URBAN GREEN

Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok, New Territories

Environmental Assessment Report

Reference: P036/01 Issue 1
Date: 11 November 2025
Confidential

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1 Introduction

1.1 Background

The Applicant intends to develop a columbarium on various Lots in D.D. 41, Sha Tau Kok, New Territories (hereafter as “the Site”).

The Applicant proposes to rezone the Site to "Other Specified Uses" annotated "Columbarium" (“OU (Columbarium)”) under Section 12A of Town Planning Ordinance (TPO).

Urban Green Consultants Ltd. (UGC) has been commissioned to conduct an Environmental Assessment (EA) to assess the potential environmental impact on the Proposed Development.

1.2 Objectives of the EA

This EA has identified and addressed the following major environmental issues:

- Identify the sensitive uses that will likely be affected by the operation of the Site;
- Assess and evaluate the potential noise impacts due to site operation upon the sensitive uses;
- Assess and evaluate the potential air quality impacts upon the sensitive users; and
- Propose mitigation measures, where necessary, to reduce the environmental impacts to an acceptable level.

1.3 Report Structure

The remaining chapters of this report are shown below:

Chapter 2 – Site Context

Chapter 3 – Air Quality

Chapter 4 – Noise

Chapter 5 – Water Quality

Chapter 6 – Waste Management

Chapter 7 - Land Contamination

Chapter 8 – Cultural Heritage

Chapter 9 – Conclusion

2 Site Context

2.1 Site Location and Its Environs

The Site is located in Sha Tau Kok and to the north of Sha Tau Kok Road. Currently, to the west of the Site are temporary structure for residential uses and farmlands of Tong To Tsuen. Further to the west and northwest of the Site are village houses of Tong To Ping Tsuen and Tong To Shan Tsuen respectively. To the north and east of the Site are vegetated slopes. To the south of the Sites separated by Sha Tau Kok Road are village houses.

The site surrounding is in an area of rural character. Two existing streams with approx. 3 to 4m in width were identified to the east and South of the Site. The Site area is about 13,382m^2. Figure 2.1 shows the site location and its environs.

2.2 Proposed Development

The Site is intended for the development of columbarium. The Proposed Development will include area for columbarium, office, multi-function rooms and toilets. Proper landscape and tree planting areas are planned at the remaining area of the Site.

The Proposed Development will provide a maximum of 6,495 niches, 65 parking spaces for private cars, one pick-up/drop-off point for private cars/taxis that can accommodate up to 3 cars, and one pick-up/drop-off point for shuttle buses that can accommodate up to 3 coaches. No burners / furnace will be provided at the Proposed Development as there will be no burning of ritual papers and joss sticks.

The operation year of the Proposed Development is expected to be Year 2030. The proposed layout plan is presented in Appendix A.

3 Air Quality

3.1 Introduction

This section aims to assess the air quality impact associated with vehicular emission arising from the surrounding roads upon the Proposed Development and the potential air quality impact arising from the Proposed Development to nearby ASRs during operation phase.

3.2 Statutory Requirements and Guidelines

Chapter 9 of the HKPSG stipulates the AQOs issued under the APCO. An updated AQOs was in force on 11 April 2025 and the relevant criteria for this assessment are tabulated in Table 3.1.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Averaging time	Concentration limit [i] ug/m^2	No. of exceedances allowed
Sulphur dioxide	10-minute	500	3
	24-hour	40	3
Respirable suspended particulates (PM10) [ii]	24-hour	75	9
	Annual	30	Not applicable
Fine suspended particulates (PM2.5) [iii]	24-hour	37.5	18
	Annual	15	Not applicable
Nitrogen dioxide	1-hour	200	18
	24-hour	120	9
	Annual	40	Not applicable
Ozone	8-hour	160	9
	Peak season	100	Not applicable
Carbon monoxide	1-hour	30,000	0

Pollutant	Averaging time	Concentration limit [i] ug/m^2	No. of exceedances allowed
	24-hour	10,000	0
	Annual	4,000	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.

The minimum buffer distance required between roads and air sensitive uses and chimneys are stipulated in Table 3.1 in Chapter 9 of the HKPSG. The relevant minimum buffer distances are summarised in Table3.2 and Table 3.3.

Table 3.2 Relevant Buffer Distance Requirements for Road

Type of Road	Buffer Distance(1)
Trunk Road and Primary Distributor	>20m
District Distributor	>10m
Local Distributor	>5m

(i) Buffer distance is the horizontal distance from the edge of road kerb and the site boundary.

Table 3.3 Relevant Buffer Distance Requirements for Chimney

Difference in Height between Industrial Chimney Exit and the Site	Buffer Distance
<20m	>200m
20-30m	>100m
30-40m	>50m
40m	>10m

The relevant regulations specified by APCO include the followings:

- Air Pollution Control Ordinance (Cap. 311);
- Air Pollution Control (Construction Dust) Regulation (Cap. 311R);
- Air Pollution Control (Smoke) Regulation (Cap. 311C);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311Z);

- Air Pollution Control (Fuel Restriction) Regulations (i.e. using liquid fuel with a sulphur content of less than 0.001% by weight); and
- Recommended Pollution Control Clauses for Construction Contracts

3.3 Baseline Air Quality

As there is no EPD's monitoring station located in the vicinity of the Site, the nearest general monitoring station, North Air Quality Monitoring Station (AQMS) which is approximately 10 km from the Site is selected. The North AQMS has been commissioned on 10 July 2020. The monitoring concentrations between 2020 and 2023 are summarised in Table 3.4.

Table 3.4 Air Quality Monitoring Concentration ((μg/m^3) at North AQMS (Years 2020 to 2023)

Pollutant	Averaging Period	2020	2021	2022	2023	Concentration Limit (μg/m3)	No. of Exceedances Allowed
SO_2	10-min (4thhighest)	19	18	27	27	500	3
	24-hr (4thhighest)	8	7	7	7	40	3
PM_{10}	Annual	No data	25	23	27	30	Not Applicable
	24-hr (10thhighest)	55	62	50	57	75	9
$PM_{2.5}$	Annual	No data	15	14	15	15	Not Applicable
	24-hr (19thhighest)	29	29	28	28	37.5	18
NO_2	Annual	No data	36	31	30	40	Not Applicable
	1-hr (19thhighest)	112	135	115	116	200	18
	24-h (10th Highest)	54	70	58	58	120	9
O_3	8-hr (10thhighest)	**166**	**187**	**197**	**164**	160	9
	Peak season	No data	97	98	95	100	Not Applicable
CO	24-hr	1022	1213	994	1001	4,000	0
	8-hr	1238	1550	1304	1231	10,000	0
	1-hr	1830	2150	1710	2390	30,000	0

Note:

[1] Bolded and underlined value indicates the exceedance of the AQO.

3.4 Future Air Quality

Future background air quality has been predicted based on hourly concentration data extracted from the "Pollutants in the Atmosphere and their Transport over Hong Kong" (PATH v3.0) model. The operation year of the project is in Year 2030. The best available data from PATH v3.0 will be the projected background scenario in Year 2030. Pollutant concentrations in PATH grid (44,57) projected to Year 2030 were extracted and summarized in Table 3.5.

Table 3.5 Background Air Pollutants in Year 2030 Extracted from PATH V3.0

Pollutant	Averaging Period	Path Grid 44,57 (µg/m3)	Concentration Limit (µg/m3)	No. of Exceedances Allowed
NO_2	Annual	9.89	40	Not Applicable
	1-hr (19thhighest)	40.87	200	18
	24-hr (10th highest)	16.51	120	9
PM_{10}	Annual	19.86	30	Not Applicable
	24-hr (10th Highest)	50.99	75	9
$PM_{2.5}$	Annual	12.14	15	Not Applicable
	24-hr (19th Highest)	30.19	37.5	18
SO_2	10-min (4thhighest)	34.19	500	3
	24-hr (4thhighest)	8.43	40	3
O_3	8-hr (10thhighest)	**175.33**	160	9
	Peak Season	**124.58**	100	Not Applicable
CO	24-hr	443.25	4,000	0
	8-hr	480.51	10,000	0
	1-hr	525.07	30,000	0

Note:
[1] The values of Year 2030, L1 are obtained from https://aqia.epd.gov.hk/
[2] Bolded and underlined value indicates the exceedance of the AQO.

No exceedance of AQOs was predicted from the PATH background concentrations in Year 2030, except O_3. The high concentration of O_3 is a regional air pollution problem in the Pearl River Delta (PRD) Region.

3.5 Air Sensitive Receivers

Air sensitive receivers (ASRs) include village houses identified within the study area of 500m from the site boundary of the Proposed Development. The representative ASRs were shown in Figure 3.1 and summarised in Table 3.6.

In addition to the surrounding ASRs, there are ASRs (i.e. Office, Multi-function Rooms and Guard Room) identified within the Proposed Development.

Table 3.6 Representative Air Sensitive Receivers (ASRs)

ID	Description	Use	Shortest Horizontal Distance from Site Boundary (m)	Height of the ASRs (m)
ASRs in the surrounding				
A1	Village House 1	Residential	19	3.5
A2	Village House 2	Residential	20	4.8
A3	Village House 3	Residential	12	3
A4	Village House 4	Residential	5	5.2
A5	Village House 5	Residential	4	3.1
A6	Village House 6	Residential	4	5
A7	Village House 7	Residential	6	5.3
A8	Village House 8	Residential	6	3.3
A9	Village House 9	Residential	5	3
A10	Tong To Ping Tsuen	Residential	177	6
A11	Tong To	Residential	153	11
A12	Nga Yiu Tau	Residential	129	11
A13	Bula Land	Leisure Farm	115	-
A14	Sha Tau Kok Farm	Leisure Farm	112	-
ASRs at the Proposed Development				
A15	Guard Rooms on the G/F and 1/F of the Proposed Development	Columbarium Development	-	6
A16	Multi-function Rooms/Canteen at the Proposed Development	Columbarium Development	-	10.5

ID	Description	Use	Shortest Horizontal Distance from Site Boundary (m)	Height of the ASRs (m)
A17	Office at the Proposed Development	Columbarium Development	-	10.5

3.6 Air Quality during Construction Phase

The major air pollution concerns shall be fugitive dust and smoke emission during the construction stage, especially excavation works. As advised by the project team, the area of excavation is about 2,267 m^2 and the volume of the excavation materials is about 4,534 m^3. It is estimated that 1 dump truck per day will be used to remove the excavated soil. Furthermore, one 25 tonnes bulldozer and one 15 tonnes excavator will be used per time over the work site. The construction of the Proposed Development shall comply with the guidelines listed below:

- Construction dust shall be controlled in accordance with the requirements as listed in the Schedule of the Air Pollution Control (Construction Dust) Regulation of APCO. Also, notice of notifiable works as defined under the Regulation shall be completed by the Contractor and sent to the Environmental Protection Department (EPD).
- Dark smoke emission of the machines used for construction shall comply with the requirements of the Air Pollution Control (Smoke) Regulation of APCO.
- All of the Non-road Mobile Machinery (NRMMs) used for the construction shall comply with the Air Pollution Control (NRMMs) (Emission) Regulation.

To mitigate fugitive dust impact, all dust control measures recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, will be implemented. Typical relevant dust 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 its body and wheels;
- 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 do not leak from the vehicle;
- Travelling speeds should be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks;
- Erection of hoarding of not less than 2.4 m high from ground level along the site boundary;
- 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; and
- 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.

- Adopt a higher hoarding height close to those concerned ASRs.
- Locate the haul road away from those concerned ASRs.
- Avoid dusty works or placing stockpile near those concerned ASRs
- Minimization of unpaved, exposed earth by immediate covering/ permanent paving as soon as the works have been completed.

With the implementation of the mitigation measures, no adverse construction dust impact is anticipated.

3.7 Air Quality during Operational Phase

3.7.1 Vehicular Emission Impact on the Proposed Development

Sha Tau Kok Road – Shek Chung Au section is adjacent to the Site and identified as rural road as referred to Annual Traffic Census Station No. 5860 (Sha Tau Kok Road – Section Between Ping Che Road and Shun Lung Street). Vehicular emissions from Sha Tau Kok Road – Shek Chung Au section is the potential air quality impact upon the Proposed Development during operational phase.

As there is no minimum buffer distance requirement for rural road, the buffer distance for district distributor was adopted for conservative approach. Based on the layout plan of the Proposed Development, the ASRs of the Proposed Development are beyond 10m from Sha Tau Kok Road – Shek Chung Au section. Therefore, no adverse air quality impact at the Proposed Development is anticipated. Figure 3.2 shows the buffer distance.

3.7.2 Vehicular Emission Impact on the Surrounding Sensitive Uses

The Proposed Development may increase the number of vehicles at Sha Tau Kok Road – Shek Chung Au section. Therefore, potential air quality impact on the surrounding ASRs is expected. The number of vehicles induced by the Proposed Development was provided by Project Traffic Consultant and presented in Table 3.7. The Traffic Impact Assessment Report have been prepared by the Project Traffic Consultant.

Table 3.7 Summary of Traffic Flow Induced by the Proposed Development in 2030

Road ID	Road	Scenario	Peak Traffic Flow (Vehicles/hour)
1	Sha Tau Kok Road – Shek Chung Au (Luk Keng Road – Access Road to Tong To)	Ordinary (Normal Day)	926
		Worst-case (During Ching Ming and Chung Yeung Festivals)	1,002

Road ID	Road	Scenario	Peak Traffic Flow (Vehicles/hour)
2	Sha Tau Kok Road – Shek Chung Au (Access Road to Tong To - Sha Ho Road)	Ordinary (Normal Day)	903
		Worst-case (During Ching Ming and Chung Yeung Festivals)	793

As advised by the Project Traffic Consultant, the P/DF (i.e. volume to capacity) ratios of all concerned road links of Sha Tau Kok Road – Shek Chung Au Section would be well below the acceptable threshold of 0.85 (i.e. the roads would not be subject to traffic congestion during the peak hours of Ching Ming and Chung Yeung Festivals). Therefore, higher pollutants emission from traffic congestion is not anticipated. Hence, no adverse air quality impact arising from vehicles induced by the Proposed Development on the surrounding sensitive uses is anticipated.

According to the Cap. 611 Motor Vehicle Idling (Fixed Penalty) Ordinance, the idling prohibition is applicable to all roads in Hong Kong, including private roads and car parks. Therefore, the air quality impact arising from the car parks within the Proposed Development on the ASRs should be minimal.

The provision of free shuttle buses will be arranged to encourage visitors to use this facility instead of driving cars or taking a taxi to the site. This will avoid overcrowding traffic in peak hours. The measure will help to minimize the potential air quality impact during operation phase.

3.7.3 Chimney Emission

Chimney Emission in the Surroundings

Based on the site surveys conducted in July 2025, no chimney was identified within 200m from the site boundary of the proposed site. Therefore, no adverse air quality impact arising from chimney emission is anticipated.

Chimney Emission at the Proposed Development

There will be no chimney at the Proposed Development. Therefore, no adverse air quality impact arising from chimney emission is anticipated.

3.7.4 Ritual Paper Burning

As mentioned in Section 2.2, no burners/furnace provided will be provided in the Proposed Development as burning of ritual papers and joss sticks will be prohibited. Therefore, no adverse air quality impact is anticipated.

4 Noise

4.1 Introduction

This section aims to assess potential noise impacts upon the Proposed Development during occupancy and the noise impacts from the Proposed Development on the adjacent sensitive uses.

4.2 Criteria and Guidelines

4.2.1 Road Traffic Noise

Noise standards are stipulated in Chapter 9 of the Hong Kong Planning Standards and Guidelines (HKPSG) for planning against possible impact from road traffic. According to the HKPSG, the road traffic noise standard for noise sensitive uses (i.e. bedroom, dining room, offices, etc.) relying on opened window for ventilation is $L_{10(1\text{-}hr)}$ 70 dB(A). Moreover, the road traffic noise standard for Noise Sensitive uses of Education Institutions (e.g. kindergartens, childcare centres, etc.) relying on openable window for ventilation is $L_{10(1\text{-}hr)}$ 65 dB(A).

4.2.2 Fixed Noise Sources

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).

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 Site is located within rural area and surrounded by village houses and temporary structure for residential uses. Given the type of area for the subject site is classified as “Type (i) Rural area, including country parks or village type development” and it is not affected by the IFs, the Area Sensitivity Rating of the subject site area is defined as “A”. Noise standards for this fixed noise impact assessment are tabulated in Table 4.1.

