Appendix B

Environmental Appraisal

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Environmental Appraisal

For

Section 16 Application

For

Proposed Temporary Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop

For a Period of 3 Years

and Associated Filling of Land and Pond

at the Remaining Portion (RP) of 342 (part) and RP of 343

in Demarcation District (D.D.) 87,

North New Territories, Hong Kong

Proposed byf **Prudential Surveyors International Limited**

Revision: **-**

Date: December 2023

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1. Introduction

1.1 Background

1.1.1 The purpose of this Environmental Appraisal (EA) is to furnish members of the TPB with details of the development proposal in support of this S16 Application and other necessary information to facilitate consideration of the Proposed Development.

1.2 The Site and its Surroundings

1.2.1 The Site, with an area of about 3,060 sq.m, is located to the North of Kong Nga Po Road and to the Southeast of San Uk Ling Holding Centre, North New Territories, Hong Kong **[Figure 1.1]**. Currently, the Site has remained fallowed from agriculture productivity and an abandoned fish pond for many years. There are no intention by the landowners to use the land for agricultural use at this time.

1.2.2 The Site is surrounded by existing natural features such as woodlands, as well as, existing man-made features such as warehouses, temporary structures, pigsties/farms, and roads. The details of the current context and the planned context of the surrounding are as follows: **[Figure 1.2]**:

Current Context

- to the north of the Site are some warehouses;
- to the further north are natural features composing of mainly woodlands;
- to the east of the Site is a road (unnamed) and some temporary structures and warehouses;
- to the south of the Site is a pigsty/farm and Kong Nga Po Road,
- to the further south are some pigsties and woodlands; and

Planned Context

- to the west of the Site is the Planned Police Facilities.

1.2.3 The Site is accessible via Kong Nga Po Road.

1.3 Proposed Development

1.3.1 The following table summarises the major development parameters for this Proposed Development: -

Major Development Parameters	**Proposed Development**
Site area	About 3,060 sq.m *Covered Area: about 581 sq.m (approx. 19%)* *Uncovered Area: about 2,479 sq.m (approx. 81%)*
Site Coverage	About 19%
Applied Use	Temporary Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop for a period of 3 Years and Associated Filling of Land and Pond

Major Development Parameters	Proposed Development
Nos. of Temporary Structures	1 nos. structure for Freight Working Area *(H: not exceeding 7m, L: not exceeding 20m, W: not exceeding 13m)* 1 nos. of Site Office *(H: not exceeding 3m, L: not exceeding 7m, W: not exceeding 3m)* 1 nos. of Vehicle Repair Workshop *(H: not exceeding 7m, L: not exceeding 25m, W: not exceeding 20m)*
Fences	1.8m high fences will be established around the Site
Tree Planting	*Cinnamomum burmannii* and *Scheera heptaphylla* will be planted along the Site boundary within the Site at the spacing of about 3m to 4m
Parking Provision[1]	1 nos. Accessible Parking/Private Parking *(L: 5m, W: 3.5m)* 1 nos. Heavy Goods Vehicle Parking also able to be used for loading/unloading *(L: 11m, W: 3.5m)*

Table 1.1 - Proposed Development Parameters

2. Purpose and Scope of Study

2.1.1 An Environmental Appraisal (EA) has been prepared to identify and evaluate the potential environmental impacts arising from and upon the Proposed Development during the construction and operation phases of the Project. Suitable and practicable environmental mitigation measures and good site practices have been proposed where necessary, in order to minimise the potential environmental impacts induced.

2.1.2 This EA covers the following aspects:

- identify the potential environmental issues associated with construction and operation of the Project;
- review and evaluate the potential construction and operational impacts due to the Project upon the nearby sensitive uses; and compare against relevant statutory guidelines and criteria; and
- propose mitigation measures, where necessary, to reduce the environmental impacts.

2.1.3 This EA presents the study of the potential environmental impacts of the following aspects:

- Air Quality
- Noise
- Water Quality
- Waste Management Implications
- Land Contamination

[1] Referenced to Hong Kong Planning and Standards Guidelines Chapter 8.

3. Air Quality

3.1 Introduction

3.1.1 This section addresses the potential air quality impacts associated with the construction and operation of the Project. The potential air quality impacts associated with the proposed construction works, chimney emission and vehicular emission are identified and evaluated.

3.2 Relevant Legislation, Standards and Guidelines

3.2.1 The air quality impact assessment criteria have made reference to the Air Pollution Control Ordinance (APCO) (Cap. 311) and the Hong Kong Planning Standards and Guidelines (HKPSG).

3.2.2 The APCO provides a statutory framework for establishing the Air Quality Objectives (AQO) and stipulating the anti-pollution requirements for air pollution sources. The AQOs have been defined for seven pollutants and are presented in Table 2.1.

Pollutant	**Averaging time**	**Concentration limit [i] ug/m^2**	**No. of exceedances allowed**
Sulphur dioxide	10-minute	500	3
	24-hour	50	3
Respirable suspended particulates (PM10) [ii]	24-hour	100	9
	Annual	50	Not applicable
Fine suspended particulates (PM2.5) [iii]	24-hour	50	35
	Annual	25	Not applicable
Nitrogen dioxide	1-hour	200	18
	Annual	40	Not applicable
Ozone	8-hour	160	9
Carbon monoxide	1-hour	30,000	0
	8-hour	10,000	0
Lead	Annual	0.5	Not applicable

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

Table 2.1- Hong Kong Air Quality Objectives

3.2.3 Table 3.1 in Chapter 9 of HKPSG stipulates the required buffer distance between the Air Sensitive Receivers ASRs and the surrounding roads. Applicable buffer distance requirements are summarised in Table 2.2 below.

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

Table 2.2 – Required Buffer Distance between the Surrounding Roads and Air Sensitive Receivers

3.2.4 In Section 3.1.4 in Chapter 8 of HKPSG, the rural area road classification is extracted as below:

In rural areas roads may be classified as:

(a) trunk roads: for longer-distance traffic movements between main centres of population and activities;
(b) rural roads A: for the movement of traffic from the smaller centres of population or popular recreation areas to the major road network;
(c) rural roads B: for traffic from villages to rural roads A;
(d) feeder roads: for traffic from more remote settlements to rural roads B; and
(e) single track access roads: for traffic from isolated developments to rural roads B

3.2.5 In Table 4 in Chapter 8 of the HKPSG stipulates the minimum carriageway widths in Rural Area. The table is extract in Table 2.3.

Road Type	Single Carriageway	Dual Carriageway
Expressway and Trunk Road	-	7.3 m (2-lane)
		11.0 m (3-lane)
		14.6 m (4-lane)
Rural Road A	7.3 m (2-lane)	7.3 m (2-lane)
	10.3 m (2-lane)*	-
Rural Road B	6.75 m (2-lane)	7.3 m (2-lane)
	10.3 m (2-lane)*	-
Feeder Road	6.0 m (2-lane)	-
Single Track Access Road	3.5 m (1-lane)	-
	Widened to 6 m at passing bays	
	6.0m (2-lane)	-

* When the peak hour traffic volume (2-way) exceeds 1 600 vehicles but is less than 2 400 vehicles, a wider 2-lane single carriageway should be used. The use of a 3-lane single carriageway is not recommended for safety reasons.

Table 2.3 – Minimum Carriageway Widths in Rural Areas

3.2.6 Kong Nga Po Road is located to the south and an unnamed road (the unnamed road) to the east of the site. The roads measured on plan have a width of 9.9m and 3.5m respectively. Based on the above, Kong Nga Road is classified as Rural Road B and the unnamed road is considered a single track access road.

3.2.7 Given the above, there are no local distributor roads in the vicinity therefore these is no prescribe required buffer distance.

3.3 Representative Air Sensitive Receivers

3.3.1 Representative existing ASRs located within 300 m of study area from the Site have been identified and details are provided in Table 2.4, and their locations are shown in locations are shown in **Figure 2.1**.

ASR	Uses	Location	Horizontal Separation from ASR to the Site Boundary (m)
ASR 1	Office	Site Office	0
ASR 2	Training Facility	Police Facilities in Kong Nga Po	50

Table 2.4 – Representative Air Sensitive Receivers

3.4 Construction Air Quality Impact

3.4.1 The potential sources of air quality impact associated with the proposed construction activities have been identified and these include:

- Superstructure works;
- Material storage and handling; and
- Operation of on-site vehicle and diesel-powered plants.

3.4.2 With consideration of the nature and scale of the Project, demolition and substructure works will be localised and confined to within the Site. With the implementation of the dust suppression measures stipulated in the "Air Pollution Control (Construction Dust) Regulation and Good Site Practices", adverse fugitive dust impacts during the construction phase are not expected to occur.

Recommendation of Mitigation Measures

3.4.3 The Contractor shall implement dust control measures in accordance with the requirements of the Air Pollution Control (Construction Dust) Regulation. The requirement of the regulation has been summarised as follows:

- Water spraying on any dusty materials before loading and unloading; stockpile of dusty materials; area where demolition work is carried out; area where excavation or earth moving activities are carried out; and any unpaved main haul road;
- Provide hoarding of not less than 2.4m high from ground level along the site boundary which is next to a road or other public area;
- Provide effective dust screens, sheeting or netting to enclose any scaffolding built around the perimeter of a building;
- Cover or shelter any stockpile of dusty materials;

- Dispose of any dusty materials collected by fabric filters or other pollution control system in totally enclosed containers;
- Properly treat any exposed earth, such as by compacting or hydro seeding, within 6 months after the last construction activity;
- Provide vehicle washing facilities at all site exits to wash away any dusty materials from vehicle body and wheels before they leave the site; and
- Cover any dusty load on vehicles before they leave the site.

3.4.4 In addition to the dust control measures stipulated in the regulation, good site practices to minimise the dust generation to be implemented by the Contractor are listed as follows:

- Avoid storage of dusty materials, including stockpiles and bags of cement, within the Site as far as possible;
- Minimise the drop height during loading and unloading;
- Avoid the handling of dusty materials at open area;
- Limit the speed of vehicles within the construction Site to below 8km/h.

