

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.43) – February 2022

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

Date	Reference No.	Prepared By	Certified By
14 March 2022	TCS00881/18/600/R0621v2	Anh	Am

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

Version	Date	Remarks
1	10 March 2022	First Submission
2	14 March 2022	Amended according to the IEC's comment on 11March 2022



Our Ref: TCS00881/18/300/L0622

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 March 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.43) –February 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: <u>twtam@fordbusiness.com</u>.

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) ARUP (RE of Contract 2)
. HCTY-JV (Contractor of Contract 1) Sang Hing (Contractor of Contract 2) Acuity (IEC) Mr. Steven Tang Mr. Anthony Lau Mr. Ho Man To Mr. Elvin Lam Mr. Jacky Leung by e-mail by e-mail by e-mail by e-mail

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Our ref: PL-202203019

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 March 2022

Dear Sir,

Site formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery Monthly Environmental Monitoring and Audit Report (No. 43) February 2022

I refer to the email of the ET on 14/03/2022 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 February 2022 (Version 2) with Ref. No. TCS00881/18/600/R0621v2.

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 43rd Monthly Environmental Monitoring and Audit (EM&A) Report summarizing the monitoring results and inspection findings under the Project for the period from 1st to 28th February 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.

Issues	Environmental Monitoring	Monitorin	Total Occasions/		
155465	Parameters / Inspection	CV/2016/10	CV/2017/02	dates	
Air Quality	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	M3	M1, M2 and M4	11 (#)	
Ecology	Sensitive Habitat	Transect within site area of CV/2016/10		8 th Feb 2022	
Landscape & Visual	Site Inspection	Site area of CV/2016/10	Site area of CV/2017/02	17 th Feb 2022	
Inspection & Audit	Environmental Team (ET) Regular Environmental Site Inspection Independent Environmental Checker (IEC) Monthly Environmental Site Audit	Site area of CV/2016/10	Site area of CV/2017/02	4	

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

Remarks: (#) There will be no construction activities during Chinese New Year on 1 to 3 Feb 2022, and no water quality monitoring conducted that period. Impact monitoring schedule provided to all relevant parties without adverse comment received. Besides, the channel of M2 was dried up / too shallow on 4-18 Feb and 28 Feb, 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 Limit Level exceedance for noise monitoring exceedance was recorded in the Reporting Month, however, a noise complaint (which triggered Action Level) was received. 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
Air Quality	1-hour TSP	0	0	-	-
Air Quality	24-hour TSP	0	0	-	-
Construction Noise	Leq _{30min} Daytime	1	0	Not project-related	Corrective measurement is not required
	DO	0	0	-	-
Water Quality	Turbidity	0	0	-	-
Water Quanty	Suspended Solids (SS)	0	0	-	-

ES.04. Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on δ^{th} February 2022. After analysing survey results in February 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 17th February 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. In the Reporting Period, a public complaint was received from EPD regarding the construction noise near Sha Ling Village on 11 February 2022. The complainant stated that the construction site near Sha Ling Village generated noise (sound like piling) on public holiday, which affecting the resident nearby. EPD suspected that the concerned construction noise was from the construction site of Sandy Ridge Cemetery and investigation has been conducted by ET for both Contracts accordingly. In our investigation measures / good practices were adopted to reduce the noise impact and nuisance to the public. Moreover, sheet piling work was observed undertaken by other Contract near the complaint location. Based on the investigation, it is considered that the complaint was unlikely valid to the Project. The statistics of Environmental Complaint is summarized in the following tables.

Reporting Month		Environmental Complaint Statistics			
		Frequency	Cumulative	Complaint Nature	
	Contract 1	1	2	(1) Air Quality (1) Noise	
1 st – 28 th February 2022	Contract 2	1	3	(1) Water (1) Air Quality (3) Noise	

 Table ES-3
 Environmental Complaint Summaries in the Reporting Month

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
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Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Summons Nature	
1 st – 28 th February 2022	Contract 1	0	0	NA	
1 - 28 February 2022	Contract 2	0	0	NA	

Table ES-5	Environmental Prosecution Summaries in the Reporting Month
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Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Prosecution Nature	
$1^{st} - 28^{th}$ February 2022	Contract 1	0	0	NA	
1 - 28 February 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 10^{th} , 17^{th} and 24^{th} February 2022. Since there was site closure for Contract 1 during the period of 31^{st} January to 5^{th} February 2022, and entry to site area was restricted, inspection by ET was conducted by near the entrance area and adjacent Lin Ma Hang Road on 4^{th} February 2022. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 4^{th} , 10^{th} , 17^{th} and 24^{th} February 2022. IEC attended the both Contract joint site inspections.

FUTURE KEY ISSUES

- ES.012. 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. During dry season, 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

- 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 **43rd** Monthly EM&A Report summarizing the monitoring results and inspection findings for the period from **1st** to **28th February 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 Noise Monitoring Results Section 5 Water Quality Monitoring Results Section 6 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)

- Construction of cut slope, installation of soil nailing and construction of surface channel and planter wall
- Construction of pick-up and drop-off Point near Man Kam To Road
- Construction of storm drain
- Construction of Concrete Pavement
- Construction of noise barrier

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 2-1Status 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		



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

Table 2-2	Status of Environmental Licenses and Permits for Contract 2
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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 2-3Status of Submission as under FEP

Item	EP and / or FEP Stipulation	Description	Status
1	Condition 2.10 of FEP	5	Submitted and no approval is required.
2	Condition 2.11 of FEP	1 01 0	Submitted and no approval is required.
3	Condition 2.12 of FEP		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



Item	EP and / or FEP Stipulation	Description	Status
		for Contract 1	
6	Condition 2.17 of FEP	Woodland Compensation Plan (Rev.05)	Approved by EPD on 30 Jun 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 2-4Status 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 3-1Summary of EM&A Requirements

Environmental Issue	Parameters	
Air Quality	1-hour TSP;24-hour TSP	
Noise	 Leq_(30min) during normal working hours.; and Leq_(15min) during the construction works undertaken in Restricted Hours 	
Water Quality	In-situ Measurements • Dissolved Oxygen Concentration (mg/L) & Saturation (%); • Temperature (°C); • Turbidity (NTU); • Salinity (nom)	
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	
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Location ID	Description in EM&A Manual	Location	Related Work Contract
ASR-1	Village House along Man Kam To Road	Sha Ling Village House No.6	Contract 1
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.

- 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

	8	5	0
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)	

^{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:



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 3-4Designated Water Quality Monitoring Stations under the Project

Proposed	Co-ore	linates	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
М3	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 3-5Air 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	Sibata LD-3 Laser Dust monitor Particle Mass Profiler & Counter	

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2022 \ 43rd \ Month \ (Feb \ 2022) \ R0621 \ v2. \ doc \ R0621 \ v2. \ R0621 \ r2. \ r2. \ R0621 \ r2. \ R0621 \ r2. \ R0621 \ r2. \$



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*.

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

Table 3-6Noise Monitoring Equipment

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.

<u>pH Measurement</u>

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 3-7Water Quality Monitoring Equipment

Equipment	Model
Water Depth Detector	Tape measures
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



Equipment	Model
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.

Monitoring Station	Action]	Level (µg /m ³)	Limit Level (µg/m ³)		
Monitoring Station	1-hour TSP	24-hour TSP	1-hour TSP	24-hour TSP	
ASR-1	331	181	500	260	
ASR-2	316	165	500	260	
ASR-3	307	160	500	260	

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



Table 3-9Action and Limit Levels for Construction Noise

Monitoring Logotion	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

Da	Performance	Monitoring Location					
Parameter	criteria	M1	M2	M3	M4		
$\mathbf{DO}(\mathbf{m}\mathbf{g}/\mathbf{I})$	Action Level	3.03	4.99	4.58	3.62		
DO (mg/L)	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 (mg/I)	Action Level	8.5	29.0	9.3	4.8		
SS (mg/L)	Limit Level	10.1	31.0	9.5	5.0		

Notes:

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.

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*.



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*.

	24-hour	1-hour TSP (μg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Feb-22	20	5-Feb-22	9:17	70	72	73
9-Feb-22	24	10-Feb-22	13:22	87	79	81
15-Feb-22	51	16-Feb-22	9:21	79	82	83
21-Feb-22	10	22-Feb-22	13:40	45	51	42
26-Feb-22	61	28-Feb-22	13:00	89	95	90
Average	33	Average		75		
(Range)	(10 - 61)	(Range)		(42 – 95)		

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

Table 4-2Summary of Air Quality Monitoring Results at ASR-2 under Contract 2
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	24-hour	1-hour TSP (μg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Feb-22	13	5-Feb-22	9:21	67	73	75
9-Feb-22	16	10-Feb-22	13:27	77	80	84
15-Feb-22	22	16-Feb-22	9:14	80	72	82
21-Feb-22	9	22-Feb-22	13:46	43	48	41
26-Feb-22	31	28-Feb-22	13:06	93	98	89
Average	18	Average		73		
(Range)	(9 - 31)	(Range)		(41 – 98)		

Table 4-3	Summary of Air Quality Monitoring Results at ASR-3a under Contract 2
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	24-hour	1-hour TSP (µg/m ³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
4-Feb-22	9	5-Feb-22	9:26	78	81	85
9-Feb-22	17	10-Feb-22	13:31	82	74	77
15-Feb-22	12	16-Feb-22	9:07	77	81	85
21-Feb-22	8	22-Feb-22	13:52	31	29	30
26-Feb-22	14	28-Feb-22	13:12	77	75	82
Average (Range)	12 (8 – 17)	Average (Range)		70 (29 – 85)		

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 _{eg30min}), dB(A)								
Date	Start Time	Start TimeCN1(*)Start TimeCN2(*)							
10-Feb-22	13:24	63	13:58	64					
16-Feb-22	9:25	9:25 63 10:04 62							
22-Feb-22	13:39	13:39 64 14:13 57							
28-Feb-22	13:01	63	13:41	58					
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
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	Construction Noise Level (L _{eq30min}), dB(A)											
Date	Start Time	CN3 ^(*)	Start Time	CN4								
10-Feb-22	14:36	61	15:11	60								
16-Feb-22	10:42	65	11:27	57								
22-Feb-22	14:48	58	15:22	61								
28-Feb-22	14:08	64	14:46	59								
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 Limit Level exceedance for noise monitoring exceedance was recorded in the Reporting Month. However, a noise complaint (which triggered Action Level) was received. Investigation has been conducted by ET for both Contracts accordingly and it was considered that the complaint was unlikely valid to the Project. Complaint details and investigation could be referred to Section 11 of the report.



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 *11* monitoring days were carried out for water quality impact monitoring. There will be no construction activity during Chinese New Year on 1 to 3 Feb 2022, and no water quality monitoring conducted that period. Impact monitoring schedule provided to all relevant parties without adverse comment received. Besides, the channel of M2 was dried up / too shallow on 4-18 Feb and 28 Feb, 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*.

		Parameters	
Date	DO (Averaged) (mg/L)	Turbidity (Averaged) (NTU)	Suspended Solids (Averaged) (mg/L)
4-Feb-22	8.90	0.2	3.0
7-Feb-22	8.92	0.9	3.0
9-Feb-22	8.81	1.4	2.0
11-Feb-22	8.40	3.1	2.0
14-Feb-22	8.60	1.7	2.0
16-Feb-22	8.49	4.6	2.0
18-Feb-22	8.55	3.0	2.0
21-Feb-22	8.63	0.6	2.0
23-Feb-22	9.54	3.0	3.5
25-Feb-22	7.83	4.1	2.0
28-Feb-22	7.61	2.5	2.0

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

				Pa	rameter	'S				
Date		(Average (mg/L)	d)	Turbidi	ity (Ave (NTU)	raged)	Suspended Solids (Averaged) (mg/L)			
	M1	M2	M4	M1	M1 M2		M1	M2	M4	
4-Feb-22	8.98	#	8.91	0.2	#	4.1	2.5	#	2.0	
7-Feb-22	9.09	#	8.90	1.3	#	0.3	2.0	#	2.0	
9-Feb-22	9.01	#	8.60	3.2	#	4.0	2.0	#	2.5	
11-Feb-22	8.83	#	8.16	1.3	#	0.9	2.0	#	2.0	
14-Feb-22	8.67	#	8.57	0.5	#	0.6	2.0	#	2.0	
16-Feb-22	8.80	#	8.39	0.8	#	3.4	2.0	#	2.0	
18-Feb-22	8.83	#	8.64	0.3	#	1.3	2.0	#	2.5	
21-Feb-22	7.48	10.02	10.27	6.7	25.8	4.6	7.5	28.5	4.0	
23-Feb-22	9.99	8.49	9.92	2.1	28.2	3.7	3.0	24.0	2.5	
25-Feb-22	8.83	8.69	7.94	4.9	8.6	2.5	2.0	11.5	2.0	
28-Feb-22	8.49	#	6.62	6.6	#	2.2	2.0	#	2.0	

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*.

		Parameters of field measurements											
Monitoring Location	pH (Ave (un		Salinity (A) (pp)	. .	Temp (Av	veraged)	Water Flow (Averaged) (m/s)						
Location	min	max	min	max	min) max	min	max					
2.64													
M1	7.0	8.4	0.03	0.07	10.8	17.6	< 0.1	< 0.1					
M2	6.9	8.3	0.04	0.09	11.8	14.8	< 0.1	0.1					
M3	7.1	8.5	0.01	0.02	11.3	18.0	< 0.1	0.1					
M4	6.8	8.2	0.02	0.06	11.6	18.2	< 0.1	< 0.1					

 Table 6-3
 Summary of Field Measurements for Water Quality

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*.

Station	DO		Turb	oidity	S	S	To Excee	tal dance	Project excee	Related dance
	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

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

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

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

Date of Exceedance	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*.

Action Level	Response	Limit Level	Response			
	e	taxa diversity by	Investigate cause and if cause identified as related to the project instigate remedial action.			

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

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
	e	species diversity	Investigate cause and if cause identified as related to the project instigate remedial action.

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

v v O												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mammals												\checkmark
Birds (day)								\checkmark				\checkmark



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

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.

<u>Bird Survey</u>

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 8^{th} *February 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

<u>Birds</u>

There were a total of 45 bird individuals from 11 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. Three species of conservation interests were recorded in this survey: Greater Spotted Eagle (*Clanga clanga*)烏鵰, Common Kestrel (*Falco tinnunculus*) 紅隼, Chinese Grosbeak (*Eophona migratoria*)黑尾蠟嘴雀.

<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.

<u>Butterfly</u>

7.3.4 There were a total of 7 butterfly individuals from 4 species recorded in the monitoring area.

<u>Dragonfly</u>

7.3.5 There was no odonate individual 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.

Scientific Name	Common /	Chinese Name	Conservation	Non-w	vetland		etlan	
Scientific Mame	Engineer Name	Chinese Name	Status	UG	WL	MA	WW	W
Mammal Survey								
Avifauna Survey					_			
Clanga clanga	Greater Spotted Eagle	烏鵰	China Red Data Book Status: (Rare);Fellowes et al. (2002): GC;IUCN Red List Status: Vulnerable; Appendix 2 of CITES	1				
Spilopelia chinensis	Spotted Dove	珠頸斑鳩					2	
Falco tinnunculus	Common Kestrel	紅隼	Class 2 Protected Animal of China; Appendix 2 of CITES	1				
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		1			3	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		2			2	
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1			1	
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			2			
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯			2		1	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		4				
Motacilla alba	White Wagtail	白鶺鴒						2
Eophona migratoria	Chinese Grosbeak	黑尾蠟嘴雀	Fellowes et al. (2002): LC	20				
Reptile Survey								
						-		
Amphibian Survey								
						-		
Kaniska canace	Blue Admiral	琉璃蛺蝶		1				
Junonia lemonias	Lemon Pansy	蛇眼蛺蝶		1				
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶		3				
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		2			1	

Table 7-4Result of Faunal Survey under Contract 1



Scientific Norre	Common /	Chinaga Nama	Conservation	Non-w	retland	W	'etlan	d
Scientific Name	Engineer Name	Chinese Name	Status	UG	WL	MA	WW	WC
						-		

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

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

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

Discussion

7.3.8 After analysing survey results in February 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 8th February 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

<u>Mammal</u>

7.4.2 There was no mammal recorded in the monitoring area

<u>Birds</u>

7.4.3 There were a total of 35 bird individuals from 7 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

<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 5 butterfly individuals from 3 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 7-6Result of Faunal Survey under Contract 2

Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status		on- land	W	Vetlar	nd
	Name	Ivanie	Status	UG	WL	MA	WW	WC
Mammal Survey								
Avifauna Survev								



Common / Engineer Name	Chinese Name	Conservation Status	wet			etlar	
	1 (unite	Status	UG	WL	MA	WW	WC
Masked	黑臉噪鶥		8				1
Laughingthrush			0				
Japanese White-eye	暗綠繡眼鳥		12				1
			12				
Red-whiskered Bulbul	紅耳鵯		2			2	1
			2			2	
Common Tailorbird	長尾縫葉鶯		2				
			Z				1
Yellow-bellied Prinia	黃腹鷦鶯				3		
Yellow-browed	黃眉柳鶯					2	
Warbler						Z	1
Scaly-breasted	斑文鳥				4		
Munia					4		1
Angled Castor	波蛺蝶				1		
C					1		ĺ
Indian Cabbage White	東方菜粉蝶				İ	_	
	/1~/J//////////////////////////////////					2	
Dark Brand Bush	小眉眼蝶					_	
Brown						2	
		1	1	I			
	NameMaskedLaughingthrushJapanese White-eyeRed-whiskered BulbulCommon TailorbirdYellow-bellied PriniaYellow-bellied PriniaScaly-breastedMuniaAngled CastorIndian Cabbage WhiteDark Brand Bush	NameNameMasked Laughingthrush黑臉噪鶥 二Japanese White-eye暗綠繡眼鳥Red-whiskered Bulbul紅耳鵯Common Tailorbird長尾縫葉鶯Yellow-bellied Prinia黃腹鷦鶯Yellow-browed Warbler黃眉柳鶯Scaly-breasted Munia斑文鳥Image Castor三Angled Castor波蛺蝶Dark Brand Bush小眉眼蝶	NameNameStatusMasked Laughingthrush黑臉噪鶥 二	NameNameStatuswetch UGMasked Laughingthrush黑臉噪鶥8Japanese White-eye暗綠繡眼鳥12Red-whiskered Bulbul紅耳鵯2Common Tailorbird長尾縫葉鶯2Yellow-bellied Prinia黃腹鷦鶯2Yellow-browed Warbler黃眉柳鶯Scaly-breasted Munia斑文鳥Angled Castor波蛺蝶Dark Brand Bush小眉眼蝶	NameStatuswetant UGWLMasked Laughingthrush黑臉噪鶥812Japanese White-eye暗綠繡眼鳥1212Red-whiskered Bulbul紅耳鵯22Common Tailorbird長尾縫葉鶯22Yellow-bellied Prinia黃腹鷦鶯11Yellow-berwed Warbler黃眉柳鶯11Scaly-breasted Munia斑文鳥11TAngled Castor波蛺蝶11Dark Brand Bush小眉眼蝶511	NameNameStatuswelland UGWLMAMasked Laughingthrush黑臉噪鶥811Japanese White-eye暗綠繡眼鳥12121Red-whiskered Bulbul紅耳鵯221Common Tailorbird長尾縫葉鶯213Yellow-bellied Prinia黃腹鷦鶯13Scaly-breasted Munia斑文鳥114TAngled Castor波蛟蝶11Dark Brand Bush小眉眼蝶小眉眼蝶	NameNameStatuswetland UGWLMAWWMasked Laughingthrush黑臉噪鶥 暗綠繡眼鳥8111Japanese White-eye暗綠繡眼鳥121212Red-whiskered Bulbul紅耳鵯2212Common Tailorbird長尾縫葉鶯2132Yellow-bellied Prinia黃腹鷦鶯-32Scaly-breasted Munia斑文鳥112TAngled Castor波蛺蝶111Indian Cabbage White東方菜粉蝶12Dark Brand Bush小眉眼蝶22

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

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

Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		W	etlan	d
	Ivanie		Status	UG	WL	MA	WW	WC
Gambusia affinis	Mosquito fish	食蚊魚						+
Puntius semifasciolatus	Chinese Barb	五線無鬚鮑						+

*UG: Upland Grassland | WL: Woodland | MA: Marsh | WW: Wet Woodland | WC: Watercourse +: Species appeared but uncountable.

Discussion

- 7.4.9 After analysing survey results in February 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 (March 2022) is scheduled on 8th March 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 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 17th February 2022. The findings / reminders recorded during the inspection are presented in *Tables 8-1 and 8-2*.

	Lanuscape & visual hispection Finding for Contract 1	
Date	Findings and Reminder	Follow-Up Status
17 th February 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 8-1
 Landscape & Visual Inspection Finding for Contract 1

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

Findings and Reminder	Follow-Up Status
1. Contractor is reminded to set up TPZ of proper size	Reminder only
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.	
	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

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.

	Cont	ract 1	Cont	ract 2
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
Total generated C&D Materials (Inert) ('000m ³)	0.486		158.1 (#)	
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)	0.286	Tuen Mun Area 38	158.1 (#)	Tuen Mun Area 38

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

Remark: the unit is '000kg

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

	Con	tract 1	Cont	ract 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)	0.015	NENT Landfill	2.280 (#)	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 10th, 17th and 24th February 2022 and IEC attended joint site inspection on 17th February 2022. Since there was site closure for Contract 1 during the period of 31st January to 5th February 2022, and entry to site area was restricted, inspection by ET was conducted by near the entrance area and adjacent Lin Ma Hang Road on 4th February 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*.

Date	Findings / Deficiencies	Follow-Up Status
4 th Feb 2022 10 th Feb 2022	 No adverse environmental issue was observed. Opened cement bags were observed on the ground. The Contractor was advised to cover it 	 N/A Opened cement bags were covered properly on iste.
17 th Feb 2022	 properly. Free standing chemical container was observed on the ground. The Contractor was advised to put it inside drip tray. 	• Chemical containers were placed inside drip tray.
	 Construction waste and material was observed near the tree protection zone. The Contractor was advised to dispose or remove it. 	• Construction material was removed near the tree protection zone.
	• Open stockpiles were observed. The Contractor was advised to provide proper dust mitigation measures.	• Stockpile was well compacted to avoid dust impact.
24 th Feb 2022	• The Contractor was advised to clean general refuse and construction waste on site.	 General refuse and construction waste was removed.
	• The Contractor was reminded to spray water regularly on site.	• Reminder only.

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

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 4th, 10th, 17th and 24th February 2022 and IEC attended joint site inspection on 17th February 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 10-2Site Observations for the Works of Contract 2

Date	Findings / Deficiencies	Follow-Up Status
4 th Feb 2022	• No adverse environmental issue was observed.	• N/A
10 th Feb 2022	• No adverse environmental issue was observed.	• N/A
17 th Feb 2022	• Generator without NRMM label was observed. The Contractor was advised to provide and place it properly.	• NRMM label was displaye on the generator.
24 th Feb 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 summons and prosecution was lodged for the Contract.
- 11.1.2 A public complaint was received from EPD regarding the construction noise near Sha Ling Village on 11 Feb 2022. The complainant stated that the construction site near Sha Ling Village generated noise (sound like piling) on public holiday, which affecting the resident nearby. EPD suspected that the concerned construction noise was from the construction site of Sandy Ridge Cemetery and request follow up and investigation. Investigation was conducted by ET for both Contracts accordingly.
- 11.1.3 As advised by the Contractor of Contract 1, construction of bituminous pavement and concrete pavement were conducted near Sha Ling Village but there were no piling works conducted during the period 10 to 12 Feb 2022. Similarly, there were no piling works conducted under Contract 2 and the active works areas were far to Sha Ling Village. Both Contracts have no valid CNP and no construction works were undertaken under restricted hours. Nevertheless, it is noticed that part of the works area of Contract 1 near Sha Ling Village has been handover to a WSD project for waterworks and sheeting piling work was observed undertaken.
- 11.1.4 In our investigation, no piling works were conducted under the Project during the concerned period and noise mitigation measures / good practices were adopted to reduce the noise impact and nuisance to the public. Moreover, there were no valid CNP and Contractors confirmed that no construction works were undertaken under restricted hours. Based on the above conclusion and as sheet piling work was observed undertaken by other Contract near the complaint location, it is considered that the complaint was unlikely valid to the Project.
- 11.1.5 The investigation report for the complaint and the complaint log for the Project are shown in *Appendix N*. The statistical summary table of the environmental complaint, summons and prosecution are presented in *Tables 11-1, 11-2* and *11-3*.

Reporting Month		Environmental Complaint Statistics			
		Frequency	Cumulative	Complaint Nature	
1 st – 28 th February 2022	Contract 1	1	2	(1) Air Quality (1) Noise	
1 st – 28 th February 2022	Contract 2	1	3	(1) Water (1) Air Quality (3) Noise	

 Table 11-1
 Statistical Summary of Environmental Complaints

Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Complaint Nature	
$1^{st} - 28^{th}$ February 2022	Contract 1	0	0	NA	
$1^{st} - 28^{th}$ February 2022	Contract 2	0	0	NA	

Table 11-3 Statistical Summary of Environmental Prosecution

Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Complaint Nature	
1 st – 28 th February 2022	Contract 1	0	0	NA	
$1^{st} - 28^{th}$ February 2022	Contract 2	0	0	NA	

11.1.6 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*.

Issues	Environmental Mitigation Measures
Water Quality	 Provided efficient silt removal facilities to reduce SS level before effluent 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	 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 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.
Chemical	Followed requirements and procedures of the "Trip-ticket System"
Management	 Predicted required quantity of concrete accurately. Collected the unused fresh concrete at designated locations in the sites for subsequent disposal.
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.
General	The site was generally kept tidy and clean.Environmental Permit was displayed at site entrance.

 Table 12-1
 Environmental Mitigation Measures



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:
 - Construction of Cut Slope, installation of soil nailing and construction of surface channel and planter wall
 - Construction of Pick-up and Drop-off Point near Man Kam To Road
 - Construction of storm drain
 - Construction of noise barrier
 - Construction of concrete pavement
- 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*.

Description of Construction Activities	Used on PME	Environmental Mitigation Measures
Construction of Concrete Pavement	ExcavatorDump truckCrane lorry	 Provided efficient silt removal facilities to reduce SS level before effluent discharge. Provided ditches, earth bunds or sand bag barriers to minimize polluted runoff.
of cut slope	 Drilling machine Excavtor Crane lorry 	 Exposed slopes surface were compacted and covered with 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;
Construction of watermain, sewer and drainage works	1	 Provided water spraying for all active works area, in particular for the soil nail works. Stockpiles of dusty material were covered with impervious sheeting. Provided workers to clear dusty materials at the vehicle entrance

Table 12-2	Work Undertaken and Illustrations of Mitigation Measures for Contract 1
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Description of Construction Activities	Used on PME	Environmental Mitigation Measures
Construction •	Dump truck	or exit regularly.
of concrete	 Dump truck Excavator Crane lorry 	 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. 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.

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

Construction Activities	Used on PME	Environmental Mitigation Measures
Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road	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 tarpaulin or similar means.
	 Pipe jacking drilling machine 	 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.
of road works	 Excavator Roller Dump truck 	 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



Construction Activities	Used on PME	Environmental Mitigation Measures
		 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. 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 43rd Monthly EM&A Report presenting the monitoring results and inspection findings for the period of 1st to 28th February 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 Limit Level exceedance for noise monitoring exceedance was recorded however, a noise complaint (which triggered Action Level) was received. Investigation for the complaint was conducted by ET accordingly and it was considered that the complaint was unlikely valid to the Project.
- 13.1.4 Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 8th February 2022. After analysing survey results in from February 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 *17th February 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 Period, a public complaint was received from EPD regarding the construction noise near Sha Ling Village on 11 February 2022. The complainant stated that the construction site near Sha Ling Village generated noise (sound like piling) on public holiday, which affecting the resident nearby. EPD suspected that the concerned construction noise was from the construction site of Sandy Ridge Cemetery and investigation has been conducted by ET for both Contracts accordingly. In our investigation, no piling works were conducted under the Project during the concerned period and noise mitigation measures / good practices were adopted to reduce the noise impact and nuisance to the public. Moreover, sheet piling work was observed undertaken by other Contract near the complaint location. Based on the investigation, it is considered that the complaint was unlikely valid to the Project.
- 13.1.8 In the Reporting Month, no environmental 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.
- 13.1.9 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 10th, 17th and 24th February 2022. Since there was site closure for Contract 1 during the period of 31st January to 5th February 2022, and entry to site area was restricted, inspection by ET was conducted by near the entrance area and adjacent Lin Ma Hang Road on 4th February 2022. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 4th, 10th, 17th and 24th February 2022. IEC attended the both Contract joint site inspection on 17th February 2022. No non-compliance was noted during the site inspections.



13.2 RECOMMENDATIONS

- 13.2.1 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.
- 13.2.2 During dry season, 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.



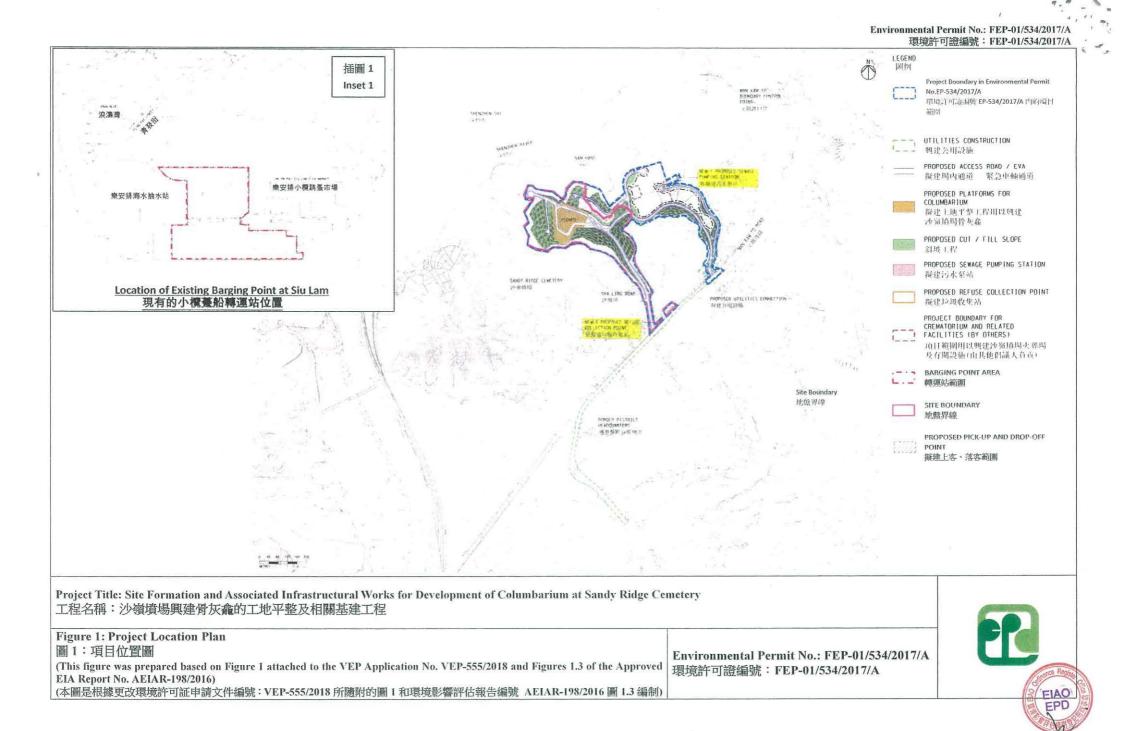
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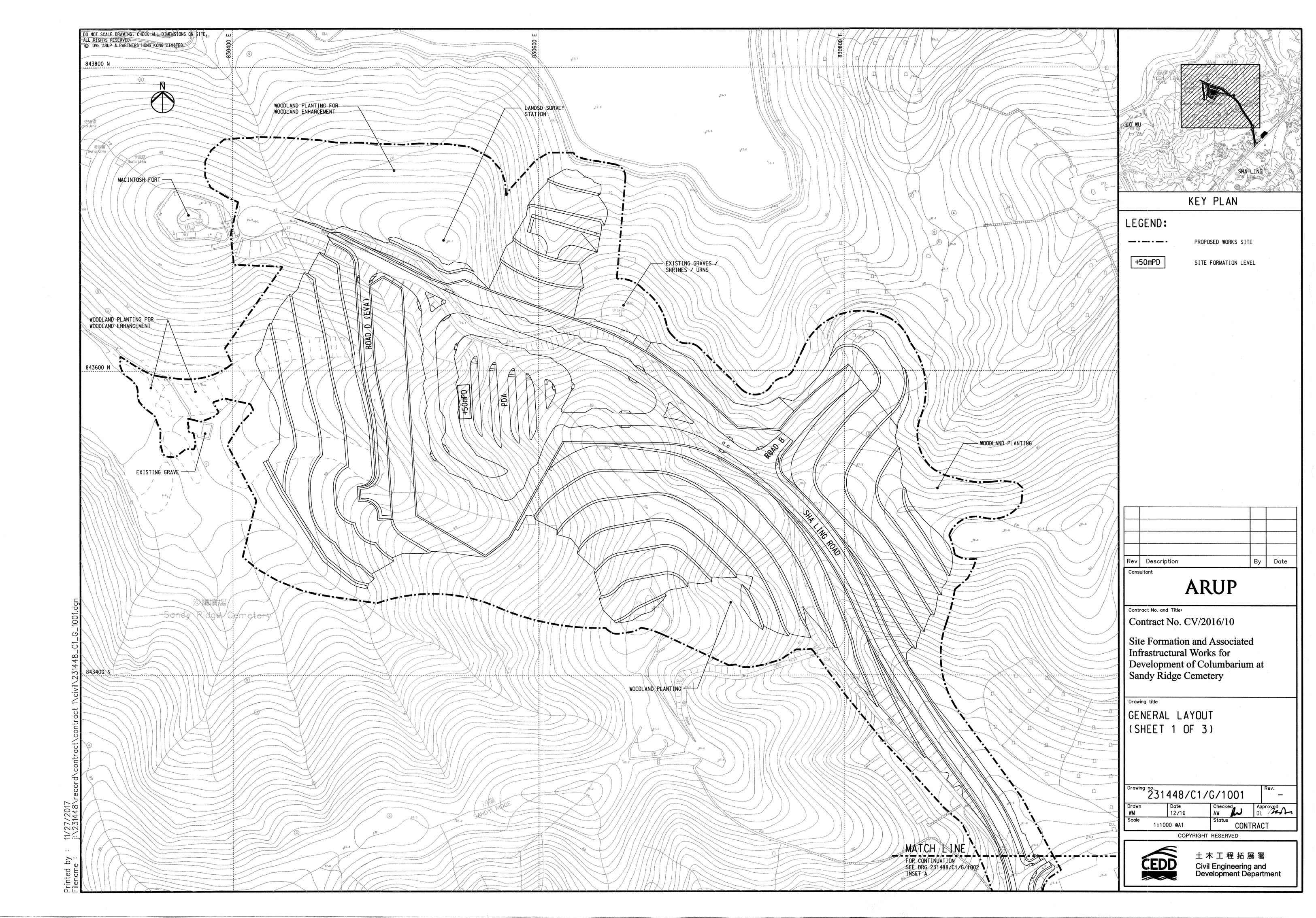
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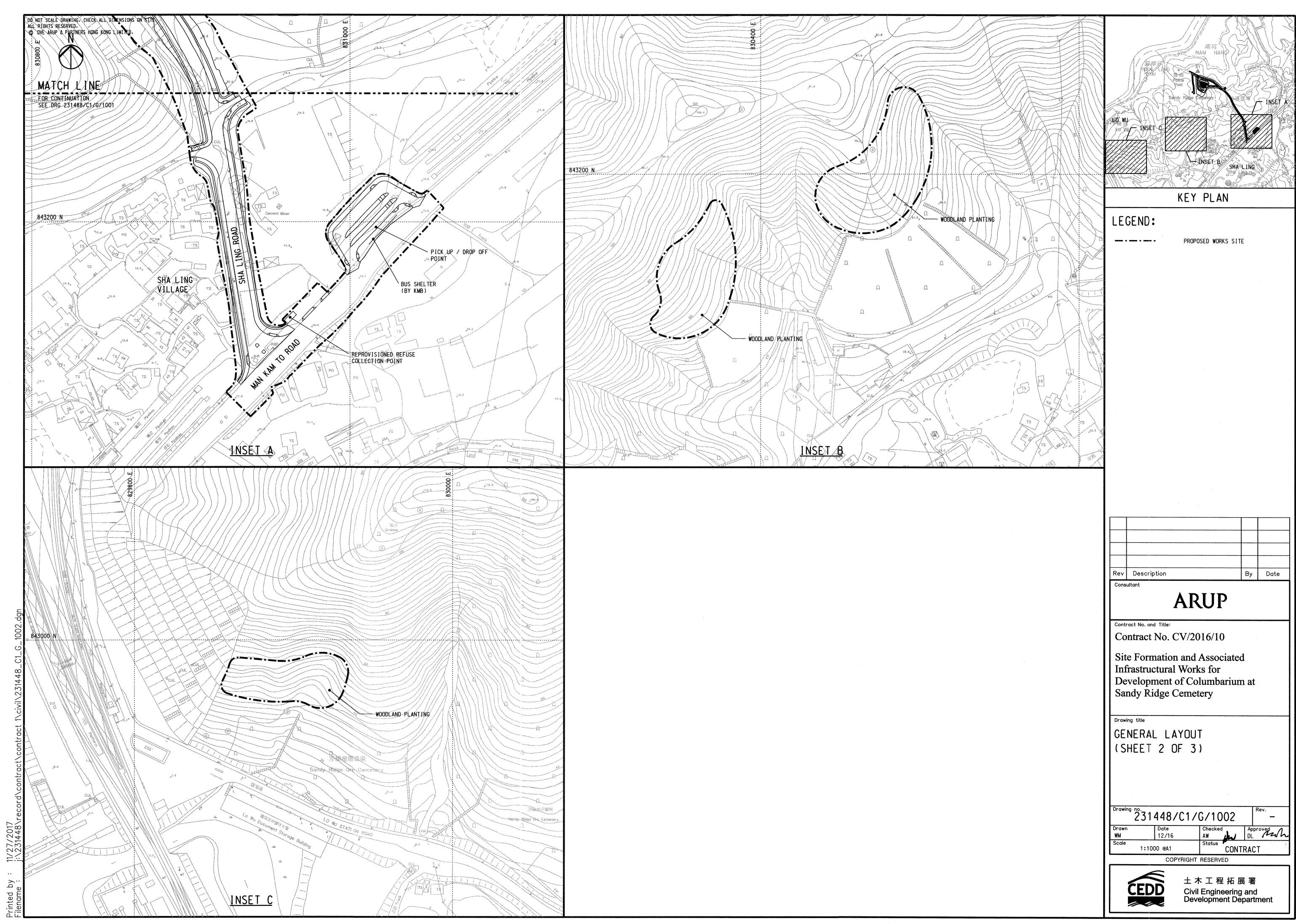
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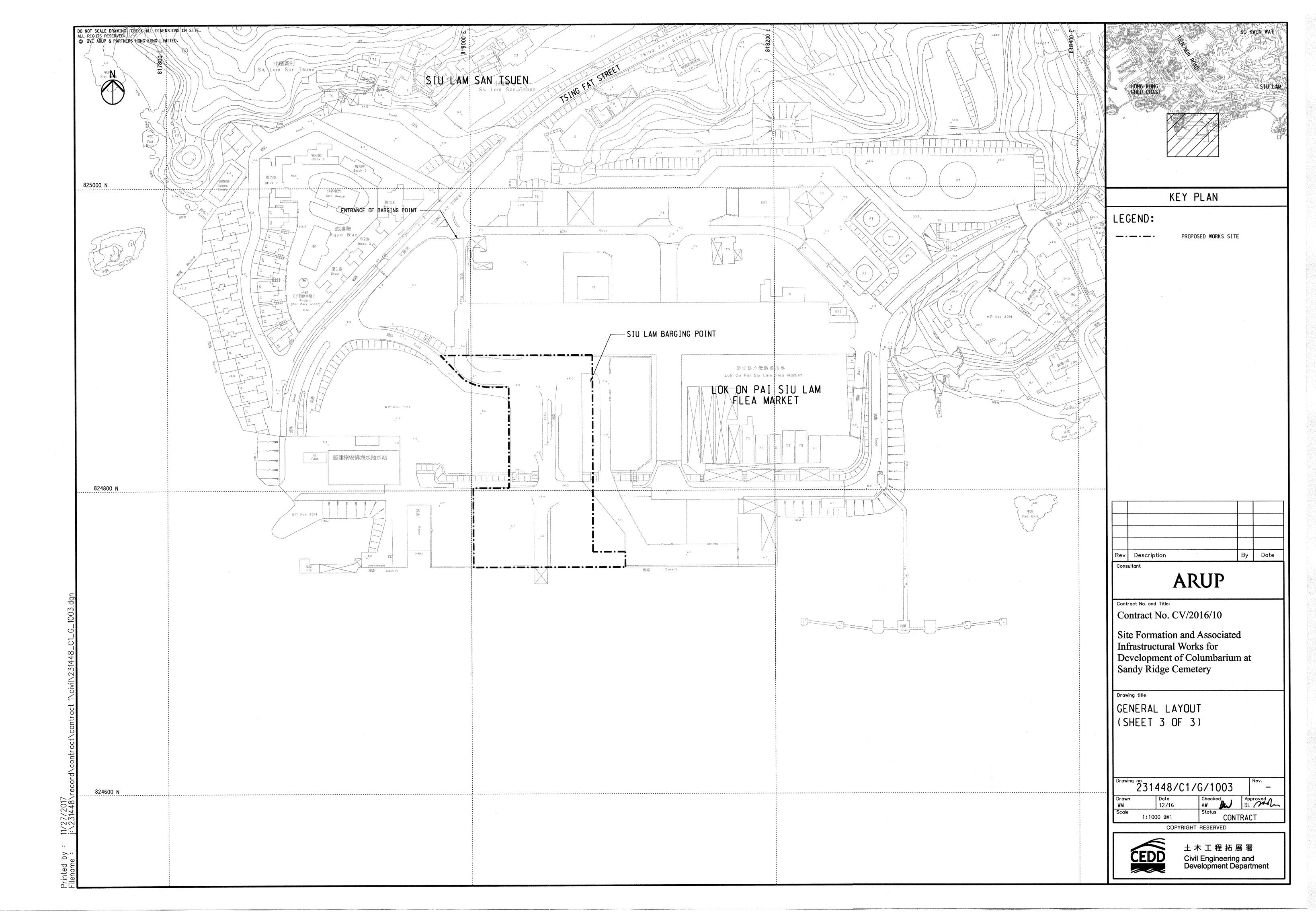