Table 4.1 Noise Standards for Fixed Noise Sources

Time Period	ANL in IND-TM, dB(A)	IND-TM Noise Standard for Planned Fixed Noise Source, [ANL-5dB(A)], dB(A)
Day and Evening (0700-2300 hours)	60	55
Night (2300 to 0700-Hours)	50	45

The Noise Sensitive Receivers (NSR) and Acceptable Noise Level (ANL) are used for assessment purpose only, it does not represent Noise Control Authority's decision in determining the noise criteria based on the legislation and practices being in force.

Under Noise Control Ordinance (NCO), noise criteria for existing fixed noise sources are stipulated in the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites" (IND-TM).

4.3 Noise Sensitive Receivers

Representative NSRs located within 300m of the assessment area from the Site have been identified and provided in Table 4.2, and their locations are shown in Figure 4.1.

Table 4.2 Representative Noise Sensitive Receivers (NSRs)

)ID	Location	Type	ASR	Horizontal Separation from the Site Boundary, m
N1	Village House 1	Residential	A	19
N2	Village House 2	Residential	A	20
N3	Village House 3	Residential	A	12
N4	Village House 4	Residential	A	5
N5	Village House 5	Residential	A	4
N6	Village House 6	Residential	A	4
N7	Village House 7	Residential	A	6
N8	Village House 8	Residential	A	6
N9	Village House 9	Residential	A	5
N10	Tong To Ping Tsuen	Residential	A	177
N11	Tong To	Residential	A	153
N12	Nga Yiu Tau	Residential	A	129

All noise sensitive uses within the Proposed Development, including office and multi-function rooms would not rely on opened windows for ventilation. Therefore, no NSRs within the Proposed Development has been identified.

4.4 Prevailing Background Noise Level

Noise survey was conducted on 12 and 21 September 2023 to obtain the prevailing background noise level during daytime. The measurement was taken at 1.2m above the ground level and in free-field condition. LAeq 30 minutes were recorded and

monitoring locations are shown in Figure 4.1. The measured prevailing noise levels and established noise standard to be complied with according to IND-TM for fixed plant sources are summarised in Table 4.1. Details of the noise survey are provided in Appendix B.

Table 4.3 Prevailing Background Noise Level

Measurement Period	ID	Location	Measured Background Noise Level, $L_{Aeq30min}$, dB(A)	IND-TM Noise Standard for Planned Fixed Noise Source, [ANL-5dB(A)], dB(A)
21 Sep 2023 10:51 – 11:21	L1	Village house	57 (1)	55
21 Sep 2023 11:23 – 11:53	L2	Tong To	59 (1)	55
12 Sep 2023 14:02 – 14:32	L3	Nga Yiu Tau	62 (1)	55

Note:
(1) +3dB free field correction applied.

4.5 Noise Impact during Operational Phase

4.5.1 Road Traffic Noise

The traffic flow on Sha Tau Kok Road - Shek Chung Au Section will be increased due to the operation of Proposed Development, especially during the Ching Ming and Chung Yeung Festivals.

The provision of free shuttle buses will be arranged to encourage visitors to use this facility instead of driving cars or taking a taxi to the site. This measure will help to minimize the potential traffic noise impact during the operation phase. The shuttle bus will travel from Po Nga Road, Tai Wo to the Project Site. Due to the limited number of shuttle buses operated per hour, the traffic noise impact brought by the shuttle bus to Po Nga Road and surrounding buildings is not anticipated.

Details of the Traffic and Crowd Management Plan (TCMP) (i.e., Section 4) has been presented in the TIA Report. Therefore, the traffic flow induced by the Proposed Development during Ching Ming and Chung Yeung Festivals should be limited by the special traffic arrangements proposed by the Project Traffic Consultant.

As advised by the Project Traffic Consultant, it is anticipated that the traffic will grow continuously within 15 years from occupation of the Proposed Development (i.e. Year 2045 = Year of occupancy (Year 2030) + 15 years). Therefore, the road traffic noise levels are predicted based on the projected peak hour traffic flows for the worst year within 15 years from the year of occupancy. The traffic forecast in Year 2045 provided by the Traffic Consultant is shown in Appendix C. The traffic data at peak hour is taken into consideration in the assessment.

The total number of vehicles induced by the Proposed Development during normal days and festive days (i.e. Ching Ming and Chung Yeung Festivals) at Sha Tau Kok Road - Shek Chung Au is summarised in Table 4.4. The basic noise levels at Sha

Tau Kok Road – Shek Chung Au Section have been evaluated before and after the development as shown in Table 4.5 and detailed in Appendix D.

Table 4.4 Traffic Forecast Data in 2045

ID	Road	Normal Days		Festive Days	
		Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles
Road 1	Sha Tau Kok Road - Shek Chung Au (Luk Keng Road – Access Road to Tong To)	1,105	27	1,157	20
Road 2	Sha Tau Kok Road - Shek Chung Au (Access Road to Tong To – Sha Ho Road)	1,079	30	945	26

Table 4.5 Basic Noise Level Before and After the Development during Festival Period in 2045

ID	Road	BNL without site L10 (1 hour), dB(A)	BNL with site L10 (1 hour), dB(A)	Difference
Road 1	Sha Tau Kok Road – Shek Chung Au (Luk Keng Road – Access Road to Tong To)	74.21	74.80	0.59
Road 2	Sha Tau Kok Road – Shek Chung Au (Access Road to Tong To - Sha Ho Road))	74.54	74.72	0.18

As the noise difference are less than 1dB(A) in during the peak hour, the road traffic noise impact arising from vehicle due to the Proposed Development on the surrounding noise sensitive uses should be insignificant during festival period.

4.5.2 Planned Fixed Noise Source at the Proposed Development

A 56kW multi-split type air-conditioning system on the roof will be provided for office and multi-functions room. The air-conditioning system in office will operate daily from 1000 to 1700, while air-conditioning system in multi-functions room will operate during Ching Ming and Chung Yeung Festival or as required in some ceremonies once or twice in a month. The proposed air-conditioning units will be placed on the roof and will be fully screened by the solid parapet construct with effective noise screen materials (i.e. surface density with at least 10 kg/m2) to mitigate the noise produced to the adjacent NSRs. Furthermore, all the planned fixed noise source shall strictly comply with the HKPSG's noise criteria stated in Table 4.3 which is 5 dB(A) below the Acceptable Noise Level (ANL - 5dB(A)), or the prevailing

background noise level, whichever is lower. As such, no potential fixed noise impact is anticipated from the Proposed Development to the nearby NSRs.

Furthermore, no burner and furnace will be provided within the Proposed Development. As such, adverse fixed noise impact due to operation of the Proposed Columbarium on the surrounding areas is not anticipated.

4.5.3 Other Planned Noise Source at the Proposed Development

Other planned noise source within the Proposed Development will include operation of the multi-functions' rooms which serve as ceremonial rooms and car park area.

The noise impact from the ceremonial rooms will only occurs for short duration and not frequent. Also, the multi-function's rooms would not rely on openable window for ventilation. Double glazing will be provided at the multi-function rooms to minimise the noise impact during the ceremony. Therefore, it is expected that the noise impact to the NSRs is not expected.

Free shuttle bus services will only be provided during grave sweeping periods. 2.5m and 4.5m high fence wall will be provided along the site boundary. Thus, there would be no direct line of sight to the car park space. Furthermore, the three-storey ancillary buildings of 10.5m high can also screen off the noise impact from the shuttle bus drop off/ pick up area. Figure 4.2 shows the section of the Proposed Development and the village houses. Therefore, the noise impact from the car park space would be minimal.

5 Water Quality

5.1 Criteria and Guidelines

The construction and operation of the Site shall comply with the Water Pollution Control Ordinance (WPCO) and its Technical Memorandum.

The following Legislation, Standards and Practice Notes should be considered in the assessment:

- Water Pollution Control Ordinance (Cap. 358): Water Quality Objectives (WQOs) for Mirs Bay Water Control Zone (WCZ);
- Water Pollution Control Ordinance (Cap. 358): Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters; and,
- EPD's Practice Notes for Professional Persons ProPECC PN 2/24 "Construction Site Drainage".
- ETWB TC(W) No. 5/2005 "Protection of natural streams/rivers from adverse impacts arising from construction works"

Guidelines for handling construction site runoff and discharges in ProPECC PN 2/24 "Construction Site Drainage" should be followed. The guidelines and relevant requirements will be specified in the construction contracts. The guidelines in ProPECC PN 1/23 "Drainage Plans subject to Comment by the Environmental Protection Department" should also be followed in the design of drainage plans for the Proposed Development.

The nearest Water Control Zone (WCZ) to the Site is Mirs Bay WCZ. Appendix F summarizes the WQOs for the Mirs Bay WCZ. In addition to the WQOs, any discharges into the inshore waters of the Mirs Bay WCZ are required to comply with Table 10b of "*Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters*".

5.2 Baseline Condition

The baseline condition has referred to the past marine water quality monitoring data from the EPD. The nearest monitoring station to the Site is MM1. In 2024, the overall compliance rate for Mirs Bay WCZ is 100% and full compliance with the DO objectives. Table 5.1 presents the water quality monitoring data at the monitoring station extracted from the EPD's publication "2024 Marine Water Quality in Hong Kong".

Table 5.1 Summary of EPD Water Quality Monitoring Data for MM1 at Mirs Bay WCZ in 2024

Parameters		Mirs Bay MM1
Temperature (^{O}C)		25.1 (20.1 – 31.2)
Salinity		31.5 (25.5 – 33.4)
Dissolved Oxygen (mg/L)	Depth average	6.3 (4.8 – 8.1)
	Bottom	5.9 (4.9 – 7.9)
Dissolved Oxygen (%Saturation)	Depth average	90 (71 - 109)
	Bottom	85 (20 - 105)
pH		8.1 (7.8 - 8.4)
Secchi Disc Depth (m)		2.1 (1.5 – 2.7)
Turbidity (NTU)		2.4 (0.4 – 4.9)
Suspended Solids (mg/L)		4.6 (2.3 – 8.0)
5-day Biochemical Oxygen Demand (mg/L)		0.9 (0.2 – 2.0)
Ammonia Nitrogen (mg/L)		0.035 (0.008 - 0.127)
Unionised Ammonia (mg/L)		0.002 (<0.001 - 0.007)
Nitrite Nitrogen (mg/L)		0.005 (<0.002 - 0.027)
Nitrate Nitrogen (mg/L)		0.059 (0.012 - 0.207)

Parameters	Mirs Bay MM1
Total Inorganic Nitrogen (mg/L)	0.10 (0.04 - 0.25)
Total Kjeldahl Nitrogen (mg/L)	0.21 (0.10 - 0.30)
Total Nitrogen (mg/L)	0.28 (0.12 - 0.51)
Orthophosphate Phosphorus (mg/L)	0.004 (<0.002 - 0.009)
Total Phosphorus (mg/L)	0.07 (0.02 - 0.18)
Silica (as SiO_2) (mg/L)	0.64 (0.15 – 1.31)
Chlorophyll-a (g/L)	4.3 (0.9 – 8.6)
E. coli (cfu/100 mL)	16 (<1 - 9000)
Faecal Coliforms (cfu/100 mL)	37 (1 - 21000)

Note:

1. *Unless otherwise specified, data presented are depth-averaged (A) values calculated by taking the means of three depths: Surface (S), Mid-depth (M), Bottom (B).*
2. *Data presented are annual arithmetic means of the depth-averaged results except for E. coli and faecal coliforms which are annual geometric means.*
3. *Data in brackets indicate the ranges.*

According to the Marine Water Quality of Hong Kong 2024 Report issued by the EPD, the monitoring results of key water quality parameters, including Dissolved Oxygen (DO) indicate that the overall Water Quality Objective (WQO) compliance rate of the Mirs Bay WCZ was 100%. The water quality of the Mirs Bay WCZ was good in 2024 with high DO and low TIN levels. The Mirs Bay WCZ also complied with the bacteriological WQO of ≤ 610 *E. coli* counts/100mL.

In 2024, full compliance with the ammonia nitrogen, TIN and DO objectives were achieved at the monitoring station.

5.3 Water Sensitive Receivers

Water sensitive receivers (WSRs) within 500m of the study area from the site boundary were identified. The identified WSRs are listed in Table 5.2 and the locations of the WSRs are shown in Figure 5.1.

Table 5.2 Water Sensitive Receivers

WSR	Nature of WSRs	Status (Active/Inactive)	Shortest Separation Distance (m)
WSR 1	Stream	Active	61
WSR 2	Stream	Active	21
WSR 3	Pond	Active	62
WSR 4	Pond	Active	406
WSR 5	Sha Tau Kok Hoi	Active	104
WSR 6	Pond	Active	247
WSR 7	Pond	Active	150
WSR 8	Pond	Active	79

5.4 Water Quality During Construction Stage

Construction site runoff and drainage, sewage effluent and liquid/ chemical spillage generated from construction activities are the potential pollution sources and may induce water quality impact if not properly controlled.

The Contractor shall apply for a Discharge License from EPD in accordance with the WPCO. The effluent standards will have to comply with the Discharge License requirements. Appropriate water pollution control measures in ProPECC PN2/24 and ETWB TC (Works) No.5/2005 shall be followed during construction stage. Applicable measures may 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;
- 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;
- 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;

- 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;
- Sections of the roads between the wheel washing bay and the public road should be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains; and
- Sufficient chemical toilet(s) will be provided for workers during construction stage. All chemical toilets, if any, shall be regularly cleaned and the night-soil 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.

As 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.

All construction works will be conducted within the Site and will not encroach into existing streams. The construction site runoff and wastewater arising from the Site will be properly treated according to the aforesaid control measures. The effluent discharge will be in compliance with the discharge license requirements, and the Technical Memorandum (TM) under WPCO. Hence, no adverse impact on WSRs is anticipated.

5.5 Water Quality During Operational Stage

The sewage generated from the Proposed Development will include the wastewater generated from toilet flushing and other domestic wastewater.

The drainage record plans were obtained from the Drainage Services Department (DSD) in July 2023 and May 2025 to gather the background information on sewerage infrastructure in the vicinity of the Site. According to the drainage record plans, the Site is not currently served by any public sewerage facility. The sewage generated from the Proposed Development will be discharged into the Tapping Point (No.:

FTH1032120). ProPECC PN1/23 shall be followed as far as applicable as mitigation measure during operation stage.

A Drainage Impact Assessment Report have been conducted. The report demonstrates that the surface runoff from relevant catchments and within the Site will be collected by a series of proposed drainage system. Catchpits with sand trap or rubbish traps at the outlet of the proposed drainage system will be provided to prevent pollutant from entering the public drainage. As such, the Proposed Development would not cause adverse drainage impacts or increase in the flooding susceptibility of the adjacent areas.

A Sewerage Impact Assessment Report have been conducted. The report shows that the capacities of existing public sewers along Sha Tau Kok Road are sufficient to cater for the sewage generation from the Proposed Development. The sewer connection from the Proposed Development to the public sewers will be constructed and completed before the occupation of the building in 2030. Therefore, no adverse sewerage impact due to the proposed uses on the local area is anticipated.

6 Waste Management

6.1 Criteria and Guidelines

The Waste Disposal Ordinance prohibits the unauthorised disposal of wastes, with waste defined as any substance that is abandoned. All wastes should be properly stored and disposed in accordance with relevant waste management regulations and guidelines listed below:

- 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;
- Environment, Transport and Works Bureau Technical Circular (Works) No. 19/2005, Environmental Management on Construction Sites (ETWB TC(W) No.19/2005);
- Development Bureau (Works) No. 8/2010, Enhanced Specification for Site Cleanliness and Tidiness;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste;
- Development Bureau (DEVB) Technical Circular (Works) (TC(W)) No. 6/2010 – Trip Ticket System for Disposal of C&D Materials; and
- Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers, No. ADV-19, Construction and Demolition Waste.

6.2 Assessment Methodology

The assessment of waste management implications from handling, storage, collection, transportation and disposal of solid waste materials generated by the Proposed Development have been undertaken.

The waste management hierarchy has been applied in the assessment and development of mitigation measures for waste. The waste management hierarchy is a concept which shows the desirability of various waste management methods and comprises the following in order of descending preference:

a) avoidance;
b) minimisation;
c) recycling/reuse;

d) treatment; and
e) disposal.

All opportunities for reducing waste generation have been assessed based upon the following factors:

a) avoiding or minimising waste generation throughout design, construction and operational phase;
b) adopting better management practices to promote segregation materials;
c) reuse and recycling on site or other projects; and
d) diverting C&D materials to public fill reception facilities as far as possible.