3.4.5 The standard pollution control measures in the EPD's guidelines on "Recommended Pollution Control Clauses for Construction Contracts" shall be incorporated into the Project construction contracts.

3.4.6 All relevant requirements stipulated in Air Pollution Control (Non-Road Mobile Machinery (NRMM)) (Emission) Regulation shall be strictly adhered to during construction phase in order to minimise emissions from NRMMs.

3.4.7 With the implementation of the above proposed mitigation measures, it is anticipated that the fugitive dust emission from the construction works of the Project would be readily minimised.

3.5 Operation Air Quality Impact

Vehicular Emission

3.5.1 Vehicular emission from Kong Nga Po Road would be minimal as it is only classified as a Rural Road B and not a distributor road. Given this, the posed potential air quality impact during construction and operational period would be minimal in nature.

3.5.2 As the proposed development will be provided with AC system, no adverse air quality impact upon the proposed development is anticipated.

Odour

3.5.3 There would be no any odour nuisance from the Project during operation phase.

Chimney Emission

3.5.4 **Chimney Emission from Surrounding Area:** A site survey was conducted on 25.10.2023 to identify that the surrounding area of the Site is mainly limited to educational institution, transportation, residential. Based on the observation during the site surveys, no chimney was found within the 200m study area from the site boundary of the proposed development.

3.5.5 As no chimney was identified. Adverse air quality impact arising from chimney emission upon the proposed development is not anticipated.

3.5.6 **Chimney Emission from proposed Development:** The proposed development is for a Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop. No chimney emission is generated from the Proposed Development during the operation stage. No adverse air quality impact arising from the proposed development is anticipated.

4. Noise

4.1 Introduction

4.1.1 This section addresses the potential noise impacts associated with the construction and operation phases of the Project. The potential noise impacts associated with the proposed construction works and operation of the development (e.g. fixed plant noise) are identified and evaluated.

4.1.2 The Proposed Development will consist of a small office in a container provided with central air conditioning and will not contain any noise sensitive uses that rely on openable windows for ventilation during operational phase, no adverse noise impact associated with surrounding noise sources on the development is anticipated.

4.2 Relevant Legislation, Standards and Guidelines

Relevant Legislation, Standards and Guidelines

4.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for noise control. Assessment procedures and standards relevant to the Project are set out in the Technical Memoranda (TM) and guidelines listed below:

- Chapter 9, Environment – Hong Kong Planning Standards and Guidelines (HKPSG);
- Practise Note for Professional Persons No. ProPECC PN No. 2/93 'Noise from Construction Activities – Non-Statutory Controls";
- Practice Note for Professional Persons No. ProPECC PN No. 4/93 "Planning and Designing Noise Sensitive Developments";
    - Noise Control Ordinance (NCO) (Cap. 400);
    - Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM);
    - Technical Memorandum on Noise from Percussive Piling" (PP-TM); and
- Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM).

Construction Noise – General Construction Works

4.2.2 For the construction phase, general construction work by using Powered Mechanical Equipment (PME) between 0700 and 1900 hours on any day not being a Sunday or general holiday (i.e. non-restricted hours) is not controlled under the Noise Control Ordinance (NCO). However, the noise standards (as tabulated in Table 3.1) within non-restricted hours as stipulated in the "Practice Note PN 2/93 Noise from Construction Activities – Non-Statutory" issued by the EPD should be followed as far as practicable.

Receiver	**Noise Standard, $L_{eq(30\text{-}min)}$, dB(A)**
Dwelling	75
School	70 (65 during examinations)

Table 3.1 – Noise Standards for Daytime Construction Activities

Fixed Plant Noise

4.2.3 According to the HKPSG, noise assessment for fixed plant noise sources would normally be conducted in accordance with the IND-TM published under the NCO. IND-TM lays down statutory Acceptable Noise Levels (ANLs). The HKPSG also states that in order to plan for a better environment, all planned fixed noise sources should be located and designed that when assessed in accordance with IND-TM, the level of the intruding noise at the façade of the nearest existing sensitive use should be at least 5 dB(A) below the appropriate ANL shown in Table 2 of IND-TM or, in the case of the background being 5 dB(A) lower than the ANL, should not be higher than the background. The ANLs in IND-TM are provided in Table 3.2.

Time Period	**Acceptable Noise Level, $L_{eq(30\text{-}min)}$, dB(A)**		
	ASR "A"	ASR "B"	ASR "C"
Daytime (07:00 – 19:00)	60	65	70
Evening (19:00 – 23:00)	60	65	70
Night-time (23:00 – 07:00)	50	55	60

Table 3.2 – Acceptable Noise Levels in IND-TM Noise

4.2.4 The ASR and ANLs adopted in this EA report are used for assessment purpose only, they should not bind the Noise Control Authority's decision in determining the noise criteria based on the legislation and practices being in force, and contemporary conditions/ situations of adjoining land uses

4.3 Representative Noise Sensitive Receivers

4.3.1 Representative existing NSRs located within 300 m noise study area from the Site have been identified and details are provided in Table 3.3, and their locations are shown in locations are shown in **Figure 3.1**.

NSR	**Uses**	**Location**	**ASR(1)(2)**
NSR 1	Office (7mX3m= 21 sq.m)	Site Office	B
NSR 2	Training Facility (about 50m to the west of the Site	Police Facilities in Kong Nga Po	B

Note: (1) ASR = Area Sensitivity Rating

(2) NSR1 and NSR2 considered to be located in an area other than country parks, village type developments, low density residential area, urban area, etc and not affected by an IF (Man Kam To Road) and thus, an ASR of "B" has been assigned.

Table 3.3 – Representative Noise Sensitive Receivers

4.3.2 With reference to IND-TM, there is no industrial zone located near the Site. Man Kam To Road is located more than 1 kilometre west of the Site (horizontal distance) is not considered to be an Influencing Factor (IF).

4.4 Discussion of Operation Noise

4.4.1 The NSR 1 is the proposed site office of the operation and would be in an enclosed indoor space with an area of about 21 sq.m. with non-openable windows and served with an air conditioner. The office with the proper migration measure such enclosing the office space and providing non-openable windows and served air conditioner.

4.4.2 The NSR 2 is training centre located greater than 50m west of the Site. Given the nature of the facility and also the distance separation, no adverse traffic noise impact is anticipated.

4.5 Construction Noise Impact

General

4.5.1 There is no statutory control of daytime (07:00 – 19:00) construction noise and general construction work (except percussive piling) on normal weekdays. Any maintenance work in connection with the proposed construction work is also considered as construction work under the NCO and should also be conducted within this time period.

4.5.2 Noise impact arising from general construction activities conducted during restricted hours (19:00-07:00 on any day and any time on Sunday or general holiday) are governed by the NCO. A Construction Noise Permit (CNP) should be applied if there are any construction activities during restricted hours and percussive piling at any time.

4.5.3 The operation for the carrying out of percussive piling may be restricted to 12, 5 or 3 hours per day in any day not being a general holiday, depending on the numbers and types of piling machines and nature of the noise sensitive uses. The actual piling time and duration should be subject to the conditions/ requirements as specified in the CNP issued by EPD.

Identification of Sources of Noise Impact

4.5.4 The potential sources of noise impact are mainly associated with the use of Powered Mechanical Equipment (PME) for the construction activities.

Assessment Methodology – Construction Plant Inventory

4.5.5 During construction phase of the Proposed Development, it is anticipated that general construction works with the use of PME will be the primary noise source from the Site.

4.5.6 The key noise generating construction activities include the following:

- Stage 1: Foundation & Site formation
- Stage 2: Construction of Superstructure

4.5.7 For assessing the potential construction noise impact, the construction plant inventory has been estimated based on other projects.

4.5.8 The construction plant inventory adopted for general construction works for the assessment is presented in Table 3.4.

4.5.9 The assessment of general construction works is based on the methodology as described in the "Technical Memorandum on Noise from Construction Work other than Percussive Piling" (GW-TM) issued under the NCO. This involves the following steps:

Step 1: Assign Sound Power Level (SWL) for each PME to be used;
Step 2: Calculate the total SWL based on the given equipment inventory;
Step 3: Determine the distance attenuation based on the physical separation distance between the source position and the NSR;
Step 4: Determine the barrier correction factor for the proposed barrier or existing topography;
Step 5: Determine the façade reflection correction;
Step 6: Calculate the noise level at each NSR by applying correction factors (from Steps 3 to 5) to the total SWL obtained in Step 2; and
Step 7: Compare against the noise standards as summarised in Table 3.1

Equipment	ID	SWL, dB(A)	Quantity
Stage 1 – Foundation Works			
Generator, standard	CNP 101	108	1
Air compressor	CNP 002	102	2
Backhoe Excavator	CNP 081	112	1
Bar Bender	CNP 021	90	1
Mobile Crane	CNP 048	112	2
Concrete Lorry Mixer	CNP 044	109	1
Vibratory Poker	CNP 170	113	4
Concrete Pump	CNP 047	109	1
Water Pump (Electric)	CNP 281	88	2
Drilling Bit	CNP 166	100	1
Stage 2 – Construction of Superstructure			
Generator, standard	CNP 101	108	1
Mobile Crane	CNP 048	112	1
Concrete Lorry Mixer	CNP 044	109	1
Vibratory Poker	CNP 170	113	4
Bar Bender	CNP 021	90	1
Concrete Pump	CNP 047	109	1

Note: (1) SWL quoted from "Sound Power Levels of Other Commonly Used PME" published by EPD.

Table 3.4 – List of Powered Mechanical Equipment (PME)

4.5.10 **Source Location**: As the Site has a length to width ratio not exceeding 5:1, all PME for general construction works are assumed to be grouped at a single notional source at a position mid-way between the approximate geographical centre of the construction site and its boundary nearest to the NSR. This position is referred to as the notional source position according to the GW-TM.

4.5.11 **Barrier Correction**: If the Predicted Noise Levels (PNLs) potentially exceeds the assessment criteria, noise mitigation measures could be proposed to reduce the construction noise impacts.