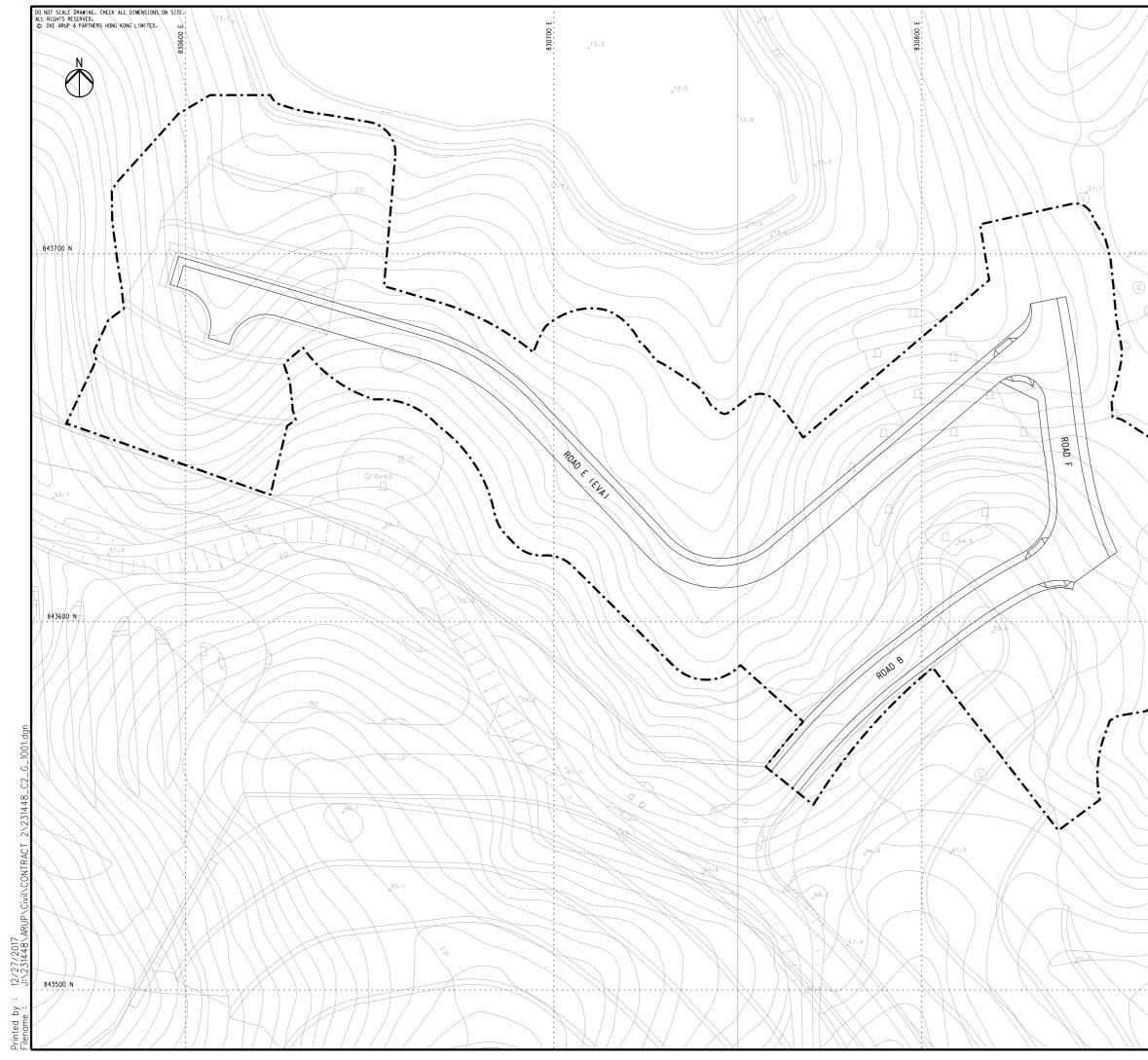
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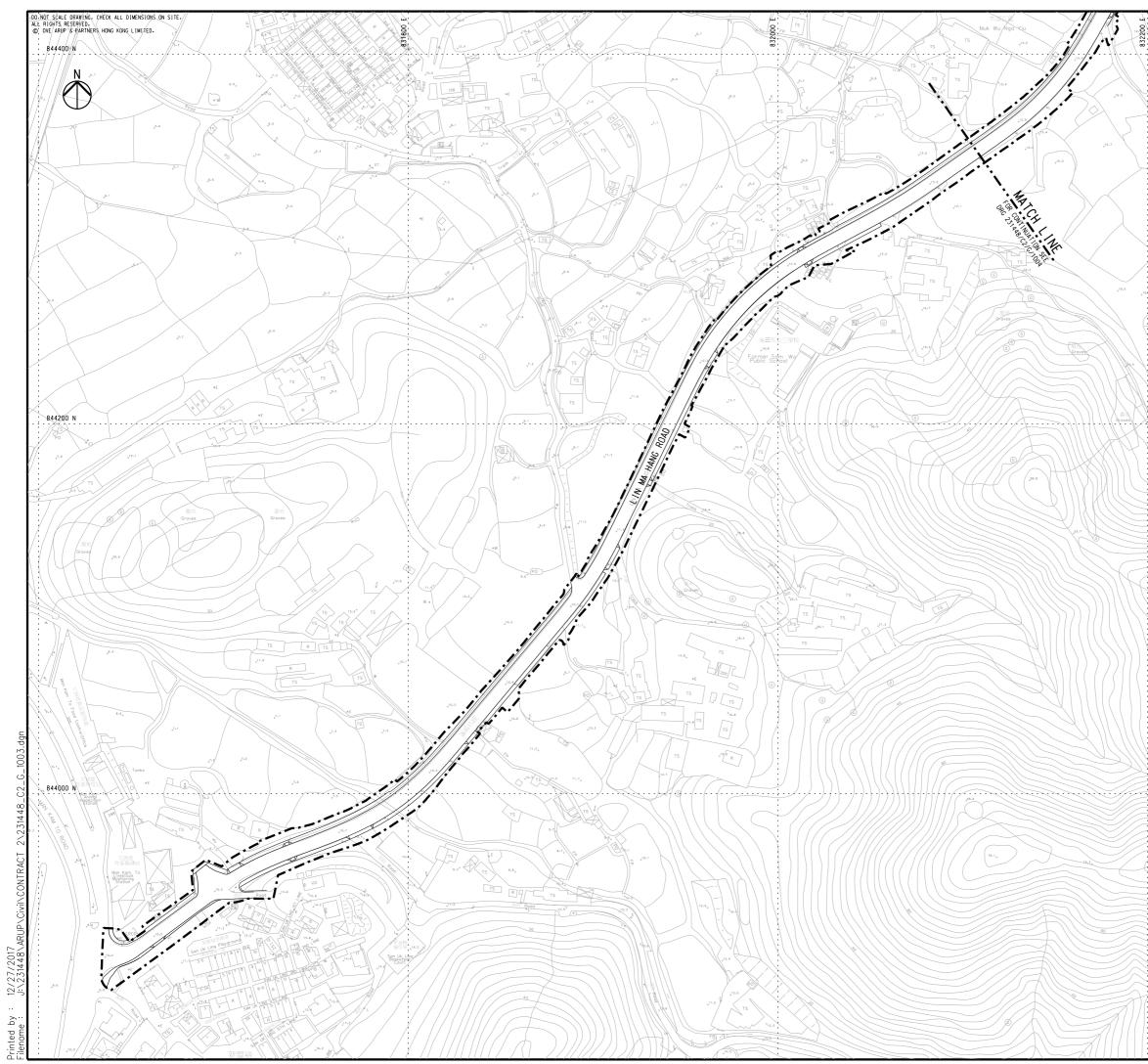


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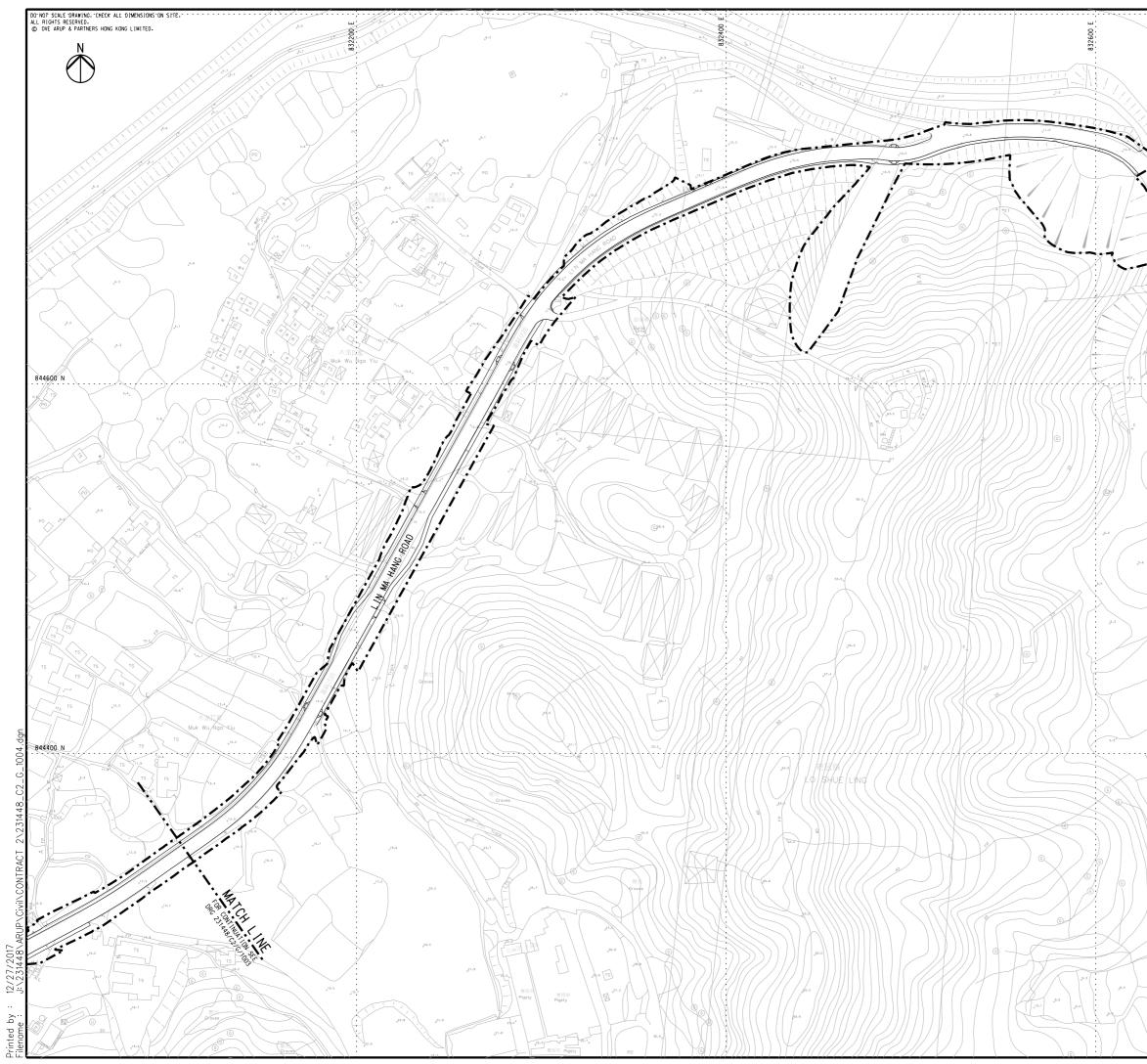


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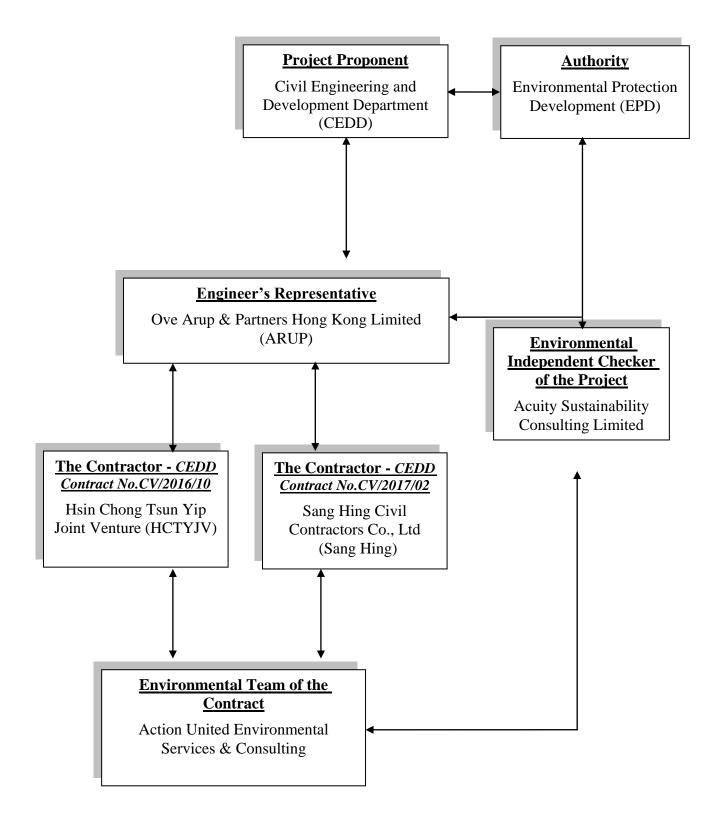


Appendix B

Organization Structure and Contact Details of Relevant Parties



The Contract's Environmental Management Organization





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. Kan Kwok Cheung	9495-2408	2633-4691
HCTYJV	Construction Manager	Mr. Keniel Kwong	9863-0020	2633-4691
HCTYJV	Site Agent	Mr. Ho Man To	9507-9634	2633-4691
HCTYJV	Environmental Officer	Mr. Chan Ming Tai	9358-7007	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

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

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



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

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

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

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3 Month Rolling Programme (Feb 2022 to Apr 2022)

Task. Name 1 Key Dates 2 Contract Starling Date 3 Contract Completion Date for Section 1 4 Contract Completion Date for Section 2 5 Contract Completion Date for Section 3 6 Scheduled Completion Date 7 Section 1 8 Section 2 9 Section 3 0 Preliminary Works 1 Submission and Approval Required at Environmental Permit for Commencement of Construction 2 Other Submission (Initial Survey /Tree Survey/ Condition Survey) 3 Section 1 for the Works (Parts A1, A2 & A3) 4 Ground Investigation and Geotechnical Instrumentation for Commencement of Slopework 5 Verification Drillholes (8 Nos., VDH1, 2, 7-9,8-16) / Inspection Pits and Preliminary Results Submission 6 Design Review 7 Retaining Wall RW1 8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 0 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 12 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 13 Base s	Duration 1071 days 0 days 1 day 1 day 1 day 1 day 644 days 0 days 0 days 0 days 0 days 0 days 128 days 128 days 106 days 112 days 114 days 36 days 280 days 37 days 3 days 15 days 8 days 13 days	Start Fri 15/12/17 Fri 15/12/17 Sat 29/8/20 Fri 30/7/21 Thu 21/11/19 Tue 10/12/19 Sat 2/10/21 Mon 14/2/22 Tue 10/12/19 Tue 20/2/18 Tue 20/3/18 Thu 29/3/18 Thu 29/3/18 Thu 29/3/18 Thu 29/3/18 Thu 5/7/18 Thu 5/7/18 Thu 16/8/18 Thu 16/8/18	Finish Fri 30/7/21 Fri 15/12/17 Sat 29/8/20 Fri 30/7/21 Thu 21/11/19 Mon 14/2/22 Tue 10/12/19 Wed 15/8/18 Wed 15/8/18 Fri 22/6/18 Sat 2/10/21 Wed 15/8/18 Wed 8/8/18 Wed 15/8/18	0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 100% 100%	Predecessors 1071 days 0 days 1 day 1 day 1 day 1 day 644 days 644 days 0 days 13FF 0 days 133FF 0 days 0 days 0 days 0 days		2 	3
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5 Verification Drillholes (8 Nos., VDH1, 2, 7-9,8-16) / Inspection Pits and Preliminary Results Submission 6 Design Review 7 Retaining Wall RW1 8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 10 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 11 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 12 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 13 Base slab of Retaining Wall RW1 Bay 1-4 14 Base slab of Retaining Wall RW1 Bay 5-8 15 Base slab of Retaining Wall RW1 Bay 9-13 16 Base slab of Retaining Wall RW1 Bay 14-17 17 Wall Stem of Retaining Wall RW1 Bay 14-17 18 Wall Stem of Retaining Wall RW1 Bay 10-13 19 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17	114 days 36 days 280 days 37 days 3 days 3 days 15 days 7 days 8 days	Thu 29/3/18 Thu 5/7/18 Thu 16/8/18 Thu 16/8/18	Wed 8/8/18		305.84 days			
6 Design Review 7 Retaining Wall RW1 8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 10 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 11 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 12 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 13 Base slab of Retaining Wall RW1 Bay 1-4 14 Base slab of Retaining Wall RW1 Bay 5-8 15 Base slab of Retaining Wall RW1 Bay 9-13 16 Base slab of Retaining Wall RW1 Bay 14-17 17 Wall Stem of Retaining Wall RW1 Bay 5-8 18 Wall Stem of Retaining Wall RW1 Bay 5-8 19 Wall Stem of Retaining Wall RW1 Bay 10-13 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 11 Protective Coating / Subsoil Drain / Filter Layer	36 days 280 days 37 days 3 days 3 days 15 days 7 days 8 days	Thu 5/7/18 Thu 16/8/18 Thu 16/8/18		100%	0 days			
Retaining Wall RW1 8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 90 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 91 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 92 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 93 Base slab of Retaining Wall RW1 Bay 1-4 94 Base slab of Retaining Wall RW1 Bay 9-13 95 Base slab of Retaining Wall RW1 Bay 9-13 96 Base slab of Retaining Wall RW1 Bay 14-17 97 Wall Stem of Retaining Wall RW1 Bay 5-8 99 Wall Stem of Retaining Wall RW1 Bay 10-13 90 Wall Stem of Retaining Wall RW1 Bay 14-17 91 Wall Stem of Retaining Wall RW1 Bay 14-17 92 Wall Stem of Retaining Wall RW1 Bay 14-17 93 Wall Stem of Retaining Wall RW1 Bay 14-17 94 Protective Coating / Subsoil Drain / Filter Layer	280 days 37 days 3 days 3 days 15 days 7 days 8 days	Thu 16/8/18 Thu 16/8/18	Wed 15/8/18	100%	0 days			
Retaining Wall RW1 8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 90 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 91 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 92 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 93 Base slab of Retaining Wall RW1 Bay 1-4 94 Base slab of Retaining Wall RW1 Bay 9-13 95 Base slab of Retaining Wall RW1 Bay 9-13 96 Base slab of Retaining Wall RW1 Bay 14-17 97 Wall Stem of Retaining Wall RW1 Bay 5-8 99 Wall Stem of Retaining Wall RW1 Bay 10-13 90 Wall Stem of Retaining Wall RW1 Bay 14-17 91 Wall Stem of Retaining Wall RW1 Bay 14-17 92 Wall Stem of Retaining Wall RW1 Bay 14-17 93 Wall Stem of Retaining Wall RW1 Bay 14-17 94 Protective Coating / Subsoil Drain / Filter Layer	280 days 37 days 3 days 3 days 15 days 7 days 8 days	Thu 16/8/18 Thu 16/8/18	Wed 15/8/18	1000/				
8 General Excavation to Formation Level 9 Plate Load Test and Blinding Layer for Retaining Wall Bays 1-4 90 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 91 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 92 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 93 Base slab of Retaining Wall RW1 Bay 1-4 94 Base slab of Retaining Wall RW1 Bay 5-8 95 Base slab of Retaining Wall RW1 Bay 14-17 96 Base slab of Retaining Wall RW1 Bay 1-4 97 Wall Stem of Retaining Wall RW1 Bay 5-8 99 Wall Stem of Retaining Wall RW1 Bay 10-13 90 Wall Stem of Retaining Wall RW1 Bay 14-17 91 Wall Stem of Retaining Wall RW1 Bay 14-17 92 Wall Stem of Retaining Wall RW1 Bay 10-13 93 Wall Stem of Retaining Wall RW1 Bay 14-17 94 Protective Coating / Subsoil Drain / Filter Layer	37 days 3 days 3 days 15 days 7 days 8 days	Thu 16/8/18		100%	0 days			
9Plate Load Test and Blinding Layer for Retaining Wall Bays 1-410Plate Load Test and Blinding Layer for Retaining Wall Bays 5-811Plate Load Test and Blinding Layer for Retaining Wall Bays 9-1312Plate Load Test and Blinding Layer for Retaining Wall Bays 14-1713Base slab of Retaining Wall RW1 Bay 1-414Base slab of Retaining Wall RW1 Bay 5-815Base slab of Retaining Wall RW1 Bay 9-1316Base slab of Retaining Wall RW1 Bay 14-1717Wall Stem of Retaining Wall RW1 Bay 1-418Wall Stem of Retaining Wall RW1 Bay 1-419Wall Stem of Retaining Wall RW1 Bay 1-410Wall Stem of Retaining Wall RW1 Bay 1-411Protective Coating / Subsoil Drain / Filter Layer	3 days 3 days 15 days 7 days 8 days		Sat 27/7/19	100%	0 days			
00 Plate Load Test and Blinding Layer for Retaining Wall Bays 5-8 11 Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 12 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 13 Base slab of Retaining Wall RW1 Bay 1-4 14 Base slab of Retaining Wall RW1 Bay 5-8 15 Base slab of Retaining Wall RW1 Bay 9-13 16 Base slab of Retaining Wall RW1 Bay 14-17 17 Wall Stem of Retaining Wall RW1 Bay 14-17 18 Wall Stem of Retaining Wall RW1 Bay 5-8 19 Wall Stem of Retaining Wall RW1 Bay 10-13 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Wall Stem of Retaining Wall RW1 Bay 14-17	3 days 15 days 7 days 8 days		Thu 27/9/18	100%	0 days			
Plate Load Test and Blinding Layer for Retaining Wall Bays 9-13 Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 Base slab of Retaining Wall RW1 Bay 1-4 Base slab of Retaining Wall RW1 Bay 5-8 Base slab of Retaining Wall RW1 Bay 9-13 Base slab of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 10-13 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Protective Coating / Subsoil Drain / Filter Layer	15 days 7 days 8 days		Mon 1/10/18		0 days			
Plate Load Test and Blinding Layer for Retaining Wall Bays 14-17 Base slab of Retaining Wall RW1 Bay 1-4 Base slab of Retaining Wall RW1 Bay 5-8 Base slab of Retaining Wall RW1 Bay 9-13 Base slab of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 10-13 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Protective Coating / Subsoil Drain / Filter Layer	7 days 8 days	Tue 2/10/18 Wed 10/10/18	Thu 4/10/18 Fri 26/10/18	100%	0 days			
Base slab of Retaining Wall RW1 Bay 1-4 Base slab of Retaining Wall RW1 Bay 5-8 Base slab of Retaining Wall RW1 Bay 9-13 Base slab of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 10-13 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Protective Coating / Subsoil Drain / Filter Layer	8 days	Sat 6/10/18	Sat 13/10/18	100%	0 days			
Base slab of Retaining Wall RW1 Bay 5-8 Base slab of Retaining Wall RW1 Bay 9-13 Base slab of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-4 Wall Stem of Retaining Wall RW1 Bay 5-8 Wall Stem of Retaining Wall RW1 Bay 10-13 Wall Stem of Retaining Wall RW1 Bay 14-17 Wall Stem of Retaining Wall RW1 Bay 14-17 Protective Coating / Subsoil Drain / Filter Layer		Tue 2/10/18	Wed 10/10/18	100%	0 days 0 days			
25 Base slab of Retaining Wall RW1 Bay 9-13 26 Base slab of Retaining Wall RW1 Bay 14-17 27 Wall Stem of Retaining Wall RW1 Bay 1-4 28 Wall Stem of Retaining Wall RW1 Bay 5-8 29 Wall Stem of Retaining Wall RW1 Bay 10-13 30 Wall Stem of Retaining Wall RW1 Bay 14-17 31 Protective Coating / Subsoil Drain / Filter Layer	10 uays	Mon 8/10/18	Mon 22/10/18	100%	0 days			
16 Base slab of Retaining Wall RW1 Bay 14-17 17 Wall Stem of Retaining Wall RW1 Bay 1-4 18 Wall Stem of Retaining Wall RW1 Bay 5-8 19 Wall Stem of Retaining Wall RW1 Bay 10-13 10 Wall Stem of Retaining Wall RW1 Bay 14-17 10 Protective Coating / Subsoil Drain / Filter Layer								
77 Wall Stem of Retaining Wall RW1 Bay1-4 88 Wall Stem of Retaining Wall RW1 Bay 5-8 99 Wall Stem of Retaining Wall RW1 Bay 10-13 80 Wall Stem of Retaining Wall RW1 Bay 14-17 81 Protective Coating / Subsoil Drain / Filter Layer	17 days 17 days	Mon 22/10/18 Mon 22/10/18	Fri 9/11/18 Fri 9/11/18	100%	0 days 0 days			
88 Wall Stem of Retaining Wall RW1 Bay 5-8 99 Wall Stem of Retaining Wall RW1 Bay 10-13 80 Wall Stem of Retaining Wall RW1 Bay 14-17 81 Protective Coating / Subsoil Drain / Filter Layer	-	Thu 25/10/18	Wed 5/12/18	100%				
9 Wall Stem of Retaining Wall RW1 Bay 10-13 80 Wall Stem of Retaining Wall RW1 Bay 14-17 81 Protective Coating / Subsoil Drain / Filter Layer	36 days	Tue 11/12/18		100%	0 days			
Wall Stem of Retaining Wall RW1 Bay 14-17 Protective Coating / Subsoil Drain / Filter Layer	26 days 30 days	Wed 14/11/18	Wed 9/1/19 Tue 18/12/18	100%	0 days			
Protective Coating / Subsoil Drain / Filter Layer	-	Mon 26/11/18	Fri 21/12/18	100%	0 days			
	23 days 5 days	Thu 14/2/19	Tue 19/2/19	100%	0 days 0 days			
	75 days	Tue 26/3/19	Thu 20/6/19	100%	0 days			
Construction CP1X & CP7X	102 days	Mon 1/4/19	Sat 27/7/19	100%	0 days			
Filling Works behind Retaining Wall and Fill Slope FS1 South (Section 12 at Drawing C1/GE/1030)	705 days	Mon 1/4/19	Tue 17/8/21	50%	351.98 days			
Behind Retaining Wall RW1, Filling Stage 1 (up to +25mPD)	95 days	Mon 1/4/19	Fri 19/7/19	100%	0 days			
FS1 South , Filling (Rolling by Pass) (+25 to +27.8mPD)	10 days	Sat 20/7/19	Wed 31/7/19	100%	0 days			
FS1 South Filling Stage 2 (~2.5m, +25.0 to +27.5 mPD)	56 days	Wed 1/4/20	Thu 4/6/20	100%	0 days			
Filling (Rolling by Pass)	1 day	Wed 1/4/20	Wed 1/4/20	100%	0 days			
9 Filling in 3m Zone	28 days	Thu 2/4/20	Mon 11/5/20	100%	0 days			
0 Benching Works for Rolling by Pass Surface	3 days	Thu 2/4/20	Mon 6/4/20	100%	0 days 38			
Lay Rockfill Layer (4.5/1m per 5 days)	25 days	Tue 7/4/20	Mon 11/5/20	100%	0 days 40			
Drainage and Maintenance Access (+25 to +27.5 mpD)	21 days	Tue 12/5/20	Thu 4/6/20	100%	0 days 41			
Image and manufacture record (12) is (21.0 mpc) IB FS1 South Filling Stage 3 (~7.5m height, +27.5 to +35mPD)	320 days	Sat 1/2/20	Mon 8/2/21	53%	150.8 days			
4 Filling (Rolling by Pass)(~7.5m, 0.5m per day)	130 days	Sat 1/2/20	Tue 1/9/20	5%	123 days 38			
5 Filling in 3m Zone	103 days	Wed 2/9/20	Wed 6/1/21	100%	0 days			
Benching Works for Rolling by Pass Surface	3 days	Wed 2/9/20	Fri 4/9/20	100%	0 days 44			
Image: Second and the fact of the fac	100 days	Sat 5/9/20	Wed 6/1/21	100%	0 days 46			
Drainage and Maintenance Access (+27.5 to +35 mpD)	28 days	Thu 7/1/21	Mon 8/2/21	100%	0 days 47			
9 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			
i0 Filling (Rolling by Pass)(~7.5m, 0.5m per day)	15 days	Wed 2/9/20	Fri 18/9/20	100%	0 days 44			
Image: The second se	41 days	Thu 7/1/21	Fri 26/2/21	7%	38 days			
2 Benching Works for Rolling by Pass Surface	3 days	Thu 7/1/21	Sat 9/1/21	100%	0 days 50,47			
3 Lay Rockfill Layer (7.5/1m per 5 days)	38 days	Mon 11/1/21	Fri 26/2/21	0%	38 days 52			
Drainage and Maintenance Access (+35 to +42.5mpD)	35 days	Sat 27/2/21	Thu 8/4/21	0%	35 days 53			
5 FS1 South Filling Stage 5 (~7.5m height, +42.5 to +50mPD)	536 days	Mon 2/12/19	Tue 17/8/21	17%	443.59 days			
66 Construction of RW11	30 days	Mon 2/12/19	Wed 8/1/20	100%	0 days 36			
Filling in 3m Zone	109 days	Sat 27/2/21	Mon 12/7/21	0%	109 days			
8 Benching Works for Rolling by Pass Surface	3 days	Sat 27/2/21	Tue 2/3/21	0%	3 days 53			
9 Lay Rockfill Layer (7.5/1m per 5 days)	102 days	Wed 3/3/21	Wed 7/7/21	0%	102 days 58			
0 Additional Plate Load Test at FS1	4 days	Thu 8/7/21	Mon 12/7/21	0%	4 days 59			
Drainage and Maintenance Access (+42.4 to +50 mpD)	35 days	Thu 8/7/21	Tue 17/8/21	0%	35 days 59			
2 Fill Slope FS1 Middle (Section 13 at Drawing C1/GE/1030)	386 days	Mon 10/2/20	Sat 29/5/21	100%	0 days			
3 Drainage and Maintenance Access at toe (+13 mpD)	10 days	Mon 10/2/20	Thu 20/2/20	100%	0 days			
4 FS1 middle Filling Stage 1 (~7.0m max, +13.0 mPD to +20 mPD)	22 days	Fri 21/2/20	Tue 17/3/20	100%	0 days			
5 Filling (Rolling by Pass)(~2m, 0.5m per day)	4 days	Fri 21/2/20	Tue 25/2/20	100%	0 days			
6 Filling in 3m Zone	8 days	Wed 26/2/20	Thu 5/3/20	100%	0 days			
Benching Works for Rolling by Pass Surface	3 days	Wed 26/2/20	Fri 28/2/20	100%	0 days 65			
8 Lay Filter Layer	5 days	Sat 29/2/20	Thu 5/3/20	100%	0 days			
9 Drainage and Maintenance Access (at and below+20 mpD)	10 days	Fri 6/3/20	Tue 17/3/20	100%	0 days 68			
0 FS1 middle Filling Stage 2 (~7.5m, +20.0 to +27.5 mPD)		Wed aciaiaa				1	2 I I I I I I I I I I I I I I I I I I I	
1 Filling (Rolling by Pass)(~7.5m, 0.5m per day)	53 days	Wed 26/2/20	Mon 4/5/20	100%	0 days			
2 Filling in 3m Zone	53 days 15 days	Wed 26/2/20 Wed 26/2/20	Mon 4/5/20 Fri 13/3/20	100% 100%				
3 Benching Works for Rolling by Pass Surface		Wed 26/2/20 Sat 14/3/20			0 days			
Task Milestone 🔶 Summary 🖵	15 days	Wed 26/2/20	Fri 13/3/20	100%	0 days 0 days 65			

	Hsin Chong Tsun Yip Jo Updated Da	Dint Venture ate : Feb 2022
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

	Task Name	Duration	Start	Finish	% Complete Re	emaining Duration Predecessors		
74	Lay Rockfill Layer (7.5m/1m per 5 day)	20 days	Wed 18/3/20	Tue 14/4/20	100%	0 days 73	2	3
5	Drainage and Maintenance Access (at and below+27.5 mpD)	15 days	Wed 15/4/20	Mon 4/5/20	100%	0 days 74		
	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		
	Filling (Rolling by Pass)(~7.5m, 0.5m per day)	130 days	Sat 14/3/20	Fri 21/8/20	100%	0 days 71		
	Filling in 3m Zone	133 days	Sat 22/8/20	Sat 30/1/21	100%	0 days		
-	Benching Works for Rolling by Pass Surface	3 days	Sat 22/8/20	Tue 25/8/20	100%	0 days 77,75		
	Lay Rockfill Layer (7.5m/1m per 5 day)	130 days	Wed 26/8/20	Sat 30/1/21	100%	0 days 79		
-	Drainage and Maintenance Access (at and below +35 mpD)	20 days	Mon 1/2/21	Fri 26/2/21	100%	0 days 80		
-	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)	15 days	Sat 22/8/20	Tue 8/9/20	100%	0 days 77		
-	Filling in 3m Zone	41 days	Sat 27/2/21	Mon 19/4/21	100%	0 days		
-	Benching Works for Rolling by Pass Surface	3 days	Sat 27/2/21	Tue 2/3/21	100%	0 days 81		
	Lay Rockfill Layer (7.5/1m per 5 days)	38 days	Wed 3/3/21	Mon 19/4/21	100%	0 days 85		
-	Drainage and Maintenance Access (+35 to +42.5mpD)	35 days	Tue 20/4/21	Sat 29/5/21	100%	0 days 86		
	FS1 middle Filling Stage 5 below +42.5mPD and +50mPD)	30 days	Tue 20/4/21	Wed 26/5/21	100%	0 days		
_	Filling (Rolling by Pass)(~15m, 0.5m per day)	30 days	Tue 20/4/21	Wed 26/5/21	100%	0 days 86		
_	Slope Surface forming/ Drainage and Maintenance Access	20 days	Tue 20/4/21	Thu 13/5/21	100%	0 days 86		
_	Fill Slope FS1 North (Section 14 at Drawing C1/GE/1030)	900 days	Wed 11/7/18	Thu 22/7/21	80%	179.24 days		
	CE16	264 days	Wed 11/7/18	Fri 31/5/19	38%	164 days		
	FS1 North Filling Works Stage 1 (+15 to+19.7mPD)	204 days	Sat 1/6/19	Fri 24/1/20	100%	0 days 92		
	Drainage and Maintenance Access (+15 to +20 mpD)	28 days	Sat 25/1/20	Wed 26/2/20	100%	0 days 93		
	Construction of Outfall CP2X	14 days	Thu 27/2/20	Fri 13/3/20	100%	0 days 94		
	FS1North , Filling (Rolling by Pass) (+19.7 to +22.4mPD)	20 days	Sat 14/3/20	Mon 6/4/20	100%	0 days 95		
	FS1 North Filling Stage 2 (+20 to +27.5 mPD)	100 days	Tue 7/4/20	Fri 31/7/20	100%	0 days 94		
	Drainage and Maintenance Access (+20 to +27.5 mpD)	65 days	Sat 1/8/20	Thu 15/10/20	100%	0 days 97		
-	Filling in 3m Zone (below +27.5mPD)	58 days	Mon 9/3/20	Thu 21/5/20	100%	0 days		
-	Benching Works for Rolling by Pass Surface	3 days	Mon 9/3/20	Wed 11/3/20	100%	0 days 98		
-	Lay Filter Layer	5 days	Thu 12/3/20	Tue 17/3/20	100%	0 days 100		
_	Filling by SRT (7.5m/ 3 day per 5 day)	50 days	Wed 18/3/20	Thu 21/5/20	100%	0 days 101		
	Filling in 3m Zone (below +27.5mPD) (Rockfill)	23 days	Mon 9/3/20	Fri 3/4/20	100%	0 days		
	Benching Works for Rolling by Pass Surface	3 days	Mon 9/3/20	Wed 11/3/20	100%	0 days		
	Lay Rockfill Layer (7.5m/1m per 5 day)	20 days	Thu 12/3/20	Fri 3/4/20	100%	0 days 104		
	Drainage and Maintenance Access	22 days	Sat 2/5/20	Wed 27/5/20	100%	0 days 105		
_	FS1 North Filling Stage 3 (+27 to +35 mPD)	171 days	Tue 26/11/19	Thu 11/6/20	100%	0 days		
;	Filling (Rolling by Pass)(~3m, 0.5m per day)	6 days	Tue 26/11/19	Mon 2/12/19	100%	0 days 97		
)	Drainage and Maintenance Access (+27.5 to +35 mpD)	30 days	Fri 8/5/20	Thu 11/6/20	100%	0 days 108		
)	FS1 North Filling Stage 4 (+35 to +42.5 mPD), Upgrading of Existing Slope Feature 3NW-C/F37	229 days	Fri 12/6/20	Fri 5/3/21	100%	0 days		
1	Filling (Rolling by Pass)(~3m, 0.5m per day)	20 days	Fri 12/6/20	Tue 7/7/20	100%	0 days 109		
2	Drainage and Maintenance Access (+35 to +42.5 mpD)	30 days	Sat 30/1/21	Fri 5/3/21	100%	0 days 111		
3	FS1 North Filling Stage 5 (+42.5 to +50mPD), Upgrading of Existing Slope Feature 3NW-C/F37	<mark>62 days</mark>	Wed 12/5/21	Thu 22/7/21	60%	24.8 days		
4	Filling (Rolling by Pass)(~3m, 0.5m per day)	<mark>30 days</mark>	Wed 12/5/21	Thu 17/6/21	70%	9 days 112		
5	Drainage and Maintenance Access (+42.5 to +50 mpD)	<mark>30 days</mark>	Fri 18/6/21	Thu 22/7/21	50%	15 days 114		
6	Civil Works for Pick-up/Drop-off area (Part A1, M011 CH020 to CH140)	162 days	Sat 6/3/21	Sat 18/9/21	0%	162 days		
7	Waterworks / Drainage / Sewerage/ Utilities Works	131 days	Sat 6/3/21	Fri 13/8/21	0%	131 days		
3	Sewerage Works / Drainage Works	90 days	Sat 6/3/21	Fri 25/6/21	0%	90 days 112		
	Watermain FW1a (CH29-100)	20 days	Wed 31/3/21	Mon 26/4/21	0%	20 days 118SS+21 days		
)	Road Lighting Civil Works Provision	20 days	Thu 22/7/21	Fri 13/8/21	0%	20 days 118FS+21 days		
1	Utilities (by others)	10 days	Wed 31/3/21	Wed 14/4/21	0%	10 days 118SS+21 days		
2	Carriageway and Footway	72 days	Sat 26/6/21	Sat 18/9/21	0%	72 days		
3	Backfilling to Formation Level	30 days	Sat 26/6/21	Sat 31/7/21	0%	30 days 118		
1	Carriageway	30 days	Mon 2/8/21	Sat 4/9/21	0%	30 days 123		
5	Footpath, Road Marking and Street Furniture	12 days	Mon 6/9/21	Sat 18/9/21	0%	12 days 124,131		
5	Landscape Works	172 days	Sat 6/3/21	Sat 2/10/21	0%	172 days		
7	Shrubs Planting at RW1	30 days	Wed 18/8/21	Tue 21/9/21	0%	30 days 34		
3	Woodland Planting at Site 3	10 days	Wed 18/8/21	Sat 28/8/21	0%	10 days 34		
)	Hydroseeding at Fill Slope	80 days	Sat 6/3/21	Sat 12/6/21	0%	80 days 110		
)	Shrubs Planting at Pick-up/ Drop Off	10 days	Fri 23/7/21	Tue 3/8/21	0%	10 days 115		
1	Irrigation System and Water Points (Except Water Connection)	24 days	Mon 2/8/21	Sat 28/8/21	0%	24 days 123		
2	Tree Planting Works	10 days	Mon 20/9/21	Sat 2/10/21	0%	10 days 125		
3	Section 2 of the Works (Parts B1, B2, C, D, F, G1 & G2)	1232 days	Fri 15/12/17	Mon 14/2/22	60%	487.25 days	ę_	
4	Part B1	1103 days	Sat 28/4/18	Thu 13/1/22	69%	337.58 days		
5	Ground Investigation and Geotechnical instrumentation for Commencement of Slopework	96 days	Sat 28/4/18	Wed 22/8/18	100%	0 days		
	Verification Drillholes (10 Nos., VDH3, 6, 10-15,19-20) and Preliminary Results Submission	95 days	Sat 28/4/18	Tue 21/8/18	100%	0 days		
	Design Review	36 days	Thu 12/7/18	Wed 22/8/18	100%	0 days		
;	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		
1	Drainage and Maintenance Access (at +55mPD berm)	55 days	Tue 16/10/18	Tue 18/12/18	100%	0 days		
2	Drainage and Maintenance Access (+55 to +50 slope surface)	180 days	Tue 16/10/18	Mon 13/5/19	100%	0 days		
3	Cut Slope CS3	251 days	Wed 4/11/20	Tue 7/9/21	100%	0 days		
_	Excavation (crest to toe)	15 days	Wed 4/11/20	Fri 20/11/20	100%	0 days		
4		00 -	Sat 21/11/20	Thu 24/12/20	100%	0 days 144		
4	Drainage and Maintenance Access	29 days						
14 15 16	Drainage and Maintenance Access Southern End of CS13	29 days 95 days	Mon 17/5/21	Tue 7/9/21	100%	0 days		

	Hsin Chong Tsun Yip Joint Vent Updated Date : Feb 2	
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

Developi	tent of Columbartum at Sandy Nuge Cemetery							
ID Ta	k Name	Duration	Start	Finish	% Complete R	emaining Duration Predecessors		
148	Construction of toe wall (5 bays, approx. 66m) (4 days/ bay)	20 days	Thu 29/7/21	Fri 20/8/21	100%	0 days 147		
149	Backfilling and drainage	15 days	Sat 21/8/21	Tue 7/9/21	100%	0 days 148	_	
150	Cut Slopes CS11 , CS12 and CS13	880 days	Thu 23/8/18	Wed 11/8/21	84%	140.71 days		
150	Slope Cutting (crest to+94.5mPD)	31 days	Thu 23/8/18	Fri 28/9/18	100%	0 days		
			Tue 2/10/18					
152	Drainage and Maintenance Access (at crest)	29 days		Mon 5/11/18	100%	0 days		
153	Slope Cutting and Soil Nail (+94.5 to +87mPD, 59 nos. of Soil Nail)	40 days	Sat 6/10/18	Thu 22/11/18	100%	0 days		
154	Drainage and Maintenance Access (at +94.5mPD berm)	7 days	Fri 26/10/18	Fri 2/11/18	100%	0 days	E	
155	Drainage and Maintenance Access (+94.5 to +87mPD slope surface)+ GI Works	24 days	Fri 26/10/18	Thu 22/11/18	100%	0 days		
156	Slope Cutting and Soil Nail (+87 to+79.5mPD, 84Nos. of Soil Nail)	40 days	Thu 8/11/18	Mon 24/12/18	100%	0 days		
157	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		
150	RFI(Slope Cutting and Soil Nail - additional 24 Nos. of Soil Nail)	39 days	Fri 11/1/19	Thu 28/2/19	100%	0 days		
		-						
160	RFI50(Additional Drainage and Mantenance Access (at 87mPD berm)	13 days	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)	90 days	Mon 21/1/19	Wed 15/5/19	100%	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	13 days	Thu 2/5/19	Fri 17/5/19	100%	0 days		
165	Slope Cutting and Soil Nail (+64.5 to +72 mPD, ,192 Nos. of Soil Nail)	67 days	Mon 8/4/19	Tue 2/7/19	100%	0 days		
166	Drainage and Maintenance Access (at +72mPD berm)	29 days	Sat 13/4/19	Wed 22/5/19	100%	0 days		
167	Drainage and Maintenance Access (+64.5 to +72mPD slope surface)+ GI Works	17 days	Wed 3/7/19	Mon 22/7/19	100%	0 days 165		
167	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	100%			
		-				0 days		
169	Drainage and Maintenance Access (at +64.5mPD berm)	40 days	Tue 6/8/19	Sat 21/9/19	100%	0 days 168SS+30 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 168		
171	Slope Cutting and Soil Nail for CS11 (+57 to +49.5 mPD, 88 nos. of Soil Nail, 19 nos. of Raking Drain)	38 days	Thu 12/3/20	Wed 29/4/20	100%	0 days 195		
17.0	Drainage and Maintenance Access for CC44 (at . 57mBD harm)	20 days	Thu 06/0/00	Wed 20/4/00	1000/	0 dovo 17100 - 10 dov-		
172	Drainage and Maintenance Access for CS11 (at +57mPD berm)	20 days	Thu 26/3/20	Wed 22/4/20	100%	0 days 171SS+12 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 171		
174	Slope Cutting and Soil Nail for CS12/CS13 (+57 to +49.5 mPD, 497 nos. of Soil Nail, 80 nos. of Raking Drain	85 days	Fri 7/2/20	Fri 22/5/20	100%	0 days 168,169,170FS-28 days		
1/4	Slope Cutting and Soli Nali for CS12/CS13 (+37 to +49.5 mPD, 497 hos. of Soli Nali, 60 hos. of Raking Drain) ob days	FII //2/20	FII 22/3/20	100%	0 days 100,109,170F5-20 days		
17.5	Drainage and Maintenance Access for CS12/13 (at +57mPD berm)	35 days	Wed 11/3/20	Fri 24/4/20	100%	0 days 174SS+28 days		
176	Drainage and Maintenance Access for CS12/CS13 (+49.5 to + 57mPD slope surface)+ GI Works	20 days	Sat 23/5/20	Mon 15/6/20	100%	0 days 174		
1/0	Drainage and Maintenance Access for 0512/0515 (++3.5 to + 57m D slope sunace)+ of works	20 uays	Sal 23/3/20	1011 13/0/20	100 /8	0 days 174		
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 davs	Tue 2/6/20	Tue 22/12/20	44%	96 days 174,175,176FS-12 days		
							Ξ	
178	Drainage and Maintenance Access for CS12/13 (at +49.5mPD berm)	42 days	Fri 3/7/20	Thu 20/8/20	100%	0 days 177SS+25 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 177		
		,						
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 177,178,179FS-20 days		
				T 00/0/0/	1000/			
181	Drainage and Maintenance Access for CS13 (at +42mPD berm)	28 days	Tue 19/1/21	Tue 23/2/21	100%	0 days 180SS+20 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	100%	0 days 180		
183	Slope Cutting and Soil Nail for CS13 (+34.5 mPDto toe, 73 nos. of Soil Nail, 27 nos. of Raking Drain)	100 days	Tue 16/3/21	Sat 17/7/21	0%	100 days 180,181,182FS-19 days		
101		07.1						
184	Drainage and Maintenance Access for CS13 (at +34.5mPD berm)	27 days	Mon 12/4/21	Thu 13/5/21	0%	27 days 183SS+20 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 183		
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 168		
188	Plate Load Test and Blinding Layer for RW11 Bays 1-4	5 days	Tue 17/12/19	Sat 21/12/19	100%	0 days 187		
189	Base slab of Retaining Wall RW11 Bay 1-4	10 days	Sun 22/12/19	Mon 6/1/20	100%	0 days 188		
190	Wall Stem of Retaining Wall RW11 Bay 1-4	20 days	Mon 13/1/20	Fri 7/2/20	100%	0 days 189		
190	Plate Load Test and Blinding Layer for RW11 Bays 5-6	5 days	Tue 17/12/19	Sat 21/12/19	100%	0 days 187		
	Base slab of Retaining Wall RW11 Bay 5-6	•	Sun 22/12/19	Mon 6/1/20	100%			
192	o i	10 days				0 days 191		
193	Wall Stem of Retaining Wall RW11 Bay 5-6	20 days	Tue 7/1/20	Sat 1/2/20	100%	0 days 192		
194	Protective Coating / Subsoil Drain / Filter Layer	5 days	Sat 8/2/20	Thu 13/2/20	100%	0 days 190,193		
19.5	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 194		
196	Existing Slope Upgrading Works	210 days	Tue 1/12/20	Tue 17/8/21	65%	73.2 days		
197	Existing Feature 3NW-C/C256 Rock Joint Mapping, drainage and maintenance access	150 days	Tue 1/12/20	Mon 24/5/21	32%	102 days 174SS+110 days		
198	Existing Feature 3NW-C/C258 Slope Upgrading Works	200 days	Mon 28/12/20	Tue 17/8/21	90%	20 days		
199	Slope Cutting and Soil Nail (Crest to To, 29 Nos. of Soil Nail)	100 days	Mon 28/12/20	Thu 22/4/21	100%	0 days 174SS+110 days		
200	Drainage and Maintenance Access (Crest)	100 days	Fri 23/4/21	Tue 17/8/21	80%	20 days 199		
	5 ()	-						
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)	36 days	Thu 16/8/18	Thu 27/9/18	100%	0 days		
203	Drainage and Maintenance Access (at crest)	15 days	Mon 20/8/18	Wed 5/9/18	100%	0 days		
204	Slope Cutting and Soil Nail (+62 to +69.5mPD, 99 nos. of Soil Nail, 37 nos. of Raking Drain)	62 days	Mon 3/9/18	Fri 16/11/18	100%	0 days		
205	Drainage and Maintenance Access (at +69.5mPD berm)	49 days	Mon 3/9/18	Thu 1/11/18	100%	0 days		
206	Drainage and Maintenance Access (+62 to +69.5mPD slope surface)+ GI Works	36 days	Fri 26/10/18	Thu 6/12/18	100%	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		
200	Drainage and Maintenance Access (+54.5 to +62mPD slope surface)+ GI Works	38 days	Sat 29/12/18	Fri 15/2/19	100%	0 days		
	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	Thu 18/7/19	100%			
210						0 days		
211	Drainage and Maintenance Access (at +54.5mPD berm)	61 days	Sat 19/1/19	Wed 3/4/19	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		
212		0.4	Mon 6/5/19	Mon 26/8/19	100%	0 days		
212 213	Slope Cutting and Soil Nail (+39.5 to +47mPD, 490 nos. of Soil Nail, 107 nos. of Raking Drain)	94 days						
	Slope Cutting and Soil Nail (+39.5 to +47mPD, 490 nos. of Soil Nail, 107 nos. of Raking Drain) Drainage and Maintenance Access (at +47mPD berm)	94 days 38 days	Tue 2/7/19	Wed 14/8/19	100%	0 days	E	
213		-		Wed 14/8/19 Mon 23/9/19	100% 100%	0 days 0 days 213	_	
213 214	Drainage and Maintenance Access (at +47mPD berm)	38 days	Tue 2/7/19				_	

