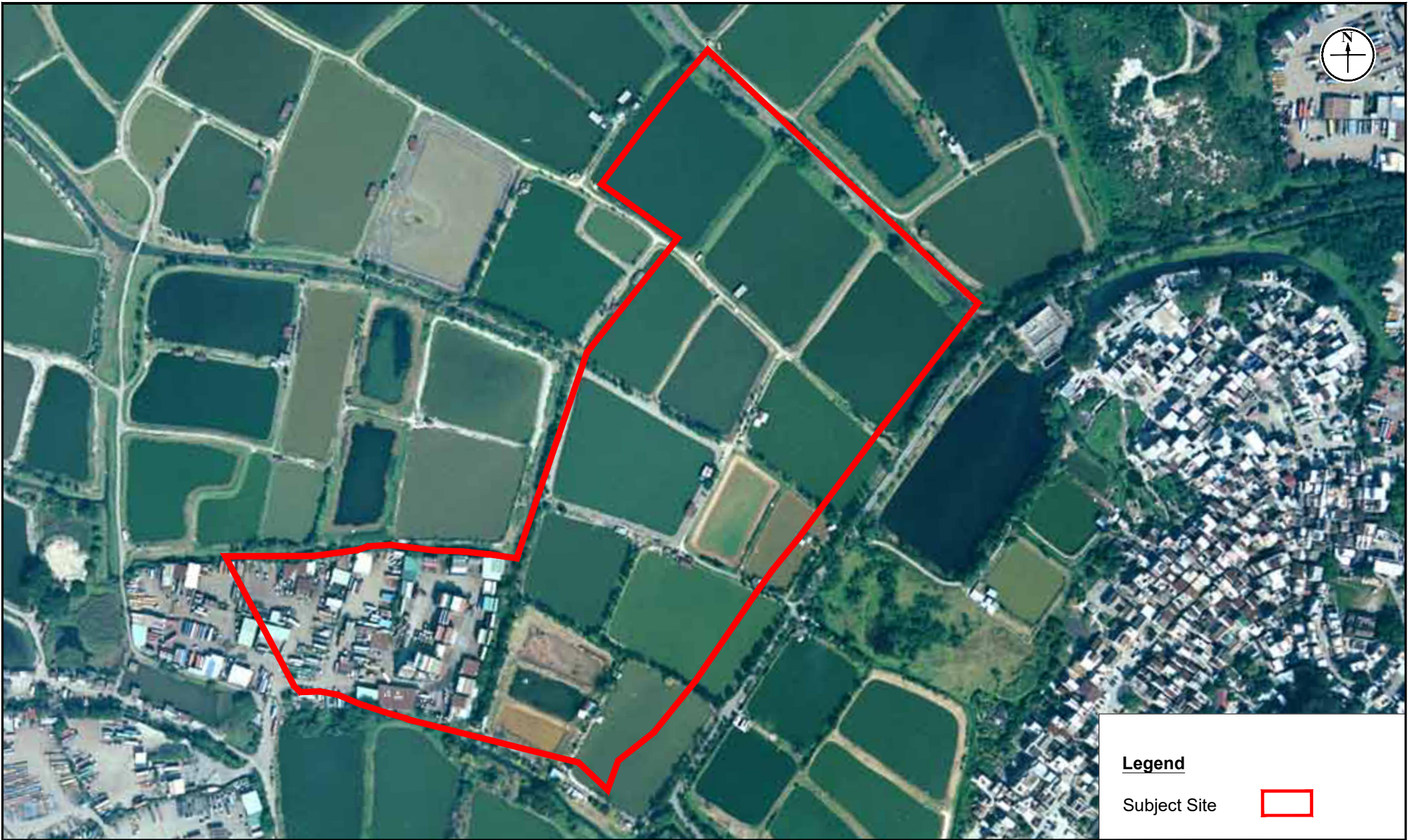
RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Legend

Subject Site 

Appendix: 7.1f		RAMBOLL	
Title: Aerial Photo (2013 - Ref No. CW100909RM)		Drawn by: SC	
		Checked by: TW	
Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.		Rev.: 1.0	
		Date: Dec 2025	



Legend

Subject Site



Appendix: 7.1g

Title: Aerial Photo (2024 - Ref No. E219578C & E219579C)

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

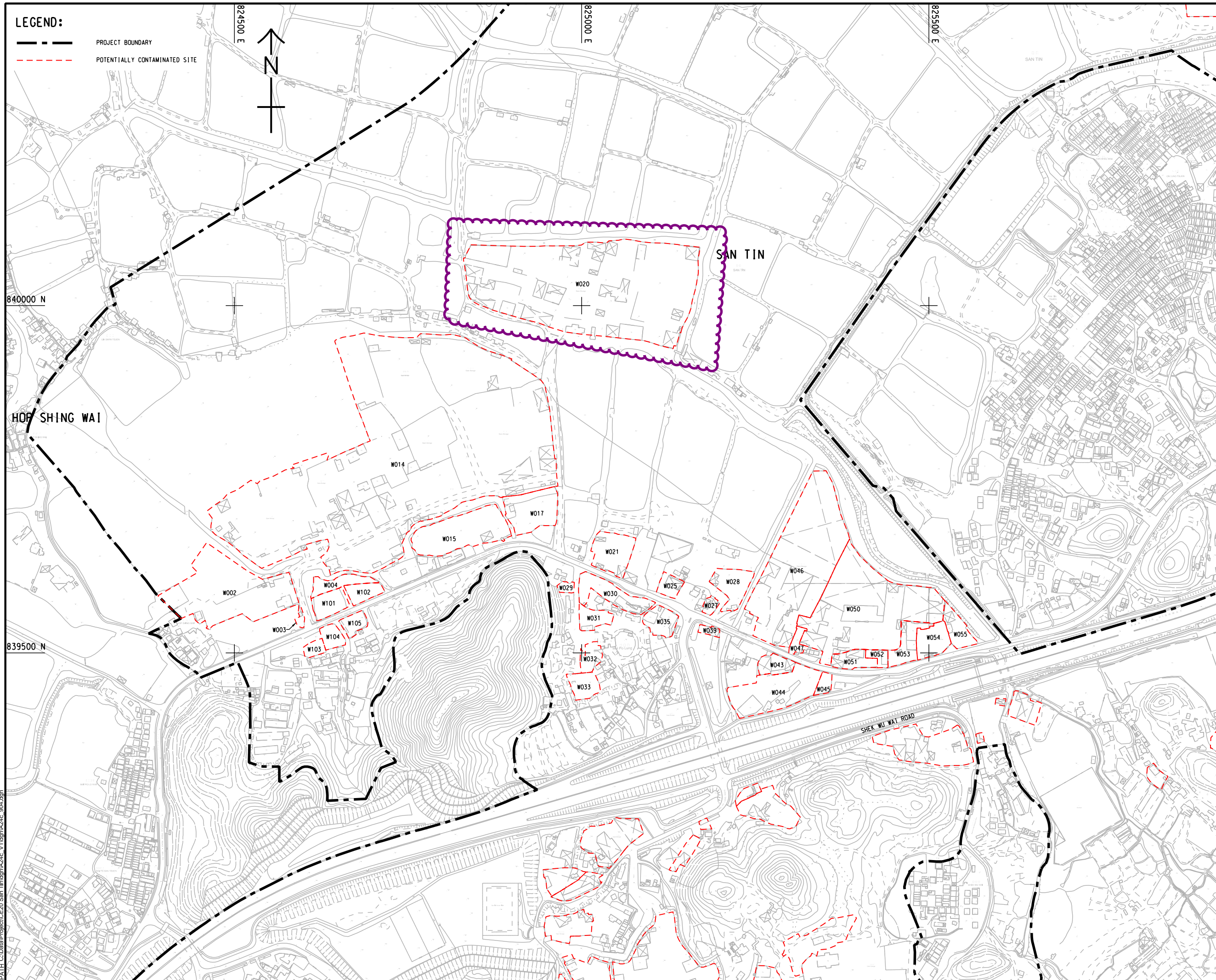
Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025