4.5.12 Boundary structure and/ or the temporary mobile noise barriers could be considered. Assuming that the PME on-site is totally screened by boundary structure and movable noise barriers such that none will be visible when viewed from any window, door or other opening in any façade of the NSR, a negative correction of 10 dB(A) could be applied.

4.5.13 It is assumed that erection of noise barrier is required which can achieve 10 dB(A) noise reduction for stationary sources (e.g. concrete pump) to minimise the construction noise impact on NSRs.

4.5.14 **Percentage on time correction**: When calculating the PNL, it is assumed that there will be a 100% utilisation rate for all PME.

4.5.15 **Acoustic Reflection Correction**: A positive correction of 3 dB(A) is applied to the PNL due to façade reflection.

4.5.16 **Calculation of Corrected Noise Level (CNL)**: The corrected noise level at the NSR is calculated based on the following equation:

CNL = Total Sound Power Level – Distance correction – Percentage on time correction – Barrier Correction + Acoustic reflection correction

4.6 Discussion of Construction Noise

4.6.1 The NSR 1 is the proposed site office. It would not be in operation at the time of construction and therefore would not be accessed.

4.6.2 The NSR 2 is the training centre is anticipated to be completed by 2026/2027 according to Architectural Services Department's website and therefore would not be affected by the Site construction noise.

Noise Mitigation Measures

4.6.3 Given that there are no NSR, as good site practice, noise mitigation measures should be practiced. With reference to the "Practice Note for Professional Persons ProPECC 2/93 Noise from Construction Activities – Non-statutory Controls", recommended noise mitigation measures include the use of quality powered mechanical equipment (QPME), implementation of temporary noise barriers, avoidance of concurrent construction activities within an active construction site, implementation of good site practices, and siting of facilities and application of the acoustic screen.

4.6.4 Use of QPME is considered as a practical measure to reduce the predicted noise impacts. QPME are defined as having SWLs less than those listed in the GW-TM, and the quiet PME adopted in the assessment are presented in Table 3.5.

Equipment	ID	SWL, dB(A)	Quantity
Stage 1 – Foundation Works			
Generator, standard	EPD-11890	90	1
Air compressor	EPD-12497	94	2
Backhoe Excavator	EPD-11788	98	1
Bar Bender	CNP 021	90	1
Mobile Crane	EPD-10642	107	2
Concrete Lorry Mixer	CNP 044	109	1
Vibratory Poker	EPD-09714	94	4
Concrete Pump	CNP 047	109	1
Water Pump (Electric)	CNP 281	88	2
Drilling Bit	CNP 166	100	1

Equipment	ID	SWL, dB(A)	Quantity
Stage 2 – Construction of Superstructure			
Generator, standard	EPD-11890	90	1
Mobile Crane	EPD-10642	107	1
Concrete Lorry Mixer	CNP 044	109	1
Vibratory Poker	EPD-09714	94	4
Bar Bender	CNP 021	90	1
Concrete Pump	CNP 047	109	1

Note:
(1) SWL quoted from "Sound Power Levels of Other Commonly Used PME" published by EPD.
(2) PME with ID Code "EPD-0XXXX" are quiet equipment with SWLs extracted from the EPD QMPE inventory

Table 3.5 – List of Proposed QPME

4.6.5 It should be noted that the Contractor has the flexibility to select appropriate QPME models on the condition that the SWLs of the selected QPME are less than or equal to the SWLs shown in Table 3.5.

4.6.6 **Erection of Temporary/ Noise Barriers**: The erection of temporary noise barriers provides noise attenuation by screening NSRs from stationary and mobile plants from direct line-of-sight in shadow zone. The superficial material surface density shall be at least 10 kgm-2. With this temporary noise barrier configuration, a noise reduction of 10 dB(A) and 5 dB(A) can be achieved for stationary and mobile PME, respectively.

4.6.7 **Implementation of Good Site Practices**: Good site practices can reduce the noise impacts on affected NSRs, although the effectiveness of these practices can vary depending on actual site conditions, and hence it is difficult to quantify effectiveness. The recommended practices are as follows:

- PME should be kept to a minimum and the parallel use of them should be avoided;
- Intermittent use of PME which can be shut down between work periods or throttled down to a minimum;
- Mobile PME should be sited as far from NSRs as possible;
- PME known to emit noise strongly in one direction should be orientated to direct away from the nearby NSRs; and
- Only well-maintained plant should be operated on-site and PME should be serviced regularly during the construction programme.

4.6.8 With the implementation of QPME (as proposed in Table 3.5), use of temporary noise barriers and avoidance of concurrent utilisation of PME, the site and the surrounding would face lower construction noise levels.

Quieter Construction Methods

4.6.9 The feasibility of adopting other quieter construction method such as non-explosive chemical expansion agent, silent piling by press-in method, bursting system, listed in the EPD website will also be considered.

4.6.10 To ensure the above mitigation measures will be implemented properly, the contractor shall prepare a Continuous Noise Monitoring Plan (CNMP). Furthermore, the construction contract shall also include "Recommended Pollution Control Clause for Construction Contracts" issued by EPD and specify the construction method and quiet construction equipment that will be used during construction.

4.7 Operation Noise Impact

Fixed Noise Source

4.7.1 This section aims to assess the noise impact from planned fixed noise sources on representative NSRs during the operation phase. All the planned fixed noise source shall strictly comply with the HKPSG's noise criteria.

4.7.2 The Air Condition will be located within the office will be fully enclosed by the structure. Potential breakout noise impact upon the surrounding NSRs is expected to be minimal. Furthermore, proposed development would not be operating during late evenings and night time period, no adverse noise impact is expected.

Traffic Road Noise

4.7.3 The traffic flow at Man Kam To Road is expected to be similar to the current conditions. Given that that road is more than 1 km to the west of the site (horizontal distance), the noise impact during the operational of the Proposed Development would be minimal.

5. Water Quality

5.1 Introduction

5.1.1 This section addresses the potential water quality impacts associated with the construction and operation phase of the Project. Mitigation measures have been proposed if considered necessary to minimise the identified water quality impacts.

5.2 Relevant Legislation, Standards and Guidelines

5.2.1 The relevant legislations, standards and guidelines for the review of water quality impact includes the following:

- Water Pollution Control Ordinance (WPCO) (Cap. 355);
- Technical Memorandum for Effluents Discharged into Drainage and Sewerage System Inland and Coastal Waters (TM-DSS);
- Professional Persons Environmental Consultative Committee Practice Note (ProPECC) PN 1/94 "Construction Site Drainage"; and
- Professional Persons Environmental Consultative Committee Practice Note on Drainage Plans (ProPECC PN 5/93).
- Environment, Transport and Works Bureau Technical Circular (Works) ETWB TC (Works) No.5/2005, Protection of Natural Streams/rivers from Adverse Impacts Arising from Construction Works.

5.2.2 According to "Marine Water Quality of Hong Kong 2022" published by EPD, the proposed development is located in the inland area of the Western Buffer Water Control Zone (WCZ). The water quality objectives for Western Buffer WCZ are summarised in Table 4.1.

Parameters	Water Quality Objectives	Part or parts of Zone
Aesthetic Appearance	a) There should be no objectionable odours or discolouration of the water	Whole Zone
	b) Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substance should be absent	Whole Zone
	c) Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam.	Whole Zone
	d) There should be no recognisable sewage-derived debris.	Whole Zone
	e) Floating, submerged and semi-submerged objects of a size likely to interfere with the free movement of vessels, or cause damage to vessels, should be absent	Whole Zone
	f) The water should not contain substances which settle to form objectionable deposits.	Whole Zone

Parameters	Water Quality Objectives	Part or parts of Zone
Bacteria	a) The level of Escherichia coli should not exceed 610 per 100 mL, calculated as the geometric mean of all samples collected in one calendar year.	Secondary Contact Recreation Subzone and Fish Culture Subzones
	b) The level of Escherichia coli should not exceed 180 per 100 mL, calculated as the geometric mean of all samples collected from March to October inclusive in 1 calendar year. Samples should be taken at least 3 times in 1 calendar month at intervals of between 3 and 14 days.	Recreation Subzones
	c) The level of Escherichia coli should be less than 1 per 100 mL, calculated as the geometric mean of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Water Gathering Ground Subzones
	d) The level of Escherichia coli should not exceed 1 000 per 100 ml, calculated as the running median of the most recent 5 consecutive samples taken at intervals of between 7 and 21 days.	Other Inland waters
Colour	a) Human activity should not cause the colour of water to exceed 30 Hazen units.	Water Gathering Ground Subzones
	b) Human activity should not cause the colour of water to exceed 50 Hazen units.	Other inland waters
Dissolved Oxygen	a) The level of dissolved oxygen should not fall below 4 mg per litre for 90% of the sampling occasions during the whole year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	Marine waters excepting Fish Culture Subzones

Parameters	Water Quality Objectives	Part or parts of Zone
	b) The level of dissolved oxygen should not be less than 5 mg per litre for 90% of the sampling occasions during the year; values should be calculated as water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed). In addition, the concentration of dissolved oxygen should not be less than 2 mg per litre within 2 m of the seabed for 90% of the sampling occasions during the whole year.	Fish Culture Subzones
	c) The level of dissolved oxygen should not be less than 4 mg per litre.	Water Gathering Ground Subzones and other inland waters
pH	a) The pH of the water should be within the range of 6.5-8.5 units. In addition, waste discharges shall not cause the natural pH range to be extended by more than 0.2 units.	Marine waters
	b) Human activity should not cause the pH of the water to exceed the range of 6.5-8.5 units.	Water Gathering Ground Subzones
	c) Human activity should not cause the pH of the water to exceed the range of 6.0–9.0 units.	Other inland waters
Temperature	Human activity should not cause the natural daily temperature range to change by more than 2.0ºC.	Whole Zone
Salinity	Human activity should not cause the natural ambient salinity level to change by more than 10%.	Whole Zone
Suspended Solids	a) Human activity should neither cause the natural ambient level to be raised by more than 30% nor give rise to accumulation of suspended solids which may adversely affect aquatic communities.	Marine waters
	b) Human activity should not cause the annual median of suspended solids to exceed 20 mg per litre.	Water Gathering Ground Subzones
	c) Human activity should not cause the annual median of suspended solids to exceed 25 mg per litre.	Other inland waters

