

JOB NO.: TCS00881/18 & TCS00944/18

SITE FORMATION AND ASSOCIATED INFRASTRUCTURAL WORKS FOR DEVELOPMENT OF COLUMBARIUM, CREMATORIUM AND RELATED FACILITIES AT SANDY RIDGE CEMETERY

MONTHLY ENVIRONMENTAL MONITORING AND AUDIT REPORT (No.44) – MARCH 2022

PREPARED FOR
HSIN CHONG TSUN YIP JOINT VENTURE &
SANG HING CIVIL CONTRACTORS CO., LTD

Date Reference No. Prepared By Certified By

13 April 2022 TCS00881/18/600/R0627v2

Nicola Hon Tam Tak Wing (Environmental Consultant) (Environmental Team Leader)

Version	Date	Remarks
1	11 April 2022	First Submission
2	13 April 2022	Amended according to the IEC's comments



Our Ref: TCS00881/18/300/L0628

Civil Engineering and Development Department

2/F, Civil Engineering and Development Building, 101 Princess Margaret Rd, Homantin, Kowloon

Attn: Mr. SHUM Ngai Hung, Steven

14 April 2022 By e-mail

Dear Sirs,

Re: Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.44) –March 2022

We confirmed that the captioned report has complied with the requirement set out in the EM&A Manual, we hereby certify the captioned report pursuant to Specific Condition 3.4 of the Environmental Permit No. FEP-01/534/2017/A and EP-534/2017/A.

Should you have any queries, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or Email: twtam@fordbusiness.com.

Yours sincerely,
For and on Behalf of
Action-United Environmental Services & Consulting (AUES)

T. W. Tam Environmental Team Leader TW/nh

cc	ARUP (RE of Contract 1)	Mr. Steven Tang	by e-mail
	ARUP (RE of Contract 2)	Mr. Anthony Lau	by e-mail
	HCTY-JV (Contractor of Contract 1)	Mr. Ho Man To	by e-mail
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Our ref: PL-202204018

Hsin Chong Tsun Yip Joint Venture (CV/2016/10)
Hsin Chong Centre
107-109 Wai Yip Street
Kwun Tong, Kowloon
Hong Kong

Attention: Mr. HO Man-to

14 April 2022

Dear Sir,

Site formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

Monthly Environmental Monitoring and Audit Report (No. 44) March 2022

I refer to the email of the ET on 13/04/2022 regarding the captioned Monthly Report. According to Section 3.4 of the EP-534/2017/A and the FEP-01/534/2017/A, I hereby verify the Monthly EM&A report for March 2022 (Version 2) with Ref. No. TCS00881/18/600/R0627v2.

You are required to follow up the comments from EPD and IEC on the relevant EPs requirement and provide supplementary information of this report for our further review as soon as possible.

Yours faithfully,

CH Leung

Leung CH Jacky Independent Environmental Checker

cc. CEDD-DPTL/Land Works – Mr. SHUM Steven ARUP – Mr. LEE Davis ET Leader – Mr. TAM



EXECUTIVE SUMMARY

ES.01. This is the 44th Monthly Environmental Monitoring and Audit (EM&A) Report summarizing the monitoring results and inspection findings under the Project for the period from 1st to 31st March 2022 (the Reporting Month).

ENVIRONMENTAL MONITORING AND AUDIT ACTIVITIES

ES.02. In the Reporting Month, the major construction works under the Project included Contract CV/2016/10 (hereinafter named "Contract 1") and Contract CV/2017/02 (hereinafter named "Contract 2"). Environmental monitoring activities under the EM&A programme in this Reporting Month are summarized in the following table.

Table ES-1 Summary of EM&A Programme in the Reporting Month

Issues	Environmental Monitoring	Monitorin	Total Occasions/	
issues	Parameters / Inspection	CV/2016/10	CV/2017/02	dates
Aim Ovolity	1-hour TSP	ASR-1	ASR-2	45
Air Quality	24-hour TSP	ASK-1	ASR-3	15
Construction Noise	L _{eq (30min)} Daytime	CN-1 CN-2	CN-3 CN-4	16
Water Quality	In-situ measurement and Water sampling		M1, M2 and M4	13 (#)
Ecology	Sensitive Habitat	Transect within site area of CV/2016/10		3 rd March 2022
Landscape & Visual	Site Inspection	Site area of CV/2016/10	Site area of CV/2017/02	23 rd March 2022
Inspection	Environmental Team (ET) Regular Environmental Site Inspection		Site area of	4
& Audit	Independent Environmental Checker (IEC) Monthly Environmental Site Audit		CV/2017/02	1

Remarks: (#) The channel of M2 was dried up / too shallow on 2 to 22 March 2022, and representative water sampling were unable be carried out. Notification was provided to relevant parties in the following days of the events.

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.03. In the Reporting Month, no exceedance of air quality and water quality monitoring was recorded. No noise complaint (which triggered Action Level) was received and Limit Level exceedance for noise monitoring exceedance was recorded. The statistics of environmental exceedance, Notification and investigation of exceedance are summarized in the following table.

Table ES-2 Breach of Action and Limit (A/L) Levels in the Reporting Month

Environmental	Monitoring	Action	Limit	Event & Action	
Issues	Parameters	Level	Level	Investigation Findings	Corrective Actions
A in Ovolity	1-hour TSP	0	0	-	-
Air Quality	24-hour TSP	0	0	-	-
Construction Noise	Leq _{30min} Daytime	0	0	-	-
	DO	0	0	-	-
Water Quality	Turbidity	0	0	-	-
	Suspended Solids (SS)	0	0	-	-

ES.04. Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 3rd March 2022. After analysing survey results in March from 2019 to 2022, there was a slight decrease in species richness and abundance for wetland habitat under Contract 1. Good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas



should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. For Contract 2, no significant drop in species richness and abundance is observed for wetland and non-wetland habitats. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.

- ES.05. As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.
- ES.06. Landscape and visual inspection at both Contracts were undertaken on 23rd March 2022. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone and ensure no works is allowed within the TPZ.

ENVIRONMENTAL COMPLAINT

ES.07. No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

Table ES-3 Environmental Complaint Summaries in the Reporting Month

Reporting Month		Environmental Complaint Statistics			
		Frequency	Cumulative	Complaint Nature	
	Contract 1	0	2	(1) Air Quality (1) Noise	
1 st – 31 st March 2022	Contract 2	0	3	(1) Water (1) Air Quality (1) Noise	

NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

ES.08. No environmental summons or successful prosecution was recorded in this Reporting Month. The statistics of summons or successful prosecutions are summarized in the following tables.

Table ES-4 Environmental Summons Summaries in the Reporting Month

Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Summons Nature	
1 st – 31 st March 2022	Contract 1	0	0	NA	
1 – 31 March 2022	Contract 2	0	0	NA	

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Donouting Mo	Environmental Prosecution Statistics			
Reporting Month		Frequency	Cumulative	Prosecution Nature
1 st – 31 st March 2022	Contract 1	0	0	NA
1 – 31 March 2022	Contract 2	0	0	NA

ES.09. In addition, no complaint and emergency event relating to violation of environmental legislation for illegal dumping and landfilling was received.

REPORTING CHANGE

ES.010. No reporting change was made in the Reporting Month.

SITE INSPECTION

ES.011. In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer, ET and the Contractor of the Contract 1 on 3^{rd} , 10^{th} , 17^{th} , 24^{th} and 31^{st} March 2022. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 3^{rd} , 10^{th} , 17^{th} , 24^{th} and 31^{st} March 2022. IEC attended joint site inspection for both Contracts on 17^{th} March 2022. No non-compliance was noted during the site inspections.

FUTURE KEY ISSUES



- ES.012. Since wet season is approaching, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- ES.013. Air quality mitigation measures such as wheel wash facilities, watering of haul roads, loose soil construction surface and covering of dusty materials with tarpaulin sheet should be implemented as far as practicable.
- ES.014. Construction noise would be a key environmental issue during construction phase of the Project. Noise mitigation measures such as using quiet plants and mobile noise barriers should be implemented in accordance with the EM&A requirement.



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1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Civil Engineering and Development Department (CEDD) is the Project Proponent for the Project "Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery". The Project is a Designated Project to be implemented under Environmental Permit No. EP-534/2017/A and FEP-01/534/2017/A. The layout plan of the Project is shown in Appendix A. Major works to be executed under the Project shall include to the following:

A Designated Works under EP-534/2017/A

- (i) Site formation of about 8 hectares of land and associated drainage, sewerage and landscape works for development of Columbarium and Crematorium facilities at the Sandy Ridge Cemetery;
- (ii) Construction of a new road (about 600m) including a section of viaduct connecting the platform for Crematorium and Man Kam To Road and the pick-up/drop-off point at Man Kam To Road;
- (iii) Widening of about 900m of the existing Sha Ling Road;
- (iv) Widening of about 1.4km of the existing Lin Ma Hang Road; and
- (v) Improvement works to the existing barging point at Siu Lam

Non-Designated Works

- (i) Construction of a sewage detention tank complete with odour and septicity control mechanism;
- (ii) Construction of noise barriers along Sha Ling Road;
- (iii) Construction of a new Refuse Collection Point (RCP) near the junction between Man Kam To Road and Sha Ling Road;
- (iv) Landscaping works (including both hard and soft landscape works);
- (v) Associated tree felling, transplanting and compensatory planting works;
- (vi) Associated street lighting, street furniture and road marking, etc.; and
- (vii) Other works which are specified in PS of the Contract.
- 1.1.2 To facilitate the Project management, the Project works were separated into three Contracts to be executed which are described in below sub-sections.
- 1.1.3 Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery (hereinafter named "Contract 1"):-
 - Site formation of about 1.77 ha of land for the proposed pick-up and drop-off area for shuttle bus operation;
 - Upgrading of a section of 900m existing Sha Ling Road from 3m wide carriageway to 7.3m wide carriageway with footpath at both sides;
 - Construction of one EVA with a total length of about 160m;
 - Construction of noise barriers along Sha Ling Road;
 - Modification of junction between Man Kam To Road and Sha Ling Road;
 - Construction of a new pick up / drop off point at Man Kam To Road;
 - Relocation and construction of a new refuse collection point near junction between Man Kam To Road and Sha Ling Road;
 - Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures;
 - Associated drainage, sewerage and waterworks along Sha Ling Road; and
 - Associated landscaping works.
- 1.1.4 Contract No. CV/2017/02 Infrastructural Works at Man Kam To Road and Lin Ma Hang Road for Development of Columbarium at Sandy Ridge Cemetery (hereinafter named "Contract 2"):-
 - Construction of a new road connecting Columbarium site to Crematorium site;
 - Construction of one EVA with a total length of about 300m;
 - Widening of a section of 1.4 km long Lin Ma Hang Road (between Man Kam To Road and Ping Yuen River) from 6m wide carriageway to 7.3m with 2m width footpath on both sides;
 - Provision of a pair of lay-by at Lin Ma Hang Road;
 - Construction of a new vehicular access connecting the Sheung Shui Landmark North PTI and Lung Sum Avenue;



- Construction of covered walkway along Fanling Station Road;
- Removal of planters and central divider along Fanling Station Road and San Wan Road;
- Associated drainage, sewerage, waterworks and utility works along Man Kam To Road and Lin Ma Hang Road;
- Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
- Associated landscaping works.
- 1.1.5 CEDD Contract No. (to be confirmed):-
 - Site Formation for the platform of the columbarium site;
 - Construction of two 2 at-grade access roads;
 - Construction of road junction between Man Kam To Road and the new access road;
 - Associated drainage, sewerage and waterworks along the two new access roads;
 - Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
 - Associated landscaping works
- 1.1.6 Hsin Chong Tsun Yip Joint Venture (hereafter referred as "HCTYJV") has been awarded Contract 1 on 5 December 2017. According to the Contract requirement, HCTYJV shall take over the responsibility for part of the Environmental Permit No. EP-534/2017 for ease of management, therefore application for Further Environmental Permit was submitted by HCTYJV to EPD on 26 January 2018 and Further Environmental Permit No. FEP-01/534/2017 was granted to HCTYJV by EPD on 23 February 2018. Furthermore, EPD issued Environmental Permit No. FEP-01/534/2017/A on 24 December 2018.
- 1.1.7 Sang Hing Civil Contractors Company Limited (hereinafter referred as "Sang Hing") was awarded Contract 2 on 23 May 2018. The Contract Works is a Designated Project as under Environmental Permit (EP) No. EP-534/2017. Furthermore, EPD issued Environmental Permit No. EP-534/2017/A on 24 December 2018.
- 1.1.8 Action-United Environmental Services & Consulting (AUES) has been commissioned by the Contractors as an Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme in accordance with the approved EM&A Manual as well as the associated duties. As part of the EM&A programme, baseline monitoring to determine the ambient environmental conditions was completed before construction work commencement. The Baseline Monitoring Report (air, noise and water) certified by ET Leader (ETL) and verified by Independent Environmental Checker (IEC) was submitted to Environmental Protection Department (EPD) and it was approved by EPD on 25 October 2018.
- 1.1.9 Major construction work of Contract 1 and Contract 2 was commenced on 16 August 2018 and 5 November 2018 respectively.
- 1.1.10 This is the 44th Monthly EM&A Report summarizing the monitoring results and inspection findings for the period from 1st to 31st March 2022.

1.2 REPORT STRUCTURE

1.2.1 The Monthly EM&A Report is structured into the following sections:-

Section 1 Introduction

Section 2 *Project Organization and Construction Progress*

Section 3 *Summary of Monitoring Requirements*

Section 4 *Air Quality Monitoring Results*

Section 5 *Noise Monitoring Results*

Section 6 Water Quality Monitoring Results

Section 7 *Ecology Monitoring Results*

Section 8 *Landscape & Visual*

Section 9 *Waste Management*

Section 10 *Site Inspections*



Section 11 Environmental Complaints and Non-Compliance
 Section 12 Implementation Status of Mitigation Measures
 Section 13 Conclusions and Recommendation



2. PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS

2.1 CONSTRUCTION CONTRACT PACKAGING

- 2.1.1 To facilitate the project management and implementation, the Project was divided by the following contracts:
 - Contract 1 (Contract No. CV/2016/10)
 - Contract 2 (Contract No. CV/2017/02)
 - Contract 3 (Contract No. TBA)
- 2.1.2 Organization structure and contact details of relevant parties with respect to on-site environmental management are shown in *Appendix B*.

2.2 CONSTRUCTION PROGRESS

2.2.1 The three-month rolling construction programme for Contract 1 and Contract 2 are enclosed in *Appendix C*. Construction activities of the Contract 1 and Contract 2 undertaken in the Reporting Month are presented below. The tentative construction activities are summarised in Section 12.2

Contract 1 (CV/2016/10)

- Directional Sign (DS4) Footing Construction Works
- Toe Wall Construction Works at Cut Slope CS13
- Drainage & Sewerage Works at Sha Ling Road near Man Kam To road, and PDA
- Soil Nail and Slope Drain Works at Cut Slope CS13

Contract 2 (CV/2017/02)

- Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH0-50 Southbound & CH505-565 Northbound & CH890-960 Northbound.
- Pipe Jacking works for DN400 watermain in approx. CH0-300 at Man Kam To Road
- DN400 DI Watermain reinstatement works in approx. CH700-1040 at Man Kam To Road North Slow Lane
- Construction of road works at Sandy Ridge Road E, Road F, Road B
- Fanling Station Road Covered Walkway
- Lung Sum Avenue road surface modification works

2.3 SUMMARY OF ENVIRONMENTAL SUBMISSIONS

2.3.1 Summary of the relevant permits, licenses, and/or notifications on environmental protection for the Project in this Reporting Month is presented in *Tables 2-1 and 2-2*.

Table 2-1 Status of Environmental Licenses and Permits for Contract 1

Item	Description	License/ Permit ref no.	License/ Permit Status
1	Air Pollution Control	Ref. no. 428909	Valid
	(Construction Dust) Regulation	Acknowledged by EPD on 20/12/2017	
2	Chemical waste Producer	WPN: 5231-641-H3937-01	Valid
	Registration	Issued by EPD on 27/03/2018	
3	Water Pollution Control	License no. WT00030795-2018	Valid
	Ordinance	Issued date: 9/5/2018	
		Expire Date: 31/5/2023	
4	Billing Account for Disposal	Account no.: 7029769	Valid
	of Construction Waste		

Table 2-2 Status of Environmental Licenses and Permits for Contract 2

Item	Description	License/ Permit ref no.	License/ Permit Status
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Item	Description	License/ Peri	mit ref no.	License/ Permit Status
1	Air Pollution Control (Construction Dust) Regulation	Ref. no. 440406 Acknowledged by EPD on 14/12/2018	Man Kam To Road (near Sha Ling Road to Kong Nga Po Road	Valid
		Ref. no. 440405 Acknowledged by EPD on 14/12/2018	Fanling Station Road	Valid
		Ref. no. 440404 Acknowledged by EPD on 14/12/2018	Sa Ling Road (Sandy Ridge Cemetery)	Valid
		Ref. no. 440401 Acknowledged by EPD on 14/12/2018	Lin Ma Hang Road (San Uk Ling – Muk Wu Nga Yiu)	Valid
		Ref. no. 440402 Acknowledged by EPD on 14/12/2018	Lung Sum Avenue	Valid
2	Chemical waste Producer Registration	WPN: 5213-641-S4151-01 Issued by EPD on 04/02/20		Valid
3	Water Pollution Control Ordinance	License no: WT00032936-2018 Issued date: 16/01/2019 Expire Date: 31/01/2024	Man Kam To Road & Lin Ma Hang Road, Man Kam To	Valid
		License no: WT00033335-2019 Issued date: 29/03/2019 Expire Date: 31/03/2024	Columbarium at Sandy Ridge Cemetery	Valid
		License no: WT00034717-2019 Issued date: 9/10/2019 Expire Date: 31/10/2024	Fanling Station Road	Valid
4	Billing Account for Disposal of Construction Waste	Account no.: 7031098		Valid
5	Construction Noise Permit	GW-RN0226-21 (1 May 2021 – 30 Oct 202	1)	Valid

2.4 SUMMARY OF SUBMISSION UNDER THE ENVIRONMENTAL PERMIT REQUIREMENTS

2.4.1 *Tables 2-3 to 2-4* summarized the submission status under the EP and/or FEP stipulation in the Reporting Month.

Table 2-3 Status of Submission as under FEP

Item	EP and / or FEP Stipulation	Description	Status
1		Management organization of : i) the	Submitted and no approval is
		main construction companies; ii) ET; and iii) IEC and the supporting team	required.
2			Submitted and no approval is
		construction works; and ii) Location plan of all construction works	required.
3	Condition 2.12 of FEP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May 2019
4	Condition 2.13 of FEP	Grassland Reinstatement Plan	Pending approval
5	Condition 2.14 to 2.16 of	Vegetation Survey Report and	Approved by EPD on 12
	FEP	Vegetation Transplantation Proposal	October 2018
		for Contract 1	
6	Condition 2.17 of FEP	Woodland Compensation Plan	Approved by EPD on 30 Jun



Item	EP and / or FEP Stipulation	Description	Status
		(Rev.05)	2020
7	Condition 2.18 of FEP	Monitoring and Survey Plan for Golden-headed Cisticola for Contract 1 (Rev.02)	Approved by EPD on 22 Oct 2019
8	Condition 2.20 of FEP	Landscape & Visual Mitigation and Tree Preservation Plan(s) Contract 1 (Rev.04)	Pending approval
9	Condition 2.22 of FEP	Traffic Noise Mitigation Plan Contract 1 (Rev. 4)	Pending approval
10	Condition 3.3 of the FEP	Baseline Monitoring Report (Air, Noise and Water)	Approved by EPD on 25 October 2018
11	Condition 4.2 of the FEP	The Contract Internet website	Internet website address has notified EPD on 15 Jun 2018 and no approval is required.

Table 2-4 Status of Submission as under EP

Item	EP and / or FEP Stipulation	Description	Status
1	Condition 2.10 of EP	Management organization of: i) the main construction companies; ii) ET; and iii) IEC and the supporting team	Submitted and no approval is required.
2	Condition 2.11 of EP	i) Detailed phasing programme of all construction works; and ii) Location plan of all construction works	Submitted and no approval is required.
3	Condition 2.12 of EP	Layout Plan for the proposed footpath at Lin Ma Hang Road	Pending approval
4	Condition 2.13 of EP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May 2019
5	Condition 2.14 of EP	Grassland Reinstatement Plan	Pending approval
6	Condition 2.15 to 2.17 of EP	Vegetation Survey Report and Vegetation Transplantation Proposal under Contract 2	Pending approval
7	Condition 2.18 of EP	Woodland Compensation Plan (Rev.05)	Approved by EPD on 30 Jun 2020
8	Condition 2.19 of EP	Monitoring and Survey Plan for Golden-headed Cisticola Contract 2	Pending approval
9	Condition 2.21 – 2.22 of EP	Landscape & Visual Mitigation and Tree Preservation Plan(s) Contract 2	Pending approval
10	Condition 2.23 of EP	Traffic Noise Mitigation Plan Contract 2	Pending approval
11	Condition 3.3 of the EP	Baseline Monitoring Report (Air, Noise and Water)	Approved by EPD on 25 October 2018
12	Condition 4.2 of the EP	The Contract Internet website	Internet website address has notified EPD on 15 June 2018 and no approval is required.



3. SUMMARY OF IMPACT MONITORING REQUIREMENT

3.1 GENERAL

- 3.1.1 The EM&A requirements are set out in the Approved EM&A Manual. Environmental issues such as air quality, construction noise, water quality and ecology were identified as the key issues during the construction phase of the Project.
- 3.1.2 A summary of construction phase EM&A requirements are presented in the sub-sections below.

3.2 MONITORING PARAMETERS

- 3.2.1 The EM&A impact monitoring shall cover the following environmental aspect:
 - Air quality;
 - Construction noise;
 - Water quality;
 - Ecology; and
 - Landscape and visual
- 3.2.2 A summary of the monitoring parameters is presented in *Table 3-1* below

Table 3-1 Summary of EM&A Requirements

Environmental Issue	Parameters	
Air Quality	• 1-hour TSP;	
	• 24-hour TSP	
Noise	• Leq _(30min) during normal working hours.; and	
TVOISC	 Leq_(15min) during the construction works undertaken in Restricted Hours 	
	In-situ Measurements	
	 Dissolved Oxygen Concentration (mg/L) & Saturation (%); 	
	• Temperature (°C);	
	• Turbidity (NTU);	
Water Ovality	• Salinity (ppm)	
Water Quality	pH unit;	
	• Water depth (m); and	
	• Stream Flow Velocity (m/sec).	
	Laboratory Analysis	
	• Suspended Solids (mg/L)	
Ecology	Ecologically sensitive habitats (wetland habitats and non-wetland habitats)	

3.3 MONITORING LOCATIONS

- 3.3.1 According to the Approved EM&A Manual of the Project *Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery*, the designated monitoring locations for air quality, noise, water quality and ecology under the monitoring programme, is shown in *Appendix D*.
- 3.3.2 Since the Project was divided into three Works Contracts and all Contracts will be commenced at different time, the construction phase impact monitoring will only be performed at the Contract-related monitoring stations upon commencement of each Contract Works.

Air Quality

3.3.3 There were three (3) designated air quality monitoring stations recommended in the Approved EM&A Manual Section 5.6.1.1. There was proposed relocation of air quality monitoring location ASR-3 in October 2018 since the landlord refused to set up the HVS at his premises and nearby Conservation Area due to noise nuisance and Muk Wu Nga Yiu House No. 2A was proposed as alternative location ASR-3a. The proposal dated on 9 November 2018 which verified by IEC was submitted to EPD for approval. Based on rationale in Section 3.3.2, the Contract-related air quality monitoring location for construction phase were summarized in *Table 3-2* and illustrated in *Appendix D*.



Table 3-2 Designated Air Quality Monitoring Location under the Project

Location ID	Description in EM&A Manual	Location	Related Work Contract
ASR-1	Village House along Man Kam To	Sha Ling Village House No.6	Contract 1
	Road		
ASR-2	Village House at San Uk Ling	San Uk Ling Village House No.1	Contract 2
ASR-3	Village House at Muk Wu Nga Yiu	Muk Wu Nga Yiu House No.28	Contract 2
ASR-3a (#)	Village House at Muk Wu Nga Yiu	Muk Wu Nga Yiu House No.2A	Contract 2

Remark: (#) There was proposed relocation of air quality monitoring location ASR-3 in October 2018. The proposal dated on 9 November 2018 after verified by IEC was submitted to EPD for approval.

- 3.3.4 If the designated monitoring location is required to relocate, alternative monitoring location shall agree with IEC and seek for EPD approval which shall meet the following criteria:
 - i) Be at the site boundary or such locations close to the major dust emission source;
 - ii) Close to the sensitive receptors;
 - iii) Take into account the prevailing meteorological conditions;
 - iv) For monitoring location located in the vicinity of the ASRs, care shall be taken to cause minimal disturbance to the occupants during monitoring.
 - v) When positioning the HVS, the following points shall be noted:
 - a. a horizontal platform with appropriate support to secure the samples against gusty wind shall be provided;
 - b. no two samplers shall be placed less than 2m apart;
 - c. the distance between the HVS and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the HVS;
 - d. a minimum of 2 m separation from walls, parapets and penthouses is required for HVS at the rooftop;
 - e. a minimum of 2 m separation from any supporting structure, measures horizontally is required;
 - f. no furnace or incinerator flue is nearby;
 - g. airflow around the sampler is unrestricted;
 - h. the HVS is more than 20 m from the dripline;
 - i. any wire fence and gate to protect the HVS, shall not cause any obstruction during monitoring;
 - j. permission must be obtained to set up the HVS and to obtain access to the monitoring stations; and
 - k. a secured supply of electricity is needed to operate the HVS.

Construction Noise

3.3.5 There were four (4) designated noise monitoring locations recommended in the Approved EM&A Manual Section 6.5.1.1. Based on rationale in Section 3.3.2, the Contract-related noise quality monitoring location for construction phase were summarized in *Table 3-3* and illustrated in *Appendix D*.

Table 3-3 Designated Construction Noise Monitoring Location under the Project

Locatio n ID	Description in EM&A Manual	Location	Related Work Contract
CN-1	Village house to the west of	Village house to the west of Sha Ling	Contract 1
	Sha Ling Road	Road (free field condition)	
CN-2	Village house to the north of	Sha Ling Village House No. 25 (free	Contract 1
	Man Kam To Road	field condition)	& 3
CN-3	Village house near San Uk	San Uk Ling Village House No. 18 (free	Contract 2
	Ling	field condition)	
CN-4	Village house of Muk Wu	Muk Wu Village House No. 267 (1m	Contract 2
		façade from the building)	



Water Quality

3.3.6 There were four (4) water quality monitoring locations recommended in the Approved EM&A Manual Section 7.6.1.2. The locations and coordinates of water quality monitoring were listed in *Table 3-4*. Based on rationale in Section 3.3.2, the Contract-related water quality monitoring location for construction phase were summarized in *Table 3-4* and illustrated in *Appendix D*.

Table 3-4 Designated Water Quality Monitoring Stations under the Project

Proposed	Co-ore	dinates	Description	Related Work
Location ID	North	East	Description	Contract
M1	843 431	831 308	Midstream of Nam Hang Stream	Contract 2
M2	843 840	831 101	Downstream of Nam Hang Stream	Contract 2
M3	843 509	830 040	Wetland in the Conservation Area near Yuen Leng Chai	Contract 1
M4	843 997	831 783	Watercourse across Lin Ma Hang Road, running from east of San Uk Ling to Man Kam To Boundary Control Point	Contract 2

3.4 MONITORING FREQUENCY AND PERIOD

3.4.1 The requirements of impact monitoring were stipulated in *Sections 5.8.1.1*, *6.7.1.1* and *7.8.1.4* of the approved *EM&A Manual* and presented as follows.

Air Quality Monitoring

- 3.4.2 Monitoring frequency for air quality impact monitoring is as follows:
 - 1-Hour TSP 3 sets of 1-hour TSP monitoring shall be carried out once every six days during construction periods
 - 24-Hour TSP 24-hour TSP monitoring shall be carried out every six days during construction periods

Noise Monitoring

3.4.3 Noise impact monitoring shall be carried out once per week during construction periods. The noise measurement for the time period between 0700 and 1900 hours shall be measured in terms of L_{eq} (30 minutes) or 6 sets of L_{eq} (5mins).

Water Quality Monitoring

3.4.4 The monitoring frequency shall be 3 days per week during construction phase and the interval between two sets of monitoring shall not be less than 36 hours.

3.5 MONITORING EQUIPMENT

3.5.1 The monitoring equipment using for the EM&A program as proposed by the ET shall be verified by the IEC.

Air Quality Monitoring

- 3.5.2 The 24-hour and 1-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the *Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B*. If ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, it shall submit sufficient information to IEC for approval.
- 3.5.3 The filter paper of 24-hour TSP measurement shall be determined by HOKLAS accredited laboratory.
- 3.5.4 All equipment used by ET for air quality monitoring is listed in *Table 3-5*.

Table 3-5 Air Quality Monitoring Equipment

Equipment	Model	
24-hour TSP		
High Volume Air Sampler (HVAS)	TISCH High Volume Air Sampler, HVS Model TE-5170	
Calibration Kit	TISCH Model TE-5025A	
1-Hour TSP		
Portable Dust Meter	Laser Dust Monitor, Model AM510	



Equipment	Model
	/ Sibata LD-3 Laser Dust monitor Particle Mass Profiler &
	Counter

Wind Data Monitoring Equipment

- 3.5.5 According to the approved EM&A Manual, wind data monitoring equipment shall also be provided and set up for logging wind speed and wind direction near the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:
 - 1) The wind sensors should be installed 10 m above ground so that they are clear of obstructions or turbulence caused by buildings.
 - 2) The wind data should be captured by a data logger. The data shall be downloaded for analysis at least once a month.
 - 3) The wind data monitoring equipment should be re-calibrated at least once every six months.
 - 4) Wind direction should be divided into 16 sectors of 22.5 degrees each.
- 3.5.6 ET has liaised with the premises owners/ landlords to grant the permission for the HVS installation. However, they rejected to set up wind data monitoring equipment installation in their premises.
- 3.5.7 Under this situation, the ET proposed to obtain representative wind data from the Hong Kong Observatory Ta Kwu Ling Weather Station. Ta Kwu Ling Station is located near the Project site which situated at the sea level above 15mPD and the wind data monitoring equipment is installed 10 m above the existing ground.

Noise Monitoring

- 3.5.8 Sound level meter in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. The sound level meter shall be checked using an acoustic calibrator. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in ms⁻¹ before each noise monitoring event. Noise measurements should not be made in fog, rain, wind with a steady speed exceeding 5 m s⁻¹ or wind with gusts exceeding 10 m s⁻¹.
- 3.5.9 Noise monitoring equipment used for impact monitoring is listed in *Table 3-6*.

Table 3-6 Noise Monitoring Equipment

Equipment	Model
Integrating Sound Level Meter	Rion NL-52 Sound Level Meter
Calibrator	Rion NC-74 Acoustical Calibrator
Portable Wind Speed Indicator	Testo Anemometer

3.5.10 Sound level meters listed above comply with the *International Electrotechnical Commission Publications 651:1979 (Type 1)* and *804:1985 (Type 1)* specifications, as recommended in TM issued under the NCO.

Water Quality Monitoring

3.5.11 Water quality parameters include dissolved oxygen, water temperature & depth, turbidity, salinity, pH and stream flow velocity shall be measured *in-situ*, and suspended solids shall be analyzed by a HOKLAS-accredited testing laboratory.

Dissolved Oxygen and Temperature Measurement

- 3.5.12 The dissolved oxygen (DO) measuring instruments should be portable and weatherproof. The equipment should also complete with cable and sensor, and DC power source. It should be capable of measuring:
 - A DO level in the range of 0 20 mg/L and 0 200% saturation; and
 - A temperature of 0-45 degree Celsius.



- 3.5.13 The equipment should have a membrane electrode with automatic temperature compensation complete with a cable.
- 3.5.14 Should salinity compensation not be built-in to the DO equipment, in-situ salinity should be measured to calibrate the DO measuring instruments prior to each measurement.

Turbidity Measurement

3.5.15 The turbidity measuring instruments should be a portable and weatherproof with DC power source. It should have a photoelectric sensor capable of measuring turbidity level between 0–1000 NTU (for example, Hach model 2100Q or an approved similar instrument).

Salinity Measurement

3.5.16 A portable salinometer capable of measuring salinity in the range of 0–40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

pH Measurement

3.5.17 A portable pH meter capable of measuring a range between 0.0 and 14.0 should be provided to measure pH under the specified conditions accordingly to the APHA Standard Methods.

Water Depth Measurement

3.5.18 A portable, battery-operated echo sounder or an approved similar instrument should be used for water depths determination at each designated monitoring station.

Stream Flow Velocity Equipment

3.5.19 Since the EM&A Manuals do not specified instrument to use stream flow velocity measurement, the monitoring of stream flow velocity is therefore proposed to be conducted by using a flow probe which is a digital water velocity meter.

Water Sampling Equipment

- 3.5.20 A water sampler is required for suspended solid (SS) monitoring. A water sampler e.g. Kahlsico Water Sampler, which is a transparent PVC cylinder with capacity not less than 2 litres, will be used for water sampling if water depth over than 0.5m.
- 3.5.21 For sampling from very shallow water depths e.g. <0.5 m, water sample will be collected from water surface below 100mm using plastic bottle to avoid inclusion of bottom sediment or humus. Moreover, Teflon/stainless steel bailer or self-made sampling buckets maybe used for water sampling. The equipment used for sampling will be depended the sampling location and depth situations.

Sample Containers and Storage

- 3.5.22 Water samples for suspended solid should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory within 24 hours of collection and be analyzed as soon as possible after collection.
- 3.5.23 Analysis of suspended solids should be carried out in a HOKLAS or other accredited laboratory. Water samples of about 1L should be collected at the monitoring stations for carrying out the laboratory suspended solids determination. The SS determination work should start within 24 hours after collection of the water samples. The SS analyses should follow the *APHA Standard Methods* 2540D with Limit of Reporting of 2 mg/L.
- 3.5.24 Details of the equipment used for water quality monitoring are listed in *Table 3-7* below.

Table 3-7 Water Quality Monitoring Equipment

Equipment	Model
Water Depth Detector	Tape measures



Equipment	Model
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends or Teflon/stainless steel bailer or self-made sampling bucket
Thermometer & DO meter	YSI Professional Plus/ YSI 550A
pH meter	AZ8685 pH meter / YSI Professional Plus / YSI Professional DSS
Turbidimeter	Hach 2100Q/ YSI Professional Plus / YSI Professional DSS
Salinometer	Atago refractometer Atago S Salinity Meter / YSI Professional Plus / YSI Professional DSS
Stream Flow Velocity	FP211 Global Flow Probe
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box with Ice pad

3.5.25 Furthermore, Suspended solids (SS) analysis was carried out by *ALS Technichem (HK) Pty Ltd*. Which is one a local HOKLAS-accredited laboratory

3.6 EQUIPMENT CALIBRATION

- 3.6.1 The HVAS is operated and calibrated on a regular basis in accordance with the manufacturer's instruction using Tisch Calibration Kit Model TE-5025A. Calibration would carry out at fortnightly interval. The calibration data are properly documented and the records are maintained by ET for future reference. Furthermore, Tisch Calibration Kit will be calibrated by the manufacturer in yearly basis.
- 3.6.2 The 1-hour TSP meter calibrated by a local HOKLAS-accredited laboratory would be undertaken in yearly basis. Zero response of the equipment was checked before and after each monitoring event.
- 3.6.3 The sound level meter and acoustic calibrator are calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme at yearly basis.
- 3.6.4 The multi-parameter Water Quality Monitoring System is calibrated by HOKLAS accredited laboratory of three month intervals.
- 3.6.5 All updated calibration certificates of the monitoring equipment used for the impact monitoring program in this Reporting Month are attached in Appendix E.

3.7 DATA MANAGEMENT AND DATA QA/QC CONTROL

- 3.7.1 The impact monitoring data are handled by the ET's systematic data recording and management, which complies with in-house Quality Management System. Standard Field Data Sheets (FDS) are used in the impact monitoring program.
- 3.7.2 The monitoring data recorded in the equipment e.g. 1-hour TSP meter, noise meter and Multi-parameter Water Quality Monitoring System are downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data. For monitoring activities require laboratory analysis, the local laboratory follows the QA/QC requirements as set out under the HOKLAS scheme for all laboratory testing.

3.8 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS

3.8.1 The baseline monitoring results form the basis for determining the environmental acceptance criteria for the impact monitoring. The air quality, construction noise and water quality criteria, namely Action and Limit levels were established according to Approved EM&A Manual, and they are listed in *Tables 3-8, 3-9* and *3-10* below.

Table 3-8 Action and Limit Levels for Air Quality Monitoring

Manitaring Station	Action I	Level (μg /m³)	Limit Level (µg/m³)		
Monitoring Station	1-hour TSP	TSP 24-hour TSP 1-hour TSP 24		24-hour TSP	
ASR-1	331	181	500	260	

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ASR-2	316	165	500	260
ASR-3	307	160	500	260



Table 3-9 Action and Limit Levels for Construction Noise

Monitoring Location	Action Level	Limit Level in dB(A)		
Monitoring Location	Time Period: 0700-1900 hours on normal weekdays			
CN-1,CN-2, CN-3, CN-4	When one or more documented complaints are received	75 dB(A)		

Note: * Reduces to 70 dB(A) for schools and 65 dB(A) during the school examination periods.

Table 3-10 Action and Limit Levels for Water Quality

Domomotor	Performance		Monitorin	Monitoring Location		
Parameter	criteria	M1	M2	M3	M4	
DO (ma/L)	Action Level	3.03	4.99	4.58	3.62	
DO (mg/L) Lim	Limit Level	2.97	4.90	4.49	3.52	
Turbidity	Action Level	7.1	39.7	5.6	5.4	
(NTU)	Limit Level	7.6	42.2	5.9	5.9	
SS (Action Level	8.5	29.0	9.3	4.8	
SS (mg/L)	Limit Level	10.1	31.0	9.5	5.0	

Notes:

3.8.2 Should non-compliance of the environmental quality criteria occurs, remedial actions will be triggered according to the Event and Action Plan enclosed in Appendix F.

[•] For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits

[•] For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.



4. AIR QUALITY

4.1 MONITORING RESULTS

- 4.1.1 In the Reporting Month, air quality monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in *Appendix G*.
- 4.1.2 In this Reporting Month, there were 5 sessions of 24-hour TSP and 15 sessions of 1-hour TSP undertaken at each designated station for air quality monitoring. The air quality monitoring results are summarized in *Tables 4-1* to 4-3. The database of 24-hour TSP is shown in *Appendix H* and the graphical plots of monitoring result are shown in *Appendix I*.

Table 4-1 Summary of Air Quality Monitoring Results at ASR-1 under Contract 1

	24-hour	1-hour TSP (μg/m³)					
Date TSP (μg/m³)		Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
4-Mar-22	9	5-Mar-22	13:00	92	89	91	
10-Mar-22	118	11-Mar-22	13:24	64	68	71	
16-Mar-22	91	17-Mar-22	9:14	78	58	61	
22-Mar-22	73	23-Mar-22	13:15	67	61	58	
28-Mar-22	26	29-Mar-22	9:01	62	65	68	
Average	63	Average		70			
(Range)	(9 - 118)	(Range)		(58 – 92)			

Table 4-2 Summary of Air Quality Monitoring Results at ASR-2 under Contract 2

	24-hour	1-hour TSP (μg/m³)					
Date	$TSP (\mu g/m^3)$	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
4-Mar-22	10	5-Mar-22	13:06	90	92	89	
10-Mar-22	21	11-Mar-22	13:18	62	65	68	
16-Mar-22	21	17-Mar-22	9:21	71	67	50	
22-Mar-22	20	23-Mar-22	13:09	67	70	63	
28-Mar-22	9	29-Mar-22	9:10	57	64	68	
Average	16	Average		70			
(Range)	(9-21)	(Range	(Range)		(50 - 92)		

Table 4-3 Summary of Air Quality Monitoring Results at ASR-3a under Contract 2

	24-hour	1-hour TSP (μg/m³)				
Date	Date TSP (μg/m³)		Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Mar-22	13	5-Mar-22	13:11	87	90	89
10-Mar-22	26	11-Mar-22	13:13	57	59	65
16-Mar-22	23	17-Mar-22	9:26	67	70	60
22-Mar-22	21	23-Mar-22	13:04	65	47	59
28-Mar-22	12	29-Mar-22	9:17	58	60	49
Average	19	Average		65		
(Range)	(12 - 26)	(Range)		(47 - 90)		

4.2 AIR MONITORING EXCEEDANCE

4.2.1 As shown in *Tables 4-1 to 4-3*, the monitoring results of 24-hour and 1-hour TSP monitoring in the Reporting Month were below the Action/ Limit Level. No Notification of Exceedance (NOE) of air quality monitoring criteria was issued and therefore corrective action was not required. The meteorological data during the impact monitoring days are summarized in *Appendix J*.



5. CONSTRUCTION NOISE

5.1 MONITORING RESULTS

- 5.1.1 In the Reporting Month, noise monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in *Appendix G*.
- 5.1.2 In this Reporting Month, 4 sessions of noise monitoring were undertaken at each designated noise monitoring location. The sound level were set in a free field situation for CN1, CN2 and CN3 and therefore a façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines. The monitoring result of noise monitoring is show in *Tables 5-1 and 5-2* and the graphical plots are shown in *Appendix I*.

Table 5-1 Summary of Construction Noise Monitoring Results under Contract 1

Construction Noise Level (L _{eq30min}), dB(A)							
Date	Start Time	CN1(*)	Start Time	CN2(*)			
11-Mar-22	13:27	66	14:09	64			
17-Mar-22	9:07	65	9:47	66			
23-Mar-22	15:03	66	14:26	69			
29-Mar-22	9:16	70	9:53	68			
Limit Level	75 dB(A)						

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

Table 5-2 Summary of Construction Noise Monitoring Results under Contract 2

Construction Noise Level (L _{eq30min}), dB(A)								
Date	Start Time CN3 (*) Start Time CN4							
11-Mar-22	14:46	64	15:21	53				
17-Mar-22	10:20	61	11:04	60				
23-Mar-22	13:45	63	13:02	58				
29-Mar-22	10:31	66	11:14	61				
Limit Level	75 dB(A)							

 $^{(*) \} A \ façade \ correction \ of \ +3dB(A) \ has \ been \ added \ according \ to \ acoustical \ principles \ and \ EPD \ guidelines.$

5.1.3 Prior and after noise monitoring, the accuracy of the sound level meter has been checked by an acoustic calibrator to ensure the measurement within acceptance range of ± 0.5 dB. Moreover, wind speed checked by portable wind speed meter has been performed before noise monitoring. No noise measurement was performed in fog, rain, wind with a steady speed exceeding 5 m s⁻¹ or wind with gusts exceeding 10 m s⁻¹.

5.2 Noise Monitoring Exceedance

5.2.1 As shown in *Tables 5-1 and 5-2*, no noise complaint (which triggered Action Level) and Limit Level exceedance for noise monitoring exceedance was recorded in the Reporting Month.



6. WATER QUALITY

6.1 MONITORING RESULTS

- 6.1.1 In the Reporting Month, water quality monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in *Appendix G*.
- 6.1.2 In the Reporting Month, a total of *13* monitoring days were carried out for water quality impact monitoring. Besides, the channel of M2 was dried up / too shallow on 2 to 22 March, and representative water sampling were unable be carried out. Notification was provided to relevant parties in the following days of the events.
- 6.1.3 The monitoring result of key parameters including Dissolved Oxygen, Turbidity and Suspended Solids are summarized in *Tables 6-1* and *6-2*. Detailed monitoring results including in-situ measurements and laboratory analysis data are shown in *Appendix H* and graphical plots for monitoring result are shown in *Appendix I*.

Table 6-1 Summary of Water Quality Monitoring Results – M3 under Contract 1

	Parameters					
Date	DO (Averaged) (mg/L)	Turbidity (Averaged) (NTU)	Suspended Solids (Averaged) (mg/L)			
2-Mar-22	8.23	1.5	<2			
4-Mar-22	8.04	3.1	2.0			
7-Mar-22	7.93	1.4	3.0			
10-Mar-22	8.11	1.2	<2			
12-Mar-22	7.88	4.8	2.0			
15-Mar-22	7.76	1.2	<2			
17-Mar-22	7.62	1.4	<2			
19-Mar-22	7.62	1.1	<2			
22-Mar-22	7.75	1.3	<2			
24-Mar-22	7.28	1.2	<2			
26-Mar-22	7.66	1.6	2.0			
28-Mar-22	7.59	3.2	2.0			
31-Mar-22	7.69	2.9	6.0			

Table 6-2 Summary of Water Quality Monitoring Results (M1, M2 and M4) under Contract 2

	Parameters									
Date	DO (Averaged) (mg/L)				Turbidity (Averaged) (NTU)			Suspended Solids (Averaged) (mg/L)		
	M1	M2	M4	M1	M2	M4	M1	M2	M4	
2-Mar-22	8.29	#	6.65	3.6	#	1.3	3.0	#	<2	
4-Mar-22	8.04	#	6.45	3.1	#	1.4	5.5	#	3.0	
7-Mar-22	8.09	#	6.69	2.0	#	1.1	3.0	#	2.0	
10-Mar-22	8.23	#	6.97	1.7	#	1.3	3.0	#	<2	
12-Mar-22	7.93	#	7.23	1.1	#	5.2	<2	#	3.5	
15-Mar-22	7.80	#	7.00	1.1	#	1.9	<2	#	3.5	
17-Mar-22	7.76	#	6.94	1.8	#	2.0	<2	#	<2	
19-Mar-22	7.66	#	6.72	1.4	#	5.1	<2	#	12.0	
22-Mar-22	7.82	#	7.28	1.4	#	1.0	<2	#	2.5	
24-Mar-22	7.76	6.61	7.09	0.8	26.2	5.4	<2	22.5	4.0	
26-Mar-22	8.07	8.16	6.40	2.1	16.2	1.7	<2	15.0	3.0	
28-Mar-22	7.84	8.82	6.08	1.5	33.2	2.4	2.0	26.5	17.0	
31-Mar-22	7.63	7.47	6.55	1.4	31.4	1.5	2.5	23.5	4.0	

Remarks: (#) The channel of M2 was dried up / too shallow and representative water sampling was unable be carried out.



6.1.4 During the Reporting Month, field measurements including temperature of stream water, salinity concentrations, pH values and the stream flow velocity for all monitoring locations are summarized in *Table 6-3*.

Table 6-3 Summary of Field Measurements for Water Quality

	Parameters of field measurements										
Monitoring	pH (Ave		Salinity (A	-	Temp (A	veraged)	Water Flow				
Location	(un	nit)	(ppt))°()	C)	(Averaged	l) (m/s)			
	min	max	min	max	min	max	min	max			
M1	7.2	7.6	0.01	0.08	17.3	22.7	< 0.1	< 0.1			
M2	7.4	7.7	0.05	0.10	18.5	22.0	< 0.1	< 0.1			
M3	7.0	8.1	0.01	0.08	18.0	23.0	< 0.1	< 0.1			
M4	6.9	7.4	0.03	0.07	18.2	23.1	< 0.1	< 0.1			

6.2 WATER QUALITY MONITORING EXCEEDANCE

6.2.1 In this Reporting Month, there were no exceedances of water quality parameters recorded. The summary of non-compliance of water quality performance is shown in *Table 6-4*.

Table 6-4 Action and Limit (A/L) Levels Exceedance Record

Station	D	O	Turb	Turbidity		SS		tal dance	Project Related exceedance		
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit	
M1	0	0	0	0	0	0	0	0	0	0	
M2	0	0	0	0	0	0	0	0	0	0	
M3	0	0	0	0	0	0	0	0	0	0	
M4	0	0	0	0	0	0	0	0	0	0	

6.2.2 Notification of Exceedance (NOE) and the investigation for exceedance in the Reporting Month is summarized in *Table 6-5*.

Table 6-5 Summary of Investigation of Water Quality Exceedance in the Reporting Month

Date of Exceedance	Exceeded Location	Exceeded Parameter	Cause of Water Quality Exceedance



7. ECOLOGY MONITORING

7.1 REQUIREMENT

- 7.1.1 According to approved EIA report (AEIAR-198/2016), habitat types within project boundary comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 7.1.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution. In order to monitor the effectiveness of the measures to the minimize impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland habitats (wet woodland and watercourse) and non-wetland habitats (upland grassland and woodland).

7.2 METHODOLOGY

7.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardized quantitative methodology will conduct at fixed points. For seasonal watercourse, the survey will be conducted whenever the habitat appears. Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and Action/Limit levels to trigger these measures are detailed in *Table 7-1*.

Table 7-1 Action and Limit Levels for Wet Woodland Habitats Monitoring

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction in	Investigate cause and if cause
taxa diversity by	cause identified as related	taxa diversity by	identified as related to the
30%	to the project instigate	50%	project instigate remedial
	remedial action to remove		action.
	or reduce source of		
	disturbance.		

Remarks: Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

7.2.2 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts. Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and Action/Limit levels to trigger these measures are detailed in *Table 7-2*.

Table 7-2 Action and Limit Levels for Non-Wet Woodland Habitats Monitoring

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction in	Investigate cause and if cause
species diversity	cause identified as related	species diversity	identified as related to the
by 30%	to the project instigate	by 50%	project instigate remedial
	remedial action to remove		action.
	or reduce source of		
	disturbance.		