Appendix 7.2 Relevant Sections from the EIA report (AEIAR-261/2024)



PROJECT

FIRST PHASE DEVELOPMENT OF THE NEW TERRITORIES NORTH – SAN TIN / LOK MA CHAU DEVELOPMENT NODE – INVESTIGATION

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ISSUE/REVISION
修訂

I/R 修訂	DATE 日期	DESCRIPTION 內容摘要	CHK. 複核
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STATUS
阶段

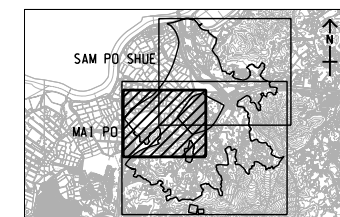
SCALE
比例

A3 1 : 5000

DIMENSION UNIT
尺寸單位

METRES

KEY PLAN A3 1:160000

PROJECT NO.
項目編號

60670882

AGREEMENT NO.
收購編號

CE 20/2021

SHEET TITLE
圖紙名稱

LOCATION PLAN OF POTENTIALLY
CONTAMINATED SITES
(WESTERN PORTION)

SHEET NUMBER
圖紙編號

60670882/A24c/904

ID	English Name	Chinese Name	Address	Nature of Bussiness	Corresponding Site
067 *	CHUN YIP ENVIRONMENTAL RECYCLE LIMITED	駿業環保再生資源有限公司	DD102 Lot 1525, Shek Wu Wai San Tsuen, San Tin Yuen Long, N.T.	環保回收	S283
068	Kan Sin International Trading Limited	更先國際貿易有限公司	DD102 Lot 1517RP, Shek Wu Wai, San Tin, Yuen Long, N.T.	Destroy of material & process environmental treatment	S288
069	H2O & Au Environmental Recycling Company Limited	淼鑫再生資源有限公司	DD102 Lot 1517, Shek Wu Wai, San Tin, Yuen Long, N.T.	Waste Recycle	S288
070	ON FAT LUNG ELECTRICAL & METAL COMPANY	安發隆電器五金有限公司	DD102 Lot 1524 (Part), Shek Wu Wai, San Tin, Yuen Long, N.T. .	電器五金	S288
071	YAM Mei Chau	任美就	Site near lamp post VD8200, near Lot 1522 in DD102, Shek Wu Wai San Tsuen, San Tin, Yuen Long, N.T.	回收	S290
072	Hung Hing Electronic Commerce Limited	雄興電子貿易有限公司	Lots 1770, 1773, 1774, 1776, 1779, 1796, 1800, 1802, 1803, 1804, 1805 in DD102, 12B Shek Wu Wai, San Tin, Yuen Long, N.T.	廢五金・塑膠買賣	S304, S306, S307, S308, S309
073	Yee Hop Engineering Company Limited	義合工程有限公司	Lots 1255-1262, 1273 and 1276 in DD102, San Tin, Yuen Long, NT	Construction Plant Maintenance and Storage Compound	S316
074	HEHE RESOURCES LIMITED	和合資源有限公司	DD102 Lots 1242 (Part), 1243, 1244 (Part), 1245 (Part), 1253 (Part), 1254 (Part), 1258, 1274 and 1275, Shek Wu Wai, San Tin, Yuen Long, N.T.	倉庫	S317
075	Yu Sen Environmental Protection Technology Limited	羽森環保科技有限公司	Lot 1249 in DD102, No. 8 Wah Hing Road, Shek Wu Wai, San Tin, Yuen Long, New Territories	Waste recycling	S317
076	Man Sun Group Recycling Company, Limited	萬新集團環保有限公司	No. 8 Wah Hing Road, Lot 1249 in DD102, Shek Wu Wai, San Tin, Yuen Long, New Territories	Recycle Services	S317
077	XUNWEISHENG TECHNOLOGY LIMITED	訊緯盛科技有限公司	Lot 1225, 1227, 1228 & 1237 in DD102, Siu Hum Tsuen, San Tin, Yuen Long, N.T.	電子產品的科技開發與銷售和國際貿易	S318
078	SI HONG of TEN LONG TRADING CO.	天朗貿易公司的施紅	DD102 LOT 1204 - 1206, 1223 & 1224, SIU HUM TSUEN, SAN TIN, YUEN LONG, N.T.	Trading	S319
079	Wevo Asia Co. Limited	威乎亞洲有限公司	DD99 Lot 769RP, San Tin, Yuen Long, N.T.	General Trading	W014
080	Alent Hong Kong Limited - Enthone	確信電子有限公司 - 樂思化學	DD99 Lot 769, Ground Floor, Yuen Long, NT	Transportation & Warehouse	W014
081	Hong Kong Gold Gate Enterprise Ltd.	香港金門企業有限公司	Lot 769 in DD99, Caslte Peak Road - San Tin, Yuen Long, N.T.	Transportation	W014
082	Yau Kee Rubbertyre Ltd	有記膠輪有限公司	DD99 Lot 769 G, Mai Po Tsuen, San Tin, Yuen Long, N.T.(米埔中華車場路口內) near L/P FC4124	Rubbertyre	W014
083	Chung Way Transportation Company Limited	中匯運輸有限公司	DD99, Lot 769 S.A, Mai Po Lung, San Tin, Yuen Long, N.T.	中港運輸	W017
084	Hung Kai Engineering Company Limited	雄佳機械工程有限公司	Container 8, D.D.99 Lot 769, Mai Po Lon, San Tin, Yuen Long, N.T.	汽車維修vehicle maintenance	W017
085	Siu Wan Motor Reparation operated by Chan Siu Bik	陳笑碧經營的小雲汽車維修	D.D.99 Lot 769RP, Mai Po Lung, San Tin, Yuen Long, N.T.	汽車維修	W017
086 *	LEE SIK TIM		LOT 769 DD 99 MAI PO SAN TIN KUI NT	CAR REPAIRING	W017
087 *	HON KO ENGINEERING LIMITED	漢高工程有限公司	LOT 769 IN DD 99 MAI PO LUNG SAN TIN, YUEN LONG NT	ENGINE REPAIRING	W017
088	SHUN HING MOTOR CAR WORKS	信興車房	LOT 764 IN DD99 LOK MA CHAU KWAI YING ROAD SAN TIN NT	MOTOR CAR REPAIRING	W020
089	TUNG LOK CAR SERVICE CENTRE		LOT 764 DD99 SAN TIN YUEN LONG NT	AUTOMOBILE MAINTENANCE	W020
090	SUK FAT SUN	葉發新	LOT 764 IN DD 99 MAI PO LUNG SAN TIN YUEN LONG NT	CAR REPAIRING	W020
091	MAGIC LINK (HK) LIMITED	誠商 (香港) 有限公司	MAI PO LUNG, SAN TIN, YUEN LONG, NEW TERRITORIES, D.D.99, LOT 764	IMPORT/EXPORT	W020
092 *	LI SHUI YUEN		LOT 764 DD 99 CASTLE PEAK RD, MAI PO YUEN LONG NT	CAR REPAIRING	W020