Task Milestone 🔶 Summary Critical Progress

	Hsin Chong Tsun Yip J Updated D	oint Venture ate : Feb 2022
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

	Drainage and Maintenance Access (at +39.5mPD berm and Slope Surface) + GI Works	30 days	Tue 5/1/21	Mon 1/3/21	100%	0 days	2	L
	Fill Slope FS17	52 days	Fri 2/7/21	Tue 31/8/21	0%	52 days		
	Drainage and Maintenance Access at toe	28 days	Fri 2/7/21	Tue 3/8/21	0%	28 days 217		
	FS17 Filling Stage 1 (~2.5m max)	24 days	Wed 4/8/21	Tue 31/8/21	0%	24 days 219		
	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		
1	Waterworks / Drainage / Sewerage/ Utilities Works	27 days	Mon 28/12/20	Thu 28/1/21	0%	27 days		
	Sewerage Works / Drainage Works	18 days	Mon 28/12/20	Mon 18/1/21	0%	18 days 138,145		
	Watermain FW1 (CH532-637), FW1a (CH000-029) and FW2 (CH530-618)	15 days	Tue 12/1/21	Thu 28/1/21	0%	15 days 223SS+12 days		
	Road Lighting Civil Works Provision	8 days	Tue 12/1/21	Wed 20/1/21	0%	8 days 223SS+12 days		
-	Utilities (by others)		Tue 12/1/21	Thu 14/1/21	0%	3 days 223SS+12 days		
		3 days						
	Carriageway and Footway	57 days	Fri 23/7/21	Tue 28/9/21	0%	57 days		
<u> </u>	Backfilling to Formation Level	11 days	Fri 23/7/21	Wed 4/8/21	0%	11 days 222,115		
	Carriageway	28 days	Thu 5/8/21	Mon 6/9/21	0%	28 days 228		
	Footpath, Road Marking and Street Furniture	18 days	Tue 7/9/21	Tue 28/9/21	0%	18 days 229		
	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		
	Waterworks / Drainage / Sewerage/ Utilities Works	238 days	Fri 5/6/20	Mon 22/3/21	100%	0 days		
	Drainage Works (with Petrol Interceptor)	200 days	Fri 5/6/20	Tue 2/2/21	100%	0 days 444		
	Road Lighting Civil Works Provision	10 days	Thu 11/3/21	Mon 22/3/21	100%	0 days 233FS+28 days		
	Carriageway and Footway	143.1 days	Tue 23/3/21	Tue 14/9/21	69%	44.17 days		
	Backfilling to Formation Level	80 days	Tue 23/3/21	Wed 30/6/21	80%	16 days 232		
	Carriageway	60 days	Sat 10/4/21	Thu 19/8/21	80%	12 days 236		
	Footpath, Road Marking and Street Furniture	22 days	Thu 19/8/21	Tue 14/9/21	0%	22 days 237		
	Civil Works for PDA (M011 CH140-215,M08 CH70-102)	161 days	Tue 9/3/21	Mon 20/9/21	21%	126.67 days		
	Waterworks / Drainage / Sewerage/ Utilities Works	90 days	Tue 9/3/21	Mon 28/6/21	40%	53.78 days		
						-		
	Sewerage Works / Drainage Works	60 days	Tue 9/3/21	Sat 22/5/21	30%	41.8 days 180		
	Road Lighting Civil Works Provision	10 days	Mon 29/3/21	Wed 16/6/21	70%	3 days 241FS+17 days		
	Utilities (by others)	10 days	Thu 17/6/21	Mon 28/6/21	70%	3 days 242		
	Carriageway and Footway	71 days	Tue 29/6/21	Mon 20/9/21	0%	71 days		
	Backfilling to Formation Level	30 days	Tue 29/6/21	Tue 3/8/21	0%	30 days 240		
	Carriageway	30 days	Wed 4/8/21	Tue 7/9/21	0%	30 days 245		
	Footpath, Road Marking and Street Furniture	11 days	Wed 8/9/21	Mon 20/9/21	0%	11 days 246		
	Civil Works for Sha Ling Road (M001 CH610-710)	114 days	Tue 9/3/21	Tue 27/7/21	53%	53.2 days		
	Waterworks / Drainage / Sewerage/ Utilities Works	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 days 440,180		
	Watermain FW1 (CH433-532) and FW2 (CH433-530)	30 days	Thu 25/3/21	Mon 3/5/21	100%	0 days 250SS+14 days		
	Road Lighting Civil Works Provision	10 days	Thu 25/3/21	Thu 8/4/21	100%	0 days 250SS+14 days		
	Utilities (by others)	10 days	Thu 25/3/21	Thu 8/4/21	100%	0 days 250SS+14 days		
	Carriageway and Footway	70 days	Tue 4/5/21	Tue 27/7/21	0%	70 days		
	Backfilling to Formation Level	30 days	Tue 4/5/21	Tue 8/6/21	0%	30 days 249		
	Carriageway	30 days	Wed 9/6/21	Thu 15/7/21	0%	30 days 255		
	Footpath, Road Marking and Street Furniture	10 days	Fri 16/7/21	Tue 27/7/21	0%	10 days 256		
	Civil Works for Sha Ling Road (M001 CH480-610, M08 CH00-70)	555 days	Tue 3/3/20	Thu 13/1/22	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		
	Civil and Structural Works	74 days	Tue 3/3/20	Wed 3/6/20	80%	15 days		
	Excavation by open cut	25 days	Tue 3/3/20	Tue 31/3/20	40%	15 days		
	Blinding layer concreting	1 day	Wed 1/4/20	Wed 1/4/20	100%	0 days 261		
	Construction of base slab	7 days	Thu 2/4/20	Tue 14/4/20	100%	0 days 262		
						-		
	Construction of wall and top slab	20 days	Wed 15/4/20	Sat 9/5/20	100%	0 days 263		
	Construction of manhole	7 days	Mon 11/5/20	Mon 18/5/20	100%	0 days 264		
		14 days	Tue 19/5/20	Wed 3/6/20	100%	0 days 265		
	VDS and AMS for Sewage Detention Tank (Permanment Design and Submission Approval)	<mark>350 days</mark>	Mon 18/5/20	Tue 20/7/21	<mark>23%</mark>	270 days 266		
	VDS and AMS for Sewage Detention Tank	140 days	Wed 21/7/21	Thu 6/1/22	0%	140 days 267		
	Waterworks / Drainage / Sewerage/ Utilities Works	146 days	Tue 4/5/21	Wed 27/10/21	0%	146 days		
	Sewerage Works / Drainage Works	40 days	Wed 8/9/21	Wed 27/10/21	0%	40 days 260,256,246		
	Watermain FW1 and FW2 (CH310-433)	17 days	Tue 4/5/21	Mon 24/5/21	0%	17 days 251		
	Road Lighting Civil Works Provision	18 days	Tue 25/5/21	Tue 15/6/21	0%	18 days 271		
	Utilities (by others)	17 days	Wed 16/6/21	Tue 6/7/21	0%	17 days 272		
	Carriageway and Footway	64 days	Thu 28/10/21	Thu 13/1/22	0%	64 days		
	Backfilling to Formation Level	12 days	Thu 28/10/21	Wed 10/11/21	0%	12 days 269		
	Carriageway	32 days	Thu 11/11/21	Fri 17/12/21	0%			
	•					32 days 275		
	Footpath, Road Marking and Street Furniture	20 days	Sat 18/12/21	Thu 13/1/22	0%	20 days 276		
	Civil Works for Sha Ling Road (M001 CH360-480)	104 days	Wed 28/7/21	Mon 29/11/21	26%	76.47 days		
	Waterworks / Drainage / Sewerage/ Utilities Works	67 days	Wed 28/7/21	Sat 16/10/21	36%	42.83 days		
	Sewerage Works / Drainage Works	28 days	Wed 28/7/21	Sat 28/8/21	80%	5.6 days 257		
	Watermain FW1 and FW2 (CH175-310)	18 days	Thu 19/8/21	Wed 8/9/21	80%	3.6 days 280SS+19 days		
	Additional rising main (CE No. 181)	30 days	Thu 9/9/21	Sat 16/10/21	0%	30 days 281		
	Road Lighting Civil Works Provision	15 days	Thu 19/8/21	Sat 4/9/21	0%	15 days 280SS+19 days		
	Utilities (by others)	11 days	Thu 19/8/21	Tue 31/8/21	0%	11 days 280SS+19 days		
	Carriageway and Footway	37 days	Mon 18/10/21	Mon 29/11/21	0%	37 days		
	Backfilling to Formation Level	7 days	Mon 18/10/21	Mon 25/10/21	0%	7 days 279		
	Carriageway	18 days	Tue 26/10/21	Mon 15/11/21	0%	18 days 286		
					0%			
	Footpath, Road Marking and Street Furniture	12 days	Tue 16/11/21	Mon 29/11/21		12 days 287		
	Civil Works for Sha Ling Road (M001 CH180-360)	109 days	Fri 6/8/21	Tue 14/12/21	0%	109 days		
	Waterworks / Drainage / Sewerage/ Utilities Works	59 days	Fri 6/8/21	Sat 16/10/21	0%	59 days		

	Hsin Chong Tsun Yip Joint Vent Updated Date : Feb 2	
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

evelopment of Columbarium at Sandy Ridge Cemetery	lo e	la	P: 1	0.0			
Task Name	Duration	Start	Finish	% Complete Ren	naining Duration Predecessors	2	
Drainage and Sewerage Works	40 days	Fri 6/8/21	Tue 21/9/21	0%	40 days 316		
2 Watermain FW1 and FW2 (CH000-175)	23 days	Tue 7/9/21	Tue 5/10/21	0%	23 days 291SS+27 days		
3 Road Lighting Civil Works Provision	22 days	Tue 7/9/21	Mon 4/10/21	0%	22 days 291SS+27 days		
Utilities (by others)	32 days	Tue 7/9/21	Sat 16/10/21	0%	32 days 291SS+27 days		
5 Carriageway and Footway	50 days	Mon 18/10/21	Tue 14/12/21	0%	50 days		
6 Backfilling to Formation Level	10 days	Mon 18/10/21	Thu 28/10/21	0%	10 days 290		
7 Carriageway	24 days	Fri 29/10/21	Thu 25/11/21	0%	24 days 296		
Footpath, Road Marking and Street Furniture	16 days	Fri 26/11/21	Tue 14/12/21	0%	16 days 297		
P Part B2, G1 and G2	1232 days	Fri 15/12/17	Mon 14/2/22	67%	404.47 days		
0 Access Date for Part G1 and G2	0 days	Tue 5/2/19	Tue 5/2/19	0%	0 days	ĭ	
1 Land Decontamination Works	293 days	Tue 2/10/18	Thu 26/9/19	100%	0 days		
2 Re-appraisal and Contamination Assessment Plan (CAP) Submission to EPD	10 days	Tue 2/10/18	Fri 12/10/18	100%	0 days		
		Fri 12/10/18		100%			
3 EPD Review and Acceptance for CAP	195 days		Wed 12/6/19		0 days		
Environmental SI for Determination of Decontamination and SI Testing	70 days	Tue 28/5/19	Mon 19/8/19	100%	0 days		
5 Contamination Assessment Report (CAR) Submission to EPD	18 days	Tue 20/8/19	Mon 9/9/19	100%	0 days 304		
6 EPD Review and Acceptance for CAR	14 days	Tue 10/9/19	Thu 26/9/19	100%	0 days 305		
7 Civil Works for Sha Ling Road (M001 CH40-110)	717 days	Tue 21/5/19	Sat 16/10/21	83%	120.49 days		
8 Objection from Local Village (EW16 & 18)	355 days	Tue 21/5/19	Wed 29/7/20	100%	0 days		
Application for Road Closure / Road Divertion	17 days	Thu 30/7/20	Tue 18/8/20	100%	0 days 308		
Noise Barrier Bay 5 to Bay 8	322 days	Wed 19/8/20	Thu 16/9/21	89%	35.78 days		
General Excavation with ELS to Formation Level Bay 5 to Bay 8	15 days	Wed 19/8/20	Fri 4/9/20	100%	0 days 309		
Base slab of Noise Barrier Bay 5 to Bay 8	30 days	Thu 20/8/20	Wed 23/9/20	100%	0 days 311		
Wall Stem of Noise Barrier Bay 5 to Bay 8	30 days	Thu 24/9/20	Sat 31/10/20	100%	0 days 312		
Protective Coating /Temp Fill	5 days	Mon 2/11/20	Fri 6/11/20	100%	0 days 313		
Installation of panel	10 days	Mon 6/9/21	Thu 16/9/21	0%	10 days 382		
				60%			
Waterworks / Drainage / Sewerage/ Utilities Works	70 days	Thu 13/5/21	Thu 5/8/21		28 days		
Sewerage Works / Drainage Works	35 days	Thu 13/5/21	Thu 24/6/21	80%	7 days 373		
Watermain FW3 (CH045-105)	20 days	Wed 14/7/21	Thu 5/8/21	0%	20 days 320		
Road Lighting Civil Works Provision	10 days	Fri 25/6/21	Wed 7/7/21	80%	2 days 317		
Utilities (by others)	15 days	Fri 25/6/21	Tue 13/7/21	80%	3 days 317		
Carriageway and Footway	59 days	Fri 6/8/21	Sat 16/10/21	0%	59 days		
Backfilling to Formation Level	10 days	Fri 6/8/21	Tue 17/8/21	0%	10 days 316		
Carriageway	42 days	Wed 18/8/21	Thu 7/10/21	0%	42 days 322		
Footpath, Road Marking and Street Furniture	7 days	Fri 8/10/21	Sat 16/10/21	0%	7 days 323		
5 Ground Investigation and Geotechnical instrumentation for Commencement of Slopework	45 days	Fri 8/2/19	Mon 1/4/19	100%	0 days		
6 Trial Pit Excavation / Installation of Instruments and Preliminary Results Submission	45 days	Fri 8/2/19	Mon 1/4/19	100%	0 days 11,300		
7 Fill Slope FS13 and FS14	56 days	Fri 6/8/21	Tue 12/10/21	0%	56 days		
					-		
B Drainage and Maintenance Access at toe	32 days	Fri 6/8/21	Sat 11/9/21	0%	32 days 325,316		
FS13 and FS14 Filling Stage 1 (~2.5m max)	24 days	Mon 13/9/21	Tue 12/10/21	0%	24 days 328		
Cut Slope CS14	20 days	Wed 13/10/21	Fri 5/11/21	0%	20 days		
1 Slope Cutting (crest totoe)	3 days	Wed 13/10/21	Sat 16/10/21	0%	3 days 327		
2 Drainage and Maintenance Access (at crest)	17 days	Mon 18/10/21	Fri 5/11/21	0%	17 days 331		
3 Civil Works for Sha Ling Road (M001 CH110-180)	104 days	Fri 8/10/21	Mon 14/2/22	0%	104 days		
4 Waterworks / Drainage / Sewerage/ Utilities Works	45 days	Fri 8/10/21	Tue 30/11/21	0%	45 days		
Sewerage Works / Drainage Works	30 days	Fri 8/10/21	Fri 12/11/21	0%	30 days 323		
Watermain FW3 (CH105-175)	12 days	Sat 13/11/21	Fri 26/11/21	0%	12 days 335		
Road Lighting Civil Works Provision	10 days	Sat 13/11/21	Wed 24/11/21	0%	10 days 335		
Utilities (by others)	15 days	Sat 13/11/21	Tue 30/11/21	0%	15 days 335		
Carriageway and Footway	59 days	Wed 1/12/21	Mon 14/2/22	0%	59 days 329		
Backfilling to Formation Level	10 days	Wed 1/12/21	Sat 11/12/21	0%	10 days 334	——	
	42 days	Mon 13/12/21	Sat 5/2/22	0%	42 days 340		
	7 days	Mon 7/2/22	Mon 14/2/22	0%	7 days 341		
Man Kam To Road Bus Shelter (PT01, PT02 and PT03)	1175 days	Fri 15/12/17	Thu 2/12/21	71%	339.29 days		
Used as Temporary Site Office / Storage Area	340 days	Fri 15/12/17	Mon 11/2/19	100%	0 days 2SS		
Investigation for DongJiang Watermain(CE23)	82 days	Thu 10/1/19	Tue 23/4/19	100%	0 days		
Works Area Handing Over to WSD as Request	198 days	Mon 15/4/19	Thu 12/12/19	100%	0 days		
Interface Issue with C2 (As request by Arup to delay XP application) (Including Temp. Road	290 days	Tue 28/5/19	Tue 19/5/20	35%	188.75 days		
Diversion)							
TTA and XP Application at Man Kam To Road	14 days	Wed 20/5/20	Thu 4/6/20	0%	14 days 347		
Works Area Handling to WSD for DongJiang Watermain Works	37 days	Wed 25/11/20	Sat 9/1/21	0%	37 days		
Waterworks / Drainage / Sewerage/ Utilities Works	180 days	Mon 11/1/21	Thu 19/8/21	77%	41.77 days		
Sewerage Work (Petrol Interceptor)	15 days	Fri 16/7/21	Mon 2/8/21	100%	0 days 352		
Sewerage Works / Drainage Works	150 days	Mon 11/1/21	Thu 15/7/21	90%	15 days 349		
Road Lighting Civil Works Provision	11 days	Fri 16/7/21	Wed 28/7/21	20%	8.8 days 352		
Utilities (by others)	30 days	Fri 16/7/21	Thu 19/8/21	20%	24 days 352		
				17%	96.65 days		
Carriageway and Footway	117 days	Fri 16/7/21	Thu 2/12/21				
6 Backfilling to Formation Level	12 days	Fri 20/8/21	Thu 2/9/21	40%	7.2 days 350		
7 Carriageway	56 days	Fri 3/9/21	Wed 10/11/21	20%	44.8 days 356		
8 Footpath, Road Marking and Street Furniture	19 days	Thu 11/11/21	Thu 2/12/21	0%	19 days 357		
9 Reinstatement to existing Man Kam To Road	5 days	Fri 16/7/21	Wed 21/7/21	0%	5 days 352		
0 Civil Works for Sha Ling Road (M001 CH00-40)	985 days	Thu 30/8/18	Wed 22/12/21	55%	445.63 days		
TTA and XP Application at Man Kam To Road	14 days	Fri 15/1/21	Sat 30/1/21	0%	14 days 364		
Works Area Handing Over to WSD as Request	120 days	Mon 6/5/19	Thu 26/9/19	80%	24 days		
63 Work Area Handling to Sang Hing for Turn Around	190 days	Mon 6/4/20	Tue 24/11/20	0%	190 days		

Task Milestone 🔶 Summary Critical Progress =

	Hsin Chong Tsun Yip J Updated D	oint Venture ate : Feb 2022
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

Task Name Works Area Handling to WSD for DongJiang Watermain Works	Duration	Start	Finish		emaining Duration Predecessors	2
Works Area Handling to WSD for DongJiang Watermain Works Consent from WSD for Works Near Dong Jing Watermain	41 days 325 days	Wed 25/11/20 Thu 30/8/18	Thu 14/1/21 Fri 4/10/19	<u>0%</u> 99%	<u>41 days</u> <u>363</u> 3.89 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	
Approval from WSD	80 days	Tue 2/7/19	Fri 4/10/19	95%	4 days 367	
Noise Barrier Bay 1-4	196 days	Mon 1/2/21	Wed 29/9/21	89%	21.78 days	
General Excavation with ELS to Formation Level Bay 1-4	30 days	Mon 1/2/21	Wed 10/3/21	100%	0 days 361,313,364	
Base slab of Noise Barrier Bay 1-4	30 days	Thu 11/3/21	Sat 17/4/21	100%	0 days 370	
Wall Stem of Noise Barrier Bay 1-4	15 days	Mon 19/4/21	Thu 6/5/21	100%	0 days 371	
Protective Coating /Temp Fill	5 days	Fri 7/5/21	Wed 12/5/21	100%	0 days 372	
Installation of panel	10 days	Fri 17/9/21	Wed 29/9/21	0%	10 days 315	
Waterworks / Drainage / Sewerage/ Utilities Works (RHS + Man Kam To EB Slow Lane) Sewerage Works / Drainage Works	62 days	Thu 13/5/21	Tue 27/7/21	54%	28.8 days	
Sewerage Works / Drainage Works	54 days	Thu 13/5/21	Sat 17/7/21	80%	10.8 days 373	
Watermain FW3 (CH000-045)	6 days	Mon 19/7/21	Sat 24/7/21	0%	6 days 376	
Road Lighting Civil Works Provision	8 days	Mon 19/7/21	Tue 27/7/21	20%	6.4 days 376	
Utilities (by others)	25 days	Thu 13/5/21	Fri 11/6/21	20%	20 days 373	
Carriageway and Footway (RHS+ Man Kan To EB Slow Lane)	38 days	Wed 28/7/21	Thu 9/9/21	0%	38 days	
Backfilling to Formation Level	10 days	Wed 28/7/21	Sat 7/8/21	0%	10 days 375	
Carriageway	24 days	Mon 9/8/21	Sat 4/9/21	0%	24 days 381	
Footpath, Road Marking and Street Furniture	4 days	Mon 6/9/21	Thu 9/9/21	0%	4 days 382	
Waterworks / Drainage / Sewerage/ Utilities Works (LHS)	52 days	Mon 6/9/21	Mon 8/11/21	0%	52 days	
Sewerage Works / Drainage Works	42 days	Mon 6/9/21	Wed 27/10/21	0%	42 days 382	
Road Lighting Civil Works Provision	5 days	Thu 28/10/21	Tue 2/11/21	0%	5 days 385	
Utilities (by others) Carriageway and Footway (LHS)	10 days 38 days	Thu 28/10/21 Tue 9/11/21	Mon 8/11/21 Wed 22/12/21	0%	10 days 385 38 days	
Backfilling to Formation Level	10 days	Tue 9/11/21	Fri 19/11/21	0%	10 days 384	E
Carriageway	24 days	Sat 20/11/21	Fri 17/12/21	0%	24 days 389	
Footpath, Road Marking and Street Furniture	4 days	Sat 18/12/21	Wed 22/12/21	0%	4 days 390	
Part C	902 days	Sat 15/12/18	Fri 31/12/21	28%	648.67 days	
Consent from WSD for Works Near Dong Jing Watermain	702 days	Sat 15/12/18	Mon 3/5/21	34%	465.52 days	
Investigation works / Trial Pits for Watermains	60 days	Sat 15/12/18	Fri 1/3/19	100%	0 days	
Submission for Tempworks	102 days	Sat 23/2/19	Sat 29/6/19	100%	0 days	
Approval from WSD (RFI No.66) & Re-design the arrangement	546 days	Tue 2/7/19	Mon 3/5/21	14%	469.5 days 395	
Refuse Collection Point	200 days	Tue 4/5/21	Fri 31/12/21	18%	163.17 days	
General Excavation with ELS to Formation	15 days	Tue 4/5/21	Fri 21/5/21	100%	0 days 396	
Substructure Construction	20 days	Sat 22/5/21	Tue 15/6/21	100%	0 days 398	
Superstructure Construction	45 days	Wed 16/6/21	Sat 7/8/21	90%	4.5 days 399	
Pavement / Footpath reinstatment	90 days	Mon 9/8/21	Wed 24/11/21	0%	90 days 400	
ABWF Works	120 days	Mon 9/8/21	Fri 31/12/21	0%	120 days 400	
E&M and Waterworks	120 days	Mon 9/8/21	Fri 31/12/21	0%	120 days 400	
Landscape Works	274 days	Tue 2/3/21	Sat 29/1/22	0%	274 days	
at Cut Slope CS1, CS2, CS3	90 days	Wed 8/9/21	Fri 24/12/21	0%	90 days 138,143	
at Cut Slope CS11, CS12, CS13	90 days	Thu 12/8/21	Sat 27/11/21	0%	90 days 150	
at Cut Slope CS15, CS16, CS17	90 days	Tue 2/3/21	Mon 21/6/21	0%	90 days 201	
at Fill Slope FS13, FS14, FS17	60 days	Wed 13/10/21	Wed 22/12/21	0%	60 days 218,327	
Sha Ling Road and Man Kam To Road	30 days	Thu 23/12/21	Sat 29/1/22	0%	30 days 391	
Woodland Planting at Site 1,2,4, 7, 8, 9	170 days	Tue 2/3/21	Fri 24/9/21	0%	170 days 217	
Irrigation System and Water Points (Except Water Connection)	30 days	Fri 3/12/21	Mon 10/1/22	0%	30 days 358	
Section 3 of the Works (Part E)	457 days	Thu 31/5/18	Tue 10/12/19	98%	7.34 days	
Ground Investigation and Geotechnical Instrumentation for Commencement of Slopework	64 days	Thu 31/5/18	Wed 15/8/18	100%	0 days	
Verification Drillholes (2 Nos., VDH4-5) and Preliminary Results Submission	43 days	Thu 31/5/18	Sat 21/7/18	100%	0 days	
Design Review	36 days	Thu 5/7/18	Wed 15/8/18	100%	0 days	
Fill Slope FS3 (Section 17 at Drawing C1/GE/1053)	424 days	Wed 11/7/18	Tue 10/12/19	99%	4.02 days	
Time Lag of CE16	100 days	Wed 11/7/18	Wed 7/11/18	100%	0 days	
RFI046 Outfall Location	47 days	Mon 8/10/18	Sat 1/12/18	100%	0 days	
Drainage, Maintenance Access at slope toe	63 days	Sat 16/2/19	Mon 6/5/19	100%	0 days	
Construction of Outfall CP14X	11 days	Mon 7/1/19	Fri 18/1/19	100%	0 days	
FS3 Filling Stage 1(~+16 to+17.6 mPD)	121 days	Thu 6/12/18	Wed 8/5/19	100%	0 days	
CE50-No Fine at Slope Toe	12 days	Fri 26/4/19	Fri 10/5/19	100%	0 days	
FS Filling (+16.9 to +27.6 mPD) (Rolling by Pass)	60 days	Thu 23/5/19	Fri 2/8/19	100%	0 days	
FS Filling (+27.6to 30 mPD) (Rolling by Pass)	12 days	Sat 3/8/19 Sat 17/8/19	Fri 16/8/19	100% 100%	0 days 423	
FS3 Filling Stage 1 (+16.9 to +21 mPD) Drainage and Maintenance Access (+21 to +28.5 mpD)	41 days	Sat 17/8/19 Tue 8/10/19	Sat 5/10/19 Tue 29/10/19	100%	0 days 424	
FS3 Filling Stage 2 (~7.5m, 21 to +28.5 mPD)	19 days 10 days	Wed 30/10/19	Sat 9/11/19	100%	0 days 425 0 days 426	
Drainage and Maintenance Access (+28.5 to +35.5mpD)	15 days	Fri 22/11/19	Mon 9/12/19	67%	5 days 420	
FS3 Filling Stage 3 (~7.5m, +28.5 to 35.5 mPD)	17 days	Thu 21/11/19	Tue 10/12/19	100%	0 days 436,437	
Retaining Wall RW4	96 days	Sat 17/8/19	Tue 10/12/19	99%	0.68 days	
General Excavation to Formation Level(Bay1~2)	23 days	Sat 17/8/19	Thu 12/9/19	100%	0 days 424	
Plate Load Test and Blinding Layer for Retaining Wall Bays 3-8	5 days	Fri 13/9/19	Thu 19/9/19	100 %	0 days 424	
Plate Load Test and Blinding Layer for Retaining Wall Bays 1-2	5 days	Fri 20/9/19	Wed 25/9/19	100 %	0 days 432	
Base Slab of Retaining Wall RW4 Bay 1-4	16 days	Fri 20/9/19	Thu 10/10/19	100%	0 days 432	
Base Slab of Retaining Wall RW4 Bay 1-4 Base Slab of Retaining Wall RW4 Bay 5-8	16 days	Thu 26/9/19	Wed 16/10/19	100%	0 days 433	
Wall Stem of Retaining Wall RW4 Bay 1-4	30 days	Fri 11/10/19	Thu 14/11/19	100%	0 days 434	
Wall Stem of Retaining Wall RW4 Bay 5-8	20 days	Thu 17/10/19	Fri 8/11/19	100%	0 days 435	
7 Wall Stem of Retaining Wall RW4 Bay 5-8						

	Hsin Chong Tsun Yip Joint Vent Updated Date : Feb 2	
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3 Month Rolling Programme (Feb 2022 to Apr 2022)

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ID	Task Name	Duration	Start	Finish	% Complete	Remaining Duration	Predecessors	2	3
438	Protective Coating / Subsoil Drain / Filter Layer	5 days	Sat 9/11/19	Thu 14/11/19	100%	0 days	436,437	Ĩ	
439	Backfilling behind RW4 and Fill Slop FS4 (~8m up to +35.5 mPD)	22 days	Fri 15/11/19	Tue 10/12/19	95%	1 day	438		
440	Fill Slope FS2	47 days	Thu 17/10/19	Tue 10/12/19	100%	0 days			
441	Drainage and Maintenance Access (+35.5 to +43.0 mpD)	19 days	Thu 17/10/19	Thu 7/11/19	100%	0 days	435		
442	FS2 Filling Stage 1 (~7.5m, +35.5 to +43 mPD)	20 days	Fri 8/11/19	Sat 30/11/19	100%	0 days	441		
443	Drainage and Maintenance Access (+43.0 to +50 mpD)	30 days	Thu 17/10/19	Wed 20/11/19	100%	0 days	435		
444	FS2 Filling Stage 2 (~7.5m, +43 to +50 mPD)	18 days	Wed 20/11/19	Tue 10/12/19	100%	0 days	443		
445	Cut Slope CS18 and CS19	235 days	Mon 25/2/19	Sat 7/12/19	100%	0 days			
446	Slope Cutting (+54.5 to crest)	30 days	Wed 27/2/19	Tue 2/4/19	100%	0 days			
447	Confirmation of Interface Details at CS18/19 (NCE29)	30 days	Wed 27/2/19	Tue 2/4/19	100%	0 days			
448	Drainage and Maintenance Access (crest)+ GI Works	8 days	Wed 3/4/19	Fri 12/4/19	100%	0 days			
449	Slope Cutting and Raking Drain (+47 to +54.5mPD, 13 nos. of Raking Drain)	113 days	Mon 25/2/19	Mon 15/7/19	100%	0 days			
450	Drainage and Maintenance Access (+54.5 to +62mPD slope surface/berm)+ GI Works	30 days	Thu 4/4/19	Wed 15/5/19	100%	0 days			
451	Slope Cutting and Raking Drain (+47mPD to toe, 18 nos. of Raking Drain)	110 days	Mon 6/5/19	Fri 13/9/19	100%	0 days	450FS-30 days,213SS		
452	Drainage and Maintenance Access (below +47mPD slope surface/berm)+ GI Works	70 days	Sat 14/9/19	Sat 7/12/19	100%	0 days	451		
453	Landscape Works	67 days	Mon 16/9/19	Wed 4/12/19	86%	9.14 days			
454	at Fill Slope FS2, FS3	50 days	Tue 8/10/19	Wed 4/12/19	70%	15 days	425		
455	at Cut Slope CS18, CS19	60 days	Mon 16/9/19	Tue 26/11/19	100%	0 days	451		

Task Milestone I Summary Critical Progress

		 Hsin Chong Tsun Yip Joint Venture Updated Date : Feb 2022					
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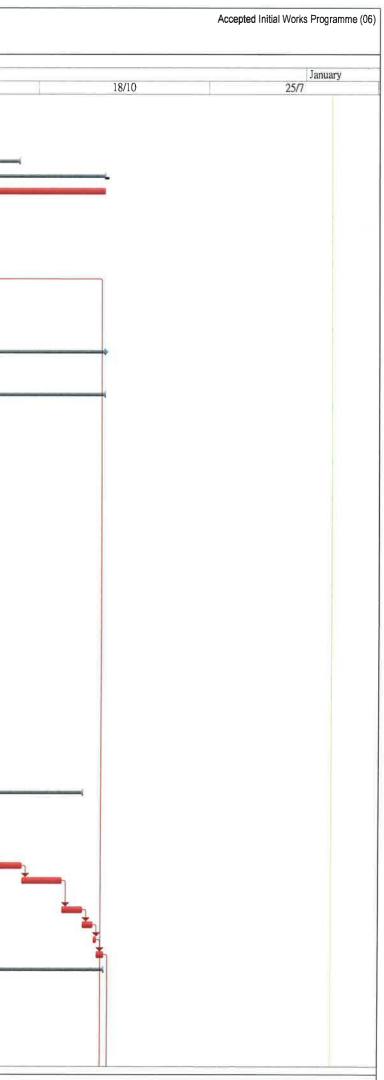
Three Months Rolling Programme of

Contract CV/2017/02

 $Z:\label{eq:loss} CV-2016-10)\ (CV-2016-10)\ (CV-2016-10$

3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

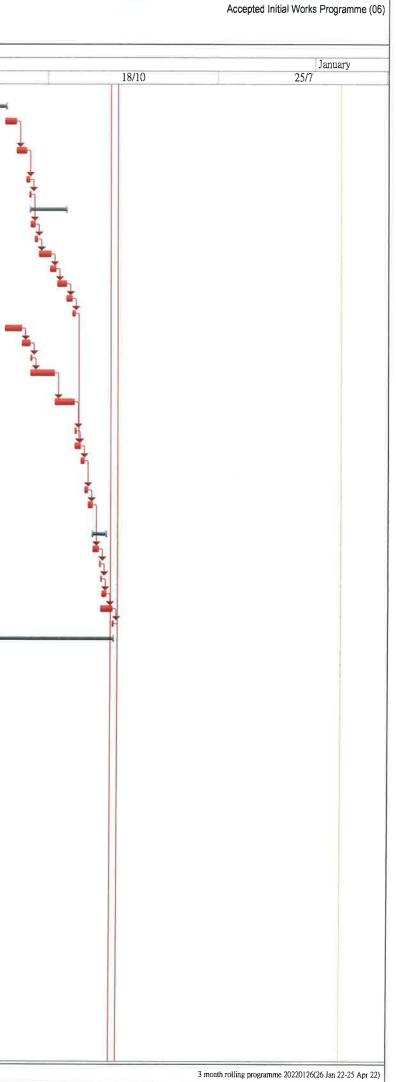
WBS Ta	sk Name	Duration Start Date		Completion Date		November				
					24/9	1/7		7/4		
	tter of Acceptance	0 days	Wed 30/5/18	Wed 30/5/18	∳i `			Sector .	-	
	arting Date	0 days	Thu 31/5/18	Thu 31/5/18	*				i	
	Submissions	9 days	Wed 26/9/18	Fri 5/10/18		×				
	plications to Government Department	27 days	Mon 4/6/18	Sat 30/6/18	<u></u>					
Su	bmissions & acceptances	835 days	Mon 4/6/18	Tue 15/9/20	j				-	
Lia	aison with Utility Undertakers	979 days	Fri 1/6/18	Wed 3/2/21					_	
	aison with Contract CV/2016/01 regarding Parts A1 to		Fri 1/6/18	Wed 3/2/21	Territoria and a second		_	and the second		
A4	(refer PS Appendix A1)									
	aison Meeting with Interface and associated contractors	389 days	Fri 1/6/18	Mon 24/6/19				•		
9 Tre	ee Survey Reporting	164 days	Fri 1/6/18	Sun 11/11/18						
		671 days	Fri 1/6/18	Wed 1/4/20		<u></u>				
	ovision of Project Manager's Site Accommodation	28 days	Fri 1/6/18	Thu 28/6/18				·		
	S1.08A(b) & 1.49)									
12 De	esign of irrigation system within the Sandy Ridge emetery (LS/2021, 2041, 2042, W/1041,1011)	21 days	Fri 20/12/19	Fri 10/1/20					-	
	ondition Survey	81 days	Thu 23/8/18	Sun 11/11/18		jamen and a state of the state				
			Thu 31/5/18	Wed 3/2/21	ber					
wi	thin Parts A1, A2 and B of the Site except tablishment works	or o days	110 0 1/0/10	W60 012121						
	Parts A1	859 days	Fri 28/9/18	Wed 3/2/21						
14.1 14.1.1	access date for section 1 (Parts A1) - not more than	0 days	Fri 28/9/18	Fri 28/9/18		*				
12.1	120 days after the starting date	e aajo								
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	general site clearance	30 dave	Tue 23/10/19	Wed 28/11/18						
14.1.4	initial survey		Thu 29/11/18	Wed 2/1/19		×				
14.1.5	construction of temporary drainage	21 days 21 days	Thu 3/1/19	Sat 26/1/19						
			Mon 28/1/19	Mon 23/12/19						
14.1.6	A1)	200 days	11/19	WUT 23/12/19		_			1	
14.1.7	A1) Construction of Retaining Wall RW13 (bays 1 to	102 down	Mon 15/4/10	Thu 12/12/19			1			
14.1.8	Site Formation works for Fill Slope FS18		Mon 15/4/19	Mon 3/2/20						
14.1.9	CS21 - slope cutting	-	Fri 20/12/19	Mon 3/2/20 Mon 30/12/19			·			
	install instrument for CS21	7 days							ł	
14.1.10 14.1.11	placement of erosion control mat/ hydroseeding	5 days	Tue 31/12/19	Mon 6/1/20					1	
14.1.12		2 days	Tue 7/1/20	Wed 8/1/20					7	
) 14.1.12	minor cutting CS26 (Parts A1) (for Road E)	7 days	Thu 9/1/20	Thu 16/1/20						
	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		47	181-144/0/00	N/ 1 4 /4 /00						
4 14.1.15 5 14.1.16	CS23 - slope cutting & 300U channel		Wed 11/3/20	Wed 1/4/20						
5 14.1.16 6 14.1.17	install instrument for CS23	5 days	Thu 2/4/20	Wed 8/4/20						
0 14.1.17 7 14.1.18	placement of erosion control mat/ hydroseeding	2 days	Thu 9/4/20	Tue 14/4/20						
14.1.10	backfilling of pipe trench to formation (including SRT	9 days	Wed 15/4/20	Sat 25/4/20						
3 14.1.19	test) 2001 channel behind DW/12	Adams	Man 07/4/00	0-4 0/5/00						
14.1.19	300U channel behind RW13	4 days	Mon 27/4/20	Sat 2/5/20						
14.1.20	300U channel and planter wall at south side of Road	30 days	Mon 4/5/20	Sat 6/6/20						
) 14.1.21	E Dephysical of Dept E (Ad shall be a abo	404 -	Mar. 0/0/00							
14.1.21 1 14.1.21.1			Mon 8/6/20	Wed 30/12/20						
19.621.1	ducting for road lighting (RD/2091) & construction	20 days	Mon 8/6/20	Thu 2/7/20						
2 14.1.21.2	of irrigation system kerbing, sub-base (include subbase SRT test) &	24 days	Fri 3/7/20	Thu 30/7/20						
	cross road duct (RD/2061, 2081)									
3 14.1.21.3	concrete pavement	45 days	Fri 31/7/20	Mon 21/9/20						
4 14.1.21.4	traffic signs, directional signs, type 2 railing,	48 days	Tue 22/9/20	Thu 26/11/20						
12541	emergency crash gate, beam barriers	is days								
14.1.21.5	concrete footpath	27 days	Fri 27/11/20	Wed 30/12/20						
14.1.22	street lighting (Drg/ RD/2091)		Thu 31/12/20	Sat 16/1/21						
14.1.23	landscaping (hydroseeding)	5 days	Mon 18/1/21	Fri 22/1/21						
8 14.1.24	landscaping (hydroseeding)	10 days		Wed 3/2/21						
			Tue 31/12/19	Wed 3/2/21 Wed 3/2/21						
50 14.2									-	
17.6.1	access date for section 1 (Parts A2) - not more than 580 days after the starting date	o days	Tue 31/12/19	Tue 31/12/19						
14.2.2	580 days after the starting date	6 days	Thu 0/4/00						4	
	form temporary haul road to Parts A2	6 days	Thu 2/1/20	Wed 8/1/20					1	
	general site clearance	18 days	Thu 9/1/20	Sat 1/2/20					200	
3 14.2.4 4 14.2.5	initial survey	12 days	Mon 3/2/20	Sat 15/2/20						
	construction of temporary drain age	20 dave	Mon 17/2/20	Tue 10/3/20						