Parameters	Water Quality Objectives	Part or parts of Zone
Ammonia	The un-ionised ammoniacal nitrogen level should not be more than 0.021 mg per litre, calculated as the annual average (arithmetic mean).	Whole Zone
Nutrients	a) Nutrients shall not be present in quantities sufficient to cause excessive or nuisance growth of algae or other aquatic plants.	Marine waters
	b) Without limiting the generality of objective (a) above, the level of inorganic nitrogen should not exceed 0.4 mg per litre, expressed as annual water column average (arithmetic mean of at least 3 measurements at 1 m below surface, mid-depth and 1 m above seabed).	Marine waters
5-Day Biochemical Oxygen Demand	a) The 5-day biochemical oxygen demand should not exceed 3 mg per litre.	Water Gathering Ground Subzones
	b) The 5-day biochemical oxygen demand should not exceed 5 mg per litre.	Other inland waters
Chemical Oxygen Demand	a) The chemical oxygen demand should not exceed 15 mg per litre.	Water Gathering Ground Subzones
	b) The chemical oxygen demand should not exceed 30 mg per litre.	Other inland waters
Toxic Substances	a) Toxic substances in the water should not attain such levels as to produce significant toxic, carcinogenic, mutagenic or teratogenic effects in humans, fish or any other aquatic organisms, with due regard to biologically cumulative effects in food chains and to interactions of toxic substances with each other.	Whole Zone
	b) Human activity should not cause a risk to any beneficial use of the aquatic environment.	Whole Zone
Turbidity	Waste discharges should not reduce light transmission substantially from the normal level.	Bathing Beach Subzones

Source: Cap. 358AD Statement of Water Quality Objectives (Western Buffer Water Control Zone)

Table 4.1 – Summary of Water Quality Objectives for Wester Buffer WCZ

5.3 Identified Water Sensitive Receivers and Baseline Conditions

5.3.1 The Water Sensitive Receivers (WSR) located within 500 m of the study area from the Site have been identified. The locations of water sensitive receivers are presented in **Figure 4.1** and summarised in Table 4.2.

WSR	Description	Horizontal Distance (m)
WSR1	U-channel	415
WSR2	Pond	158
WSR3	Ping Yuen River	106
WSR4	Nullah	389

Table 4.2 – Identified Water Sensitive Receivers

5.3.2 The drainage would only include the surface runoff within the Site. The installation of sand traps and petrol interceptors in the stormwater drainage system can effectively reduce the potential impacts of these pollutants on downstream river water quality. Therefore, no adverse water quality impact would be anticipated to the surrounding WSRs.

5.4 Water Quality During Construction Stage

Construction Site and Drainage

5.4.1 The proposed Project is expected to only include land-based construction activities and will involve demolition, substructure (including excavation) and superstructure works. The key water quality issues associated with the construction activities include uncontrolled surface runoff generated from general cleaning, wheel washing and water spraying for dust suppression. These types of wastewater would contain high concentrations of suspended solids (SS). The effects on water quality from general construction activities are likely to be minimal, provided that site drainage would be well maintained and good construction site practices would be implemented in accordance with ProPECC PN 1/94 for proper management of construction site drainage.

5.4.2 During periods of heavy rain, site runoff would wash away soil particles and the runoff is generally characterised by high concentrations of SS. Release of uncontrolled construction site runoff would increase the SS level and turbidity in the nearby water environment. A discharge license will be obtained according to the WPCO requirements before any wastewater discharge from the site to storm drains or foul sewers. All site discharges will be pre-treated as necessary, in accordance with the WPCO, the conditions of the WPCO discharge license and the relevant standards listed in the TM-DSS.

5.4.3 It is also important that proper site practice and good site management are adhered to in accordance with ProPECC PN 1/94 to prevent runoff with high levels of SS from entering the surrounding waters. With the implementation of the appropriate measures to control runoff and drainage from the construction site (such as provision of silt traps), disturbance of water bodies would be avoided and deterioration in water quality is anticipated to be minimal.

5.4.4 Accidental spillage of chemicals may contaminate the surface soils. The contaminated soil particles may be washed away by construction site runoff. Mitigation measures shall be properly implemented to minimise and control accidental spillage (such as provision of petrol interceptors).

5.4.5 Sewage Effluent will be generated by the on-site construction workforce at the Proposed Development and this has the potential to cause water pollution if uncontrolled. Sewage is characterised by high levels of biochemical oxygen demand (BOD), ammonia and E.coli counts. Chemical toilet(s) will be provided for workers during construction stage. All chemical toilets shall be regularly cleaned and the sewage collected and transported off site for disposal.

5.4.6 Appropriate water pollution control measures shall be implemented on-site during construction phase in order to minimise the impacts which shall include but not limited to the following:

- High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor;
- Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions. Exposed soil surfaces should be protected from rainfall through covering temporarily exposed slope surfaces or stockpiles with tarpaulin or the like; Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of rainstorm.
- Stockpiles of construction materials on sites should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.
- Temporary ditches, earth bunds will be created/ provided where necessary to facilitate directed and controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps, silt traps and sediment retention basin; Perimeter channels at the site boundaries should be provided where necessary to intercept storm run-off from outside the site so that it will not wash across the Site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.
- Sand and silt removal facilities, channels and manholes will be regularly maintained and the deposited silt and grit should be removed by the contractor, and at the onset of and after each rainstorm to ensure that these facilities area functioning properly;
- 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 should be discharged into storm drains after the removal of silt in silt removal facilities.
- 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 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.
- 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

- Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system;
- Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area;
- Section of the 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; and
- All chemical toilets, if any, should be regularly cleaned and the sewage collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal.
- Regarding management of chemicals such as oils and solvents involved with Project construction, the following measures shall apply:
- Plant workshop/ maintenance areas should be bunded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations;
- Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas; and
- Chemical waste arising from the site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation.

5.4.7 The above water pollution control measures will be properly implemented during the construction stage, the effluent discharge shall be in compliance with the discharge license requirements, and the Technical Memorandum (TM) under WPCO. No adverse water quality impacts are anticipated during the construction phase of the Proposed Development.

5.5 Water Quality During Operation Stage

5.5.1 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. 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.

5.5.2 During operation phase, all stormwater/rainwater from the site will be conveyed to the stormwater drain. Domestic sewage including toilet flushing would be the major wastewater discharge arising from the Project. All sewage will be properly collected and poured to the portable toilets. With a properly designed sewerage and drainage system, no insurmountable water quality impacts would be generated from the operation of the Project.

5.5.3 A Sewerage and Drainage Impact Appraisal has been separately conducted and that demonstrates the handling of stormwater and sewage and has been included in this planning application.

6. Waste Management Implications

6.1 Introduction

6.1.1 This section identifies the types of wastes that are likely to be generated during the construction and operation phases of the Project and evaluates the associated waste management implication that may result from these waste types.

6.2 Relevant Legislation, Standards and Guidelines

6.2.1 The relevant legislation and associated guidelines applicable to this PER for the review of waste management implications include:

- Waste Disposal Ordinance (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C);
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N);
- Land (Miscellaneous Provisions) Ordinance (Cap. 28);
- Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation;

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

- Environment, Transport and Works Bureau Technical Circular (Works) (ETWB TCW) No. 19/2005, Environmental Management on Construction Sites;
- DEVB TCW No. 6/2010 Trip-ticket System for Disposal of Construction and Demolition Materials;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste (Cap. 354 Section 35);
- Project Administration Handbook for Civil Engineering Works, 2021 Edition;
- Development Bureau (Works) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness;
- A Guide to the Chemical Waste Control Scheme.

6.3 Waste Disposal Implications during Construction Phase

6.3.1 The construction activities associated with the Project (i.e. demolition (including site clearance), substructure and superstructure works) are expected to generate a variety of wastes which can be divided into categories based on their composition and ultimate method of disposal. The identified waste types include:

- Construction and demolition (C&D) materials;
- Chemical wastes; and
- General refuse

6.3.2 The estimated quantity of each type of waste during construction stage has been presented in Table 5.1.

Material Type	Source(s)	Handling	Disposal / Treatment	Estimated Quantity
C&D Materials	Site formation and Building works	Sort on-site into inert C&D materials (broken concrete and public fill) and noninert C&D materials (e.g. timber, paper, plastics, etc)	Inert C&D materials reused as backfilling materials on-site	3,100 cu. m
			Inert C&D materials to be disposed to public fill reception facilities for other beneficial uses	0
			Non-inert C&D materials (e.g. timber, paper, plastics, etc.) reused or disposed of at landfill as the last resort	310 cu. m
Chemical Waste	Cleansing fluids, solvent, lubrication oil and fuel from construction plant and equipment	Collected regularly and safely stored at a dedicated location and collected by a licensed chemical waste collector	To Chemical Waste Treatment Facility or other licensed facility for treatment	0.5 L per month
General Refuse	Waste paper, discarded containers, etc. generated from workforce (only the non-recyclable will be disposed of at landfill)	To be stored in designated area prior to collection and disposal	To separate recyclable materials (e.g., paper, tin-cans, etc.) for collection by outside recyclers or disposal to landfill as the last resort	13 kg per day

Table 5.1 – Summary of Waste Generation during Construction Stage

Construction and Demolition Materials

6.3.3 C&D materials will be generated from the construction activities. The inert portion of C&D materials will likely comprise excavated soil, fill, excavated rock and concrete. With consideration of the scale of the Project, it is anticipated that there will be approximately 3,100 cu.m of inert C&D materials and 310cu.m of non-inert C&D materials generated during the construction phase of the Proposed Development. The quantities are subject to change based on the actual site conditions.