093 *	UNIVERSAL ENTERPRISE INTERNATIONAL LIMITED		LOT 764 IN DD 99 MAI PO YUEN LONG NT	CAR REPAIRING	W020
094 *	LEUNG YU CHEUNG		LOT 764 IN DD 99 MAI PO SAN TIN NT	CAR REPAIRING	W020
095 *	UP WING MACHINERY & MOTOR VEHICLES SERVICES CO		LOT 150, DD 105, MAI PO LUNG SAN TIN, YUEN LONG, NT	VEHICLES REPAIRING	W021
096 *	WAH YAN TRADING CO.		LOT NO. 15C IN D.D. 105 MAI PO LUNG SAN TIN YUEN LONG NT	TRADING MOTOR PARTS	W021
097	SUN KONG MOTORING SERVICES LIMITED	新港汽車服務有限公司	194.S.C DD105, Mai Po Lung Village, Yuen Long, N.T.	汽車服務・維修・維護・保養・	W025
098 *	AH KWAN CAR CLEANING & SPRAYING		MAI PO LUNG TSUEN, NO 194, DD105 YUEN LONG NT	SERVICING OF MOTOR VEHICLE	W025
099 *	LI TAI HO		LOT 194 DD 105 MAI PO LUNG TSUEN YUEN LONG NT	CAR WASHING	W025

Site Background	
Company Name	九記行有限公司(標場)
Site ID	W020
Suspected Current Land Use / Activities	Trailer and container yard with vehicle parking, storage containers
Approximate Area (m ²)	39,804
Locations	North of Castle Peak Road - San Tin

Desktop Review	
Review of Outline Zoning Plan	Other Specified Uses (Comprehensive Development and Wetland Enhancement Area)
Principal Rock Types / Characters on the Geological Survey Map	Qa
Historical Land Use (Review of Historical Aerial Photos)	1963: Vacant Land 1973: Ponds 1982: No significant change in land use is observed in comparison with the land use from 1973 aerial photo. 1993: Trailer and container yard with vehicle parking, storage containers 2002: No significant change in land use is observed in comparison with the land use from 1993 aerial photo. 2006: No significant change in land use is observed in comparison with the land use from 2002 aerial photo. 2011: No significant change in land use is observed in comparison with the land use from 2006 aerial photo. 2014: No significant change in land use is observed in comparison with the land use from 2011 aerial photo. 2017: No significant change in land use is observed in comparison with the land use from 2014 aerial photo. 2020: No significant change in land use is observed in comparison with the land use from 2017 aerial photo. 2022: No significant change in land use is observed in comparison with the land use from 2020 aerial photo.
Reference of Historical Aerial Photos	Appendix A - Sheet 6, 10, 11
Lot No.	DD99 Lot 764 RP
Land Ownership Status	Private

Site Reconnaissance Information and Recommendation	
Date of Survey	Apr-22
Conducted by	Darren Chen and Ray Chow
Site Observation	Trailer and long vehicle parking was observed. Stacking containers storage was observed on site. Potential vehicle workshop and suspected refuelling activities was observed on site in aerial photo. Chemical waste producer record (No. 088 - 094) indicated vehicle maintenance works undertaken on site.
Potentially Contaminating Activities	<u>Current Activities and Information from FSD and EPD</u> The possible contaminating activities may include release of oils and fuels and lubricants from vehicles, vehicle and equipment maintenance and refuelling the use of chemicals and solvents in maintenance activities. Based on FSD/EPD information, there were no DGs / incident / spillage records for the site. <u>Past Activities</u> Trailer and container yard with vehicle parking, storage containers The possible contaminating activities may include release of oils and fuels and lubricants from vehicles, vehicle and equipment maintenance and refuelling the use of chemicals and solvents in maintenance activities.
References of Photographs of Site Reconnaissance	Appendix H - Figure 60670882/A24c/711
Recommended No. of Boreholes*	32
Recommended Grid Size in Practice Guide (in meters)*	31
Key Chemicals of Concern	Metals (e.g. chromium, copper, lead, manganese, nickel, zinc), PCRs, VOCs (e.g. acetone, BTEX, MTBE, and trichloroethene) and PAHs.
Necessity for Further Site Investigation	Yes
Future Land Use	OU(I&T)1.1.2, O.1.1 & OU(I&T)1.1.3
RBRGs	Lower of Urban Residential or Public Park

Note: The recommended testing and sampling protocol (i.e. grid size, no. of boreholes and key COCs) is only tentative and is subject to be reviewed after the sites are resumed by the Project Proponent.