Remarks: Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna

7.2.3 The ecological survey includes all taxa being investigated in accordance with EIA report. Schedule of faunal surveys in each year during construction phase is presented in *Table 7-3*.

Table 7-3 Schedule of Faunal Surveys in each year During Construction Phase

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals				V		V			V	V		
Birds (day)			V	V		V		V	V	V		



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Birds (night)												
Herpetofauna												
Dragonflies												
Butterflies												
Aquatic fauna		V	V	V	V		V		V	V		V

Mammal Survey

7.2.4 Mammal surveys will be conducted along the proposed transects (shown in *Appendix K* - Ecological Survey Reports) in during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

Bird Survey

7.2.5 Bird surveys will be conducted along the transects (shown in *Appendix K* - Ecological Survey Reports) during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilizing.

Herpetofauna Survey

7.2.6 Reptile and amphibian surveys will be conducted along transects (shown in *Appendix K* - Ecological Survey Reports) during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

Dragonfly and Butterfly Survey

7.2.7 Dragonfly and Butterfly surveys will be conducted along transects (shown in *Appendix K* - Ecological Survey Reports) during surveys all dragonflies and Butterflies seen will be identified and counted as accurately as possible.

Aquatic Fauna Survey

- 7.2.8 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.
- 7.2.9 After each ecological monitoring survey, a monthly report of the survey result and data collected will be provided with reference to EM&A Manual. An annual analysis of data will be carried out in order to study if there is any significant reduction in taxa diversity and abundance.

7.3 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 1)

7.3.1 In the Reporting Month, ecological monitoring was undertaken on 3rd March 2022, a sunny day. The day survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed points. All species seen will be identified and counted as accurately as possible. Results of the monitoring survey are presented below:

Monitoring Result for Contract 1

Mammal

7.3.2 There was no mammal recorded in the monitoring area

Birds

There were a total of 33 bird individuals from 9 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. One species of conservation interests were recorded in this survey: Crested Serpent Eagle (*Spilornis cheela*) 蛇鶥.

<u>Herpetofauna</u>

7.3.3 There was no reptile species recorded in monitoring area. There was no amphibian species recorded in the monitoring area.



Butterfly

7.3.4 There were a total of 7 butterfly individuals from 3 species recorded in the monitoring area.

Dragonfly

7.3.5 There was 1 odonate individual from 1 species recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

- 7.3.6 There was no freshwater community recorded in the monitoring area.
- 7.3.7 The summaries of faunal survey result are shown in *Tables 7-4* and *7-5*.

Table 7-4 Result of Faunal Survey under Contract 1

Scientific Name	Common /	Chinese Name	Conservation	Non-w	etland	W	etlan	d
Scientific Name	Engineer Name	Chinese Name	Status	UG	WL	MA	WW	WC
Mammal Survey								
Avifauna Survey								
Spilornis cheela	Crested Serpent Eagle	蛇鵰	China Red Data Book Status: (Vulnerable); Fellowes et al. (2002): (LC); Appendix 2 of CITES	1				
Spilopelia chinensis	Spotted Dove	珠頸斑鳩		2				
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		4			2	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		1			4	
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1				
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			2			
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯			5		2	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		7				
Emberiza spodocephala	Black-faced Bunting	灰頭鵐		2				
Reptile Survey								
						-		
Amphibian Survey				,				
						-		
7 . 1	D 1 D	25 HT 1-1-144						
Junonia almana	Peacock Pansy	美眼蛺蝶		1				
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶		2				
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		4				
Odonate Survey								
Neurothemis fulvia	Russet Percher	網脈蜻			1			

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 7-5 Result of Freshwater Communities Survey under Contract 1

Scientific Name	Common	Chinese	Conservation	Non-we	tland	V	Vetla	nd
	Name	Name	Status	UG	WL	MA	WW	WC



Discussion

7.3.8 After analysing survey results in March from 2019 to 2022, there was a decrease in species richness and abundance for wetland habitat. The reduction could be due to natural fluctuation. Yet, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.

7.4 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2)

7.4.1 In the Reporting Month, ecological monitoring was undertaken on 3rd March 2022 at work area of Contract 2. A sunny day covered wetland and non-wetland areas. The survey was conducted by transect and at fixed point. All species seen will be identified and counted as accurately as possible. Results of the monitoring survey are presented below:

Monitoring Result for Contract 2

Mammal

7.4.2 There was no mammal recorded in the monitoring area

Birds

7.4.3 There were a total of 31 bird individuals from 8 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. One species of conservation interests were recorded in this survey: Rose-ringed Parakeet (*Psittacula krameri*) 紅領綠鸚鵡.

<u>Herpetofauna</u>

7.4.4 There was no reptile recorded in the monitoring area. There was no amphibian recorded in the monitoring area.

Butterfly

7.4.5 There were a total of 13 butterfly individuals from 4 species recorded in the monitoring area.

<u>Dragonfly</u>

7.4.6 There was no odonate individuals recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

- 7.4.7 There were 2 species of freshwater fish were recorded in the monitoring area.
- 7.4.8 The summaries of faunal survey result are shown in *Tables 7-6* and 7-7.

Table 7-6 Result of Faunal Survey under Contract 2

Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	No wet	n- land	Wetland		
	Name	Name	Status	UG	WL	MA	WW	WC
Mammal Survey								
							1	-
Avifauna Survey								
Psittacula krameri	Rose-ringed Parakeet	紅領綠鸚鵡	Class 2 Protected Animal of China; China Red Data Book Status: (Indeterminate);	8				
Lanius schach	Long-tailed Shrike	棕背伯勞				1		
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥			4			



Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	No wetl		v	Vetlar	ıd
	Name	Name	Status	UG	WL	MA	WW	WC
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥			3		4	
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯			5			
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2				
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯				2		
Phylloscopus inornatus	Yellow-browed Warbler	黄眉柳鶯			2			
Reptile Survey								
Amphibian Survey								
Butterfly Survey								
Papilio polytes	Common Mormon	玉帶鳳蝶				2		
Pieris canidia	Indian Cabbage White	東方菜粉蝶					2	
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		2			3	
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶					4	
Odonate Survey								

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 7-7 Result of Freshwater Communities Survey under Contract 2

Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		
	Name		Status	UG	WL	MA	WW	WC
Gambusia affinis	Mosquito fish	食蚊魚						+
Puntius semifasciolatus	Chinese Barb	五線無鬚舥						+

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Discussion

- 7.4.9 After analysing survey results in March 2019 to 2022, there was no significant drop in species richness and abundance for wetland and non-wetland habitats. Still, a good site practice during construction, with reference to EM&A Manual, is still required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.
- 7.4.10 The detailed Ecological Survey Reports for Contract 1 and Contract 2 are attached in *Appendix K*.
- 7.4.11 The tentative ecology inspection and monitoring in the next Reporting Month (April 2022) is scheduled on 7th April 2022.

7.5 MONITORING OF FLORA SPECIES OF CONSERVATION INTEREST UNDER CONTRACT 1

- 7.5.1 According to the approved vegetation survey report and transplantation proposal under FEP-01/534/2017/A, an individual of flora species of conservation interest (the transplanted T-2928) was identified and transplanted to the receptor site.
- 7.5.2 According to approved vegetation survey report and transplantation proposal, post-transplantation monitoring was conducted once per week in the first three months after the transplantation in Oct

^{+:} Species appeared but uncountable.



2018 and once in each of the following month in the remaining establishment period for 12 month. During the remaining construction phase of the project, the transplanted T-2928 would be monitored on quarterly basis.

7.5.3 A landscape sub-contractor was employed by the Contractor to monitor the health condition of transplanted species and provide advice on necessary weeding, fertilizing and pest control. The monitoring records were submitted to ET and IEC for review and record. Moreover, inspection of the transplanted T-2928 was undertaken by ET as part of the weekly site inspection. No construction activity and disturbance were observed at the location of the transplanted T-2928. The health condition of the transplanted T-2928 was fair with normal foliage color and density.

7.6 MEASURE FOR PROTECTION OF NESTING BIRD

- 7.6.1 Pursuant to FEP-01/534/2017/A condition 2.19 and EP-534/2017/A condition 2.20, precautionary checks for the presence of nesting birds shall be carried out in the breeding season (February to July) before vegetation clearance.
- 7.6.2 As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.



8. LANDSCAPE AND VISUAL

8.1 REQUIREMENT

- 8.1.1 The EIA has recommended EM&A for landscape and visual resources to be undertaken during the design, construction and operational stages of the project. The design, implementation and maintenance of landscape mitigation measures is a key aspect of this and should be checked to ensure that they are fully realized and that potential conflicts between the proposed landscape measures and any other project works let its are resolved at the earliest possible date and without compromise to the intention of the mitigation measures. In addition, implementation of the mitigation measures recommended by the EIA will be monitored through the site audit programme.
- 8.1.2 A number of mitigation measures to ameliorate the landscape and visual impacts of the Project implementation is summarized in the EMIS of *Appendix 13.1* of the EIA Report.
- 8.1.3 The landscape and visual mitigation measures proposed should be incorporated in the landscape and engineering design. Mitigation measures to be implemented during construction should be adopted from the start of construction and be in place throughout the entire construction period. Mitigation measures to be implemented during operation should be integrated into the detailed design and built as part of the construction works so that they are in place on commissioning of the Project. Tree transplantation and compensatory planting should be carried out as early as possible in the Project with transplantation carried out prior to construction starting in any particular area.
- 8.1.4 During construction phase, Landscape & Visual Monitoring of the contractor's operations should be conducted monthly and reported by ET, and countersigned by IEC.

8.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH

8.2.1 In the Reporting Month, landscape & visual inspection was carried out by the Registered Landscape Architect (RLA) for works area of Contract 1 and Contract 2 on 23rd March 2022. The findings / reminders recorded during the inspection are presented in *Tables 8-1 and 8-2*.

Table 8-1 Landscape & Visual Inspection Finding for Contract 1

Date	Findings and Reminder	Follow-Up Status
23 rd March 2022	1. The Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement.	Reminder only
	2. The Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.	Reminder only
	3. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density. Contractor is reminded to provide proper maintenance according to approved method statement.	Reminder only

Table 8-2 Landscape & Visual Inspection Finding for Contract 2

Date	Findings and Reminder	Follow-Up Status
23 rd March	1. Contractor is reminded to set up TPZ of proper size	 Reminder only
2022	and with appropriate material around retain trees	
	according to approved method statement. Contractor	
	should prevent any construction material pile within	
	TPZ and ensure no works is allowed within the TPZ.	

8.2.2 Inspection checklist of Landscape & Visual signed by RLA is attached in *Appendix L*.



9. WASTE MANAGEMENT

9.1 GENERAL WASTE MANAGEMENT

9.1.1 Waste management was carried out by an on-site Environmental Officer or an Environmental Supervisor from time to time in accordance with the Waste Management Plan (WMP).

9.2 RECORDS OF WASTE QUANTITIES

- 9.2.1 All types of waste arising from the construction work are classified into the following:
 - Construction & Demolition (C&D) Material;
 - Chemical Waste;
 - General Refuse; and
 - Excavated Soil.
- 9.2.2 The quantities of waste for disposal in this Reporting Month are summarized in *Table 9-1* and *9-2* and the Monthly Summary Waste Flow Table is shown in *Appendix M*. Whenever possible, materials were reused on-site as far as practicable.

Table 9-1 Summary of Quantities of Inert C&D Materials

	Contract 1		Contract 2	
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
Total generated C&D Materials (Inert) ('000m ³)	0.669		112.60 (#)	
Reused in this Contract (Inert) ('000m ³)	0.200		0	
Reused in other Projects (Inert) ('000m ³)	0		0	
Disposal as Public Fill (Inert) ('000m ³)	0.469	Tuen Mun Area 38	112.60 (#)	Tuen Mun Area 38

Remark: the unit is '000kg

Table 9-2 Summary of Quantities of C&D Wastes

	Contract 1		Contract 2	
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0		0	
Recycled Paper / Cardboard Packing ('000kg)	0		0	
Recycled Plastic ('000kg)	0		0	
Chemical Wastes ('000kg)	0		0	
General Refuses ('000m ³)	0.020	NENT Landfill	12.640 (#)	NENT Landfill

Remark: the unit is '000kg

9.2.3 Since canteen and/or kitchen are not allowed setting on the Project site, no domestic wastewater was generated from the Project.



10. SITE INSPECTION

10.1 REQUIREMENT

10.1.1 According to the approved EM&A Manual, environmental site inspection should be led by RE and attended by the Contractor and ET at least once per week. Regular environmental site inspections shall be carried out to assess the environmental performance.

10.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH Contract 1

- 10.2.1 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the RE, ET and the Contractor on 3rd, 10th, 17th, 24th and 31st

 March 2022 and IEC attended joint site inspection on 17th March 2022. No non-compliance was noted in the Reporting Month.
- 10.2.2 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-1*.

Table 10-1 Site Observations for the Works of Contract 1

Date	Findings / Deficiencies	Follow-Up Status
3 rd Mar 2022	construction waste regularly.	The Construction waste was removed on site. Deminder only.
	• The Contractor was reminded to spray water regularly on site.	Reminder only.
10 th Mar 2022	• The Contractor was reminded to spray water regularly on unpaved haul road.	Reminder only.
17 th Mar 2022	• The Contractor should provide drip tray for chemical containers and air compressor within site area.	Chemical containers were removed on site and drip tray was provided inside the air compressor.
	 The Contractor was advised to provide proper TPZ for retained tree and remove weeds around the root of transplanted tree. 	 Proper TPZ was provided and weeds were removed near the root of transplanted tree.
	• The Contractor was advised to divert effluent from AMS well to the treatment plant before discharge.	• Muddy water discharge was stopped on site.
	Generator without NRMM label was observed, the Contractor should provide it.	• Fuel consumption of generator is lower than NRMM label standard required.
	• The Contractor was reminded to spray water for dusty construction activity.	Reminder only.
24 th Mar 2022	The Contractor was reminded to maintain good housekeeping.	Reminder only.
31 st Mar 2022	• The Contractor was reminded to maintain good housekeeping.	Reminder only.

Contract 2

- 10.2.3 In the Reporting Month, joint site inspections for Contract 2 to evaluate the site environmental performance carried out by the RE, ET and the Contractor was on 3rd, 10th, 17th, 24th and 31st March 2022 2022 and IEC attended joint site inspection on 17th March 2022 non-compliance was noted.
- 10.2.4 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-2*.

Table 10-2 Site Observations for the Works of Contract 2

Date	Findings / Deficiencies	Follow-Up Status
3 rd Mar 2022	No adverse environmental issue was observed.	• N/A
10 th Mar 2022	No adverse environmental issue was observed.	• N/A



Date	Findings / Deficiencies	Follow-Up Status
17 th Mar 2022	• Proper dust mitigation should provide for the unpaved channel at C2.	• The works for channel at C2 is completed and no dust impact was observed.
24 th Mar 2022	 No adverse environmental issue was observed. 	• N/A
31 st Mar 2022	No adverse environmental issue was observed.	• N/A



11. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 Environmental Complaint, Summons and Prosecution

11.1.1 In the Reporting Month, no environmental complaint was received for the project. No summons and prosecution was lodged for the Contract. The statistical summary table of the environmental complaint, summons and prosecution are presented in *Tables 11-1*, *11-2* and *11-3*. The complaint log for the Project is shown in *Appendix N*.

Table 11-1 Statistical Summary of Environmental Complaints

Donouting Mon	.4h	Environmental Complaint Statistics					
Reporting Mon	ith	Frequency	Cumulative	Complaint Nature			
1 st – 31 st March 2022	Contract 1	0	2	(1) Air Quality (1) Noise			
1 st – 31 st March 2022	Contract 2	0	3	(1) Water (1) Air Quality (1) Noise			

Table 11-2 Statistical Summary of Environmental Summons

Donouting Month		Environmental Summons Statistics					
Reporting Mon	ш	Frequency	Cumulative	Complaint Nature			
1 st – 31 st March 2022	Contract 1	0	0	NA			
1 st – 31 st March 2022	Contract 2	0	0	NA			

Table 11-3 Statistical Summary of Environmental Prosecution

Donouting Mon	4h	Environmental Prosecution Statistics						
Reporting Mon	ш	Frequency	Cumulative	Complaint Nature				
1 st – 31 st March 2022	Contract 1	0	0	NA				
$1^{st} - 31^{st}$ March 2022	Contract 2	0	0	NA				

11.1.2 In addition, no complaints received and emergency event relating to violation of environmental legislation for illegal dumping and landfilling were received.



12. IMPLEMENTATION STATUS OF MITIGATION MEASURES

12.1 GENERAL REQUIREMENTS

- 12.1.1 The environmental mitigation measures that recommended in the Implementation Schedule for Environmental Mitigation Measures (ISEMM) in the approved EM&A Manual covered the issues of dust, noise, water and waste.
- 12.1.2 The Works of Contract 1 and Contract 2 under the Project shall be implementing the required environmental mitigation measures according to the approved EM&A Manual subject to the site condition. Environmental mitigation measures implemented in this Reporting Month is summarized in *Table 12-1*. The status of the Environmental mitigation measures are presented in *Appendix O*.

Table 12-1 Environmental Mitigation Measures

Issues	Environmental Mitigation Measures
Water	• Provided efficient silt removal facilities to reduce SS level before effluent
Quality	discharge.
	• Provided ditches, earth bunds or sand bag barriers to minimize polluted runoff.
	• Temporary drainage was provided to prevent runoff going through site surface
	and minimize polluted runoff.
	Provided perimeter cut-off drains at site boundaries to intercept storm runoff from
	crossing the site.
	Exposed slopes surface were compacted and covered with tarpaulin or similar
	means.Provided portable chemical toilets on site.
Air Quality	 Provided portable chemical toilets on site. Maintain damp / wet surface on access road.
All Quality	 Maintain low vehicular speed within the works areas.
	 Provided vehicle wheel washing facilities at each construction site exit;
	 Provided water spraying every hour for all active works area.
	Stockpiles of dusty material were covered with impervious sheeting.
	 Provided workers to clear dusty materials at the vehicle entrance or exit regularly.
	• Stockpile more than 20 bags of cement or dry pulverized fuel ash (PFA) has been
	covered entirely by impervious sheeting or placed in an area sheltered on the top
	and the 3 sides.
Noise	• Restricted operation time of plants from 07:00 to 19:00 on any working day
	except for Public Holiday and Sunday.
	Keep good maintenance of plants.
	 Placed noisy plants away from residence and school.
	 Provided noise barriers or hoarding to enclose the noisy plants or works.
	Shut down the plants when not in used.
Waste and	Provided on-site sorting prior to disposal. The disposal of the Control of
Chemical	Followed requirements and procedures of the "Trip-ticket System"
Management	Predicted required quantity of concrete accurately. Called the desired from the concrete accurately.
	Collected the unused fresh concrete at designated locations in the sites for subsequent diagonal.
Ecology	 subsequent disposal. Implementing water control measures (ETWB TCW No. 5/2005) to avoid direct
Ecology	• Implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and impact to any aquatic fauna during the
	construction phase.
	 Demarcation fencing has been erected to prevent unauthorised encroachment into
	the riparian corridor by constructions works and traffic.
	• The construction work and site formation have been phased in order to reduce
	overall noise disturbance impacts in particular areas.
	Works have been restricted to daytime and any construction lighting was designed
	and positioned as to not impact on adjacent ecologically sensitive areas.
Cananal	The site was generally kept tidy and clean.
General	Environmental Permit was displayed at site entrance.



12.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH

- 12.2.1 According to the information provided by HCTYJV, the forthcoming construction activities for Contract 1 are listed below:
 - Drainage & Sewerage Works at Sha Ling Road near Man Kam To road, and PDA
 - Pit Planting Works at Cut Slope CS15
 - Slope Drain Works at Cut Slope CS13
 - Road Pavement and Drain Works
 - Fill Slope Works
- 12.2.2 According to the information provided by Sang Hing, the forthcoming construction activities for Contract 2 are listed below:
 - Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH0-50 Southbound & CH505-565 Northbound & CH890-960 Northbound.
 - Pipe Jacking works for DN400 watermain in approx. CH0-300 at Man Kam To Road
 - DN400 DI Watermain reinstatement works in approx. CH700-1040 at Man Kam To Road North Slow Lane
 - Construction of road works at Sandy Ridge Road E, Road F, Road B
 - Fanling Station Road Covered Walkway
 - Lung Sum Avenue road surface modification works

12.3 KEY ISSUES FOR THE COMING MONTH

12.3.1 The construction activities are illustrated in *Appendix P*. Key issues to be considered in the coming month for the works of Contract 1 and 2 shown in *Table 12-2* and *Table 12-3*.

Table 12-2 Work Undertaken and Illustrations of Mitigation Measures for Contract 1

Description of Construction Activities	Used on PME	Environmental Mitigation Measures
Drainage & Sewerage Work at PDA	ExcavatorVibratory RollerDump truck	 Provided efficient silt removal facilities to reduce SS level before effluent discharge. Provided ditches, earth bunds or sand bag barriers to minimize polluted runoff. Exposed slopes surface were compacted and covered with
Footing construction works for directional Sign	• Excavator	 tarpaulin or similar means. Maintain damp / wet surface on access road. Maintain low vehicular speed within the works areas. Provided vehicle wheel washing facilities at each construction site exit; Provided water spraying for all active works area, in particular for
Soil nail and slope drain works and toe wall construction at cut slope CS13	Crane lorry	 the soil nail works. Stockpiles of dusty material were covered with impervious sheeting. Provided workers to clear dusty materials at the vehicle entrance or exit regularly. Stockpile more than 20 bags of cement or dry PFA has been



Description of Construction Activities	Used on PME	Environmental Mitigation Measures
_	Dump truckExcavator	covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.
works at Sha	LACUVIIIO	• Restricted operation time of plants from 07:00 to 19:00 on any
Ling Road		working day except for Public Holiday and Sunday.
near Man		• Keep good maintenance of plants.
Kam To Toad		Placed noisy plants away from residence and school.
		 Provided noise barriers or hoarding to enclose the noisy plants or works.
		• Shut down the plants when not in used.
		• Provided on-site sorting prior to disposal.
		Followed requirements and procedures of the "Trip-ticket System"Predicted required quantity of concrete accurately.
		• Collected the unused fresh concrete at designated locations in the sites for subsequent disposal.
		• Implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and impact to any aquatic fauna during the construction phase.
		 Demarcation fencing has been erected to prevent unauthorised encroachment into the riparian corridor by constructions works and traffic.
		 The construction work and site formation have been phased in order to reduce overall noise disturbance impacts in particular areas.
		 Works have been restricted to daytime and any construction lighting was designed and positioned as to not impact on adjacent ecologically sensitive areas.
		• The site was generally kept tidy and clean.

Table 12-3 Work Undertaken and Illustrations of Mitigation Measures for Contract 2

Construction Activities	Used on PME	Environmental Mitigation Measures
of Manhole, gullies, drainage pipe at Lin Ma	Dump truckExcavator	 Provided efficient silt removal facilities to reduce SS level before effluent discharge. Provided ditches, earth bunds or sand bag barriers to minimize polluted runoff. Exposed slopes surface were compacted and covered with
Hang Road Pipe Jacking works for DN400 watermain at Man Kam To Road	• Pipe jacking drilling machine	 tarpaulin or similar means. Maintain damp / wet surface on access road. Maintain low vehicular speed within the works areas. Provided vehicle wheel washing facilities at each construction site exit; Provided water spraying for all active works area, in particular for the soil nail works.
Construction of road works		 Stockpiles of dusty material were covered with impervious sheeting. Provided workers to clear dusty materials at the vehicle entrance or exit regularly. Stockpile more than 20 bags of cement or dry PFA has been covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. Restricted operation time of plants from 07:00 to 19:00 on any working day except for Public Holiday and Sunday. Keep good maintenance of plants.



Construction Activities	Used on PME	Environmental Mitigation Measures
		 Placed noisy plants away from residence and school. Provided noise barriers or hoarding to enclose the noisy plants or works.
		• Shut down the plants when not in used.
		 Provided on-site sorting prior to disposal.
		• Followed requirements and procedures of the "Trip-ticket System"
		 Predicted required quantity of concrete accurately.
		• Collected the unused fresh concrete at designated locations in the sites for subsequent disposal.
		• Implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and impact to any aquatic fauna during the construction phase.
		 Demarcation fencing has been erected to prevent unauthorised encroachment into the riparian corridor by constructions works and traffic.
		 The construction work and site formation have been phased in order to reduce overall noise disturbance impacts in particular areas.
		 Works have been restricted to daytime and any construction lighting was designed and positioned as to not impact on adjacent ecologically sensitive areas.
		• The site was generally kept tidy and clean.

12.3.1 The Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.



13. CONCLUSIONS AND RECOMMENTATIONS

13.1 CONCLUSIONS

- 13.1.1 This is the 44th Monthly EM&A Report presenting the monitoring results and inspection findings for the period of 1st to 31st March 2022.
- 13.1.2 No 24-hour or 1-hour TSP monitoring result that triggered the Action or Limit Levels was recorded. No NOEs or the associated corrective action was therefore required.
- 13.1.3 In the Reporting Month, no noise complaint (which triggered Action Level) was received and no Limit Level exceedance for noise monitoring exceedance was recorded.
- 13.1.4 Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 3rd March 2022. After analysing survey results in from March 2019 to 2021, there was a slight decrease in species richness and abundance for wetland habitat under Contract 1. Good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. For Contract 2, no significant drop in species richness and abundance is observed for wetland and non-wetland habitats. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.
- 13.1.5 As advised by both Contractors, there were no vegetation clearance conducted within the site in the Reporting Month and therefore precautionary check for the presence of nesting birds was not required.
- 13.1.6 Landscape and visual inspection at both Contracts were undertaken on 23rd March 2022. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone and ensure no works is allowed within the TPZ.
- 13.1.7 In the Reporting Month, no environmental complaints, summons and prosecution were received. In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.
- 13.1.8 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer, ET and the Contractor of the Contract 1 on 3^{rd} , 10^{th} , 17^{th} , 24^{th} and 31^{st} March 2022. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 3^{rd} , 10^{th} , 17^{th} , 24^{th} and 31^{st} March 2022. IEC attended the both Contract joint site inspection on 17^{th} March 2022. No non-compliance was noted during the site inspections.

13.2 RECOMMENDATIONS

- 13.2.1 Since wet season is approaching, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- 13.2.2 Air quality mitigation measures such as wheel wash facilities, watering of haul roads, loose soil construction surface and covering of dusty materials with tarpaulin sheet should be implemented as far as practicable.
- 13.2.3 Construction noise would be a key environmental issue during construction phase of the Project. Noise mitigation measures such as using quiet plants and mobile noise barriers should be implemented in accordance with the EM&A requirement.



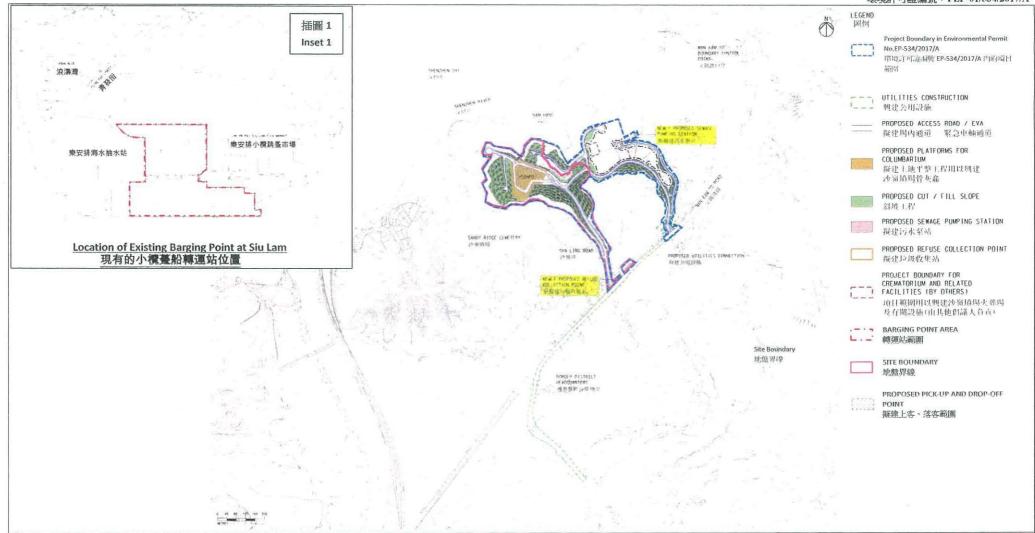
Appendix A

Layout Plan of the Project



Layout Plan of Contract CV/2016/10

Environmental Permit No.: FEP-01/534/2017/A 環境許可證編號: FEP-01/534/2017/A



Project Title: Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery 工程名稱:沙嶺墳場興建骨灰龕的工地平整及相關基建工程

Figure 1: Project Location Plan

圖 1:項目位置圖

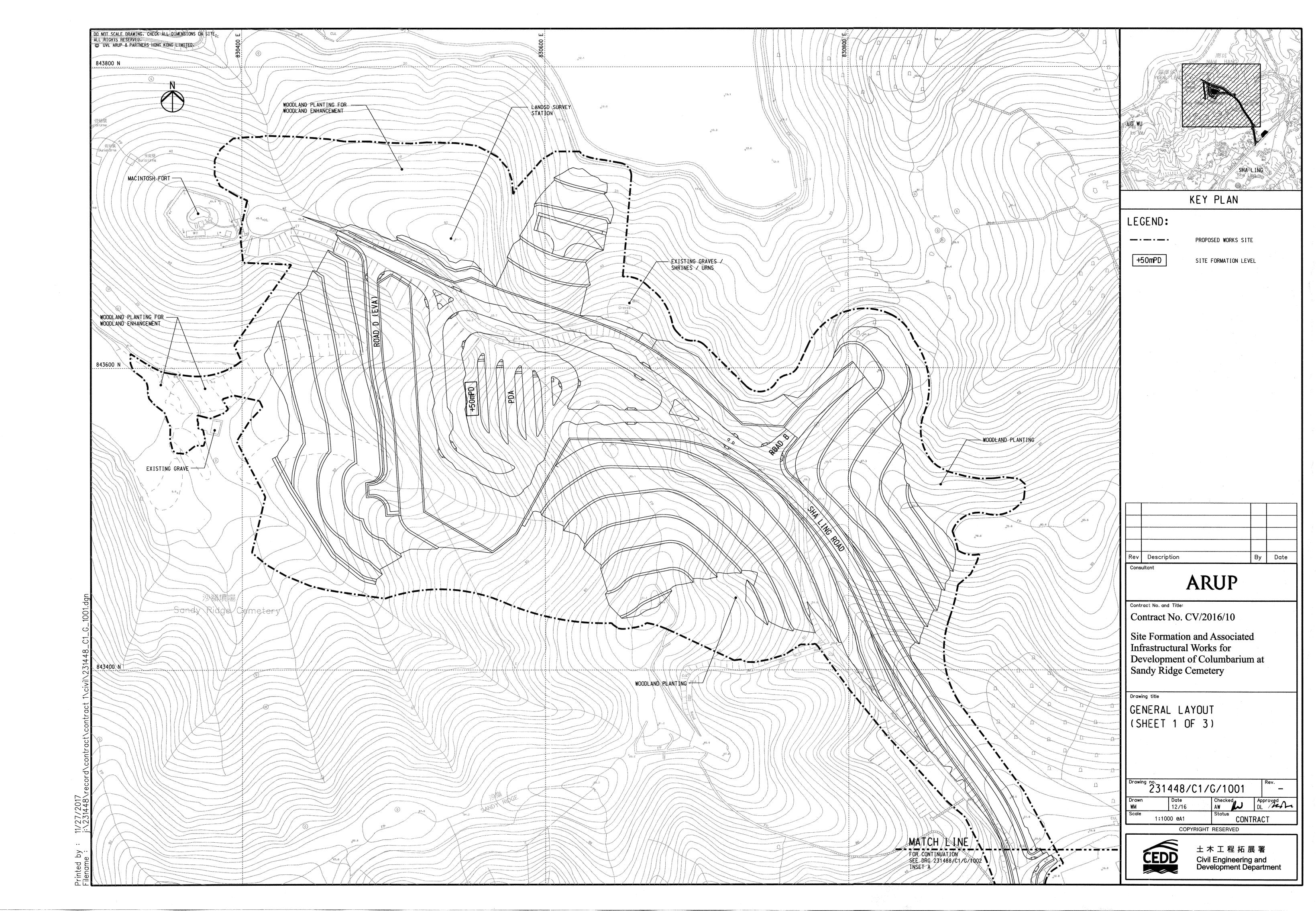
(This figure was prepared based on Figure 1 attached to the VEP Application No. VEP-555/2018 and Figures 1.3 of the Approved EIA Report No. AEIAR-198/2016)

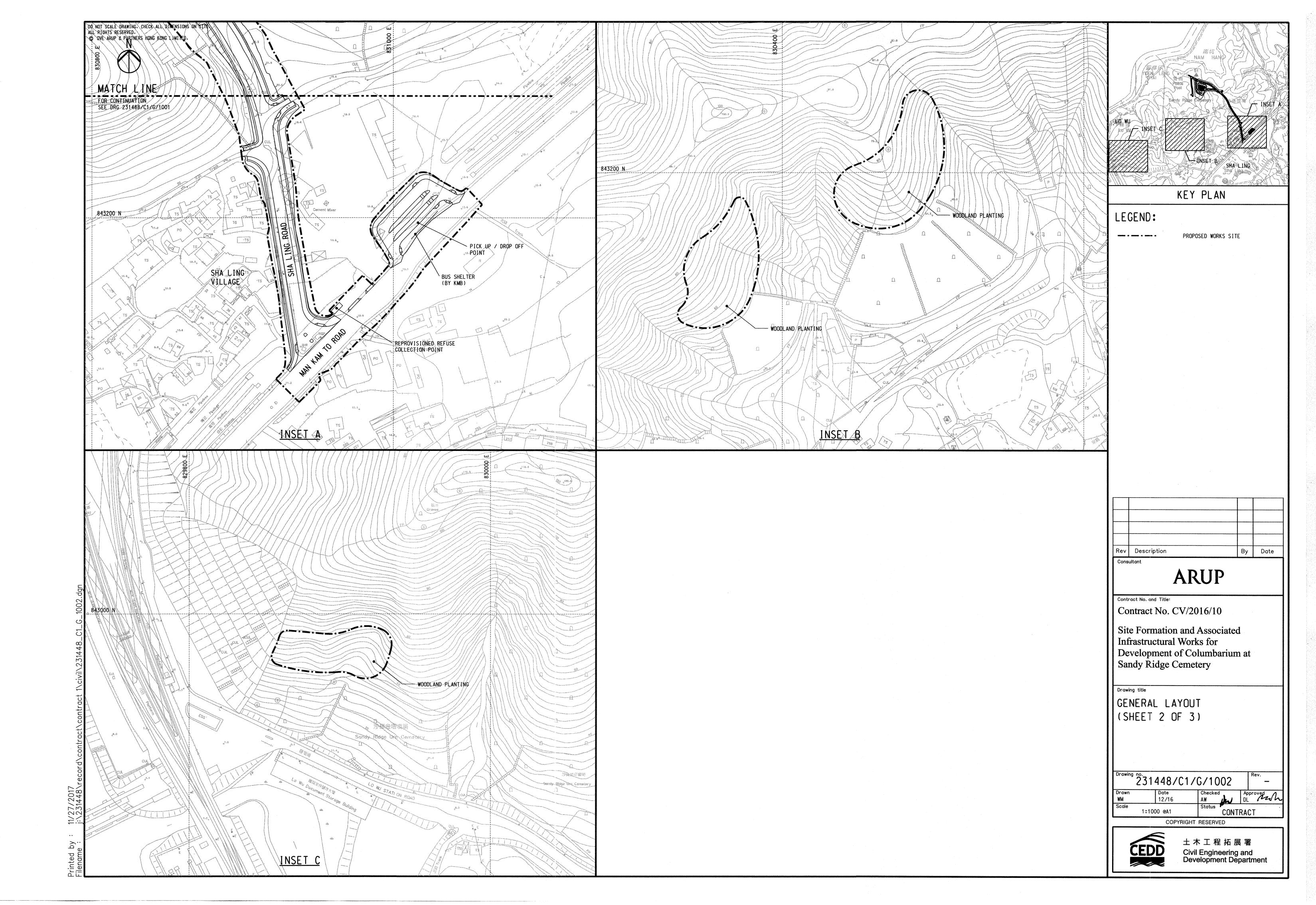
(本圖是根據更改環境許可証申請文件編號: VEP-555/2018 所隨附的圖 1 和環境影響評估報告編號 AEIAR-198/2016 圖 1.3 編制)

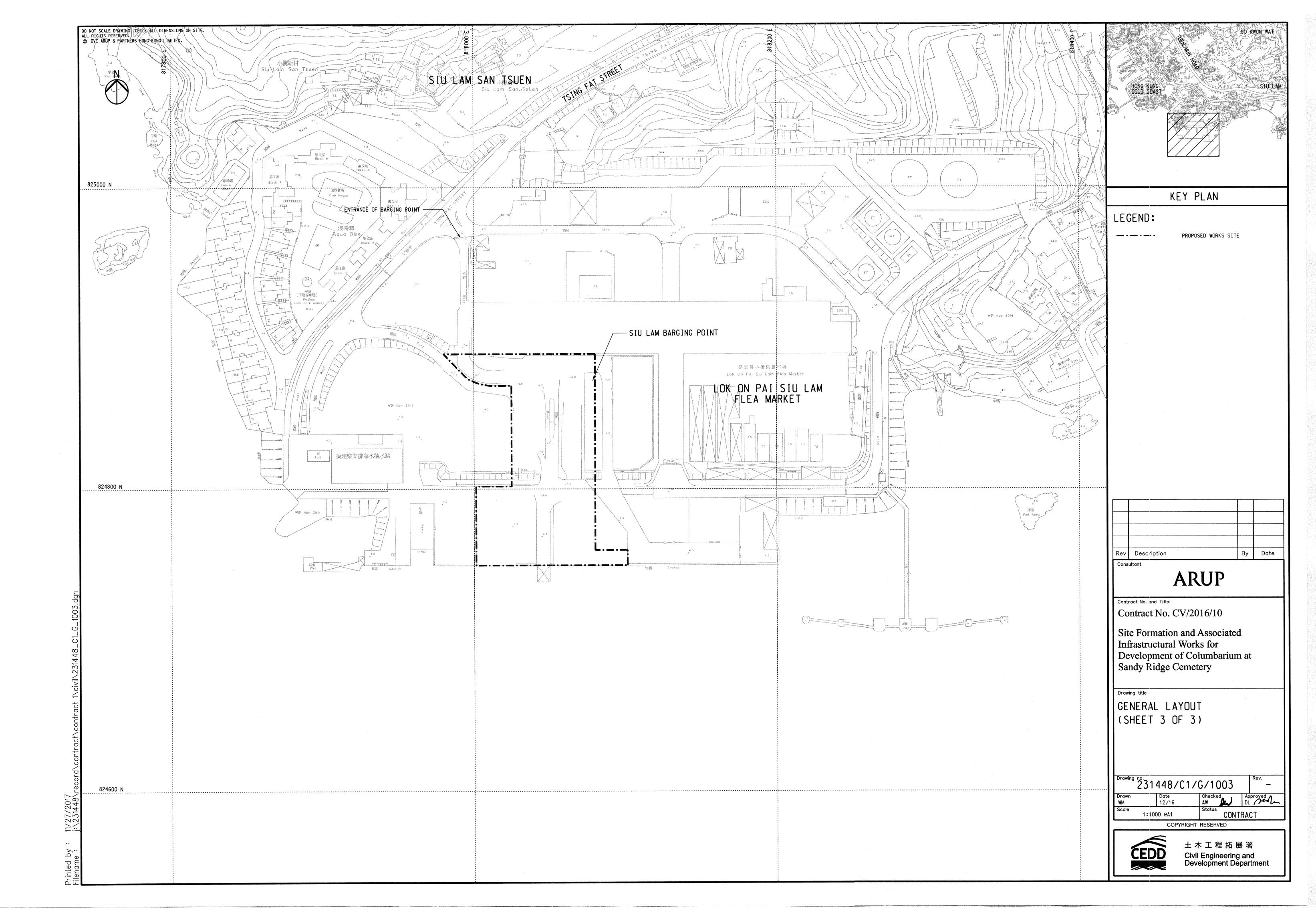
Environmental Permit No.: FEP-01/534/2017/A 環境許可證編號:FEP-01/534/2017/A



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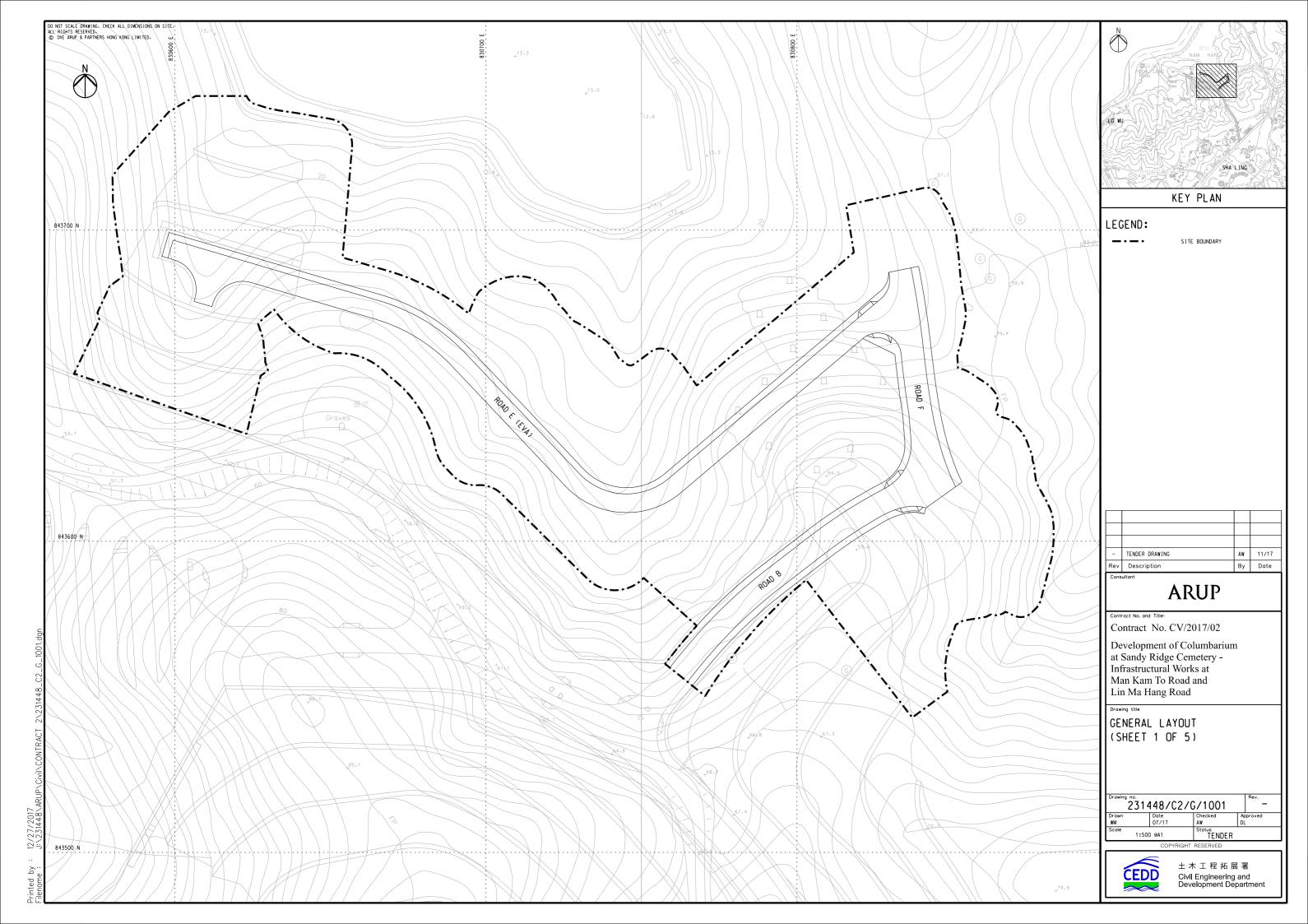