3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

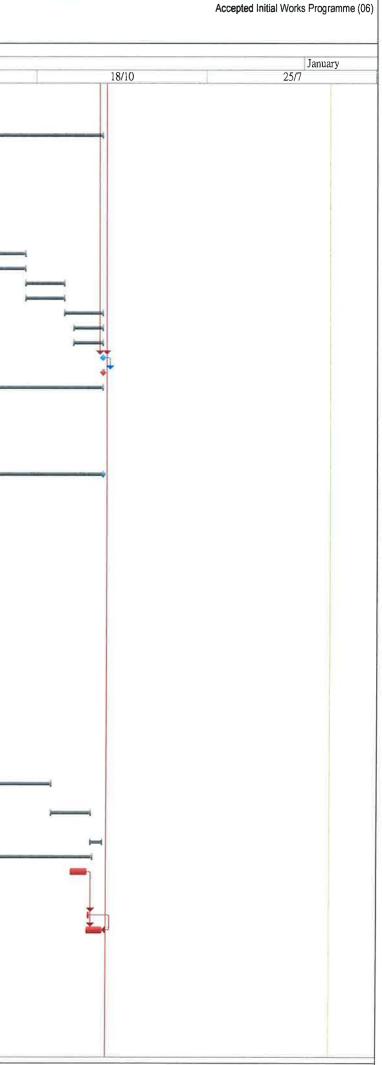
	s at Man Kam To Road and Lin Ma Hang Road	D	0	0.1.	(0/1/2022 10 23/4/2022)	12	
D WBS Task	Name	Duration	Start Date	Completion Date		November	Qtr 4, 2019	
					24/9	1/7	7/4	
165 14.2.6	Site Formation works for Cut Slope CS22 (in Parts A:	15 days	Wed 11/3/20	Mon 30/3/20				jennej
174 14.2.7	Construction of Retaining Wall RW13 Bay 6 to Bay 8			Mon 10/8/20				
	(west) drainage works at Road E (ch250 to 300)	16 days	Sat 8/8/20	Wed 26/8/20				27
200 14.2.9	(west) waterworks at Road E (ch250 to 300)	15 days	Thu 27/8/20	Sat 12/9/20				
		-						
	construction of Irrigation System	5 days	Sat 12/9/20	Thu 17/9/20				
	U channel for Road E	3 days	Thu 17/9/20	Sat 19/9/20				
	Roadworks of Road E (A2-ch243-300)	42 days	Sat 19/9/20	Tue 17/11/20				
204 14.2.12.1	kerbing & sub-base (include sub-base SRT test)	7 days	Sat 19/9/20	Sat 26/9/20				
205 14.2.12.2	ducting for road lighting & water point	4 days	Sat 26/9/20	Wed 30/9/20				
06 14.2.12.3	concrete pavement	15 days	Sat 3/10/20	Thu 22/10/20				
07 14.2.12.4	traffic signs, beam barriers		Wed 21/10/20	Fri 30/10/20				
08 14.2.12.5	concrete footpath		Mon 2/11/20	Tue 17/11/20				
09 14.2.13	street lighting for Road E (Drg/ RD/2091)	9 days	Tue 17/11/20	Thu 26/11/20				
	andscaping (shrub planting)	4 days	Fri 27/11/20	Tue 1/12/20				
	site formation works for Cut Slope CS26 (A2)	24 days	Sat 8/8/20	Fri 4/9/20				
5002	site formation works for Cut Slope CS25 (A2)	12 days	Sat 5/9/20	Fri 18/9/20				
20.01063	placement of erosion control mat/ hydroseeding	2 days	Sat 19/9/20	Mon 21/9/20				
1.185	drainage works at Road B & sewerage works at	28 days	Sat 19/9/20	Wed 28/10/20				
	Road B	20 udys	Gat 19/9/20					
	waterworks at Road B	25 dave	Thu 20/10/20	Mon 30/11/20				
and here i		20 udys	110 23/10/20					
16 14.2.20	backfill formation for Road B	3 days	Tue 1/12/20	Thu 3/12/20				
	street lighting ducts and drawpits at Road B	9 days	Tue 1/12/20 Tue 1/12/20	Thu 10/12/20				
Street Street								
COLUMNER .	arrange Town Gas to lay cables (NOT YET AGREED)	5 days	Fri 11/12/20	Wed 16/12/20				
Contractor and a second		E dava	Thu: 47/40/00	Tu - 00/40/00				
	planter wall for Road B	•		Tue 22/12/20				
	arrange HKT to lay PCCW cables (NOT YET	5 days	vvea 23/12/20	Wed 30/12/20				
	AGREED)	10 -1-	Th. 04/40/00	E-: 00///04				
21 14.2.25 22 14.2.25.1	Roadworks of Road B (A2-ch28.5-90)		Thu 31/12/20	Fri 22/1/21				
and and an an an and a second second	kerbing & sub-base (include sub-base SRT test)	8 days	Thu 31/12/20	Sat 9/1/21				
the second se	DBM (Roadbase)	2 days	Mon 11/1/21	Tue 12/1/21				
//	base course and wearing course	2 days	Wed 13/1/21	Thu 14/1/21				
25 14.2.25.4	directional sign, roadmarkings & footpath	7 days	Fri 15/1/21	Fri 22/1/21				
	andscaping (hydroseeding)	-	Wed 13/1/21	Mon 1/2/21				
	andscaping (shrub planting)	3 days	Mon 1/2/21	Wed 3/2/21				
	rts B - refer Appendix MKTR01A & Appendix	979 days	Thu 31/5/18	Wed 3/2/21	P-1			
	(TR01B	•						
29 14.3.1 a	access date for section 1 (Parts B) - the starting date	0 days	Thu 31/5/18	Thu 31/5/18				
20 44.0.0								
	nitial Survey	104 days	Fri 1/6/18	Thu 4/10/18				
	utility detection and submit reports	30 days	Fri 5/10/18	Fri 9/11/18				
		134 days	Fri 1/6/18	Fri 9/11/18	P-1			
	Man Kam Road							
	Construction of Fresh Water Mains (DN400)-refer to	352 days	Sat 10/11/18	Fri 17/1/20				
[Drawings No. MKTR Programme/W/001 & 002		_					
37 14.3.5.1	Phase 1: TTA 1s		Sat 10/11/18	Sat 12/1/19		(terminal t		
46 14.3.5.2	Phase 1: TTA 8s		Wed 14/11/18	Sat 12/1/19				
55 14.3.5.3	Phase 1: TTA 15s	44 days	Tue 20/11/18	Sat 12/1/19				
54 14.3.5.4	Phase 2: TTA 2s	39 days	Tue 15/1/19	Mon 4/3/19				
73 14.3.5.5	Phase 2: TTA 9s	39 days	Tue 15/1/19	Mon 4/3/19				
32 14.3.5.6	Phase 2: TTA 16s	40 days	Mon 14/1/19	Mon 4/3/19				
14.3.5.7	Phase 3: TTA3s	39 days	Tue 5/3/19	Tue 23/4/19				
14.3.5.8	Phase 3: TTA10s	39 days	Tue 5/3/19	Tue 23/4/19				
9 14.3.5.9	Phase 3: TTA17s	39 days	Tue 5/3/19	Tue 23/4/19				
8 14.3.5.10	Phase 4: TTA4s	38 days	Mon 29/4/19	Fri 14/6/19				
7 14.3.5.11	Phase 4: TTA11s	38 days	Mon 29/4/19	Fri 14/6/19				
36 14.3.5.12	Phase 4: TTA18s	42 days	Wed 24/4/19	Fri 14/6/19				
45 14.3.5.13	Phase 5: TTA5s	42 days	Wed 24/4/19 Wed 19/6/19	Wed 7/8/19				
54 14.3.5.14	Phase 5: TTA12s	42 days 45 days	Sat 15/6/19	Wed 7/8/19 Wed 7/8/19				
63 14.3.5.15	Phase 5: TTA19s	-	Sat 15/6/19 Sat 15/6/19	Wed 7/8/19 Wed 7/8/19				
72 14.3.5.16	Phase 6: TTA6s	45 days						
81 14.3.5.17		46 days	Fri 9/8/19 Wed 14/9/10	Thu 3/10/19				
90 14.3.5.18	Phase 6: TTA13s	42 days	Wed 14/8/19	Thu 3/10/19				
90 14.3.5.18	Phase 6: TTA20s	47 days	Thu 8/8/19	Thu 3/10/19				
MM 10 8 5 1M	Phase 7: TTA7s	44 days	Tue 8/10/19	Wed 27/11/19				

Sang Hing Civil Contractors Company Limited



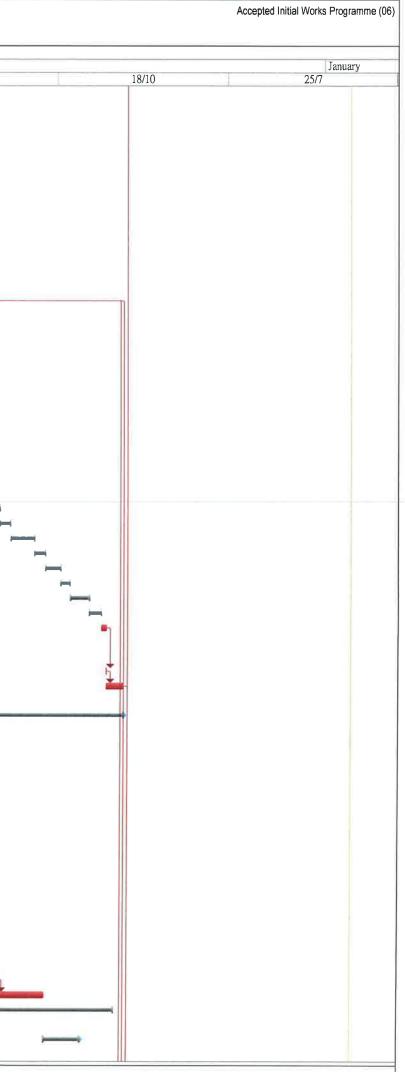
3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

WBS	Task Name	Duration	Start Date	Completion Date		Marrantes		Qtr 4, 2019
				Date	24/9	November 1/7	7/4	
14.3.5.20	Phase 7: TTA14s	46 days	Fri 4/10/19	Wed 27/11/19				
14.3.5.21	Phase 7: additional TTA21s		Thu 24/10/19					
1.3.5.22	additional Phase 8: additional TTA 0s		Wed 27/11/19	Fri 17/1/20				<u> </u>
14.3.6	Construction of Sewerage (DN630) - refer to		Sat 18/1/20	Wed 3/2/21				
	Drawing No. MKTR Programme/DR/001	,						
4.3.6.1	Phase A: TTA 1n	50 days	Tue 21/1/20	Sat 21/3/20				
1.3.6.2	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				
14.3.6.4	Phase B: TTA 8n	52 days	Mon 23/3/20	Thu 28/5/20				
14.3.6.5	Phase C: TTA 3n	52 days	Fri 29/5/20	Thu 30/7/20				
14.3.6.6	Phase C: TTA 9n	52 days	Fri 29/5/20	Thu 30/7/20				
14.3.6.7	Phase D: TTA 4n	52 days	Fri 31/7/20	Tue 29/9/20				
4.3.6.8	Phase D: TTA 10n	52 days	Fri 31/7/20	Tue 29/9/20				
4.3.6.9	Phase E: TTA 5n	52 days	Wed 30/9/20	Wed 2/12/20				
4.3.6.10	Phase E: TTA 11n		Wed 30/9/20	Wed 2/12/20 Wed 2/12/20				
14.3.6.11	Phase F: TTA 6n	52 days	Thu 3/12/20	Wed 3/2/20 Wed 3/2/21				
4.3.6.12		51 days						
.3.6.12	Phase F: additional TTA 12s	38 days	Fri 18/12/20	Wed 3/2/21				
	Phase F: additional TTA 0n	38 days	Fri 18/12/20	Wed 3/2/21				
	Planned Completion for section 1 of the works	0 days	Wed 3/2/21	Wed 3/2/21				
	Completion Date for section 1 of the works	0 days	Wed 3/2/21	Wed 3/2/21				
7	section 2 of the works - Completion of all works	979 days	Thu 31/5/18	Wed 3/2/21	P-1			_
	within Parts C1 and C2 of the Site except Establishment works							
I	access date for section 2 (Part C1)	0 days	Thu 31/5/18	Thu 31/5/18	I⇒T			
2	Temporary Traffic Arrangement (TTA) Scheme for Lin Ma Hang Road	162 days	Fri 1/6/18	Fri 9/11/18	b			
3		817 days	Sat 10/11/18	Wed 3/2/21				
7.3.1	Phase I (stage 1)-south lane (chainage 240-283)	23 days	Sat 10/11/18	Thu 6/12/18				
.3.2	Phase I (stage 2)-north lane (chainage 240-283)	16 days	Fri 7/12/18	Thu 27/12/18				
3.3	Phase I (stage 2)-south lane (chainage 283-335)	26 days	Fri 28/12/18	Mon 28/1/19				
3.4	Phase I (stage 4)-north lane (chainage 283-335)	17 days	Tue 29/1/19	Wed 20/2/19				
.3.5		-	The 29/1/19 Thu 21/2/19	Wed 20/2/19 Wed 13/3/19			L	
.3.5 .3.6	Phase I (stage 5)-south lane (chainage 335-380)	18 days		Mon 1/4/19				
.3.0 .3.7	Phase I (stage 6)-north lane (chainage 335-380)	16 days	Thu 14/3/19					
.3.7	Phase I (stage 7)-south lane (chainage 380-435)	23 days	Tue 2/4/19	Fri 3/5/19				
7.3.8 7.3.9	Phase I (stage 8)-north lane (chainage 380-435)	15 days	Sat 4/5/19	Wed 22/5/19			· · · ·	
.3.9 .3.10	Phase I (stage 9)-south lane (chainage 190-240)	18 days	Thu 23/5/19	Thu 13/6/19				
	Phase I (stage 10)-north lane (chainage 190-240)	16 days	Fri 14/6/19	Wed 3/7/19				÷.
.3.11	Phase II (stage 1)-south lane (chainage 32-85)-Noise Barrier MM6 (bays 1-3) & MM7 (bays 1-2)	95 days	Thu 4/7/19	Fri 25/10/19				-
7.3.12	Phase II (stage 2)-north lane (chainage	84 days	Sat 26/10/19	Fri 7/2/20				-
3.13	32-85)-Noise Barrier MM9 (bays 1-4)	20 daura	Cot 0/0/00	Mon 03/2/00				
7.3.14	Phase II (stage 3)-south lane (chainage 85-138)	38 days	Sat 8/2/20	Mon 23/3/20				
.0.14	Phase II (stage 4)-north lane (chainage	68 days	Tue 24/3/20	Wed 17/6/20				
3.15	85-138)-Noise Barrier MM10 (bays 1-4)	26 4	Thu 10/0/00	Ed 04/7/00				
.3.15	Phase II (stage 5)-south lane (chainage 138-190)	36 days	Thu 18/6/20	Fri 31/7/20				
. 10	Phase II (stage 6)-north lane (chainage 138-190)-Noise Barrier MM10 (bays 5-9)	85 days	Sat 1/8/20	Wed 11/11/20				
3.17	Phase II (stage 7)-south lane (chainage 0-32)-Noise Barrier MM5 (bays 1-2)	53 days	Thu 12/11/20	Fri 15/1/21				
7.3.18	Phase II (stage 8)-north lane (chainage 0-32)	16 days	Sat 16/1/21	Wed 3/2/21				
7.3.19	Noise Barrier MM8 (bays 1-3)	-		Mon 18/1/21				
7.3.20			Sat 1/8/20					
5.20	Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch0-435)	21 uays	Mon 14/12/20	Sat 9/1/21				
.3.21	tree planting	3 days	Mon 11/1/21	Wed 13/1/21				
7.3.22	Street furniture & construction of footpath (ch0-435)	22 days	Sat 9/1/21	Wed 3/2/21				
7.3.23	Phase Ia (stage 101)-south lane (chainage 633-685)	20 davs	Sat 10/11/18	Mon 3/12/18		jungani		
7.3.24	Phase Ia (stage 102)-north Iane (chainage 633-685)		Tue 4/12/18	Fri 21/12/18				
7.3 25	Phase la (stage 102)-north lane (chainage 685-740)		Sat 22/12/18	Wed 23/1/19				
3.26	Phase la (stage 103)-south lane (chainage 003-740) Phase la (stage 104)-north lane (chainage 685-740)		Thu 24/1/19	Fri 15/2/19				
7.3.27	Phase la (stage 104)-north lane (chainage 000-740) Phase la (stage 105)-south lane (chainage 740-790)		Sat 16/2/19	Fri 15/3/19				
	Phase la (stage 105)-south lane (chainage 740-790) Phase la (stage 106) north lane (chainage 740-790)		Sat 16/2/19 Sat 16/3/19	Thu 4/4/19				
28		1/ udys	Jal 10/3/19	1110 4/4/19			-	
28 29	Phase la stage 107)-south lane (chainage 790-840)		Sat 6/4/19	Sat 4/5/19				



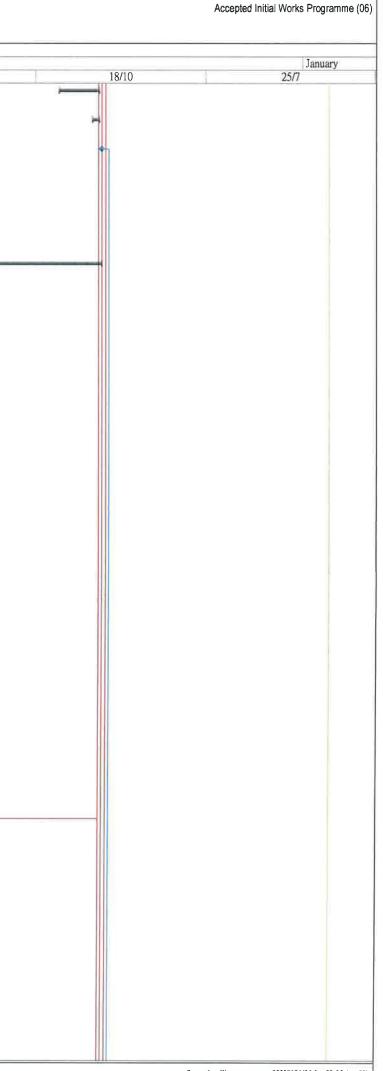
3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

D WBS 966 17.3.3 976 17.3.3 988 17.3.3 998 17.3.3 1009 17.3.3 1030 17.3.3 1039 17.3.4 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4 1083 17.3.4 1084 17.3.4 1085 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4 1093 17.3.4	 Phase la (stage 108)-north lane (chainage 790-840) Phase la (stage 109)-south lane (chainage 840-890) Phase la (stage 110)-north lane (chainage 840-890) Phase ll (stage 1)-south lane (chainage 435-490) Phase III (stage 2)-north lane (chainage 435-490) Phase III (stage 3)-south lane (chainage 435-490) Phase III (stage 3)-south lane (chainage 490-540) Phase III (stage 5)-south lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 540-590) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 		Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Completion Date Mon 10/6/19 Wed 17/7/19 Wed 7/8/19 Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20 Sat 18/4/20	24/9 1/7	ember	Qtr 4, 2019	June 12/1
976 17.3.3 988 17.3.3 998 17.3.3 1009 17.3.3 1019 17.3.3 1030 17.3.4 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase Ia (stage 109)-south Iane (chainage 840-890) Phase Ia (stage 110)-north Iane (chainage 840-890) Phase II (stage 1)-south Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 3)-south Iane (chainage 490-540) Phase III (stage 4)-north Iane (chainage 490-540) Phase III (stage 5)-south Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	31 days 18 days 20 days 16 days 34 days 17 days 29 days 29 days 29 days 29 days 25 days 7 days 5 days	Tue 11/6/19 Thu 18/7/19 Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Mon 10/6/19 Wed 17/7/19 Wed 7/8/19 Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20		ember:		
976 17.3.3 988 17.3.3 998 17.3.3 1009 17.3.3 1019 17.3.3 1030 17.3.4 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase Ia (stage 109)-south Iane (chainage 840-890) Phase Ia (stage 110)-north Iane (chainage 840-890) Phase II (stage 1)-south Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 3)-south Iane (chainage 490-540) Phase III (stage 4)-north Iane (chainage 490-540) Phase III (stage 5)-south Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	31 days 18 days 20 days 16 days 34 days 17 days 29 days 29 days 29 days 29 days 25 days 7 days 5 days	Tue 11/6/19 Thu 18/7/19 Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Wed 17/7/19 Wed 7/8/19 Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20		, P		
976 17.3.3 988 17.3.3 998 17.3.3 1009 17.3.3 1019 17.3.3 1030 17.3.4 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase Ia (stage 109)-south Iane (chainage 840-890) Phase Ia (stage 110)-north Iane (chainage 840-890) Phase II (stage 1)-south Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 3)-south Iane (chainage 490-540) Phase III (stage 4)-north Iane (chainage 490-540) Phase III (stage 5)-south Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	31 days 18 days 20 days 16 days 34 days 17 days 29 days 29 days 29 days 29 days 25 days 7 days 5 days	Tue 11/6/19 Thu 18/7/19 Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Wed 17/7/19 Wed 7/8/19 Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20		, , , , , , , , , , , , , , , , , , ,	I I I I I I I I I I I I I I I I I I I	*
988 17.3.2 998 17.3.3 1009 17.3.3 1019 17.3.3 1019 17.3.4 1030 17.3.2 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4	 Phase Ia (stage 110)-north Iane (chainage 840-890) Phase III (stage 1)-south Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 2)-north Iane (chainage 435-490) Phase III (stage 3)-south Iane (chainage 490-540) Phase III (stage 4)-north Iane (chainage 490-540) Phase III (stage 5)-south Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	18 days 20 days 16 days 34 days 17 days 29 days 29 days 29 days 25 days 7 days 5 days	Thu 18/7/19 Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Wed 7/8/19 Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20				*
998 17.3.3 1009 17.3.3 1019 17.3.3 1030 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1069 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 1)-south lane (chainage 435-490) Phase III (stage 2)-north lane (chainage 435-490) Phase III (stage 2)-north lane (chainage 435-490) Phase III (stage 3)-south lane (chainage 490-540) Phase III (stage 4)-north lane (chainage 490-540) Phase III (stage 5)-south lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	20 days 16 days 34 days 17 days 29 days 22 days 29 days 25 days 7 days 5 days	Thu 8/8/19 Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Fri 30/8/19 Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20			I I I I I	4
1009 17.3.3 1019 17.3.3 1030 17.3.4 1039 17.3.4 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 2)-north lane (chainage 435-490) Phase III (stage 3)-south lane (chainage 490-540) Phase III (stage 3)-south lane (chainage 490-540) Phase III (stage 5)-south lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 540-590) Phase III (stage 8)-north lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) Street furniture & construction of footpath (ch435-890) 	16 days 34 days 17 days 29 days 22 days 29 days 25 days 7 days 5 days	Sat 31/8/19 Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Thu 19/9/19 Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20				4
1019 17.3.3 1030 17.3.2 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 3)-south lane (chainage 490-540) Phase III (stage 4)-north lane (chainage 490-540) Phase III (stage 5)-south lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 540-590) Phase III (stage 8)-north lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	34 days 17 days 29 days 22 days 29 days 25 days 7 days 5 days	Fri 20/9/19 Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Thu 31/10/19 Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20				4 1
1030 17.3.3 1039 17.3.3 1049 17.3.4 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 4)-north Iane (chainage 490-540) Phase III (stage 5)-south Iane (chainage 540-590) Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	17 days 29 days 22 days 29 days 25 days 7 days 5 days	Fri 8/11/19 Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Wed 27/11/19 Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20				ni Henneni
1039 17.3.3 1049 17.3.3 1059 17.3.4 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 5)-south lane (chainage 540-590) Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	29 days 22 days 29 days 25 days 7 days 5 days	Thu 28/11/19 Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Fri 3/1/20 Sat 1/2/20 Sat 7/3/20 Tue 7/4/20			- I	4 1
1049 17.3.2 1059 17.3.2 1069 17.3.4 1079 17.3.4 1080 17.3.4 1081 17.3.4 1081 17.3.4	 Phase III (stage 6)-north lane (chainage 540-590) Phase III (stage 7)-south lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	22 days 29 days 25 days 7 days 5 days	Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Sat 1/2/20 Sat 7/3/20 Tue 7/4/20			j	ei Jerreni
1059 17.3.3 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 6)-north Iane (chainage 540-590) Phase III (stage 7)-south Iane (chainage 590-633) Phase III (stage 8)-north Iane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	22 days 29 days 25 days 7 days 5 days	Sat 4/1/20 Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Sat 1/2/20 Sat 7/3/20 Tue 7/4/20			_	1
1059 17.3.3 1069 17.3.4 1079 17.3.4 1080 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 7)-south lane (chainage 590-633) Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	29 days 25 days 7 days 5 days	Tue 4/2/20 Mon 9/3/20 Wed 8/4/20	Sat 7/3/20 Tue 7/4/20			-	
1069 17.3.4 1079 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Phase III (stage 8)-north lane (chainage 590-633) Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	25 days 7 days 5 days	Mon 9/3/20 Wed 8/4/20	Tue 7/4/20				
1079 17.3.4 1080 17.3.4 1081 17.3.4 1082 17.3.4	 Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890) 	7 days 5 days	Wed 8/4/20					
1080 17.3.4 1081 17.3.4 1082 17.3.4	lighting & cable, 100uPVC ducts) (ch435-890) tree planting Street furniture & construction of footpath (ch435-890)	5 days		Sat 10/4/20				
1081 17.3.4 1082 17.3.4	 tree planting Street furniture & construction of footpath (ch435-890) 		T . 44/4/00					
1081 17.3.4 1082 17.3.4	 Street furniture & construction of footpath (ch435-890) 			0-140/4/00				
1082 17.3.4	(ch435-890)		Tue 14/4/20	Sat 18/4/20				
		20 uays	Mon 20/4/20	Mon 18/5/20				
1003 173/		22 days	Fri 20/9/19	Thu 17/10/19			⊢	
	· ····································	17 days		Wed 6/11/19			H	
1103 17.3.4	. nace i (cage of coalinane (chamage of coo)	31 days	Thu 7/11/19	Thu 12/12/19			i i i i i i i i i i i i i i i i i i i	
1113 17.3.4	Phase IV (stage 4)-north lane (chainage 940-983)	16 days	Fri 13/12/19	Fri 3/1/20				-
1122 17.3.4		17 days	Sat 4/1/20	Thu 23/1/20				
1132 17.3.4	(chage) could and (chambed)	16 days	Fri 24/1/20	Fri 14/2/20				
1141 17.3.	······································	19 days	Sat 15/2/20	Sat 7/3/20				
1151 17.3.5		12 days	Mon 9/3/20	Sat 21/3/20				
1160 17.3.5	······································							
1170 17.3.5	(chage c) country (chamber go root)	-	Mon 23/3/20	Sat 18/4/20				_
	······································	15 days	Mon 20/4/20	Fri 8/5/20				
1179 17.3.5		•	Sat 9/5/20	Mon 1/6/20				
1189 17.3.5	(15 days	Tue 2/6/20	Thu 18/6/20				i i i i i i i i i i i i i i i i i i i
1198 17.3.5		21 days	Fri 19/6/20	Wed 15/7/20				ii
1208 17.3.5		15 days	Thu 16/7/20	Sat 1/8/20				H
1217 17.3.5		34 days	Mon 3/8/20	Thu 10/9/20				-
1228 17.3.5	⁵⁹ Phase VI (stage 4)-north lane (chainage 1240-1286)	15 days	Fri 11/9/20	Mon 28/9/20				
1237 17.3.6			Tue 29/9/20	Fri 23/10/20				
1247 17.3.6			Sat 24/10/20	Sat 7/11/20				
1254 17.3.6			Mon 9/11/20	Wed 9/12/20				
1266 17.3.6			Thu 10/12/20	Tue 29/12/20				
1275 17.3.6		-	Tue 29/12/20	Wed 6/1/21				
1215 11.00	Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch890-1377)	7 days	106 29/12/20	Weu 0/1/21				
1276 17.3.6	5 trac planting	4						
0.63		1 day	Wed 6/1/21	Wed 6/1/21				
1277 17.3.6		25 days	Wed 6/1/21	Wed 3/2/21				
1070	(ch890-1377)							
1278 17.4	Noise Barrier works above the concrete substructure of	674 days	Mon 29/10/18	Wed 3/2/21				
1000	the noise barrier (section 2 Part C1)							
1279 17.4.1			Mon 29/10/18					
1280 17.4.2	propose specialist subcontractor to PM for	0 days	Sun 26/5/19	Sun 26/5/19				
	acceptance							
1281 17.4.3	acceptance of propose specialist subcontractor by	0 days	Sun 16/6/19	Sun 16/6/19				
	Project Manager	J =						
1282 17.4.4		120 days	Mon 17/6/19	Mon 14/10/19			*	
1283 17.4.5	propero ecolgi o neloo niti ecolgilo, el m	•	Tue 15/10/19				¥.,	
1	design, if any	i i uuyo	100 10/10/10	101120/10/13				
1284 17.4.6		0 dowo	Mon 28/10/19	Mon 28/10/10			+	
1285 17.4.0								
2011			Tue 29/10/19				-	
1286 17.4.8	i e nee e e e e e e e e e e e e e e e e		Tue 19/11/19					
1287 17.4.9	Sector games and games and a sector pressed	-	Mon 16/12/19				*	
1288 17.4.1		7 days	Tue 17/12/19	Mon 23/12/19				7
100	acceptance							L
1289 17.4.1		0 days	Mon 13/1/20	Mon 13/1/20				*
1290 17.4.1	2 ordering of noise barrier panel		Wed 15/1/20	Wed 15/1/20				*1
1291 17.4.1	•		Thu 16/1/20	Mon 13/7/20				*
1292 17.4.1			Tue 14/7/20	Sun 27/9/20				*
1293 17.4.1		-	Mon 14/10/19					
CALIFORNIA DE LA	Nosie Barriers	100 0033						
1301 17.4.1		AR down	Man 28/0/20	Mod 25/11/20				
10.71	of the noise barrier MM6, MM7 & MM9 (app. 77m)	+0 udys	WOIT 20/9/20	WEU 20/11/20				
	or the hoise pather wilvio, wilvi7 & Wilvia (app. 77m)							



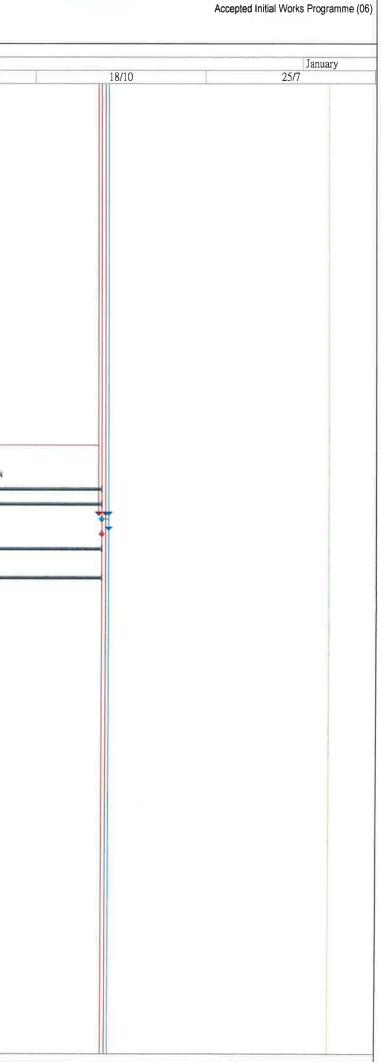
3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

2	Who	The state of the s	D	Ocea Data	0.1.	•		0: 4 2010
)	WBS	Task Name	Duration	Start Date	Completion Date		November	Qtr 4, 2019
308	17.4.17	construction works above the concrete substructure	54 days	Thu 26/11/20	Sat 30/1/21	24/9	1/7	7/4 1
500		of the noise barrier MM10 (app. 94m)	04 udys	1110 20/11/20	Sat 30/1/21			
315	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			
322	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			
323	17.5	access date for section 2 (Part C2)	0 days	Sun 24/2/19	Sun 24/2/19			
324		additional site possession for areas outside site boundary {for 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 new drillholes DHA1,A2 & A3 }	0 days	Sun 24/2/19 Sun 24/2/19	Sun 24/2/19 Sun 24/2/19			
325	17.7	Slope Upgrading works (section 2 Part C2)	578 days	Mon 25/2/19	Wed 3/2/21		1 3	
	17.7.1	general site clearance		Mon 25/2/19	Thu 18/4/19			
327	17.7.2	Initial topographic survey		Thu 11/4/19	Sat 8/6/19			
328	17.7.3	utility detection and submit reports		Wed 22/5/19	Sat 15/6/19			9 000
329	17.7.4	drilling of verification boreholes DHA1,A2 & A3		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			
331	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			*
332	17.7.7	Slopeworks: 3NW-C/C470 (ch490-540S/B)	59 days	Fri 16/8/19	Sat 26/10/19			H
333	17.7.7.1	removal of existing trees	10 days		Tue 27/8/19			- A A A A A A A A A A A A A A A A A A A
334	17.7.7.2	hoarding & fencing	6 days	Wed 28/8/19	Tue 3/9/19			a di seconda di s
335	17.7.7.3	slope excavation works	1 day	Wed 4/9/19	Wed 4/9/19			ĥ
336	17.7.7.4	temporary scaffolding	5 days	Thu 5/9/19	Tue 10/9/19			*
	17.7.7.5	proposed slope stripping for mapping or rock and relict discontinuities (AS5-A,B, AS6-A,B)	8 days	Wed 11/9/19	Fri 20/9/19			1
	17.7.7.6	Phase I	8 days	Sat 21/9/19	Mon 30/9/19			*
339	17.7.7.6.1	install test nail PN02 & pull out test	6 days	Sat 21/9/19	Fri 27/9/19			a di seconda di s
340	17.7.7.6.2	drill, install steel bars and grout soil nails (B01-12)	2 days	Sat 28/9/19	Mon 30/9/19			4
341	17.7.7.7	Phase II	8 days	Wed 2/10/19	Fri 11/10/19			+
342	17.7.7.7.1	install test nail PN01 & pull out test	6 days	Wed 2/10/19	Wed 9/10/19			
343	17.7.7.2	drill, install steel bars and grout soil nails (A01-17)	2 days	Thu 10/10/19	Fri 11/10/19			Ť
	17.7.7.8	raking drains	1 day	Sat 12/10/19	Sat 12/10/19			h
345	17.7.7.9	TDR Test (including test & wait issue result)		Mon 14/10/19				Š
	17.7.7.10	soil nail head works		Wed 16/10/19				5
347	17.7.7.11	UC & catchpit (38m & 1 nr)		Sat 19/10/19				K I
	17.7.7.12	biodegradable erosion control mat with hydroseeding		Fri 25/10/19	Sat 26/10/19			ř
	17.7.8 17.7.8.1	Slopeworks: - 3NW-C/C230 (ch1240-1330S/B) removal of existing trees		Mon 28/10/19 Mon 28/10/19				
351	17.7.8.2	hoarding & fencing	9 days	Fri 8/11/19	Mon 18/11/19			a a a a a a a a a a a a a a a a a a a
352	17.7.8.3	temporary scaffolding	7 days	Tue 19/11/19	Tue 26/11/19			*
1.0.0	17.7.8.4	proposed slope stripping for mapping or rock and relict discontinuities (AS3-A,B, AS4-A,B)		Wed 27/11/19				Ĩ.
354	17.7.8.5	slope excavation works	1 day	Fri 6/12/19	Fri 6/12/19			R.
355	17.7.8.6	Phase I	25 days	Sat 7/12/19	Wed 8/1/20			
	17.7.8.6.1	install test nail PN22 & pull out test	6 days	Sat 7/12/19 Sat 7/12/19	Fri 13/12/19			a construction of the second se
			•					



3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

D	WBS	Task Name	Duration	Start Date	Completion Date
					Laur
	17.7.8.6.3	TDR Test (including test & wait issue result)	2 days	Sat 28/12/19	Mon 30/12/19
	17.7.8.6.4	soil nail head works	7 days	Tue 31/12/19	Wed 8/1/20
	17.7.8.7	Phase II	22 days	Thu 9/1/20	Thu 6/2/20
1361	17.7.8.7.1	install test nail PN21 & pull out test	6 days	Thu 9/1/20	Wed 15/1/20
1362	17.7.8.7.2	drill, install steel bars and grout soil nails	8 days	Thu 16/1/20	Fri 24/1/20
1000		(H01-25, L01-16)			
	17.7.8.7.3	raking drains	2 days	Wed 29/1/20	Thu 30/1/20
1242260	17.7.8.7.4	TDR Test (including test & wait issue result)	2 days	Fri 31/1/20	Sat 1/2/20
	17.7.8.7.5	soil nail head works	4 days	Mon 3/2/20	Thu 6/2/20
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	9 days	Tue 3/3/20	Thu 12/3/20
	1000	with handrailing			
	17.7.8.10	soil replacement by no-fines concrete	6 days	Fri 13/3/20	Thu 19/3/20
	17.7.8.10.1	stage 1	2 days	Fri 13/3/20	Sat 14/3/20
	17.7.8.10.1.	tomporary out a oxoditation of boil	1 day	Fri 13/3/20	Fri 13/3/20
1371	17.7.8.10.1.	2 placement of no-fine concrete	1 day	Sat 14/3/20	Sat 14/3/20
1372	17.7.8.10.2		2 days	Mon 16/3/20	Tue 17/3/20
1373	17.7.8.10.2.	1 temporary cut & excavation of soil	1 day	Mon 16/3/20	Mon 16/3/20
1374	17.7.8.10.2.		1 day	Tue 17/3/20	Tue 17/3/20
1375	17.7.8.10.3		2 days	Wed 18/3/20	Thu 19/3/20
	17.7.8.10.3.	0.030 0	1 day	Wed 18/3/20	Wed 18/3/20
	17.7.8.10.3.		1 day	Thu 19/3/20	Thu 19/3/20
1378	17.7.8.11	biodegradable erosion control mat with	12 days	Fri 20/3/20	Thu 2/4/20
	Conception 20	hydroseeding & shrub planting		20.0.20	
1379	17.7.9	Slopeworks: - 3NW-C/C224 (ch1040-1120N/B)	117 davs	Tue 31/3/20	Sat 22/8/20
	17.7.10	Slopeworks: - 3NW-C/C225 (ch1300-1376N/B)		Tue 3/12/19	Wed 3/2/21
	17.7.11	Slopeworks: - 3NW-C/C223 (ch1220-1240N/B)		Thu 12/9/19	Wed 3/2/21 Wed 3/2/21
1505		Planned Completion for section 2 of the works	0 days	Wed 3/2/21	Wed 3/2/21 Wed 3/2/21
1506		Completion Date for section 2 of the works	0 days 0 days	Wed 3/2/21 Wed 3/2/21	Wed 3/2/21 Wed 3/2/21
1507		•			
1.001	20	section 3 of the works - Completion of all works within Parts D and E of the Site	isi days	Thu 31/5/18	Wed 3/2/21
1508	20.1	Parts D	800 dave	Mon 26/11/18	Wed 3/2/21
1508	10 Aug. 21	access date for section 3 (Parts D) - not more than			Mon 26/11/18
1507	20.1.1	180 days after the starting date	0 days	101011 20/11/10	WOI 20/11/10
1510	20.1.2		50 dava	Tuo 27/11/10	Thu 24/1/10
1510	20,1.2	seek specialist for design, supply and installation of the covered walkway	og days	Tue 2//11/10	1110 24/1/19
1511	20.1.3	acceptance of specialist	0 daya	Thu 14/2/10	Thu 14/0/10
	20.1.4		0 days	Thu 14/2/19	Thu 14/2/19
1012	20.1.4	design for approval for lighting system for the covered walkway	150 days	Fri 15/2/19	Sun 14/7/19
1513	20.1.5		0 dava	Cue 11/7/10	0
1515	20.1.5	submit for approval for lighting system for the	0 days	Sun 14/7/19	Sun 14/7/19
1514	20.4.0	covered walkway	A 1	0 1040	0 1040
1514	20.1.6	acceptance of lighting system for the covered	0 days	Sun 4/8/19	Sun 4/8/19
1515	20.1.7	walkway	400	N 5/0/40	0 4014100
1010	20.1.7	Coordination with CLP to obtain the electricity supply	168 days	Mon 5/8/19	Sun 19/1/20
		for the street lighting system (Design for Road B, Road E, Road F(part), Lin Ma Hang Road and			
	1	Sheung Shui Landmark PTI & Lighting system for			
		the covered walkway)			
1516	20.1.8		450 -	E : 4 E /0/40	0
1510	20.1.0		150 days	Fri 15/2/19	Sun 14/7/19
1517	2010	walkway at Fanling Station Road	A 1	0 44540	0 41540
	20.1.9	submission of glazing system	0 days	Sun 14/7/19	Sun 14/7/19
1019	20.1.10		0 days	Sun 4/8/19	Sun 4/8/19
1510	20114	by Project Manager	450	E. 46 0/10	0
1212	20.1.11	design for fall arrest system of the proposed covered	150 days	Fri 15/2/19	Sun 14/7/19
1500	20440	walkway at Fanling Station Road	. .		
	20.1.12	submission of fall arrest system	0 days	Sun 14/7/19	Sun 14/7/19
1521	20.1.13	acceptance of fall arrest system by Project Manager	0 days	Sun 4/8/19	Sun 4/8/19
1000	00444				
	20.1.14	Liaison with MTRC for the works arrangement	30 days	Mon 5/8/19	Tue 3/9/19
	20.1.15	general site clearance	12 days		Wed 18/9/19
	20.1.16	initial survey	12 days		Thu 3/10/19
	20.1.17	utility detection and submit reports	8 days	Fri 4/10/19	Mon 14/10/19
	20.1.18	Fabrication of Steelworks & glass panel	100 days	Mon 5/8/19	Mon 2/12/19
	20.1.19	delivery steelworks & glass panel to site	38 days		Sat 18/1/20

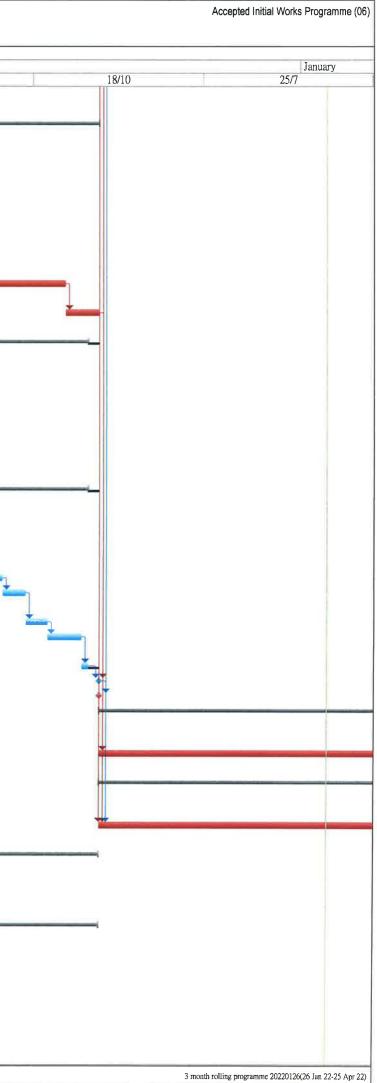


3 month rolling programme 20220126(26 Jan 22-25 Apr 22)