*Determination of the number of boreholes and grid size is based on EPD Practice Guide for Investigation and Remediation of Contaminated Land (PG) as summarized below:

Area of Site (m ²)	Grid Size	Min Number of Sampling Points
100	6	3
500	13	3
1,000	13	6
2,000	13	12
4,000	17	14
5,000	17	17
8,000	17	28
10,000	19	29
30,000	31	32
90,000	51	35

^TBC: To be confirmed. The current land uses are warehouse or enclosed structure with no other historical potentially contaminated land uses identified. The presence and degree of contamination would greatly depend on the types of goods stored and actual site operation. For example, warehouses that stored general household goods (e.g. furniture and toys) are unlikely to cause contamination to the underlying soil and groundwater. A site re-appraisal within these sites are therefore required at the later stage of the development to (i) assess the nature of these warehouses / enclosed structures and site conditions, (ii) confirm the necessity for site investigation works and, if required, (iii) formulate the sampling and testing strategies.

Appendix I List of Surveyed Site in Category

Category ¹	Sites ID
Potentially Contaminated Sites	E008, E010, E013, E014, E033, E036, E041, E045, E050, E052, E055, E059, E062, E064, E069, E070, E071, E073, E080, E081, E082, E085, E087, E100, E101, S001, S002, S004, S005, S006, S007, S010, S011, S015, S021, S024, S025, S029, S030, S031, S034, S035, S044, S045, S048, S059, S067, S071, S072, S073, S080, S089, S090, S093, S098, S099, S101, S102, S107, S109, S111, S115, S119, S122, S127, S131, S134, S138, S140, S141, S143, S144, S146, S148, S155, S157, S160, S163, S164, S166, S168, S172, S175, S176, S177, S178, S179, S182, S187, S189, S190, S191, S193, S194, S196, S197, S201, S202, S210, S211, S215, S217, S220, S224, S231, S236, S239, S246, S247, S248, S254, S255, S260, S262, S264, S267, S273, S274, S275, S276, S280, S282, S283, S284, S286, S287, S288, S290, S291, S292, S293, S294, S301, S302, S304, S306, S307, S308, S309, S310, S313, S314, S315, S316, S317, S319, S321, S322, S323, S325, S326, S327, S329, S331, S333, S340, S341, S343, S345, S346, S350, W002, W003, W004, W014, W015, W017, W020, W021, W025, W027, W028, W029, W030, W031, W032, W033, W035, W039, W043, W044, W045, W046, W047, W050, W051, W052, W053, W054, W055, W101, W102, W103, W104 & W105
Sites Requiring Further Appraisal	E019, E025, E032, E039, E049, E054, E057, E058, E067, E072, E078, E084, E091, E093, E094, E096, E097, E099, E102, S003, S009, S026, S027, S033, S036, S038, S039, S050, S051, S056, S060, S062, S068, S076, S078, S079, S081, S082, S083, S085, S086, S087, S091, S092, S095, S096, S105, S110, S113, S117, S118, S121, S124, S125, S128, S132, S139, S186, S199, S218, S221, S225, S228, S242, S243, S245, S249, S250, S251, S252, S253, S257, S263, S265, S266, S269, S270, S272, S277, S279, S289, S303, S305, S311, S318, S324, S330, S332, S334, S335, S337, S338, S344, S347, S348, S349, W001, W010, W011, W012, W016, W018, W022, W023, W036 & W049
Sites not to be Developed	E021 & S203



PHOTO W020-1: AERIAL VIEW OF SITE W020



PHOTO W020-2: AERIAL VIEW OF SITE W020



PHOTO W020-3: SITE ENTRANCE OF W020



825100 E



LEGEND:



PROJECT BOUNDARY



SURVEYED SITE



LOCATION OF PHOTOGRAPHY VIEW POINT WITH PHOTO NUMBER

PO

AECOM

PROJECT

FIRST PHASE DEVELOPMENT OF
THE NEW TERRITORIES NORTH –
SAN TIN / LOK MA CHAU
DEVELOPMENT NODE –
INVESTIGATION

CLIENT

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SUB-CONSULTANTS

分判工程顧問公司

ISSUE/REVISION

NO.	DATE	DESCRIPTION	CHK.

I/R	DATE	DESCRIPTION	CHK.

STATUS

附註

SCALE

比例

A3 1 : 1000

DIMENSION UNIT

尺寸單位

METRES

KEY PLAN

索引圖

PROJECT NO.

項目編號

60670882

AGREEMENT NO.

協議編號

CE 20/2021

SHEET TITLE

SITE INSPECTION FINDINGS AT
SITE W020

SHEET NUMBER

圖紙編號

60670882/A24c/711

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Appendix 7.3 Reply from Government Departments

1 December 2025
By Post & Email

Environmental Protection Department
Environmental Compliance Division
Regional Office (North), Islands

Units 2202-15, 22/F, Tower 2
Grand Central Plaza,
138 Sha Tin Rural Committee Road,
Shatin, New Territories

Dear Mr. Ken Fung,

Request for Land Contamination Information at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

We are the environmental consultant who are commissioned to conduct a land contamination assessment for the Proposed Development at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T. Location of the subject site is shown in **Figure 1.1**.

According to the "Practice Guide for Investigation and Remediation of Contaminated Land" published by Environmental Protection Department (EPD) of the HKSAR, information including site history and other available information regarding the site shall be reviewed during the site appraisal to identify potential current and historical, on and off-site activities that could result in contamination of the site.

In view of this, we would like to request for the following information for our assessment.