The quantity, quality and timing of the waste arising as a result of the construction and operation activities of the Project and associated works have been estimated, based on the sequence and duration of these activities. The design, general layout, construction methods and programme to minimize the generation of public fill/inert C&D materials and maximize the use if insert C&D materials for other construction works (if possible) have been considered.

The potential waste management implications associated with the handling, transportation and disposal of waste arising from the construction works have been assessed with reference to the following approach:

a) estimation of the types, timing and quantities of the wastes to be generated and fill to be imported; and
b) assessment of the potential waste management implications on the capacity of collection, transfer and disposal facilities.
c) the waste generation and disposal rate adopted in the assessment is based on statistical data issued by EPD “Monitoring of Solid Waste in Hong Kong – Waste Statistics for 2023”.

Prior to considering the disposal options for various types of wastes, opportunities for reducing waste generated, on-site or off-site re-use and recycling have been evaluated. Measures which can be taken in the design phase (e.g. by modifying the design approach) and in the construction phase for maximizing waste reduction have been separately considered.

After considering all the opportunities for reducing waste generation and maximizing re-use, the types and quantities of the remaining wastes required to be disposed of have been estimated and the disposal options for each type of wastes have been described. The disposal method recommended for each type of wastes has taken into account the result of the assessment

The impacts caused by handling (including labelling, packaging and storage), collection, and reuse/disposal of wastes have been addressed and appropriate mitigation measures have been proposed.

6.3 Waste During Construction Stage

6.3.1 Construction Stage

The construction activities associated with Proposed Development, include demolition, excavation and construction of structure works. The following types of wastes are identified during the construction of the Proposed Development:

- C&D materials;
- Chemical waste; and
- General refuse.

The estimated quantity of each type of waste during construction stage has been presented in Table 6.1.

Table 6.1 Summary of Waste Generation during Construction Stage

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 non-inert C&D materials (e.g. timber, paper, plastics, etc)	Inert C&D materials reused as backfilling materials on-site	453 tonnes
			Inert C&D materials to be delivered to public fill reception facilities for other beneficial uses	4,081 tonnes
			Non-inert C&D materials (e.g. timber, paper, plastics, etc.) reused or disposed of at landfill as the last resort	900 tonnes
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	0.5L per month
General Refuse	Wastepaper, 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	10kg per day

6.3.2 Construction and Demolition (C&D) Materials

C&D materials will be generated from the construction activities. The inert portion of C&D materials mainly comprise of excavated soil, rock and concrete. The quantity of inert C&D materials to be generated is estimated about 4,534 tonnes. About 453 tonnes of inert C&D materials will be reused as backfilling materials on-site. About 4,081 tonnes of inert C&D materials which cannot be reused during the construction works of the Project will be delivered to Tseung Kwan O Area 137 fill bank available at the time of construction. A dumping license is required to be issued by the Civil Engineering & Development Department (CEDD). The Public Fill Committee in consultation with relevant project proponent is responsible for identifying suitable sites for public filling.

Furthermore, about 900 tonnes of non-inert C&D materials will be reused and recycled as far as practicable, and the surplus will be disposed of at North East New Territories Landfill.

6.3.3 Chemical Waste

The maintenance and servicing of construction plant and equipment may generate a minimal amount of chemical wastes during construction works, such as cleaning fluids, solvents, lubrication oil and fuel.

Chemical wastes arising during the construction stage may pose environmental, health and safety hazards if not stored and disposed of in an appropriate manner as stipulated in the Waste Disposal (Chemical Waste) (General) Regulations. The potential hazards include:

- Toxic effects to workers;
- Adverse impacts on water quality from spills; and
- Fire hazards.

Materials classified as chemical wastes will require special handling and storage arrangements before removal for appropriate treatment at the Chemical Waste Treatment Centre (CWTC) or other licensed facilities. Wherever possible opportunities should be taken to reuse and recycle materials.

Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. A trip-ticket system should be operated in accordance with the Waste Disposal (Chemical Waste) (General) Regulation to monitor all movements of chemical wastes which would be collected by licensed chemical waste collectors to a licensed facility for final treatment and disposal.

Provided that this occurs, and the chemical waste is disposed at a licensed chemical waste treatment and disposal facility, the potential environmental impacts arising from the storage, handling and disposal of a small amount of chemical waste generated from the construction activities will be negligible.

6.3.4 General Refuse

The construction workforce will generate a small amount of refuse such as waste papers, packaging material and food wastes. Actual volumes will be subjected to the Contractor's site practices. It is estimated that the daily generation of general refuse during construction period is approximately 10kg per day. Waste recycling for the general refuse should be conducted as far as practicable prior to disposal. The general refuse will be collected on-site, separately from C&D materials by an appropriate waste collector employed by the Contractor to the landfills.

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 During Operation Stage

6.4.1 General Refuse

General refuse, such as food waste, plastic, aluminum cans and wastepaper are expected to be generated during operation. According to the information provided by the Project Proponent, it is estimated 20 staff, and 4,660 visitors would be on-site during festive days.

Based on the 2023 solid waste monitoring data, the disposal rate is 1.44 kg/person/day with a recovery rate of 33%. Therefore, 1.44 ÷ (100% - 33%) = 2.15 kg/person/day is adopted as the waste generation rate. The amount of general refuse to be generated from the Project is about 10,062 kg/day (4,680 x 2.15 kg/person/day = 10,062 kg/person/day).

Recyclables like plastic containers, papers, glass bottles, aluminium cans and food waste should be separated from general refuse and delivered to the local recyclers to maximise reuse and recycle volume. Other non-recyclable general refuse would be collected by licensed collectors daily and disposed of at NENT Landfill.

Provided that a sufficient number of trash bins and recycling bins (which are enclosed/covered with lids) have already been provided and will be retained for the collection of general refuse generated, no environmental impacts associated with waste management are expected during the operation.

6.5 Recommended Waste Management Mitigation Measures

6.5.1 Construction Phase

Good Site Practice and Waste Reduction Measures

Unacceptable waste management implications are not expected, provided that good site practices are strictly implemented. The following recommendations will be implemented during the construction. With the appropriate implementation of these

proposed mitigation measures, no waste management implication in general is envisaged.

- Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354C), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap 345N) and the Land (Miscellaneous Provision) Ordinance (Cap.28);
- Prepare a Waste Management Plan approved by the Engineer / Supervising Officer of the Project based on current best practice on Construction Sites;
- Waste licensed collector to collect waste;
- Implementation of trip ticket system with reference to ETWB(W) No.6/2010 Trip Ticket System for Disposal of Construction & Demolition Materials;
- Utilization of trucks with covers or enclosed containers for waste transportation;
- Provide staff training for proper waste management and chemical waste handling procedures;
- Separation of chemical waste for special handling and dispose to licensed facility for treatment;
- Sufficient waste disposal points and regular collection programme setup; and
- Recording system for waste generation, recycle and disposal.

The ETWB TCW No.19/2005 “Environmental Management on Construction” includes procedures on waste management requiring contractors to reduce the C&D material to be disposed of during construction. Under ETWB TCW No.19/2005, the Contractor is required to prepare and implement an Environmental Management Plan (EMP) and the Waste Management Plan (WMP) should be part of the EMP.

Construction and Demolition Materials

Prior to disposal of C&D waste, the following practices should be implemented.

- 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;
- Wood, steel and other materials should be separated for reuse and recycling to minimize the quantity of waste to be disposed of at the landfill;
- Minimize use of wood and reuse non-timber formwork to reduce C&D waste;
- Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
- Designated areas for different materials storage should be assigned for segregation; and
- Encourage collection of aluminium cans, plastic bottles and packaging material and office paper.

In managing and disposing of removed trees and vegetation, reuse and recycling should be prioritised. There are several options available, including chipping them into woodchips or mulch for landscaping, reusing them as timber, converting them

into biomass energy, decomposition and composting them for art and crafts, or creating wildlife habitats. The specific recycling method chosen will depend on factors such as tree condition, amount, and desired outcomes. In particular, the feasibility of recycling the tree and vegetation waste in Y Park will be explored.

Well-planned design and good site management can minimize over-loading and generation of waste materials such as concrete and cement grouts. Wooden frame should be replaced by metals. Plastic fencing and reusable site office structure can reduce C&D waste generation.

Under the Construction Waste Disposal Charging Scheme, construction waste producers such as construction and renovation contractors and premises owners, prior using government waste disposal facilities, need to prepare a billing account with EPD and pay for construction waste disposal.

A trip-ticket system will be implemented for surplus C&D materials disposal in accordance with ETWB TC(W) No.31/2004 and the Construction Waste Disposal Charging Scheme. Waste should be delivered to a public fill reception facility. Copies or counterfoils of trip tickets will be kept for record purpose. In addition, according to Annex 15 of the EIAO-TM, the transportation of construction waste will be monitored by means of dump trucks equipped with real-time tracking and monitoring devices.

With the appropriate implementation of these proposed mitigation measures, no waste management implication in C&D wastes during construction is anticipated.

Chemical Waste

During the planning stage, alternatives should be explored for the processes that generate chemical waste to eliminate the use of chemicals, reduce the generation quantities or to select a chemical type of less impact on environment, health and safety.

The Contractor should register with EPD as chemical waste producers. Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Waste published by the EPD. Chemical wastes should be stored in a suitable area close to the source of waste generation for temporary storage and in appropriate containers for collection by a licensed chemical waste collector for disposal at licensed facilities in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.

With the appropriate implementation of these proposed mitigation measures, no waste management implication in chemical waste during construction is anticipated.

General Refuse

General refuse should be stored in enclosed bins or compaction units separated from C&D materials and chemical wastes. Recycling bins will be provided for sorting of general refuse. A waste collector should be employed by the Contractor to

minimize odour, pest and litter impacts. Open burning of refuse on the construction site is prohibited by law.

The Contractor should carry out an education programme for workers relating to avoiding, reducing, reusing and recycling general waste. This should include provision of three-colour recycling bins and on site and posters and leaflets reminding of the use of recycling bins. It is expected that such arrangements would minimise potential environmental impacts from waste generation.

With the appropriate implementation of these proposed mitigation measures, no waste management implication in general refuse during construction is anticipated.

6.5.2 Operation Phase

General Refuse

It is recommended that the following good practices should be adopted to minimise the waste management impacts.

- Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Chemical Waste) (General) Regulation and the Land (Miscellaneous Provision) Ordinance (Cap. 28);
- Removed general refuse on a daily basis to minimize potential odour, pest and litter impact;

- 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;

  - Adoption of appropriate measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers; and
  - Implementation of a recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).

Good management and control can also prevent the generation of significant amounts of waste. It is recommended that the following good operational practices should be adopted to ensure waste reduction:

- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; and
- Encourage collection of aluminium cans, plastic bottles and packaging material (e.g. carton boxes) and office paper by collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force.

General refuse should be stored in enclose bins. To promote recycling of wastepaper, aluminium cans, plastic bottles and food waste, it is recommended to place clearly labelled recycling bins at designated locations. A licensed waste collector should be

employed by the management team to remove general refuse from the proposed development.

With the appropriate implementation of these proposed mitigation measures, no waste management implication in general refuse during operation phase is anticipated.

7 Land Contamination

7.1 Criteria and Guidelines

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 Review of Historical Photographs

Historical aerial photographs were reviewed to identify previous land uses at the 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 F and summarised in Table 7.1.

Table 7.1 Summary of Land Use From 1956 to 2023

Year	Ref. No.	Observations
1956	0087	The majority of the Site were occupied by farmlands, with vegetated slopes identified on the eastern portion of the Site. Sha Tau Kok Road was identified to the south of the Site.
1973	7686	The Site was covered by natural vegetation, with a vegetated slope located on the eastern portion of the Site.
1982	46729	The natural vegetation at the centre of the Site was removed. The vegetated slope on the eastern portion of the Site remained.
1990	A23059	The farmlands in the southern portion of the Site were replaced by vegetation cover, while temporary structure is observed on the northwestern portion of the Site remained. The rest of the Site was covered by natural vegetation.
1999	A50363RM	The land within the Site was the same as in 1990.
2010	CW86421	The land within the Site was the same as in 1999.
2019	E074677C	Hard-paved access roads were provided, while other portions of the site were covered by vegetation.
2023	E183526C	The land within the Site was the same as in 2018

Based on the aerial photographs, the Site was mainly covered by farmlands with vegetated slopes identified in the eastern portion of the Site in 1956. Since 1973,

except the southern portion, the Site was covered by natural vegetation and the vegetated slope remained. In 1982, the natural vegetation at the centre of the Site was removed and the vegetated slope on the eastern portion of the Site remained. In 1990, the farmlands in the southern portion of the Site were replaced by vegetation cover, while a temporary structure was located on the northwestern portion of the Site. The rest of the Site was covered by natural vegetation. In 1999 and 2010, the land within the Site remained the same. During 2018 to 2023, hard-paved access roads were provided throughout the Site while other portions of the Site were covered by vegetation.

7.3 Site inspection

Based on the site survey conducted in July 2025, the Site is mainly covered by natural vegetation with hard-paved access roads. There are no changes in land use activities since the site survey conducted in July 2025. Furthermore, no storage of chemicals and/or chemical waste was found within the Site. No potentially contaminating activities/facilities (e.g. dangerous goods stores, vehicle maintenance activities, transformer, generators, etc.) are identified at the site. The site photos of the survey are provided in Appendix G.

As a result, no land contamination sources are found within the site. Therefore, no land contamination issues are expected.

8 Cultural Heritage

8.1 Introduction

This section presents the cultural heritage impact review of potential cultural heritage impacts during construction phase of the Project.

8.2 Relevant Legislations, Standards and Guidelines

The legislations, standards and guidelines relevant to the identification and review of cultural heritage impact for the Project includes:

- Antiquities and Monuments Ordinance (Cap. 53);
- Environmental Impact Assessment Ordinance (Cap. 499);
- Hong Kong Planning Standards and Guidelines;
- Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM); and
- Guidelines for Cultural Heritage Impact Assessment.

8.3 Evaluation of Potential Cultural Heritage Impact

According to the available information from the Antiquities and Monuments Office (AMO), the Site is in close vicinity of Sha Tau Kok San Tsuen Site of Archaeological Interest (SAI). Figure 7.1 shows the Sha Tau Kok San Tsuen Sites of Archaeological Interest (SAI). Given that the Proposed Development is close to the SAI, protective measures shall be adopted to prevent the impact on the SAI. Protective measures shall include the following:

- Erection of hoarding of not less than 2.4 m high from ground level along the site boundary;
- Storage, handling, transport and disposal of construction material shall be arranged within the hoarding boundary;
- Good site practices shall be adopted from the commencement of works to avoid disturbance to the SAI; and
- Tool-box talks shall be provided to workers about the importance of SAI's protection and the protection measures to be adopted.

Apart from the protection measures mentioned above, no construction work (including excavation works) would be carried outside the site boundary.

Furthermore, there will be a wall of about 2.5m (H) at the eastern tip of the site. Outside the wall is a strip of plantation area of about 3.5m wide with 20m walkway.

Therefore, the total distance between the wall and the SAI is about 23.5m (i.e. 3.5m plantation area + 20m walkway).

Given that the wall at the Proposed Development is about 23.5m away from the boundary of SAI and there would be no excavation work, it is unlikely that the Proposed Development would affect the SAI. Figure 7.1 shows detailed information of the buffer between the Proposed Development and Sha Tau Kok San Tsuen Sites of Archaeological Interest (SAI).

Pursuant to the Antiquities and Monuments Ordinance (Cap.53), the project proponent should inform AMO immediately in case of discovery of an antiquity or supposed antiquity during the construction phase. Detailed study should be timely carried out and mitigation measures should be formulated for AMO's comment and agreement prior to implementation.

9 Conclusion

The Environmental Assessment (EA) is prepared to identify all potential environmental impacts and relevant environmental requirements due to the construction and operation of the Proposed Development.

Air Quality

The potential sources of air quality impact associated with the proposed construction activities include construction works, which will be expected to generate construction dust and gaseous emission. With the implementation of the recommended mitigation measures and good site practices, adverse air quality impact is not anticipated during the construction phase.

The required buffer distance of 10m for Sha Tau Kok Road – Shek Chung Au Section can be fulfilled Therefore, no adverse air quality impacts associated with vehicular emission on the Site is anticipated.

No burners/furnace will be provided in the Proposed Columbarium, no adverse air quality impact is anticipated.

Noise

General construction work by using PME is the major noise source during construction stage. With implementation of the noise mitigation measures as recommend in ProPECC PN 1/24, no adverse noise impact is anticipated on surrounding NSRs during construction phase.