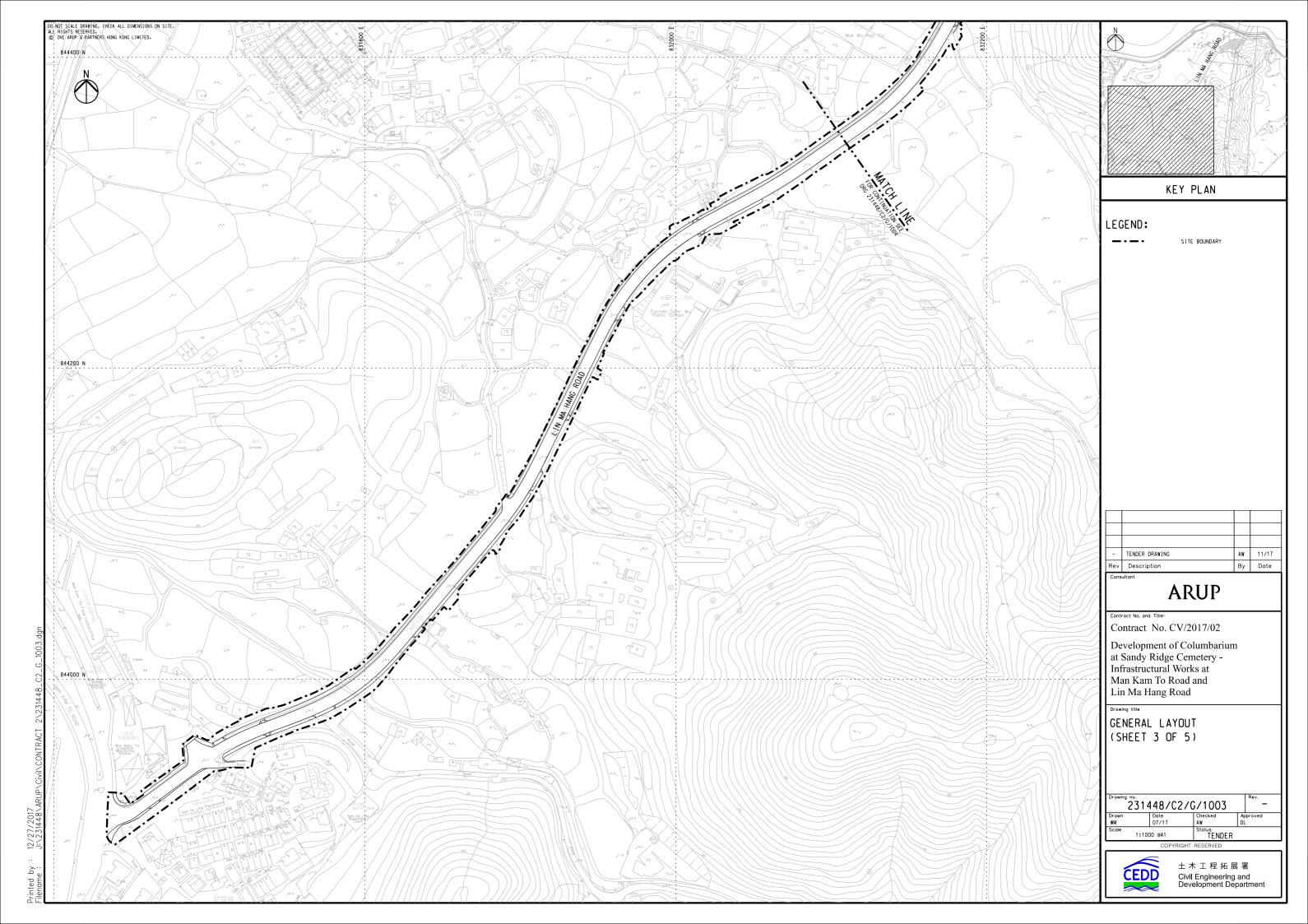


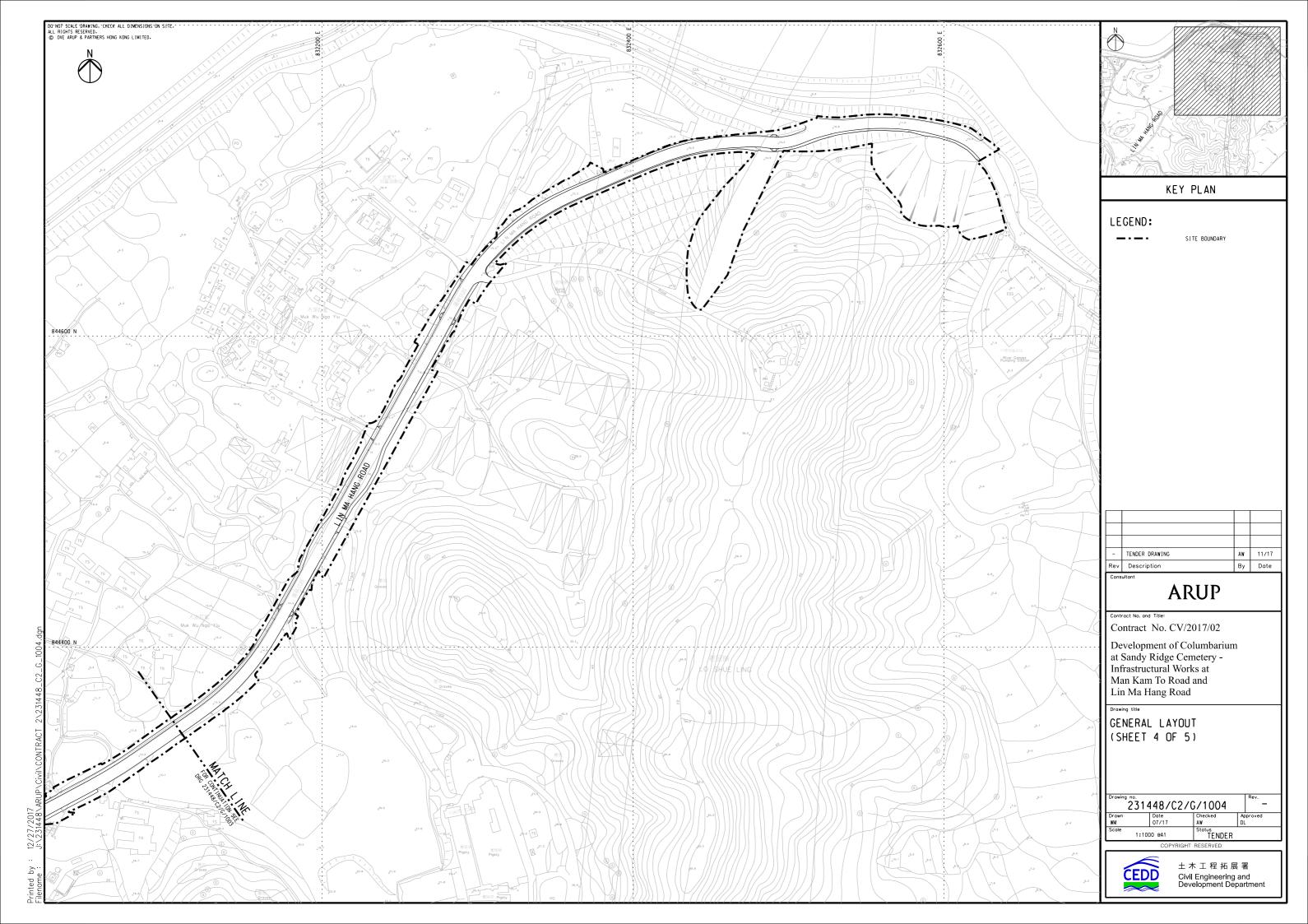


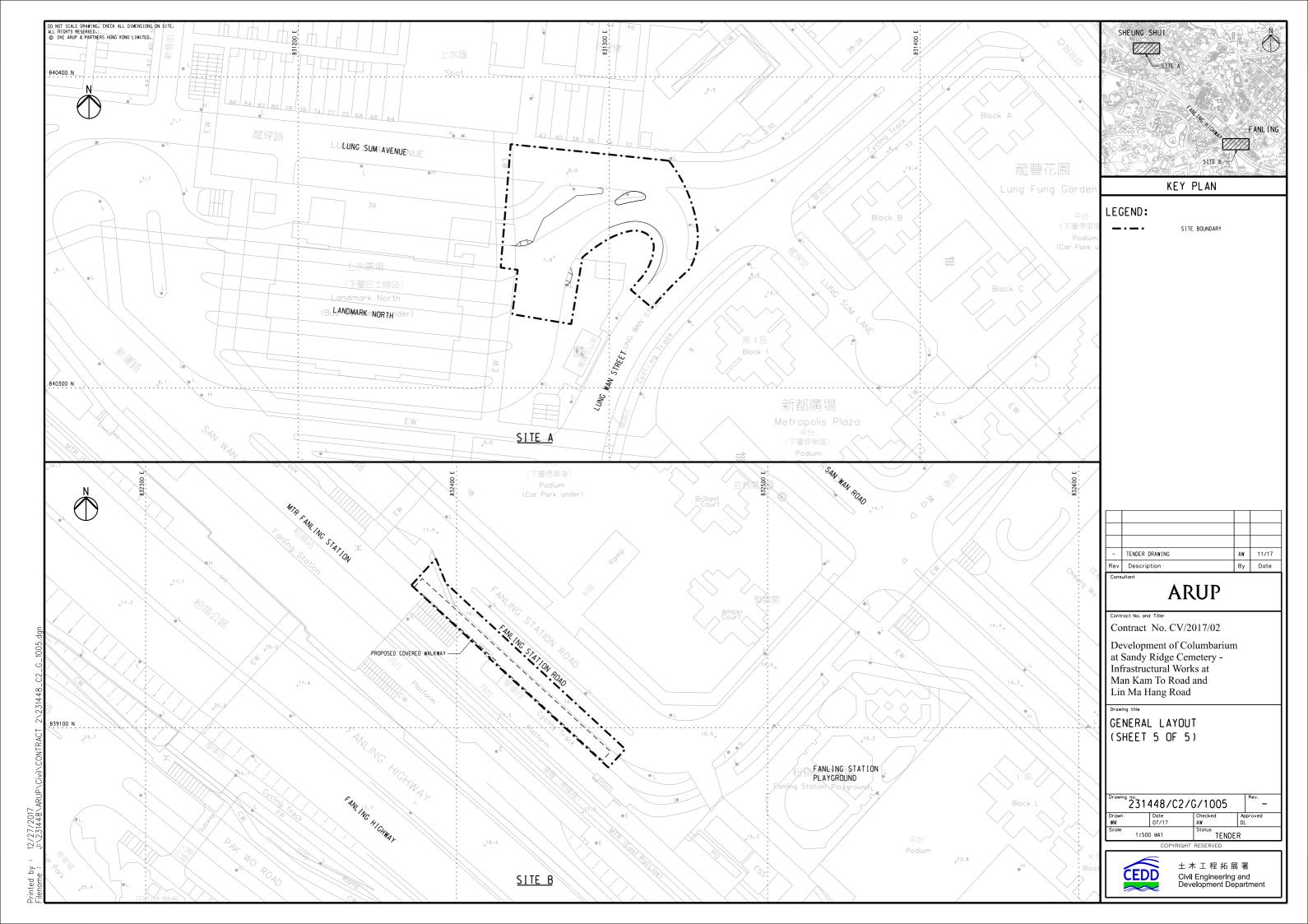
Layout Plan of Contract CV/2017/02











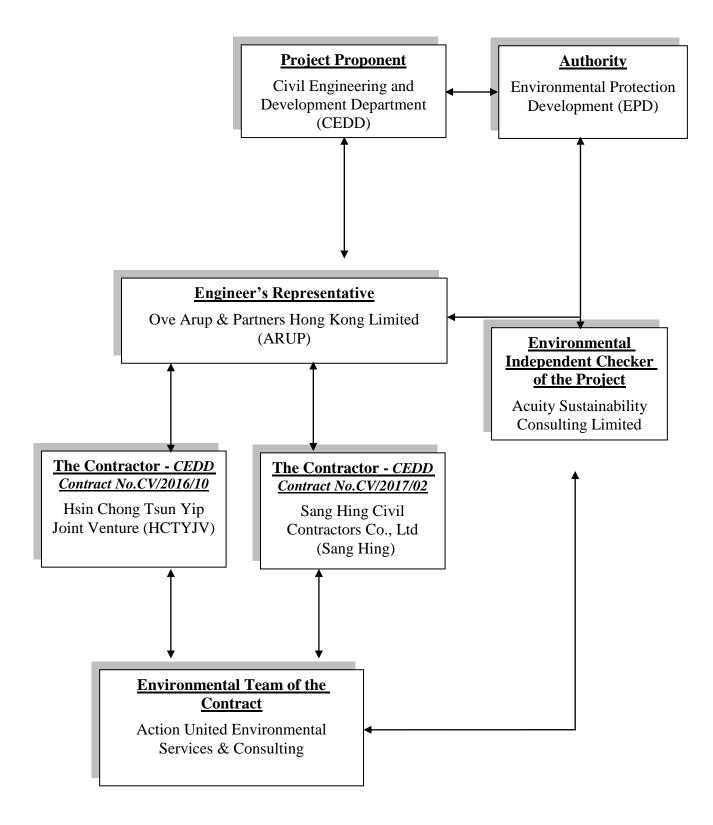


Appendix B

Organization Structure and Contact Details of Relevant Parties



The Contract's Environmental Management Organization





Contact Details of Key Personnel for CV/2016/10 (Contract 1)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	CHOI Wing-hing	2762-5620	2714-0695
ARUP	Engineer's Representative	Steve Tang	6190-1513	2268-3950
ACUITY	Independent Environmental Checker	Mr. Leung CH Jacky	2698-6833	2698-9383
HCTYJV	Project Director	Mr. Keniel Kwong	9495-2408	2633-4691
HCTYJV	Construction Manager	Mr. Ho Man To	9620-9794	2633-4691
HCTYJV	Environmental Officer	Mr. Chan Ming Tai (*)	9358-7007	2633-4691
HCTYJV	Environmental supervisor	Mr. Leung Pak Sum	9437-3606	2633-4691
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Martin Li	2959-6059	2959-6079

Remark (*): Left the post on 21 Mar 2022 and successor is TBA.

Legend:

CEDD (Employer) – Civil Engineering and Development Department

ARUP (Engineer) - Ove Arup & Partners Hong Kong Limited

HCTYJV (Main Contractor) – Hsin Chong Tsun Yip Joint Venture

ACUITY (IEC) – Acuity Sustainability Consulting Limited

AUES (ET) – Action-United Environmental Services & Consulting



Contact Details of Key Personnel for CV/2017/02 (Contract 2)

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
CEDD	Employer	CHOI Wing-hing	2762-5620	2714-0695
ARUP	Engineer's Representative	Anthony Lau	6190-1513	2268-3950
ACUITY	Independent Environmental Checker	Ir. Leung CH Jacky	2698-6833	2698-9383
SANG HING	Project Director	Edwin Au	9208-7329	2403-1162
SANG HING	Construction Manager	Raymond Wong	9272-1831	2403-1162
SANG HING	Site Agent	Elvin Lam	6285-0803	2403-1162
SANG HING	Environmental Officer	Keibi Chan	6090-0183	2403-1162
SANG HING	Environmental Supervisor	Kenny Chan	6115-0120	2403-1162
AUES	Environmental Team Leader	Mr. T.W. Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Mr. Ben Tam	2959-6059	2959-6079
AUES	Environmental Consultant	Ms. Nicola Hon	2959-6059	2959-6079
AUES	Environmental Site Inspector	Mr. Martin Li	2959-6059	2959-6079

Legend:

CEDD (Employer) – Civil Engineering and Development Department

ARUP (Engineer) - Ove Arup & Partners Hong Kong Limited

Sang Hing (Main Contractor) – Sang Hing Civil Contractors Co., Ltd

ACUITY (IEC) – Acuity Sustainability Consulting Limited

AUES (ET) – Action-United Environmental Services & Consulting



Appendix C

Three Months Rolling Programme



Three Months Rolling Programme of Contract CV/2016/10

Contract No. CV/2016/10 **Hsin Chong Tsun Yip Joint Venture** 3 Month Rolling Programme (Mar 2022 to May 2022) Site Formation and Associated Infrastructural Works for Updated Date: Feb 2022 Development of Columbarium at Sandy Ridge Cemetery Task Name Duration % Complete Remaining Duration 1071 days Fri 15/12/17 Fri 30/7/21 Key Dates 1071 days Fri 15/12/17 Contract Starting Date Fri 15/12/17 0 days 0% 0 davs Contract Completion Date for Section 0% 1 day Sat 29/8/20 Sat 29/8/20 1 day Contract Completion Date for Section 2 1 day Fri 30/7/21 Fri 30/7/21 0% 1 day Contract Completion Date for Section 3 Thu 21/11/19 Thu 21/11/19 1 day 1 day **Scheduled Completion Date** 644 days Tue 10/12/19 Mon 14/2/22 0% 644 days 0 days Sat 2/10/21 0 days Section 2 0 days Mon 14/2/22 0% 0 days Section 3 0 days Tue 10/12/19 Tue 10/12/19 0% 0 days 10 Preliminary Works Tue 20/2/18 Wed 15/8/18 144 days 100% 0 days Submission and Approval Required at Environmental Permit for Commencement of Construction 128 days Tue 20/3/18 Wed 15/8/18 100% 0 days Other Submission (Initial Survey /Tree Survey/ Condition Survey) Tue 20/2/18 Fri 22/6/18 100% 106 days 0 days Section 1 of the Works (Parts A1, A2 & A3) 70% 316.43 days 1041 days Thu 29/3/18 Sat 2/10/21 Ground Investigation and Geotechnical instrumentation for Commencement of Slopework Thu 29/3/18 Wed 15/8/18 112 days 100% 0 days Verification Drillholes (8 Nos., VDH1, 2, 7-9,8-16) / Inspection Pits and Preliminary Results Submission 114 days Thu 29/3/18 Wed 8/8/18 100% 0 days Design Review 36 days Thu 5/7/18 Wed 15/8/18 100% 0 days Retaining Wall RW1 Thu 16/8/18 100% 280 days Sat 27/7/19 0 days General Excavation to Formation Level 37 days Thu 16/8/18 Thu 27/9/18 100% 0 days Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 3 days Fri 28/9/18 Mon 1/10/18 100% 0 days Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 3 days Tue 2/10/18 100% 0 days Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 Wed 10/10/18 Fri 26/10/18 100% 15 days 0 days Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 Sat 13/10/18 100% 7 days Sat 6/10/18 0 days Base slab of Retaining Wall RW1 Bay 1-4 Tue 2/10/18 Wed 10/10/18 100% 8 davs 0 days Base slab of Retaining Wall RW1 Bay 5-8 100% Mon 8/10/18 Mon 22/10/18 13 days 0 days Base slab of Retaining Wall RW1 Bay 9-13 Mon 22/10/18 Fri 9/11/18 100% 17 days 0 days Base slab of Retaining Wall RW1 Bay 14-17 17 days Mon 22/10/18 Fri 9/11/18 100% 0 days 100% Wall Stem of Retaining Wall RW1 Bav1-4 36 days Thu 25/10/18 Wed 5/12/18 0 days Wall Stem of Retaining Wall RW1 Bay 5-8 26 days Tue 11/12/18 Wed 9/1/19 100% 0 days Wall Stem of Retaining Wall RW1 Bay 10-13 30 days Wed 14/11/18 Tue 18/12/18 100% 0 days Wall Stem of Retaining Wall RW1 Bay 14-17 Mon 26/11/18 Fri 21/12/18 100% 0 days Protective Coating / Subsoil Drain / Filter Layer 5 days Thu 14/2/19 100% 0 days Drainage and Maintenance Access in front of RW1 75 days Tue 26/3/19 Thu 20/6/19 0 days 102 days Mon 1/4/19 100% 0 days Filling Works behind Retaining Wall and Fill Slope FS1 South (Section 12 at Drawing C1/GE/1030) 47% 373.86 days Mon 1/4/19 Tue 17/8/21 705 days Behind Retaining Wall RW1, Filling Stage 1 (up to +25mPD) Mon 1/4/19 Fri 19/7/19 100% 95 days 0 days FS1 South, Filling (Rolling by Pass) (+25 to +27.8mPD) Sat 20/7/19 Wed 31/7/19 100% 10 days 0 days FS1 South Filling Stage 2 (~2.5m, +25.0 to +27.5 mPD) Thu 4/6/20 100% 56 days Wed 1/4/20 0 days Filling (Rolling by Pass) 100% 1 day Wed 1/4/20 Wed 1/4/20 0 days Filling in 3m Zone 28 days Thu 2/4/20 Mon 11/5/20 100% 0 days Benching Works for Rolling by Pass Surface 3 days Thu 2/4/20 Mon 6/4/20 100% 0 days Lay Rockfill Layer (4.5/1m per 5 days) 25 days Tue 7/4/20 Mon 11/5/20 100% 0 days Drainage and Maintenance Access (+25 to +27.5 mpD) 21 days Tue 12/5/20 Thu 4/6/20 100% 0 days 43 FS1 South Filling Stage 3 (~7.5m height, +27.5 to +35mPD) Sat 1/2/20 Mon 8/2/21 45% 175.69 days Filling (Rolling by Pass)(~7.5m, 0.5m per day) 175 days Sat 1/2/20 168 days Filling in 3m Zone 103 days Wed 2/9/20 Wed 6/1/21 100% 0 days Benching Works for Rolling by Pass Surface Wed 2/9/20 Fri 4/9/20 100% 3 days 0 days Lay Rockfill Layer (7.5/1m per 5 days) 100 days Sat 5/9/20 Wed 6/1/21 100% 0 davs Drainage and Maintenance Access (+27.5 to +35 mpD) Thu 7/1/21 Mon 8/2/21 100% 28 days 0 days FS1 South Filling Stage 4 (~7.5m height, +35 to +42.5mPD) 188 days Wed 2/9/20 Thu 8/4/21 20% 150.81 days Filling (Rolling by Pass)(~7.5m, 0.5m per day) Fri 18/9/20 100% 15 days Wed 2/9/20 0 days Filling in 3m Zone 41 days Thu 7/1/21 Fri 26/2/21 7% 38 days Benching Works for Rolling by Pass Surface 3 days Thu 7/1/21 Sat 9/1/21 100% 0 days Lay Rockfill Layer (7.5/1m per 5 days) 38 days Mon 11/1/21 Fri 26/2/21 0% 38 days Drainage and Maintenance Access (+35 to +42.5mpD) 35 days Sat 27/2/21 Thu 8/4/21 0% 35 days FS1 South Filling Stage 5 (~7.5m height, +42.5 to +50mPD) Mon 2/12/19 17% 443.59 days 30 days Mon 2/12/19 Wed 8/1/20 100% 0 days Filling in 3m Zone 0% 109 days 109 days Benching Works for Rolling by Pass Surface 3 days Sat 27/2/21 Tue 2/3/21 0% 3 days Lay Rockfill Layer (7.5/1m per 5 days) 0% 102 days 102 days Wed 3/3/2 Mon 12/7/21 Additional Plate Load Test at FS1 Thu 8/7/21 0% 4 days 4 davs Drainage and Maintenance Access (+42.4 to +50 mpD) Thu 8/7/21 Tue 17/8/21 0% 35 days Fill Slope FS1 Middle (Section 13 at Drawing C1/GE/1030) 386 days Mon 10/2/20 Sat 29/5/21 100% 0 days Drainage and Maintenance Access at toe (+13 mpD) Mon 10/2/20 100% 10 days Thu 20/2/20 0 days FS1 middle Filling Stage 1 (~7.0m max, +13.0 mPD to +20 mPD) 100% 22 days Fri 21/2/20 0 days Filling (Rolling by Pass)(~2m, 0.5m per day) 4 days Fri 21/2/20 Tue 25/2/20 100% 0 days Filling in 3m Zone Wed 26/2/20 Thu 5/3/20 100% 8 days 0 days Benching Works for Rolling by Pass Surface Fri 28/2/20 3 davs Wed 26/2/20 100% 0 days Thu 5/3/20 100% Lay Filter Layer 5 days Sat 29/2/20 0 days Drainage and Maintenance Access (at and below+20 mpD) Fri 6/3/20 Tue 17/3/20 100% 10 days 0 days FS1 middle Filling Stage 2 (~7.5m, +20.0 to +27.5 mPD) 53 days Wed 26/2/20 Mon 4/5/20 100% 0 days Filling (Rolling by Pass)(~7.5m, 0.5m per day) 15 days Wed 26/2/20 Fri 13/3/20 100% 0 days Sat 14/3/20 Tue 14/4/20 Filling in 3m Zone 23 days 100% 0 days Benching Works for Rolling by Pass Surface Sat 14/3/20 Tue 17/3/20 100% 3 days 0 days 74 Lay Rockfill Layer (7.5m/1m per 5 day) Wed 18/3/20 Tue 14/4/20 0 days 20 days Drainage and Maintenance Access (at and below+27.5 mpD) 15 days Wed 15/4/20 Mon 4/5/20 100% 0 days FS1 middle Filling Stage 3 (~7.5m height, +27.5 to ~+35mPD) 283 days Sat 14/3/20 Fri 26/2/21 100% 0 days Progress Manual Task Manual Summary Rollup 🕳 Manual Progress Inactive Milestone Milestone Inactive Task Inactive Summary Duration-only Manual Summary ■ Finish-only 5

Contract No. CV/2016/10 **Hsin Chong Tsun Yip Joint Venture** 3 Month Rolling Programme (Mar 2022 to May 2022) Site Formation and Associated Infrastructural Works for Updated Date: Feb 2022 Development of Columbarium at Sandy Ridge Cemetery Duration Start % Complete Remaining Duration Filling (Rolling by Pass)(~7.5m, 0.5m per day) Sat 14/3/20 Fri 21/8/20 130 days 100% 0 days 133 days Sat 22/8/20 Sat 30/1/21 Filling in 3m Zone 100% 0 days Benching Works for Rolling by Pass Surface Tue 25/8/20 3 days Sat 22/8/20 100% 0 days Lay Rockfill Layer (7.5m/1m per 5 day) 130 days Wed 26/8/20 Sat 30/1/21 100% 0 days Drainage and Maintenance Access (at and below +35 mpD) 20 days Mon 1/2/21 Fri 26/2/21 100% 0 days FS1 middle Filling Stage 4 (~7.5m height, +35 to +42.5mPD) 241 days Sat 22/8/20 Sat 29/5/21 100% 0 days Filling (Rolling by Pass)(~7.5m, 0.5m per day) Sat 22/8/20 Tue 8/9/20 100% 15 days 0 days Filling in 3m Zone 41 days Sat 27/2/21 Mon 19/4/21 100% 0 days 85 Benching Works for Rolling by Pass Surface 3 days Sat 27/2/21 Tue 2/3/21 0 days Lay Rockfill Layer (7.5/1m per 5 days) Wed 3/3/21 Mon 19/4/21 100% 38 days 0 days Drainage and Maintenance Access (+35 to +42.5mpD) Tue 20/4/21 Sat 29/5/21 100% 0 days 35 days 100% FS1 middle Filling Stage 5 below +42.5mPD and +50mPD) Wed 26/5/21 30 days Tue 20/4/21 0 days Filling (Rolling by Pass)(~15m, 0.5m per day) 30 days Tue 20/4/21 Wed 26/5/21 100% 0 days Slope Surface forming/ Drainage and Maintenance Access Tue 20/4/21 Thu 13/5/21 100% 0 days Fill Slope FS1 North (Section 14 at Drawing C1/GE/1030) Wed 11/7/18 Thu 22/7/21 80% 179.24 days 264 days Wed 11/7/18 Fri 31/5/19 38% 164 days FS1 North Filling Works Stage 1 (+15 to+19.7mPD) Fri 24/1/20 100% 204 days Sat 1/6/19 0 days Drainage and Maintenance Access (+15 to +20 mpD) 28 days Sat 25/1/20 Wed 26/2/20 100% 0 days Construction of Outfall CP2X 14 days Thu 27/2/20 Fri 13/3/20 100% 0 days FS1North, Filling (Rolling by Pass) (+19.7 to +22.4mPD) 20 days Sat 14/3/20 Mon 6/4/20 100% 0 days FS1 North Filling Stage 2 (+20 to +27.5 mPD) 100 days Tue 7/4/20 Fri 31/7/20 100% 0 days Drainage and Maintenance Access (+20 to +27.5 mpD) Sat 1/8/20 Thu 15/10/20 100% 65 days 0 days Filling in 3m Zone (below +27.5mPD) Mon 9/3/20 Thu 21/5/20 100% 0 days 58 days Benching Works for Rolling by Pass Surface 3 davs Mon 9/3/20 Wed 11/3/20 100% 0 days Tue 17/3/20 Lav Filter Laver Thu 12/3/20 100% 5 days 0 days Filling by SBT (7.5m/ 3 day per 5 day) Thu 21/5/20 100% 50 days Wed 18/3/20 0 days 103 Filling in 3m Zone (below +27.5mPD) (Rockfill) 23 days Mon 9/3/20 Fri 3/4/20 100% 0 days 104 Benching Works for Rolling by Pass Surface 3 days Mon 9/3/20 Wed 11/3/20 100% 0 days 105 Lay Rockfill Layer (7.5m/1m per 5 day) 20 days Thu 12/3/20 Fri 3/4/20 100% 0 days 0 days 106 Drainage and Maintenance Access 22 days Sat 2/5/20 Wed 27/5/20 100% FS1 North Filling Stage 3 (+27 to +35 mPD) 107 171 days Tue 26/11/19 Thu 11/6/20 100% 0 days 108 Filling (Rolling by Pass)(~3m, 0.5m per day) Tue 26/11/19 Mon 2/12/19 100% 6 days 0 days 109 Drainage and Maintenance Access (+27.5 to +35 mpD) 100% Fri 8/5/20 Thu 11/6/20 30 days 0 days 110 FS1 North Filling Stage 4 (+35 to +42.5 mPD), Upgrading of Existing Slope Feature 3NW-C/F37 Fri 12/6/20 Fri 5/3/21 100% 229 days 0 davs Filling (Rolling by Pass)(~3m, 0.5m per day) 20 days Fri 12/6/20 Tue 7/7/20 100% 0 days 112 Drainage and Maintenance Access (+35 to +42.5 mpD) 30 days Sat 30/1/21 Fri 5/3/21 100% 0 days 113 FS1 North Filling Stage 5 (+42.5 to +50mPD), Upgrading of Existing Slope Feature 3NW-C/F37 Wed 12/5/21 62 days Thu 22/7/21 24.8 days Filling (Rolling by Pass)(~3m, 0.5m per day) Wed 12/5/21 Thu 17/6/21 70% 9 days 30 days Drainage and Maintenance Access (+42.5 to +50 mpD) 30 davs Fri 18/6/21 Thu 22/7/21 50% 15 days Civil Works for Pick-up/Drop-off area (Part A1, M011 CH020 to CH140) 162 days 162 days Sat 18/9/21 0% Sat 6/3/21 Waterworks / Drainage / Sewerage/ Utilities Works 131 days Sat 6/3/21 Fri 13/8/21 0% 131 days 118 Sewerage Works / Drainage Works Sat 6/3/21 Fri 25/6/21 90 days 90 days 119 Mon 26/4/21 Watermain FW1a (CH29-100) 20 days Wed 31/3/21 20 days 120 Road Lighting Civil Works Provision 20 days Thu 22/7/21 Fri 13/8/21 0% 20 days Utilities (by others) 10 days Wed 31/3/21 Wed 14/4/21 10 days 122 Carriageway and Footway 72 days Sat 26/6/21 Sat 18/9/21 0% 72 days 123 Backfilling to Formation Level 30 days Sat 26/6/21 Sat 31/7/21 30 days 124 Carriageway 30 days Mon 2/8/21 Sat 4/9/21 0% 30 days 125 Footpath, Road Marking and Street Furniture 12 days Mon 6/9/21 Sat 18/9/21 0% 12 days 126 Landscape Works Sat 6/3/21 Sat 2/10/21 172 days 172 days Shrubs Planting at RW1 30 days Wed 18/8/21 Tue 21/9/21 30 days 128 Woodland Planting at Site 3 Wed 18/8/21 10 days Sat 28/8/21 10 days 129 Hydroseeding at Fill Slope 80 days Sat 6/3/21 Sat 12/6/21 80 days 130 Shrubs Planting at Pick-up/ Drop Off Fri 23/7/21 Tue 3/8/21 10 days 10 days Irrigation System and Water Points (Except Water Connection) 24 days Mon 2/8/21 Sat 28/8/21 0% 24 days Tree Planting Works Mon 20/9/21 Sat 2/10/21 10 days 0% 10 days Section 2 of the Works (Parts B1, B2, C, D, F, G1 & G2) 1232 days Fri 15/12/17 Mon 14/2/22 63% 1103 days Sat 28/4/18 Thu 13/1/22 292.7 days 135 Ground Investigation and Geotechnical instrumentation for Commencement of Slopework Sat 28/4/18 Wed 22/8/18 0 days 96 days Verification Drillholes (10 Nos., VDH3, 6, 10-15,19-20) and Preliminary Results Submiss 95 days Sat 28/4/18 Tue 21/8/18 100% 0 days Thu 12/7/18 Design Review Wed 22/8/18 100% 36 days 0 davs Cut Slopes CS1 & CS2 170 days Fri 12/10/18 Mon 13/5/19 100% 0 days Excavation (crest to +55mPD) 4 days Fri 12/10/18 Tue 16/10/18 100% 0 days Excavation (+55 to+50mPD) 11 days Fri 12/10/18 Wed 24/10/18 100% 0 days 141 Drainage and Maintenance Access (at +55mPD berm) 55 days Tue 16/10/18 Tue 18/12/18 100% 0 days 142 Drainage and Maintenance Access (+55 to +50 slope surface 180 days Tue 16/10/18 Mon 13/5/19 100% 143 Cut Slope CS3 251 days Wed 4/11/20 Tue 7/9/21 100% 0 days 144 Excavation (crest to toe) 15 days Wed 4/11/20 Fri 20/11/20 100% 0 days 145 100% Drainage and Maintenance Access 29 days Sat 21/11/20 Thu 24/12/20 0 days 146 Southern End of CS13 Mon 17/5/21 Tue 7/9/21 100% 95 days 0 days Slope Cutting and Soil Nail Mon 17/5/21 Wed 28/7/21 100% 60 days 0 days

100%

100%

96%

100%

100%

100%

0 days

0 days

0 days

0 days

Manual Summary Rollup 🕳

Manual Summary

33.45 days

Manual Task

Duration-only

Thu 29/7/21

Thu 23/8/18

Thu 23/8/18

Tue 2/10/18

Sat 6/10/18

20 days

15 days

31 days

29 days

Progress

Inactive Task

880 days

Fri 20/8/21

Wed 11/8/21

Fri 28/9/18

Mon 5/11/18

Thu 22/11/18

Inactive Milestone

Inactive Summary

Construction of toe wall (5 bays, approx, 66m) (4 days/bay)

Slope Cutting and Soil Nail (+94.5 to +87mPD, 59 nos. of Soil Nail)

Backfilling and drainage

Cut Slopes CS11 . CS12 and CS13

152

Slope Cutting (crest to+94.5mPD)

Drainage and Maintenance Access (at crest)

Milestone

5

■ Finish-only

Manual Progress

Contract No. CV/2016/10 **Hsin Chong Tsun Yip Joint Venture** 3 Month Rolling Programme (Mar 2022 to May 2022) Site Formation and Associated Infrastructural Works for Updated Date: Feb 2022 Development of Columbarium at Sandy Ridge Cemetery Task Name Duration Start % Complete Remaining Duration 154 Fri 26/10/18 Fri 2/11/18 Drainage and Maintenance Access (at +94.5mPD berm) 7 days 100% 0 days 155 Drainage and Maintenance Access (+94.5 to +87mPD slope surface)+ GI Works Fri 26/10/18 Thu 22/11/18 100% 24 days 0 days 156 157 Mon 24/12/18 Slope Cutting and Soil Nail (+87 to+79.5mPD, 84Nos, of Soil Nail) 40 days Thu 8/11/18 100% 0 days Drainage and Maintenance Access (at +87mPD berm) 33 days Fri 26/10/18 Mon 3/12/18 100% 0 days 158 RFI50 (Waiting Instruction / Abortive Works / Additional Earthwork+25m Uchannel at CS13crest) 61 days Thu 22/11/18 Mon 4/2/19 100% 0 days 159 RFI(Slope Cutting and Soil Nail - additional 24 Nos. of Soil Nail) Fri 11/1/19 Thu 28/2/19 100% 39 days 0 days 160 RFI50(Additional Drainage and Mantenance Access (at 87mPD berm) Fri 1/2/19 Tue 19/2/19 100% 0 days 161 Drainage and Maintenance Access (+79.5 to +87mPD slope surface)+ GI Works 10 days Fri 8/2/19 Tue 19/2/19 100% 0 days 162 Slope Cutting and Soil Nail (+72 to +79.5.115+21Nos, of Soil Nail) Mon 21/1/19 Wed 15/5/19 90 days 0 days 163 Drainage and Maintenance Access (at +79.5mPD berm) 42 days Fri 1/2/19 Mon 25/3/19 100% 0 days 164 Drainage and Maintenance Access (+72 to +79.5mPD slope surface, CS13 crest)+ GI Works Thu 2/5/19 Fri 17/5/19 100% 13 days 0 days 165 Slope Cutting and Soil Nail (+64.5 to +72 mPD, ,192 Nos. of Soil Nail) Mon 8/4/19 Tue 2/7/19 100% 67 days 0 days Drainage and Maintenance Access (at +72mPD berm) Sat 13/4/19 Wed 22/5/19 100% 29 days 0 days Drainage and Maintenance Access (+64.5 to +72mPD slope surface)+ GI Works 100% 17 days Wed 3/7/19 Mon 22/7/19 0 days 100% Slope Cutting and Soil Nail (+57 to +64.5mPD, 521 nos, of Soil Nail, 96 nos, of Raking Drain) 180 days Tue 2/7/19 Thu 6/2/20 0 days 169 Drainage and Maintenance Access (at +64.5mPD berm) 40 days Tue 6/8/19 Sat 21/9/19 100% 0 days 170 Drainage and Maintenance Access (+57 to +64.5mPD slope surface)+ GI Works 17 days Fri 7/2/20 Wed 26/2/20 100% 0 days 171 Slope Cutting and Soil Nail for CS11 (+57 to +49.5 mPD, 88 nos. of Soil Nail, 19 nos. of Raking Drain) Thu 12/3/20 Wed 29/4/20 100% 38 days 0 days 172 Drainage and Maintenance Access for CS11 (at +57mPD berm) 20 days Thu 26/3/20 Wed 22/4/20 100% 0 days 173 Drainage and Maintenance Access for CS11 (below57 mPD slope surface/ on RW11)+ GI Works 17 days Sat 2/5/20 Thu 21/5/20 100% 0 days 174 Slope Cutting and Soil Nail for CS12/CS13 (+57 to +49.5 mPD, 497 nos. of Soil Nail, 80 nos. of Raking Drain) Fri 7/2/20 Fri 22/5/20 100% 85 days 0 days 175 Drainage and Maintenance Access for CS12/13 (at +57mPD berm) Wed 11/3/20 Fri 24/4/20 100% 0 days 176 Drainage and Maintenance Access for CS12/CS13 (+49.5 to + 57mPD slope surface)+ GI Works Sat 23/5/20 Mon 15/6/20 100% 20 days 0 days 177 Slope Cutting and Soil Nail for CS12/CS13 (+42 to +49.5 mPD, 383 nos. of Soil Nail, 87 nos. of Raking Drain) 170 days Tue 2/6/20 Tue 22/12/20 100% 0 days 178 Fri 3/7/20 Drainage and Maintenance Access for CS12/13 (at +49.5mPD berm) Thu 20/8/20 100% 42 days 0 days 179 Drainage and Maintenance Access for CS12/CS13 (+42 to +49.5mPD slope surface)+ GI Works 17 days Sat 29/8/20 Thu 17/9/20 100% 0 days 180 Slope Cutting and Soil Nail for CS13 (+42 to +34.5 mPD, 126 nos. of Soil Nail, 55 nos. of Raking Drain) 59 days Wed 23/12/20 Mon 8/3/21 100% 0 days 181 Drainage and Maintenance Access for CS13 (at +42mPD berm) 28 days Tue 19/1/21 Tue 23/2/21 100% 0 days 182 Drainage and Maintenance Access for CS13 (+34.5 to +42mPD slope surface)+ GI Works 25 days Tue 9/3/21 Fri 9/4/21 0 days 183 Slope Cutting and Soil Nail for CS13 (+34.5 mPDto toe, 73 nos. of Soil Nail, 27 nos. of Raking Drain) 90% 10 days 100 days Tue 16/3/21 Sat 17/7/21 184 Drainage and Maintenance Access for CS13 (at +34.5mPD berm) 27 days Mon 12/4/21 Thu 13/5/21 0% 27 days 185 Drainage and Maintenance Access for CS13 (below+34.5 mPD slope surface)+ GI Works 21 days Mon 19/7/21 Wed 11/8/21 0% 21 days 186 Retaining Wall RW11 98 days Tue 12/11/19 Wed 11/3/20 100% 0 days 187 General Excavation with ELS to Formation Level RW11 Bay 1-4 30 days Tue 12/11/19 Mon 16/12/19 100% 0 days Plate Load Test and Blinding Layer for RW11 Bays 1-4 188 100% 5 days Tue 17/12/19 Sat 21/12/19 0 days 189 Base slab of Retaining Wall RW11 Bay 1-4 10 days Sun 22/12/19 Mon 6/1/20 100% 0 days 190 Wall Stem of Retaining Wall RW11 Bay 1-4 Mon 13/1/20 Fri 7/2/20 100% 20 days 0 days Plate Load Test and Blinding Layer for RW11 Bays 5-6 Tue 17/12/19 Sat 21/12/19 100% 5 davs 0 days Base slab of Retaining Wall RW11 Bay 5-6 100% 10 days Sun 22/12/19 Mon 6/1/20 0 days Wall Stem of Retaining Wall RW11 Bay 5-6 Tue 7/1/20 100% 20 days Sat 1/2/20 0 days 194 Protective Coating / Subsoil Drain / Filter Layer 5 days Sat 8/2/20 Thu 13/2/20 100% 0 days 195 Filling Works behind Retaining Wall RW11, (~5.8m, up to +54.8mPD) 23 days Fri 14/2/20 Wed 11/3/20 100% 0 days 196 **Existing Slope Upgrading Works** 210 days Tue 1/12/20 Tue 17/8/21 65% 73.2 days 197 Tue 1/12/20 Existing Feature 3NW-C/C256 Rock Joint Mapping, drainage and maintenance access 32% 102 days Mon 24/5/21 Existing Feature 3NW-C/C258 Slope Upgrading Works 200 days Mon 28/12/20 Tue 17/8/21 20 days Slope Cutting and Soil Nail (Crest to To, 29 Nos. of Soil Nail) 100 100% 0 days 200 100 days Drainage and Maintenance Access (Crest) Fri 23/4/21 20 days 201 Cut Slope CS15, CS16 and CS17 753 days Thu 16/8/18 Mon 1/3/21 100% 0 days 202 Slope Cutting and Soil Nail (crest to+69.5mPD,25 nos. of Soil Nail) Thu 27/9/18 36 days Thu 16/8/18 100% 0 days Drainage and Maintenance Access (at crest) Mon 20/8/18 Wed 5/9/18 100% 15 days 0 days 204 Slope Cutting and Soil Nail (+62 to +69.5mPD, 99 nos. of Soil Nail, 37 nos. of Raking Drain) Fri 16/11/18 100% Mon 3/9/18 62 days 0 days Drainage and Maintenance Access (at +69.5mPD berm) 49 days Mon 3/9/18 Thu 1/11/18 100% 0 days 206 Fri 26/10/18 100% Drainage and Maintenance Access (+62 to +69.5mPD slope surface)+ GI Works 36 days Thu 6/12/18 0 days 207 Slope Cutting and Soil Nail (+54.5 to +62mPD, 237 nos. of Soil Nail, 58 nos. of Raking Drain) 66 days Wed 7/11/18 Fri 25/1/19 100% 0 days 208 Drainage and Maintenance Access (at +62mPD berm) 26 days Wed 7/11/18 Thu 6/12/18 100% 0 days 2.09 Drainage and Maintenance Access (+54.5 to +62mPD slope surface)+ GI Works Sat 29/12/18 Fri 15/2/19 100% 210 Thu 18/7/19 Slope Cutting and Soil Nail (+47 to +54.5mPD, 548 nos. of Soil Nail, 86 nos. of Raking Drain) 155 days Mon 7/1/19 100% 0 days Drainage and Maintenance Access (at +54.5mPD berm) Sat 19/1/19 Wed 3/4/19 61 days 100% 0 days Drainage and Maintenance Access (+54.5 to +47mPD slope surface)+ GI Works 90 days Wed 3/4/19 Thu 25/7/19 100% 0 days 213 Slope Cutting and Soil Nail (+39.5 to +47mPD, 490 nos. of Soil Nail, 107 nos. of Raking Drain) 94 days Mon 6/5/19 Mon 26/8/19 100% 0 days 214 Drainage and Maintenance Access (at +47mPD berm) Tue 2/7/19 Wed 14/8/19 100% 38 days 0 days 215 Drainage and Maintenance Access (+39.5 to +47mPD slope surface)+ GI Works Tue 27/8/19 23 days Mon 23/9/19 100% 0 days Slope Cutting and Soil Nail (+39.5 to toe, 83 nos. of Soil Nail, 18nos. of Raking Drain) Mon 4/5/20 Mon 13/7/20 100% 59 days 0 days 217 Tue 5/1/21 100% Drainage and Maintenance Access (at +39.5mPD berm and Slope Surface) + GI Works Mon 1/3/21 45 days 0 davs 218 Fill Slope FS17 52 days Fri 2/7/21 Tue 31/8/21 0% 52 days 219 Drainage and Maintenance Access at toe 28 days Fri 2/7/21 Tue 3/8/21 0% 28 days FS17 Filling Stage 1 (~2.5m max) 24 days Wed 4/8/21 Tue 31/8/21 24 days Civil Works for Sha Ling Road (M001 CH710 to CH825, MO11 CH00 to CH20, M014) 224 days Mon 28/12/20 Tue 28/9/21 0% 224 days

27 days

18 days

15 days

Manual Task

Duration-only

8 days

0%

Mon 28/12/20

Mon 28/12/20

Tue 12/1/21

Tue 12/1/21

27 days

18 days

15 days

8 days

Progress

Inactive Task

Thu 28/1/21

Mon 18/1/21

Thu 28/1/21

Wed 20/1/21

Inactive Milestone

Inactive Summary

222

223

224

225

Waterworks / Drainage / Sewerage/ Utilities Works

Milestone

Watermain FW1 (CH532-637), FW1a (CH000-029) and FW2 (CH530-618)

Summary

Critical

Sewerage Works / Drainage Works

Road Lighting Civil Works Provision

5

■ Finish-only

Manual Progress

Manual Summary Rollup 🕳

Manual Summary

Contract No. CV/2016/10 **Hsin Chong Tsun Yip Joint Venture** 3 Month Rolling Programme (Mar 2022 to May 2022) Site Formation and Associated Infrastructural Works for Updated Date: Feb 2022 Development of Columbarium at Sandy Ridge Cemetery Task Name Duration Start % Complete Remaining Duration 226 Utilities (by others) 3 days Tue 12/1/2 3 days 227 Carriageway and Footway 57 days Fri 23/7/21 Tue 28/9/21 0% 57 days 228 Backfilling to Formation Level Fri 23/7/21 Wed 4/8/21 11 days 11 days 229 Carriageway 28 days Thu 5/8/21 Mon 6/9/21 0% 28 days 230 Footpath, Road Marking and Street Furniture 18 davs Tue 7/9/21 Tue 28/9/21 0% 18 days Civil Works for PDA (PT04, PT05, PT06, PT07 and PT08) 381.1 days Fri 5/6/20 Tue 14/9/21 87% 51.22 days 232 238 days Waterworks / Drainage / Sewerage/ Utilities Works Fri 5/6/20 Mon 22/3/21 100% 0 days 233 Drainage Works (with Petrol Interceptor) 200 days Fri 5/6/20 Tue 2/2/21 100% 0 days Road Lighting Civil Works Provision Thu 11/3/21 Mon 22/3/21 100% 10 days 0 days 235 Carriageway and Footway 143.1 days Tue 23/3/21 Tue 14/9/21 69% 44.17 days 236 Backfilling to Formation Level Wed 30/6/21 80 days Tue 23/3/21 16 days 237 80% Carriageway 60 days Sat 10/4/21 Thu 19/8/21 12 days 238 Footpath, Road Marking and Street Furniture 22 days Thu 19/8/21 Tue 14/9/21 0% 22 days Civil Works for PDA (M011 CH140-215,M08 CH70-102) 161 days Tue 9/3/21 Mon 20/9/21 37% 101.29 days Waterworks / Drainage / Sewerage/ Utilities Works 90 days Tue 9/3/21 Mon 28/6/21 70% 27 days 241 Sewerage Works / Drainage Works 60 days Tue 9/3/21 Sat 22/5/21 70% 18 days 242 Road Lighting Civil Works Provision 10 days Mon 29/3/21 Wed 16/6/21 70% 3 davs 243 Utilities (by others) 10 days Thu 17/6/21 Mon 28/6/21 70% 3 days 2.44 Carriageway and Footway 71 days Tue 29/6/21 Mon 20/9/21 71 days 245 Backfilling to Formation Level 30 days Tue 29/6/21 Tue 3/8/21 0% 30 days 246 Carriageway 30 days Wed 4/8/21 Tue 7/9/21 0% 30 days 2.47 Footpath, Road Marking and Street Furniture 11 days Wed 8/9/21 Mon 20/9/21 11 days 53.2 days 248 Civil Works for Sha Ling Road (M001 CH610-710) 114 days Tue 9/3/21 Tue 27/7/21 53% Waterworks / Drainage / Sewerage/ Utilities Works 249 44 days Tue 9/3/21 Mon 3/5/21 100% 0 days Sewerage Works / Drainage Works 30 days Tue 9/3/21 Thu 15/4/21 100% 0 davs 251 Watermain FW1 (CH433-532) and FW2 (CH433-530) 30 days Thu 25/3/21 Mon 3/5/21 100% 0 days 252 Road Lighting Civil Works Provision 10 days Thu 25/3/21 Thu 8/4/21 100% 0 days 253 Utilities (by others) 10 days Thu 25/3/21 Thu 8/4/21 100% 0 days 254 Carriageway and Footway Tue 27/7/21 70 davs Tue 4/5/21 0% 70 days 255 Backfilling to Formation Level 30 days Tue 4/5/21 Tue 8/6/21 30 days 256 30 days Wed 9/6/21 Thu 15/7/21 30 days 257 Footpath, Road Marking and Street Furniture Tue 27/7/21 10 days Fri 16/7/21 0% 10 days Civil Works for Sha Ling Road (M001 CH480-610, M08 CH00-70) Thu 13/1/22 555 days Tue 3/3/20 19% 447.85 days Sewage Detention Tank Civil and Structural Works 549 days Tue 3/3/20 Thu 6/1/22 25% 413.7 days 2.60 Civil and Structural Works 74 days Tue 3/3/20 Wed 3/6/20 80% 15 days 261 Excavation by open cut 25 days Tue 3/3/20 Tue 31/3/20 40% 15 days 262 Blinding layer concreting Wed 1/4/20 Wed 1/4/20 0 days 263 Thu 2/4/20 7 days Tue 14/4/20 100% 0 days 264 Construction of wall and top slab 20 days Wed 15/4/20 Sat 9/5/20 100% 0 days 265 Construction of manhole Mon 11/5/20 Mon 18/5/20 100% 7 days 0 days 266 Wed 3/6/20 Backgilling Tue 19/5/20 14 days 100% 0 davs VDS and AMS for Sewage Detention Tank (Permanment Design and Submission Approval) 270 days 350 days Mon 18/5/20 Tue 20/7/21 VDS and AMS for Sewage Detention Tank 140 days Wed 21/7/21 Thu 6/1/22 0% 140 days 2.69 Waterworks / Drainage / Sewerage/ Utilities Works 146 days Tue 4/5/21 Wed 27/10/21 146 days 270 Sewerage Works / Drainage Works 40 days Wed 8/9/21 Wed 27/10/21 0% 40 days 271 Watermain FW1 and FW2 (CH310-433) Tue 4/5/21 Mon 24/5/21 0% 17 days 17 days 272 Road Lighting Civil Works Provision 18 days Tue 25/5/21 Tue 15/6/21 0% 18 days Utilities (by others) 17 days Wed 16/6/21 Tue 6/7/21 0% 17 days 274 Carriageway and Footway 64 days Thu 28/10/21 Thu 13/1/22 64 days 275 Backfilling to Formation Level Wed 10/11/21 0% 12 days Thu 28/10/21 12 days 276 32 days Thu 11/11/21 Fri 17/12/21 0% 32 days 277 Footpath, Road Marking and Street Furniture 20 days Sat 18/12/21 Thu 13/1/22 0% 20 days Civil Works for Sha Ling Road (M001 CH360-480) Wed 28/7/21 Mon 29/11/21 104 days 26% 76.47 davs Waterworks / Drainage / Sewerage/ Utilities Works 67 days Wed 28/7/21 Sat 16/10/21 36% 42.83 days 280 Sewerage Works / Drainage Works 28 days Wed 28/7/21 Sat 28/8/21 80% 5.6 days Watermain FW1 and FW2 (CH175-310) 18 days Thu 19/8/21 Wed 8/9/21 80% 3.6 days 282 30 days 283 Road Lighting Civil Works Provision 15 days Thu 19/8/21 Sat 4/9/21 0% 15 days 284 Thu 19/8/21 Tue 31/8/21 0% Utilities (by others) 11 days 11 davs 285 Carriageway and Footway 37 days Mon 18/10/21 Mon 29/11/21 0% 37 days 286 Mon 25/10/21 Backfilling to Formation Level 7 days Mon 18/10/21 7 days 287 Mon 15/11/21 Carriageway 18 days Tue 26/10/21 0% 18 days 288 Footpath, Road Marking and Street Furniture 12 days Tue 16/11/21 Mon 29/11/21 12 days Civil Works for Sha Ling Road (M001 CH180-360) 109 days Fri 6/8/21 Tue 14/12/21 0% 109 days 290

Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

3 Month Rolling Programme (Mar 2022 to May 2022)

Hsin Chong Tsun Yip Joint Venture Updated Date : Feb 2022

Company Comp	Task Name	Duration	Start	Finish	% Complete R	Remaining Duration				20)22
Description for Control Cont	N Lord Brown College Works	200 1	T . 0/40/40	TI 00/0/10			3	4	5	6	7
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Contampare on Fondamy		10 days	Fri 25/6/21	Wed 7/7/21	80%	2 days					
Statistics Sta	Utilities (by others)	15 days	Fri 25/6/21	Tue 13/7/21	80%	3 days					
Ministry of Frontant Load Ministry of Principle Ministry of Principle Ministry of Principle Ministry of	Carriageway and Footway	59 days	Fri 6/8/21	Sat 16/10/21	0%						
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18	Slope Cutting (crest totoe)										
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Males by winter 10 cape 10 ca											
Curting-comy and Froatbour See dough Week 1922 Week 1922 See Week 1922		10 days	Sat 13/11/21								
Bed-Silling to Promising Lower 10 days 1	38 Utilities (by others)	15 days	Sat 13/11/21	Tue 30/11/21	0%	15 days					
Contragementy Contragement		59 days	Wed 1/12/21	Mon 14/2/22	0%	59 days					
Foundame Foundame	Backfilling to Formation Level	10 days	Wed 1/12/21	Sat 11/12/21	0%	10 days					
Foundame Foundame	41 Carriageway		Mon 13/12/21	Sat 5/2/22	0%						
Mark Name Na	<u> </u>										
Martin M											
Mesta American (Control and Waterward) (Control 2009 A Recognet of the Control 2009 A Recog						-					
March Referring Own're W 502 on Request 198 days Man 1951/19 Tay 2017/19 Tay						-					
Number N						-					
TA and XP Application at Man To Road											
Works Area Reading to WSD for Company Watermann Works	The state of the s	200 dayo	140 24 6 10	740 7070/20							
Works Area Handing to WOok Port Dengang Water House 190 days 190 Water House 190 days 190 Water House 190 days 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190 190	TTA and XP Application at Man Kam To Road	14 days	Wed 20/5/20	Thu 4/6/20	0%	14 days					
Waterworks Drainage Sewerage Willies Waterworks Drainage Sewerage Willies Waterworks Drainage Sewerage Willies Waterworks Drainage Work Part Waterworks Part Part Waterworks Part Part Waterworks Part	··										
Secretary Work Part Interception											
Secretary Works / Drainage Works Road Lighting Cell Works Provision 11 day Fri 167/21 17th Wed 287/21 20%		-				-					
Boad Lighting Colvil Works Provision 11 days Fe 167/21 11 hall 1 days Fe 167/21 11 hall 1 hall 1 hall 1 hall 2 20 days 2	Sewerane Works / Drainage Works					-		1			
Marcian Marc	80 Boad Lighting Civil Works Provision					-					
Section Sect											
Backfilling to Formation Level 12 days Fa 208/21 Thu 20/221 40% 7.2 days						-					
Scale		-				-					
Footpath, Road Marking and Street Furniture 19 days Thu 1/11/121 Thu 2/12/121 Thu 2/1	Backfilling to Formation Level							1			
Reinstatement to existing Man Kam To Road 5 days Fit 18/72t Wed 211/72t 0% 5 days											
Civil Works for Sha Ling Road (M001 CH00-40) 985 days Thu 30/8/18 Wed 22/12/21 55% 435.92 days		-									
TTA and XP Application at Man Kam To Road 14 days Fit 15/12 Sat 26/12 O% 14 days Work Area Handfung to Sang Hing for Turn Around 160 days Mon 66/19 Thu 26/819 80% 24 days 4 days Work Area Handfung to WSD for Dongulang Watermain Works Mon 66/10 The 24/17/10 O% 190 days Works Area Handfung to WSD for Dongulang Watermain Sang Hing for Turn Around 160 days Mon 66/10 The 24/17/10 O% 41 days 41											
Works Area Handing Over to WSD as Request 120 days Mon 654'9 Thu 2590'19 80% 24 days					_						
Work Area Handling to Sang Hing for Turn Around 190 days Mon 64/20 Tue 2411/20 0% 190 days											
Works Area Handling to WSD for Dong, Lamp Watermain Works 41 days Wed 25/11/20 Thu 14/12/1 0% 41 days											
Consent from WSD for Works Near Dong Jing Watermains 150 days Thu 30/8/18 Sat 23/19 100% 0 days											
Investigation works / Trial Pits for Watermains 150 days Thu 30/8/18 Sat 2/3/19 100% 0 days						-					
Submission for Tempworks 104 days Thu 21/2/19 Sat 29/6/19 100% 0 days						-					
Solid	Investigation works / Trial Pits for Watermains										
Noise Barrier Bay 1-4 196 days Mon 1/2/1 Wed 29/9/21 100% 0 days	Submission for Tempworks							1			
General Excavation with ELS to Formation Level Bay 1-4 30 days Mon 1/2/21 Wed 10/3/21 100% 0 days 11 Base slab of Noise Barrier Bay 1-4 15 days Mon 19/4/21 100% 0 days 15 days Fri 17/5/21 Wed 12/5/21 100% 0 days 16 Protective Coating /Temp Fill 10 days Fri 17/9/21 Wed 29/9/21 100% 0 days 17 Installation of pane 10 days Fri 17/9/21 Wed 29/9/21 100% 0 days 18 Waterworks / Drainage / Sewerage / Utilities Works (RHS + Man Kam To EB Slow Lane) 10 days Thu 13/5/21 Tue 27/7/21 54% 28.8 days 17 Sewerage Works / Drainage Works	Approval from WSD					-					
Base slab of Noise Barrier Bay 1-4 30 days Thu 11/3/21 Sat 17/4/21 100% 0 days						0 days					
Wall Stem of Noise Barrier Bay 1-4		30 days	Mon 1/2/21	Wed 10/3/21	100%	0 days					
Wall Stem of Noise Barrier Bay 1-4		30 days	Thu 11/3/21	Sat 17/4/21	100%	0 days					
Protective Coating /Temp Fill 5 days Fri 7/5/21 Wed 12/5/21 100% 0 days	Wall Stem of Noise Barrier Bay 1-4		Mon 19/4/21	Thu 6/5/21	100%			1			
Installation of pane	Protective Coating /Temp Fill										
Waterworks Drainage Sewerage Utilities Works (RHS + Man Kam To EB Slow Lane) 62 days Thu 13/5/21 Tue 277//21 54% 28.8 days	74 Installation of panel					-					
Sewerage Works / Drainage Works Task Milestone Critical Task Manual Summary Manual Summary Duration-only Manual Summary Manual Summary Manual Summary Finish-only Task Manual Summary Finish-only	'	-				-					
Task Summary Progress Inactive Milestone Manual Task Manual Summary Rollup Start-only Manual Progress Milestone Critical Inactive Task Inactive Summary Manual Summary Manual Summary Finish-only	,	-				-					
Milestone Critical Inactive Task Inactive Summary Duration-only Manual Summary Finish-only			10/0/21		3070	,		I P. II			
										Manual Progress	
	Milestone • Critical Inact	tive Task		Inactive Summary		Duration-only	Manual Sumr	mary F	inish-only		
5	•									-	

Contract No. CV/2016/10
Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

The Many 10 Start Start

)	Task Name	Duration	Start	Fini sh	% Complete Re	emaining Duration
077						
377		6 days	Mon 19/7/21	Sat 24/7/21	0%	6 days
378		8 days	Mon 19/7/21	Tue 27/7/21	20%	6.4 days
379		25 days	Thu 13/5/21	Fri 11/6/21	20%	20 days
380	Carriageway and Footway (RHS+ Man Kan To EB Slow Lane)	38 days	Wed 28/7/21	Thu 9/9/21	0%	38 days
381		10 days	Wed 28/7/21	Sat 7/8/21	0%	10 days
382	Carriageway	24 days	Mon 9/8/21	Sat 4/9/21	0%	24 days
383	Footpath, Road Marking and Street Furniture	4 days	Mon 6/9/21	Thu 9/9/21	0%	4 days
384	Waterworks / Drainage / Sewerage/ Utilities Works (LHS)	52 days	Mon 6/9/21	Mon 8/11/21	0%	52 days
385	Sewerage Works / Drainage Works	42 days	Mon 6/9/21	Wed 27/10/21	0%	42 days
386	Road Lighting Civil Works Provision	5 days	Thu 28/10/21	Tue 2/11/21	0%	5 days
387		10 days	Thu 28/10/21	Mon 8/11/21	0%	10 days
388		38 days	Tue 9/11/21	Wed 22/12/21	0%	38 days
389		10 days	Tue 9/11/21	Fri 19/11/21	0%	10 days
390		24 days	Sat 20/11/21	Fri 17/12/21	0%	24 days
391		4 days	Sat 18/12/21	Wed 22/12/21	0%	4 days
392	Part C	902 days	Sat 15/12/18	Fri 31/12/21	33%	600.26 days
393	Consent from WSD for Works Near Dong Jing Watermain	702 days	Sat 15/12/18	Mon 3/5/21	34%	465.52 days
394	Investigation works / Trial Pits for Watermains	60 days	Sat 15/12/18	Fri 1/3/19	100%	•
395				Sat 29/6/19		0 days
396		102 days	Sat 23/2/19 Tue 2/7/19	Mon 3/5/21	100% 14%	0 days
397	Refuse Collection Point	546 days				469.5 days
398		200 days	Tue 4/5/21	Fri 31/12/21 Fri 21/5/21	33%	133.9 days
		15 days	Tue 4/5/21		100%	0 days
399		20 days	Sat 22/5/21	Tue 15/6/21	100%	0 days
400	·	45 days	Wed 16/6/21	Sat 7/8/21	90%	4.5 days
401	Pavement / Footpath reinstatment	90 days	Mon 9/8/21	Wed 24/11/21	0%	90 days
402		120 days	Mon 9/8/21	Fri 31/12/21	0%	120 days
403	E&M and Waterworks	120 days	Mon 9/8/21	Fri 31/12/21	50%	60 days

Task Milestone

Summary

Critical

Progress

Inactive Task

Inactive Milestone

Inactive Summary



Three Months Rolling Programme of Contract CV/2017/02

3 Month Rolling Programme (from 26/3/2022 to 25/6/2022)

Accepted Initial Works Programme (06)

WBS	Task Name	Duration	n Start Date	Completion Date		November				Qtr 4, 2019 June						Januar	January		
					24/9			1/7			7/4		12/1		18/10		25/7		1/5
1	Letter of Acceptance	0 days	Wed 30/5/18	Wed 30/5/18	+	1													
2	Starting Date	0 days	Thu 31/5/18	Thu 31/5/18	•														
3	ET Submissions	9 days	Wed 26/9/18	Fri 5/10/18			H												
.4	Applications to Government Department	27 days	Mon 4/6/18	Sat 30/6/18		jerej													
5	Submissions & acceptances	835 days		Tue 15/9/20					_										
6	Liaison with Utility Undertakers	979 days		Wed 3/2/21			_												
7		979 days		Wed 3/2/21		100													
	A4 (refer PS Appendix A1)	or o days	111 1/0/10	¥ ¥ C G 5/2/2 1			- 1								•				
8	Liaison Meeting with Interface and associated contractors	389 days	Fri 1/6/18	Mon 24/6/19						-									
	Liaison Weeting with Interface and associated contractors																		
9	Tree Survey Reporting	164 days	Fri 1/6/18	Sun 11/11/18															
10	Street Lighting Designs by the Contractor	671 days	Fri 1/6/18	Wed 1/4/20						_									
11	Provision of Project Manager's Site Accommodation (PS1.08A(b) & 1.49)	28 days	Fri 1/6/18	Thu 28/6/18		-													
12	Design of irrigation system within the Sandy Ridge Cemetery (LS/2021, 2041, 2042, W/1041,1011)	21 days	Fri 20/12/19	Fri 10/1/20								<u> </u>							
13		91 days	Thu 22/9/19	Sun 11/11/18															
14	Condition Survey section 1 of the works - Completion of all works		Thu 31/5/18				73	1											
14	within Parts A1, A2 and B of the Site except Establishment works	979 days	111u 3 1/3/10	vveu 3/2/21															
14.1	Parts A1	859 dave	Fri 28/9/18	Wed 3/2/21			.								-				
14.1.1	access date for section 1 (Parts A1) - not more than 120 days after the starting date	-	Fri 28/9/18	Fri 28/9/18			*		1										
14.1.2	form temporary haul road from the south side to Parts A1	14 days	Tue 2/10/18	Mon 22/10/18															
14.1.3		30 days	Tue 23/10/10	Wed 28/11/18															
	general site clearance	•						-											
14.1.4	initial survey		Thu 29/11/18																
14.1.5	construction of temporary drainage		Thu 3/1/19	Sat 26/1/19															
14.1.6	Site Formation works for Cut Slope CS22 (in Parts A1)	258 days	Mon 28/1/19	Mon 23/12/19															
14.1.7	A1) Construction of Retaining Wall RW13 (bays 1 to	192 days	Mon 15/4/19	Thu 12/12/19					j-	_									
14.1.8	Site Formation works for Fill Slope FS18		Mon 15/4/19	Mon 3/2/20					je-	_									
5 14.1.9	CS21 - slope cutting			Mon 30/12/19								*							
7 14.1.10	install instrument for CS21		Tue 31/12/19									*							
3 14.1.11		•		Wed 8/1/20								+							
	placement of erosion control mat/ hydroseeding	2 days	Tue 7/1/20									1							
14.1.12	minor cutting CS26 (Parts A1) (for Road E)	7 days	Thu 9/1/20	Thu 16/1/20															
14.1.13	Drainage works at Road E	43 days	Fri 17/1/20	Tue 10/3/20									_						
3 14.1.14	Waterworks at Road E	24 days	Wed 11/3/20	Tue 14/4/20															
14.1.15	CS23 - slope cutting & 300U channel	17 days	Wed 11/3/20	Wed 1/4/20									1						
5 14.1.16	install instrument for CS23	5 days	Thu 2/4/20	Wed 8/4/20									*						
5 14.1.17		•	Thu 2/4/20 Thu 9/4/20	Tue 14/4/20									*						
	placement of erosion control mat/ hydroseeding	2 days											*						
7 14.1.18	backfilling of pipe trench to formation (including SRT	e days	Wed 15/4/20	Sat 25/4/20															
0 14 4 40	test)	الماما	Man 07/4/00	Cat DIEIOO									*						
3 14.1.19	300U channel behind RW13	•	Mon 27/4/20	Sat 2/5/20									1						
9 14.1.20	300U channel and planter wall at south side of Road	30 days	Mon 4/5/20	Sat 6/6/20															
	E	40		144 1 00440:00															
) 14.1.21	Roadworks of Road E (A1-ch66-243)		Mon 8/6/20	Wed 30/12/20									-		-				
1 14.1.21.1	ducting for road lighting (RD/2091) & construction	20 days	Mon 8/6/20	Thu 2/7/20															
	of irrigation system												1						
2 14.1.21.2	,	24 days	Fri 3/7/20	Thu 30/7/20									in the	ì					
	cross road duct (RD/2061, 2081)	-																	
3 14.1.21.3		45 days	Fri 31/7/20	Mon 21/9/20									100						
4 14.1.21.4		48 days		Thu 26/11/20															
	emergency crash gate, beam barriers	io dayo	I GO LLI VILV	THE EUT THEO															
5 14.1.21.5		27 days	Fri 27/11/20	Wed 30/12/20										*					
6 14.1.22								1						-	*				
	street lighting (Drg/ RD/2091)	•	Thu 31/12/20												-				
7 14.1.23	landscaping (hydroseeding)		Mon 18/1/21	Fri 22/1/21															
8 14.1.24	landscaping (shrub planting)			Wed 3/2/21											•				
9 14.2	Parts A2	400 days	Tue 31/12/19	Wed 3/2/21	ll l														

7	WBS	Task Name	Duration	Start Date	Completion	Completion Qtr 4, 2019 Qtr											
	20	A LANGE CONTROL OF THE CONTROL OF TH	2 4.4.0.	5 till 2 till	Date			Novem	ber		June				January		
						24/9		1/7		7/4	12/1		18/10	25/7		1/5	
60 1		access date for section 1 (Parts A2) - not more than 580 days after the starting date	•	Tue 31/12/19							1						
61 1		form temporary haul road to Parts A2	6 days	Thu 2/1/20	Wed 8/1/20												
	14.2.3	general site clearance	18 days	Thu 9/1/20	Sat 1/2/20						=1						
	14.2.4	initial survey	12 days	Mon 3/2/20	Sat 15/2/20						a n		nl				
	14.2.5	construction of temporary drainage	20 days	Mon 17/2/20	Tue 10/3/20						*						
55 1	14.2.6	Site Formation works for Cut Slope CS22 (in Parts A:	15 days	Wed 11/3/20	Mon 30/3/20						H				0		
74 1	14.2.7	Construction of Retaining Wall RW13 Bay 6 to Bay 8	107 days	Fri 27/3/20	Mon 10/8/20						-						
99 .1	14.2.8	(west) drainage works at Road E (ch250 to 300)	16 days	Sat 8/8/20	Wed 26/8/20						-						
00 1	14.2.9	(west) waterworks at Road E (ch250 to 300)	15 days	Thu 27/8/20	Sat 12/9/20	i					*						
01 1	14.2.10	construction of Irrigation System	5 days	Sat 12/9/20	Thu 17/9/20							1					
)2 1	14.2.11	U channel for Road E	3 days	Thu 17/9/20	Sat 19/9/20							1					
	14.2.12	Roadworks of Road E (A2-ch243-300)	42 days		Tue 17/11/20												
	14.2.13	street lighting for Road E (Drg/ RD/2091)	9 days	Tue 17/11/20								-					
	14.2.14	landscaping (shrub planting)	4 days	Fri 27/11/20	Tue 1/12/20							-					
	14.2.15	site formation works for Cut Slope CS26 (A2)	24 days	Sat 8/8/20	Fri 4/9/20							-					
	14.2.16	site formation works for Cut Slope CS25 (A2)	12 days	Sat 5/9/20	Fri 18/9/20		H										
	14.2.17	placement of erosion control mat/ hydroseeding	2 days	Sat 19/9/20	Mon 21/9/20							1					
	14.2.18	drainage works at Road B & sewerage works at	28 days	Sat 19/9/20	Wed 28/10/20							1					
		Road B										_					
	14.2.19	waterworks at Road B	25 days	Thu 29/10/20													
	14.2.20	backfill formation for Road B	3 days	Tue 1/12/20	Thu 3/12/20							I					
	14.2.21	street lighting ducts and drawpits at Road B	9 days		Thu 10/12/20						1	-					
	14.2.22	arrange Town Gas to lay cables (NOT YET AGREED)	5 days		Wed 16/12/20												
	14.2.23	planter wall for Road B		Thu 17/12/20								5					
20 1	14.2.24	arrange HKT to lay PCCW cables (NOT YET AGREED)	5 days	Wed 23/12/20	Wed 30/12/20							*					
21 1	14.2.25	Roadworks of Road B (A2-ch28.5-90)	19 days	Thu 31/12/20	Fri 22/1/21							-					
22 1	14.2.25.1	kerbing & sub-base (include sub-base SRT test)	8 days	Thu 31/12/20	Sat 9/1/21							*					
23 1	14.2.25.2	DBM (Roadbase)		Mon 11/1/21								K					
24 1	14.2.25.3	base course and wearing course	2 days	Wed 13/1/21	Thu 14/1/21							6	1				
	14.2.25.4	directional sign, roadmarkings & footpath	7 days	Fri 15/1/21	Fri 22/1/21		III.										
	14.2.26	landscaping (hydroseeding)	17 days		Mon 1/2/21												
	14.2.27	landscaping (shrub planting)	3 days	Mon 1/2/21	Wed 3/2/21												
28 1				Thu 31/5/18	Wed 3/2/21		-		_				É				
29 1	14.3.1	access date for section 1 (Parts B) - the starting date	0 days	Thu 31/5/18	Thu 31/5/18		•										
30 1	14.3.2	Initial Survey	104 days	Fri 1/6/18	Thu 4/10/18		T	-									
	14.3.3	·	30 days		Fri 9/11/18			a a a a a a a a a a a a a a a a a a a									
32 1	14.3.4	Temporary Traffic Arrangement (TTA) Scheme for Man Kam Road			Fri 9/11/18		1										
36 1	14.3.5	Construction of Fresh Water Mains (DN400)-refer to Drawings No. MKTR Programme/W/001 & 002	352 days	Sat 10/11/18	Fri 17/1/20			-									
	14.3.5.1	Phase 1: TTA 1s	52 days	Sat 10/11/18	Sat 12/1/19			þ									
6 1	14.3.5.2		•	Wed 14/11/18				1									
	14.3.5.3	Phase 1: TTA 15s		Tue 20/11/18	Sat 12/1/19												
	14.3.5.4	Phase 2: TTA 2s	39 days	Tue 15/1/19	Mon 4/3/19			7	-								
	14,3.5.5	Phase 2: TTA 9s	39 days	Tue 15/1/19	Mon 4/3/19				jamenj	l —							
	14.3.5.6	Phase 2: TTA 16s	40 days	Mon 14/1/19	Mon 4/3/19		1										
	14.3.5.7	Phase 3: TTA3s	39 days	Tue 5/3/19	Tue 23/4/19												
	14.3.5.8	Phase 3: TTA3S	39 days	Tue 5/3/19	Tue 23/4/19				_						k		
	14.3.5.9	Phase 3: TTA10s	39 days	Tue 5/3/19	Tue 23/4/19												
	14.3.5.10	Phase 4: TTA4s	38 days	Mon 29/4/19	Fri 14/6/19					1					III		
	14.3.5.11	Phase 4: TTA4s Phase 4: TTA11s			Fri 14/6/19												
	1-1.0.0.11		38 days							1							
	14.3.5.12	Phase 4: TTA18s	12 days	Wed 24/4/19	Fri 14/6/19					ad a							

Task Name Duration Start Date Completion Qtr 4, 2019 November June January 24/9 1/7 7/4 12/1 18/10 25/7 1/5 354 14.3.5.14 Phase 5: TTA12s Sat 15/6/19 Wed 7/8/19 45 days 14.3.5.15 Wed 7/8/19 Phase 5: TTA19s 45 days Sat 15/6/19 372 14.3.5.16 Fri 9/8/19 Thu 3/10/19 Phase 6: TTA6s 46 days 14.3.5.17 Thu 3/10/19 Phase 6: TTA13s 42 days Wed 14/8/19 390 14.3.5.18 Thu 8/8/19 Thu 3/10/19 Phase 6: TTA20s 47 davs 399 14.3.5.19 44 days Tue 8/10/19 Wed 27/11/19 Phase 7: TTA7s 408 14.3.5.20 Phase 7: TTA14s 46 days Fri 4/10/19 Wed 27/11/19 417 14.3.5.21 Thu 24/10/19 Wed 27/11/19 Phase 7: additional TTA21s 29 davs 427 14.3.5.22 Wed 27/11/19 Fri 17/1/20 additional Phase 8: additional TTA 0s 41 days 14.3.6 437 Construction of Sewerage (DN630) - refer to 311 days Sat 18/1/20 Wed 3/2/21 Drawing No. MKTR Programme/DR/001 438 14.3.6.1 Sat 21/3/20 Tue 21/1/20 Phase A: TTA 1n 50 days 447 14.3.6.2 Phase A: TTA 7n 52 days Sat 18/1/20 Sat 21/3/20 14.3.6.3 Phase B: TTA 2n 52 days Mon 23/3/20 Thu 28/5/20 465 14.3.6.4 Mon 23/3/20 Thu 28/5/20 Phase B: TTA 8n 52 days 474 14.3.6.5 Fri 29/5/20 Thu 30/7/20 Phase C: TTA 3n 52 days 483 14.3.6.6 Phase C: TTA 9n 52 days Fri 29/5/20 Thu 30/7/20 14.3.6.7 Fri 31/7/20 Tue 29/9/20 Phase D: TTA 4n 52 days 501 14.3.6.8 Phase D: TTA 10n Fri 31/7/20 Tue 29/9/20 52 days 510 14.3.6.9 Wed 2/12/20 Phase E: TTA 5n Wed 30/9/20 52 days 519 14.3.6.10 Phase E: TTA 11n 52 days Wed 30/9/20 Wed 2/12/20 528 14.3.6.11 Wed 3/2/21 Phase F: TTA 6n 51 days Thu 3/12/20 537 14.3.6.12 Fri 18/12/20 Wed 3/2/21 Phase F: additional TTA 12s 38 days 546 14.3.6.13 Wed 3/2/21 Phase F: additional TTA 0n 38 days Fri 18/12/20 555 15 Planned Completion for section 1 of the works 0 days Wed 3/2/21 Wed 3/2/21 556 16 Wed 3/2/21 Wed 3/2/21 Completion Date for section 1 of the works 0 days 557 17 979 days Thu 31/5/18 Wed 3/2/21 section 2 of the works - Completion of all works within Parts C1 and C2 of the Site except **Establishment works** 558 17.1 Thu 31/5/18 Thu 31/5/18 access date for section 2 (Part C1) 0 days 559 17.2 Temporary Traffic Arrangement (TTA) Scheme for Lin 162 days Fri 1/6/18 Fri 9/11/18 565 17.3 works at Lin Ma Hang Road (section 2 Part C1) refer 817 days Sat 10/11/18 Wed 3/2/21 Appendice LMHR01a to d 566 17.3.1 Thu 6/12/18 Phase I (stage 1)-south lane (chainage 240-283) Sat 10/11/18 23 days 577 17.3.2 Fri 7/12/18 Thu 27/12/18 Phase I (stage 2)-north lane (chainage 240-283) 16 days 587 17.3.3 Phase I (stage 3)-south lane (chainage 283-335) Fri 28/12/18 Mon 28/1/19 26 days 598 17.3.4 Phase I (stage 4)-north lane (chainage 283-335) 17 days Tue 29/1/19 Wed 20/2/19 Wed 13/3/19 608 17.3.5 Phase I (stage 5)-south lane (chainage 335-380) 18 days Thu 21/2/19 618 17.3.6 Thu 14/3/19 Mon 1/4/19 Phase I (stage 6)-north lane (chainage 335-380) 16 days 627 17.3.7 Phase I (stage 7)-south lane (chainage 380-435) 23 days Tue 2/4/19 Fri 3/5/19 638 17.3.8 Phase I (stage 8)-north lane (chainage 380-435) Sat 4/5/19 Wed 22/5/19 15 days 648 17.3.9 Thu 23/5/19 Thu 13/6/19 18 days Phase I (stage 9)-south lane (chainage 190-240) 659 17.3.10 Phase I (stage 10)-north lane (chainage 190-240) 16 days Fri 14/6/19 Wed 3/7/19 669 17.3.11 Phase II (stage 1)-south lane (chainage Thu 4/7/19 Fri 25/10/19 95 days 32-85)-Noise Barrier MM6 (bays 1-3) & MM7 (bays 703 17.3.12 Phase II (stage 2)-north lane (chainage 84 days Sat 26/10/19 Fri 7/2/20 32-85)-Noise Barrier MM9 (bays 1-4) 735 17.3.13 Sat 8/2/20 Mon 23/3/20 Phase II (stage 3)-south lane (chainage 85-138) 38 days 746 17.3.14 Tue 24/3/20 Phase II (stage 4)-north lane (chainage 68 days Wed 17/6/20 85-138)-Noise Barrier MM10 (bays 1-4) 776 17.3.15 Phase II (stage 5)-south lane (chainage 138-190) 36 days Thu 18/6/20 Fri 31/7/20 17.3.16 Phase II (stage 6)-north lane (chainage 85 days Sat 1/8/20 Wed 11/11/20 138-190)-Noise Barrier MM10 (bays 5-9) 818 17.3.17 Phase II (stage 7)-south lane (chainage 0-32)-Noise 53 days Thu 12/11/20 Fri 15/1/21 Barrier MM5 (bays 1-2) 851 17.3.18 Phase II (stage 8)-north lane (chainage 0-32) Sat 16/1/21 Wed 3/2/21 16 days 862 17.3.19 Noise Barrier MM8 (bays 1-3) 140 days Sat 1/8/20 Mon 18/1/21

ID	WBS	Task Name	Duration	Start Date	Completion		NT 1	Qtr 4, 2				9
					Date	24/9	November 1/7	7/4	June 12/1	18/10	January 25/7	1/5
891	17,3,20	Street lighting (drawpits, abandon existing public	21 days	Mon 14/12/20	Sat 9/1/21	2717	111	114	12/1	10/10	LSH	1/3
		lighting & cable, 100uPVC ducts) (ch0-435)	•									
000										↓		
	17.3.21	tree planting	3 days	Mon 11/1/21	Wed 13/1/21					1		
893	17.3.22	Street furniture & construction of footpath (ch0-435)	22 days	Sat 9/1/21	Wed 3/2/21							
894	17.3.23	Phase la (stage 101)-south lane (chainage 633-685)) 20 days	Sat 10/11/18	Mon 3/12/18							
	17.3.24	Phase la (stage 102)-north lane (chainage 633-685)		Tue 4/12/18	Fri 21/12/18		H					
	17.3.25	Phase la (stage 103)-south lane (chainage 685-740)		Sat 22/12/18	Wed 23/1/19							
925	17.3.26	Phase la (stage 104)-north lane (chainage 685-740)		Thu 24/1/19	Fri 15/2/19		H					
	17.3.27	Phase la (stage 105)-south lane (chainage 740-790)		Sat 16/2/19	Fri 15/3/19		H					
	17.3.28	Phase Ia (stage 106) north lane (chainage 740-790)		Sat 16/3/19	Thu 4/4/19		H					
	17.3.29	Phase la stage 107)-south lane (chainage 790-840)		Sat 6/4/19	Sat 4/5/19		[men]					
	17.3.30	Phase la (stage 108)-north lane (chainage 790-840)		Mon 6/5/19	Mon 10/6/19			1				
	17.3.31	Phase Ia (stage 109)-south lane (chainage 840-890)		Tue 11/6/19	Wed 17/7/19							
	17.3.32 17.3.33	Phase III (stage 110)-north lane (chainage 840-890)		Thu 18/7/19 Thu 8/8/19	Wed 7/8/19 Fri 30/8/19							
	17.3.34	Phase III (stage 1)-south lane (chainage 435-490) Phase III (stage 2)-north lane (chainage 435-490)	20 days 16 days	Sat 31/8/19	Thu 19/9/19							
	17.3.35	Phase III (stage 3)-south lane (chainage 490-540)	34 days	Fri 20/9/19	Thu 31/10/19							
	17.3.36	Phase III (stage 4)-north lane (chainage 490-540)	17 days	Fri 8/11/19	Wed 27/11/19			Н				
	17.3.37	Phase III (stage 5)-south lane (chainage 540-590)	29 days		Fri 3/1/20			i i	-			
	17.3.38	Phase III (stage 6)-north lane (chainage 540-590)	22 days	Sat 4/1/20	Sat 1/2/20				-			
1059	17.3.39	Phase III (stage 7)-south lane (chainage 590-633)	29 days	Tue 4/2/20	Sat 7/3/20				<u> </u>			
1069	17.3.40	Phase III (stage 8)-north lane (chainage 590-633)	25 days	Mon 9/3/20	Tue 7/4/20	V.			—			
1079	17.3.41	Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890)	7 days	Wed 8/4/20	Sat 18/4/20							
1080	17.3.42	tree planting	5 days	Tue 14/4/20	Sat 18/4/20	1						
	17.3.43	Street furniture & construction of footpath	23 days		Mon 18/5/20				*			
		(ch435-890)										
	17.3.44	Phase IV (stage 1)-south lane (chainage 890-940)	22 days		Thu 17/10/19			<u> </u>				
	17.3.45	Phase IV (stage 2)-north lane (chainage 890-940)	17 days		Wed 6/11/19			H				
	17.3.46	Phase IV (stage 3)-south lane (chainage 940-983)	31 days		Thu 12/12/19			_	1			
	17.3.47 17.3.48	Phase IV (stage 4)-north lane (chainage 940-983)	16 days		Fri 3/1/20 Thu 23/1/20			1	T_			
	17.3.49	Phase V (stage 1)-south lane (chainage 983-1035) Phase V (stage 2)-north lane (chainage 983-1035)	17 days 16 days	Sat 4/1/20 Fri 24/1/20	Fri 14/2/20				T			
	17.3.50	Phase V (stage 3)-south lane (chainage 903-1033) Phase V (stage 3)-south lane (chainage 1035-1087)			Sat 7/3/20							
	17.3.51	Phase V (stage 4)-north lane (chainage 1035-1007)			Sat 21/3/20				H			
	17.3.52	Phase V (stage 5)-south lane (chainage 1087-1139)			Sat 18/4/20				H			
	17.3.53	Phase V (stage 6)-north lane (chainage 1087-1139)			Fri 8/5/20				H			
	17.3.54	Phase V (stage 7)-south lane (chainage 1139-1190)		Sat 9/5/20	Mon 1/6/20				⊢			
1189	17.3.55	Phase V (stage 8)-north lane (chainage 1139-1190)		Tue 2/6/20	Thu 18/6/20				H			
	17.3.56	Phase VI (stage 1)-south lane (chainage 1190-1240			Wed 15/7/20				—			
	17.3.57	Phase VI (stage 2)-north lane (chainage 1190-1240)			Sat 1/8/20				H			
	17.3.58	Phase VI (stage 3)-south lane (chainage 1240-1286			Thu 10/9/20				-			
	17.3.59	Phase VI (stage 4)-north lane (chainage 1240-1286)			Mon 28/9/20				H			
	17.3.60	Phase VI (stage 5)-south lane (chainage 1286-1332			Fri 23/10/20							
	17.3.61 17.3.62	Phase VI (stage 6) - north lane (chainage 1286 -133							H			
	17.3.62	Phase VI (stage 7)-south lane (chainage 1332-1377 Phase VI (stage 8)-north lane (chainage 1332-1377)							<u></u>			
	17.3.64	Street lighting (drawpits, abandon existing public		Tue 29/12/20								
ILI	17.0.01	lighting & cable, 100uPVC ducts) (ch890-1377)	r days	100 20/12/20	VVCG 0/ 1/2 1							
1276	17.3.65	tree planting	1 day	Wed 6/1/21	Wed 6/1/21					+		
	17.3.66	Street furniture & construction of footpath	25 days		Wed 3/2/21					*		
1000	17.1	(ch890-1377)			141 1010101							
1278	17.4	Noise Barrier works above the concrete substructure of	t 674 days	Mon 29/10/18	Wed 3/2/21			<u> </u>		-		
1279	17,4.1	the noise barrier (section 2 Part C1) seek specialist subcontractor to design and build	210 dave	Mon 29/10/18	Sun 26/5/19		· ·					
	17.4.2	propose specialist subcontractor to PM for		Sun 26/5/19								
0.000000	1	acceptance	2 44,0	22 20.0/10								

Contract No. CV/2017/02 Development of Columbarium at Sandy Ridge Cemetery - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road

3 Month Rolling Programme (from 26/3/2022 to 25/6/2022)

Accepted Initial Works Programme (06)

O WBS	Task Name	Duration	Start Date	Completion Date		November	Qtr 4,	2019 June		January	
					24/9	1/7	7/4	12/1	18/10	25/7	1/5
1281 17.4.3	acceptance of propose specialist subcontractor by Project Manager	0 days	Sun 16/6/19	Sun 16/6/19			1				
1282 17.4.4	prepare design & liaise with designer & PM			Mon 14/10/19			1				
1283 17.4.5	submit a proposal detailing the changes to PM's design, if any	,		Mon 28/10/19							
1284 17.4.6	submit 1st design for PM's comment			Mon 28/10/19			•1				
1285 17.4.7	PM's comments			Mon 18/11/19			-				
1286 17.4.8	revise design			Mon 16/12/19							
1287 17.4.9	re-submit design for PM's acceptance	•		Mon 16/12/19				•			
1288 17.4.10	submit 3 sample panels for each type & colour for acceptance	7 days		Mon 23/12/19				1			
1289 17.4.11	PM's & relevant authorities' acceptance	0 days		Mon 13/1/20				•1			
1290 17.4.12	ordering of noise barrier panel	•	Wed 15/1/20					1			
1291 17.4.13	fabricating of panel and steelworks		Thu 16/1/20					1			
1292 17.4.14	delivery of panel and steelworks on site		Tue 14/7/20								
1293 17.4.15	completion of concrete curing of substructure of Nosie Barriers	463 days	Mon 14/10/19	Tue 19/1/21			-				
1301 17.4.16	construction works above the concrete substructure of the noise barrier MM6, MM7 & MM9 (app. 77m)	48 days	Mon 28/9/20	Wed 25/11/20							
1308 17.4.17	construction works above the concrete substructure of the noise barrier MM10 (app. 94m)	54 days	Thu 26/11/20	Sat 30/1/21				-			
1315 17.4.18	construction works above the concrete substructure of the noise barrier MM5 & MM8 (app. 42.322m)	10 days	Wed 20/1/21	Sat 30/1/21				H			
1322 17.4.19	submit as-built drawings & design calculation & 2 sets of velographs for noise barrier works	0 days	Wed 3/2/21	Wed 3/2/21							
1323 17.5	access date for section 2 (Part C2)	0 days	Sun 24/2/19	Sun 24/2/19		*					
1324 17.6	additional site possession for areas outside site boundary (for 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 new drillholes DHA1,A2 &	0 days	Sun 24/2/19			•					
1325 17.7	A3 } Slope Upgrading works (section 2 Part C2)		Mon 25/2/19			-					
1326 17.7.1	general site clearance	45 days	Mon 25/2/19	Thu 18/4/19							
1327 17.7.2	Initial topographic survey	45 days	Thu 11/4/19	Sat 8/6/19		_					
1328 17.7.3	utility detection and submit reports	21 days	Wed 22/5/19	Sat 15/6/19							
1329 17.7.4	drilling of verification boreholes DHA1,A2 & A3	21 days	Mon 17/6/19	Thu 11/7/19							
1330 17.7.5	baseline monitoring for 3NW-C/C230 (DH15 & 16) & C225 (DH3 & 17) on existing drillholes & 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 proposed verification drillholes DHA1,A2 & A3	30 days	Fri 12/7/19	Thu 15/8/19							
1331 17.7.6	submit 4 sets of initial readings of baseline monitoring and preliminary logs to the Project Manager to the Project Manager	0 days	Thu 15/8/19	Thu 15/8/19							
1332 17.7.7	Slopeworks: 3NW-C/C470 (ch490-540S/B)	59 davs	Fri 16/8/19	Sat 26/10/19			1				
1333 .17.7.7.1	removal of existing trees		Fri 16/8/19	Tue 27/8/19			1				
1334 17.7.7.2	hoarding & fencing	6 days	Wed 28/8/19	Tue 3/9/19			4				
1335 17.7.7.3	slope excavation works	1 day	Wed 4/9/19	Wed 4/9/19			ř,				
1336 17.7.7.4	temporary scaffolding	5 days	Thu 5/9/19	Tue 10/9/19			K				
1337 17.7.7.5	proposed slope stripping for mapping or rock and relict discontinuities (AS5-A,B, AS6-A,B)	-	Wed 11/9/19				*				
1338 17.7.7.6	Phase I	evsh 8	Sat 21/9/19	Mon 30/9/19			H				
1339 17.7.7.6.1		6 days		Fri 27/9/19			6				
1340 17.7.7.6.2	,	2 days					6				
1341 17.7.7.7	(B01-12) Phase II			Fri 11/10/19			N N				
TOTAL ILITARY	L1109£ II	o days	**CU Zi 10/13	111 11/10/10				1			

D WBS	Task Name	Duration Start Da	ate Completion Date		November	Qtr 4, 2019	June		Taureni	
			Dut	24/9	1/7	7/4	12/1	18/10	January 25/7	1/5
342 17.7.7.1	install test nail PN01 & pull out test	6 days Wed 2/1	0/19 Wed 9/10/19			4				
343 17.7.7.7.2	drill, install steel bars and grout soil nails	2 days Thu 10/1	0/19 Fri 11/10/19			r r				
0.14	(A01-17)	. 0.140//	040 0-1404040			1				
344 17.7.7.8	raking drains		0/19 Sat 12/10/19			1				
1345 17.7.7.9	TDR Test (including test & wait issue result)		0/19 Tue 15/10/19			1				
1346 17.7.7.10	soil nail head works		0/19 Fri 18/10/19			1				
1347 17.7.7.11	UC & catchpit (38m & 1 nr)	•	0/19 Thu 24/10/19							
1348 17,7.7.12	biodegradable erosion control mat with hydroseeding	2 days Fri 25/10	0/19 Sat 26/10/19							
1349 17.7.8	Slopeworks: - 3NW-C/C230 (ch1240-1330S/B)	130 days Mon 28/1	0/19 Thu 2/4/20			-				
1350 17.7.8.1	removal of existing trees	10 days Mon 28/1	0/19 Thu 7/11/19			1				
1351 17.7.8.2	hoarding & fencing	9 days Fri 8/11	/19 Mon 18/11/19			*				
1352 17.7.8.3	temporary scaffolding	7 days Tue 19/1	1/19 Tue 26/11/19			4				
1353 17.7.8.4	proposed slope stripping for mapping or rock and	8 days Wed 27/1	1/19 Thu 5/12/19			i i				
	relict discontinuities (AS3-A,B, AS4-A,B)									
1354 17.7.8.5	slope excavation works	1 day Fri 6/12	/19 Fri 6/12/19			ħ.				
1355 17.7.8.6	Phase I	25 days Sat 7/12	2/19 Wed 8/1/20			ji				
1356 17.7.8.6.1	install test nail PN22 & pull out test	6 days Sat 7/12				K				
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
1357 17.7.8.6.2	drill, install steel bars and grout soil nails	10 days Sat 14/1	2/19 Fri 27/12/19			ă i				
	(K01-22, N01-05, M01-11, J01-25)									
1358 17.7.8.6.3	TDR Test (including test & wait issue result)	2 days Sat 28/1				1				
1359 17.7.8.6.4	soil nail head works	7 days Tue 31/1				ă.				
1360 17.7.8.7	Phase II	22 days Thu 9/1					-			
1361 17.7.8.7.1	install test nail PN21 & pull out test	6 days Thu 9/1	/20 Wed 15/1/20			1				
1362 17.7.8.7.2	drill, install steel bars and grout soil nails (H01-25, L01-16)	8 days Thu 16/	1/20 Fri 24/1/20						ěl.	
1363 17.7.8.7.3	raking drains	2 days Wed 29/	1/20 Thu 30/1/20				h			
1364 17.7.8.7.4	TDR Test (including test & wait issue result)	2 days Fri 31/1					h			
1365 17.7.8.7.5	soil nail head works	4 days Mon 3/2	2/20 Thu 6/2/20				Ť.			
1366 17.7.8.8	225UC, 300SC & catchpits	21 days Fri 7/2	20 Mon 2/3/20							
1367 17.7.8.9	600mm width concrete maintenance staircase with handrailing	9 days Tue 3/3	/20 Thu 12/3/20				*			
1368 17.7.8.10	soil replacement by no-fines concrete	6 days Fri 13/3	/20 Thu 19/3/20				×			
1369 17.7.8.10.1	stage 1	2 days Fri 13/3					1			
1370 17.7.8.10.1.1		1 day Fri 13/3					h			
1371 17.7.8.10.1.2		1 day Sat 14/3					ř,			
1372 17.7.8.10.2	stage 2	2 days Mon 16/					1			
1373 17.7.8.10.2.1		1 day Mon 16/					Š.			
1374 17.7.8.10.2.2		1 day Tue 17/3					h			
1375 17.7.8.10.3	stage 3	2 days Wed 18/					1			
1376 17.7.8.10.3.1	,,	1 day Wed 18/					5			
1377 17.7.8.10.3.2	placement of no-fine concrete	1 day Thu 19/					5			
1378 17.7.8.11	biodegradable erosion control mat with hydroseeding & shrub planting	12 days Fri 20/3	/20 Thu 2/4/20				ř.	7		
1379 17.7.9	Slopeworks: - 3NW-C/C224 (ch1040-1120N/B)	117 days Tue 31/3	3/20 Sat 22/8/20							
1404 17.7.10	Slopeworks: - 3NW-C/C224 (C11040-1120N/B) Slopeworks: - 3NW-C/C225 (ch1300-1376N/B)	348 days Tue 3/1				<u></u>				
1438 17.7.11	Slopeworks: - 3NW-C/C231 (ch1220-1240N/B)	415 days Thu 12/9								
	Planned Completion for section 2 of the works	0 days Wed 3/2						***		
	Completion Date for section 2 of the works	0 days Wed 3/2						*		
11311224	section 3 of the works - Completion of all works	797 days Thu 31/						-		
	within Parts D and E of the Site	. 0. 44,0	Trou VILIZI	 				H		
1508 20.1	Parts D	800 days Mon 26/1	1/18 Wed 3/2/21		þ-					
1509 20.1.1	access date for section 3 (Parts D) - not more than		1/18 Mon 26/11/18		*					
A M M P		,						111		

3 Month Rolling Programme (from 26/3/2022 to 25/6/2022)

Accepted Initial Works Programme (06)

ID WBS	Task Name	Duration	Start Date	Completion Date		November	Qtr 4, 2019			•	
				Date	24/9	November 1/7	7/4	June 12/1	18/10	January 25/7	1/5
1510 20.1.2		59 days	Tue 27/11/18	Thu 24/1/19						2311	113
	the covered walkway										
1511 20.1.3	acceptance of specialist		Thu 14/2/19	Thu 14/2/19		•					
1512 20.1.4	design for approval for lighting system for the covered walkway	,	Fri 15/2/19	Sun 14/7/19							
1513 :20.1.5	submit for approval for lighting system for the covered walkway	0 days	Sun 14/7/19	Sun 14/7/19							
1514 20.1.6	acceptance of lighting system for the covered walkway	0 days	Sun 4/8/19	Sun 4/8/19							
1515 20.1.7	Coordination with CLP to obtain the electricity supply for the street lighting system (Design for Road B, Road E, Road F(part), Lin Ma Hang Road and Sheung Shui Landmark PTI & Lighting system for the covered walkway)			Sun 19/1/20							
1516 20.1.8	design for glazing system of the proposed covered walkway at Fanling Station Road	150 days	Fri 15/2/19	Sun 14/7/19							
1517 20.1.9	submission of glazing system	0 days	Sun 14/7/19	Sun 14/7/19							
1518 :20.1.10	acceptance of glazing system and fall arrest system by Project Manager		Sun 4/8/19	Sun 4/8/19							
1519 20.1.11	design for fall arrest system of the proposed covered walkway at Fanling Station Road			Sun 14/7/19		\					
1520 20.1.12	submission of fall arrest system	-	Sun 14/7/19	Sun 14/7/19							
1521 20.1.13	acceptance of fall arrest system by Project Manager		Sun 4/8/19	Sun 4/8/19							
1522 20,1.14	Liaison with MTRC for the works arrangement	30 days	Mon 5/8/19	Tue 3/9/19							
1523 20.1.15	general site clearance	12 days	Wed 4/9/19	Wed 18/9/19							
1524 20,1.16	initial survey	12 days	Thu 19/9/19	Thu 3/10/19			•				
1525 20.1.17	utility detection and submit reports	8 days	Fri 4/10/19	Mon 14/10/19			↓ •				
1526 20.1.18	Fabrication of Steelworks & glass panel	100 days		Mon 2/12/19							
1527 20.1.19	delivery steelworks & glass panel to site	38 days	Tue 3/12/19	Sat 18/1/20	II.	1					
1528 :20.1.20	application of XP (for Parts D)	•	Thu 29/11/18			•	1				
1529 20.1.21	acceptance of XP (for Parts D)	0 days	Thu 30/5/19	Thu 30/5/19							
1530 20.1.22	Construction of Covered Walkway at Fanling Station										
1531 20.1.22.1	construct the concrete foundation of covered walkway (first 20m)	20 days	Tue 15/10/19	Wed 6/11/19			-				
1532 20.1.22.2	construct the concrete foundation of covered walkway (2nd 20m)	20 days	Thu 7/11/19	Fri 29/11/19			*				
1533 :20.1.22.3	construct the concrete foundation of covered walkway (3rd 20m)	20 days	Sat 30/11/19	Mon 23/12/19			*				
1534 20.1.22.4	demolished existing planter (drg.WY/1051)	20 days	Sat 30/11/19	Mon 23/12/19			*				
1535 (20.1.22.5	construct the concrete foundation of covered walkway (4th 20m)	20 days	Tue 24/12/19	Sat 18/1/20							
1536 20.1.22.6	construction of covered walkway including steelworks, glass panel and electrical works	265 days	Mon 20/1/20	Wed 9/12/20							
1537 (20.1.22.7	Reinstatement of the pavement and street furniture	45 days	Thu 10/12/20	Wed 3/2/21							
1538 20.2	Parts E	782 days	Thu 31/5/18	Sat 16/1/21							
1539 20.2.1	access date for section 3 (Parts E)	0 days	Thu 31/5/18	Thu 31/5/18	**			i i			
1540 20.2.2	application of XP (for Parts E)	0 days	Thu 30/5/19				*				
1541 20.2.3	acceptance of XP (for Parts É)			Thu 28/11/19			*				
1542 20.2.4	Temporary Traffic Arrangement (TTA) Scheme for Sheung Shui Landmark North PTI and Fanling Station Road	·	Fri 31/5/19	Mon 27/1/20				†			
1546 20.2.5	general site clearance		Wed 29/1/20								
1547 20.2.6	initial Survey		Wed 12/2/20					•			
1548 20.2.7	utility detection and submit reports		Fri 28/2/20	Sat 14/3/20				-			
1549 20.2.8	Road Improvement works at Sheung Shui Landmark North PTI							-			
1559 21	Planned Completion for section 3 of the works	0 days	Wed 3/2/21	Wed 3/2/21					1		
1560 22	Completion Date for section 3 of the works	0 days	Wed 3/2/21	Wed 3/2/21					•		