1. Potentially contaminating activities that have occurred at the site such as storage and handling of chemicals, oils and/or hazardous waste, on-site waste disposal, burn pits, etc;
2. Accidents, fires, explosions, spillages and any pollution incidents attributed to the site and any remediation that has occurred at the site or neighbouring areas; and
3. Any land contamination assessment that has conducted at the site or neighbouring areas.

Your reply by 12 December 2025 is highly appreciated as it would be very helpful to our assessment. Should you have any queries, please do not hesitate to contact the undersigned at [REDACTED] or our Ms. Sally Chiu at [REDACTED]

Thank you very much for your attention.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Tak Wong
Principal Consultant

Encl.
Figure 1.1 Location of Subject Site

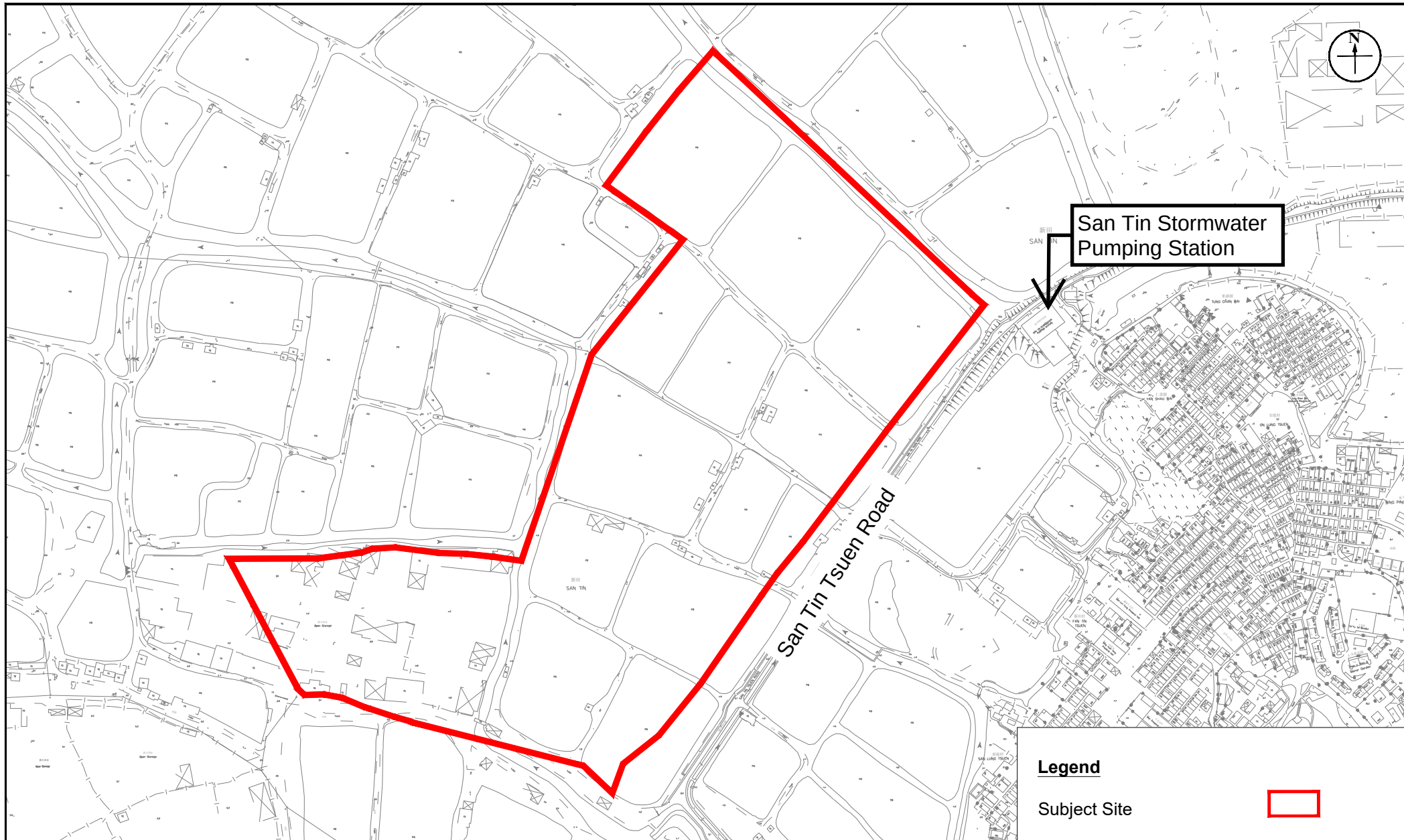


Figure: 1.1

Title: Site Location and its Environs

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025

Sally Chiu

From: kiufungng@epd.gov.hk
Sent: Thursday, 4 December 2025 5:46 pm
To: Sally Chiu
Cc: Tak Kwong Wong; Tony Cheng
Subject: Re: Request for Land Contamination Information at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Sally,

Regarding your enquiries in the email below, this Regional Office has no record of spillage or leakage of chemicals within the updated development area boundary and project site boundary as depicted in the location map enclosed for the past 10 years. You may like to check with other relevant parties or departments for such information as appropriate.

Concerning the records of registered chemical waste producers, a register of chemical waste producers is available for inspection in the Territorial Control Office of this department. If you would like to inspect, please contact Mr. Tim H. T. MAN at 2835 1017 for making appointment to view the records.

Should you have any query on the matter, please contact the undersigned at 3162 8418.

Regards,
Ken NG
Regional Office (North)
For Director of Environmental Protection

From: "Sally Chiu" [REDACTED]
To: "kiufungng@epd.gov.hk" <kiufunng@epd.gov.hk>
Cc: "Tak Kwong Wong" <[REDACTED]>, "Tony Cheng" <[REDACTED]>
Date: 01/12/2025 16:40
Subject: Request for Land Contamination Information at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

Dear Ken,

We are the environmental consultant who are commissioned to conduct a land contamination assessment for the Proposed Development at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T. Location of the subject site is shown in **Figure 1.1**.

According to the "Practice Guide for Investigation and Remediation of Contaminated Land" published by Environmental Protection Department (EPD) of the HKSAR, information including site history and other available information regarding the site shall be reviewed during the site appraisal to identify potential current and historical, on and off-site activities that could result in contamination of the site.

In view of this, we would like to request for the following information for our assessment.