The noise difference are less than 1dB(A) in during the peak hour, the road traffic noise impact arising from vehicle due to the Proposed Development on the surrounding noise sensitive uses should be insignificant during festival period.

All the planned fixed plant noise should follow the ANL in IND-TM. Furthermore, 2.5m and 4.5m fence wall at the site boundary and double glazing at the multi-function room would be provided to minimize the noise impact from the car park space and the multi-function rooms. Therefore, the noise impact to the NSRs would be minimal.

Water Quality

The potential impacts of water quality arising from the construction and operation phase of the Site have been identified and evaluated. With implementation of recommended mitigation measures, no adverse water quality impact is anticipated during construction phase.

During operation phase, the sewage/wastewater generated from the Proposed Development will be discharged to the public sewer and the run-off will be conveyed to the stormwater drain. The sewer and drain connection from the Site to the public sewerage and drainage system will be constructed and completed before the

operation of the Site. With the mitigation measures proposed above, no adverse water quality impact during operation phase is anticipated.

Waste Management

The potential impacts of waste arising from construction and operation phases of the Proposed Development have been assessed. With the implementation of waste management measures, waste generated/disposed of the Proposed Development should not lead to any adverse impact.

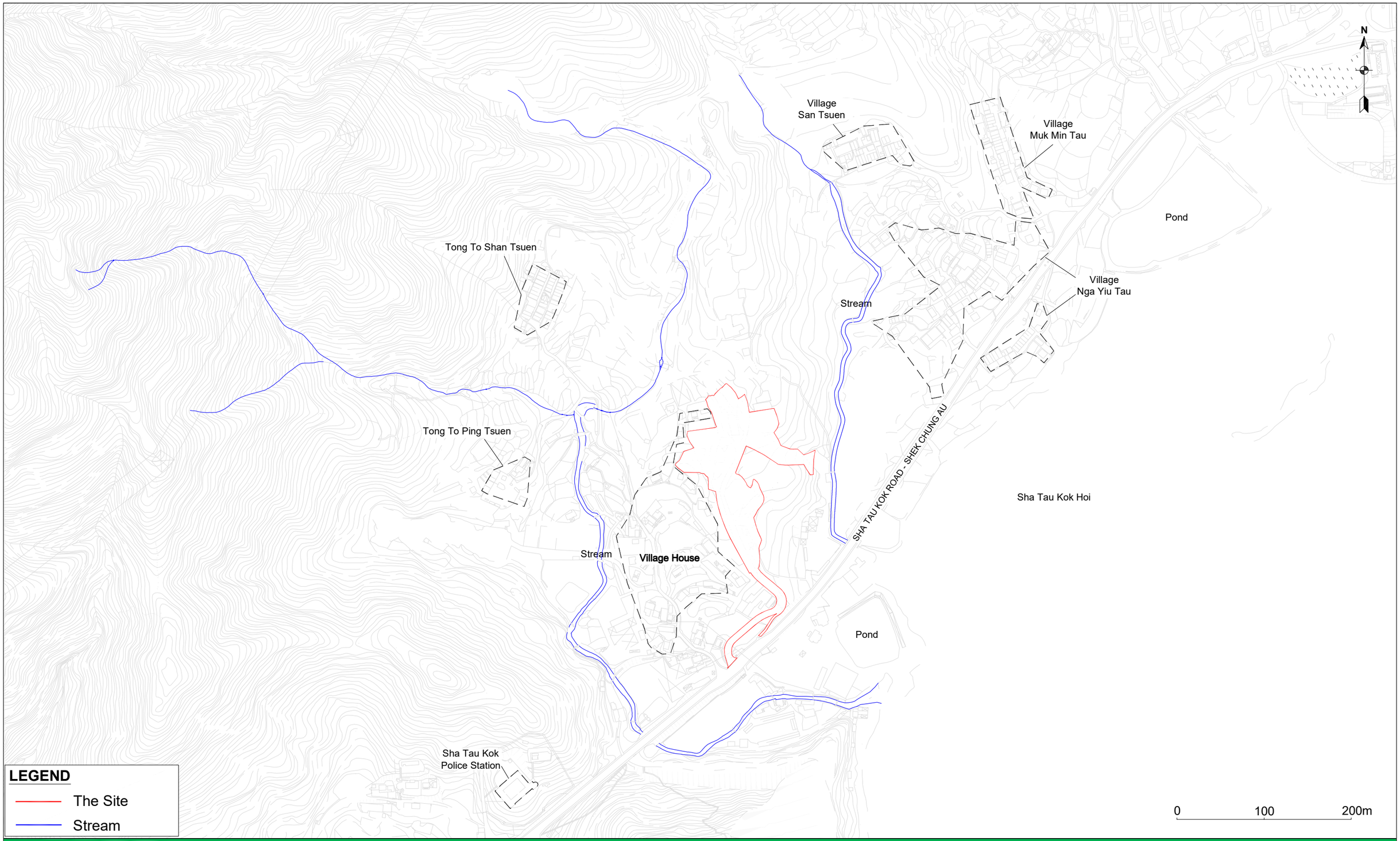
Land Contamination

Based on the review of historical aerial photographs and site visits, it is expected that there will be no potential land contamination issues at the Site.

Cultural Heritage

The Site is located proximity to Sha Tau Kok San Tsuen Sites of Archaeological Interest (SAI). Protection measures would be adopted to prevent the impact on the SAI. Furthermore, there is 23.5m buffer between the Site and the SAI and no construction activity would be carried outside the site boundary, no adverse impact on the SAI is anticipated.

Figures



Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok, New Territories

Site Location and Its environs

Figure 2.1

Rev. 0

URBAN GREEN

ID	ASR
A1	Village House 1
A2	Village House 2
A3	Village House 3
A4	Village House 4
A5	Village House 5
A6	Village House 6
A7	Village House 7
A8	Village House 8
A9	Village House 9
A10	Tong To Ping Tsuen
A11	Tong To
A12	Nga Yiu Tau
A13	Bula Land
A14	ShaTau Kok Farm
A15	Guard Room at G/F and 1/F of the Proposed Development
A16	Multi-function Rooms/Canteen at the Proposed Development
A17	Office at the Proposed Development

N

A11

A12

A10

A7 A8 A9

A6 A17

A5

A16

A4

A3 A15

A2

A1

A14

A13

Sha Tau Kok Road

Sha Tau Kok Road

LEGEND

The Site

500m Assessment Area

Representative ASRs in the Surrounding

ASRs at the Proposed Development

0 100 200m

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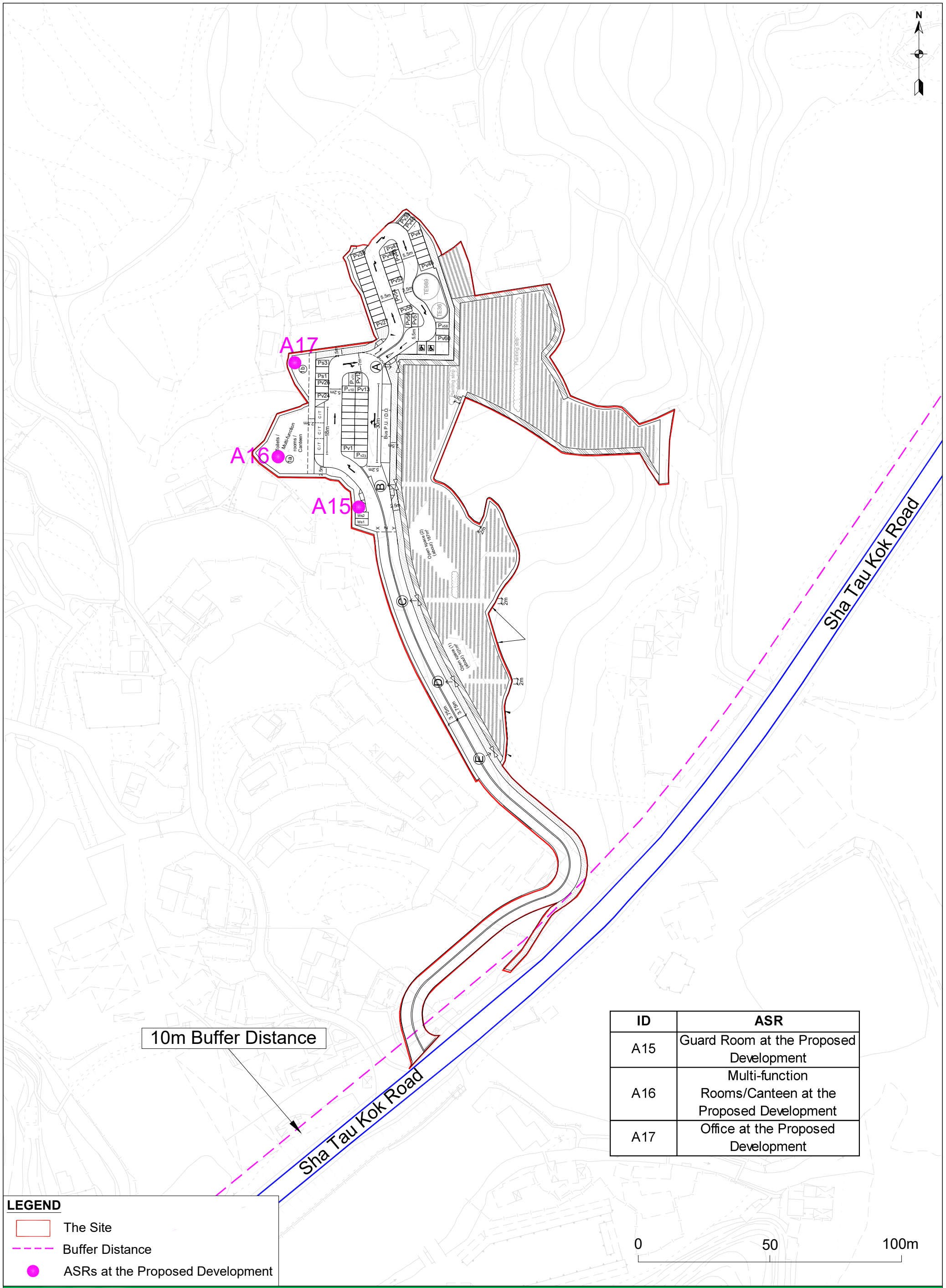
S12A Rezoning Application for Proposed Columbarium on Various Lots in D.D.41, Sha Tau Kok, New Territories

Representative Air Sensitive Receivers

Figure 3.1

Rev. 0



ID	ASR
A15	Guard Room at the Proposed Development
A16	Multi-function Rooms/Canteen at the Proposed Development
A17	Office at the Proposed Development

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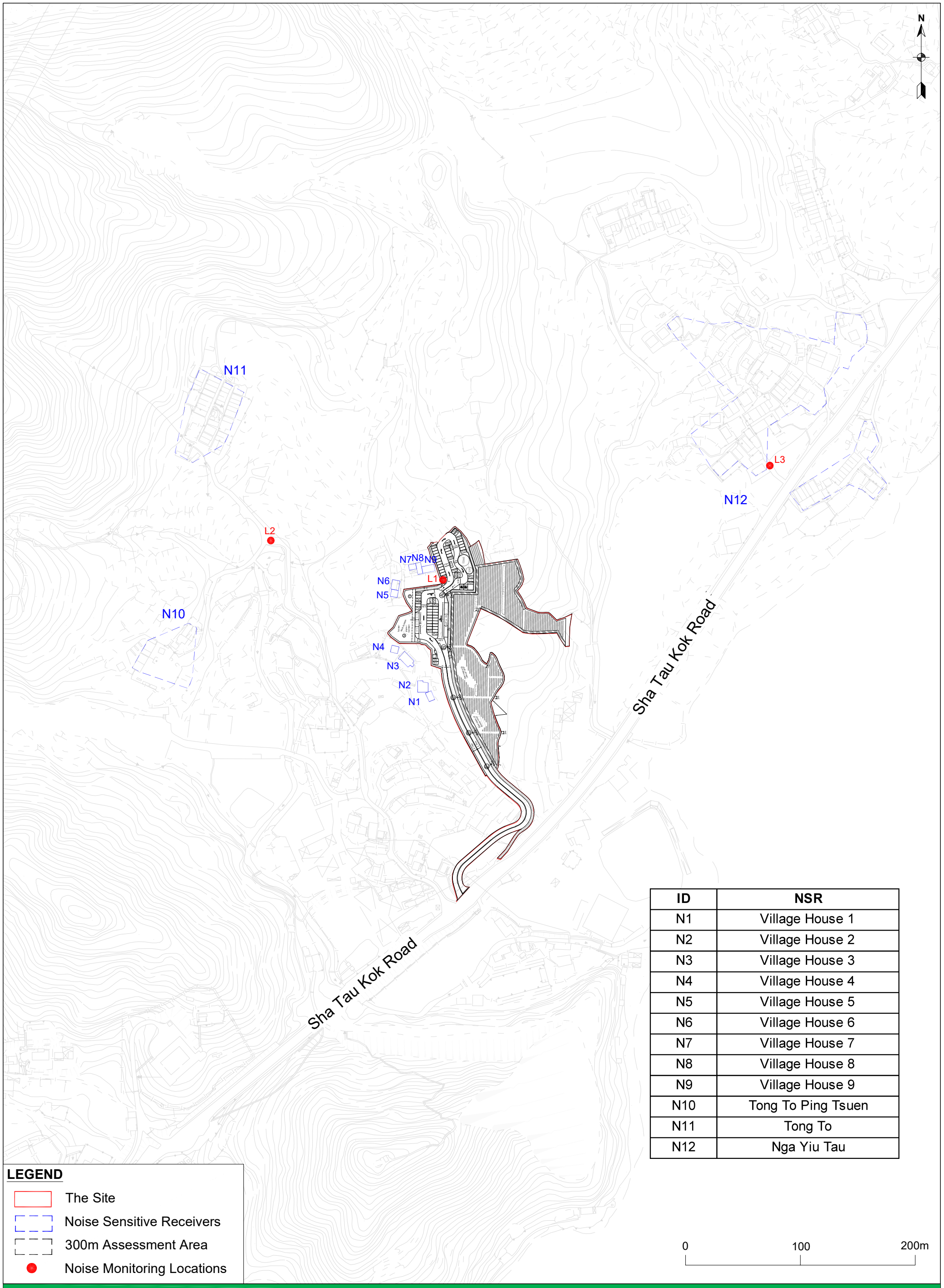
S12A Rezoning Application for Proposed Columbarium on Various Lots in D.D.41, Sha Tau Kok, New Territories

Buffer Distance from Sha Tau Kok Road

Figure 3.2

Rev. 0



ID	NSR
N1	Village House 1
N2	Village House 2
N3	Village House 3
N4	Village House 4
N5	Village House 5
N6	Village House 6
N7	Village House 7
N8	Village House 8
N9	Village House 9
N10	Tong To Ping Tsuen
N11	Tong To
N12	Nga Yiu Tau

LEGEND

- The Site
- Noise Sensitive Receivers
- 300m Assessment Area
- Noise Monitoring Locations

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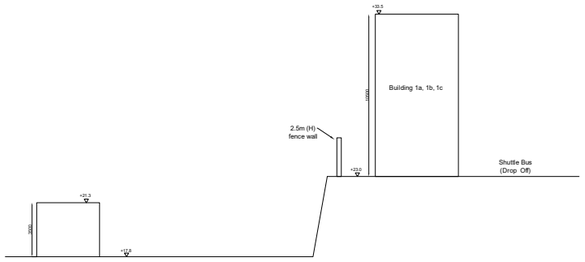
S12A Rezoning Application for Proposed Columbarium on Various Lots in D.D.41, Sha Tau Kok, New Territories

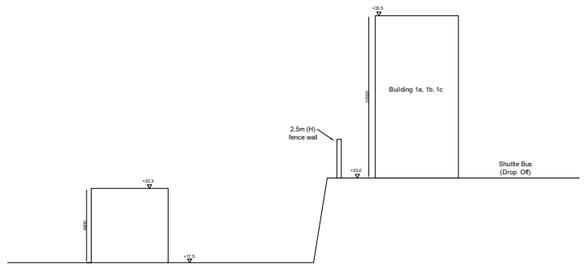
Representative Noise Sensitive Receivers and Noise Monitoring Locations