6.3.4 The surplus inert C&D materials which cannot be reused during the construction works of the Project will be disposed of at the appropriate public fill reception facilities available at the time of construction, and a license is required to be issued by the Civil Engineering & Development Department (CEDD). The Public Fill Committee in consultation with relevant Project Department is responsible for identifying suitable sites for public filling. The non-inert C&D materials will be reused and recycled as far as practicable and the surplus will be disposed of at landfills. A C&DMMP will be prepared and submitted to the Public Fill Committee (PFC) for endorsement and allocation of disposal site. The Works Agent will be responsible for obtaining confirmation and approval from PFC on the allocation of the disposal site prior to commencement of the Project works. No construction work is allowed to proceed until all issues on management of C&D materials have been resolved with all relevant authorities including the PFC and EPD.

Chemical Waste

6.3.5 Chemicals are expected to be used during the construction activities of the Project. These may include surplus adhesives, spent paints, petroleum products, spent lubrication oil, grease and mineral oil, spent acid and alkaline solutions/solvent and other chemicals.

6.3.6 The volume of chemical waste that will be generated will depend on the total number of plants and vehicles, and how much maintenance is actually required to be carried out on site by the Contractor. With respect to the scale of the construction activities, it is anticipated that the quantity of chemical waste to be generated will be small.

6.3.7 Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a chemical waste producer if chemical wastes such as spent lubricants, paints, etc. will be generated on-site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated on-site. Accidental spillage of chemicals in the works areas may contaminate the surface soils. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by the EPD.

6.3.8 Provided the waste is properly handled, stored and disposed of, no unacceptable impacts are expected.

General Refuse

6.3.9 The construction workforce will generate a small amount of refuse such as waste papers, packaging material and food wastes and actual volumes will be subject to the Contractor's site practices. Assuming up to 20 workers will be working on site during the peak construction period, with general refuse generation rate of 0.65 per workers per day, the maximum amount of general refuse to be generated will be about 13 kg per day. Waste recycling for the generated refuse should be conducted as far as practicable prior to disposal. The refuse will be collected on-site, separately from C&D materials by an appropriate waste collector employed by the Contractor to the landfills. There will be no canteen provided on-site.

6.3.10 Prior to off-site disposal, such wastes will have to be temporarily stored in a suitably covered storage area where it will have to be regularly cleaned and maintained to avoid attracting vermin and pests. With proper on-site handling and storage as well as regular disposal of these wastes, no adverse impacts are expected.

6.4 Waste Disposal Implications during Operation Phase

General Refuse

6.4.1 Only general refuse is expected to be generated from the operation of the Project as the major type of waste. General refuse will arise from the staff and administrative activities. General refuse may consist of food waste, plastic, aluminium cans and wastepaper. According to Monitoring of Solid Waste in Hong Kong 2021 issued by EPD, the amount of commercial and industrial waste disposal rate is 0.59 kg/person/day. The estimated total number of staff and office employee is 10. Thus, the amount of general refuse to be generated is estimated to be around 5.9 kg per day.

6.4.2 Recyclables materials (i.e. paper, plastic bottles and aluminium cans) will be separated for recycling. Adequate number of enclosed waste containers will be provided to avoid over-spillage of waste. The non-recyclable refuse will be placed in bags and disposed of at the Island East Transfer Station. With respect to the quantity of general refuse to be disposed of at the waste disposal facility, no adverse environmental impact is anticipated.

Chemical Waste

6.4.3 Chemical waste will be generated by the activities in the Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop. The quantity of chemical waste to be generated is small. The estimated quantity of chemical waste is 1L per month. The chemical waste will be collected by licensed chemical waste collectors and delivered to the licensed chemical waste treatment facilities for disposal or licensed lube oil recyclers for recycling.

6.5 Recommendation of Mitigation Measures

Construction Phase

6.5.1 Environmental Management Plan will be submitted to the Architect/Engineer for approval. It is anticipated that adverse waste management related impacts will not be encountered, provided that good site practices are adhered to by the Contractor. In line with the Hong Kong Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable throughout the Project construction period. Recommended mitigation measures to be implemented throughout the course of the construction of the Project include:

- An on-site environmental co-coordinator should be identified at the outset of the works. The co-coordinator shall prepare an Environmental Management Plan (EMP) incorporating waste management in accordance with the requirements set out in the ETWB TCW No. 19/2005, Environmental Management on Construction Sites. The EMP shall include monthly and yearly Waste Flow Tables (WFT) that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated;
- Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation;
- All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, masonry, brick, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance);
- The reuse/ recycling of all materials on-site shall be investigated prior to treatment/ disposal off-site; The Contractor shall be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of at landfill whilst any inert C&D materials shall be reused on-site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to a Public Fill Area or Public Fill Bank after obtaining the appropriate license. The storage, handling, transportation and disposal

of C&D materials shall be conducted in accordance with the ETWB TCW No. 19/2005, Environmental Management on Construction Sites;

- Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on-site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and a Guide to the Chemical Waste Control Scheme both published by EPD;
- A sufficient number of covered bins shall be provided on-site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of DEVB TC(W) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works;
- Tool-box talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling;
- The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the construction phase of the Project.

Operation Phase

- Waste reduction and management including the provision of recycling bins and adequate space to facilitate separation, collection and storage of recyclable materials for recycling in the Refuse Storage and Material Recovery Chamber will be implemented.
- The chemical waste will be collected by licensed chemical waste collectors and delivered to the licensed chemical waste treatment facilities for disposal or licensed lube oil recyclers for recycling.

7. Land Contamination

7.1 Relevant Legislation, Standards and Guidelines

7.1.1 The relevant legislations, standards and guidelines applicable to the present study for the review of land contamination implications include:

- Guidance Note for Contaminated Land Assessment and Remediation;
- Guidance Manual for Use of Risk-based Remediation Goals ("RBRGs") for Contaminated Land Management; and
- Practice Guide for Investigation and Remediation of Contaminated Land.

7.2 Description of Existing Environment

7.2.1 The site is currently left fallowed and abandoned for many years. There is no intention by the landowners to use the land for agricultural use.

7.3 Identification of Potential Land Contamination

7.3.1 Historical aerial photographs were reviewed to identify previous land uses at the proposed Site and any previous contaminative activities. There are no identified sources of potential land contamination from previous land uses based on review of historical aerial photographs. The reviewed aerial photographs are provided in **Appendix B**.

7.3.2 According to the records, the Site was under Agriculture/Pond use since 1973 with the previous use of natural vegetation. The Site keeps the same use from 1973 to present. Selected aerial photos of 1973, 1983, 1993, 2003, 2013 and 2022 have been extracted in **Appendix B**.

7.3.3 Based on the historical aerial photographs and site visit, it is not expected there will be potential land contamination issues at the Site.

8. Conclusion

8.1.1 This EA has been prepared to identify and evaluate the potential environmental impacts and relevant environmental requirements associated with the construction and the operation phases of the Proposed Development.

8.2 Air Quality Impact

8.2.1 With the implementation of the recommended mitigation measures and good site practices, adverse construction dust impact is not anticipated during the construction stage of the proposed development.

8.2.2 As the proposed development will be provided with AC system, no adverse air quality impact associated with vehicular emission upon the proposed development is anticipated.

8.2.3 As Kong Nga Po Road is only classified as a Rural Road B and not a distributor road, vehicular emission from Kong Nga Po Road would be minimal and no adverse air quality impact is anticipated on-site.

8.2.4 No chimney is found within 200m study area from the site boundary of the proposed development. Adverse air quality from chimney emission is not anticipated.

8.3 Noise Impact

8.3.1 Considering the fixed noise sources, the Air Condition within the office is the only noise source. The Proposed Development would not be affected by traffic road noise, as Man Kam To Road is more than 1 km away from the site (horizontal distance). In consideration of the Construction Noise impact, the two identified noise sensitive receivers (NSRs) will not be affected as they would not have been completed at the time of construction. Provided with the findings, no adverse noise impact is anticipated from the operation and construction phase of the Proposed Development.

8.4 Water Quality Impact

8.4.1 In the construction phase, potential water quality impact associated with the Proposed Development would be construction site runoff, sewage generated from construction staff and accidental leakage of chemicals in the works areas. In the operation phase, potential water quality impact associated with Proposed Development would be surface runoff generated from the Site and sewage generated from the users of the development. With sufficient sewerage management and proper implementation of proposed mitigation measures, the impact on water quality in both construction phase and operation phase are anticipated to be insignificant.

8.5 Waste Management

8.5.1 The potential impacts of waste arising from the construction and operational stages of the proposed development have been assessed. With the recommended procedures/ measures in place, the construction and operational wastes generated/ disposed of as part of the proposed development is not expected to cause adverse environmental impacts.

8.6 Land Contamination

8.6.1 The Site is currently left fallowed and abandoned for many years with no intention by the landowners to use the land for agricultural use. With the review of historical photograph and site visit, it is not expected there will be potential land contamination issues at the Site.

8.7 Overall

8.7.1 According to our study findings, no significant environmental impacts are anticipated in terms of air quality, noise, water quality, waste management and land contamination due to the proposed development during both construction and operation phases. Nevertheless, good site practices and mitigation measures have been proposed for implementation during construction stage.