1. Potentially contaminating activities that have occurred at the site such as storage and handling of chemicals, oils and/or hazardous waste, on-site waste disposal, burn pits, etc;
2. Accidents, fires, explosions, spillages and any pollution incidents attributed to the site and any remediation that has occurred at the site or neighbouring areas; and
3. Any land contamination assessment that has conducted at the site or neighbouring areas.

Your reply by 12 December 2025 is highly appreciated as it would be very helpful to our assessment. Should you have any queries, please do not hesitate to contact the undersigned at [REDACTED] or our Mr. Tak Wong at [REDACTED].

Thank you for your attention.

Kind regards

Sally Chiu

Assistant Environmental Consultant

[REDACTED]

[REDACTED]

Ramboll Hong Kong Limited

Classification: Confidential[attachment "Fig 1.1_Subject Site.pdf" deleted by Kiu Fung NG/EPD/HKSARG] [attachment "LDSSTT26E100_0_0002L.25.pdf" deleted by Kiu Fung NG/EPD/HKSARG]

1 December 2025
By Post & Email

Fire Services Department/ Management Group

9/F, Fire Services Headquarters Building,
1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong

Dear Sir/ Madam,

Request for Land Contamination Information at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

We are the environmental consultant who are commissioned to conduct a land contamination assessment for the Proposed Development Proposed Development at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T. Location of the subject site is shown in **Figure 1.1**.

According to the "Practice Guide for Investigation and Remediation of Contaminated Land" published by Environmental Protection Department (EPD) of the HKSAR, information including site history and other available information regarding the site shall be reviewed during the site appraisal to identify potential current and historical, on and off-site activities that could result in contamination of the site.

In view of this, we would like to request for the following information for our assessment.

1. Potentially contaminating activities that have occurred at the site such as storage and handling of chemicals, oils and/or hazardous waste, on-site waste disposal, burn pits, etc;
2. Accidents, fires, explosions, spillages and any pollution incidents attributed to the site and any remediation that has occurred at the site or neighbouring areas; and
3. Any land contamination assessment that has conducted at the site or neighbouring areas.

Your reply by 12 December 2025 is highly appreciated as it would be very helpful to our assessment. Should you have any queries, please do not hesitate to contact the undersigned at [REDACTED]

[REDACTED] or our Ms. Sally Chiu at [REDACTED]

Thank you very much for your attention.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



Tak Wong
Principal Consultant

Encl.
Figure 1.1 Location of Subject Site
Annex 2 Letter of Appointment

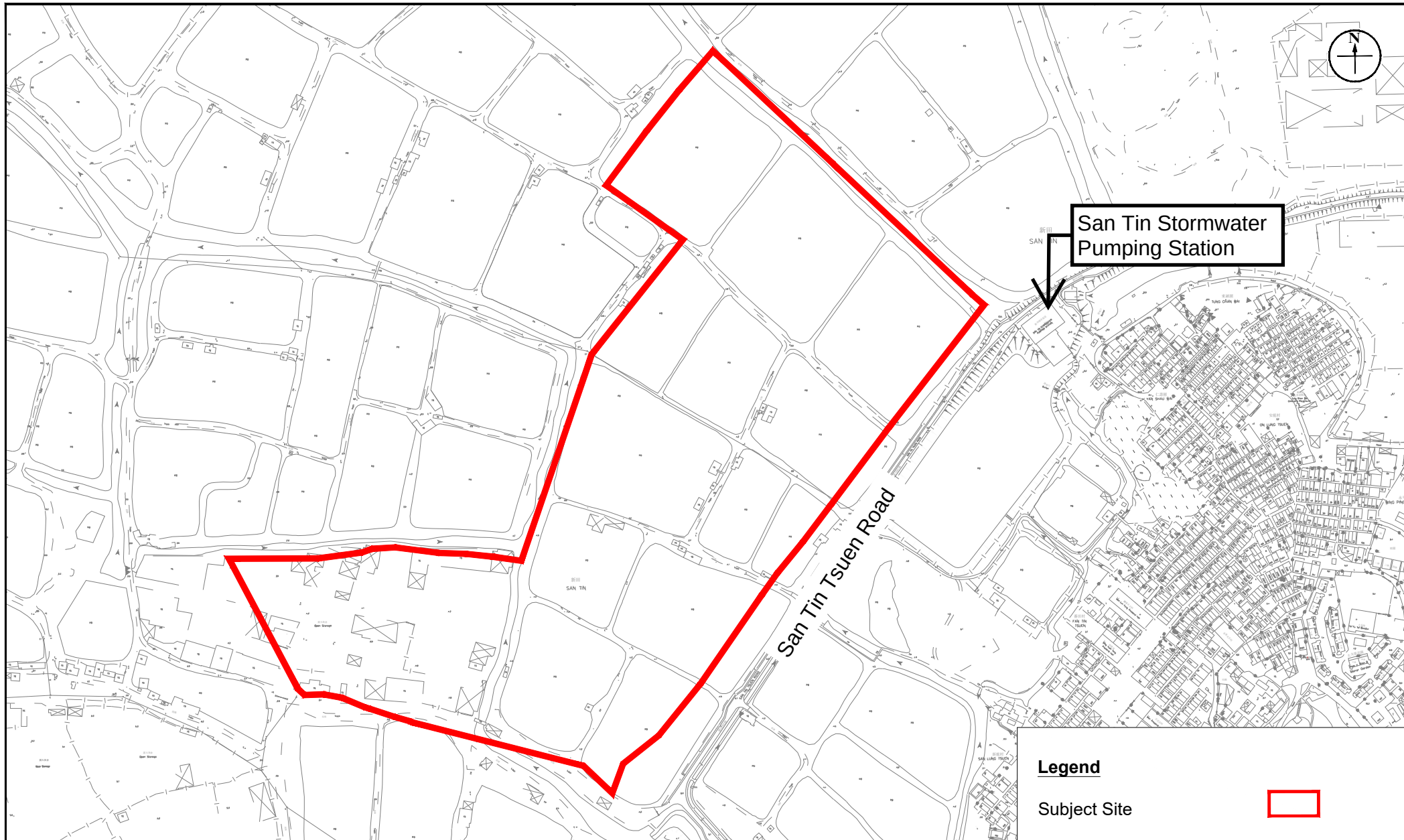


Figure: 1.1

Title: Site Location and its Environs

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Ref.: P6649.25_0_0001P.25_r1

11 September 2025

Kenwell Limited
c/o Lawson David & Sung Surveyors Ltd.
Room 1601, 16/F., South China Building
1 Wyndham Street
Central, Hong Kong

By Email

Dear Sir/Madam,

Re: Environmental Consultancy Services for S16 Planning Application (No. A/STT/26) for Proposed Filling of Ponds for Permitted Innovation and Technology Hub (including Permitted Cargo Handling and Forwarding Facilities, Creative Industries, Eating Place, Flat (Staff Quarters only), Industrial Use, Information Technology and Telecommunications Industries, Office, Public Utility Installation, Research, Design and Development Centre, Shop and Services, Warehouse (excluding Dangerous Goods Godown)) at Lot No. 764 RP (Part) in D.D.99, San Tin, Yuen Long, N.T.