WBS	Task Name	Duration	Start Date	Completion		7	Qtr 4, 2019	Version				
				Date	24/9	November 1/7	7/4	June 12/1	18/10	25/7	nuary	1/5
561 23	section 4 of the works - Completion of Establishment works for the Landscape Softworks within Parts A1, A2 and B of the Site	1095 days	Thu 4/2/21	Sat 3/2/24	247	111	774	12/1	10/10	2311		1/3
62 23.1		1095 days	Thu 4/2/21	Sat 3/2/24					*			=
65 26	section 5 of the works - Completion of Establishment works for the Landscape Softworks within Parts C1 and C2 of the Site	1095 days	Thu 4/2/21	Sat 3/2/24								
66 26.1		1095 days	Thu 4/2/21	Sat 3/2/24								
69 29	section 6 of the works (section Subject to Excision) - Completion of all works within Parts A3 and A4 of the Site except Establishment works. Extent of works under section 6 of the works is defined in Drawing No.: 231448/C2/G/1031		Fri 28/9/18	Wed 3/2/21					c			
70 29.1	Parts A3	859 days	Fri 28/9/18	Wed 3/2/21		-			4			
71 .29.1.1	access date for section 6 (Part A3) - not more than 120 days after the starting date	0 days	Fri 28/9/18	Fri 28/9/18		*						
72 29.1.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 days	Mon 24/6/19	Mon 24/6/19								
29.1.3	form temporary haul road from the south side to Parts A3	5 days	Tue 25/6/19	Sat 29/6/19								
74 29.1.4	general site clearance & tree felling	12 days	Tue 2/7/19	Mon 15/7/19			*					
75 29.1.5	initial survey		Tue 2/7/19	Mon 15/7/19								
76 29.1.6	construction of temporary drainage		Mon 15/7/19	Tue 30/7/19			<u>*</u>					
77 29.1.7	Construction of Retaining Wall RW14 (Bay 1-Bay 6)	312 days	Fri 26/7/19	Sat 22/8/20			-					
502 29.1.8	backfilling works behind Retaining Wall RW14 (bay1 to 6) (include SRT tests)			Tue 15/12/20								
603 29.1.9 613 29.1.10	Construction of Retaining Wall RW14 Bay 7 backfilling works behind RW14 (bay 7) (include SRT tests)		Wed 30/9/20 Tue 10/11/20									
614 29.1.11	install instrument for RW14		Fri 11/12/20					T.				
615 29.1.12	construct 300U channel & catchpit in front of RW14	•	Fri 11/12/20									
616 29.1.13	site formation works for fill slope FS19 and FS20 (including in "backfilling works behind Retaining Wall RW14 (bay1 to 6)")			Tue 15/12/20								
617 29.1.14	300U channel & stepped channel for FS19 & 20		Wed 16/12/20									
618 29.1.15 619 29.1.16	install instrument for FS19 & FS20 minor site formation works for cut slope CS25	,	Wed 16/12/20 Wed 16/12/20					***				
	·	•						Ţ				
620 29,1,17	minor site formation works for cut slope CS26	·	Thu 17/12/20					1				
621 29.1.18	install instruments for CS25 & CS26		Mon 21/12/20					b				
622 29.1.19	waterworks at Road E	•	Mon 21/12/20					-				
623 29.1.20	drainage works at Road E	10 days	Thu 31/12/20	Tue 12/1/21								
624 29.1.21	U channels at Road E	7 days	Tue 5/1/21	Tue 12/1/21				1*				
625 29.1.22	Roadworks of Road E (ch20-60)		Wed 13/1/21	Wed 3/2/21			.	-				
631 29.1.23	Site Formation works for Cut Slope CS24 (include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 1-3)			Fri 20/9/19								
632 29.1.24 633 29.1.25	install instrument for CS24 temporary soil nails between CS20 & RW12 (for	,	Mon 23/9/19 Mon 23/9/19	Fri 27/9/19 Mon 4/11/19			<u> </u>					
634 29.1.26	RW12 bays 1-3) Construction of Retaining Wall RW12 CH 0-20	67 days	Tue 5/11/19	Fri 24/1/20								
1657 29.1.27	backfilling along Retaining Wall RW12	40 4	Thu 4/6/20	Wed 22/7/20								

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3 Month Rolling Programme (from 26/3/2022 to 25/6/2022)

Accepted Initial Works Programme (06)

WBS	Task Name	Duration	Start Date	Completion				Qtr 4, 2019						
				Date	2410	November	7.	4	June		10/10	0.5	January	1 1/5
8 29.1.28	Completion of Site Formation works for Cut Slope 25	2 dave	Tue 21/7/20	Wed 22/7/20	24/9	1/7	7/	4	12/1	will live	18/10	25/	11	1/5
0 29.1.20	Completion of Site Formation works for Cut Slope 25	2 uays	146 2 111120	VVEQ 22/1/20										
59 29.1.29	Waterworks at Road F	24 days	Thu 23/7/20	Wed 19/8/20					i	*				
660 29.1.30	Drainage works at Road F		Thu 20/8/20	Thu 17/9/20										
61 29.1.31	planter wall for Road E and Road F in Parts A3		Fri 18/9/20	Sat 3/10/20						*				
62 29.1.32	UU-Arrange Town Gas & PCCW to lay across Road		Mon 5/10/20	Thu 22/10/20						*				
702	F (not yet agree)	11 00,0												
63 29.1.33	Roadworks of Road F (60m)	55 days	Fri 23/10/20	Mon 4/1/21										
664 29.1.33.1			Fri 23/10/20	Fri 6/11/20				1		*				
701 120.1.0011	kerbing and cross road duct (ND/2001, 2001)	10 days	11120/10/20	111 0/11/20										
65 29.1.33.2	ducting for road lighting & construction of irrigation system	12 days	Mon 9/11/20	Mon 23/11/20						*				
66 29.1.33.3	•	12 days	Tue 24/11/20	Mon 7/12/20						4				
667 29.1.33.4			Tue 8/12/20	Mon 4/1/21										
00/ 29.1.33.4	footpath	ZTuays	1 ue 0/12/20	101011 4/ 1/21										
668 29.1.34	street lighting (Drg/ RD/2091)	6 days	Tue 5/1/21	Mon 11/1/21										
669 29.1.35	landscaping (hydroseeding)	9 days	Tue 12/1/21	Thu 21/1/21							*			
570 29.1.36	landscaping (nydroseeding)		Fri 22/1/21	Wed 3/2/21							*			
571 29.2	Parts A4		Mon 24/6/19	Wed 3/2/21			j.							
572 29.2.1	access date for section 6 (Parts A4) - not more than	•	Tue 31/12/19					*						
	580 days after the starting date	•												
573 29.2.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 days	Mon 24/6/19	Mon 24/6/19			-							
574 29.2.3		15 days	Thu 2/1/20	Sat 18/1/20										
	general site clearance	15 days							+					
575 29.2.4	initial survey	•	Sat 11/1/20	Thu 23/1/20					<u></u>					
576 29.2.5	construction of temporary drainage	•		Wed 5/2/20					 ↓					
577 29.2.6	Site Formation works for Cut Slope CS24 (include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 4-6)	7 days	Wed 29/1/20	Wed 5/2/20										
578 29.2.7	install instrument for CS24	3 days	Thu 6/2/20	Sat 8/2/20					*					
579 29.2.8		•	Thu 6/2/20	Tue 17/3/20					+					
3/9 /29.2.0	temporary soil nails between CS20 & RW12 (for RW12 bays 4-6)	35 days	111u 0/2/20	Tue 17/3/20					_					
580 29.2.9	Construction of Retaining Wall RW12 CH 21-40	58 days	Wed 18/3/20	Wed 3/6/20					ii					
703 29.2.10	Site Formation works for Cut Slope CS20	125 days	Mon 1/6/20	Tue 3/11/20					-					
737 29.2.11	Site Formation works for Cut Slope CS26 (A4)		Tue 13/10/20							87				
		, -												
738 :29.2.12	Site Formation works for Cut Slope CS25 (A4)	9 days	Fri 23/10/20	Thu 5/11/20						*				
739 29.2.13	complete the construction of U channel at CS 25	15 davs	Wed 4/11/20	Mon 23/11/20						*				
	and 26		·											
740 29.2.14	planter wall	10 davs	Wed 18/11/20	Sat 28/11/20										
741 29.2.15	Waterworks at Road B		Tue 24/11/20											
	Frontier in the second of the	,-												
742 29.2.16	Sewerage works at Road B	7 davs	Fri 27/11/20	Fri 4/12/20										
102		,-												
743 29,2.17	Drainage works at Road B	7 days	Mon 30/11/20	Mon 7/12/20						•				
	•	,												
744 29.2.18	UU - Arrange Town Gas & PCCW to lay cables (not	14 days	Tue 8/12/20	Wed 23/12/20						*				
	agreed yet)													
745 29.2.19	Roadworks of Road B (A4-ch90-130)	23 days	Wed 23/12/20	Thu 21/1/21										
750 29.2.20	street lighting (Drg/ RD/2091)		Thu 21/1/21	Mon 25/1/21							B-1			
751 29.2.21	landscaping (hydroseeding)	7 days	Mon 25/1/21	Mon 1/2/21							ř.			
752 29.2.22	landscaping (shrub planting)	5 days	Fri 29/1/21	Wed 3/2/21							F.			
753 30	Planned Completion for section 6 of the works	0 days	Wed 3/2/21	Wed 3/2/21							·			
754 31	Completion Date for section 6 of the works	0 days	Wed 3/2/21	Wed 3/2/21							4			
755 32	section 7 of the works (section Subject to Excision) -			Sat 3/2/24)-			
	Completion of Establishment works for the													
	Landscape Softworks within Parts A3 and A4 of the													
756 32.1	Establishment works for the Landscape Softworks	1095 davs	Thu 4/2/21	Sat 3/2/24							*			
	within Parts A3 and A4 of the Site													

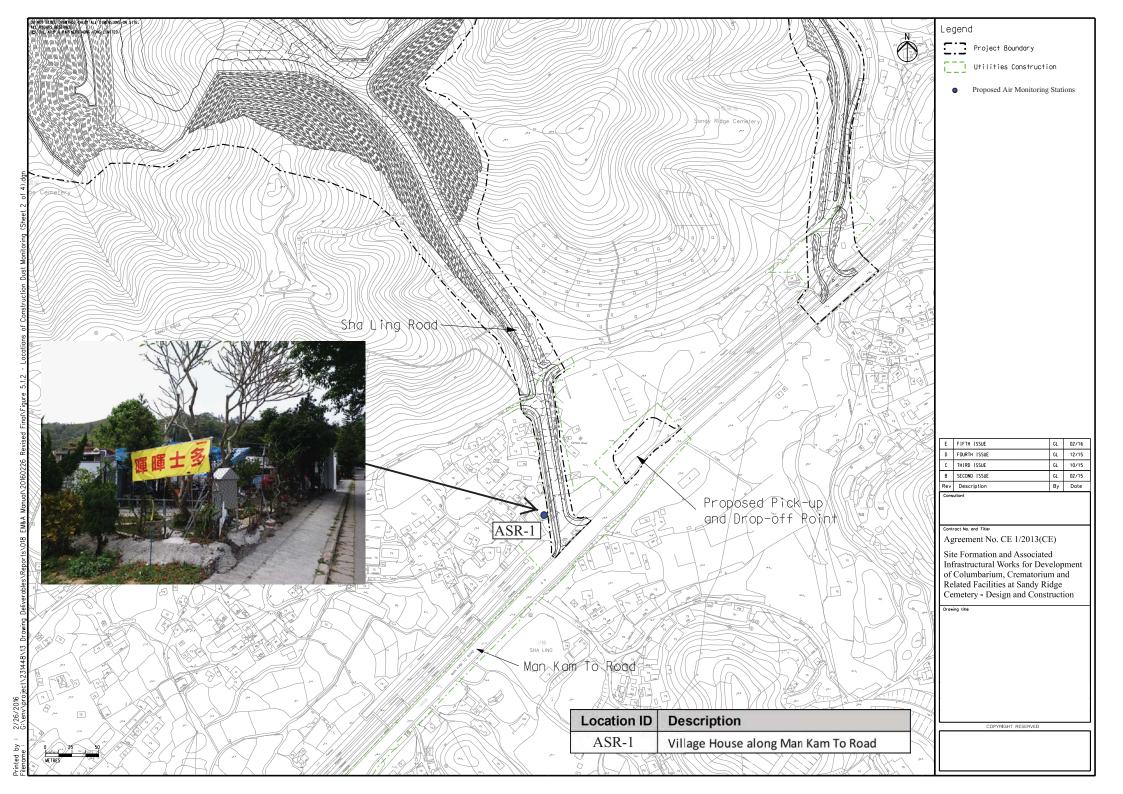


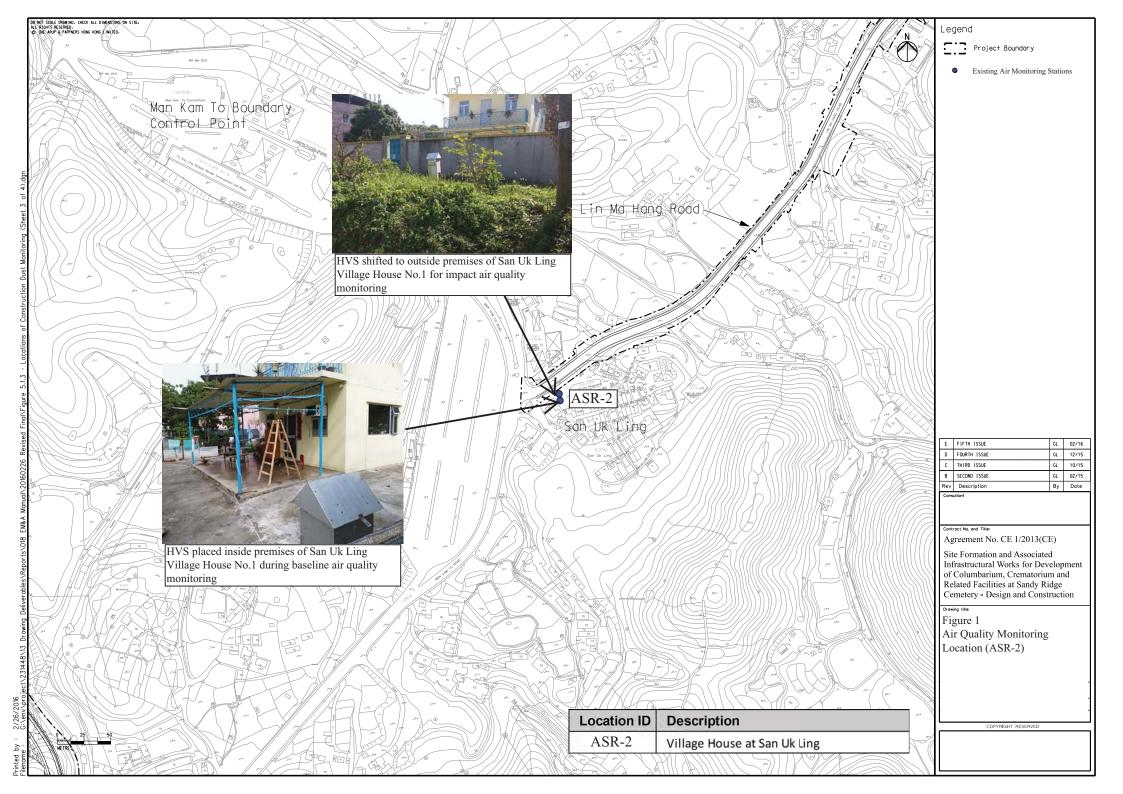
Appendix D

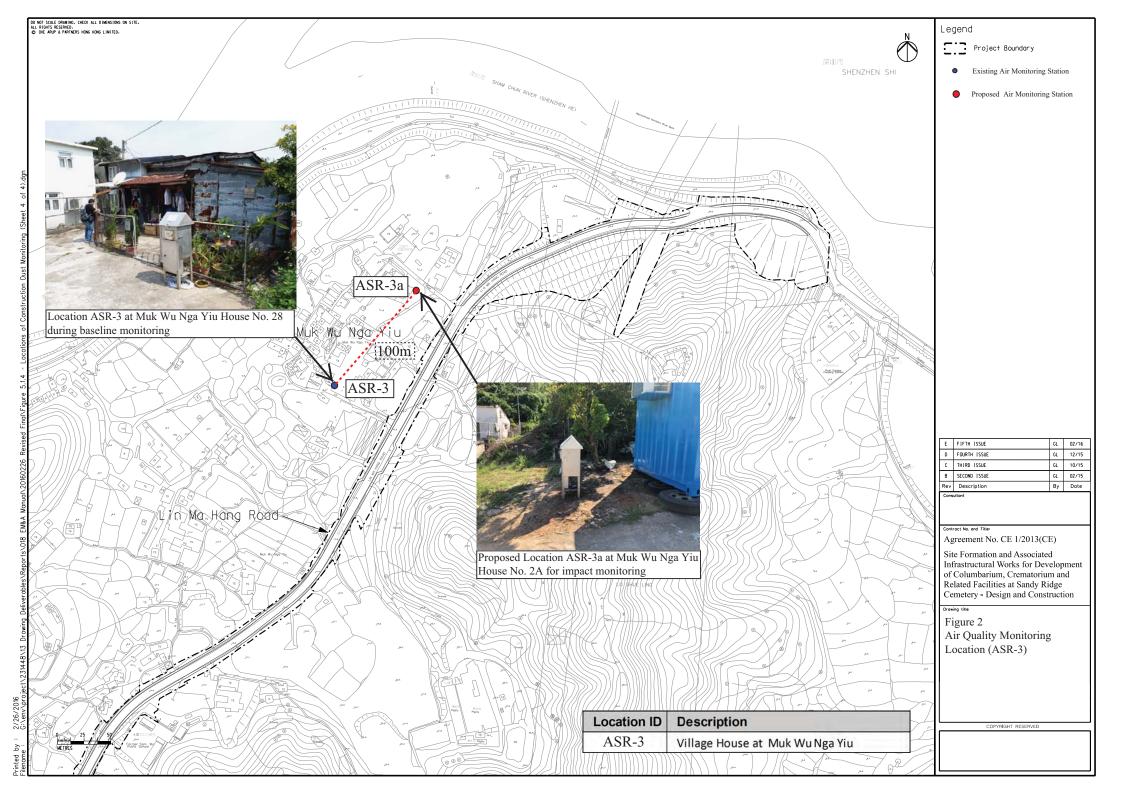
Monitoring Locations



Air Quality Monitoring Location



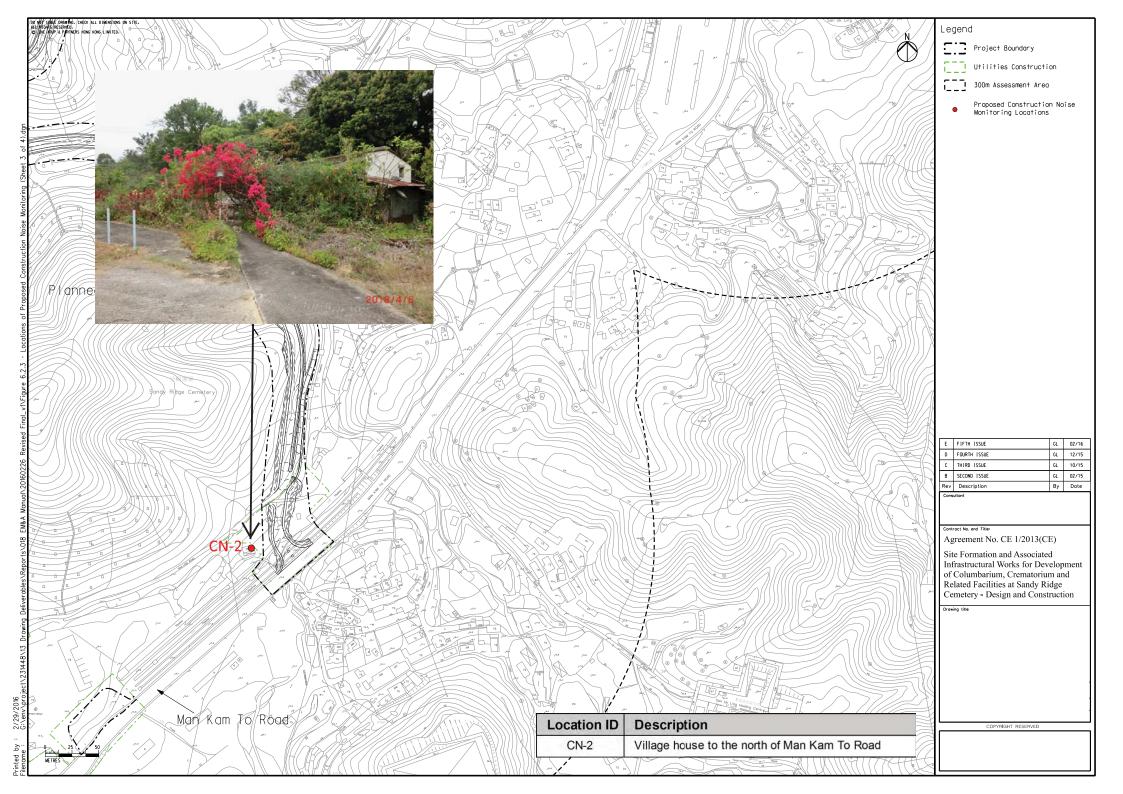


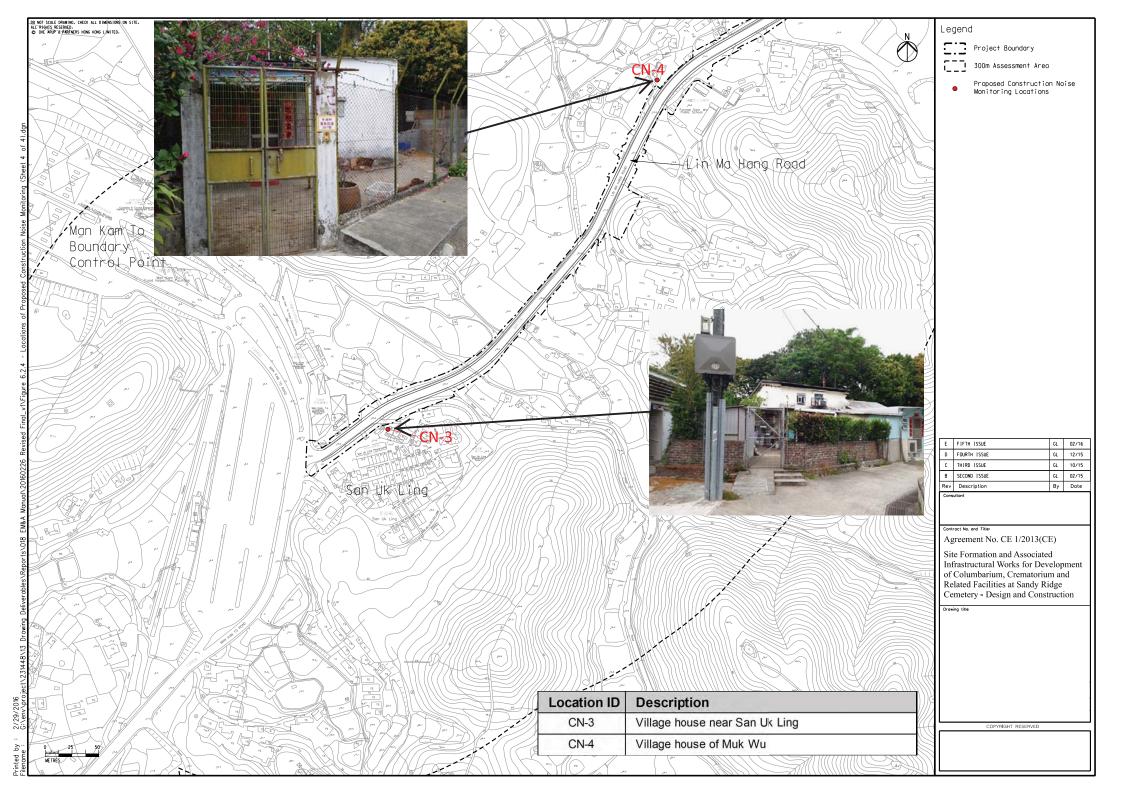




Noise Monitoring Location

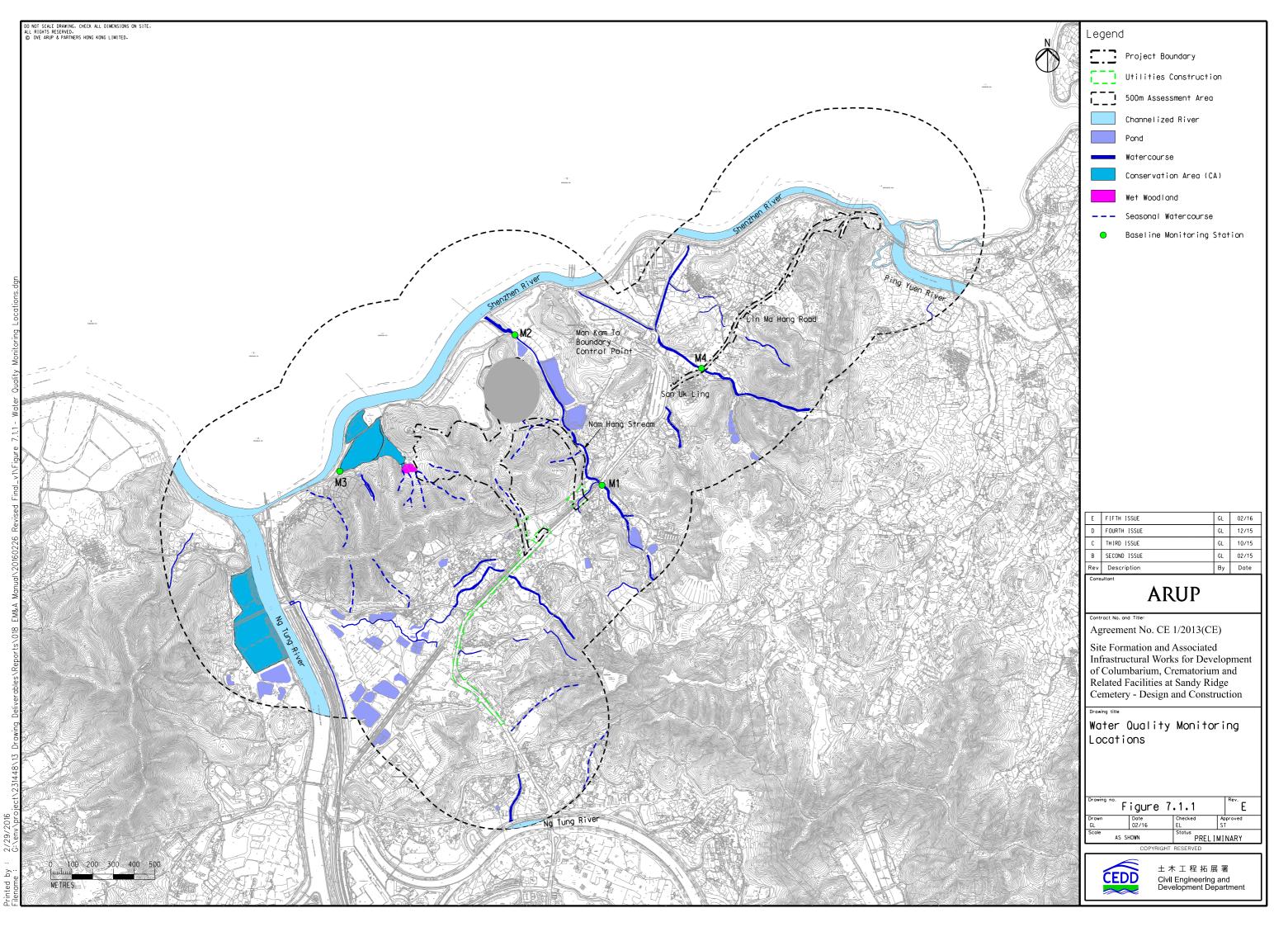








Water Quality Monitoring Station





Appendix E

Calibration Certificate of Monitoring Equipment and Laboratory Certificate



CALIBRATION CERTIFICATES FOR MONITORING EQUIPMENT USED IN THE REPORTING MONTH

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	3 Mar 22	17 Mar 22
1b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	21 Mar 22	4 Apr 22
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	3 Mar 22	17 Mar 22
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	21 Mar 22	4 Apr 22
3	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	3 Mar 22	17 Mar 22
3a	All	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	21 Mar 22	4 Apr 22
4		Calibration Kit TISCH Model TE-5025A Orifice ID 1612 and Rootsmeter S/N 438320	27 Dec 21	27 Dec 22
5		Laser Dust Monitor, Model AM510 (Serial No. 11008060) – EQ101	4 Feb22	4 Feb 23
6		Laser Dust Monitor, Model AM510 (Serial No. 11008017) – EQ102	4 Feb 22	4 Feb 23
7		Laser Dust Monitor, Model LD-3B (Serial No. 2X6145) – EQ105	15 Jan 22	15 Ja23
9		Rion NL- 52 Sound Level Meter (Serial No. 00921191) – EQ013	10 Sep 21	10 Sep 22
10	Noise	Rion NL- 52 Sound Level Meter (Serial No. 00142581) – EQ015	9 Nov 21	9 Nov 22
11		Rion NC - 74 Acoustical Calibrator (Serial No. 34657230) – EQ086	10 Sep 21	10 Sep 22
12	Weter	YSI Professional DSS (Serial No.20J101862)	10 Jan 22	10 Apr 22
13	Water	Global Water FP211 Flow Meter (Serial No. 1449006330)	1 Sep 21	1 Sep 22

Location: Sha Ling Village House No.6

Location ID: ASR-1 Date of Calibration: 3-Mar-22

Next Calibration Date: 17-Mar-22

Name and Model: TISCH HVS Model TE-5170

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C)

1017.2 19.5 Corrected Pressure (mm Hg) Temperature (K)

762.9 293

CALIBRATION ORIFICE

Make-> TISCH Model-> 5025A Serial # -> 1612

Qstd Slope -> Qstd Intercept -> 1.999838 -0.00903

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.05	6.05	12.1	1.764	55	56.14	Slope = 30.3854
13	4.90	4.90	9.8	1.588	48	49.00	Intercept = 1.2677
10	4.00	4.00	8.0	1.435	42	42.87	Corr. coeff. = 0.9925
7	2.45	2.45	4.9	1.124	36	36.75	
5	1.35	1.35	2.7	0.835	26	26.54	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Ostd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

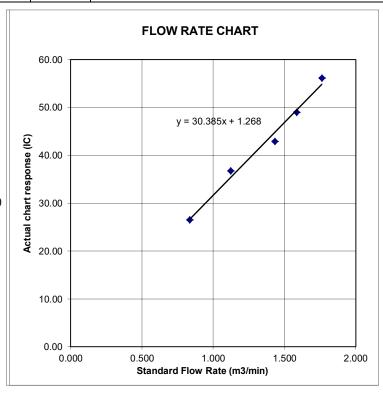
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: San Uk Ling Village House No.1

Location ID: ASR-2

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 3-Mar-22

Next Calibration Date: 17-Mar-22

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1017.2 19.5

Corrected Pressure (mm Hg)
Temperature (K)

762.9 293

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

1.999838 -0.00903

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.10	6.10	12.2	1.771	53	54.10	Slope = 30.7025
13	5.00	5.00	10.0	1.604	48	49.00	Intercept = -0.2297
10	3.85	3.85	7.7	1.408	42	42.87	Corr. coeff. = 0.9997
7	2.45	2.45	4.9	1.124	34	34.71	
5	1.50	1.50	3.0	0.880	26	26.54	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

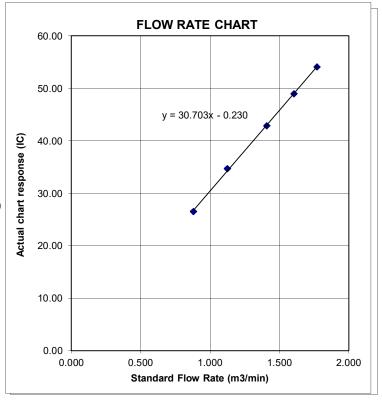
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: Muk Wu Nga Yiu House No.2A

Location ID: ASR-3a

Next Calibration: 3-Mar-22

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 3-Mar-22

Next Calibration Date: 17-Mar-22

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1017.2 19.5

Corrected Pressure (mm Hg)
Temperature (K)

762.9 293

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

0.00903

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.20	6.20	12.4	1.785	52	53.08	Slope = 29.7867
13	5.10	5.10	10.2	1.620	47	47.98	Intercept = -0.2013
10	3.80	3.80	7.6	1.399	40	40.83	Corr. coeff. = 0.9980
7	2.50	2.50	5.0	1.135	34	34.71	
5	1.50	1.50	3.0	0.880	25	25.52	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

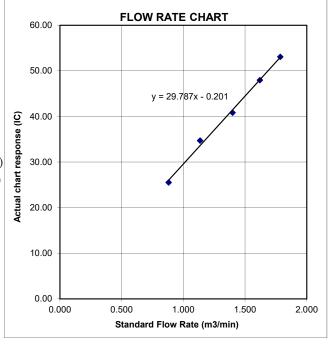
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature



Location: Sha Ling Village House No.6

Location ID: ASR-1

Name and Model: TISCH HVS Model TE-5170

Date of Calibration: 21-Mar-22 Next Calibration Date: 4-Apr-22

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa)
Temperature (°C)

1012.9 22.1 Corrected Pressure (mm Hg)
Temperature (K)

759.675 295

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept -> 1.999838

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.00	6.00	12.0	1.745	55	55.53	Slope = 30.4430
13	4.90	4.90	9.8	1.577	48	48.46	Intercept = 1.1575
10	3.90	3.90	7.8	1.408	42	42.40	Corr. coeff. = 0.9940
7	2.30	2.30	4.6	1.082	35	35.34	
5	1.35	1.35	2.7	0.830	26	26.25	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

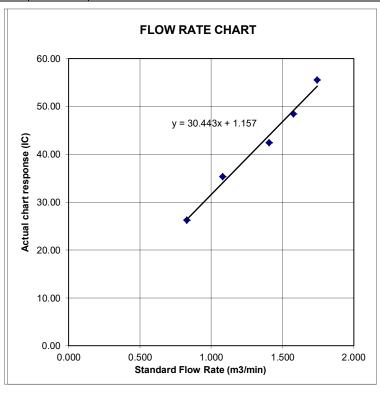
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: San Uk Ling Village House No.1

ASR-2

Date of Calibration: 21-Mar-22 Next Calibration Date: 4-Apr-22

Location ID: Name and Model: TISCH HVS Model TE-5170

Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa)

Temperature (°C)

1012.9

Corrected Pressure (mm Hg) Temperature (K)

759,675

CALIBRATION ORIFICE

Make-> TISCH Model-> 5025A

Serial # -> 1612

Qstd Slope -> Qstd Intercept -> 1.999838 -0.00903

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.10	6.10	12.2	1.759	54	54.52	Slope = 31.7633
13	4.90	4.90	9.8	1.577	48	48.46	Intercept = -2.0135
10	3.80	3.80	7.6	1.389	40	40.38	Corr. coeff. = 0.9962
7	2.40	2.40	4.8	1.105	33	33.32	
5	1.50	1.50	3.0	0.875	26	26.25	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

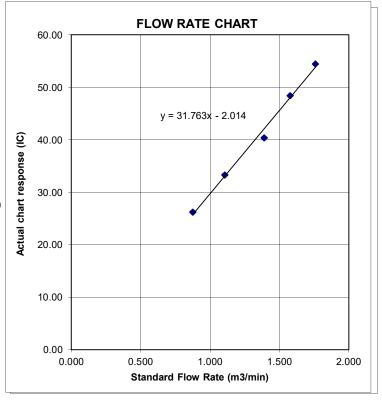
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: Muk Wu Nga Yiu House No.2A Date of Calibration: 21-Mar-22 Location ID: ASR-3a Next Calibration Date: 4-Apr-22

Name and Model: TISCH HVS Model TE-5170 Technician: Leung Ka Wai

CONDITIONS

Sea Level Pressure (hPa) 1012.9
Temperature (°C) 22.1

Corrected Pressure (mm Hg)
Temperature (K)

759.675 295

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Serial # -> 1612

Qstd Slope -> Qstd Intercept ->

0.00903

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.20	6.20	12.4	1.774	53	53.51	Slope = 28.4217
13	5.20	5.20	10.4	1.625	46	46.44	Intercept = 1.5500
10	3.80	3.80	7.6	1.389	40	40.38	Corr. coeff. = 0.9945
7	2.50	2.50	5.0	1.128	33	33.32	
5	1.40	1.40	2.8	0.845	26	26.25	

Calculations :

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)
Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

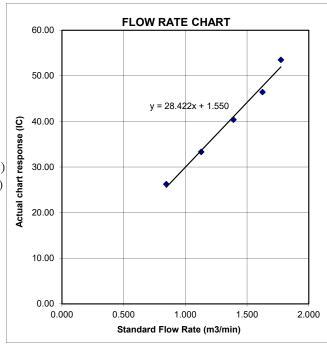
1/m((I)[Sgrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature





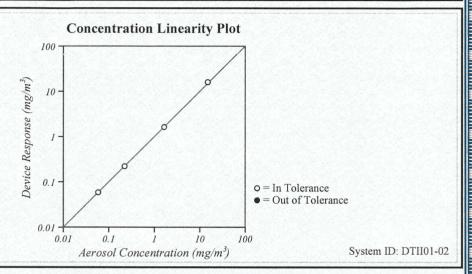
CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions		
Temperature	76.23 (24.6)	°F (°C)
Relative Humidity	19.5	%RH
Barometric Pressure	29.30 (992.2)	inHg (hPa)

Model	AM510	
Serial Number	11008060	

⊠ As Left	☐ In Tolerance	
☐ As Found	☐ Out of Tolerance	



Co	NCENTRATIO	νν					Unit: mg/m3
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	1.631	1.529	1.468~1.794	3	0.058	0.055	0.041~0.075
2	0.221	0.207	0.188~0.254	4	14.840	14.955	13.356~16.324

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, Al test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurement Variable	System ID	Last Cal.	Cal. Due	
DC Voltage	E003314	01-11-22	01-31-23	Photometer	E003319	08-30-21	02-28-22	
Microbalance	M001324	01-29-21	01-31-23	Pressure	E003511	10-26-21	10-31-22	
Flowmeter	E005626	03-09-21	03-31-22	DC Voltage	E003315	01-11-22	01-31-23	

Calibrated

February 4, 2022

Date



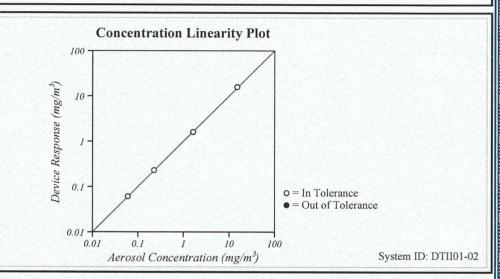
CERTIFICATE OF CALIBRATION AND TESTING

TSI Incorporated, 500 Cardigan Road, Shoreview, MN 55126 USA Tel: 1-800-874-2811 1-651-490-2811 Fax: 1-651-490-3824 http://www.tsi.com

Environment Conditions						
Temperature	76.22 (24.6)	°F (°C) %RH				
Relative Humidity	21.7					
Barometric Pressure	29.32 (992.9)	inHg (hPa)				

Model	AM510
Serial Number	11008017

☐ As Left ☐ In Tolerance ☐ Out of Tolerance



Co	NCENTRATIO	N .			Unit: mg/m3		
#	STANDARD	MEASURED	ALLOWABLE RANGE	#	STANDARD	MEASURED	ALLOWABLE RANGE
1	1.609	1.505	1.448~1.770	3	0.059	0.057	0.041~0.077
2	0.223	0.216	0.190~0.256	4	14.848	14.816	13.363~16.333

TSI Incorporated does hereby certify that all materials, components, and workmanship used in the manufacture of this equipment are in strict accordance with the applicable specifications agreed upon by TSI and the customer and with all published specifications. All performance and acceptance tests required under this contract were successfully conducted according to required specifications. There is no NIST standard for optical mass measurements. Calibration of this instrument performed by TSI has been done using emery oil and has been nominally adjusted to respirable mass per standard ISO 12103-1, Al test dust (Arizona dust). Our calibration ratio is greater than 4:1

Measurement Variable	System ID	Last Cal.	Cal. Due	Measurem	ent Variable	System ID	Last Cal.	Cal. Due
DC Voltage	E003314	01-11-22	01-31-23	Pl	notometer	E003319	08-30-21	02-28-22
Microbalance	M001324	01-29-21	01-31-23		Pressure	E003511	10-26-21	10-31-22
Flowmeter	E005626	03-09-21	03-31-22	D	C Voltage	E003315	01-11-22	01-31-23

Calibrated

February 4, 2022

Date

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES



SUB-CONTRACTING REPORT

CONTACT : MR BEN TAM WORK ORDER : HK2210522

CLIENT : ACTION-UNITED ENVIRONMENTAL

SERVICES & CONSULTING

ADDRESS : RM A 20/F., GOLD KING IND BLDG, NO. 35-41 SUB-BATCH :

TAI LIN PAI ROAD, KWAI CHUNG, N.T.

DATE RECEIVED : 18-MAR-2022

DATE OF ISSUE : 28-MAR-2022

PROJECT : ---- NO. OF SAMPLES : 1

CLIENT ORDER :---

General Comments

 Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Calibration was subcontracted to and analysed by Action United Environmental Services & Consulting.

Signatories

This document has been signed by those names that appear on this report and are the authorised signatories

Signatories Position

0

Richard Fung Managing Director

This is the Final Report and supersedes any preliminary report with this batch number.

All pages of this report have been checked and approved for release.

: HK2210522 WORK ORDER

SUB-BATCH

: 1 : ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING CLIENT

PROJECT



ALS Lab	Client's Sample ID	Sample	Sample Date	External Lab Report No.
ID		Туре		
HK2210522-001	S/N: 2X6145	AIR	18-Mar-2022	S/N: 2X6145

Equipment Verification Report (TSP)

Equipment Calibrated:

Type: Laser Dust monitor

Manufacturer: Sibata LD-3B

Serial No. 2X6145

Equipment Ref: EQ105

Standard Equipment:

Standard Equipment: Higher Volume Sampler (TSP)

Location & Location ID: AUES office (calibration room)

Equipment Ref: HVS 018 & HVS 019

Last Calibration Date: 5 November 2021 & 13 December 2021

Equipment Verification Results:

Verification Date: 20 December 2021 & 7 January 2022

Date	Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in ug/m³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/min)
7 Jan 22	2hr	11:55 ~ 13:55	18.6	1021.6	55.1	2445	20.4
7 Jan 22	2hr27mins	14:23 ~ 16:50	18.6	1021.6	54.8	2316	15.8
7 Jan 22	2hr09mins	16:50 ~ 18:59	18.6	1021.6	56.5	2504	19.4
20 Dec 21*	45mins	10:15 ~ 11:00	20.5	1008.7	472.0	9410	209.1
20 Dec 21*	31mins	11:05 ~ 11:36	20.5	1008.7	187.2	3955	129.2

^(*) Suspended particle was added into calibration room of HVS019 for high concentration test.

Sensitivity Adjustment Scale Setting (Before Calibration)

Sensitivity Adjustment Scale Setting (After Calibration)

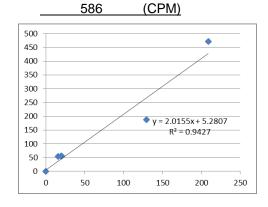
586 (CPM)

Linear Regression of Y or X

Slope (K-factor): $2.0155 (\mu g/m^3)/CPM$

Correlation Coefficient (R) 0.9709

Date of Issue 15 January 2022



Remarks:

- 1. **Strong** Correlation (R>0.8)
- 2. Factor 2.0155 (µg/m³)/CPM should be apply for TSP monitoring

*If R<0.5, repair or re-verification is required for the equipment

Operator : _____ Fai So Signature : _____ Date : ____ 15 January 2022

QC Reviewer: Ben Tam Signature: Date: 15 January 2022

Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 5-Nov-21
Location ID: Calibration Room Next Calibration Date: 5-Feb-22

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1012.5 25.6

Corrected Pressure (mm Hg)
Temperature (K)

759.375 299

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 19-Jan-21

Qstd Slope -> Qstd Intercept -> Expiry Date-> 2.10574 -0.00985 18-Jan-22

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.2	6.2	12.4	1.675	52	51.93	Slope = 24.2092
13	5	5	10.0	1.504	48	47.93	Intercept = 10.8881
10	3.9	3.9	7.8	1.329	42	41.94	Corr. coeff. = 0.9959
8	2.5	2.5	5.0	1.065	36	35.95	
5	1.0	1.0	2.0	0.675	28	27.96	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Ostd = standard flow rate

IC = corrected chart respones

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

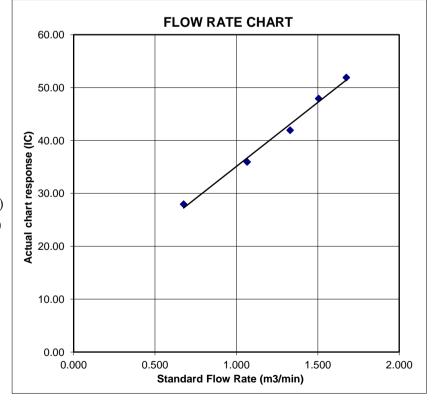
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tay = daily average temperature



Location: Gold King Industrial Building, Kwai Chung Date of Calibration: 13-Dec-21

Location: Date of Calibration Page New Calibration Page 13 May 22

Location ID: Calibration Room Next Calibration Date: 13-Mar-22

CONDITIONS

Sea Level Pressure (hPa) Temperature (°C) 1014.3 24.0

Corrected Pressure (mm Hg)
Temperature (K)

760.725

CALIBRATION ORIFICE

Make-> TISCH
Model-> 5025A
Calibration Date-> 19-Jan-21

Qstd Slope -> Qstd Intercept -> Expiry Date-> 2.10574 -0.00985 18-Jan-22

CALIBRATION

Plate	H20 (L)	H2O (R)	H20	Qstd	I	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.2	6.2	12.4	1.681	52	52.11	Slope = 36.4525
13	4.9	4.9	9.8	1.495	44	44.10	Intercept = -9.0200
10	3.7	3.7	7.4	1.299	40	40.09	Corr. coeff. = 0.9943
8	2.4	2.4	4.8	1.047	30	30.06	
5	1.5	1.5	3.0	0.829	20	20.04	

Calculations:

Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b]

IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]

Qstd = standard flow rate

IC = corrected chart response

I = actual chart response

m = calibrator Qstd slope

b = calibrator Qstd intercept

Ta = actual temperature during calibration (deg K)

Pstd = actual pressure during calibration (mm Hg)

For subsequent calculation of sampler flow:

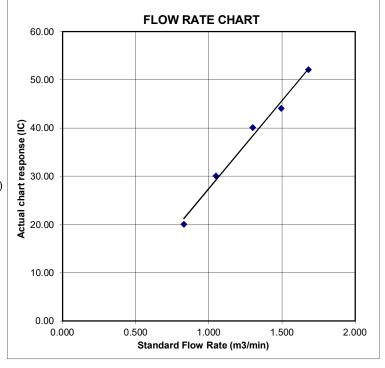
1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)

m = sampler slope

b = sampler intercept

I = chart response

Tav = daily average temperature





RECALIBRATION DUE DATE:

January 19, 2022

Certificate of Calibration

Calibration Certification Information

Cal. Date: January 19, 2021

Rootsmeter S/N: 438320

Ta: 294
Pa: 755.1

°K

Operator: Jim Tisch

Calibration Model #:

TE-5025A

Calibrator S/N: 1941

mm Hg

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4830	3.2	2.00
2	3	4	1	1.0420	6.4	4.00
3	5	6	1	0.9290	8.0	5.00
4	7	8	1	0.8840	8.8	5.50
5	9	10	1	0.7340	12.9	8.00

	Data Tabulation							
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	$\sqrt{\Delta H (Ta/Pa)}$			
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)			
1.0029	0.6762	1.4192	0.9958	0.6715	0.8824			
0.9986	0.9583	2.0071	0.9915	0.9516	1.2479			
0.9965	1.0726	2.2440	0.9894	1.0650	1.3952			
0.9954	1.1260	2.3535	0.9883	1.1180	1.4633			
0.9899	1.3487	2.8385	0.9829	1.3391	1.7648			
	m=	2.10574		m=	1.31858			
QSTD	b=	-0.00985	QA	b=	-0.00612			
-	r=	0.99992	,	r=	0.99992			

Calculations							
Vstd= ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va= ΔVol((Pa-ΔP)/Pa)						
Qstd= Vstd/∆Time	Qa= Va/ΔTime						
For subsequent flow rate calculations:							
Qstd= $1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	$\mathbf{Qa} = 1/m \left(\left(\sqrt{\Delta H \left(Ta/Pa \right)} \right) - b \right)$						

Standard Conditions						
Tstd:	298.15 °K					
Pstd:	760 mm Hg					
Key						
ΔH: calibrator manometer reading (in H2O)						
ΔP: rootsmeter manometer reading (mm Hg)						
Ta: actual absolute temperature (°K)						
Pa: actual barometric pressure (mm Hg)						
b: intercept						
m: slope						

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

FAX: (513)467-9009



RECALIBRATION DUE DATE:

February 7, 2021

Certificate of Calibration

Calibration Certification Information

Cal. Date: February 7, 2020 Rootsmeter S/N: 438320

Ta: 295 °K

Operator: Jim Tisch **Pa:** 745.5 mm Hg

Calibration Model #: TE-5025A Calibrator S/N: 1612

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3730	3.2	2.00
2	3	4	1	0.9820	6.4	4.00
3	5	6	1	0.8780	8.0	5.00
4	7	8	1	0.8340	8.8	5.50
5	9	10	1	0.6900	12.8	8.00

	Data Tabulation								
Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right) \left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)				
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)				
0.9866	0.7186	1.4078	0.9957	0.7252	0.8896				
0.9824	1.0004	1.9909	0.9914	1.0096	1.2581				
0.9802	1.1165	2.2259	0.9893	1.1267	1.4066				
0.9792	1.1741	2.3345	0.9882	1.1849	1.4753				
0.9739	1.4114	2.8155	0.9828	1.4244	1.7792				
	m=	2.03014		m=	1.27124				
QSTD	b=	-0.04616	QA	b=	-0.02917				
	r=	0.99995		r=	0.99995				

Calculations							
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)				
Qstd=	Vstd/∆Time	Qa=	Va/ΔTime				
For subsequent flow rate calculations:							
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$				

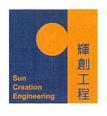
Standard Conditions						
Tstd:	298.15 °K					
Pstd:	760 mm Hg					
Key						
ΔH: calibrator manometer reading (in H2O)						
ΔP: rootsmeter manometer reading (mm Hg)						
Ta: actual absolute temperature (°K)						
Pa: actual barometric pressure (mm Hg)						
b: intercept						
m: slone						

RECALIBRATION

US EPA recommends annual recalibration per 1998
40 Code of Federal Regulations Part 50 to 51,
Appendix B to Part 50, Reference Method for the
Determination of Suspended Particulate Matter in
the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C215420

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-1765)

Date of Receipt / 收件日期: 26 August 2021

Description / 儀器名稱

Sound Level Meter (EQ013)

Manufacturer / 製造商

Rion

Model No. / 型號 Serial No. / 編號 NL-52 00921191

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 (50 ± 25) %

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST/測試日期

10 September 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

K P Cheuk

Project Engineer

Certified By 核證

K C Lee Engineer Date of Issue

13 September 2021

Lee 簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



輝創工程有限公司

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Certificate of Calibration

Certificate No.:

C215420

證書編號

仪止起音

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment:

Equipment ID

Description

Certificate No.