3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

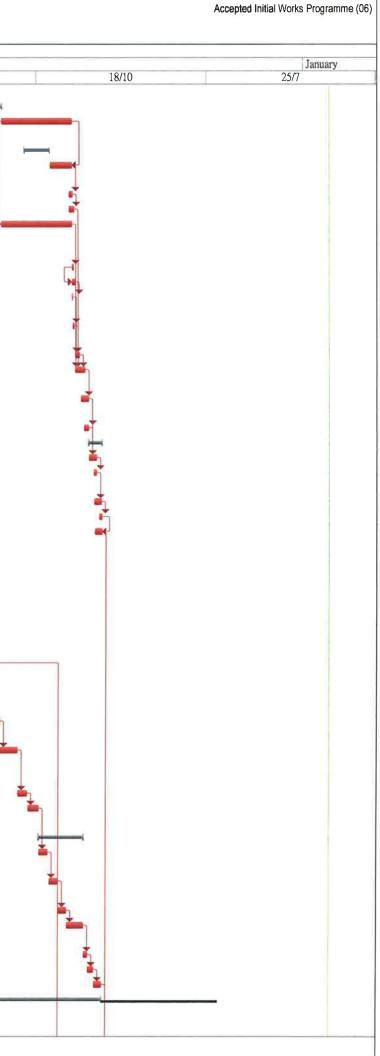
WBS	al Works at Man Kam To Road and Lin Ma Hang Road Task Name		Start Data	Completion	(110111 2011)	2022 to 25/4/2022)	Qtr 4, 2019	
wB2	I ASK INALLIC	Duration	Start Date	Date	A(10)	November		
528 20.1.20	application of YP (for Parts D)	0 dovo	Thu 29/11/18	Thu 29/11/18	24/9	1/7	7/4	12
529 20.1.20	application of XP (for Parts D)	0 days						
Contraction of the second s	acceptance of XP (for Parts D)	0 days	Thu 30/5/19	Thu 30/5/19				
530 20.1.22	Construction of Covered Walkway at Fanling Station	390 days	Tue 15/10/19	Wed 3/2/21			H	
521 00 4 00 A								
531 20.1.22.1		20 days	Tue 15/10/19	Wed 6/11/19				
	walkway (first 20m)							
532 20.1.22.2		20 days	Thu 7/11/19	Fri 29/11/19				
	walkway (2nd 20m)							
533 20.1.22.3	construct the concrete foundation of covered	20 days	Sat 30/11/19	Mon 23/12/19			, in the second s	
	walkway (3rd 20m)							
534 20.1.22.4		20 davs	Sat 30/11/19	Mon 23/12/19			*	
535 20.1.22.5			Tue 24/12/19					
	walkway (4th 20m)	E0 ddyo	1002111210	Cat Tor In20				
536 20.1.22.6		265 dave	Mon 20/1/20	Wed 9/12/20				+
JUD LUIILEN		200 uays	1011 20/ 1/20	Weu 3/12/20				
537 20.1.22.7	steelworks, glass panel and electrical works	AE dave	Thu 40/40/00	Mad 2004				
20.1.22.1	resident of the parentent and encore	40 days	Thu 10/12/20	Wed 3/2/21				
520 DO 0	furniture							
538 20.2	Parts E		Thu 31/5/18	Sat 16/1/21	1			
539 20.2.1	access date for section 3 (Parts E)	0 days	Thu 31/5/18	Thu 31/5/18	*			
540 20.2.2	application of XP (for Parts E)	0 days	Thu 30/5/19	Thu 30/5/19				
541 20.2.3	acceptance of XP (for Parts E)	0 days		Thu 28/11/19			*	
542 20.2.4	Temporary Traffic Arrangement (TTA) Scheme for		Fri 31/5/19	Mon 27/1/20				
10828/38407	Sheung Shui Landmark North PTI and Fanling	00,0						
	Station Road							
546 20.2.5		12 down	Wed 29/1/20	Tue 11/2/20				+
547 20.2.6	general site clearance							-+
	initial Survey		Wed 12/2/20	Thu 27/2/20				
548 20.2.7	utility detection and submit reports	14 days	Fri 28/2/20	Sat 14/3/20				-
549 20.2.8	Road Improvement works at Sheung Shui Landmark	250 days	Mon 16/3/20	Sat 16/1/21				
	North PTI							
550 20.2.8.1	saw cut and remove existing pavement	10 days	Mon 16/3/20	Thu 26/3/20				
551 20.2.8.2	remove existing kerb and railings	14 days	Fri 27/3/20	Thu 16/4/20				
552 20.2.8.3	demolish existing slope planter wall	21 days	Fri 17/4/20	Wed 13/5/20				-
553 20.2.8.4	construct slope planter wall	60 days	Thu 14/5/20	Fri 24/7/20				
554 20.2.8.5		-						
	construct kerb backing & lay kerb	30 days	Sat 25/7/20	Fri 28/8/20				
555 20.2.8.6	construct concrete & bituminous pavement for	30 days	Sat 29/8/20	Mon 5/10/20				
CCC	road and central refuge		_					
556 20.2.8.7	relocate existing street lighting (DD0398)			Tue 10/11/20				
557 20.2.8.8	install type 2 railing, traffic & directional signs	45 days	Wed 11/11/20	Tue 5/1/21				
558 20.2.8.9	road markings	10 days	Wed 6/1/21	Sat 16/1/21				
559 21	Planned Completion for section 3 of the works	0 days	Wed 3/2/21	Wed 3/2/21				
560 22	Completion Date for section 3 of the works	0 days	Wed 3/2/21	Wed 3/2/21				
561 23	section 4 of the works - Completion of Establishment			Sat 3/2/24				
	works for the Landscape Softworks within Parts A1,			JUL VILILT				
	A2 and B of the Site							
562 23.1		1005 dava	Thu 4/2/21	Sat 3/2/24				
	within Parts A1, A2 and B of the Site	1090 days	111U 4 /2/21	Jai 3/2/24				
565 26		1005 -1	The 4/0/04	0-10-04				
505 20	section 5 of the works - Completion of Establishment	ioso days	1 NU 4/2/21	Sat 3/2/24				
	works for the Landscape Softworks within Parts C1				-			
566 00 4	and C2 of the Site	4005		0.000				
566 26.1		1095 days	Thu 4/2/21	Sat 3/2/24				
	within Parts C1 and C2 of the Site							
569 29	section 6 of the works (section Subject to Excision) -		Fri 28/9/18	Wed 3/2/21				
	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							
570 29.1	Parts A3	859 days	Fri 28/9/18	Wed 3/2/21				
571 29.1.1	access date for section 6 (Part A3) - not more than	0 days	Fri 28/9/18	Fri 28/9/18		\$		
Constant.	120 days after the starting date	o dayo	11120/0/10	1112010/10				
		0 days	Mon 04/6/40	Mon 04/6/40			*	
577 201 2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days	0 days	Mon 24/6/19	Mon 24/6/19				
572 29.1.2	Excision: for section 6 and 7 is within 390 days							
572 29.1.2								
	commencing from and including the starting date						*	
572 29.1.2 573 29.1.3	commencing from and including the starting date form temporary haul road from the south side to	5 days	Tue 25/6/19	Sat 29/6/19	1		- M	
573 29.1.3	commencing from and including the starting date	5 days	Tue 25/6/19	Sat 29/6/19			• 1	
	commencing from and including the starting date form temporary haul road from the south side to	5 days 12 days	Tue 25/6/19 Tue 2/7/19	Sat 29/6/19 Mon 15/7/19				

Sang Hing Civil Contractors Company Limited



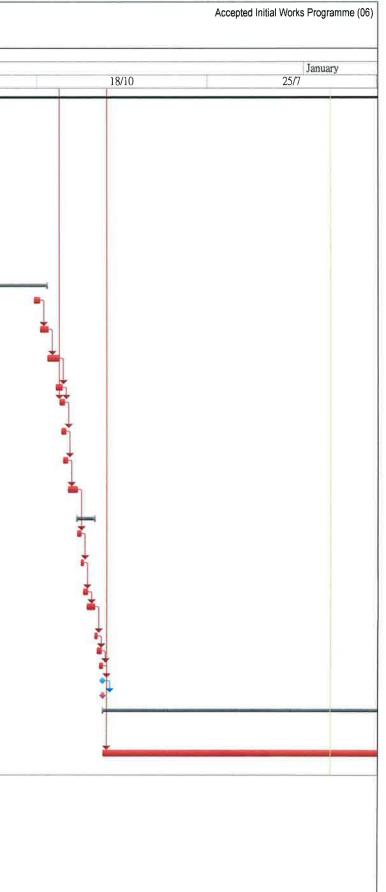
3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

	WBS	Task Name	Duration	Start Date	Completion			Qtr 4, 2019	
					Date	24/9	November 1/7	7/4	12/
576	29.1.6	construction of temporary drainage	14 days	Mon 15/7/19	Tue 30/7/19	2417	1/7		12/
	29.1.7	Construction of Retaining Wall RW14 (Bay 1-Bay			Sat 22/8/20				
	29.1.8	backfilling works behind Retaining Wall RW14 (bay) to 6) (include SRT tests)			Tue 15/12/20				
03	29.1.9	Construction of Retaining Wall RW14 Bay 7	27 dave	Wed 30/9/20	Mon 9/11/20				
_	29.1.10	backfilling works behind RW14 (bay 7) (include SRT							
1/1	29.1.11	tests) install instrument for RW14	5 dovo	Eri 11/12/20	Wed 16/12/20				
	29.1.11	construct 300U channel & catchpit in front of RW14	5 days	Fri 11/12/20 Fri 11/12/20	Sat 19/12/20				
ALC: NOT	29.1.12	site formation works for fill slope FS19 and FS20 (including in "backfilling works behind Retaining Wall RW14 (bay1 to 6)")	8 days 90 days	Sat 22/8/20	Tue 15/12/20				
	29.1.14	300U channel & stepped channel for FS19 & 20	3 days	Wed 16/12/20	Fri 18/12/20				
	29.1.15	install instrument for FS19 & FS20	5 days	Wed 16/12/20					
19	29.1.16	minor site formation works for cut slope CS25	1 day	Wed 16/12/20	Wed 16/12/20				
20	29.1,17	minor site formation works for cut slope CS26	3 days	Thu 17/12/20	Sat 19/12/20				
521	29.1.18	install instruments for CS25 & CS26	5 davs	Mon 21/12/20	Mon 28/12/20				
	29.1.19	waterworks at Road E		Mon 21/12/20					
23	29.1.20	drainage works at Road E	10 days	Thu 31/12/20	Tue 12/1/21				
524	29.1.21	U channels at Road E	7 days	Tue 5/1/21	Tue 12/1/21				
	29.1.22	Roadworks of Road E (ch20-60)		Wed 13/1/21	Wed 3/2/21				
	29.1.22.1	kerbing & sub-base & cross road ducts for UU		Wed 13/1/21	Mon 25/1/21				
	29.1.22.2	ducting for road lighting & construction of irrigation system	4 days	Thu 21/1/21	Mon 25/1/21				
528	29.1.22.3	concrete pavement	10 days	Fri 22/1/21	Tue 2/2/21				
	29.1.22.4	street lighting (Drg/ RD/2091)	4 days	Sat 30/1/21	Wed 3/2/21				
	29.1.22.5	traffic signs, directional signs, emergency crash gate, type 2 railing & footpath	10 days		Wed 3/2/21				
531	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)	4 days	Tue 17/9/19	Fri 20/9/19			Ť	
632	29.1.24	install instrument for CS24	5 days	Mon 23/9/19	Fri 27/9/19			5	
	29.1.25	temporary soil nails between CS20 & RW12 (for RW12 bays 1-3)	*	Mon 23/9/19	Mon 4/11/19				
34	29.1.26	Construction of Retaining Wall RW12 CH 0-20	67 days	Tue 5/11/19	Fri 24/1/20				-
	29.1.27	backfilling along Retaining Wall RW12	40 days		Wed 22/7/20				
58	29.1.28	Completion of Site Formation works for Cut Slope 25	2 days	Tue 21/7/20	Wed 22/7/20				
59	29.1.29	Waterworks at Road F	24 days	Thu 23/7/20	Wed 19/8/20				
560	29.1.30	Drainage works at Road F	25 days	Thu 20/8/20	Thu 17/9/20				
661	29.1.31	planter wall for Road E and Road F in Parts A3	12 days	Fri 18/9/20	Sat 3/10/20				
1.000	29.1.32	•		Mon 5/10/20	Thu 22/10/20				
563	29.1.33	Roadworks of Road F (60m)	55 days	Fri 23/10/20	Mon 4/1/21				
	29.1.33.1	kerbing and cross road duct (RD/2061, 2081)	10 days		Fri 6/11/20				
65	29.1.33.2	ducting for road lighting & construction of irrigation system	12 days	Mon 9/11/20	Mon 23/11/20				
	29.1.33.3	bituminous pavement	12 days	Tue 24/11/20	Mon 7/12/20				
667	29.1.33.4	traffic signs, directional signs, type 2 railing & footpath	21 days		Mon 4/1/21				
68	29.1.34	street lighting (Drg/ RD/2091)	6 days	Tue 5/1/21	Mon 11/1/21				
	29.1.35	landscaping (hydroseeding)	9 days	Tue 12/1/21	Thu 21/1/21				
	29.1.36	landscaping (shrub planting)	11 days		Wed 3/2/21				
	29.2			Mon 24/6/19	Wed 3/2/21)	
672	29.2.1	access date for section 6 (Parts A4) - not more than 580 days after the starting date	0 days	Tue 31/12/19				*	



3 Month Rolling Programme (from 26/1/2022 to 25/4/2022)

)	WBS	Task Name	Duration	Start Date	Completion Date			N.	Qtr 4, 2019	
				1	Date	24/9	1	November 1/7	7/4	
1673	29.2.2	The time for ordering the "section Subject to	0 days	Mon 24/6/19	Mon 24/6/19	2417		111	//*	11
		Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 udys							
	29.2.3	general site clearance	15 days	Thu 2/1/20	Sat 18/1/20				-	1
	29.2.4	initial survey	11 days		Thu 23/1/20					
	29.2.5	construction of temporary drainage	15 days	Thu 16/1/20	Wed 5/2/20					Ih
1677	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					
1678	29.2.7	install instrument for CS24	3 days	Thu 6/2/20	Sat 8/2/20					ĥ
1679	29.2.8	temporary soil nails between CS20 & RW12 (for RW12 bays 4-6)	35 days	Thu 6/2/20	Tue 17/3/20					1
1680	29.2.9	Construction of Retaining Wall RW12 CH 21-40	58 days	Wed 18/3/20	Wed 3/6/20					
1703	29.2.10	Site Formation works for Cut Slope CS20		Mon 1/6/20	Tue 3/11/20					
1737	29.2.11	Site Formation works for Cut Slope CS26 (A4)	8 days	Tue 13/10/20						
1738	29.2.12	Site Formation works for Cut Slope CS25 (A4)	9 days	Fri 23/10/20	Thu 5/11/20					
1739	29.2.13	complete the construction of U channel at CS 25 and 26	15 days	Wed 4/11/20	Mon 23/11/20					
1740	29.2.14	planter wall	10 davs	Wed 18/11/20	Sat 28/11/20					
1741	29.2.15	Waterworks at Road B	8 days	Tue 24/11/20						
1742	29.2.16	Sewerage works at Road B	7 days	Fri 27/11/20	Fri 4/12/20					
1743	29.2.17	Drainage works at Road B	7 days	Mon 30/11/20	Mon 7/12/20					
1744	29.2.18	UU - Arrange Town Gas & PCCW to lay cables (not agreed yet)	14 days	Tue 8/12/20	Wed 23/12/20					
1745	29.2.19	Roadworks of Road B (A4-ch90-130)	23 days	Wed 23/12/20	Thu 21/1/21					
	29.2.19.1	kerbing, sub-base & cross road duct (RD/2061, 2081)	4 days		Tue 29/12/20					
1747	29.2.19.2	ducting for road lighting & construction of irrigation system	4 days	Tue 29/12/20	Sat 2/1/21					
1748	29.2.19.3	bituminous pavement	7 days	Sat 2/1/21	Sat 9/1/21					
	29.2.19.4	traffic signs, directional signs, type 2 railing & footpath	12 days	Fri 8/1/21	Thu 21/1/21					
1750	29.2.20	street lighting (Drg/ RD/2091)	4 days	Thu 21/1/21	Mon 25/1/21					
	29.2.21	landscaping (hydroseeding)	7 days	Mon 25/1/21	Mon 1/2/21					
	29.2.22	landscaping (shrub planting)	5 days	Fri 29/1/21	Wed 3/2/21					
1753		Planned Completion for section 6 of the works	0 days	Wed 3/2/21	Wed 3/2/21 Wed 3/2/21					
1754		Completion Date for section 6 of the works	0 days	Wed 3/2/21 Wed 3/2/21	Wed 3/2/21 Wed 3/2/21					
1755		section 7 of the works (section Subject to Excision) - Completion of Establishment works for the Landscape Softworks within Parts A3 and A4 of the			Sat 3/2/24					
1756	32.1	Establishment works for the Landscape Softworks within Parts A3 and A4 of the Site	1095 days	5 Thu 4/2/21	Sat 3/2/24					





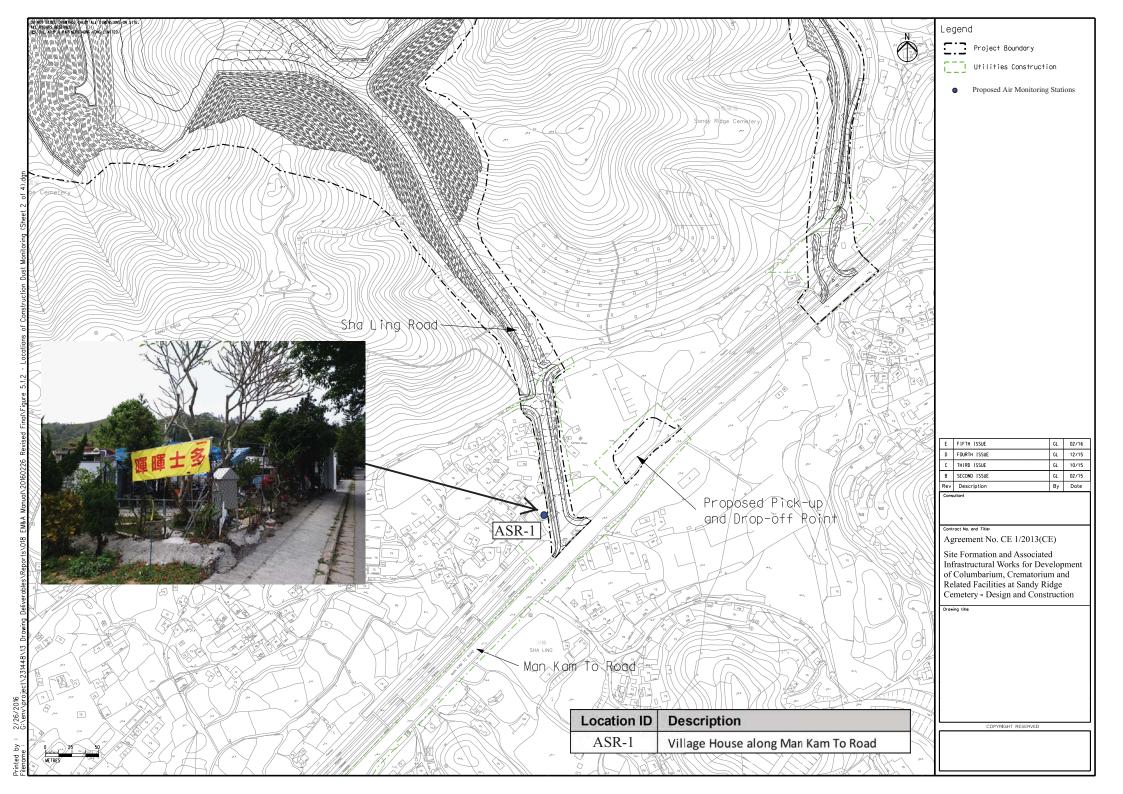
Appendix D

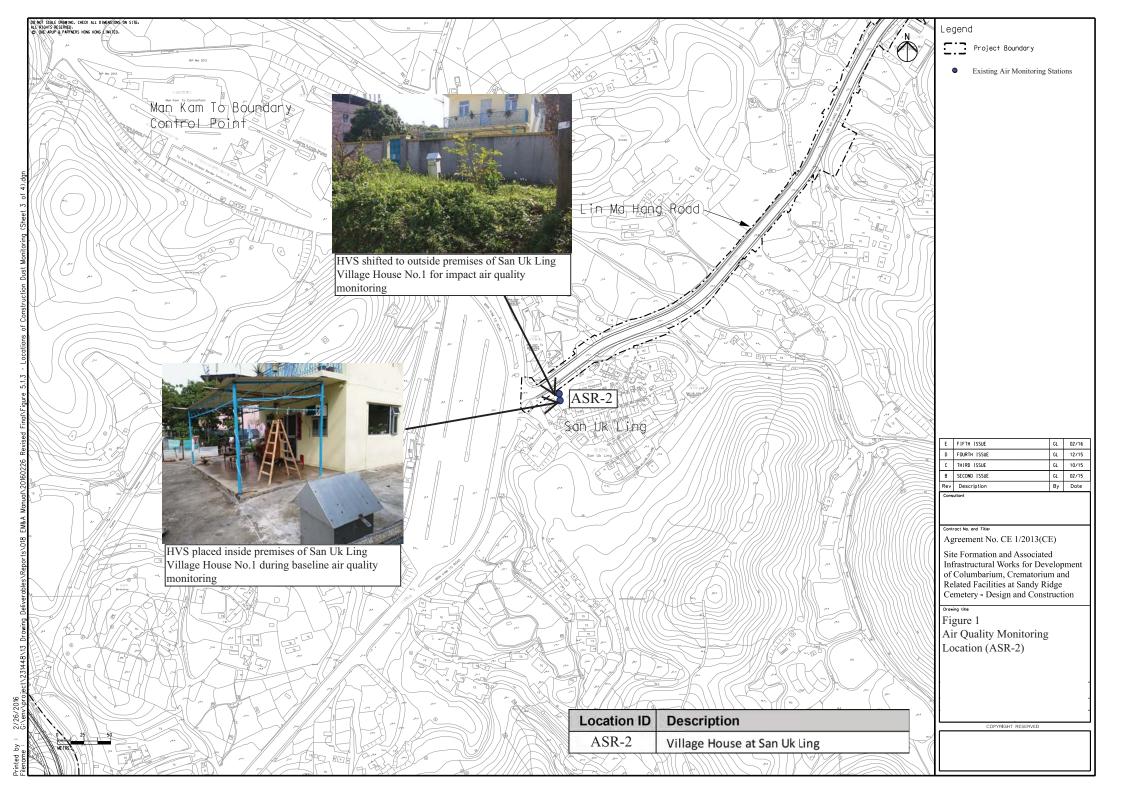
Monitoring Locations

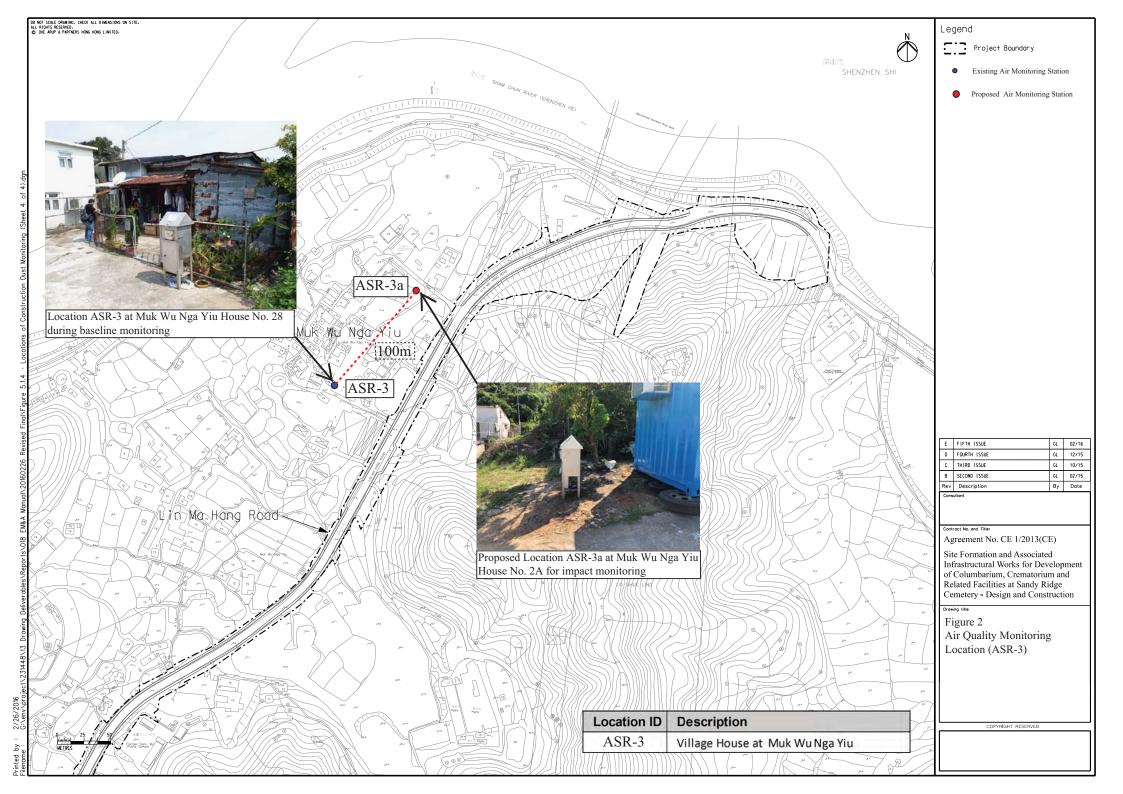
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Air Quality Monitoring Location





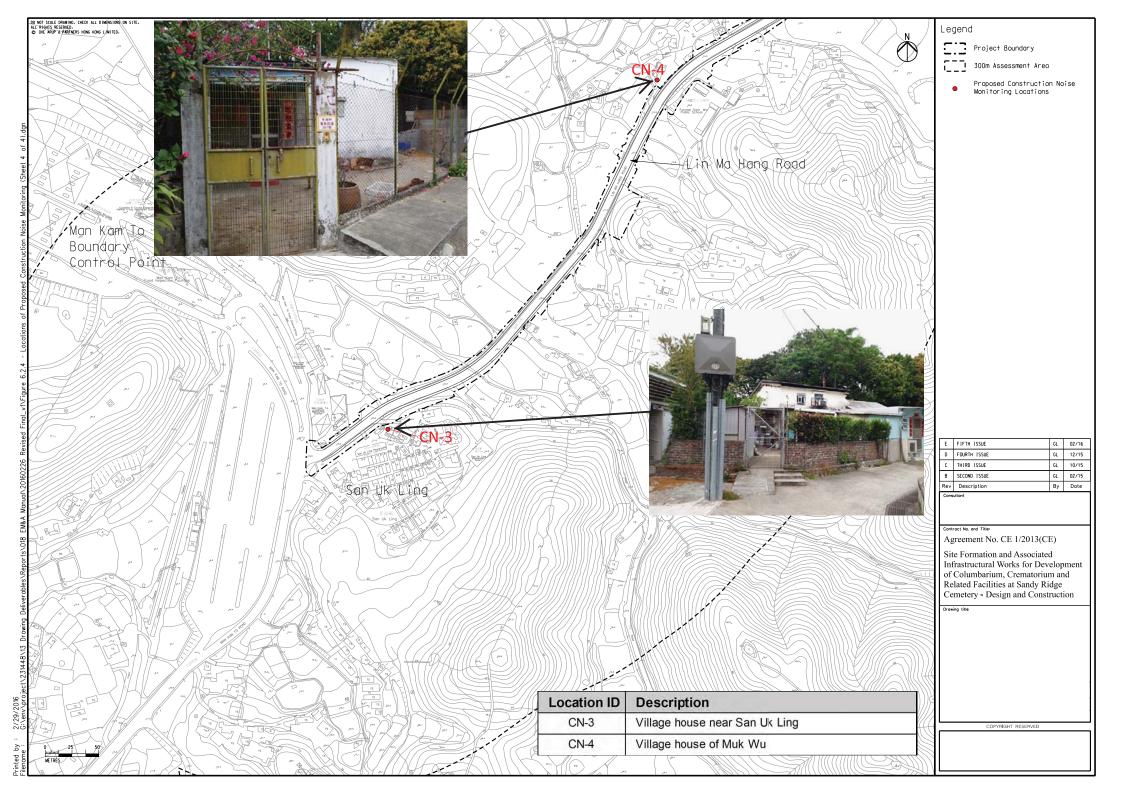




Noise Monitoring Location

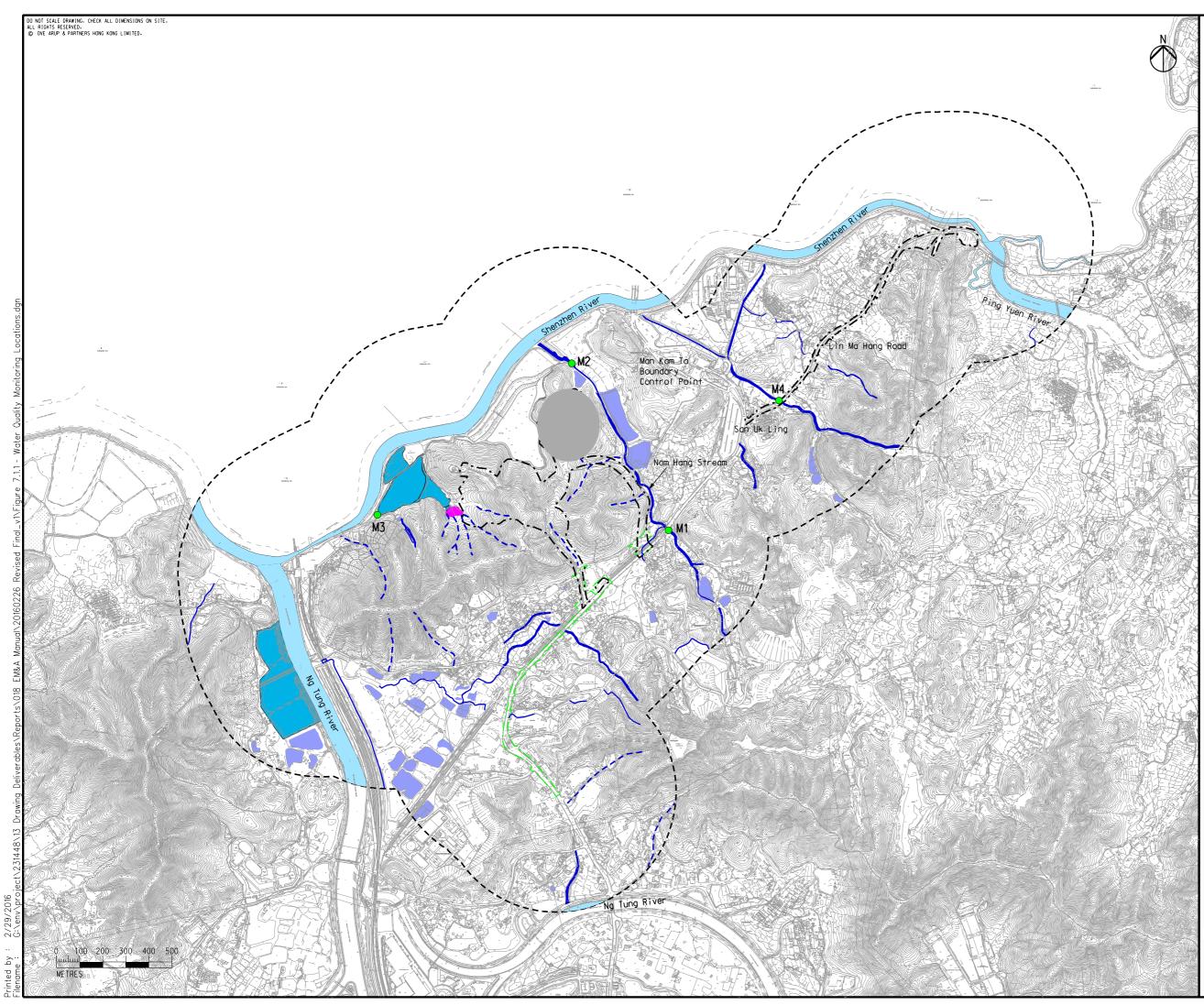








Water Quality Monitoring Station



egena	t
5:3	Project Boundary
613	Utilities Construction
[]]	500m Assessment Area
	Channelized River
	Pond
	Watercourse
	Conservation Area (CA)
	Wet Woodland
	Seasonal Watercourse
۲	Baseline Monitoring Station

E	FIFTH ISSUE	GL	02/16
D	FOURTH ISSUE	GL	12/15
С	THIRD ISSUE	GL	10/15
В	SECOND ISSUE	GL	02/15
Rev	Description	By	Date

ARUP

Contract No. and Title:

Agreement No. CE 1/2013(CE)

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

Drawing title Water Quality Monitoring Locations

Prowing no. Figure 7.1.1 Rev. E													
Drawn	Date	Checked	Approved										
GL	02/16	EL ST											
Scale AS SH	IOWN	Stotus PREL IMINARY											
	COPYRIGHT RESERVED												



土 木 工 程 拓 展 署 Civil Engineering and Development Department



Appendix E

Calibration Certificate of Monitoring Equipment and

Laboratory Certificate

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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	28 Jan 22	11 Feb 22
1b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	14 Feb 22	28 Feb 22
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	28 Jan 22	11 Feb 22
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	14 Feb 22	28 Feb 22
3	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	28 Jan 22	11 Feb 22
3a	All	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	14 Feb 22	28 Feb 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. 366407) – EQ107	15 Mar 21	15 Mar 22
6		Laser Dust Monitor, Model LD-3B (Serial No. 366418) – EQ108	15 Mar 21	15 Mar 22
7		Laser Dust Monitor, Model LD-3B (Serial No. 3Y6501) – EQ111	15 Mar 21	15 Mar 22
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	Wete	YSI Professional DSS (Serial No.15H103928)	23 Dec 21	23 Mar 22
13	Water	Global Water FP211 Flow Meter (Serial No. 1449006330)	1 Sep 21	1 Sep 22

т.,•	01 T .	T 7'11	TT	NL (
Location Location			e House	No.6			Calibration: 28-Jan-22
		ASR-1	IVC Mo	del TE-517	10		ation Date: 11-Feb-22 Fechnician: Leung Ka Wai
Name and	i Model:	поспі		del IE-JI/			rechineran. Leung Ka wai
	Se	a Level I	Pressure	(hPa)	1016	.3	Corrected Pressure (mm Hg) 762.225
			berature	· /	18		Temperature (K) 292
		1		(-/		<u> </u>	
					CALIBR		FICE
				Make->			Qstd Slope -> 2.10574
				Model->			Qstd Intercept -> -0.00985
				Serial # ->	1941		
					СА	LIBRATION	
				•			
Plate	H20 (L)	H2O (R)	H20	Qstd	Ι	IC	LINEAR
No.	(in)	(in)	(in)	(m3/min)	(chart)	corrected	REGRESSION
18	6.50	6.50	13.0	1.738	56	57.27	Slope = 35.8427
13	5.20	5.20	10.4	1.555	48	49.09	Intercept = -5.8619
10	4.20	4.00	8.2	1.381	42	42.96	Corr. coeff. = 0.9983
7	2.40	2.40	4.8	1.058	32	32.73	
5	1.50	1.60	3.1	0.851	24	24.55	
Calculatio	ons:						FLOW RATE CHART
Qstd = 1/r	m[Sart(H	20(Pa/Ps	std)(Tstd	/Ta))-b]		70.00	
IC = I[Sq]]		10.00	
		, , , , , , , , , , , , , , , , , , ,	/ -			60.00	
Qstd = sta	andard flo	ow rate				00.00	•
IC = corrections	ected cha	rt respon	es			<u>ට</u> 50.00	
I = actual	chart res	ponse				e (je	y = 35.843x - 5.862
m = calib	rator Qst	d slope				uod s 40.00	
b = calibr	-	-				s 40.00	
	-		-	bration (de		char	y
Pstd = act	tual press	ure durir	ng calibr	ation (mm	Hg)	Actual chart response (C) Actual chart response (C) 3000 - 00000 - 00000 - 00000 - 00000 - 0000 - 00000 - 00000 - 000000	
For subse	equent ca	alculatio	n of sarr	pler flow:		X 20.00	•
1/m((I)[-			-			
	1 (0)	/		,		10.00	
m = samp	ler slope						
b = samp		ept				0.00	
I = chart a	response					0.000	
Tav = dai	ly averag	e tempei	rature				Standard Flow Rate (m3/min)
Pav = dai	ly averag	e pressui	re				

Location :	San Uk	k Ling V	illage H	ouse No.1			Date	of Ca	libration: 2	28-Jan-22			
Location 1	D :	ASR-2]	Next Ca	alibrat	ion Date: 1	1-Feb-22			
Name and	Model:	TISCH H	IVS Mo	del TE-517	0			Те	chnician: I	Leung Ka W	ai		
					C	ONE	DITION	S					
	Se	a Level I	Pressure	(hPa)	10	16.3	5		Correcte	ed Pressure	(mm Hg)	76	2.225
			erature	. ,		18.8				emperature			292
		remp	oracare	(0)		1010	4			omportationo	(11)	<u> </u>	272
				C	ALIB	RAT	ION OF	RIFICE					
				Make->	TISCI	H			Qs	td Slope ->		2.105	574
				Model->	5025A	Ą				ntercept ->		-0.00	
				Serial # ->			-			1			
					U/	ALIE	BRATIO	N					
Plate	H20 (L)	H2O (R)	H20	Qstd	Ι		IC			LINI	EAR		
No.	(in)	(in)	(in)	(m3/min)	(cha	urt)	correc	cted		REGRE	SSION		
18	6.30	6.30	12.6	1.711	56	5	57.2	27	Slope = 37.2440				
13	4.80	4.80	9.6	1.494	47	7	48.0)7		Intercept =	-7.43	377	
10	4.00	4.00	8.0	1.364	41	L	41.9	93	Сс	orr. coeff. =	0.99	070	
7	2.40	2.40	4.8	1.058	31	L	31.7	70					
5	1.60	1.60	3.2	0.864	25	5	25.5	57					
									EL OV	V RATE CH	ADT		
							70.00 -						-
Qstd = 1/r	·			/1a))-b]									
IC = I[Squ	t(Pa/Pstd	l)(1std/1	a)]				60.00 -						
	1 1 9											•	
Qstd = sta							50.00						
IC = correction		-	es			ΰ	50.00 -						
I = actual						se (I			y =	37.244x - 7.43	8		
m = calibr	-	-				chart response (IC)	40.00 -						
b = calibra	-	-				t res							
	-		-	bration (de		char	30.00 -						
Pstd = act	ual pressi	ure durin	ig calibr	ation (mm	Hg)	Actual e				•			
For subse	equent ca	alculatio	n of san	npler flow:		Act	20.00 -						_
1/m((I)[S	Sart(298/	Tav)(Pav	/760)]-ł))									
	1 (5)	, <u> </u>	/] 、	,			10.00 -						
m = samp	ler slope						10.00						
b = samp		ept											
I = chart r		-					- 0.00 0.0	000	0.500	1.000	1.50	0 :	2.000
Tav = dail	-	e temper	ature							rd Flow Rate (n			
Pav = dail		-			L								
	2												

Location	Muk W	u Nøa Yi	11 House	No 2A			Dat	e of Ca	libra	tion: 28-Jan	-22			
Location	D :	ASR-3a				l		Calibrat	ion I	Date: 11-Feb	-22			
Name and	Model:	TISCH H	IVS Mo	del TE-5170					chnie	cian: Leung	Ka Wai			
					CON	IDI	TIONS	5						
	Se	a Level I Temp	Pressure erature	. ,		16.3Corrected Pressure (mm Hg)718.8Temperature (K)						762.22 29		
				CA		TIC	ON OF	RIFICE						
				Make-> Model-> Serial # ->	5025A	-]			Qstd Slo Qstd Interce	-		0574 00985	
					CAL	BF	RATIO	N						
Plate		H2O (R)	H20	Qstd	I	4)		C			LINEAR			
<u>No.</u> 18	(in) 6.20	(in) 6.20	(in) 12.4	(m3/min) 1.697	<u>(char</u> 55	()		ected .25	REGRESSION Slope = 35.7039					
13	5.00	5.00	10.0	1.525	48		49.09				-	.8474		
10	4.10	4.10	8.2	1.381	43		43	.98		Corr. co	eff. = 0	.9986		
7	2.40	2.40	4.8	1.058	33			.75						
5	1.70	1.70	3.4	0.891	26		26	.59						
Calculatio			1) (17) - 1							FLOW RATE	- CHART			
Qstd = 1/r IC = I[Sqr				(1a))-b]			60.00 -					•		
0,11,4	1 1 0						50.00 -							
Qstd = sta IC = corre			20				00.00			y = 35.704	x - 4.847			
I = actual		-					40.00 -							
m = calib	-	-				response (IC)	40.00							
b = calibr	-	-			U)	spon	00.00				*			
	_		_	oration (deg ation (mm]			30.00 -							
1 500 - 000	uur press	ure durin	g cunon			Actual chart								
	•			pler flow:		Actu	20.00 -							
1/m((I)[Sqrt(298/	Tav)(Pav	/760)]-b)										
m = samp	ler slone						10.00 -							
h = samp b = samp		ept												
I = chart r		-					0.00 0.0	00	0 4	500 1.0	000	1.500	2.00	00
Tav = dai		_					0.0			itandard Flow I			2.00	
Pav = dai	y averag	e pressur	e											

r													
Location			e House	No.6			Date of C						
Location		ASR-1				N	ext Calibra						
Name and	Model:	TISCH F	IVS Mo	del TE-517				echnicia	an: Leung	Ka Wai			
					C	CON	DITIONS						
	Se	a Level I	Draccura	(hD_0)	101	7.3			Corrected	l Pressure	(mm Uc	-) [762.975
	50		erature	. ,		7.0				nperature		5)	290
		TCIIIL	crature	(\mathbf{C})	1	. 7.0			101	inperature	(\mathbf{R})		290
					CALIE	BRA'		ICE					
					miagi	T				. 01		1	25125
				Make->					-	l Slope ->			.25135
				Model-> Serial # ->					Qsta In	tercept ->		-().00574
				Sellal # ->	1012								
					С	ALI	BRATION						
Plate	H20 (L)	H2O (R)	H20	Qstd	Ι		IC			LINEA	AR		
No.	(in)	(in)	(in)	(m3/min)	(chai		corrected			REGRES			
18	6.30	6.30	12.6	2.886	54		55.60			Slope =	19.4		
13	5.25	5.25	10.5	2.635	48		49.42			ntercept =	-0.9		
10	3.90	3.90	7.8	2.271	41		42.21		Con	c. coeff. =	0.9	932	
7 5	2.60 1.65	2.60 1.65	5.2 3.3	1.855 1.479	36 26		37.07 26.77						
5	1.05	1.05	5.5	1.479		-	20.77						
Calculatio	ons :								FLOW F	RATE CHA	RT		
Qstd = 1/r	m[Sqrt(H	20(Pa/Ps	td)(Tstd	/Ta))-b]			<u> </u>						
IC = I[Sq]	·						60.00						
Qstd = sta	andard flo	ow rate					50.00			9.406x - 0.97			
IC = corrections		-	es			6			y – 13	9.400x - 0.97			
I = actual		-				se (IC	40.00						
m = calib	-	-				log				•			
b = calibr	-	-		hustion (de	~ V)	Actual chart response (IC)	30.00						
	-		-	bration (de ation (mm		chai	30.00						
$1 \operatorname{Stu} - \operatorname{act}$	iuai press		ig canoi		iig)	stual							
For subse	equent c	alculatio	n of san	pler flow:		Ā	20.00						
1/m((I)[-			-									
	1 (· · ·						10.00						
m = samp	oler slope												
b = samp	oler interc	cept					0.00						
I = chart	-						0.00	0.500		.500 2.00) 3.00	00 3.500
Tav = dai									Standard F	low Rate (m	3/min)		
Pav = dai	ly averag	e pressur	e		L								
1													

Location :	San Ul	k Ling V	illage H	ouse No.1			Date	of Ca	librati	on: 14-Feb-	-22				
Location I	ID :	ASR-2]	Next Ca	alibrat	tion Da	te: 28-Feb-	-22				
Name and	l Model: '	TISCH H	IVS Mo	del TE-517	0			Те	chnici	an: Leung I	Ka Wa	i			
					C	ONE	DITION	S							
	Se	a Level I	Pressure	(hPa)	10	17.3			Cor	rected Pres	sure (1	nm Hg)	762.9	975
			erature	. ,		17.0				Tempera		-	, 		290
		10111				1.10	1			1 0 1 1 1 0 0 1 0)	<u> </u>		
				C	CALIBR	RAT	ION OF	RIFICE							
				Make->	TISCH	Η]			Qstd Slop	e ->		1.	25135	5
				Model->	5025A	A			Q	std Intercep	ot ->		-0	0.0057	'4
				Serial # ->	1612										
					CA	LIE	RATIO	N							
	1			1											
Plate	H20 (L)		H20	Qstd	Ι		IC	2			LINE				
No.	(in)	(in)	(in)	(m3/min)	(cha	rt)	correc	cted	REGRESSION						
18	6.20	6.20	12.4	2.863	54	-	55.6	50		Slo	pe =	20.3	171		
13	5.20	5.20	10.4	2.622	48)	49.4	42		Interce	ept =	-3.2	965		
10	3.80	3.80	7.6	2.242	40)	41.1	18		Corr. coe	ff. =	0.9	962		
7	2.50	2.50	5.0	1.820	34	Ļ	35.0)1							
5	1.70	1.70	3.4	1.501	26)	26.7	77							
Coloulatio									F		Е СНА	RT			
				(TT)) 1 1			60.00 -		•	LOWINAN					
Qstd = 1/r				/1a))-b]								•			
IC = I[Squ	rt(Pa/Psto	1)(1std/1	a)]												
0.11	1 1 0						50.00 -								
Qstd = sta IC = corre			es						y = 20	.317x - 3.297		, 			
I = actual		-				(C)	40.00 -								
m = calibi	-	-				onse				•/					
b = calibra	-	-	t			espc									
	-	-		bration (de	gK)	art r	30.00 -								
	-		_	ation (mm		l ch				•					
	-					Actual chart response	20.00 -								
For subse	equent ca	alculatio	n of san	npler flow:		٩									
1/m((I)[S	Sqrt(298/	Tav)(Pav	/760)] - ł)											
							10.00 -								
m = samp	ler slope														
b = samp	ler interc	ept					0.00 -								
I = chart r	response							000	1.0	00 2.	000	3.00	00	4.0	00
Tav = dail	ly averag	e temper	ature						St	andard Flow I	Rate (m3	3/min)			
Pav = dail	ly average	e pressur	e		L										

Location :	Muk W	u Nga Yi	u House	No.2A			Dat	e of Ca	Calibration: 14-Feb-22
Location I		ASR-3a		del TE-517	0		Next (ration Date: 28-Feb-22 Technician: Leung Ka Wai
Iname and	WOUEI.	поспп	1 V S 1V100	uel IE-JI/		D			Teennetan. Leung Ka wai
	Se	a Level I Temp	Pressure erature	. ,	101 [°] 1 [°]	7.3 7.0			Corrected Pressure (mm Hg) 762.975 Temperature (K) 290
				C	ALIBRA	TI	ON OF	RIFICE	E
				Make-> Model-> Serial # ->	5025A				Qstd Slope -> 1.25135 Qstd Intercept -> -0.00574
					CALI	BF	RATIO	N	
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (char	-)		C ected	LINEAR REGRESSION
18	6.20	6.20	12.4	2.863	(chai 52	.)		.54	Slope = 18.7184
13	5.10	5.10	10.2	2.597	47			.39	Intercept = -0.1532
10	3.80	3.80	7.6	2.242	40			.18	Corr. coeff. = 0.9980
7 5	2.50 1.50	2.50 1.50	5.0 3.0	1.820 1.410	34 25			.01 .74	
Pstd = actu	n[Sqrt(H t(Pa/Pstd ndard flo octed chan chart resp rator Qstd ator Qstd d temper ual press cquent ca Sqrt(298/ ler slope	I)(Tstd/Ta ow rate et respond ponse l slope intercept ature dur ure durin alculation Tav)(Pav	a)] es ing calibr g calibra	pration (deg ation (mm	gK) Hg)	Actual cital (response (ro)	60.00 - 50.00 - 40.00 - 30.00 - 20.00 - 10.00 -		FLOW RATE CHART y = 18.718x - 0.153
I = chart r	esponse	_					0.00 - 0.0	000	1.000 2.000 3.000 4.000
Tav = dail Pav = dail		_							Standard Flow Rate (m3/min)



RECALIBRATION DUE DATE:

December 27, 2022

	Ce	rtifa	Calibration				ntion	
Cal. Date:	December	27 2021		meter S/N:		annan an ann an Adres An Inne Aigeine Inne Station	295	°K
		27, 2021	ROOLS	meter 5/14.	436320			
Operator:	Jim Tisch					Pa:	740.4	mm Hg
Calibration	Model #:	TE-5025A	Cali	brator S/N:	1612			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.3890	3.2	2.00	
	2	3	4	1	0.9760	6.4	4.00	
	3	5	6	1	0.8740	7.9	5.00	
	4	7	8	1	0.8320	8.8	5.50	
	5	9	10	1	0.6870	12.7	8.00	
				Data Tabula	tion			
	Vstd	Vstd Qstd $\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$				Qa	√∆H(Ta/Pa)	
	(m3)	(x-axis)	y (y-ax		Va	(x-axis)	(y-axis)	
	0.9799	0.7055	1.40	1	0.9957	0.7168	0.8927	
	0.9756	0.9996	1.98		0.9914	1.0157	1.2624	
	0.9736	1.1140	2.21	1	0.9893	1.1320	1.4114	
	0.9724	1.1688	2.32	65	0.9881	1.1876	1.4803	
	0.9673	1.4079	2.80	1	0.9828	1.4306	1.7853	
		m=	1.998			m=	1.25135	
	QSTD	b=	-0.00		QA	b=	-0.00574	
		r=	0.999	999		r=	0.99999	
			(m	Calculation				
		ΔVol((Pa-ΔP) Vstd/ΔTime	/Pstd)(Tstd/T	a)	Conception of the local division of the loca	ΔVol((Pa-Δ Va/ΔTime	P)/Pa)	
	Q3tu-	vstu/Anne	For subsequ	lent flow ra	te calculation			
	Qstd=	1/m ((\\ \ \ \ \ \ \ \ \ \ \ \ \ (Pa <u>Tstd</u> Pstd Ta	The second s		1/m ((√∆H	l(Ta/Pa))-b)	
		Conditions						I
Tstd:	298.15	°K		Ι		RECA	LIBRATION	
Pstd:	Contraction of the second seco	mm Hg			LIS EPA reco	mmende	nnual recalibratio	n ner 1000
AH: calibrat		(ey ter reading (i	n H2O)				Regulations Part 5	
		eter reading					, Reference Meth	
Ta: actual al	osolute tem	perature (°K)					ended Particulate	
		ressure (mm	Hg)				ere, 9.2.17, page 3	
b: intercept				l			,	
m: slope								

Tisch Environmental, Inc.