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Figures

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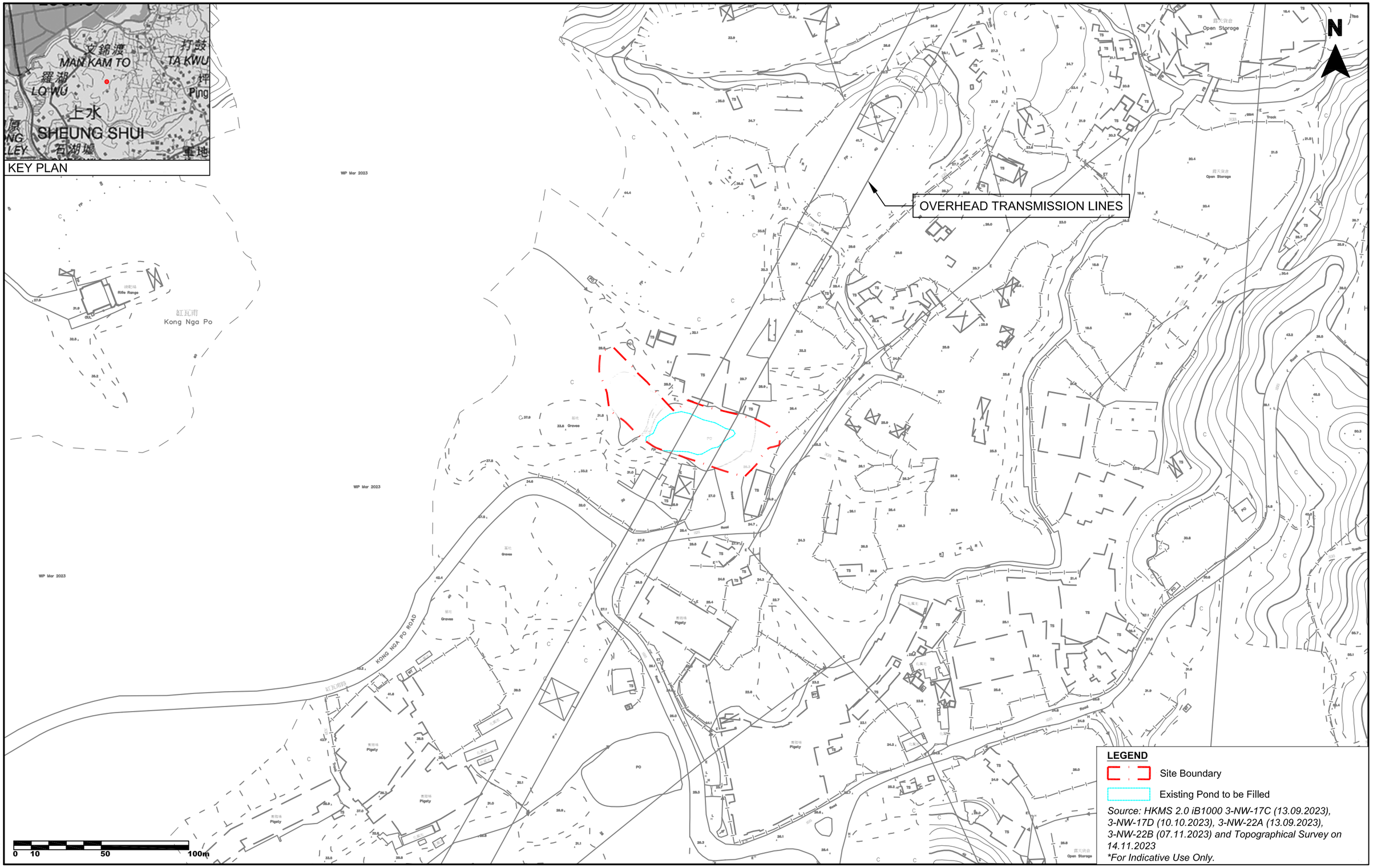
KEY PLAN



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Source : -

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JOB TITLE:
Section 16 Application for Proposed Temporary Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop for a Period of 3 Years and Associated Filling of Land and Pond at the Remaining Portion (RP) of 342 (part) and RP of 343 in Demarcation District (D.D.) 87, North New Territories, Hong Kong

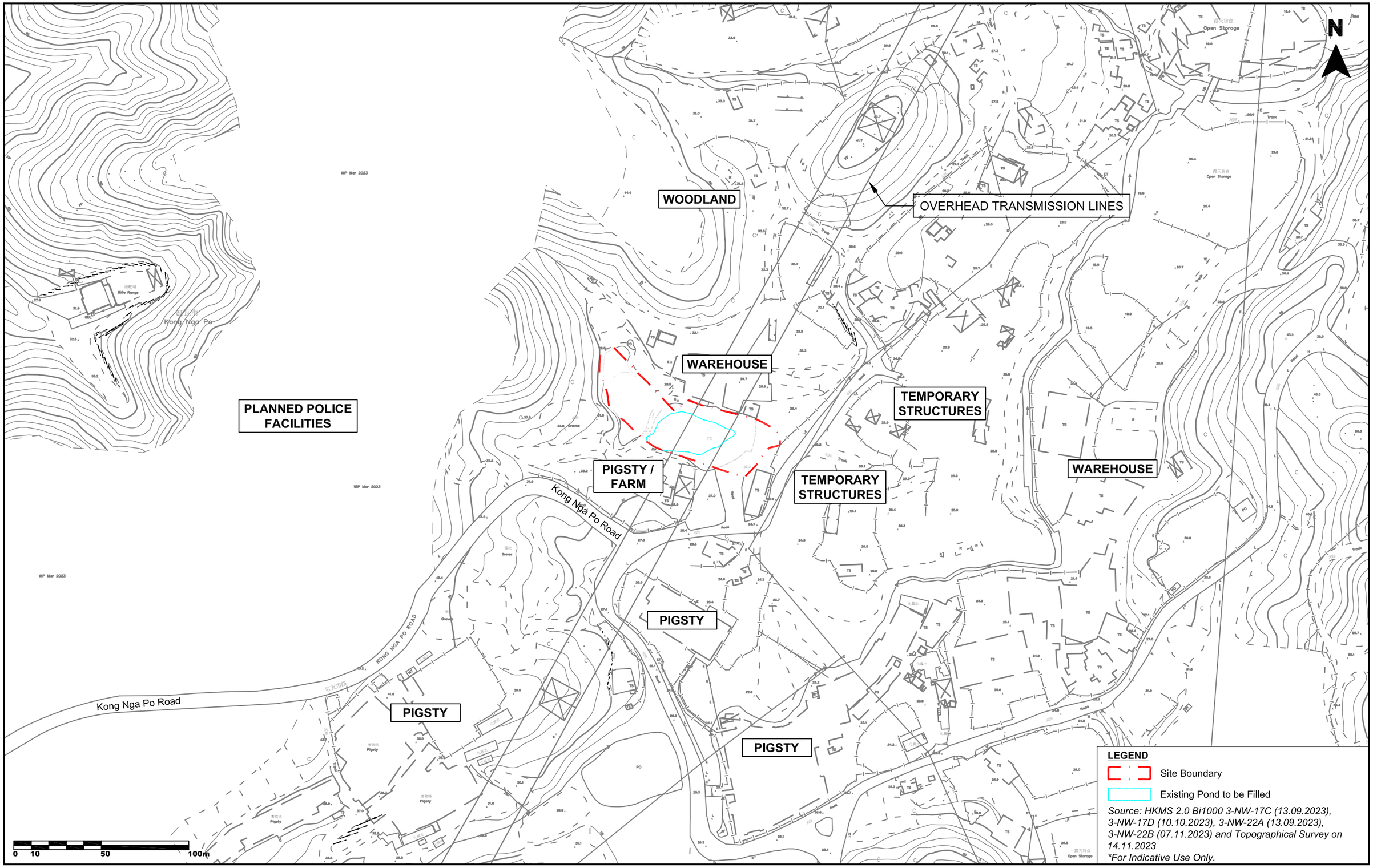
Drawing Title
LOCATION PLAN

Rev	Description	Date

Drawn	Date
CN	20/11/2023
Checked	Approved
RT	RT
Scale	
1 : 2 000 @ A3	

Drawing No.
Figure 1.1

Rev.
-



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Drawing Title
SITE LOCATION AND THE SURROUNDINGS

Rev	Description	Date

Drawn: CN	Date: 27/11/2023
Checked: RT	Approved: RT
Scale: 1 : 2 000 @ A3	

Drawing No.
Figure 1.2

Rev.
-

300 Assessment Boundary

ASR 1
Site Office

ASR 2
Police Facilities in Kong Nga Po

KONG NGA PO ROAD

HUNG LUNG HANG

LEGEND

- Site Boundary
- 300m Assessment Boundary
- Representative Air Sensitive Receiver (ASR)
- Existing Pond to be Filled

Source: HKMS 2.0 Bi1000 3-NW-17C (13.09.2023), 3-NW-17D (10.10.2023), 3-NW-22A (13.09.2023), 3-NW-22B (07.11.2023)
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0 50 100 200 400m