Figure 4.1

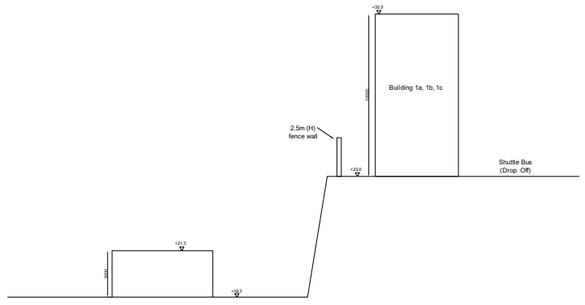
Rev. 0



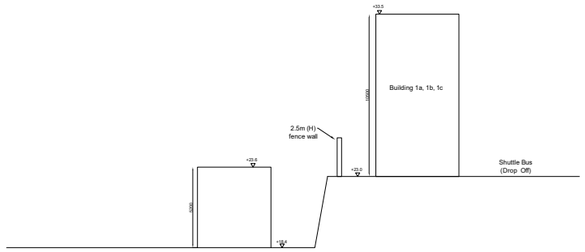
Village house 1



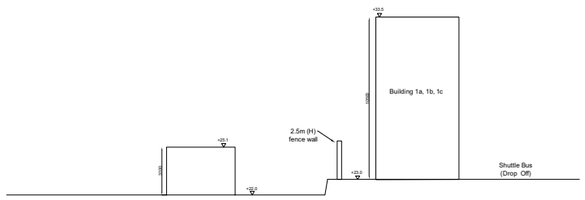
Village house 2



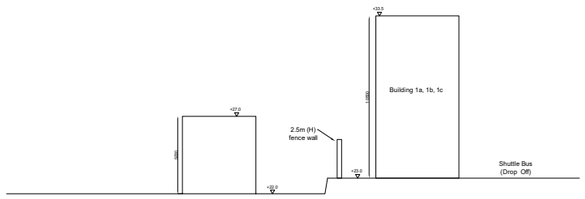
Village house 3



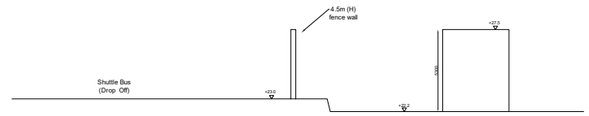
Village house 4



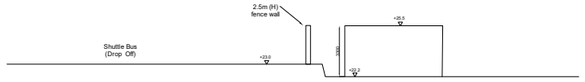
Village house 5



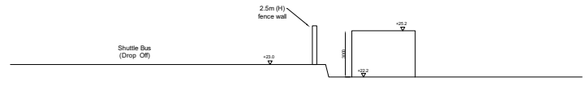
Village house 6



Village house 7



Village house 8



Village house 9

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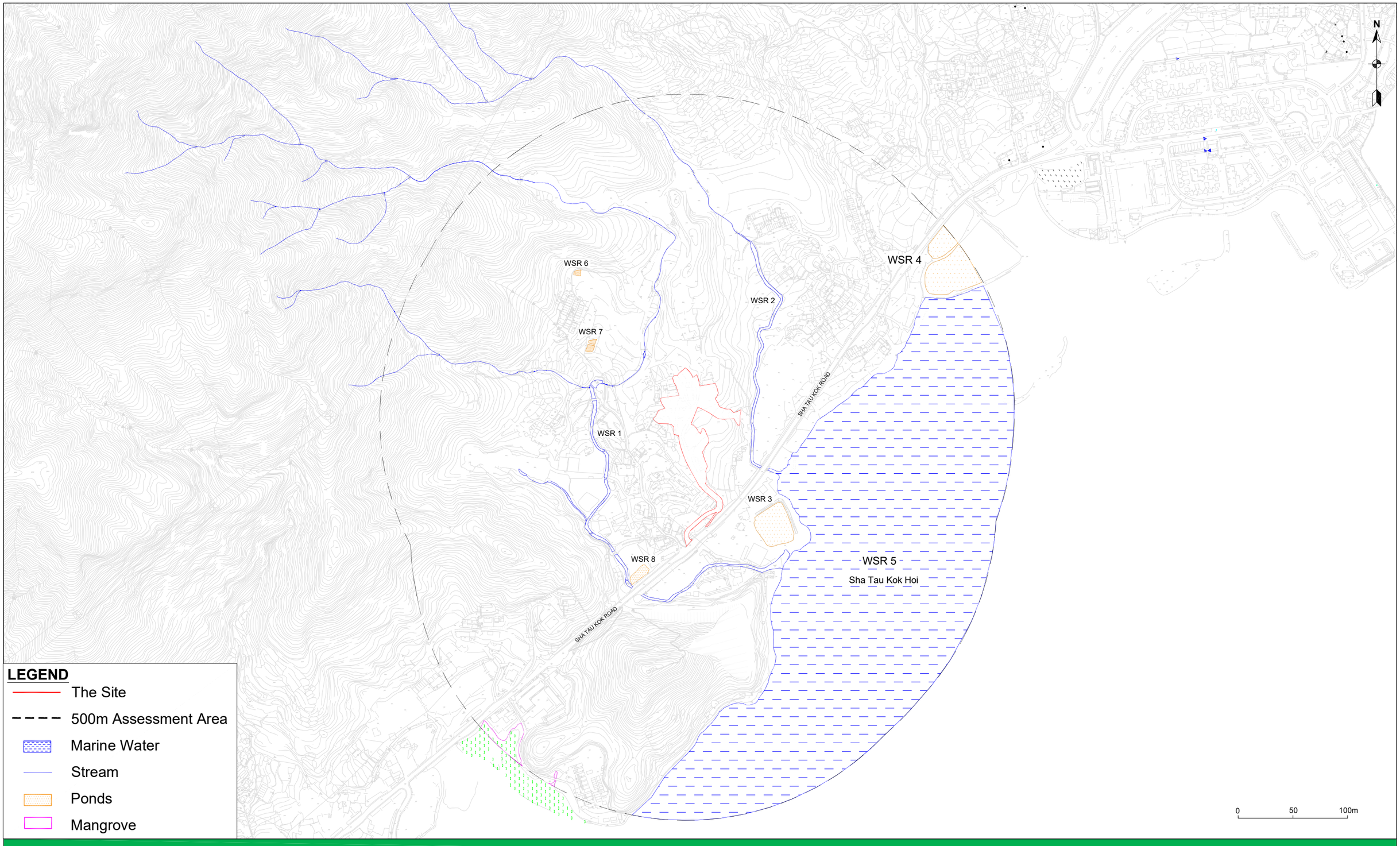
Section 12A Rezoning Application for Proposed Columbarium at Various Lots in D.D. 41, Sha Tau Kok, New Territories

Section of the Proposed Development and the Village Houses

Figure 4.2

Rev. 0



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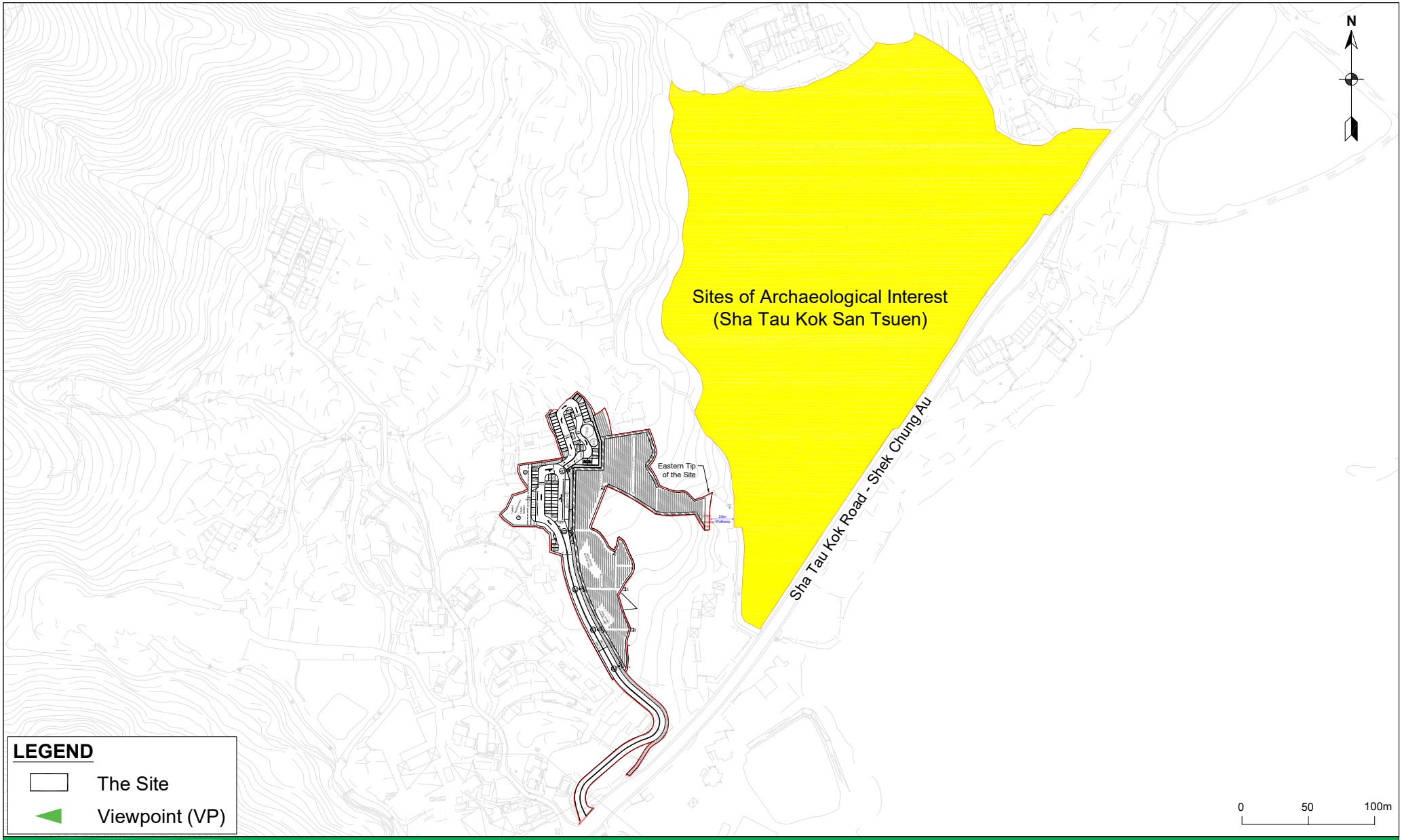
S12A Rezoning Application for Proposed Columbarium on Various Lots in D.D.41, Sha Tau Kok, New Territories

Locations of Water Sensitive Receivers

Figure 5.1

Rev. 0



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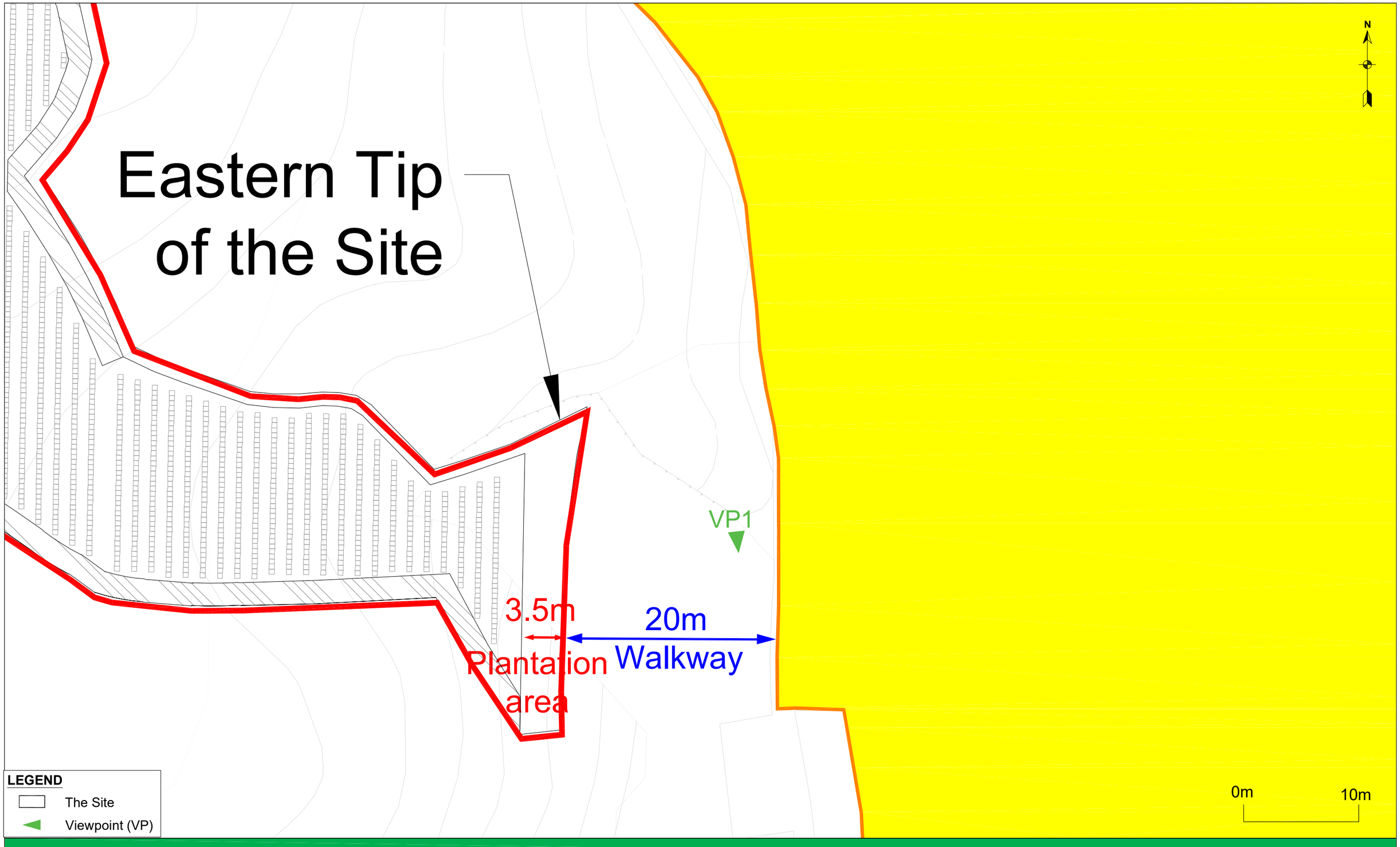
Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok

Location of Sites of Archaeological Interest (Sha Tau Kok San Tsuen)

Figure 7.1a

Rev. 0



URBAN GREEN

Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok

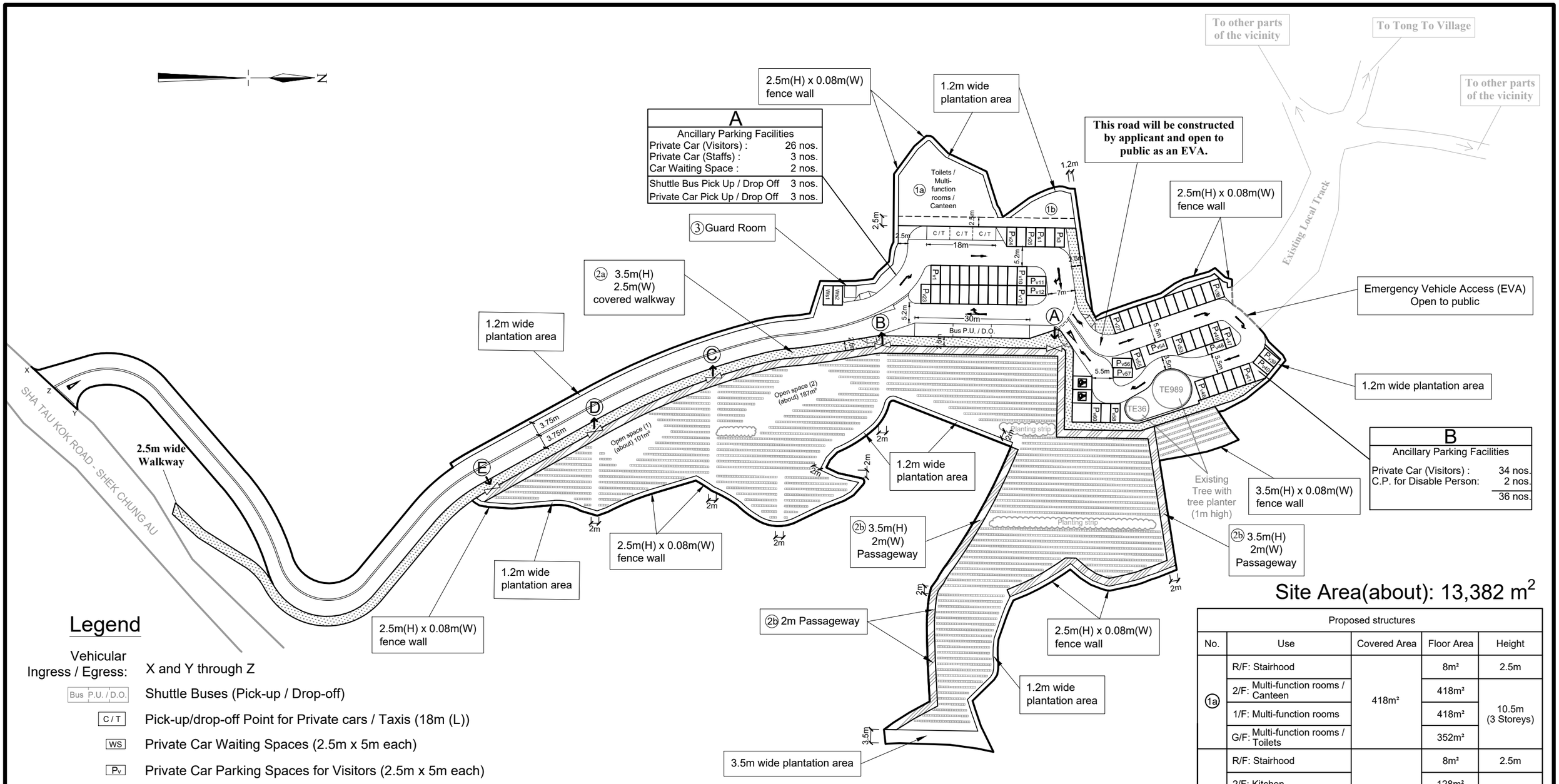
Location of Sites of Archaeological Interest (Sha Tau Kok San Tsuen)