145 South Miami Avenue

Village of Cleves, OH 45002

<u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9005

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES





CONTACT	: MR BEN TAM	WORK ORDER HK2111340						
CLIENT	ACTION UNITED ENVIRONMENT							
	SERVICES AND CONSULTING							
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1						
	TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG	DATE RECEIVED : 17-MAR-2021						
	KONG	DATE OF ISSUE : 16-APR-2021						
PROJECT	:	NO. OF SAMPLES : 1						
		CLIENT ORDER						

General Comments

- Samples(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
Richard Forg.	
Richard Fung N	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.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com WORK ORDER SUB-BATCH : HK2111340

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING



 ALS Lab
 Client's Sample ID
 Sample
 Sample Date
 External Lab Report No.

 ID
 HK2111340-001
 s/N: 3Y6501
 AIR
 17-Mar-2021
 s/N: 3Y6501

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	3Y6501
Equipment Ref:	EQ111
Job Order	HK2111340

Standard Equipment:

Higher Volume Sampler
AUES office (calibration room)
HVS 018
13 January 2021

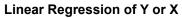
Equipment Verification Results:

Verification Date:

12 March 2021

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr01min	09:30 ~ 11:31	22.0	1018.6	0.023	1852	15.3
2hr01min	11:35 ~ 11:36	22.0	1018.6	0.044	2317	19.1
2hr	11:40 ~ 13:40	22.0	1018.6	0.039	2013	16.8

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Slope (K-factor):	0.0022
Correlation Coefficient (R)	0.9507
Date of Issue	15 March 2021

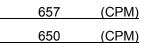
Remarks:

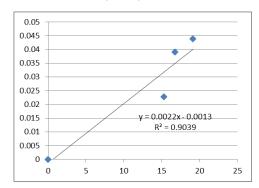
1. **Strong** Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

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







Location : Gold King Industrial Building, K Location ID : Calibration Room	wai Cl	nung		alibration: 13-Jan-21 tion Date: 13-Apr-21		
	COND	ITIONS				
Sea Level Pressure (hPa) Temperature (°C)	1019.8 13.4		Corrected Pressure (Temperature ()	C,		
CALI	IBRAT	ION ORIFICE				
	SCH 25A eb-20		Qstd Slope -> Qstd Intercept -> Expiry Date->	2.03014 -0.04616 7-Feb-21		
	CALIB	RATION				
	I nart)	IC corrected	LINE A REGRES			
13 5.1 5.1 10.2 1.633 4 10 4 4 8.0 1.448 4 8 2.6 2.6 5.2 1.172 3	55 49 42 32 22	56.28 50.14 42.98 32.75 22.51	Slope = 39.9777 Intercept = -15.3902 Corr. coeff. = 0.9972			
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	05 04 05 05 05 02 01 01		FLOW RATE CHAP	1.500 2.000		

								ALIBRATION
							D	UE DATE:
)		Febru	uary 7, 202
nvir	o n m	ent	al	- Construction of the Article				
	0		2 .		0	0.0	6 •	
	0e	rtifa	çate	01	Oal	ibra	tion	
			Calibration	Certificatio	on Informat	ion		
Cal. Date:	February 7	2020	Roots	meter S/N:	438320	Ta:	295	°К
Operator:	Jim Tisch					Pa:	745.5	mm Hg
Calibration	Model #:	TE-5025A	Calil	prator S/N:	1612			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ]
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(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 Tabula	tion]
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		Qa	√∆H(Ta/Pa)	
	(m3)	(x-axis)	(y-ax		Va	(x-axis)	(y-axis)	
	0.9866	0.7186	1.40		0.9957	0.7252	0.8896	-
	0.9824	1.0004	1.99	09	0.9914	1.0096	1.2581	-
	0.9802	1.1165	2.22	59	0.9893	1.1267	1.4066	
	0.9792	1.1741	2.33	45	0.9882	1.1849	1.4753	-
	0.9739	1.4114	2.81		0.9828	1.4244	1.7792	-
	OCTD		2.030		0.4		1.27124	
	QSTD	b= r=	-0.04		QA	b= r=	-0.02917 0.99995	
		1-	0.555			1	0.33333]
	Vstd=	AVol((Pa-AP)	/Pstd)(Tstd/Ta	Calculation		ΔVol((Pa-Δl	P)/Pa)	-
		Vstd/ATime	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Va/ATime	,,,	-
			For subsequ	ient flow rat	te calculatio			1
	Qstd=	1/m ((_ \[\[\] \[\] \[\] H (Pa (Tstd Pstd Ta	-))-b)		11	н(Та/Ра))-b)	
[Conditions	rstu /\ la	///		// V	· // /]
Tstd:				Г		RECA	LIBRATION]
Pstd:		mm Hg						
	ŀ	(ey					nnual recalibrati	
$\Delta H: calibrato$							Regulations Part	
ΔP: rootsme		eter reading perature (°K)					, Reference Met	
		essure (mm					ended Particulat	
		cooure (min			th	e Atmosphe	ere, 9.2.17, page	30
b: intercept			1	1				1

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 <u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9009

-

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES





CONTACT	: MR BEN TAM	WORK ORDER : HK2111307
CLIENT	ACTION UNITED ENVIRONMENT	
	SERVICES AND CONSULTING	
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1
	TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG	DATE RECEIVED : 17-MAR-2021
	KONG	DATE OF ISSUE : 16-APR-2021
PROJECT	:	NO. OF SAMPLES : 1
		CLIENT ORDER +

General Comments

- Samples(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
Kichard Jong.	
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.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com WORK ORDER SUB-BATCH

CLIENT PROJECT : HK2111307

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2111307-001	S/N: 366407	AIR	17-Mar-2021	S/N: 366407

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366407
Equipment Ref:	EQ107
Job Order	HK2111307

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	13 January 2021

Equipment Verification Results:

Verification Date:

12 March 2021

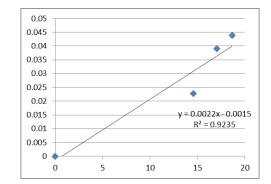
Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr01min	09:30 ~ 11:31	22.0	1018.6	0.023	1766	14.6
2hr01min	11:35 ~ 11:36	22.0	1018.6	0.044	2261	18.7
2hr	11:40 ~ 13:40	22.0	1018.6	0.039	2047	17.1

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Slope (K-factor):	0.0022
Correlation Coefficient (R)	0.9610
Date of Issue	15 March 2021

<u>565 (CPM)</u> 566 (CPM)



Remarks:

1. Strong Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

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



CONDITIONS Sea Level Pressure (hPa) 1019.8 Temperature (°C) 13.4 CALIBRATION ORIFICE Make-> TISCH	Corrected Pressure (mm Hg) 764.85 Temperature (K) 286	
Temperature (°C) 13.4 CALIBRATION ORIFICE		
Make-> TISCH		
Model-> 5025A Calibration Date-> 7-Feb-20	Qstd Slope ->2.03014Qstd Intercept ->-0.04616Expiry Date->7-Feb-21	
CALIBRATION		
PlateH20 (L)H2O (R)H20QstdIICNo.(in)(in)(m3/min)(chart)corrected	LINEAR REGRESSION	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Slope = 39.9777 Intercept = -15.3902 Corr. coeff. = 0.9972	
Qstd = 1/m[Sqrt(H20(Pa/Pstd)(Tstd/Ta))-b] 60.00 IC = I[Sqrt(Pa/Pstd)(Tstd/Ta)] 50.00 Qstd = standard flow rate 50.00 IC = corrected chart respones 40.00 I = actual chart response 40.00 m = calibrator Qstd slope 40.00 b = calibrator Qstd intercept 30.00 Ta = actual temperature during calibration (deg K) 20.00 Pstd = actual pressure during calibration (mm Hg) 20.00 For subsequent calculation of sampler flow: 10.00 1/m((I)[Sqrt(298/Tav)(Pav/760)]-b) 0.00 m = sampler slope 0.00 b = sampler intercept 0.00 I = chart response 0.000	FLOW RATE CHART	

								ALIBRATION
							D	UE DATE:
)		Febru	uary 7, 202
nvir	o n m	ent	al	Conservation and the				
	0		2 .		O	0.0	6 •	
	0e	rtifa	çate d	01	Oal	ibra	tion	
			Calibration	Certificatio	on Informat	ion		
Cal. Date:	February 7,	2020	Roots	meter S/N:	438320	Ta:	295	°К
Operator:	Jim Tisch					Pa:	745.5	mm Hg
Calibration	Model #:	TE-5025A	Calik	prator S/N:	1612			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ]
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(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	7
	5	9	10	1	0.6900	12.8	8.00]
			[Data Tabulat	tion]
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		Qa	, ΔH(Ta/Pa)	
	(m3)	(x-axis)	y (Fota (y-ax		Va	(x-axis)	(y-axis)	
	0.9866	0.7186	1.40		0.9957	0.7252	0.8896	_
	0.9824	1.0004	1.990		0.9914	1.0096	1.2581	-
	0.9802	1.1165	2.22	59	0.9893	1.1267	1.4066	
	0.9792	1.1741	2.334	45	0.9882	1.1849	1.4753	-
	0.9739	1.4114	2.81	55	0.9828	1.4244	1.7792]
		m=	2.030			m=	1.27124	
	QSTD	b=	-0.040		QA	b=	-0.02917	
		r=	0.999			r=	0.99995	<u>ן</u> ר
	Vetd-		/Pstd)(Tstd/Ta					4
		Vstd/ Δ Time	/ FSLU/ (15LU/ 16	a)	Va= ΔVol((Pa-ΔP)/Pa) Qa= Va/ΔTime			-
			For subsequ	ent flow rat	te calculatio			-
		// []				11		1
	Qstd=	1/m((_\ΔH(Pa Pstd Tstd	-))-b)	Qa=	1/m((√∆⊦	l(Ta/Pa))-b)	
		Conditions		_				
Tstd:						RECA	LIBRATION	
Pstd:	and the second	mm Hg Key			US EPA reco	ommends a	nnual recalibrati	on per 1998
ΔH: calibrate		er reading (i	n H2O)				Regulations Part	
		eter reading					, Reference Met	
Ta: actual at	solute tem	perature (°K)					ended Particulat	1
Pa: actual bab b: intercept	arometric pr	essure (mm	Hg)				ere, 9.2.17, page	

Tisch Environmental, Inc. 145 South Miami Avenue Village of Cleves, OH 45002 <u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9009

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ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES





CONTACT	: MR BEN TAM	WORK ORDER HK2111334
CLIENT	ACTION UNITED ENVIRONMENT	
	SERVICES AND CONSULTING	
ADDRESS	: RM A 20/F., GOLD KING IND BLDG, NO. 35-41	SUB-BATCH : 1
	TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG	DATE RECEIVED : 17-MAR-2021
	KONG	DATE OF ISSUE : 16-APR-2021
PROJECT	:	NO. OF SAMPLES : 1
		CLIENT ORDER ÷

General Comments

- Samples(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
Kichard Jong.	
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.

ALS Technichem (HK) Pty Ltd Part of the ALS Laboratory Group

11/F. Chung Shun Knitting Centre 1 - 3 Wing Yip Street Kwai Chung N.T. Hong Kong Tel. +852 2610 1044 Fax. +852 2610 2021 www.alsglobal.com WORK ORDER SUB-BATCH

CLIENT PROJECT : HK2111334

: 1 : ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING



 ALS Lab
 Client's Sample ID
 Sample
 Sample Date
 External Lab Report No.

 ID
 Type
 ID
 ID</t

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366418
Equipment Ref:	EQ108
Job Order	HK2111334

Standard Equipment:

Higher Volume Sampler
AUES office (calibration room)
HVS 018
13 January 2021

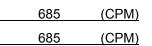
Equipment Verification Results:

Verification Date:

12 March 2021

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr01min	09:30 ~ 11:31	22.0	1018.6	0.023	1801	14.9
2hr01min	11:35 ~ 11:36	22.0	1018.6	0.044	2208	18.2
2hr	11:40 ~ 13:40	22.0	1018.6	0.039	2013	16.8

Sensitivity Adjustment Scale Setting (Before Calibration) Sensitivity Adjustment Scale Setting (After Calibration)



Linear Regression of Y or X

Slope (K-factor):	
Correlation Coefficient (R)	
Date of Issue	1

0.0022	-
0.9508	
15 March 2021	
10 101011 2021	

0 0022

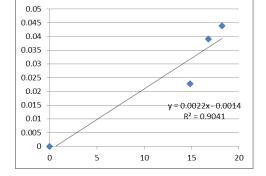
Remarks:

1. **Strong** Correlation (R>0.8)

2. Factor 0.0022 should be apply for TSP monitoring

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





TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Gold King Industrial Building, K Location ID : Calibration Room						
	COND	ITIONS				
Sea Level Pressure (hPa) Temperature (°C)	1019.8 13.4		Corrected Pressure (Temperature (C,		
CALI	IBRAT	ION ORIFICE				
	SCH 25A eb-20		Qstd Slope -> Qstd Intercept -> Expiry Date->	2.03014 -0.04616 7-Feb-21		
	CALIB	RATION				
	I nart)	IC corrected	LINE A REGRES			
13 5.1 5.1 10.2 1.633 4 10 4 4 8.0 1.448 4 8 2.6 2.6 5.2 1.172 3	55 49 42 32 22	56.28 50.14 42.98 32.75 22.51	Slope = Intercept = Corr. coeff. =	39.9777 -15.3902 0.9972		
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	05 04 05 05 05 02 01 01		FLOW RATE CHAP	1.500 2.000		

								ALIBRATION
							D	UE DATE:
)		Febru	uary 7, 202
nvir	o n m	ent	al	- Construction of the Article				
	0		2 .		0	0.0	6 •	
	0e	rtifa	çate	01	Oal	ibra	tion	
			Calibration	Certificatio	on Informat	ion		
Cal. Date:	February 7	2020	Roots	meter S/N:	438320	Ta:	295	°К
Operator:	Jim Tisch					Pa:	745.5	mm Hg
Calibration	Model #:	TE-5025A	Calil	prator S/N:	1612			
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ]
	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(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 Tabula	tion]
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd}\right)}$)(<u>Tstd</u>)		Qa	√∆H(Ta/Pa)	
	(m3)	(x-axis)	(y-ax		Va	(x-axis)	(y-axis)	
	0.9866	0.7186	1.40		0.9957	0.7252	0.8896	-
	0.9824	1.0004	1.99	09	0.9914	1.0096	1.2581	-
	0.9802	1.1165	2.22	59	0.9893	1.1267	1.4066	
	0.9792	1.1741	2.33	45	0.9882	1.1849	1.4753	-
	0.9739	1.4114	2.81		0.9828	1.4244	1.7792	-
	OCTD		2.030		0.4		1.27124	
	QSTD	b= r=	-0.04		QA	b= r=	-0.02917 0.99995	
		1-	0.555			1	0.33333]
	Vstd=	AVol((Pa-AP)	/Pstd)(Tstd/Ta	Calculation		ΔVol((Pa-Δl	P)/Pa)	-
		Vstd/ATime	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Va/ATime	,,,	-
			For subsequ	ient flow rat	te calculatio			1
	Qstd=	1/m ((_ \[\[\] \[\] \[\] H (Pa (Tstd Pstd Ta	-))-b)		11	н(Та/Ра))-b)	
[Conditions	rstu /\ la	///		// V	· // /]
Tstd:				Г		RECA	LIBRATION]
Pstd:		mm Hg						
	ŀ	(ey					nnual recalibrati	
$\Delta H: calibrato$							Regulations Part	
ΔP: rootsme		eter reading perature (°K)					, Reference Met	
		essure (mm					ended Particulat	
		cooure (min			th	e Atmosphe	ere, 9.2.17, page	30
b: intercept			1	1				1

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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

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	:	NL-52	5
Serial No. / 編號	:	00921191	
Supplied By / 委託者	:	Action-United Environmental Services an	d Consulting
		Unit A, 20/F., Gold King Industrial Build	ing,
		35-41 Tai Lin Pai Road, Kwai Chung, N.	Г.
TEST CONDITIONS / 3	tille:	体件	

Temperature / 溫度 : $(23 \pm 2)^{\circ}$ C Line Voltage / 電壓 : ---

Relative Humidity / 相對濕度 : (50 ± 25)%

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	: <u>Chenk</u> K P Cheuk Project Engineer			
Certified By 核證	K C/Lee Engineer	Date of Issue 簽發日期	:	13 September 2021

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.



Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C215420 證書編號

- 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 IDDescriptionCL28040 MHz Arbitrary Waveform GeneratorCL281Multifunction Acoustic Calibrator	<u>Certificate No.</u> C210084 AV210017
---	---

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level

	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	94.2	± 1.1

6.1.2 Linearity

	UU	Г Setting	Applie	d Value	UUT	
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L _A	А	Fast	94.00	1	94.2 (Ref.)
				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

		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	А	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.



Certificate of Calibration 校正證書

Certificate No. : C215420 證書編號

6.3 Frequency Weighting

A-Weighting 6.3.1

		Setting		Applied Value		UUT	LEC 61672
Range	Function	Frequency	Time	Level	Freq.	Reading	Class 1 Spec.
(dB)		Weighting	Weighting	(dB)		(dB)	(dB)
30 - 130	L_A	А	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

	UUT	Setting		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. 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。



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 250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 16 kHz	: $\pm 0.35 \text{ dB}$: $\pm 0.30 \text{ dB}$: $\pm 0.20 \text{ dB}$: $\pm 0.35 \text{ dB}$: $\pm 0.45 \text{ dB}$: $\pm 0.70 \text{ dB}$
	16 kHz 104 dB : 1 kHz	: ± 0.70 dB : ± 0.10 dB (Ref. 94 dB)
	114 dB : 1 kHz	: \pm 0.10 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 校正證書

Certificate No. : C216480 證書編號

ITEM TESTED / 送檢I	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	d Consulting
		Unit A, 20/F., Gold King Industrial Buildin	ng,
		35-41 Tai Lin Pai Road, Kwai Chung, N.T	

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (50±25)%

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

K 🛛 Lee Engineer

Certified By 核證

Date of Issue 簽發日期

:

10 November 2021

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 Website/網址: www.suncreation.com Page 1 of 4



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C216480 證書編號

- 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 using the internal standard (After Adjustment) was performed before the test 6.1.1.2 to 6.3.2.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

- 5. Test procedure : MA101N.
- 6. Results :
- 6.1 Sound Pressure Level
- 6.1.1 Reference Sound Pressure Level
- 6.1.1.1 Before Adjustment

	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	LA	Α	Fast	94.00	1	* 96.3	± 1.1

* Out of IEC 61672 Class 1 Spec.

6.1.1.2 After Adjustment

	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	94.0	± 1.1

6.1.2 Linearity

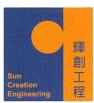
	UU	Γ Setting	Applied	d Value	UUT	
Range	Function	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
30 - 130	L _A	Α	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.0

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

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 2600 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com

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

Time Weighting 6.2

1 mile to engineering									
	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	94.0	Ref.		
			Slow			94.0	± 0.3		

6.3 **Frequency Weighting**

6.3.1 A-Weighting

	UUT	Setting		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	А	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.
					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		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	93.2	-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 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。



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	$\pm 0.35 \text{ dB}$
		250 Hz - 500 Hz	$\pm 0.30 \text{ dB}$
		1 kHz	$\pm 0.20 \text{ dB}$
		2 kHz - 4 kHz	$\pm 0.35 \text{ dB}$
	3	8 kHz	$\pm 0.45 \text{ dB}$
		16 kHz	$\pm 0.70 \text{ dB}$
	104 dB :	1 kHz	$\pm 0.10 \text{ dB}$ (Ref. 94 dB)
	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 校正證書

Certificate No. : C215419 證書編號

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	:	NC-74	-		
Serial No. / 編號	:	34657230			
Supplied By / 委託者	:	Action-United Environmental Services an	d Consulting		
		Unit A, 20/F., Gold King Industrial Buildi	ng,		
		35-41 Tai Lin Pai Road, Kwai Chung, N.T	Γ.		
a:					
TEST CONDITIONS / 🕽	則試	條件			
Temperature / 溫度 :	(23	± 2)°C R	elative Humidity / 相對濕度	:	$(50 \pm 25)\%$
Line Voltage / 電壓 :					
TEST SPECIFICATION	NS /	測試規範			

仍可以不可能

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	: <u>Chenk</u> K P Cheuk Project Engineer			
Certified By 核證	: K C Lee Engineer	Date of Issue 簽發日期	:	13 September 2021

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

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.
- 2. The results presented are the mean of 3 measurements at each calibration point.
- 3. Test equipment :

<u>Equipment ID</u>	<u>Description</u>	<u>Certificate No.</u>
CL130	Universal Counter	C213954
CL281	Multifunction Acoustic Calibrator	AV210017
TST150A	Measuring Amplifier	C201309

- 4. Test procedure : MA100N.
- 5. Results :
- 5.1 Sound Level Accuracy

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

5.2 Frequency Accuracy

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 %.

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.



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: CLIENT:	MR BEN TAM ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING	WORK ORDER:	HK2152511
ADDRESS:	RM A 20/F., GOLD KING IND BLDG,	SUB-BATCH:	0
	NO. 35-41 TAI LIN PAI ROAD,	LABORATORY:	HONG KONG
	KWAI CHUNG, N.T.	DATE RECEIVED:	20-Dec-2021
		DATE OF ISSUE:	28-Dec-2021

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:	Conductivity, Dissolved Oxygen, pH Value, Turbidity, Salinity and Temperature
Brand Name/ Model No.:	[YSI]/ [Professional DSS]
Serial No./ Equipment No.:	[20J101862/15H103928]/ [EQW018]
Date of Calibration:	23-December-2021

GENERAL COMMENTS

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

Ma A

Mr Chan Siu Ming, Vico Manager - Inorganics

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WORK ORDER:	HK2152511			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 28-Dec-2021 ACTION-UNITED ENVIRONMEN	TAL SERVICES & CONSULTING		
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	[YSI]/ [Professional DSS]			
Serial No./ Equipment No.:	[20J101862/15H103928]/ [EQ	2W018]		
Date of Calibration:	23-December-2021	Date of Next Calibration:	23-March-2022	

PARAMETERS:

Conductivity Method Ref: APHA (21st edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (µS/cm)	Tolerance (%)	
146.9	140.1	-4.6	
6667	6354	-4.7	
12890	12284	-4.7	
58670	60173	+2.6	
	Tolerance Limit (%)	±10.0	

Dissolved Oxygen

Method Ref: APHA (21st edition), 45000: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
3.58	3.69	+0.11
5.78	5.59	-0.19
8.61	8.59	-0.02
	Tolerance Limit (mg/L)	±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)	
12.0	12.7	+0.7	
23.0	22.8	-0.2	
41.0	39.2	-1.8	
	Tolerance Limit (°C)	±2.0	

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

Cha An

Mr Chan Siu Ming, Vico Manager - Inorganics

Page 2 of 4

WORK ORDER:	HK2152511			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 28-Dec-2021 ACTION-UNITED ENVIRONMEN	TAL SERVICES & CONSULTING		(, , /
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	[YSI]/ [Professional DSS]			
Serial No./ Equipment No.:	[20J101862/15H103928]/ [EC	2W018]		
Date of Calibration:	23-December-2021	Date of Next Calibration:	23-March-2022	

PARAMETERS:

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)			
0	0.53				
4	4.07	+1.8			
40	40.28	+0.7			
80	83.97	+5.0			
400	410.28	+2.6			
800	795.66	-0.5			
	Tolerance Limit (%)	±10.0			

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.03	
10	9.98	-0.2
20	20.08	+0.4
30	30.75	+2.5
	Tolerance Limit (%)	±10.0

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

Ma Ain

Mr Chan Siu Ming, Vico Manager - Inorganics

WORK ORDER:	HK2152511		ALS			
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 28-Dec-2021 ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING					
Equipment Type: Brand Name/ Model No.:	Multifunctional Meter [YSI]/ [Professional DSS]					
Serial No./ Equipment No.:	[20J101862/15H103928]/ [EQW018]					
Date of Calibration:	23-December-2021	Date of Next Calibration:	23-March-2022			
PARAMETERS:						
pH Value	Method Ref: APHA (21st edition),	, 4500H:B				
	Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)			
	4.0	3.75	-0.25			
	7.0	7.30	+0.30			
	10.0	10.22	+0.22			

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

Tolerance Limit (pH unit)

Ma Alin

±0.20

Mr Chan Siu Ming, Vico Manager - Inorganics



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: CLIENT:	MR BEN TAM ACTION-UNITED ENVIRONMENTAL SERVICES & CONSULTING	WORK ORDER:	HK2200373
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T.	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 04-Jan-2022 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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WORK ORDER:	HK2200373			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 11-Jan-2022 ACTION-UNITED ENVIRONMEN	TAL SERVICES & CONSULTING		
Equipment Type:	Multifunctional Meter			
Brand Name/ Model No.:	[YSI]/ [Professional DSS]			
Serial No./ Equipment No.:	[20J101862/15H103928]/[EC	QW018]		
Date of Calibration:	10-January-2022	Date of Next Calibration:	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 - Inorganica



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

L001934



Appendix F

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

Event and Action Plan for air quality

E	Action			
Event	ET	IEC	ER	Contractor
Action level exceedance for one sample	 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	 I. Identify source; Inform IEC and ER; Advise the ER on the effectiveness of the proposed remedial measures; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IEC and Contractor on remedial actions required; If exceedance continues, arrange meeting with IEC and ER; 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	 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 	 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. 	 Confirm receipt of notification of failure in writing; Notify Contractor; In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; Ensure remedial measures properly implemented; 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. 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; 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	Action				
Event	ET	IEC	ER	Contractor	
Action Level Exceedance	 Notify IEC, ER and Contractor; Carry out investigation; Report the results of investigation to the IEC, ER and Contractor; Discuss with the Contractor and formulate remedial measures; Increase monitoring frequency to check mitigation effectiveness 	3. Supervise the implementation of	failure in writing;2. Notify Contractor;3. Require Contractor to propose remedial measures for the analyzed	 Submit noise mitigation proposals to IEC and ER; Implement noise mitigation proposals 	
Limit Level Exceedance	 Identify source; Inform IEC, ER, EPD and Contractor; Repeat measurements to confirm findings; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IEC, ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; If exceedance stops, cease additional monitoring. 	actions; 2. Review Contractors remedial actions whenever necessary to assure their	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analyzed noise problem; Ensure remedial measures properly 	 Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within 3 working days of notification; Implement the agreed proposals; Resubmit proposals if problem still not under control; 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 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. 	 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. 	 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	 Inform IEC, contractor and ER; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with IEC, ER and Contractor; Ensure mitigation measures are implemented; and 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. 	 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



			Air Quality	Monitoring	
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Tue	1-Feb-22				
Wed	2-Feb-22				
Thu	3-Feb-22				
Fri	4-Feb-22			√	
Sat	5-Feb-22		√		✓
Sun	6-Feb-22				
Mon	7-Feb-22				✓
Tue	8-Feb-22				
Wed	9-Feb-22			√	✓
Thu	10-Feb-22	✓	√		
Fri	11-Feb-22				✓
Sat	12-Feb-22				
Sun	13-Feb-22				
Mon	14-Feb-22				✓
Tue	15-Feb-22			✓	
Wed	16-Feb-22	✓	\checkmark		✓
Thu	17-Feb-22				
Fri	18-Feb-22				✓
Sat	19-Feb-22				
Sun	20-Feb-22				
Mon	21-Feb-22			✓	✓
Tue	22-Feb-22	✓	✓		
Wed	23-Feb-22				✓
Thu	24-Feb-22				
Fri	25-Feb-22				✓
Sat	26-Feb-22			✓	
Sun	27-Feb-22				
Mon	28-Feb-22	✓	✓		✓

Impact Monitoring Schedule of Air Quality, Noise and Water Quality – February 2021

Remark: There will be no construction activity during Chinese New Year on 1 to 3 Feb 2022.

✓	Monitoring Day
	Sunday or Public Holiday



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

	Dete		Air Quality	y Monitoring	Western Orea Piter
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Tue	1-Mar-22				
Wed	2-Mar-22				\checkmark
Thu	3-Mar-22				
Fri	4-Mar-22			✓	\checkmark
Sat	5-Mar-22		✓		
Sun	6-Mar-22				
Mon	7-Mar-22				
Tue	8-Mar-22				✓
Wed	9-Mar-22				
Thu	10-Mar-22			✓	\checkmark
Fri	11-Mar-22	✓	√		
Sat	12-Mar-22				\checkmark
Sun	13-Mar-22				
Mon	14-Mar-22				
Tue	15-Mar-22				\checkmark
Wed	16-Mar-22			✓	
Thu	17-Mar-22	✓	\checkmark		\checkmark
Fri	18-Mar-22				
Sat	19-Mar-22				\checkmark
Sun	20-Mar-22				
Mon	21-Mar-22				
Tue	22-Mar-22			✓	\checkmark
Wed	23-Mar-22	✓	√		
Thu	24-Mar-22				\checkmark
Fri	25-Mar-22				
Sat	26-Mar-22				\checkmark
Sun	27-Mar-22				
Mon	28-Mar-22			✓	
Tue	29-Mar-22	✓	✓		\checkmark
Wed	30-Mar-22				
Thu	31-Mar-22				\checkmark

✓	Monitoring Day
	Sunday or Public Holiday



Appendix H

Monitoring Data

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



Air Quality (24-hour TSP)



						24-Н	our TSF	Monitor	ring Data f	or ASR-1					
DATE	SAMPLE NUMBER		APSED TI	ME	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER V (g	c)	DUST WEIGHT COLLECTED	24-Hr TSP $(\mu g/m^3)$
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³)	INITIAL	FINAL	(g)	
4-Feb-22	27888	25126.71	25150.71	1440.00	40	41	40.5	14.4	1021.4	1.32	1899	2.6891	2.7266	0.0375	20
9-Feb-22	27893	25150.71	25174.71	1440.00	40	40	40.0	16.1	1019.1	1.30	1872	2.7051	2.7494	0.0443	24
15-Feb-22	27943	25174.71	25198.71	1440.00	36	36	36.0	17.6	1017.8	1.93	2783	2.7724	2.9147	0.1423	51
21-Feb-22	27972	25198.71	25222.71	1440.00	36	36	36.0	8.8	1022.1	1.97	2831	2.7414	2.7702	0.0288	10
26-Feb-22	27979	25222.71	25246.71	1440.00	40	40	40.0	16.8	1021.9	2.15	3095	2.7450	2.9350	0.1900	61

						24-H	our TSI	P Monito	ring Data f	or ASR-2					
	SAMPLE NUMBER		APSED TI	ME	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER V (g	r)	DUST WEIGHT COLLECTED	24-Hr TSP $(\mu g/m^3)$
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	(std m ³)	INITIAL	FINAL	(g)	
4-Feb-22	27892	22541.36	22565.36	1440.00	39	40	39.5	14.4	1021.4	1.28	1849	2.6921	2.7164	0.0243	13
9-Feb-22	27894	22565.36	22589.36	1440.00	39	40	39.5	16.1	1019.1	1.28	1843	2.7020	2.7312	0.0292	16
15-Feb-22	27942	22589.36	22613.36	1440.00	32	32	32.0	17.6	1017.8	1.76	2535	2.7743	2.8293	0.0550	22
21-Feb-22	27973	22613.36	22637.36	1440.00	30	30	30.0	8.8	1022.1	1.69	2430	2.7450	2.7665	0.0215	9
26-Feb-22	27978	22637.36	22661.36	1440.00	30	32	31.0	16.8	1021.9	1.72	2471	2.7514	2.8288	0.0774	31

						24-Но	our TSP	Monitor	ing Data fo	or ASR-3a					
DATE	SAMPLE NUMBER		APSED TI	ME	CHAI	RT REA	DING	AVG TEMP	AVG AIR PRESS		AIR VOLUME	FILTER V (g	c)	DUST WEIGHT COLLECTED	24-Hr TSP $(\mu g/m^3)$
		INITIAL	FINAL	(min)	MIN	MAX	AVG	(°C)	(hPa)	(m ³ /min)	$(std m^3)$	INITIAL	FINAL	(g)	
4-Feb-22	27889	16309.11	16333.11	1440.00	42	43	42.5	14.4	1021.4	1.35	1948	2.6999	2.7184	0.0185	9
9-Feb-22	27895	16333.11	16357.11	1440.00	42	43	42.5	16.1	1019.1	1.35	1941	2.7037	2.7365	0.0328	17
15-Feb-22	27941	16357.11	16381.11	1440.00	32	32	32.0	17.6	1017.8	1.74	2510	2.7617	2.7929	0.0312	12
21-Feb-22	27971	16381.11	16405.11	1440.00	30	30	30.0	8.8	1022.1	1.66	2395	2.7545	2.7748	0.0203	8
26-Feb-22	27979	16405.11	16429.11	1440.00	28	30	29.0	16.8	1021.9	1.59	2284	2.7639	2.7967	0.0328	14



Noise



								Nois	e Measu	rement	Results ((dB (A))	of CN-1								
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 min	Façade Correction (*)
10-Feb-22	13:24	62.1	65.9	47.4	61.5	65.8	50.6	57.8	62.6	47.9	59.6	62.4	52.3	58.4	62.6	48.8	60.5	64.1	48.5	60	63
16-Feb-22	9:25	61.7	65.7	54.2	61.3	63.5	55.4	59.1	62.8	50.2	57.7	61.0	50.2	55.2	58.1	50.0	61.3	58.2	49.3	60	63
22-Feb-22	13:39	68.1	58.7	50.1	53.3	54.6	50.8	53.4	54.7	51.6	54.6	57.6	50.6	52.6	54.6	50.4	53.3	54.3	50.5	61	64
28-Feb-22	13:01	61.1	65.2	50.7	62	65.8	50.2	59.9	62.4	52.1	57	62.6	51.7	58.2	62.2	51	60.2	63.8	50.7	60	63

(*) 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-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 min	Façade Correction (*)
10-Feb-22	13:58	56.8	58.3	55.1	63.1	65.7	57.2	59.5	62.5	56.6	59.7	64.2	54.9	60	62.7	55.8	63.6	67.5	58.8	61	64
16-Feb-22	10:04	56.4	61.4	44.2	59.7	63.3	46.7	59.9	63.0	40.5	59.7	62.8	45.3	59.8	63.1	43.6	58.4	62.5	41.4	59	62
22-Feb-22	14:13	53.8	54.8	50.9	53.2	54.7	50.5	54.3	57.7	50.7	53.2	54.1	51.2	53.1	54.6	50.8	53.6	54.6	50.7	54	57
28-Feb-22	13:34	42.6	499	46	49.8	51.7	46.2	53.7	59.3	45.5	62	68.1	56.6	47.9	51.9	46.6	48.3	53	45.5	55	58

(*) 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-3	5							
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 min	Façade Correction (*)
10-Feb-22	14:36	52.6	56.6	47.2	54.9	57.1	48.3	54.6	56.8	57	53	55	50.6	59.1	65.1	48.7	62.9	65.9	48.4	58	61
16-Feb-22	10:42	62.8	64	61	60.9	62	59.5	61.8	63	60	62.6	64.5	60	63.7	65.5	61.5	61.9	62.5	60.5	62	65
22-Feb-22	14:48	51.5	55.8	44.9	58.1	53.6	44.6	46.6	48.8	44.3	45.5	46.6	44.4	45.7	46.6	44.5	59.9	58.7	44.7	55	58
28-Feb-22	14:08	65.9	63.3	45.3	53.6	48.6	45.1	50.6	55.6	44.9	65.6	63.1	45.2	53.7	48.8	45.1	50.5	55.5	44.9	61	64

(*) 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	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 _{30min}
10-Feb-22	15:11	55.6	59.6	47.8	60.2	61.3	47.7	60.6	61.7	48.1	59.7	60.9	48	60.8	61.6	47.9	59.9	60.7	47.6	60
16-Feb-22	11:27	56.8	58.5	54.3	56.4	58.2	53.6	56.5	58.4	53.9	56.5	58.3	53.5	56.5	58.4	53.9	57.9	60	51.3	57
22-Feb-22	15:22	53.3	54.4	50.8	68.5	58.8	50.6	53.4	54.7	51.6	54.7	57.5	50.7	52.4	54.4	50.5	53.3	54.3	50.6	61
28-Feb-22	14:46	59.2	61.1	55	60.3	61.6	55.9	58.8	60.7	55.8	61.4	60.2	54.7	56.6	57.1	54.6	58.1	57.4	54.5	59



Water Quality

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2022 \ 43rd \ Month \ (Feb \ 2022) \ R0621v2. doc \ R0621v2. \ R0621v$



Monthly Environmental Monitoring & Audit Report (No.43) – February 2022

Water Quality Impact Monitoring Result for M1

Date	4-Feb-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	0.13	15 15	15.0	<0.1 <0.1	<0.1	8.99 8.96	8.98	95.4 95.1	95.3	0.22 0.23	0.2	7.18 7.18	7.2	0.07 0.07	0.07	3 2	2.5

Date	7-Feb-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()	mg/L)
M1	0.20	0.12	15.8	15 0	< 0.1	<0.1	9.1	9.09	96.3	96.2	1.26	1.2	7.47	75	0.07	0.07	<2	~2
INI I	9:30	0.15	15.8	13.8	< 0.1	<0.1	9.08	9.09	96.1	90.2	1.27	1.5	7.47	7.5	0.07	0.07	<2	<2

Date	9-Feb-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)
M1	11:00	0.14	16.3 16.3	16.3	<0.1 <0.1	<0.1	9.01 9	9.01	96.8 96.7	96.8	3.2 3.23	3.2	7.45 7.45	7.5	0.07	0.07	<2 <2	<2

Date	11-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	ng/L)
M1	0.45	0.12	17	17.0	< 0.1	-0.1	8.83	0.02	96.7	067	1.27	1.2	7.20	7.2	0.03	0.02	<2	~2
M1	9:45	0.15	17	17.0	< 0.1	<0.1	8.82	8.83	96.6	96.7	1.28	1.5	7.20	1.2	0.03	0.03	<2	<2

Date	14-Feb-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	ng/L)
M1	9:30	0.13	15.6 15.6	15.6	<0.1 <0.1	<0.1	8.68 8.66	8.67	94.8 94.5	94.7	0.5 0.48	0.5	7.28 7.28	7.3	0.04 0.04	0.04	<2 <2	<2

Date	16-Feb-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(r	ng/L)
M1	11:10	0.13	17.5 17.5	17.5	<0.1 <0.1	<0.1	8.84 8.76	8.80	98.3 97.4	97.9	0.74 0.82	0.8	7.56 7.56	7.6	0.03	0.03	<2 <2	<2

Date	18-Feb-22																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	10:20	0.12	16.8	16.9	< 0.1	<0.1	8.84	0 02	95.7	95.6	0.26	0.2	7.35	74	0.03	0.03	<2	~2
IVI I	10:20	0.15	16.8	16.8	< 0.1	<0.1	8.82	0.05	95.5	95.0	0.27	0.5	7.35	7.4	0.03	0.05	<2	<2



Monthly Environmental Monitoring & Audit Report (No.43) –February 2022

Date	21-Feb-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	0.20	0.15	10.8	10.9	< 0.1	<0.1	7.49	7.48	72.2	70.1	6.67	67	6.96	7.0	0.03	0.02	8	75
IVI 1	9:30	0.15	10.8	10.8	< 0.1	<0.1	7.46	7.48	71.9	12.1	6.69	6./	6.96	7.0	0.03	0.03	7	1.5

Date	23-Feb-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	10:40	0.14	12.7	12.7	< 0.1	<0.1	9.99	9.99	94.0	94.0	2.1	2.1	7.13	71	0.05	0.05	3	3.0
101 1	10.40	0.14	12.7	12.7	< 0.1	<0.1	9.98	7.77	94.0	94.0	2.11	2.1	7.13	/.1	0.05	0.05	3	5.0

Date	25-Feb-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)
N/1	0.20	0.12	13.7	127	< 0.1	-0.1	8.82	0.02	87.7	077	4.9	4.0	8.38	0.4	0.06	0.00	2	2.0
M1	9:30	0.15	13.7	13.7	< 0.1	<0.1	8.83	8.83	87.7	87.7	4.85	4.9	8.38	8.4	0.06	0.06	2	2.0

Date	28-Feb-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	9:30	0.12	17.6	176	< 0.1	<0.1	7.21	7 17	77.5	76.9	6.69	6.6	8.10	0.1	0.06	0.06	<2	~2
M1	9:50	0.15	17.6	17.0	< 0.1	<0.1	7.12	/.1/	76.3	/0.9	6.5	0.0	8.10	0.1	0.06	0.06	<2	<2



Monthly Environmental Monitoring & Audit Report (No.43) – February 2022

Water Quality Impact Monitoring Result for M2

Date	4-Feb-22									
Location	Time	Depth (m)	Temp (oC)	Flow Velocity (m/s)	DO (mg/L)	DO (%)	Turbidity (NTU)	pН	Salinity	SS(mg/L)
M2	10:00	0.00								

Date	7-Feb-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	ng/L)
M2	10:05	0.00																

Date	9-Feb-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(r	ng/L)
M2	12:00	0.00																

Date	11-Feb-22																	
Location	Time	Depth (m)	Temp ((oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	ng/L)
M2	10:40	0.00				-												