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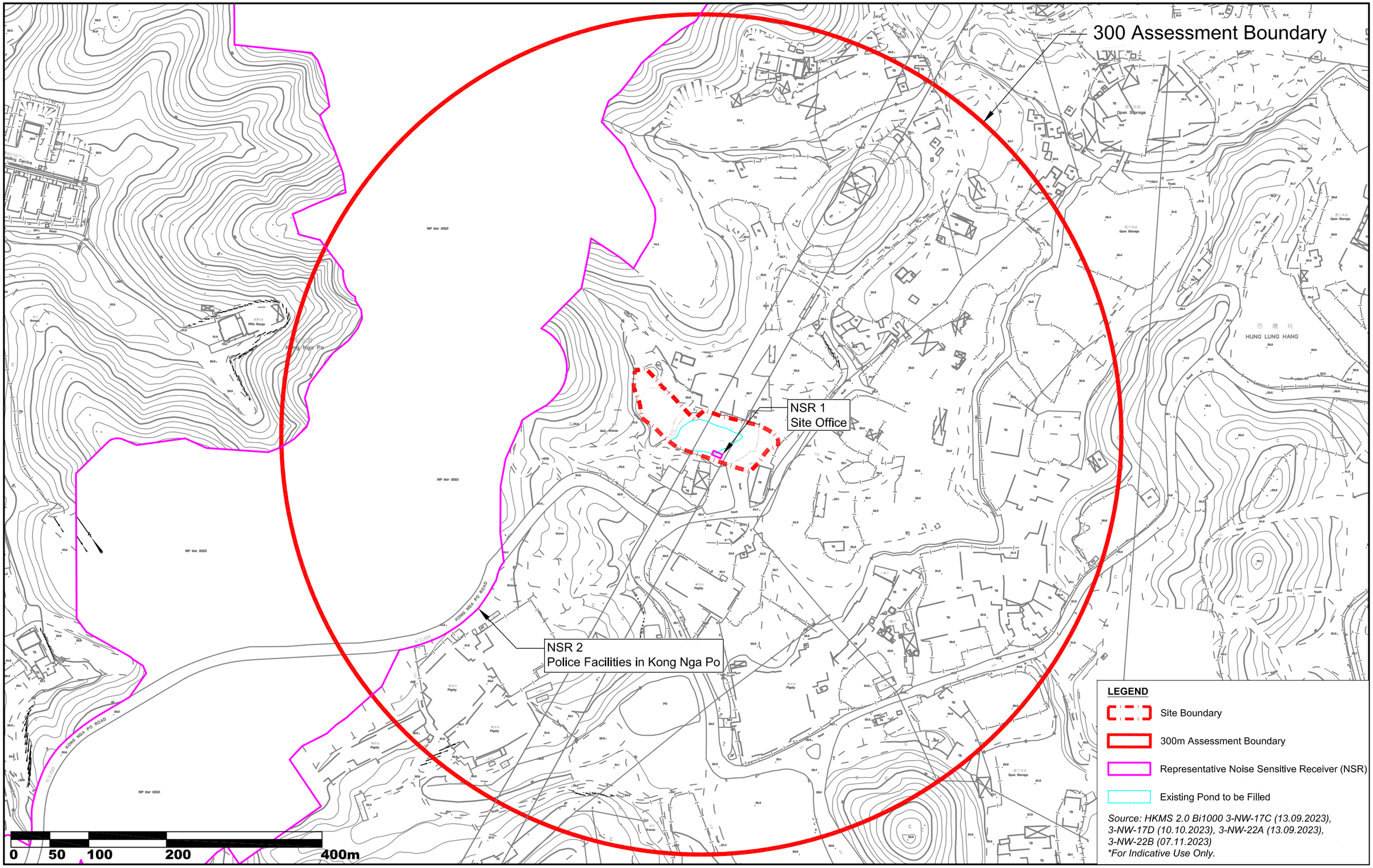
Section 16 Application for Proposed Temporary Logistic Centre, Warehouse (excluding Dangerous Goods) and Vehicle Repair Workshop for a Period of 3 Years and Associated Filling of Land and Pond at the Remaining Portion (RP) of 342 (part) and RP of 343 in Demarcation District (D.D.) 87, North New Territories, Hong Kong

Drawing Title
REPRESENTATIVE AIR SENSITIVE RECEIVERS

Rev	Description	Date

Drawn: CN	Date: 27/11/2023	Drawing No.	Figure 2.1
Checked: RT	Approved: RT		
Scale: 1:2500 @ A3		Rev.	-



File Name : -
Source : -

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JOB TITLE:
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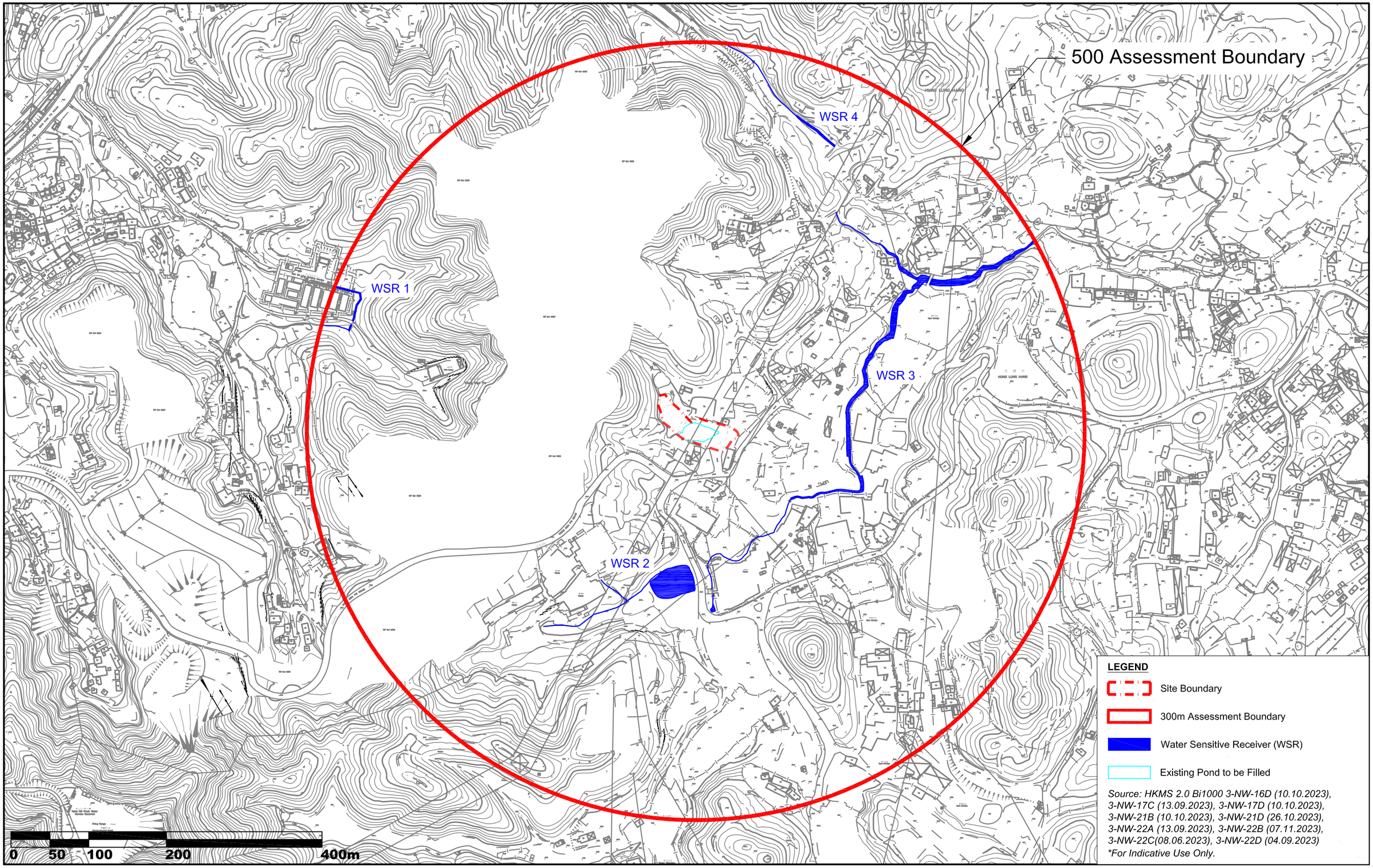
Drawing Title
REPRESENTATIVE NOISE SENSITIVE RECEIVERS

Rev	Description	Date

Drawn: CN	Date: 27/11/2023	Drawing No.: Figure 3.1
Checked: RT	Approved: RT	
Scale: 1:2500 @ A3		Rev.: -



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Drawing Title
IDENTIFIED WATER SENSITIVE RECEIVERS

Rev	Description	Date

Drawn: CN	Date: 27/11/2023
Checked: RT	Approved: RT
Scale: 1:4500 @ A3	

Drawing No.
Figure 4.1

Rev.
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Appendix A

Layout Plan

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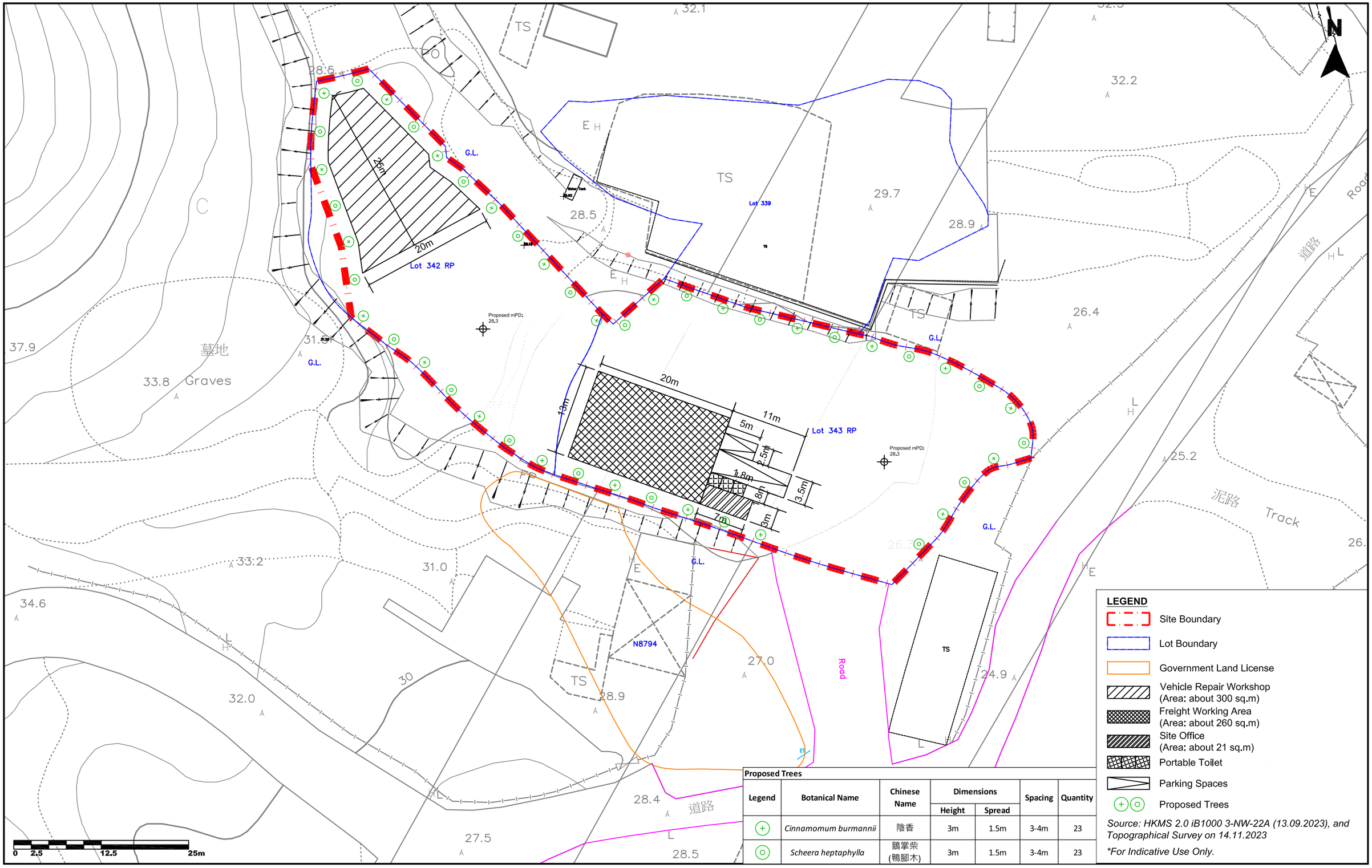