Figure 7.1b

Rev. 0

Appendix A

Proposed Layout Plan



Legend

Vehicular Ingress / Egress:	X and Y through Z
Bus P.U. / D.O.	Shuttle Buses (Pick-up / Drop-off)
C / T	Pick-up/drop-off Point for Private cars / Taxis (18m (L))
WS	Private Car Waiting Spaces (2.5m x 5m each)
P_V	Private Car Parking Spaces for Visitors (2.5m x 5m each)
P_S	Private Car Parking Spaces for Staffs (2.5m x 5m each)
♿	Private Car Parking Spaces for Visitors (Disabled Persons) (3.5m x 5m each)
	Pedestrian access
	Canopy over walk-way
	Canopy over passageway
	Planting Strip

Site Area(about): 13,382 m²

Ancillary Parking Facilities	Private Car Parking Spaces for Visitors	Private Car Parking Spaces for Visitors (Disabled Persons)	Total Private Car Parking Space for Visitors	Private Car Parking Spaces for staffs	Private Car Waiting Spaces	Pick-up/drop-off Point for Private cars / Taxis	Lay-by for Shuttle Buses
Car park A	26	-		3	2	3	3
Car park B	34	2		-	-	-	-
Total	60	2	62	3	2	3	3

Niche count	
	No. of niches
At-grade niche blocks	6,495 nos. x 1 = 6,495

Proposed structures				
No.	Use	Covered Area	Floor Area	Height
1a	R/F: Stairhood	418m²	8m²	2.5m
	2/F: Multi-function rooms / Canteen		418m²	10.5m (3 Storeys)
	1/F: Multi-function rooms		418m²	
	G/F: Multi-function rooms / Toilets		352m²	
1b	R/F: Stairhood	128m²	8m²	2.5m
	2/F: Kitchen		128m²	10.5m (3 Storeys)
	1/F: Multi-function rooms		128m²	
	G/F: Office / Storeroom		78m²	
2a	Canopy over walk-way	832m²	832m²	3.5m (1 Storey)
2b	Canopy over passageway	748m²	748m²	3.5m (1 Storey)
3	1/F: Guard room	9m²	9m²	6m (2 Storeys)
	G/F: Guard room		9m²	
Total		2,135m²	3,136m²	

1 : 1000 (A3)	Master Layout Plan	Goldrich Planners & Surveyors Ltd.
October 2025	Rezoning Application from “AGR” and “GB” to “OU (Columbarium)” on various Lots in D. D. 41 and Adjoining Government Land, Tong To, Sha Tau Kok, N.T.	Plan 4 (P 17106)

Appendix B

Details of Noise Survey

RECORD OF BACKGROUND NOISE MONITORING

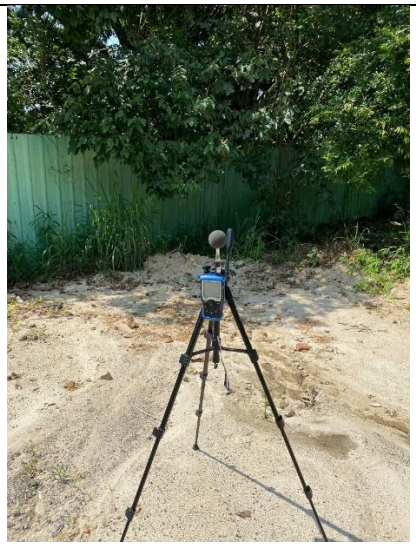
Project	Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok, New Territories		
Monitoring Location	L1	L2	L3
Description of the Location	Village House	Tong To	Nga Yiu Tau
Dominating Noise Source	Light vehicles	Light vehicles	Heavy vehicles
Measurement Method	Direct measurement		
Equipment Used (Model and Serial No.)	Noise Meter: XL2 A2A-15415-E0 Calibrator : CEL-120/1 4884880		
Weather Condition	Fine		
	<1		
Time of Monitoring	LAeq 30 minutes		
Date	21-Sep-23	21-Sep-23	12-Sep-23
Time of Monitoring	10:51	11:23	14:02
	11:21	11:53	14:32
Measured LAeq 30 minutes (dB(A))	57 (1)	59 (1)	62 (1)

Note: (1) +3dB free field correction applied

Result of Calibration

Date of Calibration	12-Sep-23	21-Sep-23	
Before measurement	Applied value	Applied value	Reading
	Level, dB	Level, dB	Level, dB
	94.0	94.0	93.9
Aftter measurement	Applied value	Applied value	Reading
	Level, dB	Level, dB	Level, dB
	94.0	94.0	93.9

	Name
Recorded by	Louis Leung
Checked by	Cheryl Chan

Measurement Period	Measurement location	Photo record
2023-09-21 10:51-11:21	L1 Village House	
2023-09-21 11:23-11:53	L2 Tong To	

2023-09-12 14:02 - 14:32	L3 Nga Yiu Tau	

Appendix C

Traffic Forecast Data from the Transport Department's Agreement

Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D.41, Sha Tau Kok, New Territories
Traffic Forecast Data in 2045

ID	Road	Operation year 2045 (without project, normal days)		Operation year 2045 (with project, normal days)		Operation year 2045 (without project, festive days)		Operation year 2045 (with project, festive days)	
		Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles
Road 1	Sha Tau Kok Road - Shek Chung Au (Luk Keng Road – Access Road to Tong To) (2-way Total)	1094	28	1105	27	947	22	1157	20
Road 2	Sha Tau Kok Road - Shek Chung Au (Access Road to Tong To – Sha Ho Road) (2-way Total)	1078	30	1079	30	933	25	945	26

Appendix D

Traffic Noise Calculation

Road L1	**Operation year 2045 (without project, normal days)**		**Operation year 2045 (with project, normal days)**		**Operation year 2045 (without project, festive days)**		**Operation year 2045 (with project, festive days)**	
	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles
Sha Tau Kok Road - Shek Chung Au (Luk Keng Road – Access Road to Tong To) (2-way	1094	28	1105	27	947	22	1157	20
BNL, L_{10} dB(A)[1]	72.59		72.63		71.96		72.83	
Correction of heavy vehicles and speed[2][3]	3.00		2.88		2.25		1.97	
Resultant BNL, L_{10} dB(A)	75.59		75.52		74.21		74.80	
Difference, dB(A)	-0.07				0.59			

Road L2	**Operation year 2045 (without project, normal days)**		**Operation year 2045 (with project, normal days)**		**Operation year 2045 (without project, festive days)**		**Operation year 2045 (with project, festive days)**	
	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles	Veh/hr	% of heavy vehicles
Sha Tau Kok Road - Shek Chung Au (Access Road to Tong To – Sha Ho Road) (2-way	1078	30	1079	30	933	25	945	26
BNL, L_{10} dB(A)[1]	72.53		72.53		71.90		71.95	
Correction of heavy vehicles and speed[2][3]	3.22		3.22		2.64		2.76	
Resultant BNL, L_{10} dB(A)	75.75		75.75		74.54		74.72	
Difference, dB(A)	0.00				0.18			

Notes:
[1] According to CRTN Chart 2, Basic Noise Level hourly $L_{10} = 42.2 + 10 \log_{10} q$ dB(A)
[2] According to CRTN Chart 4, Correction = $33 \log_{10}(V + 40 + 500/V) + 10 \log_{10}(1 + 5p/V) - 68.8$ dB(A)
[3] Road speed of Sha Tau Kok Road - Shek Chung Au is 50 km/hr.

Appendix E

Water Quality Objectives (WQOs)

Summary of Water Quality Objectives (WQOs) for marine waters of Hong Kong

Parameter	Water Quality Objective	Water Control Zone (WCZ) / Part(s) of zone / Subzone to which the WQO applies
Aesthetic Appearance	There should be no objectionable odours or discolouration of the water. Tarry residues, floating wood, articles made of glass, plastic, rubber or of any other substances should be absent. Mineral oil should not be visible on the surface. Surfactants should not give rise to a lasting foam. There should be no recognisable sewage-derived debris. 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. The waters should not contain substances which settle to form objectionable deposits.	All WCZs (whole zone)
Dissolved Oxygen (bottom)	Not less than 2 mg/L for 90% of samples;	Marine waters of all WCZs except Tolo Harbour & Channel WCZ
Dissolved Oxygen (Depth-averaged)	Not less than 4 mg/L for 90% of samples;	Marine waters of all WCZs except Tolo Harbour & Channel WCZ
Dissolved Oxygen (bottom)	Not less than 2 mg/L	Harbour Subzone in Tolo Harbour & Channel WCZ
	Not less than 3 mg/L	Buffer Subzone in Tolo Harbour & Channel WCZ
	Not less than 4 mg/L	Channel Subzone in Tolo Harbour & Channel WCZ
Dissolved Oxygen (surface to 2m above bottom)	Not less than 4 mg/L	Harbour Subzone and Buffer Subzone in Tolo Harbour & Channel WCZ
Dissloved Oxygen (all depths)	Not less than 4 mg/L	Channel Subzone in Tolo Harbour & Channel WCZ
Nutrients	Annual mean depth-averaged total inorganic nitrogen not to exceed 0.1 mg/L	Marine waters of Southern WCZ and Port Shelter WCZ
	Annual mean depth-averaged total inorganic nitrogen not to exceed 0.3 mg/L	Marine waters of Mirs Bay WCZ, Junk Bay WCZ, North Western WCZ (Castle Peak Subzone)
	Annual mean depth-averaged total inorganic nitrogen not to exceed 0.4 mg/L	Marine waters of Eastern Buffer WCZ, Western Buffer WCZ, Victoria Harbour WCZ
	Annual mean depth-averaged total inorganic nitrogen not to exceed 0.5 mg/L	Marine waters of Deep bay WCZ (Outer Subzone) and North Western WCZ (Whole zone except Castle Peak Subzone)
	Annual mean depth-averaged total inorganic nitrogen not to exceed 0.7 mg/L	Marine waters of Deep Bay WCZ (Inner Subzone)
Unionised Ammonia	Annual mean not to exceed 0.021 mg/L	All WCZs (whole zone) except Tolo Harbour & Channel WCZ
E.coli	Annual geometric mean not to exceed 610 cfu/100mL	Secondary contact recreation subzones in Tolo Harbour & Channel WCZ, Southern WCZ, Port Shelter WCZ, Mirs Bay WCZ, Deep Bay WCZ, North Western WCZ, Western Buffer WCZ
	Annual geometric mean not to exceed 610 cfu/100mL	Fish culture subzones in Tolo Harbour & Channel WCZ, Southern WCZ, Port Shelter WCZ, Junk Bay WCZ, Mirs Bay WCZ, Deep Bay WCZ, Eastern Buffer WCZ, Western Buffer WCZ
pH	To be in the range 6.5 - 8.5, change due to waste discharge not to exceed 0.2	Marine waters of all WCZs except Tolo Harbour & Channel WCZ
	Change due to waste discharge not to be greater than ± 0.5	Harbour Subzone in Tolo Harbour & Channel WCZ
	Change due to waste discharge not to be greater than ± 0.3	Buffer Subzone in Tolo Harbour & Channel WCZ
	Change due to waste discharge not to be greater than ± 0.1	Channel Subzone in Tolo Harbour & Channel WCZ
Salinity	Change due to waste discharge not to exceed 10% of natural ambient level	All WCZs (Whole zone) except Tolo Harbour & Channel WCZ
	Change due to waste discharge not to be greater than ± 3ppt	Tolo Harbour & Channel WCZ
Temperature	Change due to waste discharge not to exceed 2°C	All WCZs (Whole zone) except Tolo Harbour & Channel WCZ
	Change due to waste discharge not to exceed 1°C	Tolo Harbour & Channel WCZ
Suspended Solids	Waste discharge not to raise the natural ambient level by 30% nor cause the accumulation of suspended solids which may adversely affect aquatic communities	Marine waters of all WCZs except Tolo Harbour & Channel WCZ
Toxicants	Not to be present at levels producing significant toxic effect	All WCZs (Whole zone)
Chlorophyll-*a*	Not to exceed 20mg/m^3 (µg/L) calculated as running arithmetic mean of 5 daily measurements for any location and depth	Harbour Subzone in Tolo Harbour & Channel WCZ
	Not to exceed 10mg/m^3 (µg/L) calculated as running arithmetic mean of 5 daily measurements for any location and depth	Buffer Subzone in Tolo Harbour & Channel WCZ
	Not to exceed 6mg/m^3 (µg/L) calculated as running arithmetic mean of 5 daily measurements for any location and depth	Channel Subzone in Tolo Harbor & Channel WCZ