Date	14-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidit	ty (NTU)	p]	H	Sali	nity	SS(r	ng/L)
M2	10:00	0.00																

Date	16-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	Н	Sali	nity	SS(1	mg/L)
M2	11:45	0.00																

Date	18-Feb-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(m	ng/L)
M2	11:15	0.00																



Monthly Environmental Monitoring & Audit Report (No.43) –February 2022

Date	21-Feb-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)
M2	10:25	0.13	11.8 11.8	11.8	0.1	0.1	10.04 9.99	10.02	92.7 92.1	92.4	25.6 25.9	25.8	7.81 7.81	7.8	0.09 0.09	0.09	28 29	28.5

Date	23-Feb-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	11:35	0.12	13.6	12.6	0.1	0.1	8.54	8.49	79.4	79.0	27.8	28.2	6.91	6.9	0.04	0.04	19	24.0
IVI2	11.55	0.15	13.6	15.0	0.1	0.1	8.44	0.49	78.5	79.0	28.5	20.2	6.91	0.9	0.04	0.04	29	24.0

Date	25-Feb-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	ng/L)
MO	10.00	0.10	14.8	14.0	< 0.1	<0.1	8.63	9 60	86.8	07 /	9.72	96	8.30	02	0.07	0.07	11	115
M2	10:00	0.10	14.8	14.8	< 0.1	<0.1	8.74	8.69	87.9	87.4	7.52	8.0	8.30	8.3	0.07	0.07	12	11.5

Date	28-Feb-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	10:05	0.00																



Monthly Environmental Monitoring & Audit Report (No.43) – February 2022

Water Quality Impact Monitoring Result for M3

Date	4-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M3	10.10	2.45	15.8	15 0	< 0.1	<0.1	8.9	8 00	94.4	94.4	0.17	0.2	7.37	7.4	0.02	0.02	3	2.0
IVI 5	10:10	2.45	15.8	13.8	< 0.1	<0.1	8.89	8.90	94.3	94.4	0.18	0.2	7.37	7.4	0.02	0.02	3	3.0

Date	7-Feb-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()	mg/L)
M2	10.15	2.45	16.1	16 1	< 0.1	<0.1	8.93	8.92	94.7	94.5	0.86	0.0	7.49	75	0.02	0.02	3	2.0
M3	10:15	2.45	16.1	16.1	< 0.1	<0.1	8.9	8.92	94.3	94.5	0.89	0.9	7.49	1.5	0.02	0.02	3	3.0

Date	9-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M3	12.15	2.45	18	19.0	< 0.1	<0.1	8.81	8.81	95.3	05.3	1.42	1.4	7.51	75	0.02	0.02	2	2.0
IVI 5	12:15	2.43	18	18.0	< 0.1	<0.1	8.8	0.01	95.2	95.5	1.43	1.4	7.51	1.5	0.02	0.02	2	2.0

Date	11-Feb-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	ng/L)
M2	10.55	2.45	17.4	174	< 0.1	-0.1	8.42	9.40	93.1	02.0	3.05	2.1	7.18	7.0	0.02	0.02	<2	Ç.
M3	10:55	2.45	17.4	17.4	< 0.1	<0.1	8.37	8.40	92.6	92.9	3.08	3.1	7.18	1.2	0.02	0.02	<2	<2

Date	14-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	р	H	Sali	nity	SS(1	mg/L)
M3	10:10	2.45	15.9 15.9	15.9	<0.1	<0.1	8.61 8.59	8.60	93.0 92.7	92.9	1.65 1.66	1.7	7.27 7.27	7.3	0.01 0.01	0.01	<2 <2	<2

Date	16-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	ng/L)
M3	11:55	2.45	17.8 17.8	17.8	<0.1 <0.1	<0.1	8.52 8.46	8.49	95.0 94.4	94.7	4.59 4.6	4.6	7.06 7.06	7.1	0.01 0.01	0.01	<2 <2	<2

Date	18-Feb-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)
M3	11:25	2.45	17 17	17.0	<0.1 <0.1	<0.1	8.55 8.54	8.55	92.7 92.6	92.7	2.96 2.94	3.0	7.35 7.35	7.4	0.02 0.02	0.02	<2 <2	<2



Monthly Environmental Monitoring & Audit Report (No.43) –February 2022

Date	21-Feb-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)
M3	10.25	2.45	11.3	11.2	< 0.1	<0.1	8.64	9 62	93.0	92.9	0.64	0.6	7.46	75	0.01	0.01	<2	-2
MI3	10:35	2.43	11.3	11.5	< 0.1	<0.1	8.62	8.63	92.7	92.9	0.65	0.0	7.46	1.5	0.01	0.01	<2	<2

Date	23-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	H	Sali	nity	SS(1	mg/L)
M3	11:45	2.45	13.1	12.1	0.1	<0.1	9.6	9.54	90.1	89.5	3.01	3.0	7.12	7 1	0.01	0.01	3	2.5
INI S	11.45	2.45	13.1	15.1	0.1	<0.1	9.47	9.34	88.8	09.5	3.04	5.0	7.12	/.1	0.01	0.01	4	5.5

Date	25-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)		elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	ng/L)
M2	10.15	2.45	13.9	12.0	< 0.1	-0.1	7.67	7 02	76.5	79.0	3.99	4.1	8.51	0.5	0.02	0.02	<2	2
M3	10:15	2.45	13.9	15.9	< 0.1	<0.1	7.98	7.83	79.5	78.0	4.18	4.1	8.51	8.5	0.02	0.02	<2	<2

Date	28-Feb-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	ng/L)
M2	10.15	2.45	18	10.0	< 0.1	-0.1	7.69	7 (1	82.4	015	2.26	25	8.21	0.2	0.02	0.02	<2	2
M3	10:15	2.45	18	18.0	< 0.1	<0.1	7.53	7.61	80.5	81.5	2.74	2.5	8.21	8.2	0.02	0.02	<2	<2



Monthly Environmental Monitoring & Audit Report (No.43) – February 2022

Water Quality Impact Monitoring Result for M4

Date	4-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Velo	city (m/s)	DO (1	mg/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10:30	0.38	16.1 16.1	16.1	<0.1 <0.1	<0.1	8.92 8.89	8.91	94.6 94.4	94.5	3.9 4.3	4.1	7.07 7.07	7.1	0.05	0.05	2 2	2.0

Date	7-Feb-22																	
Location	Time	Depth (m)	Temp) (0C)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10.25	0.28	16.4	16.4	< 0.1	<0.1	8.9	8 00	94.5	04.4	0.3	0.2	7.24	7.2	0.02	0.02	<2	~2
M4	10:35	0.38	16.4	16.4	< 0.1	<0.1	8.89	8.90	94.3	94.4	0.3	0.3	7.24	1.2	0.02	0.02	<2	<2

Date	9-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Velo	city (m/s)	DO (I	ng/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	mg/L)
M4	11:15	0.37	18.2 18.2	18.2	<0.1 <0.1	<0.1	8.61 8.59	8.60	92.9 92.6	92.8	4.0 4.1	4.0	7.07 7.07	7.1	0.05 0.05	0.05	3 2	2.5

Date	11-Feb-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Velo	city (m/s)	DO (1	mg/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	mg/L)
M4	11:15	0.38	17.2 17.2	17.2	<0.1 <0.1	<0.1	8.2 8.12	8.16	89.7 88.9	89.3	0.9 1.0	0.9	6.88 6.88	6.9	0.03 0.03	0.03	2 2	2.0

Date	14-Feb-22																	
Location	Time	Depth (m)	Temp	• (•C)	Flow Velo	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	ng/L)
M4	10:30	0.38	16.1 16.1	16.1	<0.1 <0.1	<0.1	8.57 8.56	8.57	93.5 93.4	93.5	0.6 0.6	0.6	6.98 6.98	7.0	0.02 0.02	0.02	<2 <2	<2

16-Feb-22																	
Time	Depth (m)	Temp	• (oC)	Flow Veloc	city (m/s)	DO (r	ng/L)	DO	(%)		v	pl	H	Sali	nity	SS(1	ng/L)
12:15	0.38	17.6	17.6	<0.1	<0.1	8.4	8.39	93.8	93.7	3.3	3.4	6.82	6.8	0.02	0.02	<2	<2
	Time	Time Depth (m)	TimeDepth (m)Temp17.6	Time Depth (m) Temp (oC) 12:15 0.38 17.6 17.6	Time Depth (m) Temp (oC) Flow Veloc 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (n 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) 12:15 0.38 17.6 17.6 0.1 8.4 8.39	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turb (N 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pl 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Saling 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Salinity 12:15 0.38 17.6 17.6 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Salinity SS(n) 12:15 0.38 17.6 17.6 <0.1



Monthly Environmental Monitoring & Audit Report (No.43) –February 2022

Date	18-Feb-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
N/4	11.40	0.20	17.1	171	< 0.1	-0.1	8.65	9.64	93.9	02.9	1.3	1.2	6.92	6.0	0.03	0.02	2	2.5
M4	11:40	0.39	17.1	1/.1	< 0.1	< 0.1	8.63	8.64	93.6	93.8	1.3	1.5	6.92	6.9	0.03	0.03	3	2.5

Date	21-Feb-22																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Veloo	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	Н	Sali	nity	SS(1	mg/L)
M4	10.50	0.39	11.6	116	< 0.1	<0.1	10.5	10.27	92.1	92.1	4.7	16	7.75	7.8	0.05	0.05	4	4.0
114	10:50	0.39	11.6	11.6	< 0.1	<0.1	10.04	10.27	92.0	92.1	4.5	4.6	7.75	7.8	0.05	0.05	4	4.0

Date	23-Feb-22																	
Location	Time	Depth (m)	Temp	(oC)	Flow Velo	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	mg/L)
M4	12:10	0.41	13.2 13.2	13.2	<0.1 <0.1	<0.1	9.94 9.89	9.92	93.7 93.2	93.5	3.5 3.9	3.7	6.82 6.82	6.8	0.05	0.05	2 3	2.5

Date	25-Feb-22																	
Location	Time	Depth (m)	Temp	• (•C)	Flow Velo	city (m/s)	DO (I	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10:35	0.42	13.8	13.8	<0.1	<0.1	7.9	7.94	79.8	80.1	2.6	2.5	8.20	8.2	0.06	0.06	2	2.0
			13.8		< 0.1		7.97		80.4		2.4		8.20		0.06		2	

28-Feb-22																	
Time	Depth (m)	Temp) (0C)	Flow Velo	city (m/s)	DO (1	mg/L)	DO	(%)		v	p]	H	Sali	nity	SS(1	mg/L)
10:35	0.40	18.2	18.2	<0.1	<0.1	6.47	6.62	70.5	72.2	2.2	2.2	7.93	7.9	0.06	0.06	<2	<2
	Time	Time Depth (m)	Time Depth (m) Temp 10:35 0.40 18.2	TimeDepth (m)Temp (oC)18.2	Time Depth (m) Temp (oC) Flow Veloc 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (n 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turt (N) 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) p 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Sali 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Salinity 10:35 0.40 18.2 18.2 <0.1	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Salinity SS(n) 10:35 0.40 18.2 18.2 <0.1

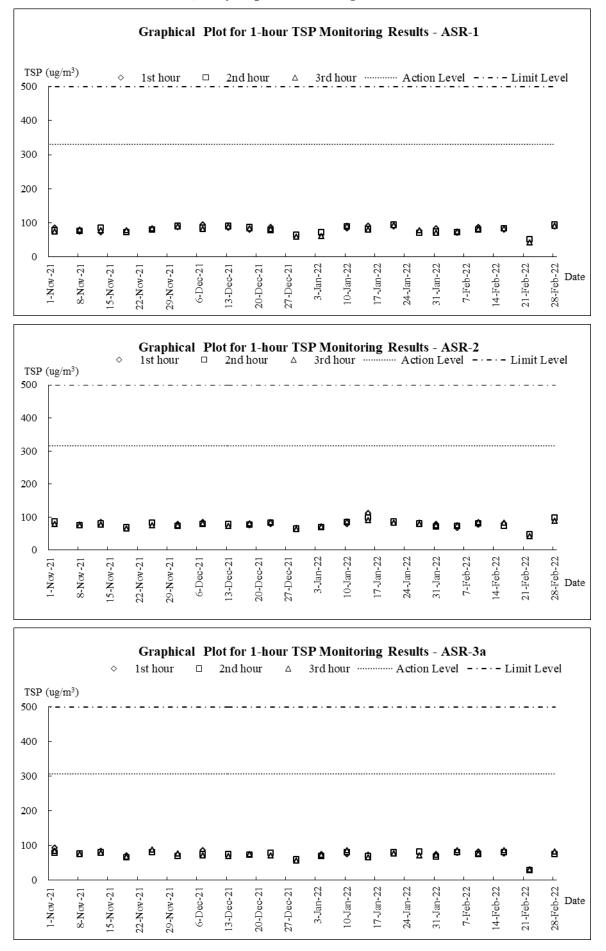


Appendix I

Graphical Plots of Air Quality, Noise and Water Quality



Air Quality Impact Monitoring – 1-hour TSP





Day

21-Feb-22 28-Feb-22

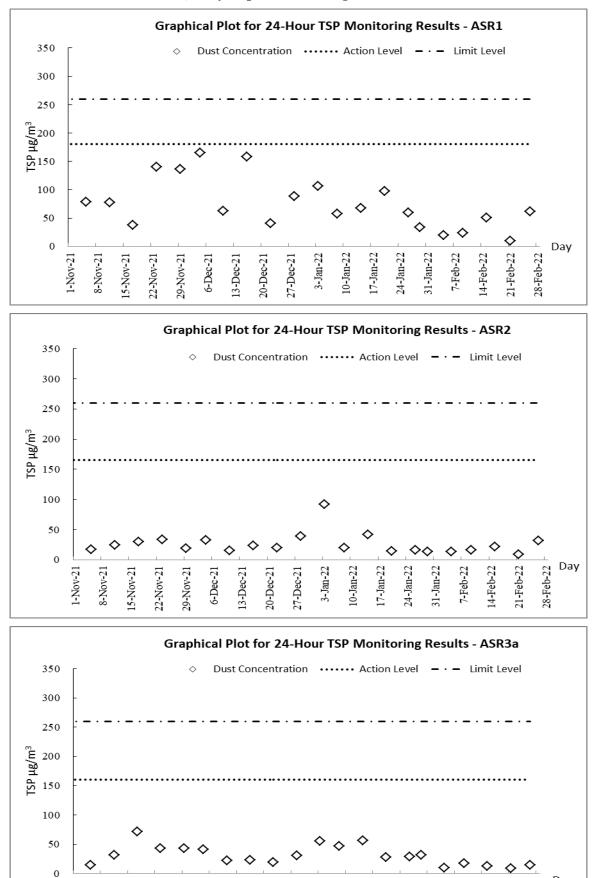
l4-Feb-22

7-Feb-22

31-Jan-22

24-Jan-22

Air Quality Impact Monitoring – 24-hour TSP



20-Dec-21

13-Dec-21

6-Dec-21

29-Nov-21

I-Nov-2]

8-Nov-2

[5-Nov-2]

22-Nov-2

3-Jan-22

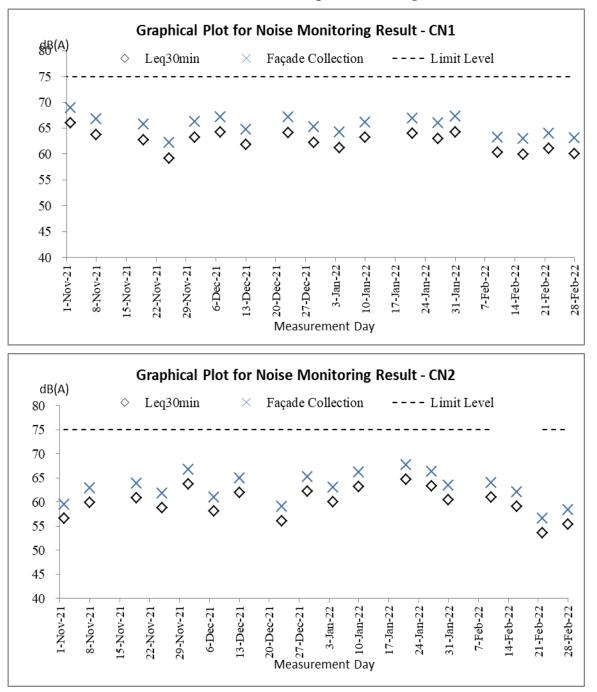
27-Dec-21

[0-Jan-22

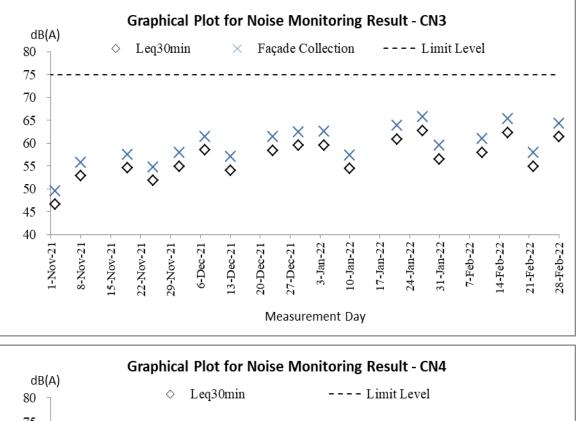
[7-Jan-22

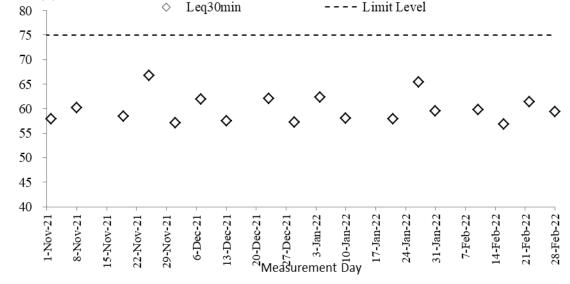


Construction Noise Impact Monitoring



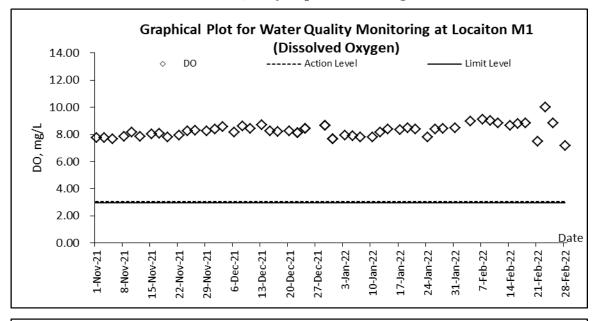


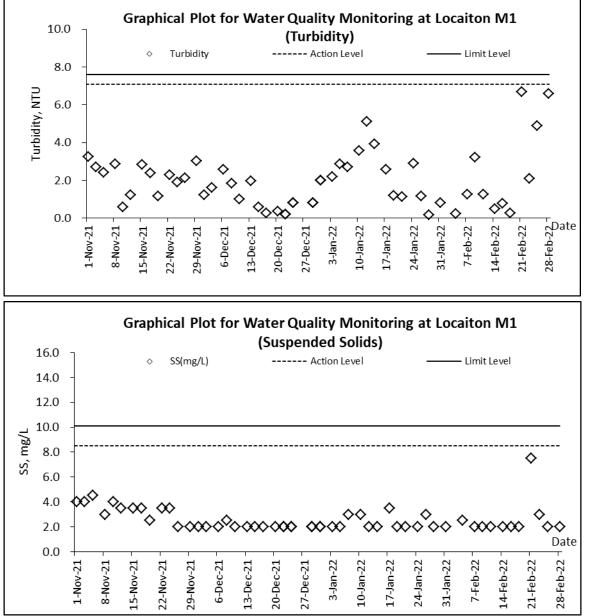




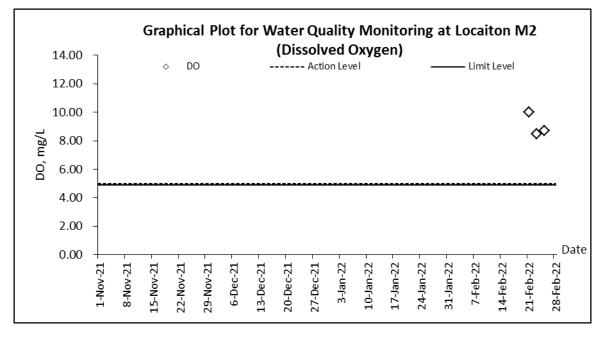


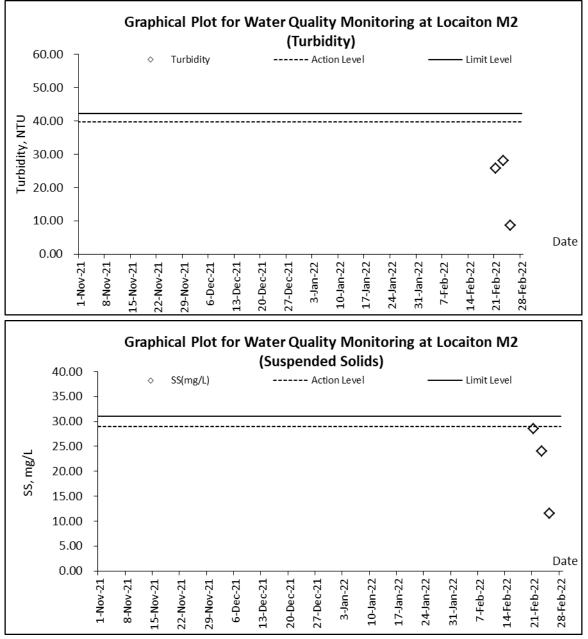
Water Quality Impact Monitoring



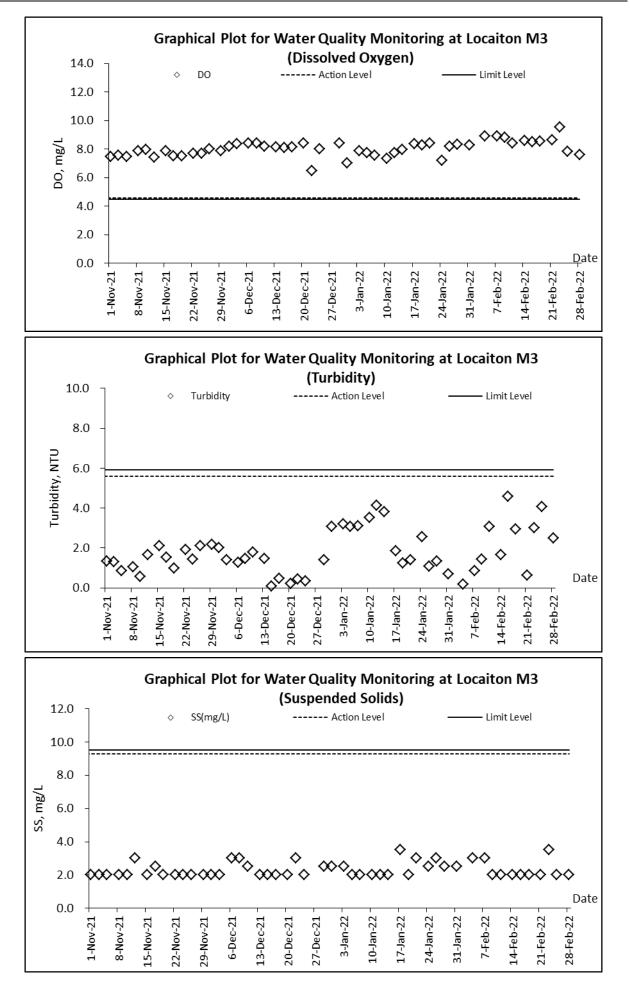




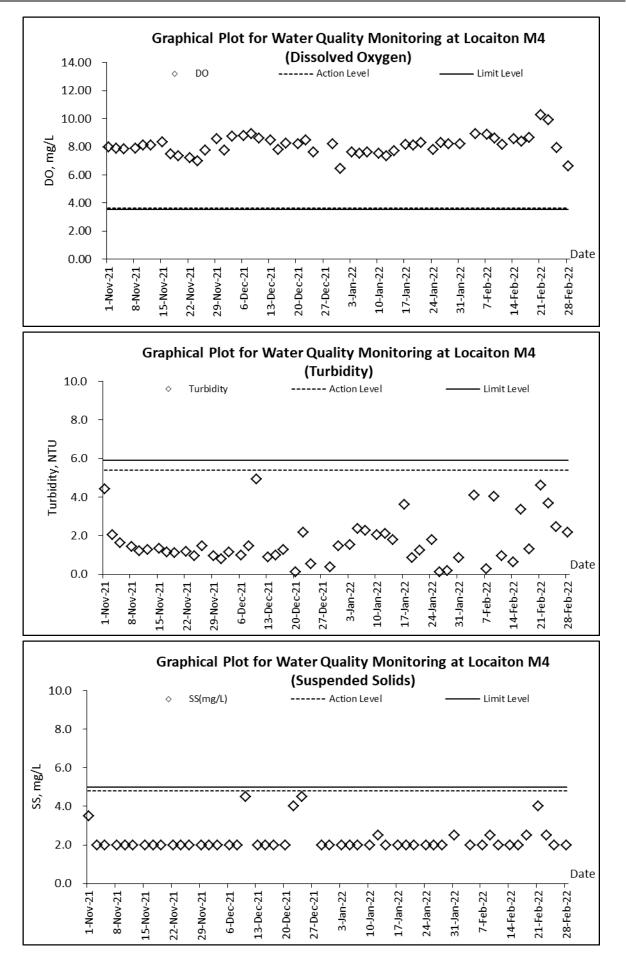














Appendix J

Meteorological Data of the Reporting Month

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2022 \ 43rd \ Month \ (Feb \ 2022) \ R0621v2. doc \ R0621v2. \ R0621v$



				,	Ta Kwu	Ling Statio	n
Date		Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Feb-22	Tue	Mainly cloudy. Bright periods during the day.	0	14.5	7.5	80.2	Е
2-Feb-22	Wed	Moderate to fresh northeasterly winds.	0	14.6	8.9	84.2	Е
3-Feb-22	Thu	Mainly cloudy. Sunny intervals tomorrow.	0.1	11.1	9	78.3	Е
4-Feb-22	Fri	Moderate to fresh easterly winds.	4.7	13.8	10.5	68.5	NE
5-Feb-22	Sat	Moderate to fresh northerly winds	1.5	14.8	9.3	82.7	NE
6-Feb-22	Sun	Mainly cloudy. Sunny intervals tomorrow.	4.5	16.2	13	73.3	NE
7-Feb-22	Mon	Moderate to fresh northeasterly winds.	0	16.0	12.5	82.5	NE
8-Feb-22	Tue	occasionally strong offshore and on high ground at first.	1.1	15.8	8	76.8	NE
9-Feb-22	Wed	Moderate to fresh northerly winds	0	14.6	6	73.8	NE
10-Feb-22	Thu	Rain will be more frequent at times.	0	15.8	6.5	75.0	Е
11-Feb-22	Fri	Sunny periods. Moderate to fresh easterly winds.	10.4	19.8	11.5	74.0	NE
12-Feb-22	Sat	Moderate to fresh easterly winds.	7	15.9	11	74.9	NE
13-Feb-22	Sun	Moderate to fresh northerly winds	0	14.5	9.5	78.7	NE
14-Feb-22	Mon	Rain will be more frequent at times.	8.9	17.6	9.5	69.3	NE
15-Feb-22	Tue	Fresh easterly winds, occasionally strong offshore and on high ground.	6.7	18.6	7.5	72.0	Е
16-Feb-22	Wed	Mainly cloudy. Sunny intervals in the afternoon.	3.9	16.9	10	75.0	Е
17-Feb-22	Thu	Moderate to fresh easterly winds.	0	16.2	12	82.0	NE
18-Feb-22	Fri	Moderate to fresh northerly winds	0.1	16.7	14.5	79.8	NE
19-Feb-22	Sat	Rain will be more frequent at times.	0	15.4	12.5	82.0	NE
20-Feb-22	Sun	Moderate to fresh northerly winds	0	6.7	11.5	93.5	NE
21-Feb-22	Mon	It will be cold. Cloudy to overcast with rain.	0	7.4	9	93.3	NE
22-Feb-22	Tue	Mainly cloudy. Sunny intervals tomorrow.	0	8.4	8	94.7	Е
23-Feb-22	Wed	Moderate to fresh easterly winds.	6.1	11.2	12	82.0	N
24-Feb-22	Thu	Moderate to fresh northerly winds	6.7	12.4	12	64.0	NE
25-Feb-22	Fri	Mainly cloudy. Sunny intervals tomorrow.	8	14.1	8.5	70.3	Е
26-Feb-22	Sat	Moderate to fresh northeasterly winds.	9.6	16.3	8.25	66.9	Е
27-Feb-22	Sun	occasionally strong offshore and on high ground at first.	10.6	16.7	10	66.2	NE
28-Feb-22	Mon	Moderate to fresh northerly winds	9.2	17.2	9.5	68.8	NE



Appendix K

Ecological Survey Report



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 – February 2022

Revision Date of issue	0 28 Feb 2022	
Prepared by	Alan Lam	R
Reviewed by	Hoiki Leung	Harte
Verified by	Mike Leung	A



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1 INTRODUCTION

1.1 <u>BACKGROUND</u>

- 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 <u>OBJECTIVE</u>

- 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.
- 2.1.4 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	\checkmark											
Birds (day)	\checkmark											
Birds (night)				\checkmark								
Herpetofauna				\checkmark								
Dragonflies			\checkmark									
Butterflies			\checkmark									
Aquatic fauna	\checkmark											

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 8th February 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 45 bird individuals from 11 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey. Three species of conservation interests were recorded in this survey: Greater Spotted Eagle (*Clanga clanga*) 烏鵰, Common Kestrel (*Falco tinnunculus*) 紅隼, Chinese Grosbeak (*Eophona migratoria*) 黑尾蠟嘴雀.

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 4 species recorded in the monitoring area.

Dragonfly

There was no odonate individual 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 Slope in monitoring area.





Table 4Result of mammal in survey

Scientific Name					08/02/2022					
	Common Name	Chinese Name	Conservation Status	on Non- wetland		Wetland		ıd		
				UG	WL	MA	ww	WC		
		N/A								

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

Table 5Result of Avifauna in survey

					08	/02/20	22	
Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland		Wetland		
				UG	WL	MA	ww	WC
Clanga clanga	Greater Spotted Eagle	烏鵰	China Red Data Book Status: (Rare);Fellowes et al. (2002): GC;IUCN Red List Status: Vulnerable; Appendix 2 of CITES	1				
Spilopelia chinensis	Spotted Dove	珠頸斑鳩					2	
Falco tinnunculus	Common Kestrel	紅隼	Class 2 Protected Animal of China; Appendix 2 of CITES	1				
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		1			3	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯		2			2	
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1			1	
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯			2			
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯			2		1	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		4				
Motacilla alba	White Wagtail	白鶺鴒						2
Eophona migratoria	Chinese Grosbeak	黑尾蠟嘴雀	Fellowes et al. (2002): LC	20				

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



Table 6Result of reptile in survey

Scientific Name				08/02/2022					
	Common Name	Chinese Name	Conservation Status			Wetland		d	
				UG	WL	MA	ww	WC	
		N/A							

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

Table 7Result of amphibian in survey

Scientific Name			Conservation Status	08/02/2022						
	Common Name			Non- wetland		Wetland		ıd		
				UG	WL	MA	WW	WC		
		N/A								

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

Table 8Result of butterfly in survey

Scientific Name	Common Name		Conservatio n Status	08/02/2022					
				Non- wetland		Wetland		d	
				UG	WL	MA	WW	WC	
Kaniska canace	Blue Admiral	琉璃蛺蝶		1					
Junonia lemonias	Lemon Pansy	蛇眼蛺蝶		1					
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶		3					
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		2					

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

Table 9Result of Odonate in survey

Scientific Name		Chinese Name	Conservation Status	08/02/2022				
	Common Name			Non- wetland		Wetland		
				UG	WL	MA	ww	WC
		N/A						

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



Table 10Result of freshwater communities in survey

Scientific Name		Chinese Name	Conservation Status	08/02/2022				
	Common Name			Non- wetland		Wetland		
				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 February 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.

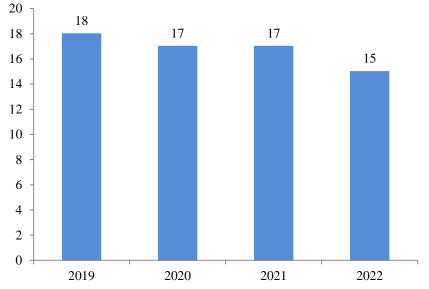


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)

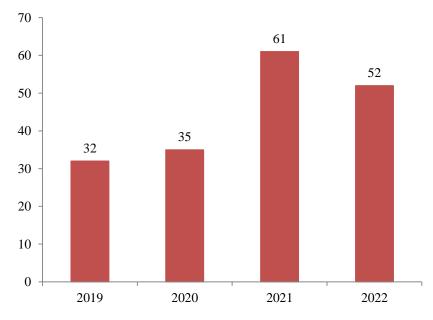
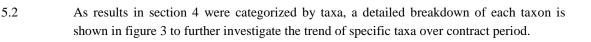


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)





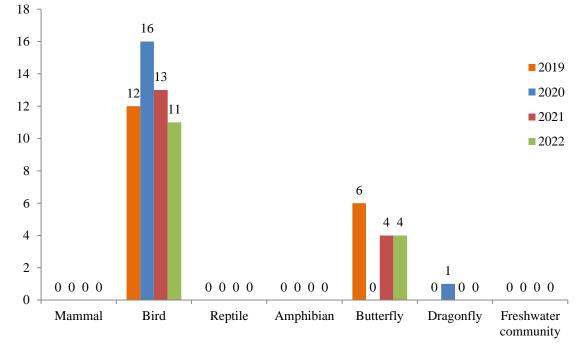


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2022 (Actual quantity annotated at the top of each bar)

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 February over years were compared in Figures 4 and 5.

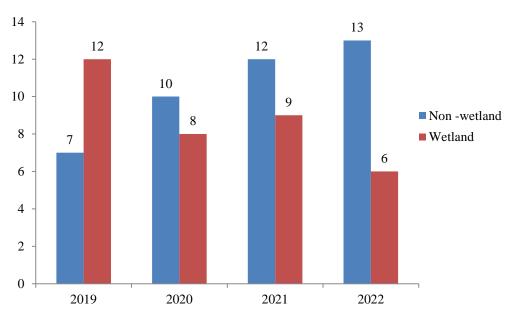


Figure 4: bar chart showing the species richness based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

15



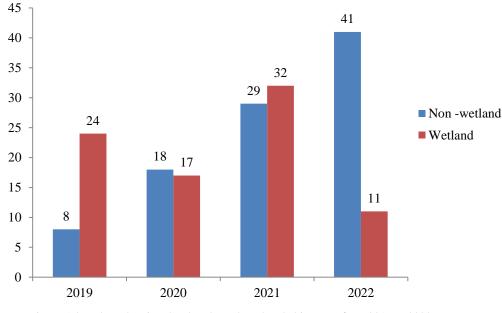


Figure 5: bar chart showing the abundance based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

5.4

After analysing survey results in February 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.



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

1 Man Kam To Boundary Control Point Shenzhen River Station Boundary of Contract 1 Survey Transect for Contract 1 **Fixed Point for** Contract 1



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 – February 2022

Revision	0	
Date of issue	28 Feb 2022	
Prepared by	Alan Lam	来
Reviewed by	Hoiki Leung	Horke
Verified by	Mike Leung	A



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	2019 to 2022				



1 INTRODUCTION

1.1 <u>BACKGROUND</u>

- 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.
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- 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 <u>OBJECTIVE</u>

- 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.
- 2.1.4 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	\checkmark											
Birds (day)	\checkmark											
Birds (night)				\checkmark								
Herpetofauna				\checkmark								
Dragonflies			\checkmark									
Butterflies			\checkmark									
Aquatic fauna	\checkmark											

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 8th February 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 35 bird individuals from 7 species recorded in the monitoring area. No Golden-headed Cisticola was observed during the bird survey.

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 5 butterfly individuals from 3 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



Picture 2 Watercourse in monitoring area.





Table 4Result of mammal in survey

Scientific Name	Common Name		Conservation Status	08/02/2022					
				UG	WL	MA	ww	WC	
N/A									

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

Table 5Result of Avifauna in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	08/02/2022					
				UG	WL	MA	ww	WC	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		8					
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		12					
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		2			2		
Orthotomus sutorius	Common Tailorbird	長尾縫葉鶯		2					
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯				3			
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯					2		
Lonchura punctulata	Scaly-breasted Munia	斑文鳥				4			

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

Table 6Result of reptile in survey

Scientific Name	Common Name		Conservation Status	08/02/2022					
				UG	WL	MA	ww	WC	
N/A									

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



Table 7Result of amphibian in survey

Scientific Name	Common Name	Chinese Name	Conservation Status		08/02/2022					
			~ ~ ~ ~ ~ ~ ~	UG	WL	MA	ww	WC		
		N/A								

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

Table 8Result of butterfly in survey

Scientific Name	Common Name	Chinese Name	Conservatio n Status	08/02/2022					
				UG	WL	MA	WW	WC	
Ariadne ariadne	Angled Castor	波蛺蝶				1			
Pieris canidia	Indian Cabbage White	東方菜粉蝶					2		
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶					2		

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

Table 9Result of Odonate in survey

Scientific Name	Common Name		Conservation Status	08/02/2022					
				UG	WL	MA	ww	WC	
		N/A							

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

Table 10Result of freshwater communities in survey

Scientific Name	Common Name	Chinese Name	Conservatio n Status	08/02/2022					
				UG	WL	MA	ww	WC	
Gambusia affinis	Mosquito fish	食蚊魚						+	
Puntius semifasciolatus	Chinese Barb	五線無鬚鮑						+	

*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.

5.1

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

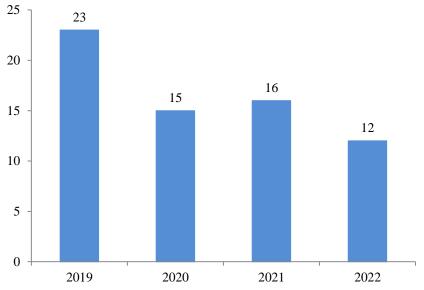


Figure 1: Bar chart showing the total species richness within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)

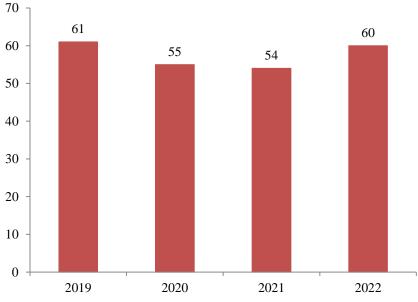
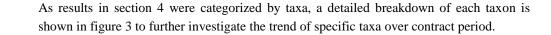


Figure 2: Bar chart showing the total abundance within site boundary from 2019 to 2022 (Actual quantity annotated at the top of each bar)





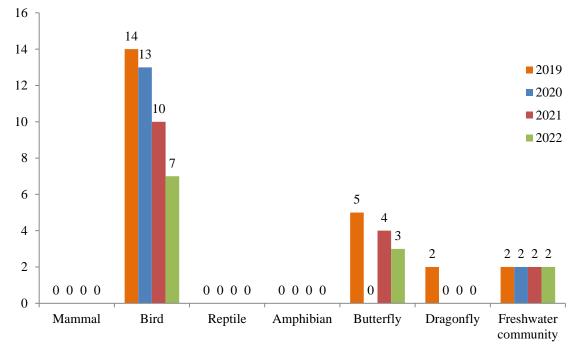


Figure 3: Bar chart showing the species richness within site boundary by taxa from 2019 to 2022 (Actual quantity annotated at the top of each bar)

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 February over years were compared in figures 4 and 5.

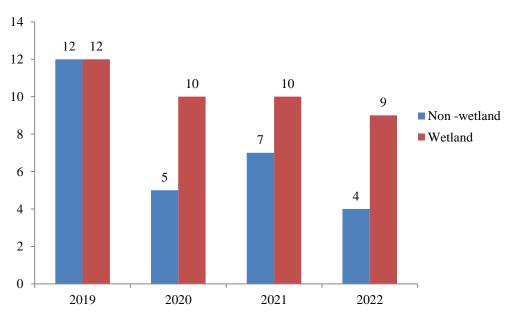


Figure 4: bar chart showing the species richness based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

5.2



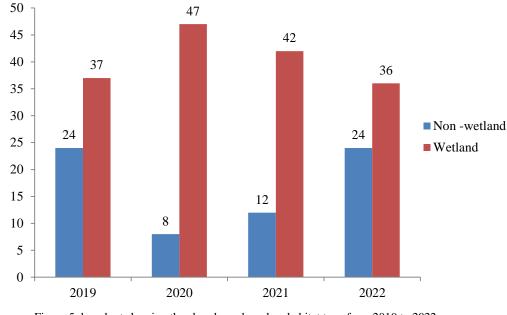


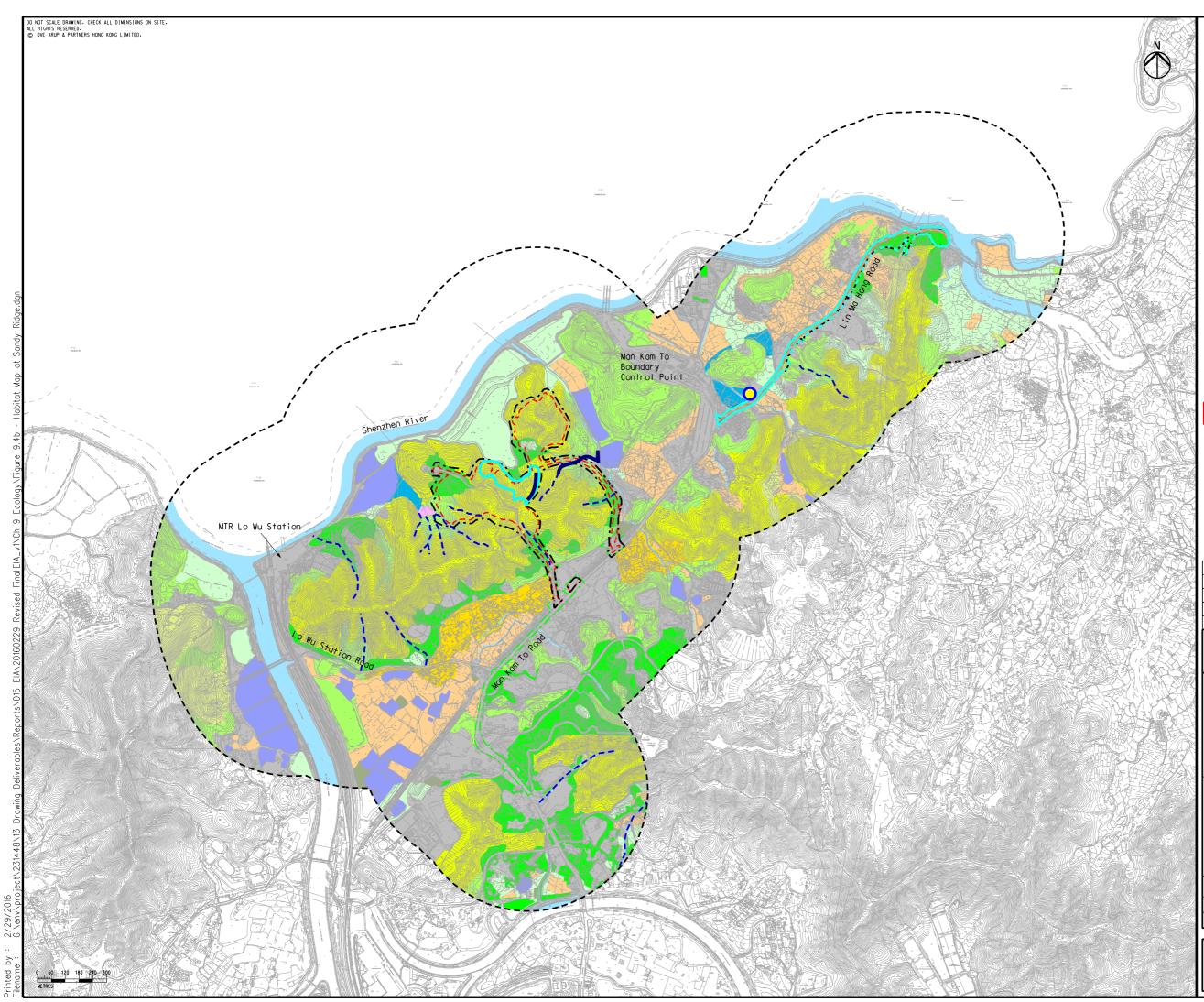
Figure 5: bar chart showing the abundance based on habitat type from 2019 to 2022 (Actual quantity annotated at the top of each bar)

5.4

After analysing survey results in February 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



egend	j
::2	Project Boundary
	Utilities Construction
111	Sandy Ridge Works Area
111	Lin Ma Hang Road Works Area
<u> </u>	500m Assessment Area
	Watercourse
	Seasonal Watercourse
	Pond
	Developed Area
	Agricultural Land
	Marsh
	Wasteland
	Grassland
	Upland Grassland
	Shrubland
	Plantation
	Woodland
	Wet Woodland
	Village Area
	Site boundary of Contract 2
	Survey Transect for Contract 2
0	Fixed Point for Contract 2

G	SEVENTH ISSUE	GL	02/16
F	SIXTH ISSUE	GL	01/16
E	FIFTH ISSUE	GL	12/15
D	FOURTH ISSUE	GL	10/15
Rev	Description	By	Date

ARUP

Contract No. and Title:

Agreement No. CE 1/2013(CE)

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

Drawing tit

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Drawing no. F Drawn	i gur e		4b hecked	Ap	Rev. G			
GL	02/16	E	L	S1	ſ			
Scole AS SH	IOWN	s	Stotus PREL IMINARY					
	COPYRIG	ht re	SERVED					
土木工程拓展署 Civil Engineering and Development Department								



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: <u>17/02/2022 14:00</u> Weather: <u>Fine/ Overcast/ Rain/ Windy</u>

Item	Mitigation Measures	Im	olemei	ntation	Actions/ Remarks		
		Yes	No	N/A	_		
1	Landscape and Visual			-	1		
1.1	Is the construction period become shortened?			\checkmark	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

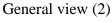
Reminders:

- 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:



General view (1)





General view (3)

General view (4)





Transplanted tree (T-2465)



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: 17/02/2022 15:00 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures	Im	olemei	ntation	Actions/ Remarks
		Yes	No	N/A	
1	Landscape and Visual	1		•	1
1.1	Is the construction period become shortened?			\checkmark	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:



General view (1)

General view (2)



General view (3)

General view (4)



Signature:

		Signature Registration Boar	Date
Recorded by	Registered Landscape Architect	henry the	21 Feb 2022
Checked by	Environmental Team Leader	An An	9 Mar 2022
	Independent Environmental Checker	h	11 Mar 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 Associated 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 N	Iaterials Generated	d Monthly			Actual Quantities	s of C&D Wastes	Generated Monthly	7
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	2.177	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											
Apr											
May											
June											
Sub-total	2.663	0.000	0.700	0.000	1.375	0.588	0.000	0.000	0.000	0.000	0.085
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	2.663	0.000	0.700	0.000	1.375	0.588	0.000	0.000	0.000	0.000	0.085

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) The yearly estimates of the C&D materials should be updated as appropriate taking into account the latest works programme etc.