Thank you for inviting us to submit a fee proposal for the captioned and we are pleased to submit herewith a proposal for your kind consideration.

■ **Technical Approach and Scope of Work**

Ramboll Hong Kong Limited will provide environmental consultancy services to ascertain the environmental acceptability of the proposed development for ONE approval only.

1. Environmental Assessment

Review of Land Contamination, Arsenic and Sediment

- Provide a clear and detailed account of the present land uses and the relevant past land use history with land contamination implications based on a desktop review and on-site appraisal;
- To retrieve existing site records kept by various Government departments to determine the potential extent of contamination for the site due to previous operations; and
- Identify any “hot spots” of potential land contamination.
- Identify any “hot spots” of potential Arsenic and sediment impact.
- Submissions for the detailed Land Contamination Assessment (e.g. Contamination Assessment Plan, Contamination Assessment Report and Remediation Action Plan), Arsenic and Sediment related assessments, any site investigation work, site supervision and laboratory testing works, and the appointment of the site investigation/decontamination contractor and laboratory are excluded.

Thank you for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,
For and on behalf of
Ramboll Hong Kong Limited



David Yeung
Managing Director

Accepted by :

Signed :

Name :

Company :

Date :

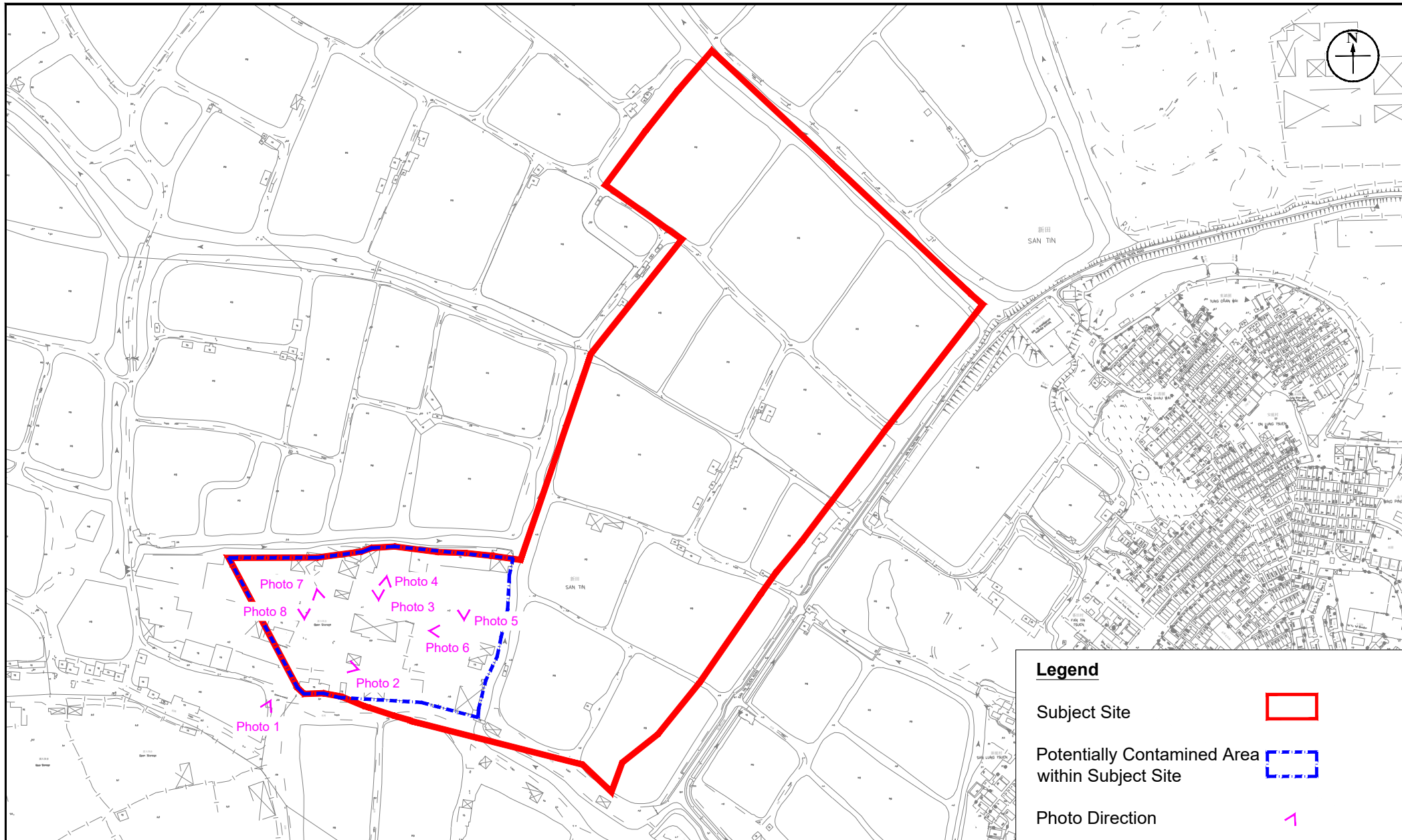


_____ M. J. B.

_____ 13 Sept. 2025

Q:\Proposal\2025\P6649.25_Lawson David_San Tin_S16\P6649.25_0_0001P.25_r1.docx

Appendix 7.4 Photo record for Site Inspection



Legend

Subject Site



Potentially Contaminated Area
within Subject Site



Photo Direction



Appendix: 7.4

Title: Photo Record for Site Inspection

Project: S16 Application for Proposed Filling of Ponds at Lot 764 RP (Part) in D.D. 99, San Tin, Yuen Long, N.T.