LEGEND

- Site Boundary
- Lot Boundary
- Government Land License
- Vehicle Repair Workshop (Area: about 300 sq.m)
- Freight Working Area (Area: about 260 sq.m)
- Site Office (Area: about 21 sq.m)
- Portable Toilet
- Parking Spaces
- Proposed Trees

Proposed Trees

Legend	Botanical Name	Chinese Name	Dimensions		Spacing	Quantity
			Height	Spread		
+	*Cinnamomum burmannii*	陰香	3m	1.5m	3-4m	23
○	*Scheera heptaphylla*	鵝掌柴 (鴨腳木)	3m	1.5m	3-4m	23

Source: HKMS 2.0 iB1000 3-NW-22A (13.09.2023), and Topographical Survey on 14.11.2023

**For Indicative Use Only.*

File Name : -
Source : -

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Drawing Title
LAYOUT PLAN

Rev	Description	Date

Drawn: HY	Date: 20/11/2023	Drawing No.: Appendix A	
Checked: RT	Approved: RT		
Scale: 1 : 500 @ A3		Rev.: -	

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Appendix B

Historical Aerial Photographs

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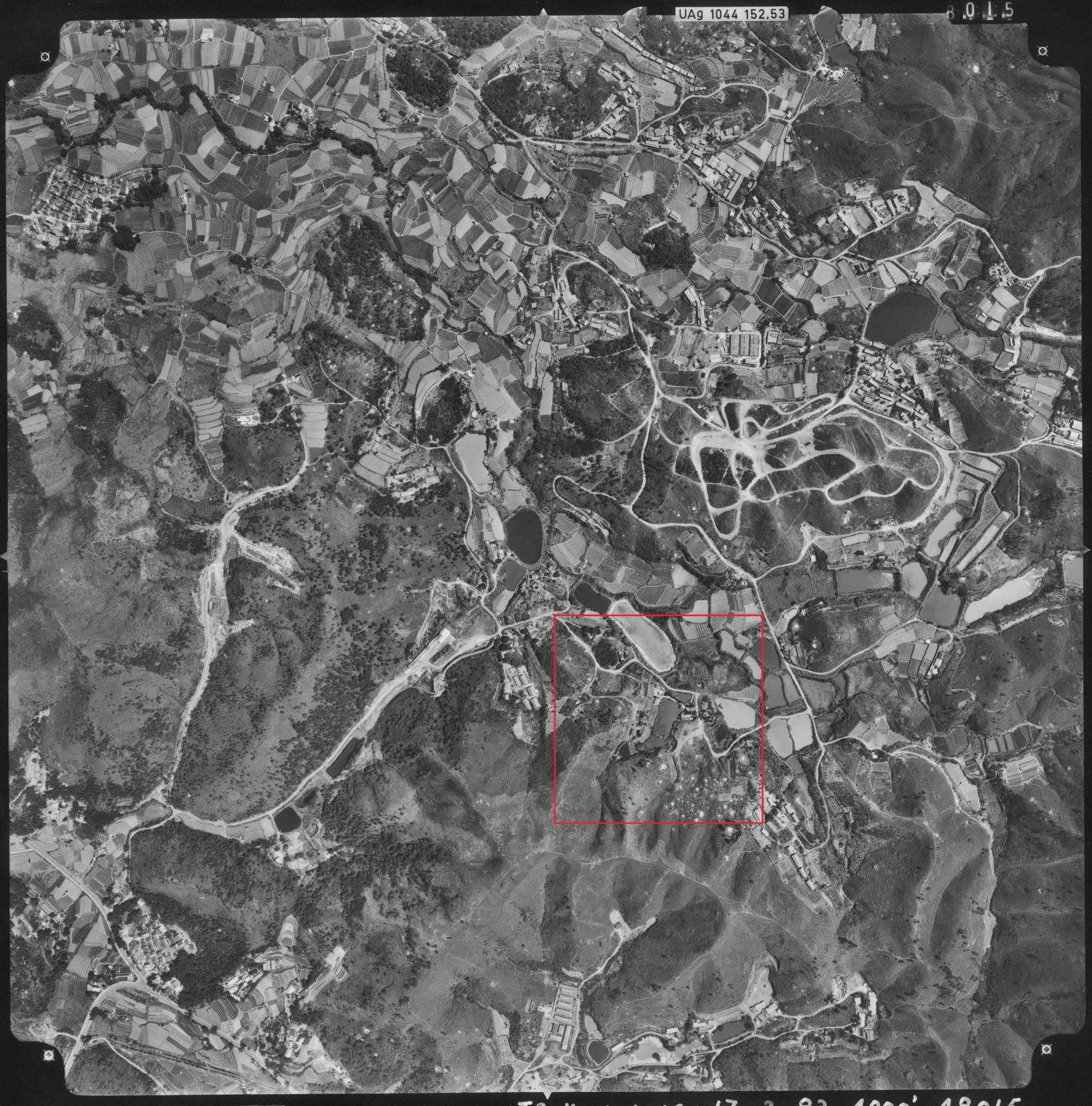
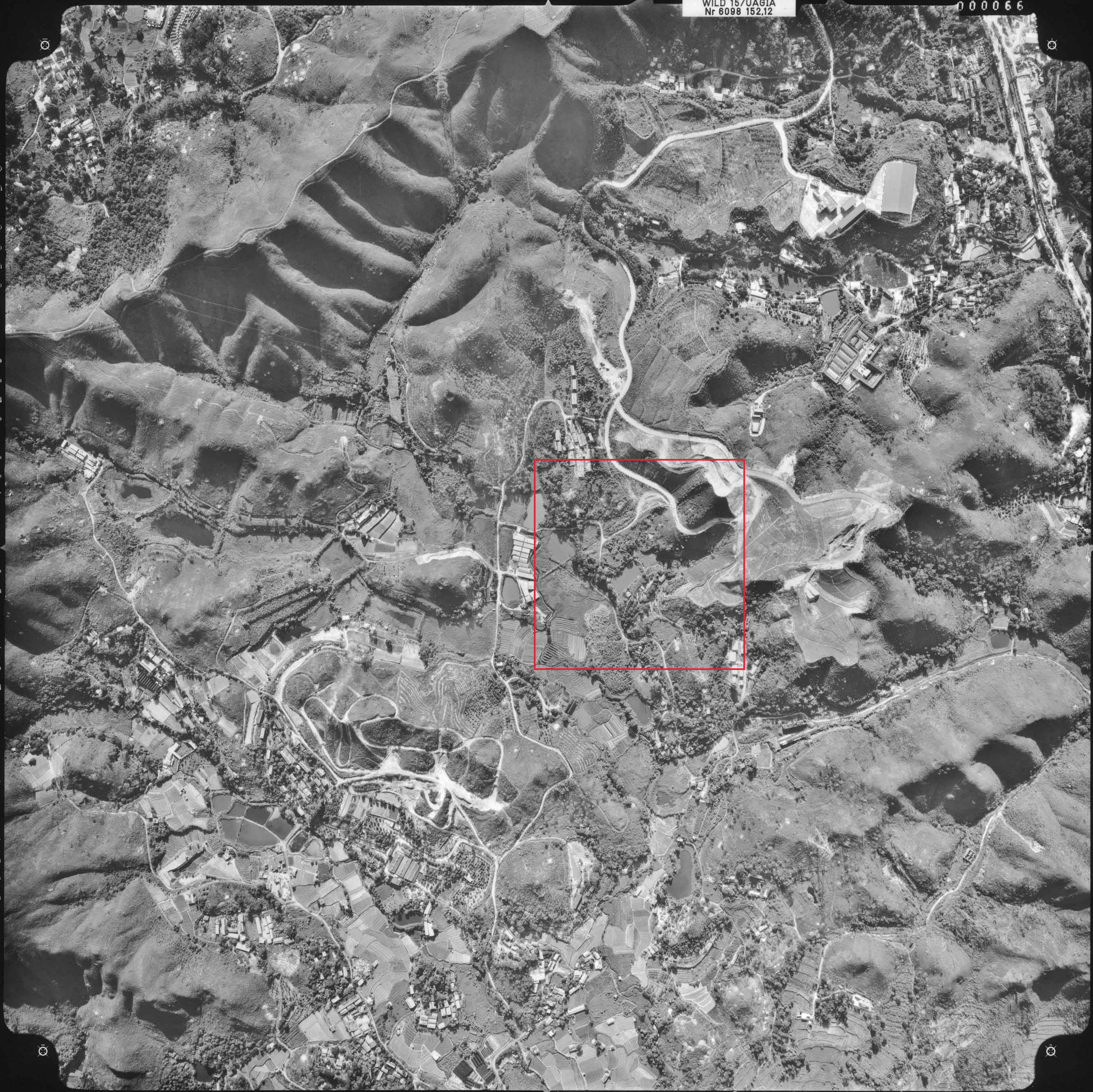
UAg 1044 152.53
Survey Division, Lands Department.
Hong Kong Government. ©
7718 HK 19-12-73 2,000'



WILD 15/UAGIA
Nr 6098 152,12

000066



SHEUNG SHUI 9-11-93 4000' A36439

HUNG LUNG HANG 27·2·2003 3500' CW46682

0082

CW101946 31 Jan 2013 2000' HUNG LUNG HANG

E174938C 6900' 18 Dec 2022 UltraCam Eagle 210mm
HUNG LUNG HANG 恐龍坑