

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.20) – MARCH 2020

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

Date	Reference No.	Prepared By	Certified By
9 April 2020	TCS00881/18/600/R0396v2	Anh	Am

Nicola HonTam Tak Wing(Environmental Consultant)(Environmental Team Leader)

Version	Date	Remarks
1	6 April 2020	First Submission
2	9 April 2020	Amended according to the IEC's comment on 7 April 2020



Our Ref: TCS00881/18/300/L0400

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

Attn: Mr. SHUM Ngai Hung, Steven

9 April 2020 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.20) – March 2020

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

 Tel
 (852) 2959-6059

 Fax
 (852) 2959-6079

 Email
 info@fordbusiness.com







Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon Hong Kong.

Tel. : (852) 2698 6833 Fax.: (852) 2698 9383

Our ref: CJO4068

SUST

CONSULTING LIMITED

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

9 April 2020

Dear Sir,

Site formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery Monthly Environmental Monitoring and Audit Report (No. 20) March 2020

I refer to the email of the ET regarding the captioned Monthly Report. We have no adverse comment on the Monthly Environmental Monitoring and Audit Report (No. 20) March 2020 (Version 2) dated 9 April 2020 with reference No. TCS00881/18/600/R0396v2 after verification.

Yours faithfully,

CH Leung

Ir Leung CH Jacky Independent Environmental Checker

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



EXECUTIVE SUMMARY

ES.01. This is the 20th Monthly Environmental Monitoring and Audit (EM&A) Report summarizing the monitoring results and inspection findings under the Project for the period from 1 to 31 March 2020 (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	Monitoring	Total	
155005	Parameters / Inspection	CV/2016/10	CV/2017/02	Occasions
Air Quality	1-hour TSP	ASR-1	ASR-2	54
Air Quality	24-hour TSP	ASK-1	ASR-3	15
Construction Noise	L _{eq (30min)} Daytime	CN-1 CN-2	CN-3 CN-4	20
Water Quality	In-situ measurement and Water sampling	M3	M1, M2 and M4	13
Ecology	Sensitive Habitat	Transect within site area of CV/2016/10	Transect within site area of CV/2017/02	1
Landscape & Visual	Site Inspection	Site area of CV/2016/10	Site area of CV/2017/02	1
Turneration	Environmental Team (ET) Regular Environmental Site Inspection		Cite and of	4
Inspection & Audit	Independent Environmental Checker (IEC) Monthly Environmental Site Audit	Site area of CV/2016/10	Site area of CV/2017/02	1

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

BREACH OF ACTION AND LIMIT (A/L) LEVELS

ES.03. In the Reporting Month, no exceedance of air quality and noise monitoring was recorded. However, for water quality monitoring, 4 Limit Level non-project related exceedances were recorded. The statistics of environmental exceedance, Notification of Exceedance (NOE) issued and investigation of exceedance are summarized in the following table.

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

				,	1 0	
Environmentel	Monitoring	Action	I imit		Event & Action	
Environmental Issues	Monitoring Parameters	Level	Linnt Level	NOE Issued	Investigation Findings	Corrective Actions
Air Quality	1-hour TSP	0	0	0	-	-
Air Quality	24-hour TSP	0	0	0	-	-
Construction Noise	Leq _{30min} Daytime	0	0	0	-	-
	DO	0	0	0	-	-
Water Quality	Turbidity	0	2	0	Not Project related	N/A
	SS	0	2	0	Not Project related	N/A

Note: NOE – *Notification of Exceedance*

ES.04. Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 10^{th} *March 2020*. 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.05. Landscape and visual inspection at both Contracts were undertaken on 25th March 2020. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone (TPZ) and ensure no works is allowed within the TPZ.

ENVIRONMENTAL COMPLAINT

ES.06. No environmental complaint was recorded or received in this Reporting Month. The statistics of environmental complaint are summarized in the following table.

Table ES-3Environmental Complaint Summaries in the Reporting Month

Reporting Month		Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2020	Contract 1	0	0	NA
1 - 51 Warch 2020	Contract 2	0	0	NA

ES.07. In addition, no complaint and emergency event relating to violation of environmental legislation for illegal dumping and landfilling was received.

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-4Environmental Summons Summaries in the Reporting Month

Reporting Month		Environmental Summons Statistics			
		Frequency	Cumulative	Summons Nature	
1 – 31 March 2020	Contract 1	0	0	NA	
1 - 51 What cm 2020	Contract 2	0	0	NA	

Table ES-5 Environmental Prosecution Summaries in the Reporting Month

Reporting Month		Environmental Prosecution Statistics			
		Frequency	Cumulative	Prosecution Nature	
1 – 31 March 2020	Contract 1	0	0	NA	
1 - 51 What cm 2020	Contract 2	0	0	NA	

REPORTING CHANGE

ES.09. No reporting change was made in the Reporting Month.