Summary of water quality data for the Mirs Bay WCZ in 2024

Parameter		Mirs Bay	Crooked Island		Port Island	Mirs Bay North		
		MM1	MM2	MM7	MM17	MM3	MM4	MM5
Number of samples		**12**	**12**	**12**	**12**	**12**	**12**	**12**
Temperature (°C)		25.1 (20.1 - 31.2)	25.0 (19.8 - 30.9)	24.8 (19.6 - 30.9)	24.5 (19.4 - 30.1)	24.7 (19.6 - 29.6)	24.4 (19.4 - 29.2)	24.6 (19.3 - 29.4)
Salinity		31.5 (25.5 - 33.9)	31.5 (25.6 - 34.1)	31.8 (26.0 - 34.0)	32.0 (26.6 - 34.1)	31.9 (26.4 - 34.2)	32.2 (28.1 - 34.2)	32.0 (27.5 - 34.2)
Dissolved Oxygen (mg/L)		6.3 (4.8 - 8.1)	6.1 (4.9 - 7.6)	6.0 (4.9 - 7.5)	6.1 (4.4 - 7.3)	6.0 (4.4 - 7.3)	6.0 (4.5 - 7.2)	5.9 (4.1 - 7.1)
	Bottom	5.9 (4.5 - 7.9)	5.8 (4.3 - 7.7)	5.4 (3.9 - 7.0)	5.8 (3.8 - 7.5)	5.8 (3.7 - 7.5)	5.5 (3.6 - 7.3)	5.5 (3.4 - 7.0)
Dissolved Oxygen (% Saturation)		90 (71 - 109)	88 (75 - 101)	86 (74 - 100)	88 (65 - 97)	86 (66 - 98)	86 (67 - 96)	84 (59 - 97)
	Bottom	85 (70 - 105)	84 (66 - 103)	77 (59 - 95)	83 (56 - 99)	82 (55 - 99)	78 (53 - 97)	78 (50 - 93)
pH		8.1 (7.8 - 8.4)	8.1 (7.8 - 8.3)	8.0 (7.8 - 8.2)	8.0 (7.8 - 8.2)	8.1 (7.8 - 8.3)	8.1 (7.9 - 8.3)	8.0 (7.8 - 8.2)
Secchi Disc Depth (m)		2.1 (1.5 - 2.7)	2.3 (1.7 - 3.0)	2.5 (1.6 - 3.2)	2.9 (1.8 - 6.5)	2.4 (1.5 - 3.7)	2.8 (1.7 - 3.9)	3.7 (1.6 - 6.6)
Turbidity (NTU)		2.4 (0.4 - 4.9)	2.1 (0.4 - 4.9)	2.0 (0.3 - 4.6)	1.8 (0.1 - 5.5)	2.2 (0.2 - 4.6)	2.2 (0.2 - 5.5)	2.5 (0.2 - 4.9)
Suspended Solids (mg/L)		4.6 (2.3 - 8.0)	4.5 (3.1 - 6.6)	3.5 (1.2 - 5.6)	3.3 (1.0 - 4.9)	3.7 (1.5 - 7.5)	3.8 (1.7 - 8.6)	3.9 (1.6 - 6.7)
5-day Biochemical Oxygen Demand (mg/L)		0.9 (0.2 - 2.0)	1.1 (0.1 - 2.7)	1.0 (<0.1 - 2.9)	1.0 (<0.1 - 3.0)	0.9 (<0.1 - 2.6)	0.9 (<0.1 - 2.5)	0.7 (<0.1 - 2.2)
Ammonia Nitrogen (mg/L)		0.035 (0.008 - 0.127)	0.023 (0.006 - 0.048)	0.021 (0.007 - 0.041)	0.018 (0.008 - 0.043)	0.020 (0.006 - 0.043)	0.019 (0.008 - 0.043)	0.017 (0.006 - 0.045)
Unionised Ammonia (mg/L)		0.002 (<0.001 - 0.007)	0.001 (<0.001 - 0.003)	0.001 (<0.001 - 0.004)	<0.001 (<0.001 - 0.003)	0.001 (<0.001 - 0.003)	0.001 (<0.001 - 0.003)	<0.001 (<0.001 - 0.003)
Nitrite Nitrogen (mg/L)		0.005 (<0.002 - 0.027)	0.004 (<0.002 - 0.020)	0.003 (<0.002 - 0.012)	0.004 (<0.002 - 0.020)	0.005 (<0.002 - 0.016)	0.005 (<0.002 - 0.029)	0.004 (<0.002 - 0.022)
Nitrate Nitrogen (mg/L)		0.059 (0.012 - 0.207)	0.049 (0.006 - 0.200)	0.038 (0.005 - 0.146)	0.038 (0.006 - 0.150)	0.045 (0.006 - 0.220)	0.040 (0.007 - 0.173)	0.039 (0.006 - 0.167)
Total Inorganic Nitrogen (mg/L)		0.10 (0.04 - 0.25)	0.08 (0.02 - 0.22)	0.06 (0.02 - 0.19)	0.06 (0.02 - 0.17)	0.07 (0.03 - 0.24)	0.06 (0.02 - 0.20)	0.06 (0.02 - 0.19)
Total Kjeldahl Nitrogen (mg/L)		0.21 (0.10 - 0.30)	0.18 (0.09 - 0.29)	0.18 (0.08 - 0.29)	0.16 (0.08 - 0.27)	0.16 (0.10 - 0.27)	0.16 (0.08 - 0.26)	0.16 (0.08 - 0.23)
Total Nitrogen (mg/L)		0.28 (0.12 - 0.51)	0.23 (0.10 - 0.49)	0.22 (0.08 - 0.44)	0.21 (0.09 - 0.42)	0.21 (0.11 - 0.50)	0.20 (0.09 - 0.45)	0.20 (0.09 - 0.40)
Orthophosphate Phosphorus (mg/L)		0.004 (<0.002 - 0.009)	0.004 (<0.002 - 0.012)	0.004 (<0.002 - 0.013)	0.005 (<0.002 - 0.012)	0.005 (<0.002 - 0.013)	0.005 (<0.002 - 0.012)	0.004 (<0.002 - 0.011)
Total Phosphorus (mg/L)		0.07 (0.02 - 0.18)	0.07 (0.03 - 0.14)	0.07 (0.03 - 0.14)	0.07 (0.03 - 0.15)	0.06 (0.03 - 0.13)	0.07 (0.03 - 0.13)	0.08 (0.03 - 0.15)
Silica (as SiO_2) (mg/L)		0.64 (0.15 - 1.31)	0.44 (0.16 - 0.86)	0.40 (0.15 - 0.71)	0.42 (0.06 - 0.73)	0.46 (0.06 - 0.90)	0.49 (<0.05 - 1.10)	0.44 (0.09 - 1.07)
Chlorophyll-*a* (µg/L)		4.3 (0.9 - 8.6)	3.0 (1.0 - 4.9)	2.6 (1.1 - 4.8)	2.1 (0.8 - 5.3)	2.2 (0.6 - 4.6)	1.7 (0.8 - 5.2)	2.0 (0.5 - 9.5)
E.coli (count/100mL)		16 (<1 - 9000)	2 (<1 - 44)	1 (<1 - 3)	1 (<1 - 2)	3 (<1 - 68)	1 (<1 - 16)	1 (<1 - 2)
Faecal Coliforms (count/100mL)		37 (1 - 21000)	5 (<1 - 130)	2 (<1 - 17)	2 (<1 - 18)	4 (<1 - 140)	2 (<1 - 80)	2 (<1 - 10)

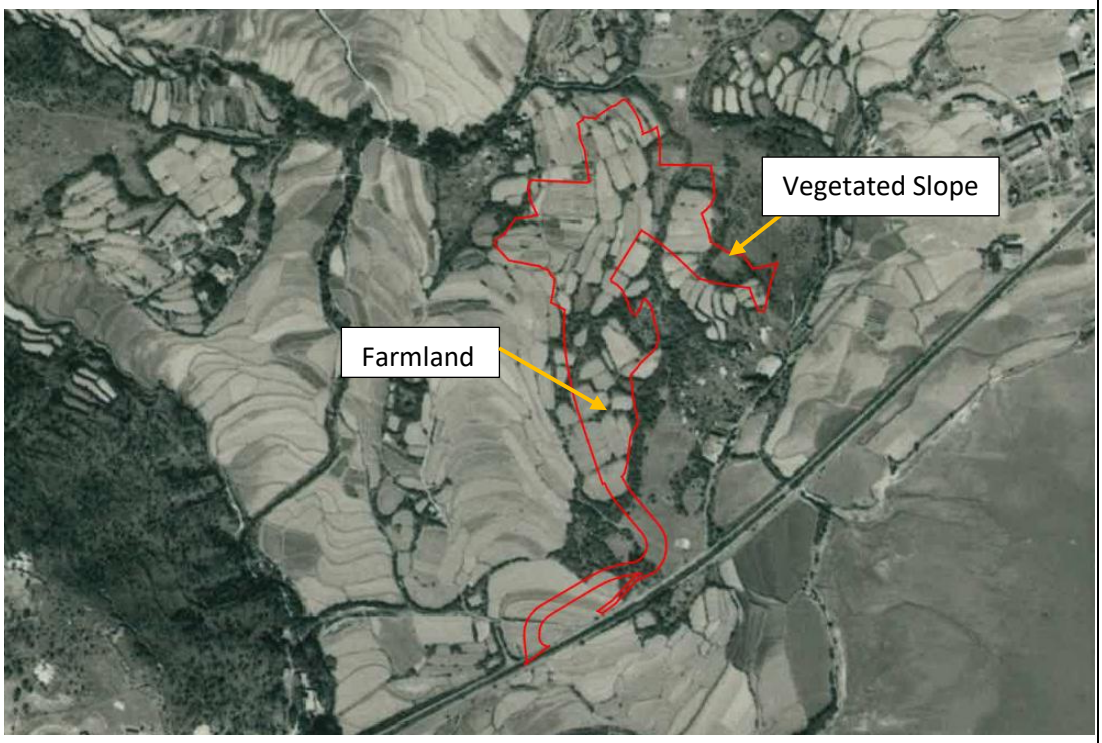
Note : 1. Unless otherwise specified, data presented are depth-averaged (A) values calculated by taking the means of three depths: Surface (S), Mid-depth (M), Bottom (B).

2. Data presented are annual arithmetic means of the depth-averaged results except for *E. coli* and faecal coliforms which are annual geometric means.

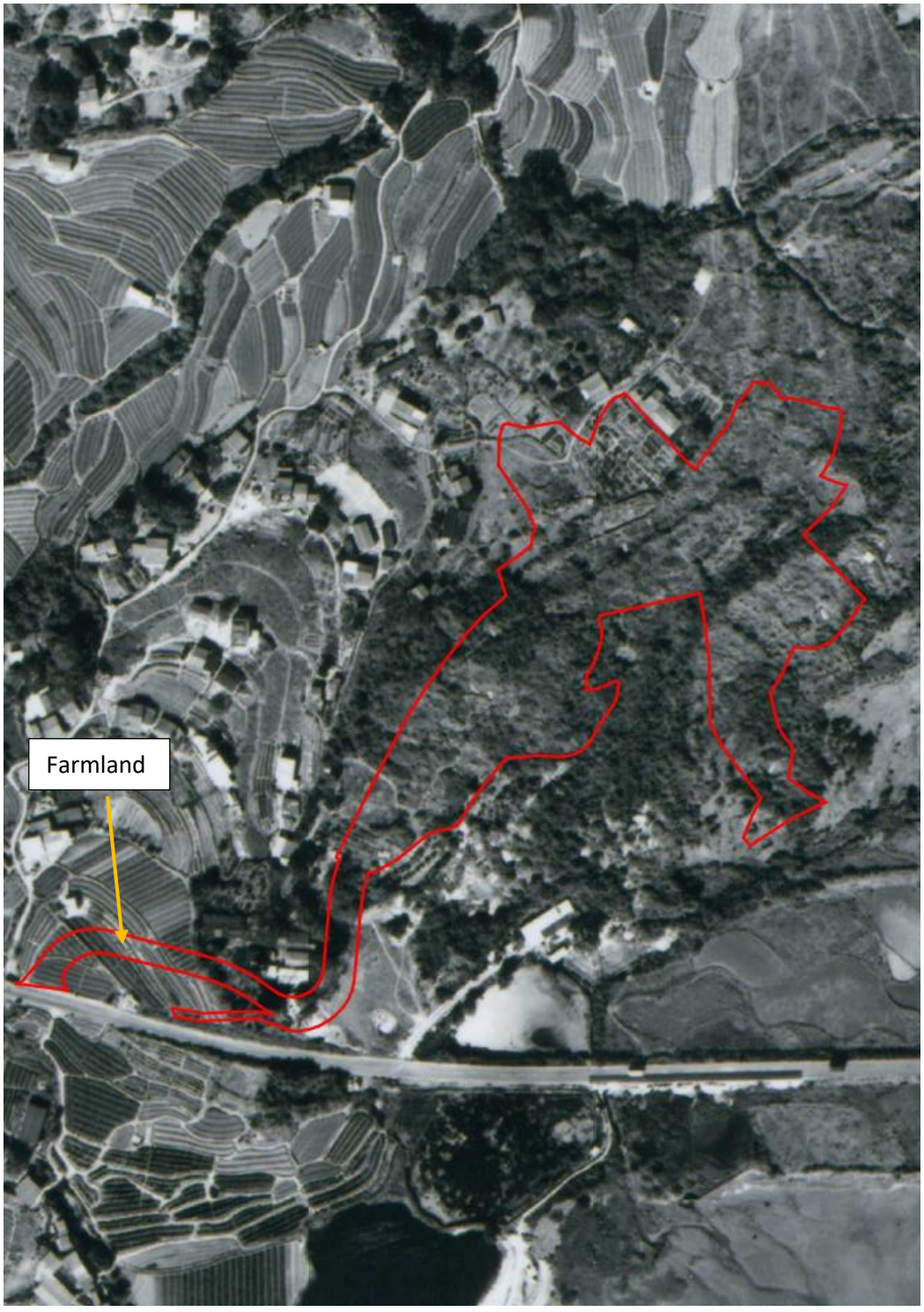
3. Data in brackets indicate the ranges.

Appendix F

Historic Aerial Photograph

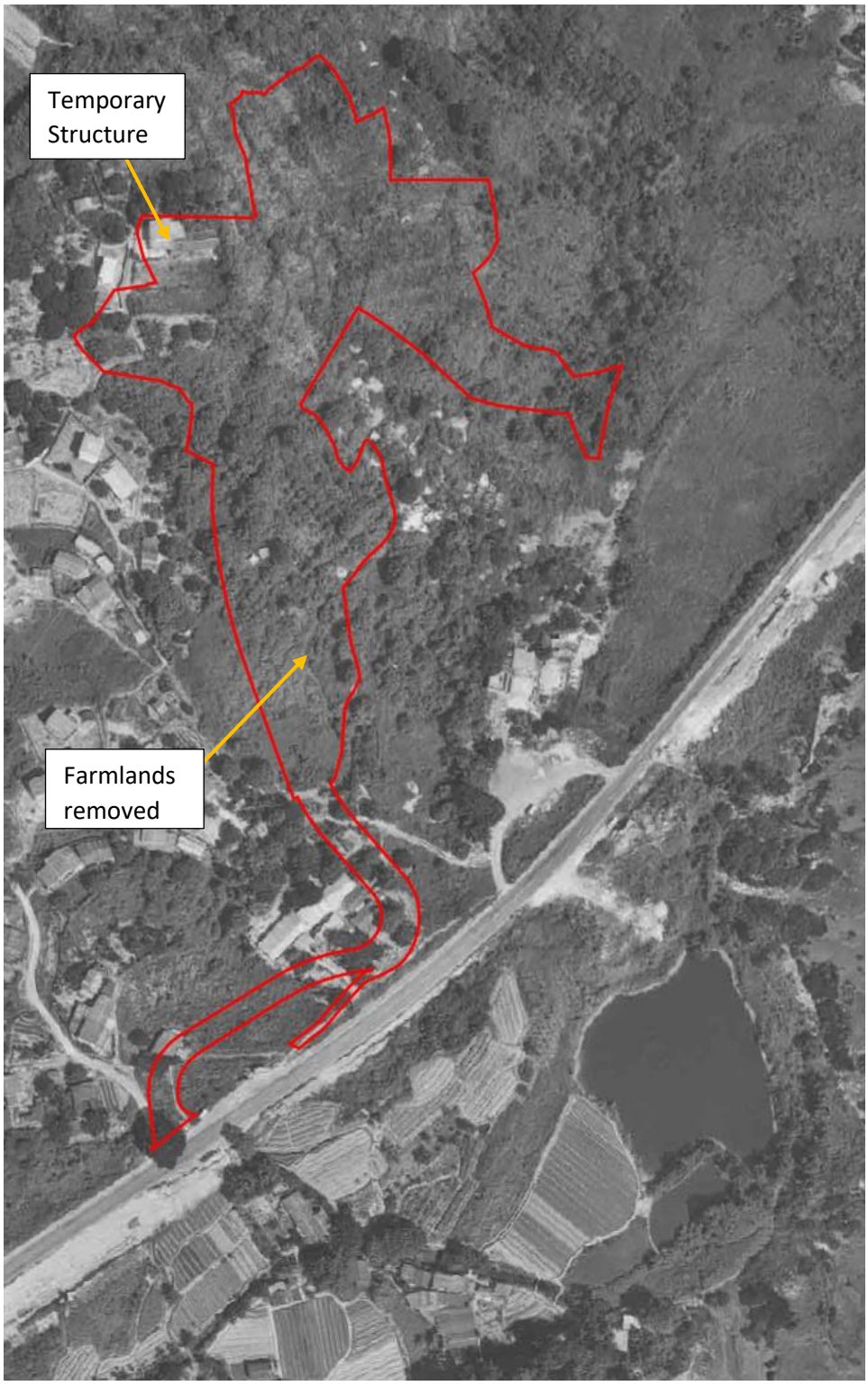


Year	Ref. No.	Observation
1956	0087	The majority of the Site was occupied by farmlands, with vegetated slopes identified on the eastern portion of the Site. Sha Tau Kok Road was identified to the south of the Site.