CL280

40 MHz Arbitrary Waveform Generator

C210084

CL281

Multifunction Acoustic Calibrator

AV210017

5. Test procedure: MA101N.

6. Results:

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

	UUT Setting					UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L _A	A	Fast	94.00	1	94.2	± 1.1

6.1.2 Linearity

-	UU'	Γ Setting	Applied	d Value	UUT		
Range	Range Function Frequence		Time	Level	Freq.	Reading	
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	
30 - 130	L_{A}	A	Fast	94.00	1	94.2 (Ref.)	
	1 5000)			104.00		104.2	
				114.00		114.1	

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

6.2 Time Weighting

	UUT Setting			Applied Value		UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_A	A	Fast	94.00	1	94.2	Ref.
			Slow			94.2	± 0.3

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C215420

證書編號

6.3 Frequency Weighting

A-Weighting 6.3.1

A-weighting										
		Applied Value		UUT	IEC 61672					
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.			
(dB)		Weighting	Weighting	(dB)	-	(dB)	(dB)			
30 - 130	L_A	A	Fast	94.00	63 Hz	67.9	-26.2 ± 1.5			
					125 Hz	78.0	-16.1 ± 1.5			
					250 Hz	85.5	-8.6 ± 1.4			
					500 Hz	91.0	-3.2 ± 1.4			
					1 kHz	94.2	Ref.			
					2 kHz	95.4	$+1.2 \pm 1.6$			
					4 kHz	95.2	$+1.0 \pm 1.6$			
					8 kHz	93.2	-1.1 (+2.1; -3.1)			
					16 kHz	86.2	-6.6 (+3.5 ; -17.0)			

6.3.2 C-Weighting

C Weighting		Applied Value		UUT	IEC 61672		
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{C}	С	Fast	94.00	63 Hz	93.3	-0.8 ± 1.5
					125 Hz	94.0	-0.2 ± 1.5
					250 Hz	94.2	0.0 ± 1.4
					500 Hz	94.2	0.0 ± 1.4
					1 kHz	94.2	Ref.
					2 kHz	94.0	-0.2 ± 1.6
					4 kHz	93.4	-0.8 ± 1.6
					8 kHz	91.3	-3.0 (+2.1; -3.1)
					16 kHz	84.3	-8.5 (+3.5 ; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
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Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C215420

證書編號

Remarks: - UUT Microphone Model No.: UC-59 & S/N: 12910

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value: 94 dB : 63 Hz - 125 Hz $: \pm 0.35 \text{ dB}$

> 250 Hz - 500 Hz : \pm 0.30 dB 1 kHz $\pm 0.20 \text{ dB}$

2 kHz - 4 kHz $: \pm 0.35 \text{ dB}$ 8 kHz $: \pm 0.45 \, dB$: $\pm 0.70 \ dB$ 16 kHz

104 dB: 1 kHz $\pm 0.10 \text{ dB (Ref. 94 dB)}$

114 dB: 1 kHz $\pm 0.10 \text{ dB (Ref. 94 dB)}$

Note:

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Fax/傳真: (852) 2744 8986

Tel/電話: (852) 2927 2606

⁻ The uncertainties are for a confidence probability of not less than 95 %.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C216480

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-2189)

Date of Receipt / 收件日期: 25 October 2021

Description / 儀器名稱

Sound Level Meter (EQ015)

Manufacturer / 製造商

Rion

Model No. / 型號

NL-52

Serial No. / 編號

00142581

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規範

Calibration

DATE OF TEST / 測試日期

9 November 2021

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification. (after adjustment)

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies

- Fluke Everett Service Center, USA

Tested By

測試

K P Cheuk Project Engineer

Certified By

K C Lee

Date of Issue 簽發日期

10 November 2021

核證

Engineer

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C216480

證書編號

The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to 1. warm up for over 10 minutes before the commencement of the test.

Self-calibration using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2. 2.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment:

Equipment ID

Description

Certificate No.

CL280

40 MHz Arbitrary Waveform Generator

C210084

CL281

Multifunction Acoustic Calibrator

AV210017

Test procedure: MA101N. 5.

6. Results:

6.1 Sound Pressure Level

Reference Sound Pressure Level 6.1.1

6.1.1.1 Before Adjustment

	UUT	Setting		Applie	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_A	A	Fast	94.00	1	* 96.3	± 1.1

^{*} Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

	UUT	Setting		Applied	d Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A.	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting			Applied Value		UUT	
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

IEC 61672 Class 1 Spec. : \pm 0.6 dB per 10 dB step and \pm 1.1 dB for overall different.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory

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Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C216480

證書編號

Time Weighting 6.2

UUT Setting			Applie	d Value	UUT	IEC 61672	
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	1	94.0	Ref.
			Slow			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

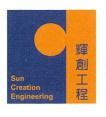
A-weighting		Setting		Appli	ed Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{A}	A	Fast	94.00	63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.5
					250 Hz	85.4	-8.6 ± 1.4
	,				500 Hz	90.8	-3.2 ± 1.4
					1 kHz	94.0	Ref.
		4			2 kHz	95.3	$+1.2 \pm 1.6$
		-			4 kHz	95.1	$+1.0 \pm 1.6$
					8 kHz	93.0	-1.1 (+2.1; -3.1)
					16 kHz	86.1	-6.6 (+3.5 ; -17.0)

6.3.2 C-Weighting

	UUT	Setting		Applie	ed Value	UUT	IEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)	-	Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_{C}	С	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.9	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
		,			500 Hz	94.1	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.3	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1; -3.1)
					16 kHz	84.2	-8.5 (+3.5; -17.0)

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.
本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing. Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 - 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓 Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C216480

證書編號

Remarks: - UUT Microphone Model No.: UC-59 & S/N: 20044

- Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB : 63 Hz - 125 Hz

 $: \pm 0.35 \text{ dB}$: \pm 0.30 dB

250 Hz - 500 Hz 1 kHz $: \pm 0.20 \text{ dB}$

2 kHz - 4 kHz : $\pm 0.35 \text{ dB}$

8 kHz : \pm 0.45 dB $: \pm 0.70 \text{ dB}$

16 kHz

 $: \pm 0.10 \text{ dB (Ref. 94 dB)}$

104 dB: 1 kHz 114 dB: 1 kHz

 $: \pm 0.10 \text{ dB (Ref. 94 dB)}$

- The uncertainties are for a confidence probability of not less than 95 %.

Note:

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration

Certificate No.:

C215419

證書編號

校正證書

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC21-1345)

Date of Receipt / 收件日期: 26 August 2021

Description / 儀器名稱

Sound Calibrator (EQ086)

Manufacturer / 製造商

Rion

Model No. / 型號 Serial No. / 編號

NC-74 34657230

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

10 September 2021

TEST RESULTS / 測試結果

DATE OF TEST / 測試日期

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

K P Cheuk Project Engineer

Certified By

核證

K C Lee Engineer Date of Issue

13 September 2021

簽發日期

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C215419

證書編號

The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement 1. of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment:

Equipment ID

Description

Certificate No.

CL130

Universal Counter

C213954

CL281

Multifunction Acoustic Calibrator

AV210017

TST150A

Measuring Amplifier

C201309

4. Test procedure: MA100N.

5. Results:

Sound Level Accuracy

Sound Level Meeting			
UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.1	± 0.3	± 0.2

Frequency Accuracy

requested recounted			
UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.002	1 kHz ± 1 %	± 1

Remark: The uncertainties are for a confidence probability of not less than 95 %.

Only the original copy or the laboratory's certified true copy is valid.

The values given in this Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration is traceable to the National Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laborator



ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR BEN TAM WORK ORDER: HK2200373

CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES &

CONSULTING

ADDRESS: RM A 20/F., GOLD KING IND BLDG, SUB-BATCH: 0

NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. LABORATORY: HONG KONG

DATE RECEIVED: 04-Jan-2022 DATE OF ISSUE: 11-Jan-2022

SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

Equipment Type: Multifunctional Meter Service Nature: Performance Check

Scope: pH Value and Temperature

Brand Name/ Model No.: [YSI]/ [Professional DSS]

Serial No./ Equipment No.: [20J101862/15H103928]/ [EQW018]

Date of Calibration: 10-January-2022

GENERAL COMMENTS

This is the Final Report and supersedes any previous report(s) with this reference.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganics

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK2200373

SUB-BATCH: 0

DATE OF ISSUE: 11-Jan-2022

CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter

Brand Name/ Model No.:

[YSI]/ [Professional DSS]

Serial No./ Equipment No.:

[20J101862/15H103928]/[EQW018]

Date of Calibration: 10-January-2022 Date of Next Calibration: 10-

10-April-2022

PARAMETERS:

pH Value Method Ref: APHA (21st edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.99	-0.01
7.0	7.13	+0.13
10.0	10.08	+0.08
	Tolerance Limit (pH unit)	±0.20

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical

Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
11.5	10.8	-0.7
21.0	20.5	-0.5
39.5	38.2	-1.3
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganic



ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR BEN TAM WORK ORDER: HK2200373

CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES &

CONSULTING

ADDRESS: RM A 20/F., GOLD KING IND BLDG, SUB-BATCH: 0

NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. LABORATORY: HONG KONG

DATE RECEIVED: 04-Jan-2022 DATE OF ISSUE: 11-Jan-2022

SPECIFIC COMMENTS

Equipment information (Brand name, Model No., Serial No. and Equipment No.) is provided by client.

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the laboratory or quoted from relevant international standards.

The validity of equipment/ meter performance only applies to the result(s) stated in the report.

Equipment Type: Multifunctional Meter Service Nature: Performance Check

Scope: pH Value and Temperature

Brand Name/ Model No.: [YSI]/ [Professional DSS]

Serial No./ Equipment No.: [20J101862/15H103928]/ [EQW018]

Date of Calibration: 10-January-2022

GENERAL COMMENTS

This is the Final Report and supersedes any previous report(s) with this reference.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganics

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK2200373

SUB-BATCH: 0

DATE OF ISSUE: 11-Jan-2022

CLIENT: ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING

Equipment Type: Multifunctional Meter

Brand Name/ Model No.:

[YSI]/ [Professional DSS]

Serial No./ Equipment No.:

[20J101862/15H103928]/[EQW018]

Date of Calibration: 10-January-2022 Date of Next Calibration: 10-

10-April-2022

PARAMETERS:

pH Value Method Ref: APHA (21st edition), 4500H: B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	3.99	-0.01
7.0	7.13	+0.13
10.0	10.08	+0.08
	Tolerance Limit (pH unit)	±0.20

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical

Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
11.5	10.8	-0.7
21.0	20.5	-0.5
39.5	38.2	-1.3
	Tolerance Limit (°C)	±2.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Ms. Lin Wai Yu, Iris

Assistant Manager - Inorganic



Hong Kong Accreditation Service 香港認可處

Certificate of Accreditation

認可證書

This is to certify that 特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F, Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong 香港新界葵涌永業街1-3號忠信針織中心11樓

is accredited by the Hong Kong Accreditation Service (HKAS) to ISO/IEC 17025:2017 for performing specific laboratory activities as listed in the scope of accreditation within the test category of 獲香港認可處根據ISO/IEC 17025:2017認可 進行載於認可範圍內下述測試類別中的指定實驗所活動

Environmental Testing

環境測試

This accreditation to ISO/IEC 17025:2017 demonstrates technical competence for a defined scope and the implementation of a management system relevant to laboratory operation (see joint IAF-ILAC-ISO Communiqué).

此項 ISO/IEC 17025:2017 的認可資格證明此實驗所具備指定範疇內所須的技術能力並 實施一套與實驗所運作相關的管理體系 (見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報)。

The common seal of HKAS is affixed hereto by the authority of the HKAS Executive 現經香港認可處執行機關授權在此蓋上香港認可處的印章

SHUM Wai-leung, Executive Administrator

執行幹事 沈偉良

Issue Date: 28 February 2020

簽發日期:二零二零年二月二十八日

Registration Number: HOKLAS 066

註冊號碼:



Date of First Registration: 15 September 1995 首次註冊日期:一九九五年九月十五日



Appendix F

Event and Action Plan of Air Quality, Noise and Water Quality



Event and Action Plan for air quality

D 4		Actio		
Event	ET	IEC	ER	Contractor
Action level exceedance for one sample	I. Identify source, investigate the causes of exceedance and propose remedial measures; Inform IEC and ER; Repeat measurement to confirm finding; Increase monitoring frequency to daily.	Check monitoring data submitted by ET; Check Contractor's working method.	1. Notify Contractor	Rectify any unacceptable practice; Amend working methods if appropriate.
Action level exceedance for two or more consecutive samples	1. Identify source; 2. Inform IEC and ER; 3. Advise the ER on the effectiveness of the proposed remedial measures; 4. Repeat measurements to confirm findings; 5. Increase monitoring frequency to daily; 6. Discuss with IEC and Contractor on remedial actions required; 7. If exceedance continues, arrange meeting with IEC and ER; 8. If exceedance stops, cease additional monitoring.	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ET on the effectiveness of the proposed remedial measures; Supervise Implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented.	Submit proposals for remedial to ER within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for one sample	I. Identify source, investigate the causes of exceedance and propose remedial measures; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.	Check monitoring data submitted by ET; Check Contractor's working method; Discuss with ET and Contractor on possible remedial measures; Advise the ER on the effectiveness of the proposed remedial measures; Supervise implementation of remedial measures.	Confirm receipt of notification of failure in writing; Notify Contractor; Ensure remedial measures properly implemented.	Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
Limit level exceedance for two or more consecutive samples	Notify IEC, ER, Contractor and EPD; Identify source; Repeat measurement to confirm findings; Increase monitoring frequency to daily; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Arrange meeting with IEC and ER to discuss the remedial actions to be taken; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring.	Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.

Note: ET – Environmental Team IEC – Independent Environmental Checker ER – Engineer's Representative



Event and Action Plan for Construction Noise

Event		Act	tion	
Event	ET	IEC	ER	Contractor
Action Level	1. Notify IEC, ER and Contractor;	1. Review the analyzed results	1. Confirm receipt of notification of	1. Submit noise mitigation proposals to
Exceedance	2. Carry out investigation;	submitted by the ET;	failure in writing;	IEC and ER;
	3. Report the results of investigation to	2. Review the proposed remedial	2. Notify Contractor;	2. Implement noise mitigation proposals
	the IEC, ER and Contractor;	measures by the Contractor and	3. Require Contractor to propose	
	4. Discuss with the Contractor and	advise the ER accordingly;	remedial measures for the analyzed	
	formulate remedial measures;	3. Supervise the implementation of	noise problem;	
	5. Increase monitoring frequency to	remedial measures.	4. Ensure remedial measures are	
	check mitigation effectiveness		properly implemented	
Limit Level	1. Identify source;	1. Discuss amongst ER, ET, and	1. Confirm receipt of notification of	1. Take immediate action to avoid
Exceedance	2. Inform IEC, ER, EPD and Contractor;	Contractor on the potential remedial	failure in writing;	further exceedance;
	3. Repeat measurements to confirm	actions;	2. Notify Contractor;	2. Submit proposals for remedial actions
	findings;	2. Review Contractors remedial actions	3. Require Contractor to propose	to IEC within 3 working days of
	4. Increase monitoring frequency;	whenever necessary to assure their	remedial measures for the analyzed	notification;
	5. Carry out analysis of Contractor's	effectiveness and advise the ER	noise problem;	3. Implement the agreed proposals;
	working procedures to determine	accordingly;	4. Ensure remedial measures properly	4. Resubmit proposals if problem still
	possible mitigation to be	3. Supervise the implementation of	implemented;	not under control;
	implemented;	remedial measures.	5. If exceedance continues, consider	5. Stop the relevant portion of works as
	6. Inform IEC, ER and EPD the causes		what portion of the work is	determined by the ER until the
	and actions taken for the		responsible and instruct the	exceedance is abated.
	exceedances;		Contractor to stop that portion of	
	7. Assess effectiveness of Contractor's		work until the exceedance is abated.	
	remedial actions and keep IEC, EPD			
	and ER informed of the results;			
	8. If exceedance stops, cease additional			
	monitoring.			

Note:

ET – Environmental Team

IEC – Independent Environmental Checker

ER – Engineer's Representative



Event and Action Plan for Water Quality

Event			Action	
Event	ET	IEC	ER	Contractor
Action level exceedance for one sampling day	Inform IEC, Contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; and Discuss remedial measures with IEC and Contractor and ER.	Discuss with ET, ER and Contractor on the implemented mitigation measures; Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with IEC, ET and Contractor on the implemented mitigation measures; Make agreement on the remedial measures to be implemented; Supervise the implementation of agreed remedial measures.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and Implement the agreed mitigation measures.
Action level exceedance for more than one consecutive sampling days	Repeat in-situ measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss remedial measures with IEC, contractor and ER Ensure remedial measures are implemented	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the proposed mitigation measures; Make agreement on the remedial measures to be implemented; and Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and Implement the agreed mitigation measures.
Limit level exceedance for one sampling day	Repeat measurement on next day of exceedance to confirm findings; Inform IEC, contractor and ER; Rectify unacceptable practice; Check monitoring data, all plant, equipment and Contractor's working methods; Consider changes of working methods; Discuss mitigation measures with IEC, ER and Contractor; and Ensure the agreed remedial measures are implemented	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the implemented remedial measures; Request Contractor to critically review the working methods; Make agreement on the remedial measures to be implemented; and Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	 Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and Implement the agreed remedial measures.
Limit level exceedance for more than one consecutive sampling days	1. Inform IEC, contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; 3. Discuss mitigation measures with IEC, ER and Contractor; 4. Ensure mitigation measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days	Discuss with ET, Contractor and ER on the implemented mitigation measures; Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	Discuss with ET, IEC and Contractor on the implemented remedial measures; Request Contractor to critically review the working methods; Make agreement on the remedial measures to be implemented; Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level.	I. Identify source(s) of impact; Inform the ER and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment and consider changes of working methods; Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and Implement the agreed remedial measures; and As directed by the ER, to slow down or stop all or part of the construction activities until no exceedance of Limit level.

Note: ET – Environmental Team IEC – Independent Environmental Checker ER – Engineer's Representative Each step of actions required shall be implemented within 1 working day unless otherwise specified or agreed with EPD.



Appendix G

Monitoring Schedules of the Reporting Month and Coming Month



Impact Monitoring Schedule of Air Quality, Noise and Water Quality - March 2021

	D 4	N. N.	Air Quality	y Monitoring	W 4 O P4
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Tue	1-Mar-22				
Wed	2-Mar-22				✓
Thu	3-Mar-22				
Fri	4-Mar-22			✓	✓
Sat	5-Mar-22		✓		
Sun	6-Mar-22				
Mon	7-Mar-22				
Tue	8-Mar-22				✓
Wed	9-Mar-22				
Thu	10-Mar-22			✓	✓
Fri	11-Mar-22	✓	✓		
Sat	12-Mar-22				✓
Sun	13-Mar-22				
Mon	14-Mar-22				
Tue	15-Mar-22				✓
Wed	16-Mar-22			✓	
Thu	17-Mar-22	✓	✓		✓
Fri	18-Mar-22				
Sat	19-Mar-22				✓
Sun	20-Mar-22				
Mon	21-Mar-22				
Tue	22-Mar-22			✓	✓
Wed	23-Mar-22	✓	✓		
Thu	24-Mar-22				✓
Fri	25-Mar-22				
Sat	26-Mar-22				✓
Sun	27-Mar-22				
Mon	28-Mar-22			✓	
Tue	29-Mar-22	✓	✓		✓
Wed	30-Mar-22				
Thu	31-Mar-22				✓

✓	Monitoring Day
	Sunday or Public Holiday



Impact Monitoring Schedule of Air Quality, Noise and Water Quality – April 2022

	D (N . N	Air Quality	y Monitoring	W 4 0 W
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Fri	1-Apr-22				
Sat	2-Apr-22			✓	✓
Sun	3-Apr-22				
Mon	4-Apr-22	✓	✓		✓
Tue	5-Apr-22				
Wed	6-Apr-22				
Thu	7-Apr-22				✓
Fri	8-Apr-22			✓	
Sat	9-Apr-22		✓		✓
Sun	10-Apr-22				
Mon	11-Apr-22				
Tue	12-Apr-22				✓
Wed	13-Apr-22				
Thu	14-Apr-22	✓	✓	✓	✓
Fri	15-Apr-22				
Sat	16-Apr-22				
Sun	17-Apr-22				
Mon	18-Apr-22				
Tue	19-Apr-22				✓
Wed	20-Apr-22	✓	✓	✓	
Thu	21-Apr-22				✓
Fri	22-Apr-22				
Sat	23-Apr-22				✓
Sun	24-Apr-22				
Mon	25-Apr-22	✓	✓		
Tue	26-Apr-22			✓	✓
Wed	27-Apr-22				
Thu	28-Apr-22				✓
Fri	29-Apr-22				
Sat	30-Apr-22		✓		✓

✓	Monitoring Day
	Sunday or Public Holiday



Appendix H

Monitoring Data

- 24-hour TSP Air Quality
- Noise
- Water Quality



Air Quality (24-hour TSP)



	24-Hour TSP Monitoring Data for ASR-1														
$1.)\Delta^{\prime}\Gamma H$	SAMPLE NUMBER	R			СНАБ	RT REA	DING	AVG TEMP	AVG AIR PRESS	HI ()W/	AIR VOLUME	FILTER V	.)	DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	$(^{\circ}\mathbb{C})$	(hPa)	(m³/min)	(std m ³)	INITIAL	FINAL	(g)	
4-Mar-22	27984	25246.71	25270.71	1440.00	40	40	40.0	18.5	1021.4	1.29	1864	2.7525	2.7702	0.0177	9
10-Mar-22	28014	25270.71	25294.71	1440.00	42	42	42.0	17	1017.7	1.36	1962	2.7190	2.9506	0.2316	118
16-Mar-22			1440.00	43	44	43.5	22.3	1011.7	1.40	2009	2.7247	2.9080	0.1833	91	
22-Mar-22	28055	25318.71 25342.71 1440.00		43	43	43.0	23	1012.8	1.38	1986	2.7027	2.8470	0.1443	73	
28-Mar-22	28088	8088 25342.71 25366.71 1440.0				43	43.0	17.5	1017.4	1.40	2009	2.7221	2.7740	0.0519	26

	24-Hour TSP Monitoring Data for ASR-2														
II I 1 1 Δ T H I I	SAMPLE NUMBER		APSED TI	ME	СНАІ	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³)	INITIAL	FINAL	(g)	,, ,
4-Mar-22	27986	22661.36	22685.36	1440.00	38	38	38.0	18.5	1021.4	1.26	1820	2.7489	2.7665	0.0176	10
10-Mar-22	28013	22685.36	22709.36	1440.00	38	38	38.0	17	1017.7	1.26	1821	2.7287	2.7670	0.0383	21
16-Mar-22	28049	+		1440.00	39	40	39.5	22.3	1011.7	1.30	1870	2.7303	2.7702	0.0399	21
22-Mar-22	28054	22733.36 22757.36 1440.00		39	39	39.0	23	1012.8	1.30	1865	2.6959	2.7329	0.0370	20	
28-Mar-22	28089	22757.36	22781.36	1440.00	35	35	35.0	17.5	1017.4	1.18	1702	2.7173	2.7318	0.0145	9

	24-Hour TSP Monitoring Data for ASR-3a														
$1)\Delta TH$	SAMPLE NUMBER				СНА	RT REA	DING	AVG TEMP	AVG AIR PRESS	H () \ \ /	AIR VOLUME	FILTER WEIGHT (g)		DUST WEIGHT COLLECTED	24-Hr TSP (μg/m³)
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³)	INITIAL	FINAL	(g)	
4-Mar-22	27985	16429.11	16453.11	1440.00	41	41	41.0	18.5	1021.4	1.40	2022	2.7390	2.7648	0.0258	13
10-Mar-22	28012	16453.11	16477.11	1440.00	39	40	39.5	17	1017.7	1.35	1950	2.7247	2.7750	0.0503	26
16-Mar-22	28050			1440.00	40	40	40.0	22.3	1011.7	1.35	1951	2.7412	2.7869	0.0457	23
22-Mar-22	28058	16501.11 16525.11 1440.00		41	41	41.0	23	1012.8	1.39	2005	2.6969	2.7382	0.0413	21	
28-Mar-22	28090	16525.11 16549.11 1440.00		42	43	42.5	17.5	1017.4	1.46	2107	2.7112	2.7355	0.0243	12	

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Monthly Environmental Monitoring & Audit Report (No.44) – March 2022



Noise



	Noise Measurement Results (dB(A)) of CN-1																				
Date	Start Time	$\begin{array}{c} 1^{st} \\ Leq_{5min} \end{array}$	L10	L90	2 nd Leq _{5min}	L10	L90	$\begin{matrix} 3^{nd} \\ Leq_{5min} \end{matrix}$	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq ₃₀	Façade Correction (*)
11-Mar-22	13:27	61.5	62.8	58.1	65	66.4	57.2	62.1	64.3	58.6	61.8	64.2	58	62.4	65.1	58.2	64.7	66.2	59.7	63	66
17-Mar-22	9:07	61.5	63.2	57.7	61.2	62.7	57.7	61.6	63.8	57.8	61.8	63.7	57.4	62.2	64.2	58.3	61.3	63.4	57.8	62	65
23-Mar-22	15:03	63.4	65.2	60.9	65.2	66.6	59.6	62	62.9	60	62.6	63.7	61.1	61.5	62.8	59.9	61.9	63.5	59.9	63	66
29-Mar-22	9:16	67.8	70.1	61.3	67.5	69.5	64.8	67.1	68.6	65	67.9	69.3	64.6	65.9	68	62.7	67.7	69.6	64.2	67	70

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

	Noise Measurement Results (dB(A)) of CN-2																				
Date	Start Time	1 st Leq _{5min}	L10	L90	2 nd Leq _{5min}	L10	L90	3 nd Leq _{5min}	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq ₃₀	Façade Correction (*)
11-Mar-22	14:09	60.1	62.5	52.9	59.2	63.6	51.6	59.8	63.8	49.8	60.8	63.4	50.4	61.7	64.8	51.7	61.8	63.6	50.8	61	64
17-Mar-22	9:47	62.5	62.7	57.4	65.6	62.8	58.4	60.6	61.9	57.2	60.3	61.9	57.1	63.5	62.5	56.8	59.4	61.1	56.1	63	66
23-Mar-22	14:26	66.5	70.6	53.3	65.5	66.8	52.8	67.2	70.9	55.6	65.3	69.6	54.2	66.1	70.2	55.4	63.6	66.8	52.2	66	69
29-Mar-22	9:53	64.8	68.2	52.3	63.9	67	50.1	64.9	68.5	53.7	64.5	68	54	63.2	67.3	52.8	65.7	69.6	54.7	65	68

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

								Noise	e Measu	rement	Results ((dB(A))	of CN-3	}							
Date	Start Time	1 st Leq _{5min}	L10	L90	$\begin{array}{c} 2^{nd} \\ Leq_{5min} \end{array}$	L10	L90	$\begin{matrix} 3^{nd} \\ Leq_{5min} \end{matrix}$	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq ₃₀	Façade Correction (*)
11-Mar-22	14:46	60.2	61.7	54.3	56.7	60.1	51.2	62.4	68	52.6	59.7	63.7	50.2	61.7	64.2	52.7	60.6	62.4	51.1	61	64
17-Mar-22	10:20	58.3	60.5	55.1	58.3	60.8	54.8	58.3	60.9	54.7	59	61.9	55.1	57.5	59.5	54.5	54.9	56.2	52.9	58	61
23-Mar-22	13:45	59.7	62.5	55	59.2	61	55	60.3	63.5	55.5	60.5	63	54.3	59	62.4	54.8	59.5	61	53.3	60	63
29-Mar-22	10:31	62.9	63.3	53.2	59.5	62.1	53.6	64.7	63.5	53	60	62.6	52.5	65	64.6	55	61.3	63.5	53.5	63	66

^(*) A façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines.

								Nois	e Measu	rement	Results ((dB(A))	of CN-4							
Date	Start Time	1 st Leq _{5min}	L10	L90	$\begin{array}{c} 2^{nd} \\ Leq_{5min} \end{array}$	L10	L90	$\begin{matrix} 3^{nd} \\ Leq_{5min} \end{matrix}$	L10	L90	4 th Leq _{5min}	L10	L90	5 th Leq _{5min}	L10	L90	6 th Leq _{5min}	L10	L90	Leq _{30min}
11-Mar-22	15:21	54.2	56.2	42.8	52.8	54.3	43	49.7	54.6	42.7	53.2	56.7	42.8	53.8	56.5	41.7	50.6	54.8	40.8	53
17-Mar-22	11:04	60.4	63.7	44.2	58.5	62.7	44.2	59	63.7	43.3	58	62.4	43.3	59.5	63	44.6	61.3	65.2	45.9	60
23-Mar-22	13:02	58.5	61.2	45.5	57.8	59.7	45.7	59.4	60.8	45.9	57.9	60.4	44.8	59.6	61.5	46.2	57	59.9	45.8	58
29-Mar-22	11:14	57.7	58.6	55	60.1	59.6	54.5	57	59.1	54	56.7	58.7	54.4	66.1	70.3	56.3	57.5	59.5	54.5	61



Water Quality



Date	2-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.13	20 20	20.0	<0.1	<0.1	8.3 8.28	8.29	93.4 93.2	93.3	3.78	3.6	7.55 7.55	7.6	0.04	0.04	2 4	3.0

Date	4-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ity (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.12	18.1	10 1	< 0.1	ر n 1	8.06	9.04	93.2	02.0	3.1	2.1	7.47	7.5	0.08	0.00	6	5.5
M1	9:30	0.12	18.1	10.1	< 0.1	<0.1	8.02	8.04	92.7	93.0	3.11	3.1	7.47	7.3	0.08	0.08	5	3.3

Date	7-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M1	0.29	0.12	19	10.0	< 0.1	۰0.1	8.08	9.00	93.5	03.5	1.97	2.0	7.27	7.2	0.04	0.04	3	2.0
M1	9:28	0.12	19	19.0	< 0.1	< 0.1	8.09	8.09	93.5	93.3	1.98	2.0	7.27	7.3	0.04	0.04	3	3.0

Date	10-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.12	17.3 17.3	17.3	<0.1	<0.1	8.23 8.22	8.23	92.9 92.8	92.9	1.41	1.7	7.61 7.61	7.6	0.03	0.03	3	3.0

Date	12-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M1	9:35	0.14	19.7	10.7	< 0.1	ر <u>۱</u> د	7.95	7 93	92.4	02.2	1.04	1 1	7.21	7.2	0.07	0.07	<2	-2
IVII	9:33	0.14	19.7	19.7	< 0.1	<0.1	7.91	1.93	92.0	92.2	1.06	1.1	7.21	1.2	0.07	0.07	<2	<2

Date	15-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	11:55	0.11	21.1	21.1	<0.1	< 0.1	7.79	7.80	93.9	94.0	1.09	1.1	7.51	7.5	0.01	0.01	<2	<2
1,11	11.00	0.11	21.1		< 0.1	10.1	7.81	7.00	94.1	7	1.12		7.51	,	0.01	0.01	<2	`-

Date	17-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	ng/L)
M1	9:30	0.12	22.7	22.7	< 0.1	< 0.1	7.76	7.76	93.8	93.8	1.79	1.8	7.51	7.5	0.06	0.06	<2	<2



22.7	<0.1	7.75	93.7	1.8	7.51	0.06	<2	

Date	19-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.13	21.8 21.8	21.8	<0.1	<0.1	7.65 7.66	7.66	94.2 94.4	94.3	1.39 1.4	1.4	7.44 7.44	7.4	0.07	0.07	<2 <2	<2

Date	22-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	0.20	0.12	22	22.0	< 0.1	ر <u>۱</u> د	7.86	7.82	94.7	04.4	1.39	1.4	7.51	7.5	0.03	0.03	<2	-2
IVI I	9:30	0.12	22	22.0	< 0.1	< 0.1	7.78	1.82	94.0	94.4	1.4	1.4	7.51	1.3	0.03	0.03	<2	<.2

Date	24-Mar-22																	
Location	Time	Depth (m)	Temp ((oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	ng/L)
M1	9:30	0.13	18.2 18.2	18.2	<0.1	<0.1	7.76 7.75	7.76	94.0 93.9	94.0	0.79 0.81	0.8	7.15 7.15	7.2	0.03	0.03	<2 <2	<2

Date	26-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M1	9:32	0.14	21.3	21.2	< 0.1	<0.1	8.06	8.07	91.9	92.0	2.11	2.1	7.36	7.4	0.03	0.03	<2	-2
IVI 1	9.32	0.14	21.3	21.3	< 0.1	< 0.1	8.08	8.07	92.1	92.0	2.1	2.1	7.36	7.4	0.03	0.03	<2	<2

Date	28-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M1	9:40	0.14	16.9	16.9	< 0.1	< 0.1	7.84	7.84	90.0	90.0	1.48	1.5	7.22	7.2	0.03	0.03	<2	<2
		0.12.	16.9		< 0.1		7.83	, ,	89.9	,	1.49	-10	7.22		0.03		<2	.—

Date	31-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.14	21.1	21.1	< 0.1	ر ۱ د	7.64	7.63	89.6	89.5	1.34	1 /	7.29	7.2	0.06	0.06	2	2.5
IVII	9:30	0.14	21.1	21.1	< 0.1	< 0.1	7.62	7.03	89.3	89.3	1.36	1.4	7.29	7.3	0.06	0.06	3	2.3



Data	2 Man 22									
Date Location	2-Mar-22 Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:10	0.00	Temp (de)	Plow velocity (m/s)	DO (llig/L)	DO (76)	Turbidity (1410)	- PII	Samity	SS(Hg/L)
Date	4-Mar-22									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:10	0.00								
Date	7-Mar-22									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:14	0.00								
			•			•		•		•
Date	10-Mar-22			_					_	
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:10	0.00								
Date	12-Mar-22	In (1 () I	TF (C)	T	DO (/T)	DO (0/)	TO 1 114 (NITOVI)	***		gg(Æ)
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:10	0.00								
Date	15-Mar-22									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	11:20	0.00								
Date	17-Mar-22					-				
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:05	0.00				= = (.3)		F=-		~~ (g ,)



Date	19-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M2	10:10	0.00																

Date	22-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M2	10:10	0.00																

Date	24-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
Ma	10.00	0.10	18.5	10.5	< 0.1	ر ۵ ر	6.63	((1	87.0	967	25.5	26.2	7.60	7.0	0.1	0.10	22	22.5
M2	10:00	0.10	18.5	18.5	< 0.1	< 0.1	6.59	6.61	86.3	86.7	26.9	26.2	7.60	7.6	0.1	0.10	23	22.5

Date	26-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M2	10:15	0.10	21.6 21.6	21.6	<0.1	<0.1	8.16 8.16	8.16	92.5 93.1	92.8	16.9 15.4	16.2	7.70 7.70	7.7	0.1	0.10	14 16	15.0

Date	28-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M2	10:25	0.12	17.1 17.1	17.1	<0.1 <0.1	<0.1	8.83 8.8	8.82	91.6 91.2	91.4	32.5 33.9	33.2	7.60 7.60	7.6	0.1	0.10	26 27	26.5

Date	31-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M2	10.00	0.08	22	22.0	< 0.1	#DIV/0!	7.48	7.47	88.1	88.0	31.2	21.4	7.43	7.4	0.05	0.05	23	22.5
IVI∠	10:00	0.08	22	22.0	< 0.1	#DIV/0!	7.45	7.47	87.8	88.0	31.6	31.4	7.43	7.4	0.05	0.03	24	23.3



Date	2-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M2	10.25	2.45	19.9	10.0	< 0.1	ەر 1	8.24	0.22	92.4	02.3	1.48	1.5	7.41	7.4	0.03	0.02	<2	-2
M3	10:25	2.45	19.9	19.9	< 0.1	< 0.1	8.22	8.23	92.2	92.3	1.54	1.5	7.41	7.4	0.03	0.03	<2	<2

Date	4-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M3	10.20	2.42	19.3	10.3	< 0.1	ر0 1	8.06	8.04	93.2	93.0	3.1	2.1	7.47	7.5	0.08	0.08	2	2.0
WIS	10:30	2.43	19.3	19.5	< 0.1	< 0.1	8.02	8.04	92.7	93.0	3.11	5.1	7.47	7.3	0.08	0.08	2	2.0

Date	7-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M3	10:15	2.44	19.3	10.3	< 0.1	<0.1	7.94	7.93	91.8	01.7	1.47	1 /	7.34	7.2	0.02	0.02	3	3.0
WIS	10.13	2.44	19.3	19.3	< 0.1	<0.1	7.92	1.93	91.6	91.7	1.42	1.4	7.34	7.3	0.02	0.02	3	3.0

Date	10-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(r	ng/L)
M2	10.25	2.45	18	10.0	< 0.1	ر <u>۱</u>	8.11	0 1 1	91.8	01.0	1.24	1.2	8.06	0 1	0.01	0.01	<2	-2
M3	10:25	2.45	18	18.0	< 0.1	<0.1	8.1	8.11	91.7	91.8	1.23	1.2	8.06	8.1	0.01	0.01	<2	<2

Date	12-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(r	mg/L)
M2	10:20	2.45	20.8	20.8	< 0.1	<0.1	7.88	7.88	91.7	01.6	1.75	1 0	7.09	7 1	0.02	0.02	<2	2.0
M3	10.20	2.43	20.8	20.8	< 0.1	<0.1	7.87	7.00	91.5	91.0	7.76	4.0	7.09	7.1	0.02	0.02	2	2.0

Date	15-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(r	ng/L)
M3	11.25	2.45	21.9	21.0	< 0.1	ر n 1	7.76	7.76	93.2	03.2	1.14	1.2	7.97	8.0	0.01	0.01	<2	-0
1/15	11:55	2.43	21.9	21.9	< 0.1	<0.1	7.75	7.76	93.1	93.2	1.16	1.2	7.97	6.0	0.01	0.01	<2	<2

Date	17-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M3	10:15	2.45	23 23	23.0	<0.1	<0.1	7.62 7.61	7.62	92.3 92.2	92.3	1.36 1.37	1.4	7.81 7.81	7.8	0.02	0.02	<2 <2	<2



Date	19-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M3	10:20	2.45	22.1 22.1	22.1	<0.1	<0.1	7.62 7.61	7.62	93.6 93.5	93.6	1.09	1.1	7.34 7.34	7.3	0.02	0.02	<2 <2	<2

Date	22-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M3	10:20	2.45	22.8 22.8	22.8	<0.1	< 0.1	7.76 7.74	7.75	93.9 93.8	93.9	1.26 1.27	1.3	7.25 7.25	7.3	0.01	0.01	<2 <2	<2

Date	24-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	ng/L)
М3	10:15	2.45	19.1 19.1	19.1	<0.1	< 0.1	7.29 7.26	7.28	88.3 87.9	88.1	1.17	1.2	7.03 7.03	7.0	0.01	0.01	<2 <2	<2

Date	26-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M3	10:30	2.45	22 22	22.0	<0.1	<0.1	7.68 7.64	7.66	87.7 87.3	87.5	1.55 1.56	1.6	7.23 7.23	7.2	0.01	0.01	2 2	2.0

Date	28-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(1	mg/L)
M3	10:35	2.45	17 17	17.0	<0.1	<0.1	7.6 7.58	7.59	87.3 86.9	87.1	3.16 3.17	3.2	7.07 7.07	7.1	0.01	0.01	2 2	2.0

Date	31-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p.	H	Sali	nity	SS(mg/L)
M2	10.10	2.45	21.9	21.0	< 0.1	۰0.1	7.69	7.60	90.2	00.2	2.91	2.0	7.17	7.0	0.01	0.01	6	6.0
M3	10:10	2.45	21.9	21.9	< 0.1	< 0.1	7.68	7.69	90.1	90.2	2.92	2.9	7.17	1.2	0.01	0.01	6	6.0



Date	2-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)	Turbid	ity (NTU)	р	H	Sali	nity	SS(r	mg/L)
M4	10:45	0.41	20.2	20.2	<0.1 <0.1	<0.1	6.71 6.58	6.65	77.4 75.9	76.7	1.3	1.3	7.02 7.02	7.0	0.07	0.07	<2 <2	<2

Date	4-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)	Turbid	ity (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M4	10:46	0.40	19.5 19.5	19.5	<0.1 <0.1	< 0.1	6.47 6.42	6.45	74.9 74.3	74.6	1.4 1.5	1.4	7.00 7.00	7.0	0.05	0.05	3	3.0

Date	7-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	eity (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M4	10:35	0.39	19.4	10.4	< 0.1	< 0.1	6.71	6.69	77.6	77.4	1.1	1 1	6.91	6.9	0.06	0.06	2	2.0
1714	10.55	0.39	19.4	19.4	< 0.1	<0.1	6.67	0.09	77.2	77.4	1.1	1.1	6.91	0.9	0.06	0.00	2	2.0

Date	10-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)	Turbid	ity (NTU)	р	H	Sali	nity	SS(1	ng/L)
N/4	10.40	0.29	18.2	10.2	< 0.1	ر <u>۱</u>	6.99	6 97	79.2	70.0	1.3	1.2	7.23	7.2	0.03	0.02	<2	-0
M4	10:40	0.38	18.2	18.2	< 0.1	< 0.1	6.95	6.97	78.8	79.0	1.3	1.3	7.23	1.2	0.03	0.03	<2	<2

Date	12-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	р	Н	Sali	nity	SS(1	ng/L)
M4	10:35	0.39	20.6	20.6	<0.1 <0.1	<0.1	7.26 7.2	7.23	84.1 83.6	83.9	5.3 5.2	5.2	6.95 6.95	7.0	0.04	0.04	3	3.5

Date	15-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)	Turbid	ity (NTU)	р	H	Sali	nity	SS(1	mg/L)
M4	12:15	0.37	22.1 22.1	22.1	<0.1 <0.1	<0.1	7.03 6.96	7.00	85.3 84.8	85.1	1.9 1.9	1.9	7.37 7.37	7.4	0.03	0.03	3 4	3.5

Date	17-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
N/4	10.25	0.27	22.9	22.0	< 0.1	ر <u>۱</u>	6.97	c 0.4	84.5	0.4.1	2.0	2.0	7.32	7.2	0.03	0.02	<2	-0
M4	10:35	0.37	22.9	22.9	< 0.1	<0.1	6.9	6.94	83.7	84.1	2.1	2.0	7.32	7.3	0.03	0.03	<2	<2



Date	19-Mar-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)	Turbid	ity (NTU)	р	H	Sali	nity	SS(1	mg/L)
M4	10:35	0.39	22.3 22.3	22.3	<0.1 <0.1	<0.1	6.74 6.7	6.72	83.0 82.5	82.8	4.4 5.7	5.1	6.93 6.93	6.9	0.06	0.06	<2 <2	<2

Date	22-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)	Turbid	ity (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M4	10:35	0.38	23.1 23.1	23.1	<0.1 <0.1	<0.1	7.29 7.27	7.28	88.2 87.9	88.1	1.0	1.0	7.01 7.01	7.0	0.03	0.03	2 3	2.5

Date	24-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (ı	ng/L)	DO	(%)	Turbidi	ity (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M4	10.20	0.29	19	10.0	< 0.1	ر <u>۱</u>	7.1	7.00	86.1	95.0	5.4	E 1	6.90	6.0	0.06	0.06	4	4.0
M4	10:38	0.38	19	19.0	< 0.1	< 0.1	7.07	7.09	85.7	85.9	5.3	5.4	6.90	6.9	0.06	0.06	4	4.0

Date	26-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ity (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M4	10:45	0.41	21.9 21.9	21.9	<0.1 <0.1	<0.1	6.46 6.34	6.40	74.1 72.8	73.5	1.7	1.7	7.11 7.11	7.1	0.05	0.05	3	3.0

Date	28-Mar-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)	Turbid	ity (NTU)	p.	H	Sali	nity	SS(1	mg/L)
MA	10.50	0.41	17.2	17.2	< 0.1	ر د0 1	6.11	6.08	70.1	60.9	2.4	2.4	7.04	7.0	0.05	0.05	4	15
M4	10:50	0.41	17.2	17.2	< 0.1	<0.1	6.05	0.08	69.5	69.8	2.4	2.4	7.04	7.0	0.05	0.03	5	4.3

Date	31-Mar-22																	
Location	Time	Depth (m)	1) Temp (oC)		Flow Velocity (m/s)		DO (mg/L)		DO (%)		Turbidity (NTU)		pН		Salinity		SS(mg/L)	
M4	10:30	0.42	22.1	22.1	< 0.1	<0.1	6.57	6.55	77.1	76.0	1.4	1.5	6.94	6.0	0.04	0.04	4	4.0
			22.1	22.1	< 0.1		6.52		76.6	76.9	1.5		6.94	6.9	0.04	0.04	4	

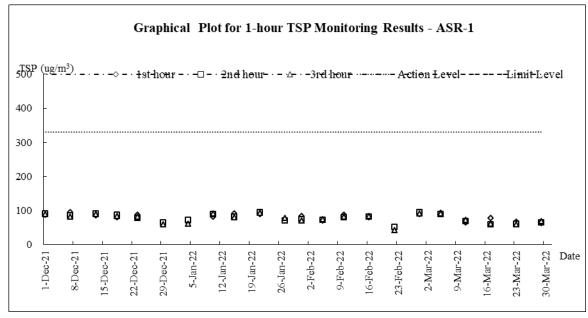


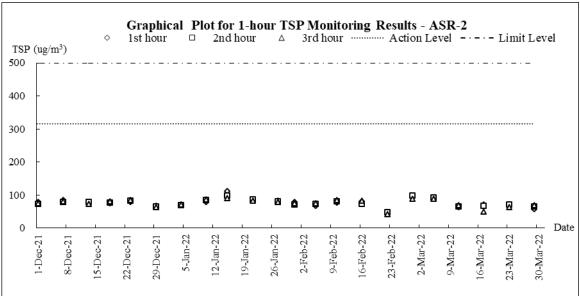
Appendix I

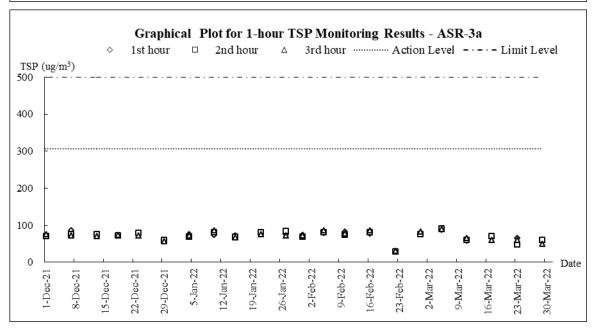
Graphical Plots of Air Quality, Noise and Water Quality