(5) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.

(6) Broken concrete for recycling into aggregates.

Contract No. CV/2017/02 Particular Specification Appendix H3

Name of Department: CEDD

	A	ctual Quantities	of Inert C&D M	Iaterials Gener	rated Monthl	у	Actual Quantities of 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	158.100	0.000	0.000	0.000	158.1	0.000	0.000	0.000	0.000	0.000	2.280	
MAR												
APRIL												
MAY												
JUN												
Sub Total	559.810	0.000	0.000	0.000	559.810	0.000	0.000	0.000	0.000	0.000	15.460	
JUL												
AUG												
SEP												
OCT												
NOV												
DEC												
Total	559.810	0.000	0.000	0.000	559.810	0.000	0.000	0.000	0.000	0.000	15.460	

Monthly Summary Waste Flow Table for 2022

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



i	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 1

Complaint Log for Contract 2

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



То	Mr. Ho Man To Mr. Elvin Lam	Fax No	By em	ail
Company	Hsin Chong Tsun Yip Joint Venture & Sang Hing Civil Contractors Co., Lid			
сс				
From	Nicola Hon	Date	23 Febr	ruary 2022
Our Ref	TCS00881/18/300/ F0619	No of Pages	7	(Incl. cover sheet)
RE	Site Formation and Associated Infrastru Columbarium, Crematorium and Relate			L
	Investigation Report Complaint of Cons Ref.: EP3/N07/RN/03921-22)	truction Noise	near Sh	a Ling Village (EPD

If you do not receive all pages, or transmission is illegible, please contact the originator on (852) 2959-6059 to re-send. Should this facsimile be sent to the wrong fax number, would receiver please destroy this copy and notify Action-United Environmental Services & Consulting immediately. Thank you.

Dear all,

Enclosed please find the investigation report for the captioned for your follow up action.

Should you have any queries or need further information, please do not hesitate to contact us or the undersigned at **Tel: 2959-6059 or Fax: 2959-6079**.

Yours Faithfully, For and on Behalf of Action-United Environmental Services & Consulting

Nicola Hon Environmental Consultant

Encl.

cc CEDD ARUP (RE of Contract 1) ARUP (RE of Contract 2) Acuity (IEC) EPD Mr. SHUM Ngai Hung, Steven Mr. Steven Tang Mr. Anthony Lau Mr. Jacky Leung Mr. Raymond Lai Chow by e-mail by e-mail by e-mail Fax: 2685 1133

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

Log No.	CV/2016/01 - 03			
Received Date by ET	17 February 2022			
Related Contract under Investigation	CV/2016/10 (Contract 1) and CV/2017/02 (Contract 2)			
Complaint Details	"2022-02-11 早上 8:50 左右 沙嶺村 此處一直有地盤工作,今早 8 點幾我們一家大小都被噪音(類似打樁聲) 嘈醒!! 明明可以好好安排發出嘈音的時間,為何偏偏要選在假日 8 點幾時嘈醒居民?? 請立即找相應部門跟進及即時處理。我們不接受 相同情況繼續發生,持續滋擾沙嶺村居民! 噪音已錄下,請查收附檔!			
Location	Construction site near Sha Ling Village			
Date of Complaint	11 February 2022			
Environmental Aspect	Noise			
Complainant	Undisclosed			
Complaint Route	Received by EPD on 16 Feb 2022 (EPD Ref.: EP3/N07/RN/03921-22)			
Investigation Result	 A public complaint was received from EPD regarding the construction noise near Sha Ling Village. The complainant stated that the construction site near Sha Ling Village generated noise (sound like piling) on public holiday, which affecting the resident nearby. EPD suspected that the concerned construction noise was from the construction site of Sandy Ridge Cemetery and request follow up and investigation. Full description of complaint can refer to "Complaint Details". According to the information provided by the complainant, the date of complaint was 11 Feb 2022, which was not public holiday as mentioned by the complainant. To facilitate the investigation and address complainant's concern, this investigation report covers the concerned period of 10 to 12 Feb 2022. 			
	 As advised by the Contractor of Contract 1, construction of bituminous pavement and concrete pavement were conducted near Sha Ling Village but there were no piling works conducted during the period 10 to 12 Feb 2022. Similarly, there were no piling works conducted under Contract 2 and the active works areas were far to Sha Ling Village. Both Contracts have no valid CNP and no construction works were undertaken under restricted hours. Nevertheless, it is noticed that part of the works area of Contract 1 near Sha Ling Village has been handover to a WSD project for waterworks and sheeting piling work was observed undertaken. (Photo 1) Site activities conducted under Contract 1 near Sha Ling village are illustrated in <i>Figure 1</i> and the areas of handover land are illustrated in <i>Figure 2</i>. Weekly joint site inspections have been carried out by RE, Contractors 			
	and ET for the implementation status of mitigation measures and audit the site practice of Contractors. According to site inspections in			

Investigation Report on Environmental Complaint / Enquires

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

Investigation Report on Environmental Complaint / Enquires

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	February 2022, concrete pavement was conducted near Sha Ling Village and no deficiencies of noise impacts were observed. Recent site photos are shown in <i>Photo 2</i> . Besides, the Contractor has implemented noise mitigation measures / good practices to reduce the noise impact and nuisance to the public as follows:
	a) QPMEs (2 nos. of hydraulic excavator) were adopted on site to reduce the noise levels of plant items;
	b) Adjust the work sequence and time (not carry out the noisy works simultaneously); and
	c) intermittent use of machine and plant
5.	Monitoring programme was executed under the project to closely monitor the environmental parameters and immediate action would be undertaken in case of exceedance. There was two noise monitoring station under Contract 1 and measurements were conducted in accordance with the requirements under the EM&A manual. Having reviewed the relevant noise monitoring results in January and February 2021 to dated, no exceedances were triggered. It is considered that the noise impact arising from the project was within acceptable level. The monitoring data are shown in <i>Annex A</i> .
6.	In our investigation, no piling works were conducted under the Project during the concerned period and noise mitigation measures / good practices were adopted to reduce the noise impact and nuisance to the public. Moreover, there were no valid CNP and Contractors confirmed that no construction works were undertaken under restricted hours. Based on the above conclusion and as sheet piling work was observed undertaken by other Contract near the complaint location, it is considered that the complaint is unlikely valid to the Project.
7.	Nevertheless, The ET would closely inspect the implementation of mitigation measures during regularly site inspection and give advice on enhancement measures, where necessary.

Photo Record



Photo 1

It is noticed that part of the works area of Contractor 1 near Sha Ling Village has been handover to a WSD project for waterworks and sheeting piling work was observed undertaken.



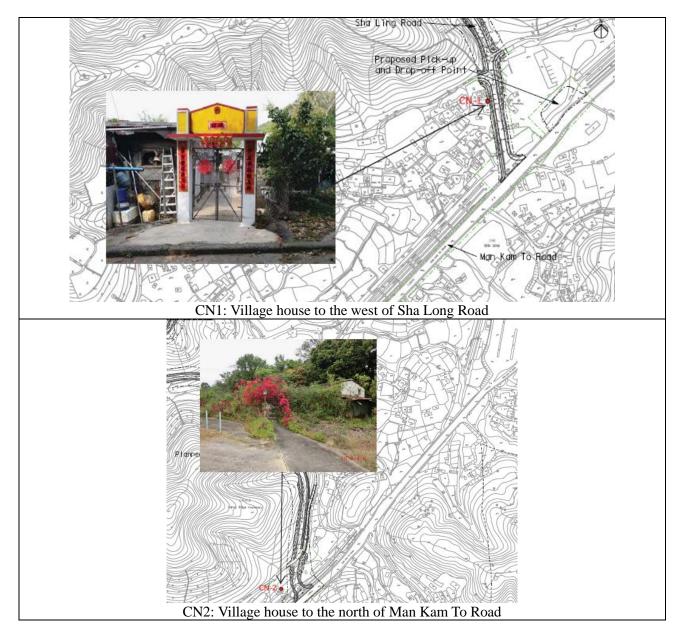


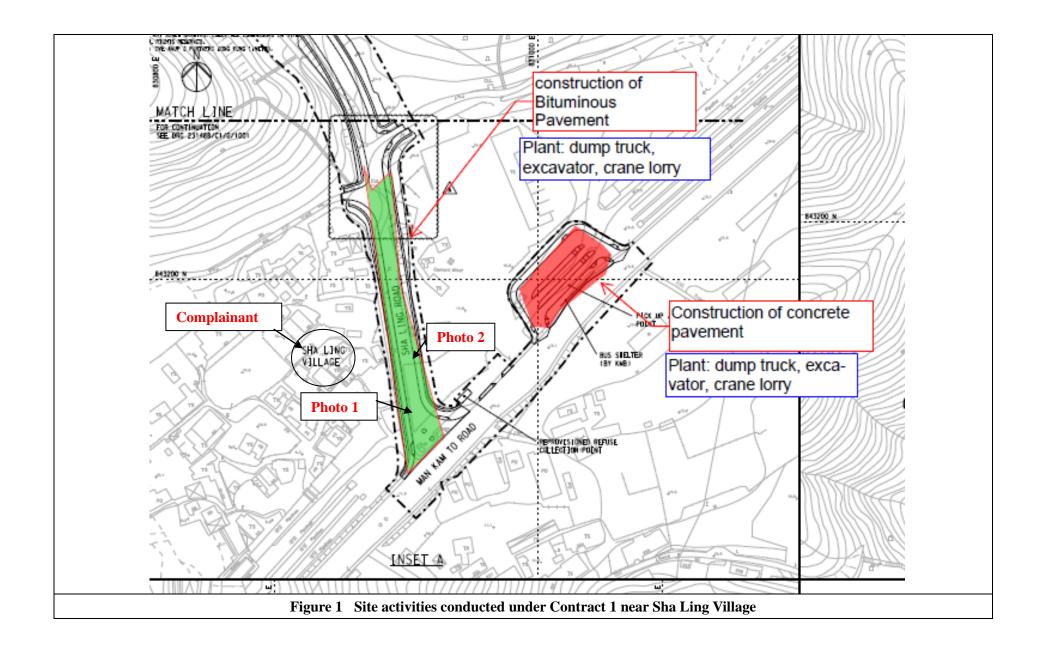
According to site inspections in February 2022, concrete pavement was conducted near Sha Ling Village and no deficiencies of noise impacts were observed.

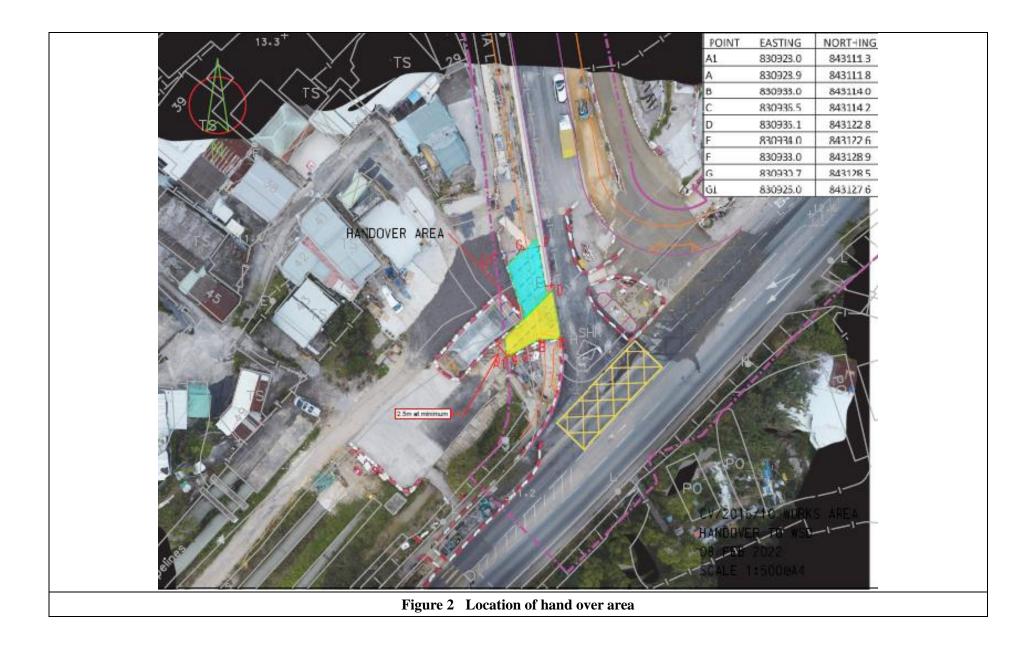
Annex A

Table 1	Summary of Constr	ruction Noise Mo	onitoring Results un	der Contract 1
	Construct	tion Noise Level	$(L_{eq30min}), dB(A)$	
Date	Start Time	CN1 (*)	Start Time	CN2 (*)
4-Jan-22	13:00	64	13:33	63
10-Jan-22	13:27	66	14:03	66
21-Jan-22	9:35	67	10:11	68
27-Jan-22	9:24	66	10:03	66
31-Jan-22	13:04	67	13:41	63
10-Feb-22	13:24	63	13:58	64
16-Feb-22	9:25	63	10:04	62
Limit Level		7	5 dB(A)	

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









Appendix O

Implementation Schedule for Environmental Mitigation Measures

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	Aitigation Measures (Applicable to ALL Project Components, including DPs and Non-D.	PS)					
Constructi	on Dust Impact						
\$4.4.5.2	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
\$4.4.5.2	 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; 	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

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*
	 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
\$4.4.5.1	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.
\$4.4.5.3	 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. 	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.
Constructio	Continuous water spray at the loading point.						
\$5.5.5.3	 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.						
\$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.
S5.5.5.7 - S5.5.5.12	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*
\$13.2.1.1 - \$13.4.1.2	Implement a noise monitoring under EM&A programme.	Monitortheconstructionnoiselevels at the selectedrepresentativelocations	Contractor	Selected representative noise monitoring station	Construction phase	TM-EIAO	Implemented. * 4 noise monitoring stations were Implemented.
Operation	I Noise (Road Traffic Noise)						
S5.6.6.4	 d Noise (Road Traffic Noise) 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: <i>For existing representative NSRs</i> Approx. 12m of absorptive noise barrier 2.5m above road level along Sha Ling Road (MM1); Approx. 92m of absorptive noise barrier 2.5m 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. 51m 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 3m above road level along Lin Ma Hang Road near San Uk Ling (MM6); Approx. 18m of absorptive noise barrier 3m 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. 18m 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 near San Uk Ling (MM10); Approx. 18m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM10); Approx. 30m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM10); Approx. 30m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM10); Approx. 30m of absorptive noise barrier 3m ab	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 Qual	ity (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 from a variety of sources and suited to applications where the influent is pumped; 	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
	 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 permanent drainage channels to enhance deposition rates; 						Implemented
	• 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						Implemented
	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						r
	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						1
	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	 <u>Sewage from workforce</u> 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; 	To minimise water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS	Implemented Implemented
	 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. 						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 	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.
Water Qual	 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. <i>ity (Operational Phase)</i> 						

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 Waste Man	 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. 	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	<u>Construction & Demolition Material Management Plan (C&DMMP)</u> • A C&DMMP shall be submitted to the Public Fill Committee for approval in the case of C&D materials disposal exceeding 50,000m ₃ .	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	
\$7.3.4.2	 <u>Good Site Practice</u> 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*
S7.3.4.3	Waste Reduction Measures	Reduce waste	Contractor	All	Construction	Waste Disposal	
	Waste reduction is best achieved at the planning and design phase, as well as by	generation		construction	phase	Ordinance	
	ensuring the implementation of good site practices. The following recommendations			sites			
	are proposed to achieve reduction:						Implemented
	• segregate and store different types of waste in different containers, skip or						
	stockpiles to enhance reuse or recycling of materials and their proper disposal;						Implemented
	 proper storage and site practices to minimise the potential for damage and 						
	contamination of construction materials;						Implemented
	 plan and stock construction materials carefully to minimise amount of waste 						
	generated and avoid unnecessary generation of waste;						Implemented
	 sort out demolition debris and excavated materials from demolition works to 						
	recover reusable/recyclable portions (i.e. soil, broken concrete metal etc.);						Implemented
	• provide training to workers on the importance of appropriate waste management						
	procedures, including waste reduction, reuse and recycling.						
S7.3.4.5	Storage of Waste	Good site practice to	Contractor	All	Construction	• Land	
	The following recommendation should be implemented to minimise the	minimise the		construction	phase	(Miscellaneous	
	impacts:	waste generation and		sites		Provisions)	
	• non-inert C&D materials such as soil should be handled and stored well to ensure	recycle the				Ordinance	Implemented
	secure containment;	C&D materials as far				Waste Disposal	
	 stockpiling area should be provided with covers and water spraying system to 	as				Ordinance	Implemented
	prevent materials from wind-blown or being washed away;	practicable so as to				• ETWB TCW No.	
	 different locations should be designated to stockpile each material to enhance 	reduce the				19/2005	Implemented
	reuse;	amount for final					
		disposal					
S7.3.4.6	Collection and Transportation of Waste	Minimise waste	Contractor	All	Construction	Waste Disposal	
	The following recommendation should be implemented to minimise the	impacts from		construction	phase	Ordinance	
	impacts:	storage		sites			
	• remove waste in timely manner;						Implemented
	• employ the trucks with cover or enclosed containers for waste transportation;						Implemented
	• obtain relevant waste disposal permits from the appropriate authorities; and						Implemented
	• disposal of waste should be done at licensed waste disposal facilities.						Implemented
\$7.3.4.8	Excavated and C&D Materials	Minimise waste	Contractor	All	Construction	• Land	
-	Wherever practicable, C&D materials should be segregated from other wastes to avoid	impacts from		construction	phase	(Miscellaneous	
\$7.3.4.15	contamination and ensure acceptability at public filling areas or reclamation sites. The	excavated and C&D		sites		Provisions)	
	following mitigation measures should be	materials				Ordinance	
	implemented in handling the excavated and C&D materials:					Waste Disposal	
	• maintain temporary stockpiles and reuse excavated fill material for backfilling;					Ordinance	Implemented
	• carry out on-site sorting;						Implemented
	 make provisions in the Contract documents to allow and promote the 					I	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*
S7.3.4.17 - S7.3.4.18	 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. <u>Chemical Waste</u> 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 	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction phase	Waste Disposal (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical	Implemented Implemented Implemented Implemented Implemented Implemented Implemented
\$7.3.4.19	 accordance with the Waste Disposal (Chemical Waste) (General) Regulation. <u>General Refuse</u> 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. 	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	Waste • Waste Disposal Ordinance	Implemented Implemented
	 A reputable waste collector should be employed to remove general refuse on a daily basis. 						Implemented
\$7.3.4.20	 <u>Sewage</u> The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability, site condition and activities. 	Minimise production of sewage impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance	Implemented
	 Regularly collection by licensed collectors should be arranged to minimise potential environmental impacts. 						Implemented
Waste Man	agement (Operational Waste)						
S7.4.4.1	<u>General Refuse</u> 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 Cont	amination						
\$8.9.1.1	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
\$8.11.1.1	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
\$8.11.1.2	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
\$8.11.1.2	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 remediation is required	Detailed Design Consultant	site (SRC-1)	phase		identified.
\$8.11.1.2	Preparation and submission of Remediation Report (RR) to EPD for review and approval following the completion of any necessary remediation works	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 (C	Construction Phase)						
\$9.7.2.3	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. A contingency plan	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.					
\$9.7.2.5	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
\$9.7.2.6	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	Indirect impacts due to potential changes in water quality, hydrology and	Minimise the indirect	Contractor	On the edge	Prior to	• ETWB TCW No.	Implemented.
- \$9.7.3.3	 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. 	impacts to Water Quality and Hydrology	/detailed design consultant.	of any active works area, 30m from The watercourse	commencement and during construction phase	5/2005 • TM-EIAO	

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					
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		
S9.7.3.6	mid 2017 to late 2022.	be phased in order to		sites	and		
		reduce overall noise			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					
	wrap and/or any other birdfriendly design for noise barriers.	occurs as a result of					
		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					
		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		construction	commencement		
	adopted by site staff throughout the construction phase at each works site. These are as	and water quality of		sites	and		
	follows:	hillside watercourses			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		
	• Erection of temporary geotextile silt or sediment fences/oil traps around any						Implemented
	earth-moving works to trap any sediments and prevent them from entering						

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*
	 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. 						Implemented Implemented Implemented Implemented
S.9.7.3.9	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 phased through the project period to minimise impacts.	Minimise the impacts to breeding birds within the works areas.	Contractor	All construction sites	Prior to site clearance	• TM-EIAO • WAPO	Implemented during breeding season.
Ecology (O	perational Phase)						
89.7.2	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 programme.		Indicative locations for Enhancement Woodland should be referred to			
				Figure 9.11 of the EIA Report			
S9.7.4.1 - S9.7.4.5	 Mitigation for Impacts to Water Quality and Hydrology (Operational Phase) Stormwater drainage system will be further developed in detailed design stage to collect dusty materials from water collected from the platform and associated road system. Silt traps will be installed to ensure removal of dusty materials. Regular cleaning will be conducted to avoid debris entering downstream rivers during first flush; and The proposed small diameter bore pile system at the foundation of the proposed platform structure. 	Specific mitigation measures will be implemented to prevent indirect impacts wetland habitats and fauna. Mitigation measures are to be further developed in the detailed design stage to address any water quality impacts due to the drainage from the proposed platform, and any erosion issues 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	Detailed Design Consultant	Wet woodland (and further down the marsh and mitigation ponds) and the seasonal watercourse to the east of the Project boundary	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
		at the detailed design stage. The proposed small					

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*
S9.7.4.6 - S9.7.4.7	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.	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	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO	Implemented before Operational phase
	Furthermore, as a precautionary measure, it is suggested that deflectors are fixed to the back of the street lights to prevent additional light reaching the marsh and causing adverse impacts to fireflies.	wildlife groups, particularly nocturnal fireflies.					
\$9.7.4.9 - \$9.7.4.9	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 grave-sweeping. 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.	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
Fisheries	This will require input in the detailed design phase.						
\$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 and demolition 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	CM8 - Implementing precautionary control measures during construction stage	Minimize landscape	Funded by CEDD	Work site/	Design and	(GLTM) Section, DevB • Latest recommended horticultural practices from GLTM Section, DevB • ETWB TCW No.	Implemented.
, Table 11.9	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 watercourses and good site practices.	impact	and implemented by Contractor	during construction	Construction phase	5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works	
S11.8.1.3 , 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	Prior to 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

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.	
OM8 - Silt traps should also be incorporated into design of road gullies for the natural	Minimise the	Funded by CEDD	Within	Construction		Implemented
water stream(s).	landscape impact	and implemented	Project Site	Phase		
	on natural stream	by				
		Contractor				
	OM8 - Silt traps should also be incorporated into design of road gullies for the natural	OM8 - Silt traps should also be incorporated into design of road gullies for the natural water stream(s). Minimise the landscape impact	Becommended Measures & Main Concerns to address Agent 0M8 - Silt traps should also be incorporated into design of road gullies for the natural water stream(s). Minimise the landscape impact on natural stream Funded by CEDD and implemented by	NoteNoteAgentTimingMeasures & Main Concerns to addressNoteNoteNoteOM8 - Silt traps should also be incorporated into design of road gullies for the natural water stream(s).Minimise the I and scape impact on natural streamFunded by CEDD NoteWithin Project Site by	NoteNo	NoteNo

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.

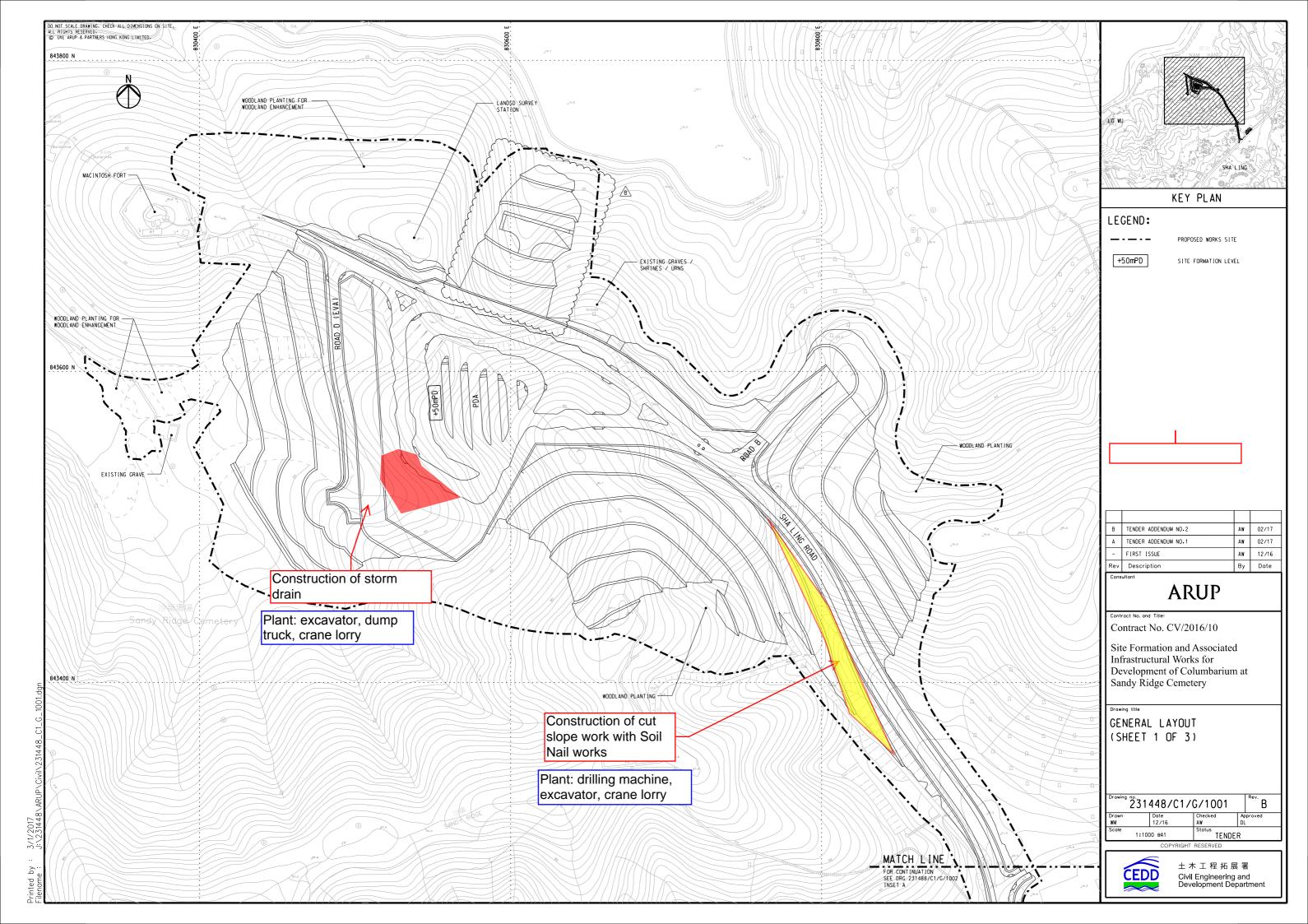
EM&A Project							
\$13.1.1.1	An Independent Environmental Checker needs to be employed as per the EM&A	Control EM&A	Highways	All	Construction	• EIAO Guidance	Implemented
,	Manual.	Performance	Department	construction	phase	Note No.4/2010	
S13.2.1.2				sites		• TM-EIAO	
\$13.2.1.1	1) An Environmental 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 & auditing	/ 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.						

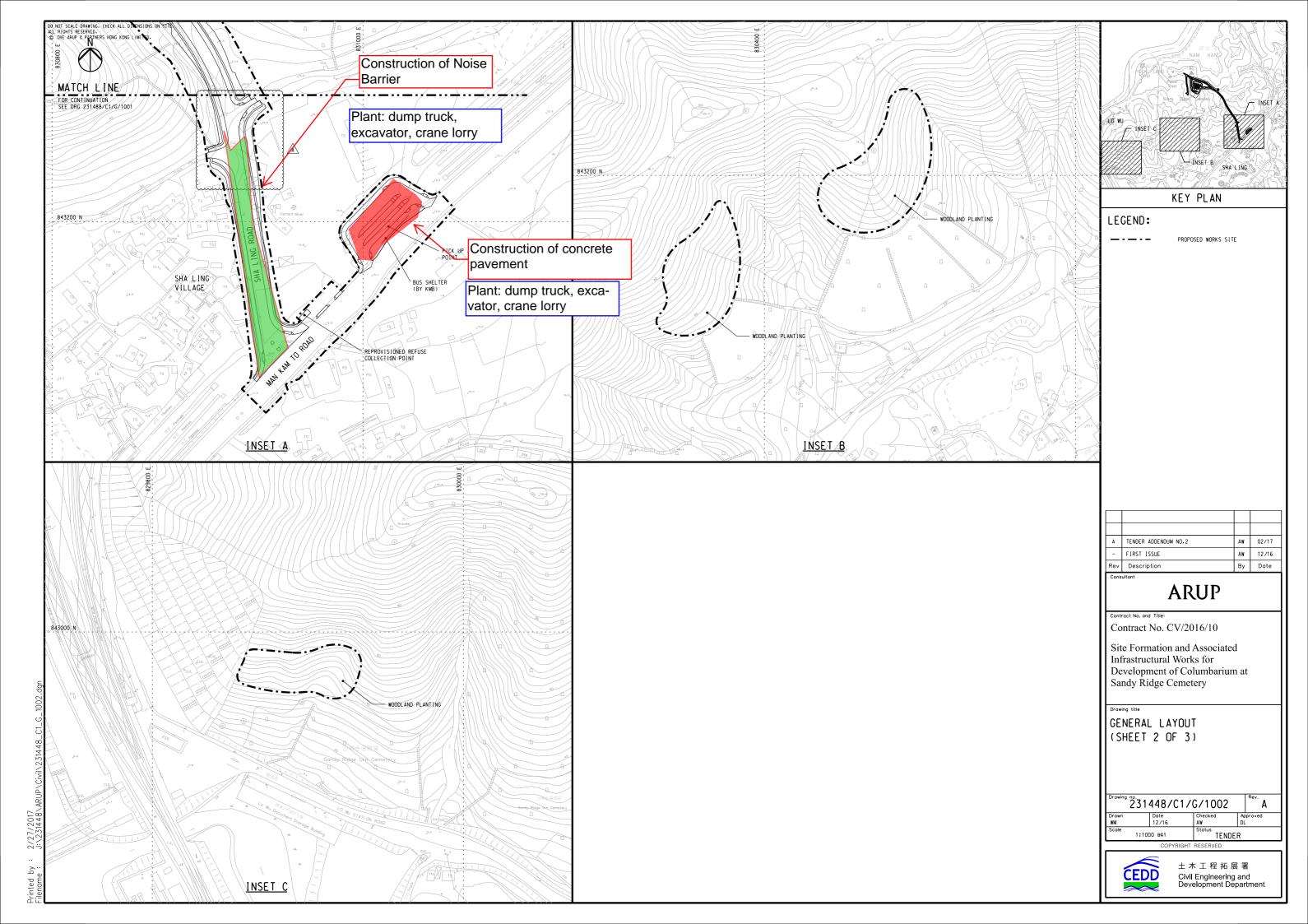


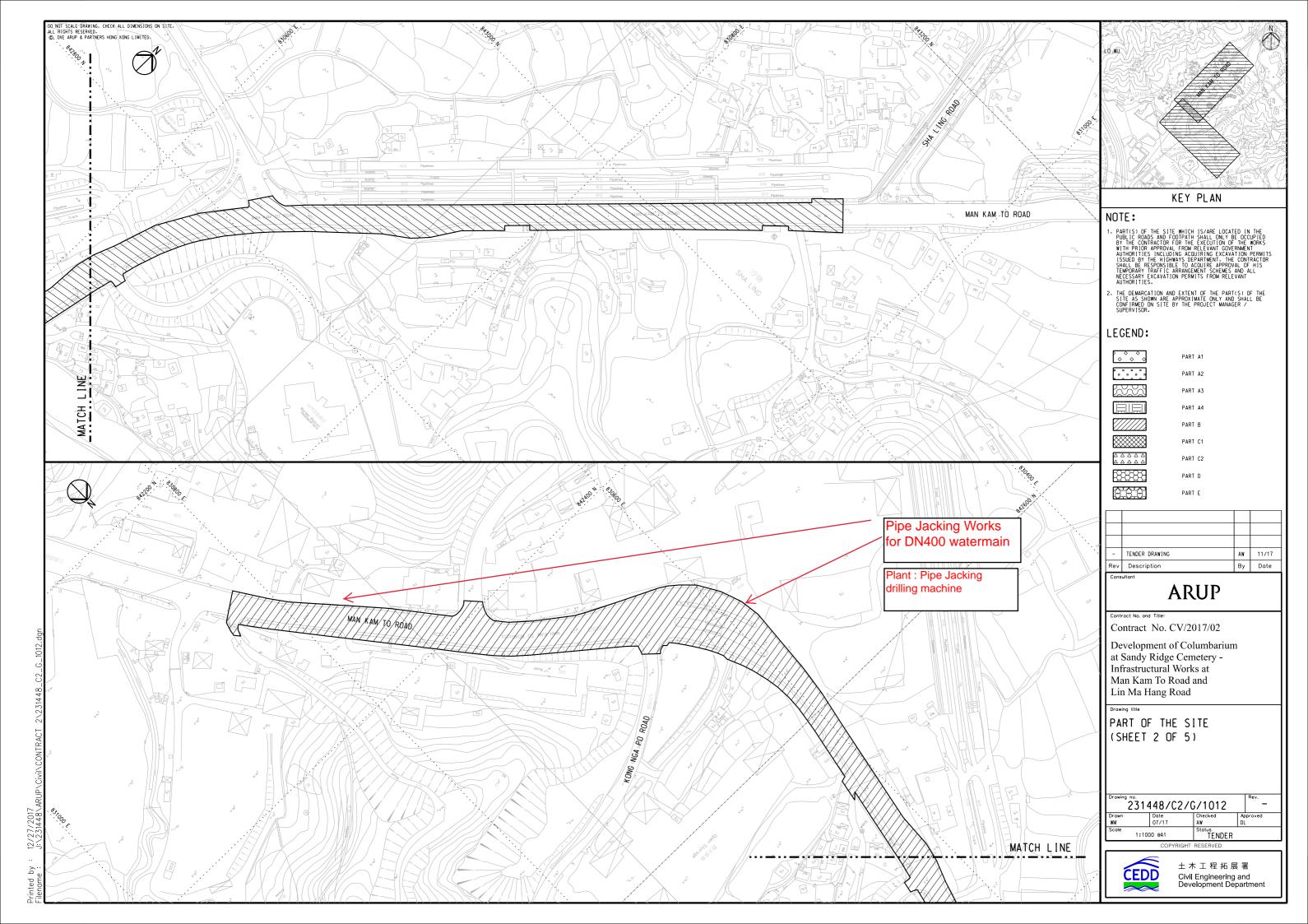
Appendix P

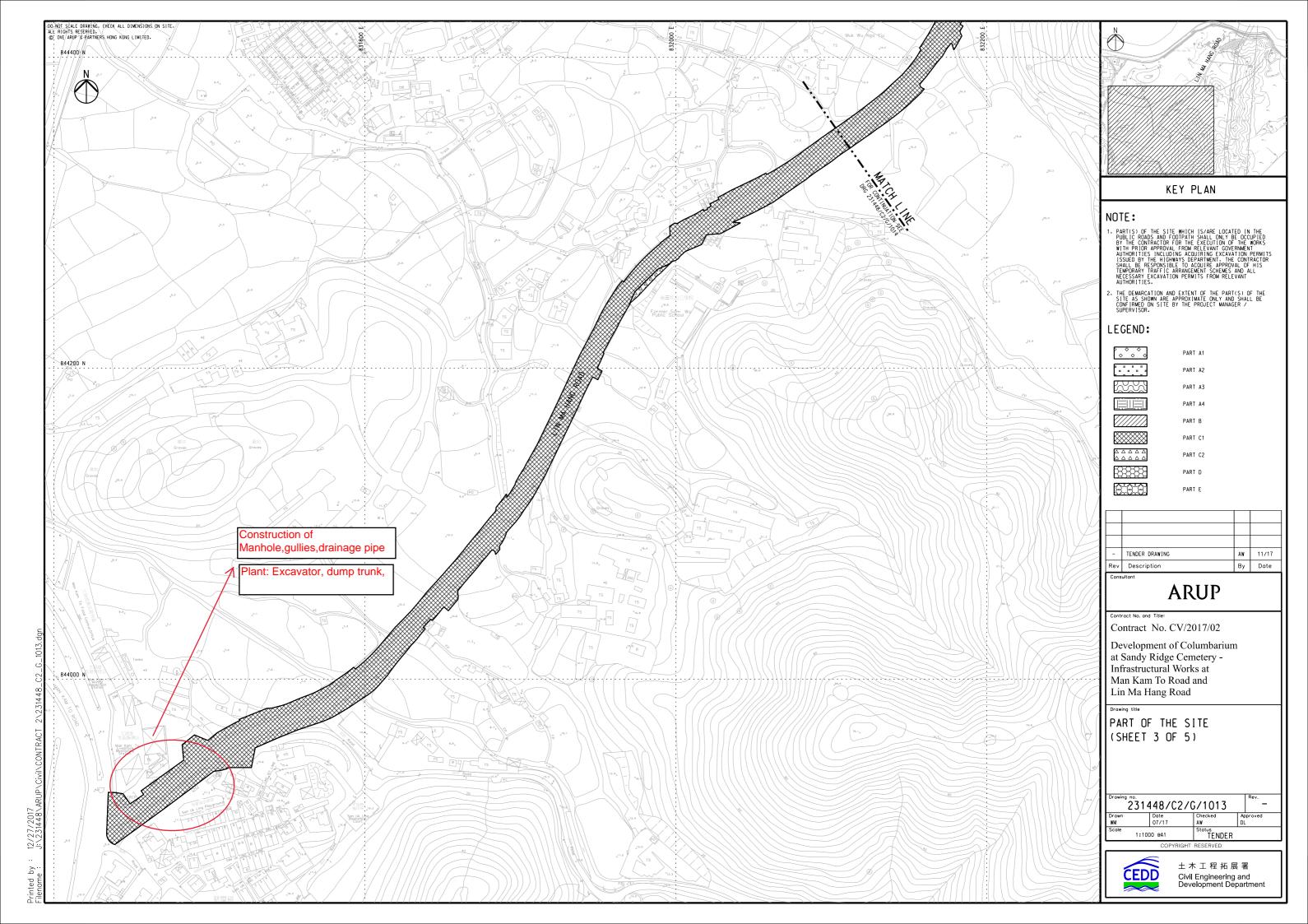
Illustrations of Site Activities

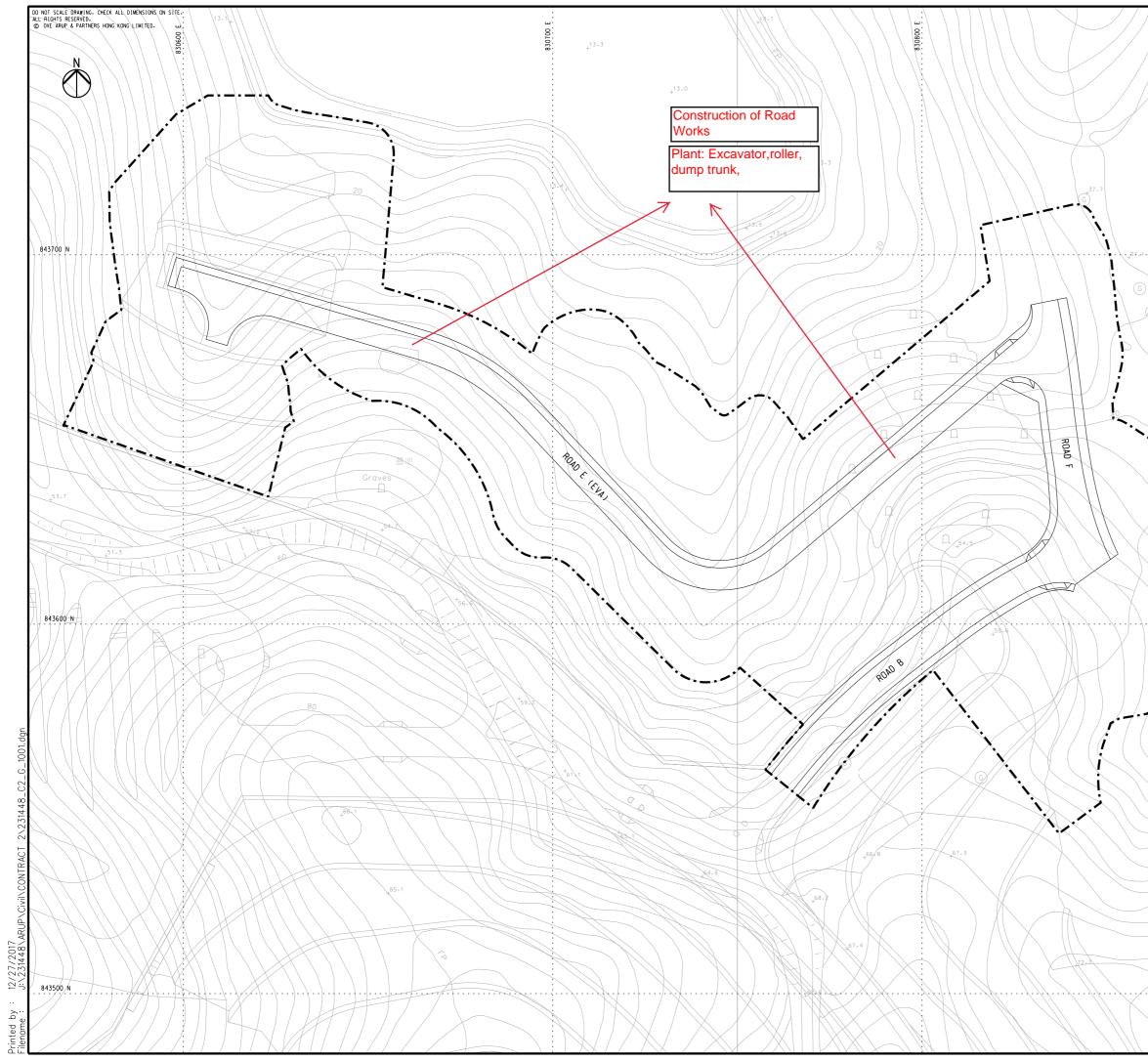
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	at Sandy Ridge Cemetery - Infrastructural Works at						
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