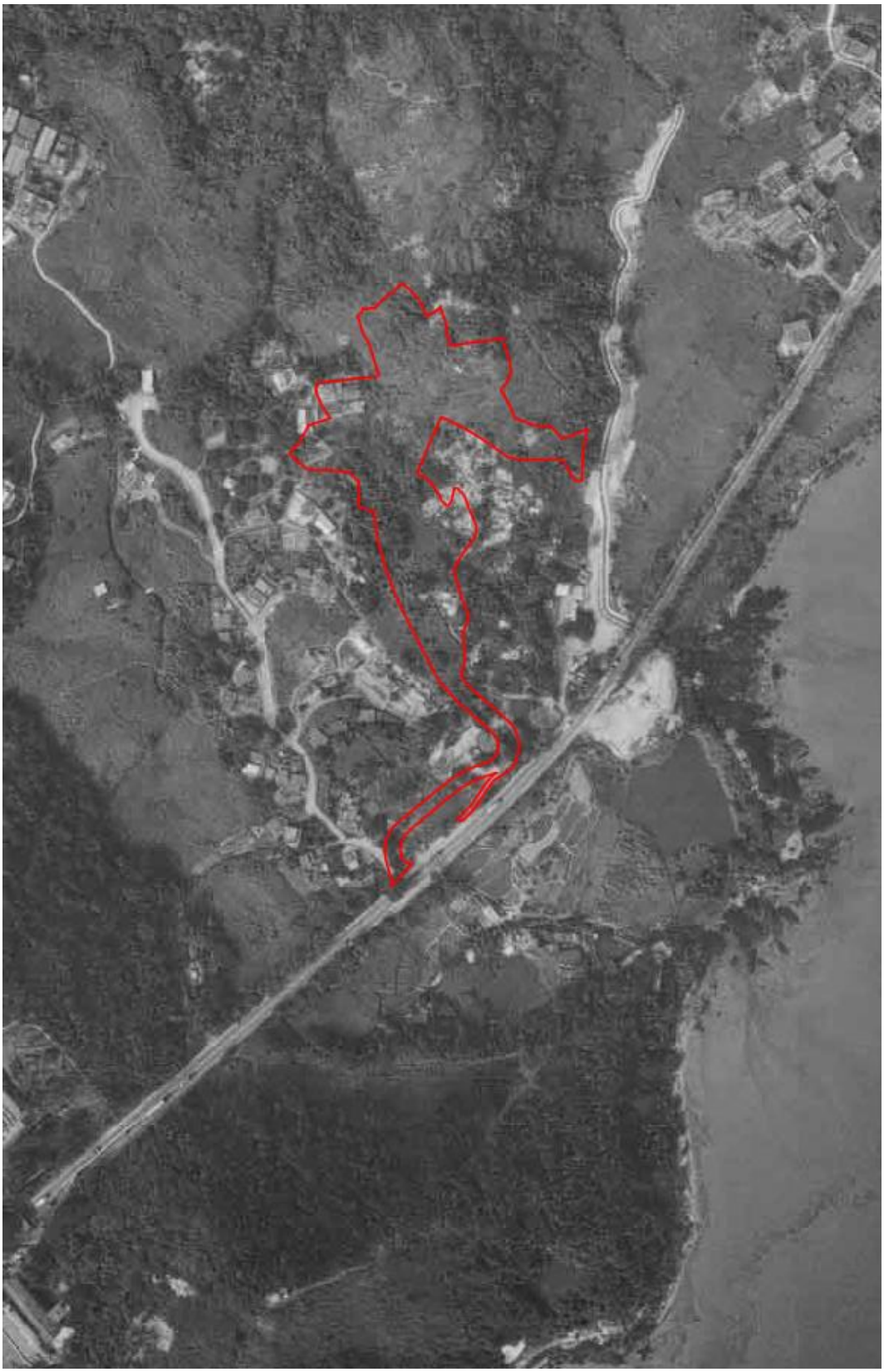


Year	Ref. No.	Observation
1973	7686	The southern portion of the Site remained farmlands, while the rest of the Site was covered by natural vegetation, with a vegetated slope located on the eastern portion of the Site.

Year	Ref. No.	Observation
1982	46729	The natural vegetation at the center of the Site was removed. The vegetated slope on the eastern portion of the Site remained.

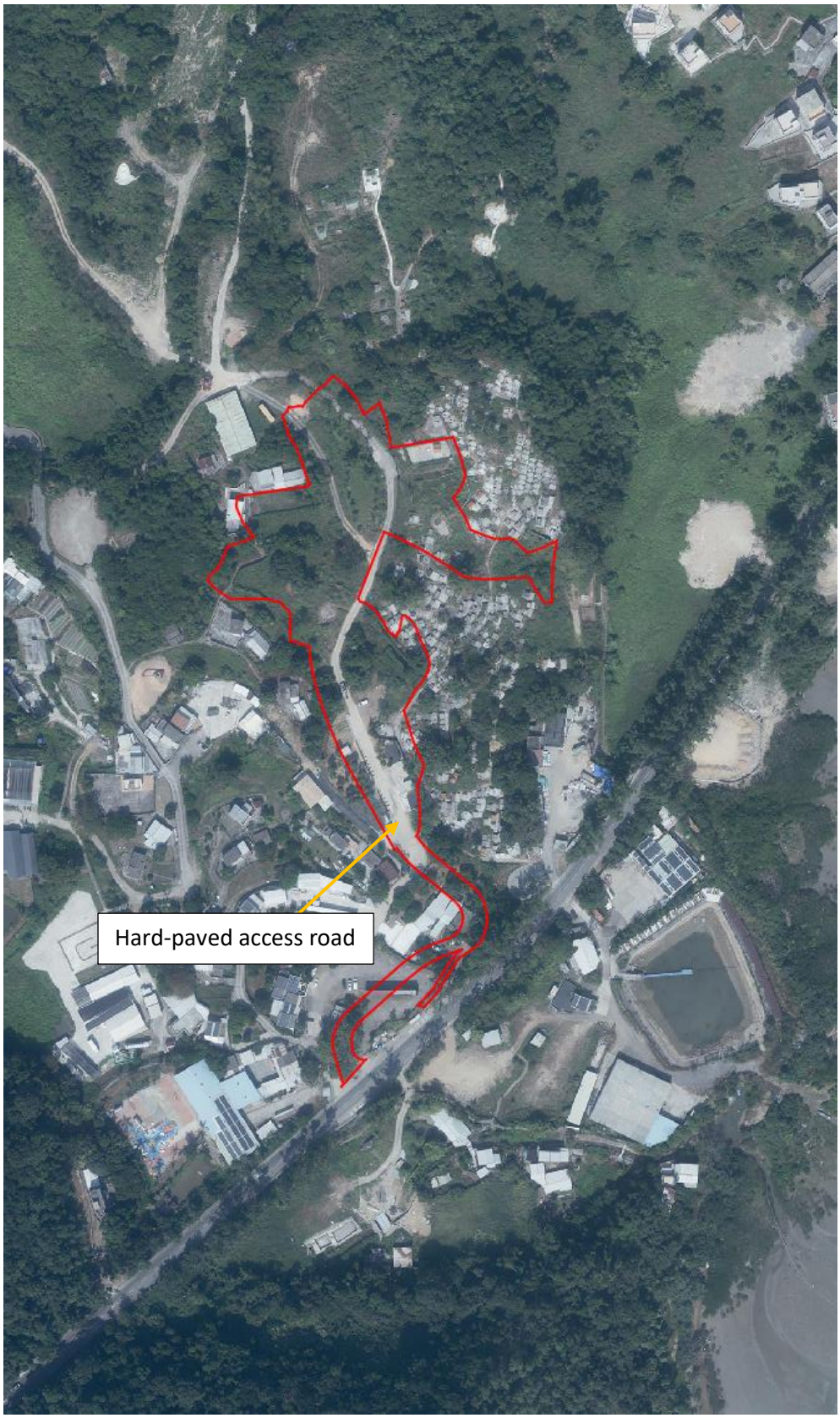


Year	Ref. No.	Observation
1990	A23059	The farmlands in the southern portion of the Site were replaced by vegetation cover, while temporary structure is observed on the northwestern portion of the Site. The rest of the Site was covered by natural vegetation.

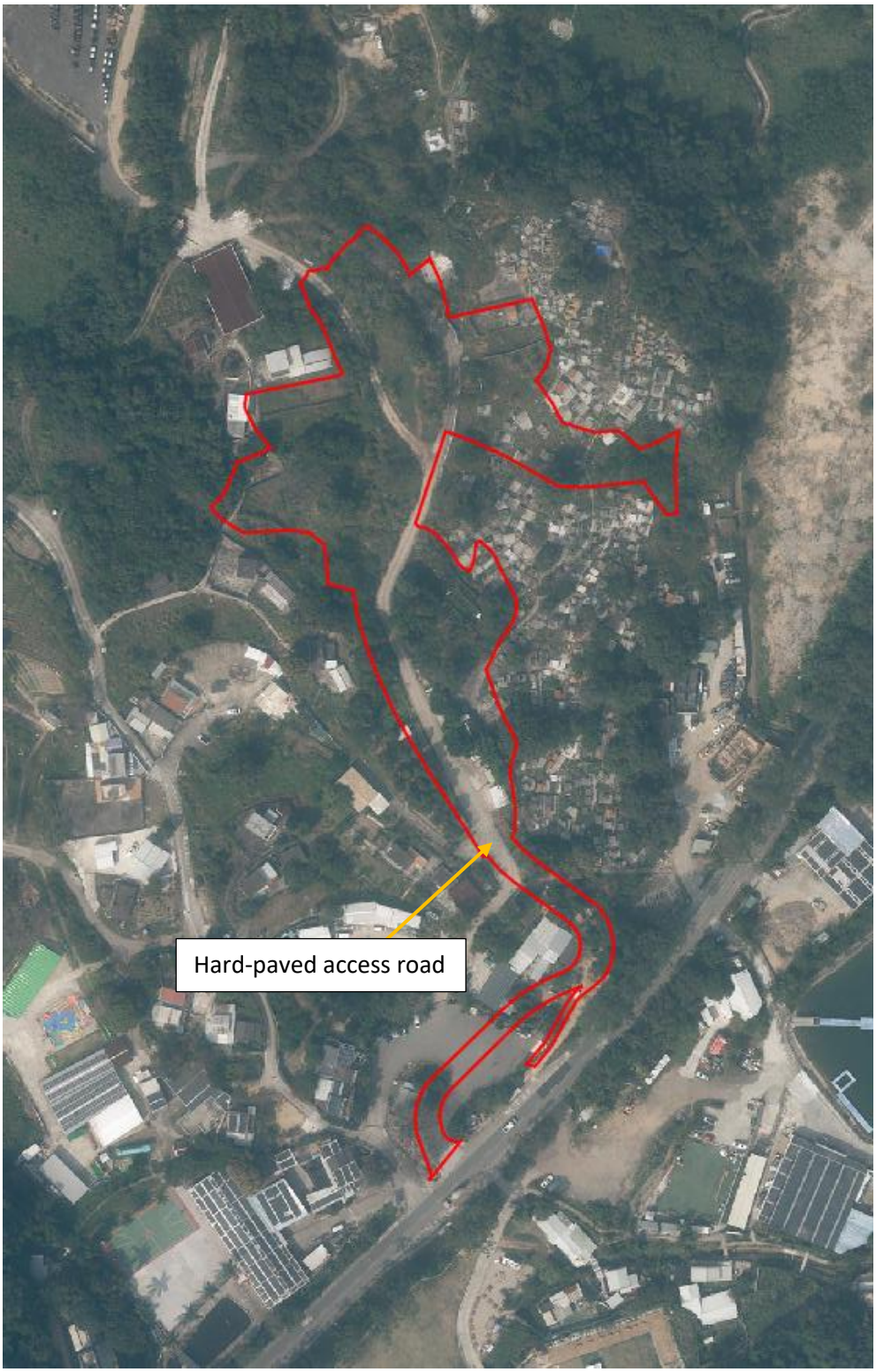


Year	Ref. No.	Observation
1999	A50363RM	The land within the Site was the same as in 1990.

Year	Ref. No.	Observation
2010	CW86421	The land within the Site was the same as in 1999.



Year	Ref. No.	Observation
2019	E074677C	Hard-paved access roads were provided, while other portions of the site were covered by vegetation.



Year	Ref. No.	Observation
2023	E183526C	The land within the Site was the same as in 2018

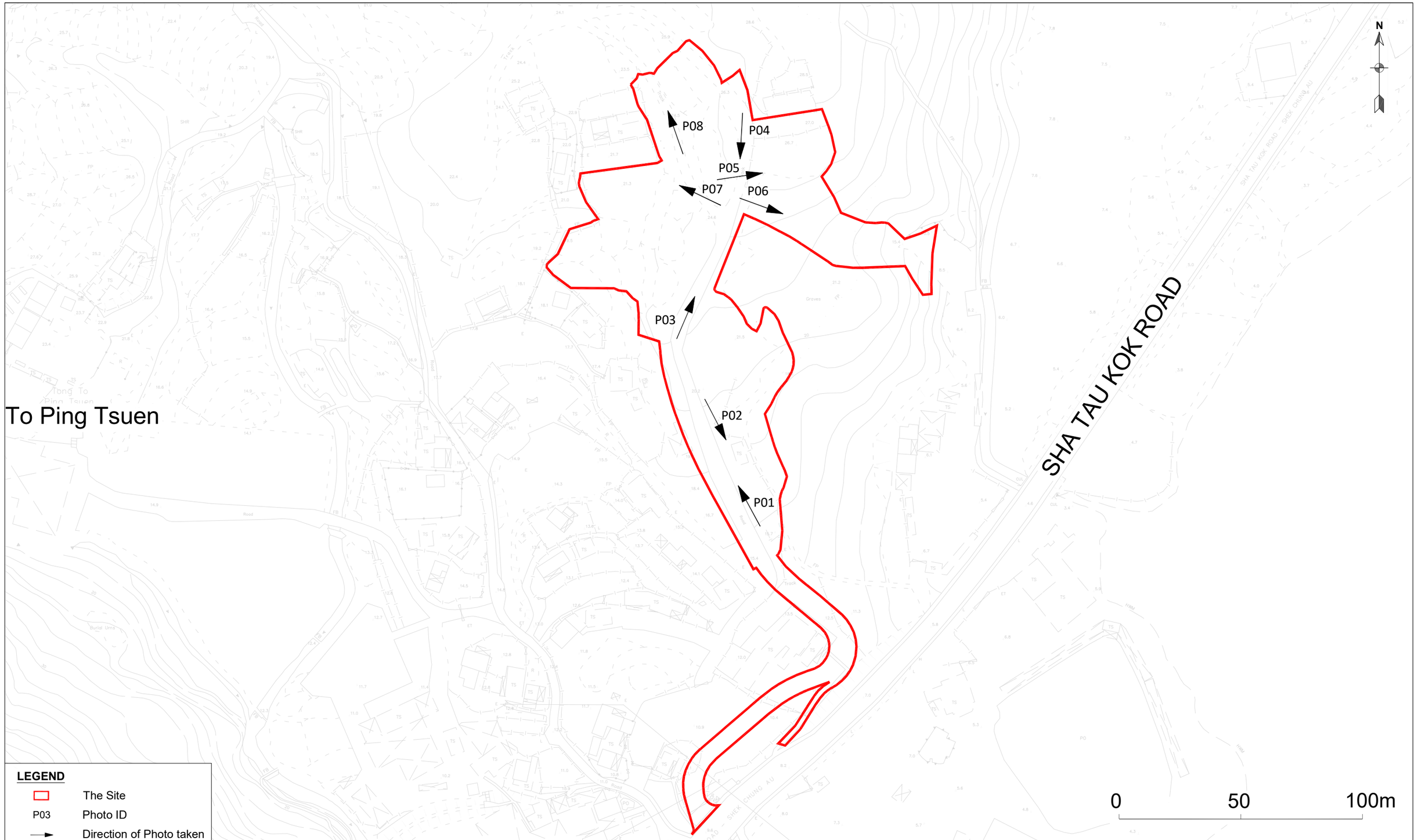
Appendix G

Site Photos

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>Photo ID: P01</td><td>Photo ID: P02</td></tr>
<tr><td>  </td><td></td></tr>
<tr><td>Photo ID: P03</td><td></td></tr>
<tr><td colspan="2">P01 – P03: Shrubs and metal frames along the access roads were observed. No storage of chemicals and/or chemical waste was found.</td></tr>
</table>

	
Photo ID: P04	Photo ID: P05
	
Photo ID: P06	
P04 – P06: P04 shows the northern portion of the access road, while P05–P06 show the vegetated slope located in the northwestern portion of the Site. It was observed that the northwestern portion of the Site consists of vegetated land, bounded by a metal fence. Further to the west, graves were found on the vegetated slope within the Site, as shown in P06. No chemicals and/or chemical waste were found in these areas.	

	
Photo ID: P07	Photo ID: P08
P07 – P08: Trees and shrubs were observed further to the north of the Site. No chemicals and/or chemical waste were found in these areas.	



URBAN GREEN

Section 12A Rezoning Application for Proposed Columbarium on Various Lots in D.D. 41, Sha Tau Kok, New Territories

Photo Index Plan

Appendix G

Rev. 0