Air Quality Impact Monitoring – 1-hour TSP

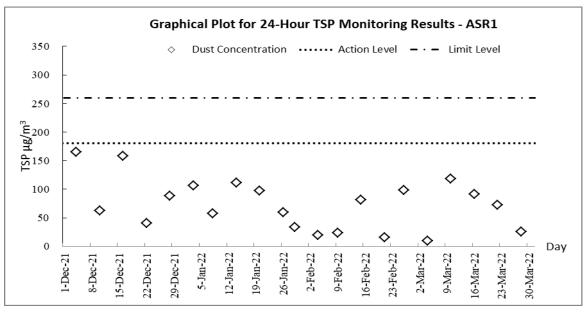


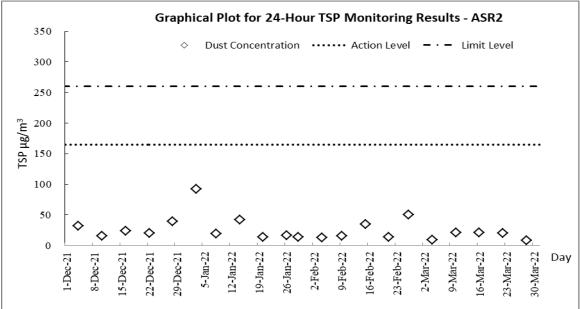


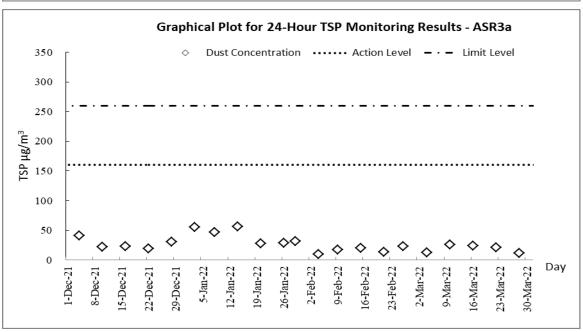




Air Quality Impact Monitoring – 24-hour TSP

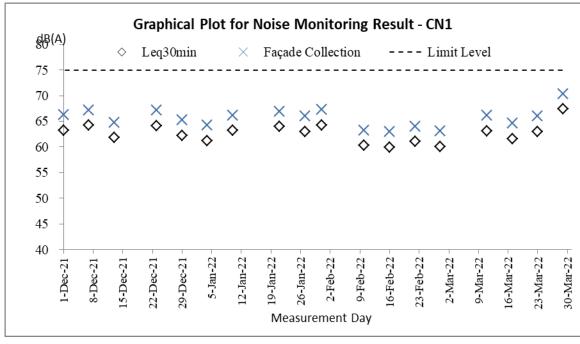


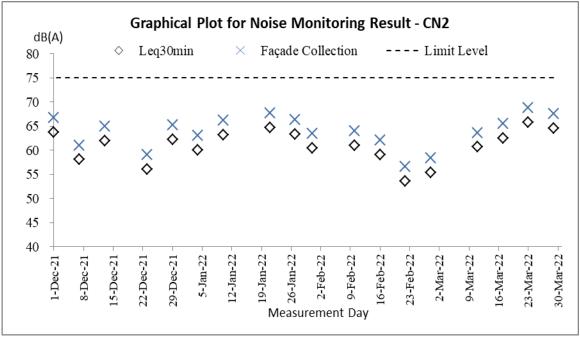




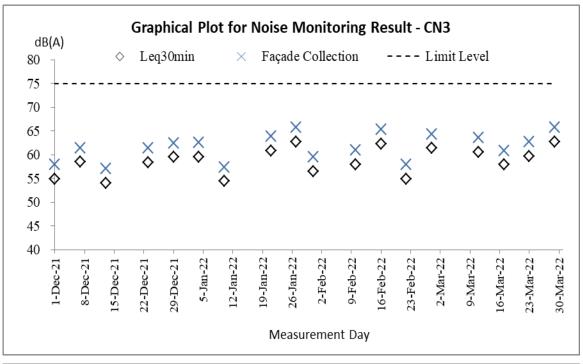


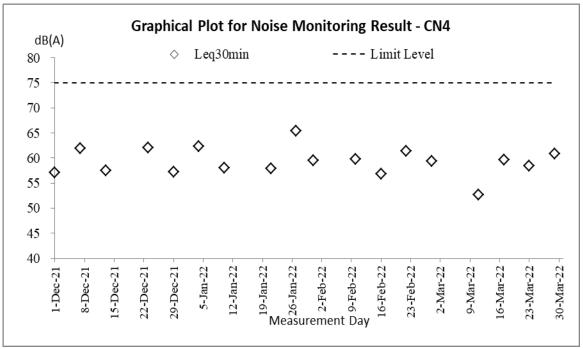
Construction Noise Impact Monitoring





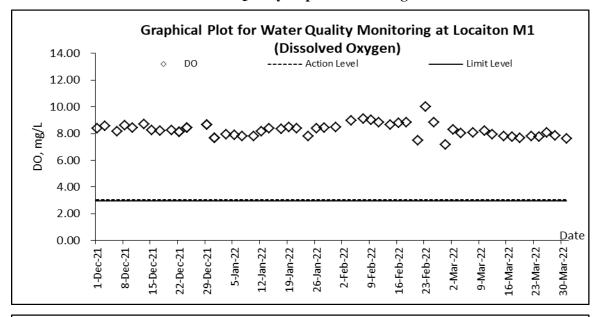


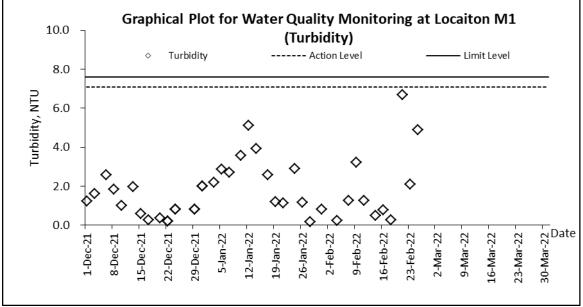


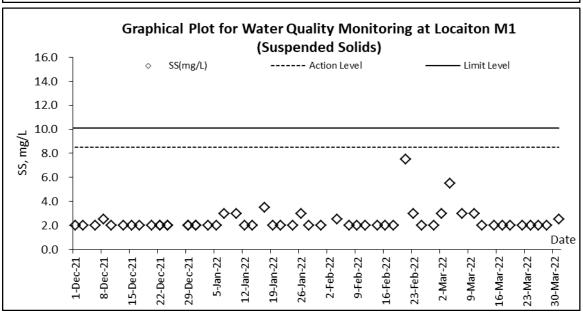




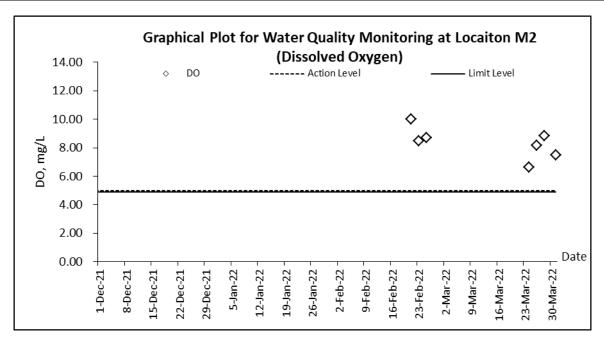
Water Quality Impact Monitoring

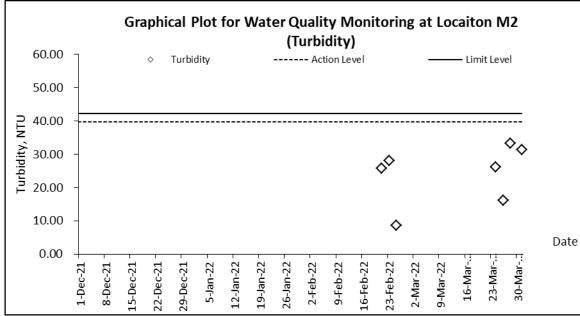


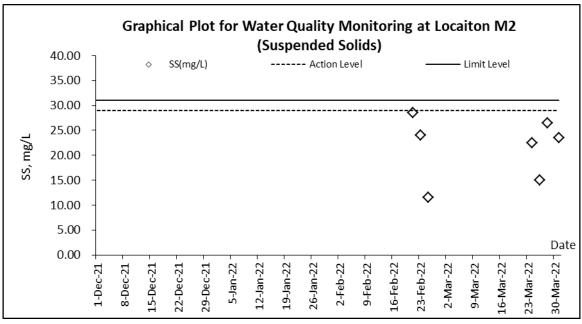




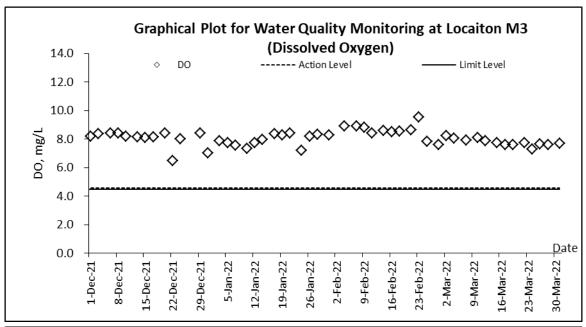


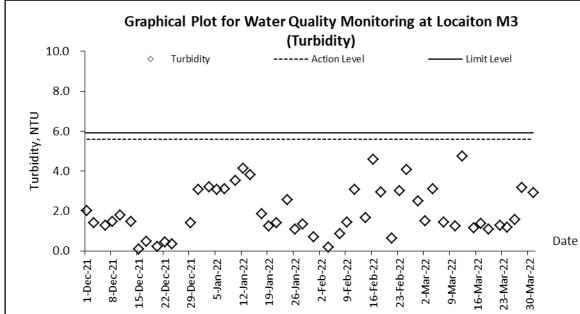


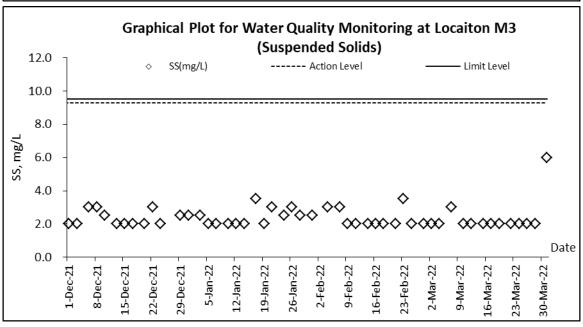




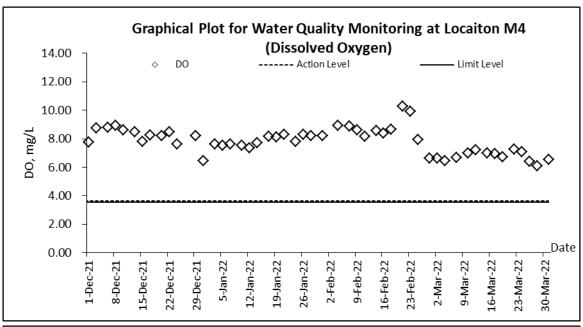


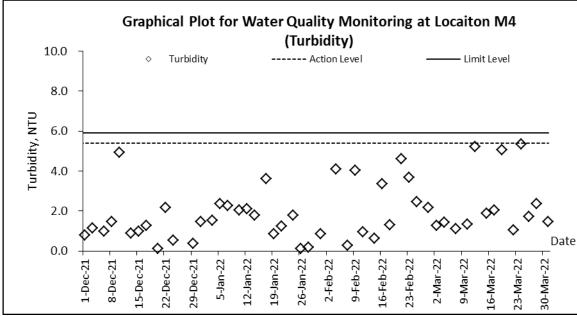


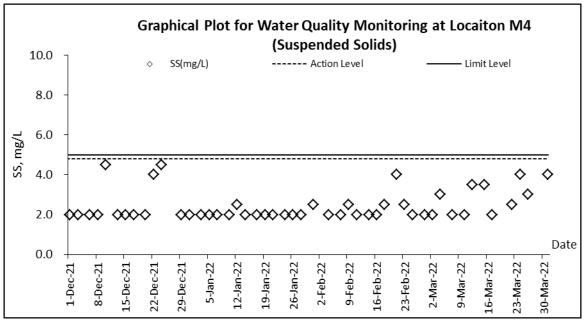














Appendix J

Meteorological Data of the Reporting Month



				Ta Kwu Ling Station			
Date		Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative	Wind Direction
1-Mar-22	Tue	Fine. Dry in the afternoon.	0	23.4	17.7	70.5	E/SE
2-Mar-22	Wed	Moderate easterly winds.	0	21.3	15.2	71.0	E/SE
3-Mar-22	Thu	Moderate to fresh easterly winds	0	21.1	12.2	68.7	E/SE
4-Mar-22	Fri	Fine and dry. Cool tomorrow morning.	0	21.9	7.5	71.5	E/SE
5-Mar-22	Sat	Fine and dry. Moderate easterly winds.	0	22.2	10.5	70.0	E/SE
6-Mar-22	Sun	occasionally strong offshore at first.	0	20.2	11	69.0	E/SE
7-Mar-22	Mon	Moderate to fresh easterly winds	4.8	20.8	11.7	68.7	E/SE
8-Mar-22	Tue	Fine and dry. Cool tomorrow morning.	0	16.1	7.5	71.0	E/SE
9-Mar-22	Wed	Fine and dry. Moderate easterly winds.	0	17.9	8.7	57.2	Е
10-Mar-22	Thu	Moderate easterly winds.	0	21.3	10.2	62.5	E/SE
11-Mar-22	Fri	Fine. Dry in the afternoon.	0	21.4	7	68.7	Е
12-Mar-22	Sat	Moderate easterly winds.	0	21.5	10	71.0	Е
13-Mar-22	Sun	Fine. Hot in the afternoon.	0.1	23.9	7.5	74.7	Е
14-Mar-22	Mon	Light winds, becoming moderate easterlies tonight.	0	25.4	5.5	69.7	E/SE
15-Mar-22	Tue	Fine. Hot in the afternoon.	0	25.4	8.7	69.2	E/SE
16-Mar-22	Wed	Mainly cloudy.	Trace	23.7	8	73.5	E/SE
17-Mar-22	Thu	One or two rain patches tonight.	Trace	25.2	6.2	79.2	E/SE
18-Mar-22	Fri	Moderate to fresh easterly winds.	0	25.0	7.5	79.0	W/NW
19-Mar-22	Sat	Mainly cloudy with coastal fog.	0	24.6	10.2	81.0	E/SE
20-Mar-22	Sun	Moderate easterly winds, becoming light to moderate southerlies tomorrow.	Trace	20.9	14.5	88.5	E/SE
21-Mar-22	Mon	Mainly cloudy and foggy with a few showers.	Trace	23.3	8.7	86.5	E/SE
22-Mar-22	Tue	Light to moderate southeasterly winds.	Trace	24.8	11.7	86.2	E/SE
23-Mar-22	Wed	Cloudy to overcast with showers.	54.8	17.9	11.7	90.2	N
24-Mar-22	Thu	Cloudy with occasional rain.	1.8	16.2	12.5	93.5	E/SE
25-Mar-22	Fri	Moderate to fresh easterly winds	0.7	22.7	13	89.0	E/SE
26-Mar-22	Sat	Cloudy with a few showers.	0.1	26.6	10.5	85.5	E/SE
27-Mar-22	Sun	Moderate to fresh southerly winds Cloudy with showers and isolated	Trace	21.0	8.7	81.0	E/SE
28-Mar-22	Mon	thunderstorms.	30.3	15.9	7	90.7 N	
29-Mar-22	Tue	Moderate to fresh east to northeasterly winds	0.1	18.1	5.5	86.0	E/SE
30-Mar-22	Wed	Becoming cloudy with a few rain patches.	0	23.7	7	74.5	Е
31-Mar-22	Thu	Moderate to fresh easterly winds	Trace	20.8	8	68.7	E



Appendix K

Ecological Survey Report

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.44) – March 2022



Ecological Survey Report for Contract CV/2016/10



Contract No. CV/2016/10

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Monthly Report of Ecologically Sensitive Habitats Monitoring – March 2022

Revision Date of issue	0 04 Apr 2022	
Prepared by	Alan Lam	积
Reviewed by	Hoiki Leung	Hak
Verified by	Mike Leung	

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 The main objective of the proposed site formation and associated infrastructural works for development of columbarium, crematorium (C&C) and related facilities at Sandy Ridge Cemetery is to increase the public cremation services and supply of public niches to meet the future demand.
- 1.1.2 The project includes site formation and associated works for development of C&C facilities at the Sandy Ridge Cemetery, road works within Sandy Ridge Cemetery, widening a section of Lin Ma Hang Road (from 6.5m to 7.3m), provision of off-site pick-up/drop-off points for shuttle buses as well as barging point at Siu Lam, Lok On Pai.
- 1.1.3 The Environmental Impact Assessment (EIA) report, including Environmental Monitoring and Audit Manual (EM&A Manual), was approved with conditions on 8 August 2016 (Register No.: AEIAR-198/2016). EPD issued an Environmental Permit (EP) for the Project (EP-534/2017) on 7 April 2017. A Further Environment Permit (FEP) for the Project (FEP-01/534/2017) was issued on 23 February 2018, variation of EP (EP-534/2017/A) and variation of FEP (FEP-01/534/2017/A) were issued on 24 December 2018.
- 1.1.4 According to Clause 3.1 of the FEP (FEP-01/534/2017/A), "The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual. Any changes to the programme shall be justified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual before submission to the Director for approval".
- 1.1.5 This Ecologically Sensitive Habitats Monitoring Methodology articulates the protocol of monitoring the ecology of concerned habitats as specified in EM&A Manual.

1.2 OBJECTIVE

- 1.2.1 According to approved EIA report (AEIAR-198/2016), habitat types within project boundary comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 1.2.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution.



2 ECOLOGICALLY SENSITIVE HABITATS

2.1 DESCRIPTION OF HABITATS

2.1.1 In order to monitor the effectiveness of the measures to the minimise impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland and non-wetland habitats:

Wetland habitats	Non-wetland habitats
Wet Woodland	Upland Grassland
Watercourses	Woodland

- Wet woodland is small patch present on northwest of the project boundary, and is confined by the marsh area to the north and the secondary woodland to the east, south and south-west parts. A number of mature trees *Cleistocalyx nervosum* and *Acronychia pedunculata* form the tree canopy, with other self-sown shrubs (including *Psychotria asiatica*, *Ligustrum sinense* and *Glochidion lanceolarium*) and trees (*Aporosa dioica* and *Litsea monopetala*). Whilst botanically it comprises of naturally regenerated secondary woodland and ground level are a series of small braided streams and weep points which even during the dry season remain wet. This creates a rather uncommon habitat in Hong Kong offering suitable conditions for a good assemblage of common wetland species. The wet woodland provides a good assemblage of micro-habitats, which is relatively undisturbed and has good linkages to other natural habitats. Several species of conversation importance were recorded in EIA report from this habitat: East Asian Porcupine, Leopard Cat, Red Muntjac, Two-striped Grass Frog, Small Snakehead, *Somanniathelphusa zanklon*, Dancing Shadow-emerald.
- 2.1.3 Seasonal watercourse running west to east in the eastern part of the area inside the Project boundary is shallower in gradient than those running off the hillside. This seasonal watercourse is heavily vegetated with wetland-associated herbs including *Commelina diffusa*, *Polygonum chinense*, *Colocasia esculenta* and *Dracaena sanderiana*. A mature tree of *Aquilaria sinensis* was recorded at the bank of the seasonal watercourse to the west of the Sandy Ridge Cemetery Office. Seasonal watercourses are restricted to the steeper slopes within the project boundary and are characterised by being entirely dry for much of the dry season. However, endemic crab *S. zanklon* population is supported by ephemeral watercourses close to the project boundary.
- Upland grassland is the major habitat within the project boundary. The semi-natural habitat is dominated by typical upland grassland species: fern *Dicranopteris pedata*, grass *Neyraudia reynaudiana*, *Miscanthus floridulus*, climbing vines *Smilax china*, *Smilax glabra*, and shrubs such as *Rhodomyrtus tomentosa*, *Breynia fruticosa* and *Helicteres angustifolia*. Approximately 30 flowering spikes of two orchid species Bamboo Orchid and Toothed Habenaria were recorded near the hill top in the northern part of this upland grassland. Golden-headed Cisticola, which is considered as Local Concern by Fellowes *et al.* (2002), was also recorded in upland grassland on Sandy Ridge, including a proved breeding record of fledged young in September 2013. In addition, numerous species of conservation interest were recorded in EIA report, such as East Asian Porcupine, Leopard Cat, Red Muntjac, Great Swift, Tamil Grass Dart, Small Three-ring and Small Grass Yellow.



2.1.5 Scattered patches of woodland are present throughout the assessment area, with the largest contiguous block located immediately to the east of the project boundary. These woodlands are relatively young with single-layered of canopy dominants (~10 – 15m tall) including *A. dioica*, *Bridelia tomentosa*, *Cinnamomum burmannii*, *Daphniphyllum calycinum*, *Litsea glutinosa*, *Rhus succedanea*, and *Zanthoxylum avicennae*. Such areas comprise secondary woodland which is largely derived from natural regeneration and colonisation of trees as a result of seed dispersal by birds and/or bats. A mature tree of *A. sinensis* is located at the woodland edge at the central part of the Project according to EIA report.

2.2 MONITORING MEASURES OF WETLAND HABITATS

- 2.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardised quantitative methodology will be conducted at fixed points. For seasonal watercourse, survey shall be conducted whenever the habitat appears.
- 2.2.2 Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and action and limit levels to trigger these measures are detailed in Table 1.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
taxa diversity	cause identified as related	in taxa	cause identified as related
by 30%	to the project instigate	diversity	to the project instigate
	remedial action to remove	by 50%	remedial action.
	or reduce source of		
	disturbance.		

Table 1 Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

2.3 MONITORING MEASURES OF NON-WETLAND HABITATS

- 2.3.1 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts.
- 2.3.2 Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and action and limit levels to trigger these measures are detailed in Table 2.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
species diversity	cause identified as related	in species	cause identified as related
by 30%	to the project instigate	diversity by	to the project instigate
	remedial action to remove	50%	remedial action.
	or reduce source of		
	disturbance.		

Table 2 Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna



3 METHODOLOGY

The ecological survey includes all taxa being investigated in EIA report. Table 3 summarizes schedule of faunal surveys.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals	√	√	√	√	√	$\sqrt{}$	√	√	√	√	$\sqrt{}$	\checkmark
Birds (day)	√	√	√	√	√	√	√	√	√	√	\checkmark	\checkmark
Birds (night)				√	√	√	√	√	√	√		
Herpetofauna				$\sqrt{}$	V	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	V		
Dragonflies			$\sqrt{}$									
Butterflies			√	√	√	$\sqrt{}$	√	√	√	√		
Aquatic fauna	√	V	V	V	V	V	V	V	V	V	√	$\sqrt{}$

Table 3 Survey Schedule

3.1 MAMMAL SURVEY

3.1.1 Mammal surveys will be conducted along the transects shown in Appendix 1 during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

3.2 BIRD SURVEY

3.2.1 Bird surveys will be conducted along the transects shown in Appendix 1 during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilising.

3.3 HERPETOFAUNA SURVEY

3.3.1 Reptile and amphibian surveys will be conducted along transects shown in Appendix 1 during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

3.4 DRAGONFLY SURVEY

3.4.1 Dragonfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.



3.5 BUTTERFLY SURVEY

3.5.1 Butterfly surveys will be conducted along transects shown in Appendix 1 during surveys all butterflies seen will be identified and counted as accurately as possible.

3.6 AQUATIC FAUNA SURVEY

3.6.1 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.



4 RESULT

This monitoring survey started on 3rd March 2022, a sunny day. The day survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed points. All species seen will be identified and counted as accurately as possible.

Mammal

There was no mammal recorded in the monitoring area.

■ Bird

There were a total of 33 bird individuals from 9 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. One species of conservation interests were recorded in this survey: Crested Serpent Eagle (*Spilornis cheela*) 蛇鵰.

Herpetofauna

There was no reptile species recorded in the monitoring area.

There was no amphibian species recorded in the monitoring area.

■ Butterfly

There were a total of 7 butterfly individuals from 3 species recorded in the monitoring area.

Dragonfly

There was 1 odonate individual from 1 species recorded in the monitoring area.

■ Freshwater communities

There was no freshwater community recorded in the monitoring area.



Picture 1

Wet woodland in monitoring area.



Picture 2 Peacock Pansy (*Junonia almana*) 美眼蛺蝶





Table 4 Result of mammal in survey

Scientific Name					03/03/2022						
	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland					
				UG	WL	MA	ww	WC			
N/A											

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 5 Result of Avifauna in survey

				03/03/2022						
Scientific Name	Common Name	Chinese Name	Conservation Status		on- land	V	Vetlan	d		
				UG	WL	MA	ww	WC		
Spilornis cheela	Crested Serpent Eagle	蛇鵰	China Red Data Book Status: (Vulnerable); Fellowes et al. (2002): (LC); Appendix 2 of CITES	1						
Spilopelia chinensis	Spotted Dove	珠頸斑鳩		2						
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		4			2			
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		1			4			
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1						
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			2					
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯			5		2			
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		7						
Emberiza spodocephala	Black-faced Bunting	灰頭鵐		2						

 $[*]UG: Upland\ Grassland\ |\ WL:\ Woodland\ |\ MA:\ Marsh\ |\ WW:\ Wet\ Woodland\ |\ WC:\ Watercourse$

Table 6 Result of reptile in survey

S	Scientific Name	Common Name		Conservation Status	03/03/2022					
					Non- wetland		Wetland		d	
					UG	WL	MA	ww	WC	
	N/A									

 $[*]UG: Upland\ Grassland\ |\ WL:\ Woodland\ |\ MA:\ Marsh\ |\ WW:\ Wet\ Woodland\ |\ WC:\ Watercourse$



Table 7 Result of amphibian in survey

				03/03/2022					
Scientific Name	Common Name	Chinese Name	Conservation Status		on- land	v	Vetlan	d	
				UG	WL	MA	ww	WC	
N/A									

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 8 Result of butterfly in survey

			03/03/2022					
Scientific Name	Common Name Chinese Name		Conservatio n Status	Non- wetland		Wetland		d
				UG	WL	MA	ww	WC
Junonia almana	Peacock Pansy	美眼蛺蝶		1				
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶		2				
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		4				

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 9 Result of Odonate in survey

			Conservation Status	03/03/2022					
Scientific Name	Common Name			Non- wetland		Wetland		d	
				UG	WL	MA	ww	WC	
Neurothemis fulvia	Russet Percher	網脈蜻			1				

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 10 Result of freshwater communities in survey

				03/03/2022					
Scientific Name	Common Name		Conservation Status		n- land	V	Vetlan	d	
				UG	WL	MA	ww	WC	
N/A									

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse



5 DISCUSSION

Data analysis was carried out to compare with the biodiversity within the site boundary in the same month over years. General description of the ecological conditions is first revealed in terms of abundance as well as species richness, following by statistical analysis of the existing database. The result is considered as significant whenever the drop of diversity indexes exceeds the percentages mentioned in previous sections 2.2 and 2.3.

5.1 Total abundance and species richness in March over years were compared to show the trends. Figures 1 and 2 indicate the total species richness and total abundance within the site boundary respectively.

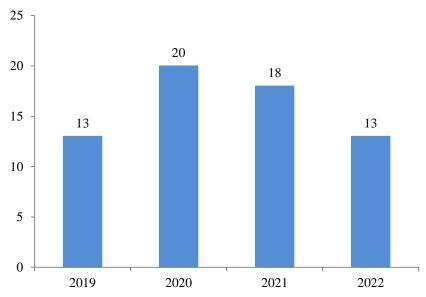


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)

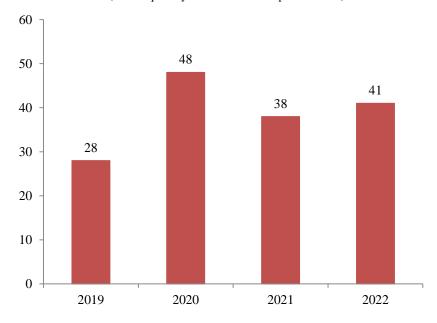


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)



As results in section 4 were categorized by taxa, a detailed breakdown of each taxon is shown in figure 3 to further investigate the trend of specific taxa over contract period.

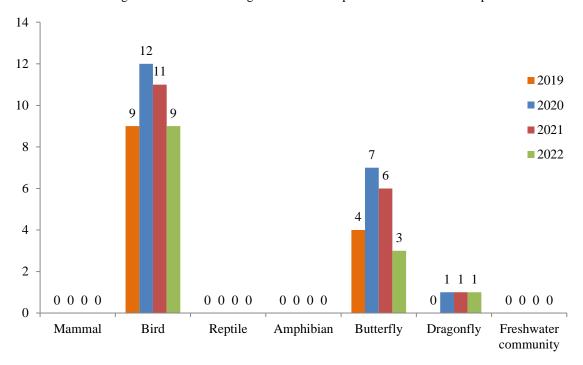


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2022 (Actual quantity annotated at the top of each bar)

5.3 According to EM&A Manual, monitoring measures was determined by the species diversity of types of sensitive habitats, i.e. non-wetland and wetland habitats. Abundance and species richness by habitat type in March over years were compared in Figures 4 and 5.

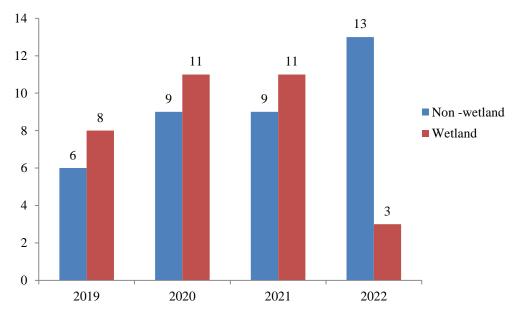


Figure 4: bar chart showing the species richness based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)



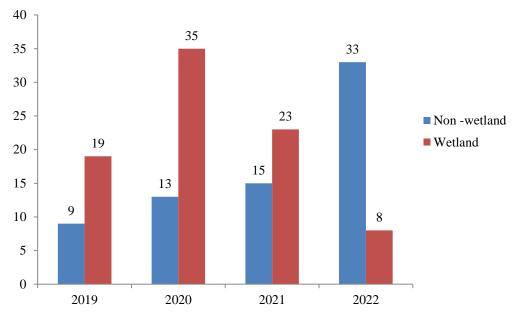
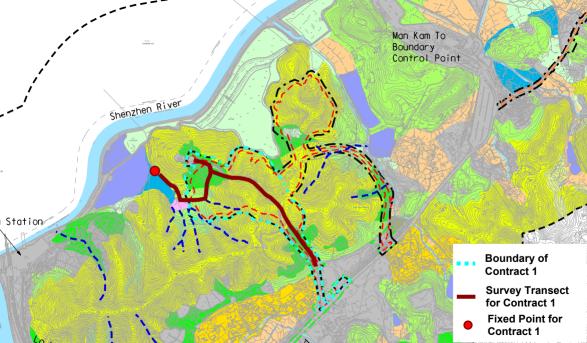


Figure 5: bar chart showing the abundance based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

After analysing survey results in March from 2019 to 2022, there was a decrease in species richness and abundance for wetland habitat. The reduction could be due to natural fluctuation. However, good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.



Appendix I – Transect Routes for Contract CV/2016/10



Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Monthly Environmental Monitoring & Audit Report (No.44) – March 2022



Ecological Survey Report for Contract CV/2017/02



Contract No. CV/2017/02 Development of Columbarium at Sandy Ridge Cemetery – Infrastructural Works at Man Kam To Road and Lin Ma Hang Road

Monthly Report of Ecologically Sensitive Habitats Monitoring – March 2022

Revision Date of issue	0 04 Apr 2022	
Prepared by	Alan Lam	积
Reviewed by	Hoiki Leung	Hork
Verified by	Mike Leung	A

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1 INTRODUCTION

1.1 BACKGROUND

- 1.1.1 The main objective of the proposed site formation and associated infrastructural works for development of columbarium, crematorium (C&C) and related facilities at Sandy Ridge Cemetery is to increase the public cremation services and supply of public niches to meet the future demand.
- 1.1.2 The project includes site formation and associated works for development of C&C facilities at the Sandy Ridge Cemetery, road works within Sandy Ridge Cemetery, widening a section of Lin Ma Hang Road (from 6.5m to 7.3m), provision of off-site pick-up/drop-off points for shuttle buses as well as barging point at Siu Lam, Lok On Pai.
- 1.1.3 The Environmental Impact Assessment (EIA) report, including Environmental Monitoring and Audit Manual (EM&A Manual), was approved with conditions on 8 August 2016 (Register No.: AEIAR-198/2016). EPD issued an Environmental Permit (EP) for the Project (EP-534/2017) on 7 April 2017, variation of EP (EP-534/2017/A) were issued on 24 December 2018.
- 1.1.4 According to Clause 3.1 of the EP (EP-534/2017/A), "The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual. Any changes to the programme shall be justified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual before submission to the Director for approval".
- 1.1.5 This Ecologically Sensitive Habitats Monitoring Methodology articulates the protocol of monitoring the ecology of concerned habitats as specified in EM&A Manual.

1.2 OBJECTIVE

- 1.2.1 According to approved EIA report (AEIAR-198/2016), habitat types within project boundary comprise of watercourse, grassland, upland grassland, plantation, woodland and developed area. Natural habitats were of moderate ecological value in terms of species diversity, species rarity, species abundance, ecological linkage as well as nursery. Moreover, 0.3ha of wet woodland on the northern side of Sandy Ridge was deemed habitat with high ecological value. Four types of habitats were regarded as ecologically sensitive habitats, namely wet woodland, watercourses, upland grassland and woodland. Considering human disturbance in upcoming construction and operation phases, ecologically sensitive habitats shall be monitored in accordance with EM&A Manual.
- 1.2.2 The objective of ecologically sensitive habitats monitoring is to evaluate the effectiveness of measures to minimize impacts on concerned habitats from disturbance and pollution.



2 ECOLOGICALLY SENSITIVE HABITATS

2.1 DESCRIPTION OF HABITATS

2.1.1 In order to monitor the effectiveness of the measures to the minimise impact on ecologically sensitive habitats from disturbance and pollution, monthly monitoring during construction and operation phases is required as specified in EM&A Manual. Standard faunal transect and sampling surveys cover both wetland and non-wetland habitats:

Wetland habitats	Non-wetland habitats
Wet Woodland	Upland Grassland
Watercourses	Woodland

- 2.1.2 Wet woodland is small patch present on northwest of the project boundary, and is confined by the marsh area to the north and the secondary woodland to the east, south and south-west parts. A number of mature trees Cleistocalyx nervosum and Acronychia pedunculata form the tree canopy, with other self-sown shrubs (including Psychotria asiatica, Ligustrum sinense and Glochidion lanceolarium) and trees (Aporosa dioica and Litsea monopetala). Whilst botanically it comprises of naturally regenerated secondary woodland and ground level are a series of small braided streams and weep points which even during the dry season remain wet. This creates a rather uncommon habitat in Hong Kong offering suitable conditions for a good assemblage of common wetland species. The wet woodland provides a good assemblage of micro-habitats, which is relatively undisturbed and has good linkages to other natural habitats. Several species of conversation importance were recorded in EIA report from this habitat: East Asian Porcupine, Leopard Cat, Red Muntjac, Two-striped Grass Frog, Small Snakehead, Somanniathelphusa zanklon, Dancing Shadow-emerald.
- 2.1.3 Seasonal watercourse running west to east in the eastern part of the area inside the Project boundary is shallower in gradient than those running off the hillside. This seasonal watercourse is heavily vegetated with wetland-associated herbs including *Commelina diffusa*, *Polygonum chinense*, *Colocasia esculenta* and *Dracaena sanderiana*. A mature tree of *Aquilaria sinensis* was recorded at the bank of the seasonal watercourse to the west of the Sandy Ridge Cemetery Office. Seasonal watercourses are restricted to the steeper slopes within the project boundary and are characterised by being entirely dry for much of the dry season. However, endemic crab *S. zanklon* population is supported by ephemeral watercourses close to the project boundary.
- Upland grassland is the major habitat within the project boundary. The semi-natural habitat is dominated by typical upland grassland species: fern *Dicranopteris pedata*, grass *Neyraudia reynaudiana*, *Miscanthus floridulus*, climbing vines *Smilax china*, *Smilax glabra*, and shrubs such as *Rhodomyrtus tomentosa*, *Breynia fruticosa* and *Helicteres angustifolia*. Approximately 30 flowering spikes of two orchid species Bamboo Orchid and Toothed Habenaria were recorded near the hill top in the northern part of this upland grassland. Golden-headed Cisticola, which is considered as Local Concern by Fellowes *et al.* (2002), was also recorded in upland grassland on Sandy Ridge, including a proved breeding record of fledged young in September 2013. In addition, numerous species of conservation interest were recorded in EIA report, such as East Asian Porcupine, Leopard Cat, Red Muntjac, Great Swift, Tamil Grass Dart, Small Three-ring and Small Grass Yellow.



2.1.5 Scattered patches of woodland are present throughout the assessment area, with the largest contiguous block located immediately to the east of the project boundary. These woodlands are relatively young with single-layered of canopy dominants (~10 – 15m tall) including *A. dioica, Bridelia tomentosa, Cinnamomum burmannii, Daphniphyllum calycinum, Litsea glutinosa, Rhus succedanea*, and *Zanthoxylum avicennae*. Such areas comprise secondary woodland which is largely derived from natural regeneration and colonisation of trees as a result of seed dispersal by birds and/or bats. A mature tree of *A. sinensis* is located at the woodland edge at the central part of the Project according to EIA report.

2.2 MONITORING MEASURES OF WETLAND HABITATS

- 2.2.1 Wetland habitats include wet woodland and watercourses. Monitoring surveys using standardised quantitative methodology will be conducted at fixed points. For seasonal watercourse, survey shall be conducted whenever the habitat appears.
- 2.2.2 Measures to respond to decreases in numbers of aquatic fauna using the wetland habitats and action and limit levels to trigger these measures are detailed in Table 1.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
taxa diversity	cause identified as related	in taxa	cause identified as related
by 30%	to the project instigate	diversity	to the project instigate
	remedial action to remove	by 50%	remedial action.
	or reduce source of		
	disturbance.		

Table 1 Action and Limit Levels and Responses to Evidence of Declines in Aquatic Fauna

2.3 MONITORING MEASURES OF NON-WETLAND HABITATS

- 2.3.1 Non-wetland habitats consist of upland grassland and woodland. Monthly quantitative surveys of non-aquatic fauna will be conducted using standard route transect counts.
- 2.3.2 Measures to respond to decreases in numbers of non-aquatic fauna using the non-wetland habitats and action and limit levels to trigger these measures are detailed in Table 2.

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction	Investigate cause and if
species diversity	cause identified as related	in species	cause identified as related
by 30%	to the project instigate	diversity by	to the project instigate
	remedial action to remove	50%	remedial action.
	or reduce source of		
	disturbance.		

Table 2 Action and Limit Levels and Responses to Evidence of Declines in Non-Aquatic Fauna



3 METHODOLOGY

The ecological survey includes all taxa being investigated in EIA report. Table 3 summarizes schedule of faunal surveys.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals	$\sqrt{}$	$\sqrt{}$										
Birds (day)	√	√	√	$\sqrt{}$	√	$\sqrt{}$	√	√	$\sqrt{}$	√	\checkmark	\checkmark
Birds (night)				$\sqrt{}$								
Herpetofauna				$\sqrt{}$								
Dragonflies			$\sqrt{}$									
Butterflies			$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	√	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$		
Aquatic fauna	√	√	$\sqrt{}$	$\sqrt{}$								

Table 3 Survey Schedule

3.1 MAMMAL SURVEY

3.1.1 Mammal surveys will be conducted along the transects shown in Appendix 1 during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

3.2 BIRD SURVEY

3.2.1 Bird surveys will be conducted along the transects shown in Appendix 1 during the surveys, species and their vocalizing individuals recorded will be enumerated and recorded according to the habitat(s) they are utilising.

3.3 HERPETOFAUNA SURVEY

3.3.1 Reptile and amphibian surveys will be conducted along transects shown in Appendix 1 during surveys careful searches of appropriate microhabitats and refugia for reptiles and their vocalizing individuals will be undertaken and all reptiles observed will be identified and counted.

3.4 DRAGONFLY SURVEY

3.4.1 Dragonfly surveys will be conducted along transects shown in Appendix 1 during surveys all dragonflies seen will be identified and counted as accurately as possible.



3.5 BUTTERFLY SURVEY

3.5.1 Butterfly surveys will be conducted along transects shown in Appendix 1 during surveys all butterflies seen will be identified and counted as accurately as possible.

3.6 AQUATIC FAUNA SURVEY

3.6.1 Freshwater fishes and macro-invertebrates will be recorded by direct observation. All species trapped/recorded will be enumerated and identified (to the lowest taxonomic level possible), and the species of conservation importance photographed.



4 RESULT

This monitoring survey started on 3rd March 2022, a sunny day. The day survey covered wetland and non-wetland areas. The survey was conducted by transect and at fixed point. All species seen will be identified and counted as accurately as possible.

Mammal

There was no mammal recorded in the monitoring area.

■ Bird

There were a total of 31 bird individuals from 8 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. One species of conservation interests were recorded in this survey: Rose-ringed Parakeet (*Psittacula krameri*) 紅領綠鸚鵡.

■ Herpetofauna

There was no reptile recorded in the monitoring area.

There was no amphibian recorded in the monitoring area.

■ Butterfly

There were a total of 13 butterfly individuals from 4 species recorded in the monitoring area.

Dragonfly

There was no odonate individual recorded in the monitoring area.

■ Freshwater communities

There were 2 species of freshwater fish recorded in the monitoring area.



Picture 1
Watercourse in monitoring area.



Picture 2
Watercourse in monitoring area.





Table 4 Result of mammal in survey

Scientific Name	Common Name		ame Status	03/03/2022							
				UG	WL	MA	ww	WC			
		N/A									

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 5 Result of Avifauna in survey

Scientific Name	Common Name		Conservation Status	03/03/2022					
			Status	UG	WL	MA	ww	WC	
Psittacula krameri	Rose-ringed Parakeet	紅領綠鸚鵡	Class 2 Protected Animal of China; China Red Data Book Status: (Indeterminate);	8					
Lanius schach	Long-tailed Shrike	棕背伯勞				1			
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥			4				
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥			3		4		
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯			5				
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2					
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯				2			
Phylloscopus inornatus	Yellow-browed Warbler	黄眉柳鶯			2				

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 6 Result of reptile in survey

Scientific Name	Common Name		03/03/2022						
			UG	WL	MA	ww	WC		
		N/A							

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse



Table 7 Result of amphibian in survey

Scientific Name	Common Name		se Conservation Status	03/03/2022						
				UG	WL	MA	ww	WC		
		N/A								

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 8 Result of butterfly in survey

Scientific Name	Common Name	Chinese Conservatio Name n Status		03/03/2022					
		1,44110		UG	WL	MA	ww	WC	
Papilio polytes	Common Mormon	玉帶鳳蝶				2			
Pieris canidia	Indian Cabbage White	東方菜粉蝶					2		
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		2			3		
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶					4		

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 9 Result of Odonate in survey

Scientific Name	Common Name	Chinese Conservation Name Status	03/03/2022						
				UG	WL	MA	ww	WC	
		N/A							

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

Table 10 Result of freshwater communities in survey

Scientific Name	Common Name		Conservatio n Status	03/		/03/2022		
				UG	WL	MA	ww	WC
Gambusia affinis	Mosquito fish	食蚊魚						+
Puntius semifasciolatus	Chinese Barb	五線無鬚鯉						+

^{*}UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse

⁺ Species appeared but uncountable



5 DISCUSSION

Data analysis was carried out to compare with the biodiversity within the site boundary in the same month over years. General description of the ecological conditions is first revealed in terms of abundance as well as species richness, following by statistical analysis of the existing database. The result is considered as significant whenever the drop of diversity indexes exceeds the percentages mentioned in previous sections 2.2 and 2.3.

Total abundance and species richness in March over years were compared to show the trends. Figures 1 and 2 indicate total species richness and total abundance within the site boundary respectively.

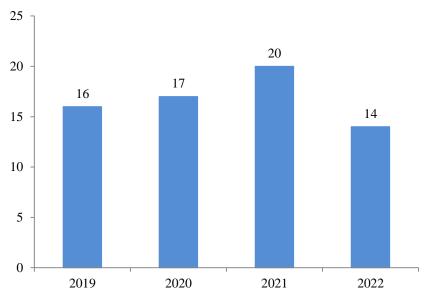


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)

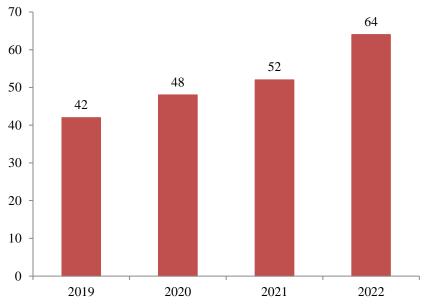


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)



As results in section 4 were categorized by taxa, a detailed breakdown of each taxon is shown in figure 3 to further investigate the trend of specific taxa over contract period.

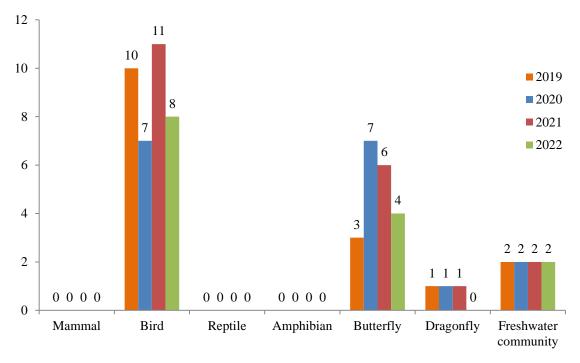


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2022 (Actual quantity annotated at the top of each bar)

5.3 According to EM&A Manual, monitoring measures was determined by the species diversity of types of sensitive habitats, i.e. non-wetland and wetland habitats. Abundance and species richness by habitat type in March over years were compared in figures 4 and 5.

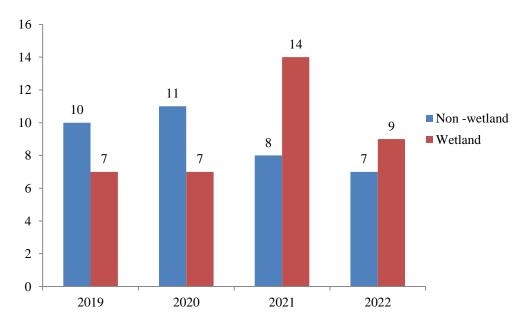


Figure 4: bar chart showing the species richness based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)



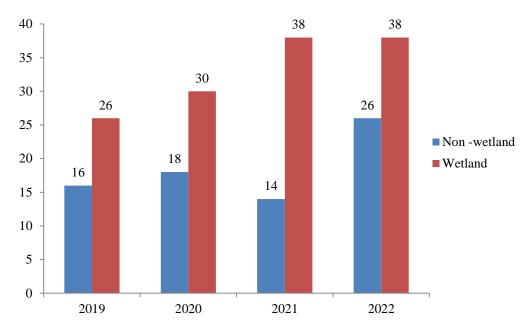
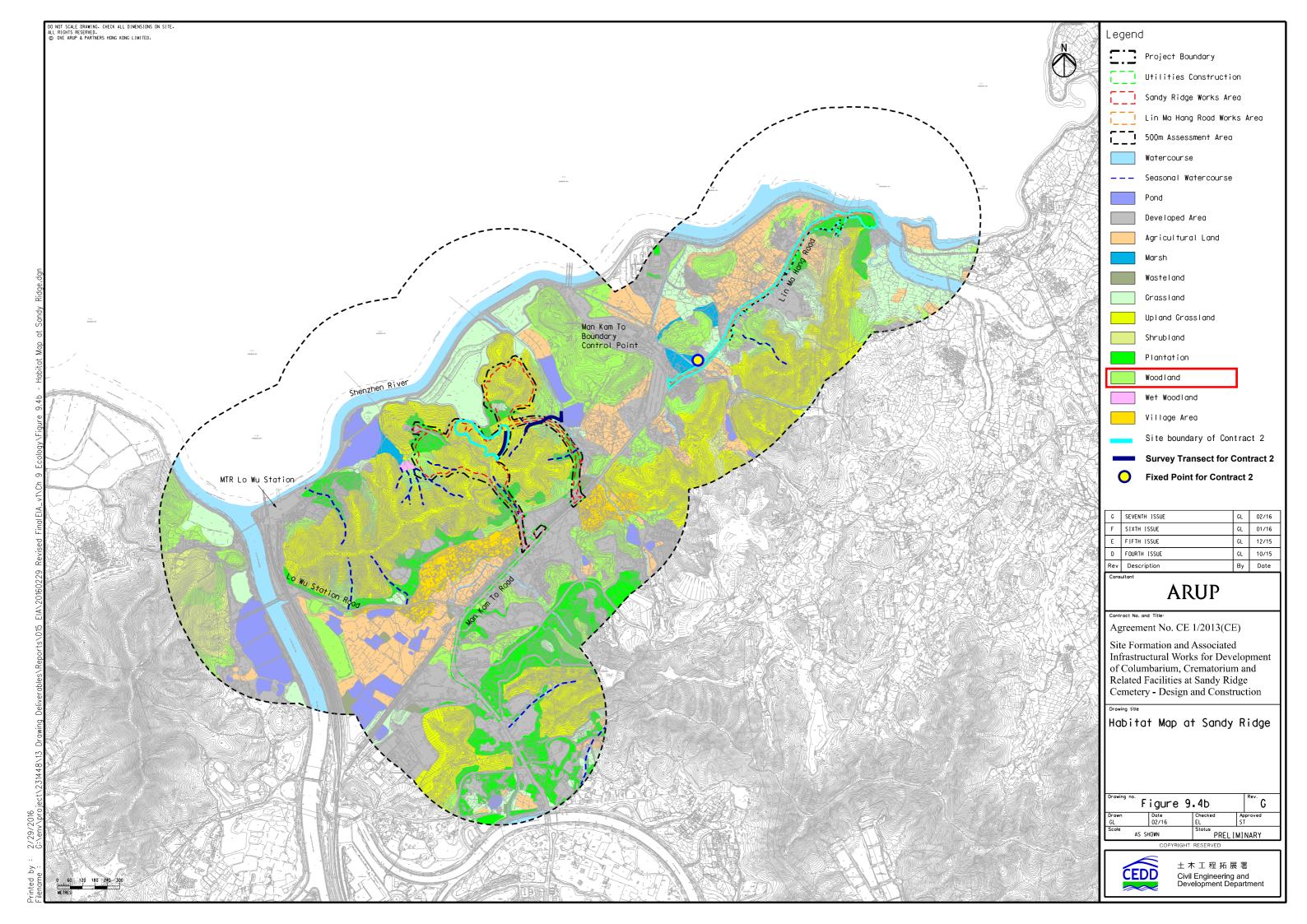


Figure 5: bar chart showing the abundance based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

After analysing survey results in March from 2019 to 2022, there was no significant drop in species richness and abundance for wetland and non-wetland habitats. Still, a good site practice during construction, with reference to EM&A Manual, is required to prevent or alleviate environmental impacts. For instance, the size of work areas should be minimized and disturbed areas should be reinstated immediately after completion of construction works. Unnecessary site clearance should be avoided as well. In addition, implementing proper waste disposal is necessary to reduce contamination to water and soil. Continuous monitoring is also recommended to inspect any significant decrease in species diversity.