RAMBOLL

Drawn by: SC

Checked by: TW

Rev.: 1.0

Date: Dec 2025



Photo 1: It is the entrance of the open storage. The road is paved with concrete in good condition. No crack and oil stains are observed.



Photo 2: There is a canteen for the staff. The ground is paved with concrete. No crack and oil stains are observed.



Photo 3: Storage containers are observed. The ground is paved with concrete in good condition. No crack and oil stains are observed.



Photo 4: Long trucks are observed for transportation. The ground is paved with concrete in good condition. No crack and oil stains are observed.

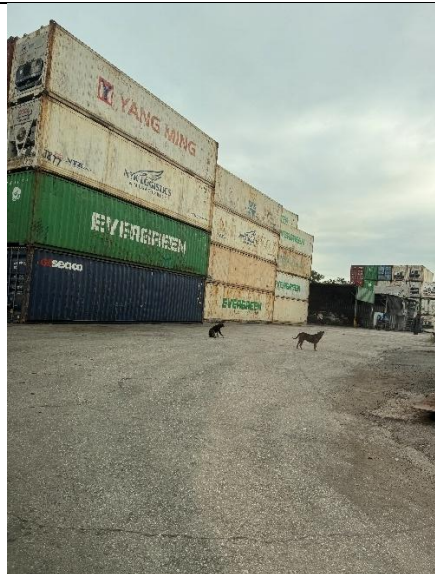


Photo 5: Storage containers are observed. The ground is paved with concrete in good condition. No crack and oil stains are observed.



Photo 6: Car repairing activities are observed. Oil drum is observed (circled in red). The ground is paved with concrete in good condition. No crack and oil stains are observed.

Appendix 7.4 Photo Record



Photo 7: The area is used for temporary car parking. No car repairing activities are observed. The ground is paved with concrete with some cracks observed.



Photo 8: The road is paved with concrete in good condition. No crack and oil stains are observed.

Appendix 7.5 Site Walkover Checklist

Annex C1

Site Walkover Checklist

Date of Site Visit:

GENERAL SITE DETAILS

SITE OWNER/CLIENT Kenwell Limited

PROPERTY ADDRESS [REDACTED]

[REDACTED]

PERSON CONDUCTING THE QUESTIONNAIRE

NAME _____

POSITION _____

AUTHORIZED OWNER/CLIENT REPRESENTATIVE (IF APPLICABLE)

NAME _____

POSITION _____

TELEPHONE _____

SITE ACTIVITIES

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

Number of employees: Full-time: No Information can be provided

Part-time: No Information can be provided

Temporary/Seasonal: No Information can be provided

Maximum no. of people on site at any time: No Information can be provided

Typical hours of operation: No Information can be provided

Number of shifts: No Information can be provided

Days per week: No Information can be provided

Weeks per year: No Information can be provided

Scheduled plant shut-down: No Information can be provided

Detail the main sources of energy at the site: [PLEASE Advise]

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

SITE DESCRIPTION

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

What is the total site area: ~163,100 m²

What area of the site is covered by buildings (%): 0

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

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

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

If yes, identify those parties: /

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

North: Fishpond

South: Fishpond

East: Fishpond

West: Mainly fishpond with some industrial activities

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

It is mainly flat terrain

State the size and location of the nearest residential communities.

Yan Shau Wai Village Houses (~110m from the east of Subject Site)

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

No

Questionnaire with Existing Site Owner

		Yes/No	Notes
1.	What are the main activities/operations at the above address?		Fishpond, Temporary Storage
2.	How long have you been occupying the site?		Information not available
3.	Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy?)	No	
4.	Prior to your occupancy, who occupied the site?		Information not available
5.	What were the main activities/operations during their occupancy?		Information not available
6.	Have there been any major changes in operations carried out at the site in the last 10 years?	No	
7.	Have any polluting activities been carried out in the vicinity of the site in the past?		Information not available
8.	To the best of your knowledge, has the site ever been used as a petrol filling station/car service garage?		Information not available
9.	Are there any boreholes/wells or natural springs either on the site or in the surrounding area?	No	
10.	Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	
11.	Are any chemicals used in your daily operations? (If yes, please provide details.)	No	
	• Where do you store these chemicals?		
12.	Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	
13.	Has the facility produced a 1separate hazardous substance inventory?	No	
14.	Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details.)		Information not available
15.	How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?		Information not available
16.	Do you have any underground storage tanks? (If yes, please provide details.)	No	
	▪ How many underground storage tanks do you have on site?		
	▪ What are the tanks constructed of?		
	▪ What are the contents of these tanks?		
	▪ Are the pipelines above or below ground?		

	▪ If the pipelines are below ground, has any leak and integrity testing been performed?		
	▪ Have there been any spills associated with these tanks?		
17.	Are there any disused underground storage tanks?	No	
18.	Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	No	
19.	How are the wastes disposed of?		Information not available
20.	Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)		Information not available
21.	Have any spills occurred on site? (If yes, please provide details.)		Information not available
	• When did the spill occur?		
	• What were the substances spilled?		
	• What was the quantity of material spilled?		
	• Did you notify the relevant departments of the spill?		
	• What were the actions taken to clean up the spill?		
	• What were the areas affected?		
22.	Do you have any records of major renovation of your site or rearrangement of underground utilities, pipe work/underground tanks (If yes, please provide details.)		Information not available
23.	Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?		Not applicable
24.	Are there any known contaminations on site? (If yes, please provide details.)	No	
25.	Has the site ever been remediated? (If yes, please provide details.)		Information not available

Observations

		Yes/No	Notes
1.	Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	
2.	What are the conditions of the bund walls and floors?		The floor is mainly paved with concrete in good condition.
3.	Are any surface water drains located near to drum storage and unloading areas?	No	
4.	Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	
5.	Is there a storage site for the wastes?	No	
6.	Is there an on-site landfill?	No	
7.	Were any stressed vegetation noted on site during the site reconnaissance? (If yes, please indicate location and approximate size.)	No	
8.	Were any stained surfaces noted on-site during the site reconnaissance? (If yes, please provide details.)	No	
9.	Are there any potential off-site sources of contamination?	No	
10.	Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	
11.	Are there any sumps, effluent pits, interceptors or lagoons on site?	No	
12.	Any noticeable odours during site walkover?	No	
13.	Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ash, oily tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Oil drum is observed near the car repairing activity.