Appendix I – Transect Routes for Contract CV/2017/02





Appendix L

Landscape & Visual Inspection Checklist



Contract No. CV/2016/10

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Landscape and Visual Impact Assessment Checklist for Site Audit

Date/ Time: 23/03/2022 11:00 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Im	olemen	tation	Actions/ Remarks
		Yes	No	N/A]
1	Landscape and Visual				
1.1	Is the construction period become shortened?			✓	Under review.
1.2	Is the work site confined within site boundaries and without encroaching into the landscape resources offsite?	✓			
1.3	Is the site kept clean and tidy (E.g. storage of materials, location and appearance of site accommodation being well positioned)	✓			
1.4	Is the construction site screened properly by hoardings or noise barriers in visually unobstructed colours?	√			
1.5	Is the erosion and dust control for exposed soil well performed during excavation work? (E.g. Exposed soil shall be covered or "camouflaged" and watered frequently. Areas that are expected to be left with bare soil for a long period of time should be hydro seeded and / or covered with suitable protective fabrics.)	✓			
1.6	Are the woodland, plantation and other vegetation being protected and preserved in accordance with DEVB TC(W) No. 07/2015(E.g. Set up Tree Protection Zone)?	✓			
1.7	Are the trees which are in direct conflict with the development proposal being transplanted as far as practical in accordance with and DEVB TC(W) No. 07/2015?	✓			
1.8	Are compensatory planting for trees being provided to compensate the trees felled in accordance with DEVB TC(W) No. 07/2015?			✓	Tree planting works have not yet been commenced.
1.9	Are precautionary control measures to protect natural streams and rivers from adverse impact being implemented in accordance with ETWWB TCW No. 5/2005? (E.g. Construction debris and spoil should be covered up and properly disposed)	✓			
1.10	Is light and glare control such as hooding being implemented during construction and operation to minimize light pollution and night time glare? (E.g. All security floodlights for construction sites should be equipped with adjustable shield, frosted diffusers and reflective covers)	✓			

Summary / Remarks:



Follow up actions taken by Contractor for previous comments:

N/A

New observation:

N/A

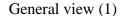
Reminders:

- 1. Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement.
- 2. Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 3. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density. Contractor is reminded to provide proper maintenance according to approved method statement.

Photo Record:

Fig A. Fig B.







General view (2)

Fig C. Fig D.



General view (3)



General view (4)



Fig E.



Transplanted tree (T-2465)

Fig F.



Transplanted tree (T-2468)





Transplanted tree (T-2928)



Contract No. CV/2017/02

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery

Development of Columbarium at Sandy Ridge Cemetery —

Infrastructural Works at Man Kam To Road and Lin Ma Hang Road

Landscape and Visual Impact Assessment Checklist for Site Audit

Date/ Time: 23/03/2022 12:00 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Im	olemen	tation	Actions/ Remarks
		Yes	No	N/A	1
1	Landscape and Visual				
1.1	Is the construction period become shortened?			✓	Under review
1.2	Is the work site confined within site boundaries and without encroaching into the landscape resources offsite?	√			
1.3	Is the site kept clean and tidy (E.g. storage of materials, location and appearance of site accommodation being well positioned)	√			
1.4	Is the construction site screened properly by hoardings or noise barriers in visually unobstructed colours?	√			
1.5	Is the erosion and dust control for exposed soil well performed during excavation work? (E.g. Exposed soil shall be covered or "camouflaged" and watered frequently. Areas that are expected to be left with bare soil for a long period of time should be hydro seeded and / or covered with suitable protective fabrics.)	✓			
1.6	Are the woodland, plantation and other vegetation being protected and preserved in accordance with DEVB TC(W) No. 07/2015(E.g. Set up Tree Protection Zone)?	✓			
1.7	Are the trees which are in direct conflict with the development proposal being transplanted as far as practical in accordance with and DEVB TC(W) No. 07/2015?			✓	
1.8	Are compensatory planting for trees being provided to compensate the trees felled in accordance with DEVB TC(W) No. 07/2015?			✓	
1.9	Are precautionary control measures to protect natural streams and rivers from adverse impact being implemented in accordance with ETWWB TCW No. 5/2005? (E.g. Construction debris and spoil should be covered up and properly disposed)			✓	
1.10	Is light and glare control such as hooding being implemented during construction and operation to minimize light pollution and night time glare? (E.g. All security floodlights for construction sites should be equipped with adjustable shield, frosted diffusers and reflective covers)			✓	

Summary / Remarks:

Follow up actions taken by Contractor for previous comments:



N/A

New Observation:

N/A

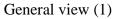
Reminders:

1. Contractor is reminded to set up TPZ of proper size and with appropriate material around retain trees according to approved method statement. Contractor should prevent any construction material pile within TPZ and ensure no works is allowed within the TPZ.

Photo Record:

Fig A. Fig B.







General view (2)

Fig C. Fig D.



General view (3)



General view (4)



Signature:

		Signature Board His	Date
Recorded by	Registered Landscape Architect	LA RB	25 Mar 2022
Checked by	Environmental Team Leader	Am	11 Apr 2022
Checked by	Independent Environmental Checker		14 Apr 2022



Appendix M

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table for 2022

Department: Civil Engineering and Development Department Contract No.: CV/2016/10

Contract Title: Site Formation and Assoicated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

Commencement Date: 15-Dec-2017 Estimated completion Date 22-Dec-2023 Estimated Contract Sum: 780M

		Actual Quantities	s of Inert C&D M	Iaterials Generated	l Monthly			Actual Quantities	of C&D Wastes	Generated Monthly	y
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	1.589	0.000	0.500	0.000	1.089	0.588	0.000	0.000	0.000	0.000	0.070
Feb	0.486	0.000	0.200	0.000	0.286	0.000	0.000	0.000	0.000	0.000	0.015
Mar	0.669	0.000	0.200	0.000	0.469	0.000	0.000	0.000	0.000	0.000	0.020
Apr											
May											
June											
Sub-total	2.744	0.000	0.900	0.000	1.844	0.588	0.000	0.000	0.000	0.000	0.105
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	2.744	0.000	0.900	0.000	1.844	0.588	0.000	0.000	0.000	0.000	0.105

Notes: (1) The waste flow table should cover the whole construction period of the Contract.

- (2) The original estimates of the C&D materials should be the estimates at contract commencement and should not be altered during construction.
- (3) Inert C&D materials that are specified in the Contract to be imported for use at the Site shall be separately indicated.
- $(4) \quad \text{The yearly estimates of the $C\&D$ materials should be updated as appropriate taking into account the latest works programme etc.}$
- $(5) \quad Plastics \ refer \ to \ plastic \ bottles/containers, \ plastic \ sheets/foam \ from \ packaging \ material.$
- (6) Broken concrete for recycling into aggregates.

Name of Department: CEDD

Monthly Summary Waste Flow Table for 2022

	A	ctual Quantities	of Inert C&D N	Iaterials Gener	ated Monthl	У	Actual Q	uantities of C	C&D Wastes	Generated	Monthly
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in Litre)	(in '000kg)
JAN	401.710	0.000	0.000	0.000	401.71	0.000	0.000	0.000	0.000	0.000	13.180
FEB	639.350	0.000	0.000	0.000	639.35	0.000	0.000	0.000	0.000	0.000	5.670
MAR	112.260	0.000	0.000	0.000	112.26	0.000	0.000	0.000	0.000	0.000	12.640
APRIL											
MAY											
JUN											
Sub Total	1153.320	0.000	0.000	0.000	1153.320	0.000	0.000	0.000	0.000	0.000	31.490
JUL											
AUG											
SEP											
OCT											
NOV											
DEC											
Total	1153.320	0.000	0.000	0.000	1153.320	0.000	0.000	0.000	0.000	0.000	31.490

Notes: * estimated quantity (pending from EPD NENT (soil) to update the actual quantity)

Name of Department: CEDD

	Forecast of Total Quantities of C&D Materials to be Generated from the Contract (see Note 4)											
Total Quantity Generated	Hard Rocks and Large Broken Concrete	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported Fill	Metal	Paper / cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse		
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)		
0	0	0	0	0	0	0	0	0	1	0		

Notes:

- (1) The performance targets are given in PS clause 6(14) above.
- (2) The waste flow table shall also include C&D materials that are specified in the Contractor to be imported for use at the Site.
- (3) Plastic refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4) The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature
- Hard Rocks and Large Broken Concrete = Cannot be defined at this stage
- Imported Fill = Estimated by the Contractor
- Metal = Estimated by the Contractor
- Paper/cardboard packaging = Estimated by the Contractor
- Plastics = Estimated by the Contractor
- Chemical Waste = Estimated by the Contractor (Spent lubricating oil, assume density 0.9kg/L)
- Other, e.g. general refuse = Estimated by the Contractor



Appendix N

Complaint Log and

Investigation Report



Complaint Log for Contract 1

Log ref.	Date of complaint	Complaint route	Reference no.	Complaint nature	Investigation fining	Status
1	15-Apr-21	EPD	EPD Ref.: EP3/N07/RN/8770-21	Air Quality	Non-project related	Interim IR was submitted to EPD on 22 April 2021 and included in EM&A Report – Apr 2021
2	11-Feb-22	EPD	EPD Ref.: EP3/N07/RN/03921-22	Noise	Non-project related	Interim IR was submitted to EPD on 25 Feb 2022 and included in EM&A Report – Feb 2021

Complaint Log for Contract 2

			Complaint Log IC	71 00111111111		
Log ref.	Date of complaint	Complaint route	Reference no.	Complaint nature	Investigation fining	Status
1	4-Sep-20	EPD	EPD Ref.: EP/RN/419300	Water quality	Non-project related	Interim IR was submitted to EPD on 14 Sep 2020 Included in EM&A Report – Sep 2020
2	15-Apr-21	EPD	EPD Ref.: EP3/N07/RN/8770-21	Air Quality	Non-project related	Interim IR was submitted to EPD on 22 April 2021 and
3	11-Feb-22	EPD	EPD Ref.: EP3/N07/RN/03921-22	Noise	Non-project related	Interim IR was submitted to EPD on 25 Feb 2022 and included in EM&A Report – Feb 2021



Appendix O

Implementation Schedule for Environmental Mitigation Measures

Environmental Mitigation Implementation Schedule - Sandy Ridge

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*					
Common M	Common Mitigation Measures (Applicable to ALL Project Components, including DPs and Non-DPS)											
Construction	on Dust Impact											
S4.4.5.2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria	Implemented.					
\$4.4.5.3	Water spraying every hour for all active works area.	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria	Implemented. *2 nos. of water truck were running on haul road for sufficient water spraying					
S4.4.5.2	 Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels; When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period; The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials; Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously; Any area that involves demolition activities should be sprayed with water or a 	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dust impact to meet HKAQO and TM-EIAO criteria	Implemented Implemented Implemented Implemented Implemented Implemented Implemented Implemented					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
	dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet; Any skip hoist for material transport should be totally enclosed by impervious						Implemented
	sheeting; • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA)						Implemented
	should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;						Implemented
	 Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; Exposed earth should be properly treated by compaction, turfing, hydroseeding, 						Implemented
	vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.						Implemented
S4.4.5.1	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO	Implemented. 3 dust monitoring stations were Implemented.
S4.4.5.3	 All road surface within the barging facilities will be paved. Dust enclosures will be provided for the loading ramp, installation of 3- sided screen with top cover and the provision of water sprays at the discharge point would be provided. Vehicles will be required to pass through designated wheel wash facilities. Continuous water spray at the loading point. 	Minimise dust impact at the nearby sensitive receivers	Contractor	Barging point at Siu Lam	Construction phase	• TM-EIAO	No Applicable. * Barging point at Siu Lam is not in used.
Construction		•	•			•	
S5.5.5.3	Implement the following good site management practices: only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;	Control construction noise	Contractor	All construction sites	Construction phase	• Annex 5, TM-EIAO	Implemented
	 machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; 						Implemented
	• plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;						Implemented
	 silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; 						Implemented
	 mobile plant should be sited as far away from NSRs as possible and practicable; material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from onsite construction 						Implemented Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
	activities.						
85.5.5.5	Adopt quiet plants during the construction of viaduct, widening of Sha Ling Road, construction of platform for crematorium and widening of Lin Ma Hang Road. The quiet plants should be made reference to the PME listed in the TM or the QPME/ other commonly used PME listed in EPD web pages or taken from BS5228: Part 1: 2009 Noise Control on Construction and Open Sites as far as possible.	Reduce the noise levels of plant items	Contractor	Works area for construction of viaduct, widening of Sha Ling Road, construction of platform for crematorium and widening of Lin Ma Hang Road	Construction phase	• Annex 5, TM-EIAO	Implemented * Quiet plants were in used.
\$5.5.5.6	Install temporary noise barriers (in the form of site hoardings, approx. 2.4m high) located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening.	Contractor	All construction sites where practicable	Construction phase	Annex 5, TM-EIAO	Implemented where necessary. * Temporary noise barriers are not practicable due to site constraint.
\$5.5.5.7 - \$5.5.5.12	Install movable noise barriers (typical design is wooden framed barrier with a small-cantilevered upper portion of superficial density no less than 7kg/m2 on a skid footing with 25mm thick internal sound absorptive lining), acoustic mat or full enclosure, screen the noisy plants including air compressors, generators etc.	Screen the noisy plant items to be used at all construction sites	Contractor	All construction sites where practicable	Construction phase	Annex 5, TM-EIAO	Implemented where necessary. * Movable noise barriers are not practicable due to site constraint.
\$5.5.5.13	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction noise	Contractor	All construction sites where practicable	Construction phase	Annex 5, TM-EIAO	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
S13.2.1.1 - S13.4.1.2	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representative noise monitoring station	Construction phase	TM-EIAO	Implemented. * 4 noise monitoring stations were Implemented.
Operation	l nl Noise (Road Traffic Noise)						L
S5.6.6.4	Provide a series of noise mitigation measures including absorptive noise barriers and low noise road surfacing materials along Lin Ma Hang Road and Sha Ling Road before operation of the proposed project for existing and planned representative NSRs. Locations of noise mitigation measures are stated as following: For existing representative NSRs Approx. 12m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM1); Approx. 92m of absorptive noise barrier 3m above road level along Sha Ling Road (MM2); Approx. 28m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM3); Approx. 51m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM4); Approx. 25m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM5); Approx. 21m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM6); Approx. 14m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM7); Approx. 18m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM8); Approx. 42m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM8); Approx. 93m of absorptive noise barrier 3m above road level along Lin Ma Hang Road opposite San Uk Ling (MM10); Approx. 185m of low noise surfacing materials along Lin Ma Hang Road near San Uk Ling (MM10); For planned representative NSRs Approx. 36m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM12);	Reduce operation noise from road traffic	Contractor	Refer to Figures 5.6.9 - 5.6.13 of the EIA Report	Prior to operation of the Project for existing representative NSRs. While for barriers to protect planned representative NSRs, it should constructed before intake of planned representative NSRs.	• TM-EIAO	Shall be implemented Prior to operation of the Project.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
	 Road near Muk Wu Nga Yiu (MM13); Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM14); Approx. 31m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM15); Approx. 41m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM16); Approx. 340m of low noise surfacing materials along Lin Ma Hang Road near Muk Wu Nga Yiu (MM17). 						
Water Qua	lity (Construction Phase)						
S6.4.4.1 - S6.4.4.3	 In accordance with the Practice Note for Professional Persons on Construction Site Drainage, Environmental Protection Department, 1994 (ProPECC PN1/94), construction phase mitigation measures shall include the following: General Site Operation At the start of site establishment, perimeter cut-off drains to direct offsite water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented. Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct stormwater to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction; Diversion of natural stormwater should be avoided as far as possible. The design of temporary on-site drainage should prevent runoff going through site surface, construction machinery and equipment in order to avoid or minimise polluted runoff. Sedimentation tanks with sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m³ capacities are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity shall be flexible and able to handle multiple inputs 	To minimise water quality impact from construction site runoff and general construction activities	Contractor	All construction sites where applicable	Construction phase	Water Pollution Control Ordinance ProPECC PN1/94 TM-EIAO TM-DSS	Implemented
	from a variety of sources and suited to applications where the influent is pumped; • The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the						Implemented
	 permanent drainage channels to enhance deposition rates; The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94. The detailed design of the sand/silt traps 						Implemented
	shall be undertaken by the contractor prior to the commencement of construction; Construction works should be programmed to minimise surface excavation works during the rainy seasons (April to September). All exposed earth areas should be						Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
	completed and vegetated as soon as possible after earthworks have been						
	completed. If excavation of soil cannot be avoided during the rainy season, or at						
	any time of year when rainstorms are likely, exposed slope surfaces should be						
	covered by tarpaulin or other means;						
	• If the excavation of trenches in wet periods is necessary, it should be dug and						Implemented
	backfilled in short sections wherever practicable. Water pumped out from						
	trenches or foundation excavations should be discharged into storm drains via silt						
	removal facilities;						
	 All drainage facilities and erosion and sediment control structures should be 						Implemented
	regularly inspected and maintained to ensure proper and efficient operation at all						
	times and particularly following rainstorms. Deposited silt and grit should be						
	removed regularly and disposed of by spreading evenly over stable, vegetated						
	areas;						
	 All open stockpiles of construction materials (for example, aggregates, sand and 						
	fill material) of more than 50m3 should be covered with tarpaulin or similar fabric						Implemented
	during rainstorms. Measures should be taken to prevent the washing away of						
	construction materials, soil, silt or debris into any drainage system;						
	 Manholes (including newly constructed ones) should always be covered and 						
	temporarily sealed so as to prevent silt, construction materials or debris being						Implemented
	washed into the drainage system and storm runoff being directed into foul						
	sewers;						
	• Precautions be taken at any time of year when rainstorms are likely, actions to be						
	taken when a rainstorm is imminent or forecasted, and actions to be taken during						Implemented
	or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.						
	Particular attention should be paid to the control of silty surface runoff during						
	storm events, especially for areas located near steep slopes;						
	 All vehicles and plant should be cleaned before leaving a construction site to 						
	ensure no earth, mud, debris and the like is deposited by them on roads. An						Implemented
	adequately designed and sited wheel washing facilities should be provided at						
	every construction site exit where practicable.						
	 Wash-water should have sand and silt settled out and removed at least on a 						
	weekly basis to ensure the continued efficiency of the process. The section of						Implemented
	access road leading to, and exiting from, the wheel-wash bay to the public road						
	should be paved with sufficient backfall toward the wheel-wash bay to prevent						
	vehicle tracking of soil and silty water to public roads and drains;						
	Oil interceptors should be provided in the drainage system downstream of any						
	oil/fuel pollution sources. The oil interceptors should be emptied and cleaned						Implemented
	regularly to prevent the release of oil and grease into the storm water drainage						
	system after accidental spillage. A bypass should be provided for the oil						
	interceptors to prevent flushing during heavy rain;						

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
	 Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid water quality impacts; All fuel tanks and storage areas should be provided with locks and sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank to prevent spilled fuel oils from reaching water sensitive receivers nearby; 						Implemented Implemented
	 Regular environmental audit on the construction site should be carried out in order to prevent any malpractices. Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the water bodies, marsh and ponds; Adopt best management practices. 						Implemented
S6.4.4.4 - S6.4.4.5	Sewage from workforce Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance; Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project; Regular environmental audit on the construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site.	To minimise water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS	Implemented Implemented Implemented
S6.4.4.6	 Operation of Barging Point at Siu Lam All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation; All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Mitigation measures for land-based activities as outlined in Section 6.4.4 should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate. 	To minimise water quality from operation of barging point at Siu Lam	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS	No Applicable. * Barging point at Siu Lam is not in used.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
S6.5.4.1 - S6.5.4.6	The following mitigation measures during operational phase are recommended: Sewage and wastewater discharge should be connected to foul sewerage system; Proper drainage systems with silt traps and oil interceptors should be installed; The design of road gullies with silt traps should be incorporated especially for the catchment leading to the existing wet woodland area located at the north of the site; The silt traps and oil interceptors should be cleaned and maintained regularly, especially before peak seasons of the visitors in Ching Ming Festival and Chung Yeung Festival; Energy dissipaters should be installed at the seasonally wet watercourses to reduce the magnitude of the first flush in order to minimise the erosion impact to the wet woodland. agement (Construction Waste)	To minimise the road runoff, wastewater discharge and erosion of seasonal watercourse during the operational phase	Highways Department /Contractors	Whole alignment	Construction / Operational Phase	Water Pollution Control Ordinance TM-DSS	For Operational phase
\$7.3.3.8	Construction & Demolition Material Management Plan (C&DMMP) • A C&DMMP shall be submitted to the Public Fill Committee for approval in the case of C&D materials disposal exceeding 50,000m3.	To enhance the management of construction and demolition (C&D) material including rock in public works projects	Contractor	All construction sites	Construction phase	Project Administrative Handbook for Civil Engineering Works, 2012 Edition	
S7.3.4.2	 Good Site Practice The following good site practices are recommended throughout the construction activities: nomination of an approved personnel, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site; training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling; provision of sufficient waste disposal points and regular collection for disposal; appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; a Waste Management Plan (WMP) should be prepared by the contractor and submitted to the Engineer for approval. 	Minimise waste generation during construction	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented Implemented Implemented Implemented Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
\$7.3.4.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal; • proper storage and site practices to minimise the potential for damage and contamination of construction materials; • plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; • sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete metal etc.); • provide training to workers on the importance of appropriate waste management	Reduce waste generation	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance	Implemented Implemented Implemented Implemented Implemented
S7.3.4.5	procedures, including waste reduction, reuse and recycling. Storage of Waste The following recommendation should be implemented to minimise the impacts: non-inert C&D materials such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse;	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction phase	• Land (Miscellaneous Provisions) Ordinance • Waste Disposal Ordinance • ETWB TCW No. 19/2005	Implemented Implemented Implemented
\$7.3.4.6	Collection and Transportation of Waste The following recommendation should be implemented to minimise the impacts: • remove waste in timely manner; • employ the trucks with cover or enclosed containers for waste transportation; • obtain relevant waste disposal permits from the appropriate authorities; and • disposal of waste should be done at licensed waste disposal facilities.	Minimise waste impacts from storage	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance	Implemented Implemented Implemented Implemented
S7.3.4.8 - S7.3.4.15	Excavated and C&D Materials Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: • maintain temporary stockpiles and reuse excavated fill material for backfilling; • carry out on-site sorting; • make provisions in the Contract documents to allow and promote the	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance	Implemented Implemented Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
\$7.3,4.17	 use of recycled aggregates where appropriate; and implement a recording system for the amount of waste generated, recycled and disposed of for checking. The recommended C&D materials handling should include: On-site sorting of C&D materials; Reuse of C&D materials; and Use of Standard Formwork and Planning of Construction Material purchasing. Chemical Waste 	Control the chemical	Contractor	All	Construction	• Waste Disposal	Implemented Implemented Implemented Implemented Implemented Implemented Implemented Implemented Implemented
S7.3.4.18	If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	waste and ensure proper storage, handling and disposal.		construction	phase	(Chemical Waste) General) Regulation • Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	
\$7.3.4.19	 General Refuse General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. A reputable waste collector should be employed to remove general refuse on a daily basis. 	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance	Implemented Implemented Implemented
\$7.3.4.20	The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. Regularly collection by licensed collectors should be arranged to minimise potential environmental impacts.	Minimise production of sewage impacts	Contractor	All construction sites	Construction phase	Waste Disposal Ordinance	Implemented Implemented
Waste Man	agement (Operational Waste)						
\$7.4.4.1	General Refuse A reputable waste collector should be employed to remove general refuse on a daily basis.	Remove general refuse during routine road cleaning activities on the roads network and avoid odour, pest and litter impacts	Highways Department /Contractor	Roads network for the C&C facilities and Lin Ma Hang Road	Operational phase	Waste Disposal Ordinance	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
Land Contamination							
S8.9.1.1	Re-appraisal of the potentially contaminated site (SRC-1)	Identify any hot spots for SI within the southeast and western portions of SRC-1	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Once the works area for the Project is confirmed and site access is available (e.g. after land resumption)	Annex 19 of the TM-EIAO, Guidelines for Assessment of Impact On Sites of Cultural Heritage and Other Impacts (Section 3 :Potential Contaminated Land Issues); Guidance Manual for Use of Risk-Based Remediation Goals (RBRGs) for Contaminated Land Management; Guidance Notes for Contaminated Land Assessment and Remediation; and Practice Guide for Investigation and Remediation of Contaminated Land Recommendations in Health Risk Assessment	Implemented
S8.11.1.1	Preparation and submission of Contamination Assessment Plan (CAP) to EPD for review and approval, if required	Present the findings of the reappraisal and strategy of the recommended SI, if required	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	After land resumption and prior to the construction phase	Ditto	Implemented
S8.11.1.2	Preparation and submission of Contamination Assessment Report (CAR) to EPD for review and approval, if required	Present the findings of SI, if any, and evaluate the level and extent of potential contamination	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto	Implemented
S8.11.1.2	Preparation and submission of Remediation Action Plan (RAP) to EPD for review and approval if contamination is identified	Recommend appropriate mitigation	Project Proponent	Potentially contaminated	Prior to the construction	Ditto	Not required as no contamination is

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
		measures for the contaminated soil and groundwater identified in the assessment if	Detailed Design Consultant	site (SRC-1)	phase		identified.
S8.11.1.2	Preparation and submission of Remediation Report (RR) to EPD for review and approval following the completion of any necessary remediation works	remediation is required Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Project Proponent / Detailed Design Consultant	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto	Not required as no contamination is identified.
Ecology (Construction Phase)						
S9.7.2.3	Preparation and submission of Upland Grassland Reinstatement Plan to EPD for agreement.	An Upland Grassland Reinstatement Plan will be prepared by a qualified ecologist/botanist with full details of the findings of a baseline grassland survey, the practical details and methodology of the physical excavation, transport and storage or turves/topsoil and their subsequent reinstatement once the receptor sites have been established, along with an implementation programme of reinstatement, post- reinstatement monitoring and maintenance programme.	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Upland Grassland Reinstatement Plan	Engineered slopes Of Crematorium Indicative locations for Grassland Reinstatement should be referred to Figure 9.11 of the EIA Report	Prior to construction phase	Reinstatement and establishment requirements to be detailed in Upland Grassland Reinstatement Plan TM-EIAO	Implemented *Upland Grassland Reinstatement Plan was submitted to EPD.

EIA Ref.	Recommended Mitigation Measures	Objectives of the	Implementation	Location /	Implementation	Requirements	Implementation
		Recommended	Agent	Timing	Stage	and / or standards to	status and remark*
		Measures & Main				be achieved	
		Concerns to address					
		should be proposed in					
		the Grassland					
		Reinstatement Plan so					
		as to describe the					
		action and limit					
		levels and the action					
		plan if certain					
		performance criteria					
		(such as area of					
		preferred habitat) are					
		not met during the					
		monitoring and					
		maintenance period.					
S9.7.2.5	Preparation and submission of a Vegetation Survey Report and	The Vegetation Survey	Project Proponent/	Within the	Prior to	 Survey findings and 	Implemented
-	Transplantation Proposal (if needed as concluded in the Vegetation Survey Report) to	will report the	Detailed Design	Project	construction	transplantation	* Vegetation Survey
S9.7.2.6	EPD for agreement.	presence, as well as	Consultant	Area where	phase	methodology to be	Report and
		update the conditions,	(qualified	applicable		detailed in Vegetation	Transplantation
		number, locations and	ecologist/			Survey Report and	Proposals for
		habitat types of any	botanist) for			Transplantation Plan	Contract 1 and
		identified floral	Vegetation Survey			respectively.	Contract 2 were
		species of	Report and			• TM-EIAO.	submitted to EPD.
		conservation	Transplantation				
		importance to be	Proposal.				
		impacted by the					
		development, and					
		evaluate suitability					
		and/or practicality of					
		transplantation.					
		The Transplantation					
		Proposal will					
		recommend locations					
		of the receptor site(s),					
		transplantation					
		methodology,					
		implementation					
		programme of					
		transplantation and					
		post-transplantation					
		monitoring					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address and maintenance programme.	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
\$9.7.5.3 - \$9.7.5.5, \$9.8.1.6	Preparation and submission of Enhancement Woodland Proposal to EPD for agreement.	Recommend appropriate enhancement planting programme, planting and post-transplantation monitoring methodology, action plan for monitoring the enhancement planting and maintenance programme.	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Wooded Area Proposal.	Filled slope west of the platform, and north west of the platform in the valley below MacIntosh Fort Indicative locations for Enhancement Woodland should be referred to Figure 9.11 of the EIA Report	Prior to construction phase	Enhancement planting and establishment requirements to be detailed in Wooded Enhancement Proposal. TM-EIAO	Implemented *Woodland compensation plan was submitted to EPD.
\$9.7.3.1 - \$9.7.3.3	Indirect impacts due to potential changes in water quality, hydrology and sedimentation could occur to a series of downstream watercourses and wetland systems (including the wet woodland, marsh and mitigation ponds) during both the construction (for the Platform and LMHR widening works) and operational stages. Generally, indirect water impact to any aquatic fauna during the construction phase should easily be avoided by implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and good site practices (further details are discussed in Section 6 of the EIA Report). In addition, construction phase impacts on the watercourses, riparian corridor and fauna using these areas will be minimised by erection of a 2m high, solid, dull green site boundary fence on the edge of any active works area, 30m from the watercourse. Where this is not practicable due to site constraints, demarcation fencing will need to be erected to prevent unauthorised encroachment into the riparian corridor by constructions works and traffic. Detailed mitigation measures will be designed at the detailed design stage.	Minimise the indirect impacts to Water Quality and Hydrology	Contractor /detailed design consultant.	On the edge of any active works area, 30m from The watercourse	Prior to commencement and during construction phase	• ETWB TCW No. 5/2005 • TM-EIAO	Implemented.

EIA Ref.	Recommended Mitigation Measures	Objectives of the	Implementation	Location /	Implementation	Requirements	Implementation
LIII KCI.	Recommended Printigation Predicties	Recommended	Agent	Timing	Stage	and / or standards to	status and remark*
		Measures & Main	rigent	Timing	Stage	be achieved	status and Temark
		Concerns to address				be acine veu	
S9.7.3.4	Mitigation for noise disturbance (details refer to \$5.5.5 to \$5.6.6 of this table). Site	The construction work	Contractor	All	Prior to	• TM-EIAO.	
_	formation and construction are tentatively proposed to cover a 65-month period from	and site formation will	Project Proponent	construction	commencement	TWI EINO.	
S9.7.3.6	mid 2017 to late 2022.	be phased in order to	1 Toject 1 Toponent	sites	and		
57.7.3.0	mid 2017 to face 2022.	reduce overall noise		Sites	during		
	As a precautionary approach, consideration should be given at the detailed design stage	disturbance impacts in			construction		
	to avoid the use of highly reflective materials in the design and implementing the use	particular areas.			phase		
	of opaque materials, fritting, breaking up external reflections with stickers or plastic	Collisions usually			phase		
	wrap and/or any other birdfriendly design for noise barriers.	occurs as a result of					
	with and of any other oraniently design for noise ouriers.	birds perceiving a					
	Works will be restricted to daytime and any construction lighting should	clear path through an					
	be designed and positioned as to not impact on adjacent ecologically sensitive areas.	object that is					
	and positioned as to not impact on adjacent ecologically sensitive areas.	transparent or appears					
		to be transparent at					
		some distance, or if					
		the noise barrier is					
		highly reflective which					
		would appear to be					
		composed of the					
		adjacent natural					
		vegetation.					
		Furthermore,					
		mitigation measures to					
		control noise					
		disturbance during this					
		phase will involve the					
		selection of					
		quieter plant, use of					
		movable noise barriers					
		and erection of					
		hoarding and fencing					
		to demarcate the site					
		boundary					
.9.7.3.7	In order to demonstrate ecological awareness and to minimise the risk of indirect	Minimise impacts on	Contractor	All	Prior to	• TM-EIAO.	
.,.,.,.,	impacts from water pollution and hill fires, a series of good site practices should be	hydrological condition	Contractor	construction	commencement	1111 21110.	
	adopted by site staff throughout the construction phase at each works site. These are as	and water quality of		sites	and		
	follows:	hillside watercourses		3100	during		
	Put up signs to alert site staff about any locations which are ecologically sensitive	and reduce chances of			construction		Implemented
	and measures to prevent accidental impacts;	hillfires.			phase		Implemented
	Erection of temporary geotextile silt or sediment fences/oil traps around any	mmics.			Pilase		Implemented
	earth-moving works to trap any sediments and prevent them from entering						Implemented
	carm-moving works to trap any seaments and prevent them from entering		<u> </u>	L		1	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
S.9.7.3.9	watercourses; Prohibition of soil storage against trees or close to waterbodies; Delineation of works site to prevent encroachment onto adjacent habitats and fence off areas which have some ecological value; No smoking, hot works or sources of fire close to upland grassland; No on-site burning of waste; and Waste and refuse in appropriate receptacles. Precautionary checks by a suitably experienced ecologist of the vegetation for the presence of nesting birds should be carried out in the breeding season (February to July) before vegetation clearance. These impacts can be avoided by conducting vegetation clearance during the non-breeding season (tentatively August-January) and	Minimise the impacts to breeding birds within the works areas.	Contractor	All construction sites	Prior to site clearance	• TM-EIAO • WAPO	Implemented Implemented Implemented Implemented Implemented Implemented Implemented during breeding season.
Ecology (C	phased through the project period to minimise impacts. **Department of the project period to minimise impacts.** **Department of the project period to minim			<u> </u>			
S9.7.2	Establishment, maintenance and monitoring of a Upland Grassland Reinstatement Area	Reinstatement of upland grassland and to maintain connectivity in Sandy Ridge.	Project Proponent/ Contractor / Maintenance Authority	Engineered slopes of Crematorium Indicative locations for Grassland Reinstatement should be referred to Figure 9.11 of the EIA Report	Operational phase	Monitoring methodology and successfulness of survival of upland grassland should follow Upland Grassland Reinstatement Plan. TM-EIAO.	Upland Grassland Reinstatement Area will be implemented by other contract.
\$9.7.5.3 - \$9.7.5.6	Establishment, maintenance and monitoring of an enhancement woodland	Recommend appropriate enhancement planting programme, planting and post-transplantation monitoring methodology, action plan for monitoring the enhancement planting and	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for Wooded Area Proposal.	Filled slope west of the platform, and north west of the platform in the valley below MacIntosh Fort	Operational phase	Enhancement planting and establishment requirements to be detailed in Wooded Area Proposal. TM-EIAO.	

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
		maintenance		Indicative			
		programme.		locations for			
				Enhancement			
				Woodland			
				should			
				be referred to			
				Figure 9.11			
				of the			
				EIA Report			
S9.7.4.1	Mitigation for Impacts to Water Quality and Hydrology (Operational	Specific mitigation	Detailed Design	Wet	Detailed Design	• TM-EIAO	Implemented before
-	<u>Phase</u>)	measures will be	Consultant	woodland	phase/Operational		Operational phase
S9.7.4.5	• Stormwater drainage system will be further developed in detailed design stage to	implemented to		(and further	phase		
	collect dusty materials from water collected from the platform and associated road	prevent indirect		down			
	system. Silt traps will be installed to ensure removal of dusty materials. Regular	impacts wetland		the marsh and			
	cleaning will be conducted to avoid debris entering downstream rivers during first	habitats and fauna.		mitigation			
	flush; and	Mitigation measures		ponds)			
	The proposed small diameter bore pile system at the foundation of	are to be further		and the			
	the proposed platform structure.	developed in the		seasonal			
		detailed design stage		watercourse			
		to address any water		to the			
		quality impacts due to		east of the			
		the drainage from the		Project			
		proposed platform, and any erosion issues		boundary			
		due to the drainage					
		from the proposed					
		platform.					
		The surface runoff					
		collected on the					
		platform will be					
		captured by a					
		stormwater drainage					
		system, which will be					
		further developed					
		at the detailed design					
		stage.					
		The proposed small					
		diameter bore					
		pile system at the					
		foundation of the					

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
\$9.7.4.6 - \$9.7.4.7	Minimise the potential indirect light disturbance on the Street Lighting on fireflies surrounding the Project Site during operational phase It is considered that at the detailed design stage, street lighting of similar lux/light intensity as to what is currently present is utilised. Furthermore, as a precautionary measure, it is suggested that deflectors are fixed to	proposed platform structure would allow a notional free area of about 87 – 91% for groundwater to pass through. Reduce light pollution and impact on the nearby habitats and their associated wildlife groups,	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
S9.7.4.9 - S9.7.4.9	the back of the street lights to prevent additional light reaching the marsh and causing adverse impacts to fireflies. The increase in visitors to the columbarium allows greater public access to the upland grassland of Sandy Ridge and in turn, the potential for hill fires is also increased. Fires may emanate from discarded cigarettes and from specific practices during festivals or	particularly nocturnal fireflies. Minimise the risk of hill fires.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
	In order to reduce the risk of hill fires, sufficient educational signage should be displayed throughout the columbarium warning people of the risks of fire and strictly prohibits practices that could cause hill fires. This will require input in the detailed design phase.						
Fisheries							
\$10.5.1.1	No loss of fish ponds is anticipated and no <i>in situ</i> mitigation is required. However, mitigation measures for water quality (S6.4.4 – S6.5.4 in this table) proposed are also pertinent in ensuring that fisheries impacts of the Project do not occur downstream of the Project area either locally or in Inner Deep Bay.	-	-	-	-	-	Not applicable
Landscape	& Visual						
S11.8.1.3 , Table 11.9	CM1 – The construction area and contractor's temporary works areas should be minimised to avoid impacts on adjacent landscape, and the reliance on off-site construction.	Minimise landscape impact and visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-	Implemented.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
S11.8.1.3 , Table 11.9	CM3 – Screening of construction works by hoardings/noise barriers around works area in visually unobtrusive colours and to screen construction works. It is proposed that screening be compatible with the surrounding environment and non-reflective, recessive colours be used. Hoarding should be taken down at the end of the construction period.	Minimise visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-	Implemented.
S11.8.1.3 , Table 11.9	CM4 – Dust and Erosion Control for Exposed Soil - Excavation works anddemolition of existing building blocks shall be well planned with precautions to suppress dust. Exposed soil shall be covered or watered often. Areas that are expected to be left with bare soil for a long period of time after excavation shall be properly covered with suitable protective fabric. Suitable drainage shall be provided around construction sites to avoid discharge of contaminants and sediments into sensitive water-based habitat.	Minimise indirect landscape impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-	Implemented.
S11.8.1.3 , Table 11.9	CM5 – Control night-time lighting and glare by hooding all lights.	Minimise visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	-	Implemented.
11.8.1.3, Table 11.9	CM6 – Tree Protection and Preservation – Woodland, plantation and other vegetation within the Study Area will be protected and preserved as far as possible in accordance with ETWB TCW No. 29/2004 - Registration of Old and Valuable Trees, and Guidelines for their Preservation and DEVB TCW No.07/2015 – Tree Preservation. Detailed Design Considerations are made to avoid impacts to trees, e.g. proper viaduct/ bridge design routing to avoid majority of the woodland, locating the columbarium buildings in areas with less trees and ensuring design of the buildings has as small a footprint as practical.	Minimise landscape impact and visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Construction phase	DEVB TC(W) 07/2015 Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB	Implemented.
S11.8.1.3 , Table 11.9	CM7 – Tree Transplantation – Tree(s) will be affected according to the Tree Preservation and Removal Proposal to be carried out in a later stage. Established trees of value are to be re-located where practically feasible.	Minimise landscape and visual impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Design and Construction phase	• 'Guidelines for Tree Risk Management And Assessment Arrangement on an Area Basis and on a Tree Basis', issued January 2011, Greening, Landscape and Tree Management	Implemented.

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
S11.8.1.3 , Table 11.9	CM8 - Implementing precautionary control measures during construction stage accordingly to ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works to avoid direct or indirect impacts any	Minimize landscape impact	Funded by CEDD and implemented by	Work site/ during construction	Design and Construction phase	(GLTM) Section, DevB • Latest recommended horticultural practices from GLTM Section, DevB • ETWB TCW No. 5/2005 – Protection of natural	Implemented.
	watercourses and good site practices.	Companyets the loss	Contractor		Prior to	streams/rivers from adverse impacts arising from construction works	Implemented
\$11.8.1.3 , Table 11.9	OM1 – Compensatory Woodland Planting - The arrangement of compensatory planting (e.g. areas of woodland to be compensated and space to be allowed within the Project Site) will be subject to detailed engineering design, landscape design and planting plan, and is recommended to be implemented prior to the construction activities as far as practical.	Compensate the loss of landscape greenery and enhance the overall visual value of the site.	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	DEVB TC(W) 07/2015 – Tree Preservation Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB DEVB TCW No. 06/2015 – Maintenance of Vegetation and Hard Landscape Features	Implemented
S11.8.1.3 , Table 11.9	OM2 – Compensatory Tree Planting for Plantation and Other Vegetated Areas - Compensatory planting should be provided in accordance with DEVB TCW No. 07/2015 to compensate for those trees felled. According to the preliminary design, compensatory trees will be planted on the cut/fill slopes, along new roads and in car parks. The selection of planting species shall be made with reference to the species identified in the future Detailed Tree Survey and be native to Hong Kong or the South China region.	Compensate the loss of landscape greenery and enhance the overall visual value of the site.	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	DEVB TC(W) 07/2015 – Tree Preservation Latest recommended horticultural practices from Greening, Landscape and Tree Management (GLTM) Section, DevB DEVB TCW No. 06/2015 –	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved	Implementation status and remark*
						Maintenance of Vegetation and Hard Landscape Features	
S11.8.1.3 , Table 11.9	OM3 – Amenity Planting and aesthetic streetscape design of hard landscaping for Pedestrian Walkway, Roadside - Roadside amenity planting should be provided along Sha Ling Road, Lin Ma Hang Road, as well as the internal road within Sandy Ridge columbarium and crematorium site; to enhance the landscape quality of the existing and proposed transport routes. Climbers are proposed to cover vertical, hard surfaces of the piers of the proposed viaducts, and also the newly formed retaining wall within the site. Shade tolerant plants will be planted, where light is sufficient, to improve aesthetic value of areas under viaducts.	Minimise visual impact and also enhance landscape.	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	 Guidelines on Greening of Noise Barriers, issued April 2012, GLTMS, DevB DEVB TCW No. 06/2015 – Maintenance of Vegetation and Hard Landscape Features 	Implemented
S11.8.1.3 , Table 11.9	OM4 – Greening Works and Contour Grading Works on Cut/ Fill Slopes - Greening works such as hydroseeding/ terraces of shrub or tree planting will be provided where slope gradient allows, according to Geotechnical Engineering Office (GEO) Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes.	Minimise landscape and visual impact	Funded by CEDD and implemented by Contractor	Within Project Site	Construction phase	Geotechnical Engineering Office (GEO) Publication No.1/2011 Technical Guidelines on Landscape Treatment for Slopes.	Implemented
S11.8.1.3 , Table 11.9	OM5 – Landscape design treatment to be provided by relevant government department.	Mitigate the loss of greenery and enhance the overall landscape and visual value	Funded by FEHD and implemented by Contractor	Within Project Site	After handover to the relevant department	-	Implemented after handover to the relevant department
S11.8.1.3 , Table 11.9	OM6 – Architectural and chromatic treatment of the hard architectural and engineering structures and facilities.	Mitigate the loss of greenery and enhance the overall landscape and visual value	Funded by FEHD and implemented by Contractor	Within Project Site	After handover to the relevant department	-	Implemented after handover to the relevant department
S11.8.1.3 , Table 11.9	OM7 – Aesthetic design of the proposed noise barriers.	Mitigate the visual impact	Funded by CEDD and implemented by Contractor	Along Sha Ling Road and Lin Ma Hang Road	Construction phase	• WBTC No. 36/2004 - ACABAS - submission is required to ACABAS for approval of any bridges and associated structures within the public highway	Implemented

EIA Ref.	Recommended Mitigation Measures	Objectives of the	Implementation	Location /	Implementation	Requirements	Implementation
		Recommended	Agent	Timing	Stage	and / or standards to	status and remark*
		Measures & Main				be achieved	
		Concerns to address					
						system.	
S11.8.1.3	OM8 - Silt traps should also be incorporated into design of road gullies for the natural	Minimise the	Funded by CEDD	Within	Construction		Implemented
, Table	water stream(s).	landscape impact	and implemented	Project Site	Phase		
11.9		on natural stream	by				
			Contractor				

Notes:

- (a) A detailed Tree Survey Report showing all identified valuable trees and OVT will be undertaken in a separate Tree Preservation and Removal Proposal.
- (b) Wood resulting from tree removal should be recycled as mulch or soil conditioner for re-use within the Project or in other projects as far as possible e.g. for the construction of soft landscape work, were practical.
- (c) Contractor is responsible for landscaping during the agreed establishment and maintenance period. Other designated management and maintenance agents to take up maintenance and management of landscaping after end of agreed period
- (d) Highways Department (HyD) is responsible for maintenance and management of landscaping of public road side slope, Leisure and Cultural Services Department (LCSD) is responsible for the management and maintenance of soft landscapes along non-expressway public roads outside Country Park and Food and Environmental Hygiene Department (FEHD) is responsible for maintenance and management of landscaping of other areas allocated to FEHD.
- (e) The landscape mitigation treatment of the future development site shall follow the below frameworks:
 - Buffer planting shall be provided to soften the edge of the site.
 - Aesthetic landscape treatment including both soft and hard landscape features shall be provided.
 - Vertical greening shall be provided as far as practicable.
 - At-grade tree planting shall be provided as far as possible while planting space is allowed, to enhance the overall environment.
 - Architectural design shall blend in with the surrounding environment.
 - Overall greening ratio shall comply with TC(W) No.3/2012 Site coverage of Greenery for Government Building Projects.

EIA Ref.	Recommended Mitigation Measures	Objectives of the	Implementation	Location /	Implementation	Requirements	Implementation
		Recommended	Agent	Timing	Stage	and / or	status and remark*
		Measures & Main				standards to be	
		Concerns to address				achieved	

The compensatory woodland planting shall be included woodland mixed whips, seeding, and shrubs. The principle of the location shall be the extension of the existing woodland, as well as the original lost woodland location. The proposal will be agreed with AFCD, the woodland enhancement planting shall refer to Chapter 9.

EM&A Pro	ject						
S13.1.1.1	An Independent Environmental Checker needs to be employed as per the EM&A	Control EM&	A Highways	All	Construction	• EIAO Guidance	Implemented
,	Manual.	Performance	Department	construction	phase	Note No.4/2010	
S13.2.1.2				sites		• TM-EIAO	
S13.2.1.1	1) An Environmental Team needs to be employed as per the EM&A Manual.	Perform	Highways	All	Construction	EIAO Guidance	Implemented
_	2) Prepare a systematic Environmental Management Plan to ensure effective	environmental	Department	construction	phase	Note No.4/2010	
S13.4.1.2	implementation of the mitigation measures.	monitoring & auditin	g / Contractor	sites		• TM-EIAO	
	3) An environmental impact monitoring needs to be implementing by the						
	Environmental Team to ensure all the requirements given in the EM&A Manual are						
	fully complied with.						



Appendix P

Illustrations of Site Activities