SITE INSPECTION

ES.010. In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the Resident Engineer (RE), ET and the Contractor of the Contract 1 on 5th, 12th, 19th and 26th March 2020. Moreover, joint site inspections for Contract 2 by the RE, ET and the Contractor of Contract 2 were carried out on 5th, 12th, 19th and 26th March 2020. IEC attended the both Contract joint site inspection on 19th March 2020. No non-compliance was noted during the site inspections.

FUTURE KEY ISSUES

- ES.011. Since wet season is approaching, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- ES.012. 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.013. Construction noise mitigation measures such as use of movable noise barriers and Quality Powered Mechanical Equipment should be properly provided to reduce construction noise impact, where appropriate.
- ES.014. The Contractors should properly maintain the cleanliness and tidiness of the site. In addition, mosquito control should be performed to prevent mosquito breeding on site.



Table of Contents

1.	NTRODUCTION	1
	.1 PROJECT BACKGROUND .2 REPORT STRUCTURE	1 2
2.	PROJECT ORGANIZATION AND CONSTRUCTION PROGRESS	4
	.1 CONSTRUCTION CONTRACT PACKAGING	4
	 CONSTRUCTION PROGRESS SUMMARY OF ENVIRONMENTAL SUBMISSIONS 	4 4
	4.4 SUMMARY OF ENVIRONMENTAL SUBMISSIONS SUMMARY OF SUBMISSION UNDER THE ENVIRONMENTAL PERMIT REQUIREMENTS	4 5
3.	SUMMARY OF IMPACT MONITORING REQUIREMENT	7
	.1 GENERAL	7
	.2 MONITORING PARAMETERS.3 MONITORING LOCATIONS	7 7
	.4 MONITORING ECCATIONS .4 MONITORING FREQUENCY AND PERIOD	9
	.5 MONITORING EQUIPMENT	9
	.6 EQUIPMENT CALIBRATION	12
	.7 DATA MANAGEMENT AND DATA QA/QC CONTROL	12
	.8 DETERMINATION OF ACTION/LIMIT (A/L) LEVELS	12
4.	AIR QUALITY	14
	.1 MONITORING RESULTS .2 AIR MONITORING EXCEEDANCE	14 14
-		
5.	CONSTRUCTION NOISE .1 MONITORING RESULTS	15 15
	1.2 NOISE MONITORING EXCEEDANCE	15
6.	VATER QUALITY	16
	.1 MONITORING RESULTS	16
	5.2 WATER QUALITY MONITORING EXCEEDANCE	17
7.	ECOLOGY MONITORING	18
	.1 REQUIREMENT	18
	2 METHODOLOGY ECCLOSIGNAL MONITORING SUBVEY ENTERIOS (CONTRACT 1)	18
	 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 1) ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2) 	19 21
	 MEASURE FOR PROTECTION OF NESTING BIRD 	22
8.	ANDSCAPE AND VISUAL	23
	.1 REQUIREMENT	23
	5.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH	23
9.	VASTE MANAGEMENT .1 General Waste Management	24
	9.1 GENERAL WASTE MANAGEMENT 9.2 RECORDS OF WASTE QUANTITIES	24 24
10.	TTE INSPECTION	25
10.	0.1 REQUIREMENT	25
	0.2 FINDINGS / DEFICIENCIES DURING SITE INSPECTION IN THE REPORTING MONTH	25
11.	ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE	27
	1.1 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION	27
12.	MPLEMENTATION STATUS OF MITIGATION MEASURES	28
	2.1 GENERAL REQUIREMENTS	28
	2.2 TENTATIVE CONSTRUCTION ACTIVITIES IN THE COMING MONTH2.3 KEY ISSUES FOR THE COMING MONTH	28 29
12	CONCLUSIONS AND RECOMMENTATIONS	2) 30
13.	3.1 CONCLUSIONS	30
	3.2 RECOMMENDATIONS	30



TOC

LIST OF TABLES

TABLE 2-1	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS FOR CONTRACT 1
TABLE 2-2	STATUS OF ENVIRONMENTAL LICENSES AND PERMITS FOR CONTRACT 2
TABLE 2-3	STATUS OF SUBMISSION AS UNDER FEP FOR CONTRACT 1
TABLE 2-4	STATUS OF SUBMISSION AS UNDER FEP FOR CONTRACT 2
TABLE 3-1	SUMMARY OF EM&A REQUIREMENTS
TABLE 3-2	DESIGNATED AIR QUALITY MONITORING LOCATION UNDER THE PROJECT
TABLE 3-3	DESIGNATED CONSTRUCTION NOISE MONITORING LOCATION UNDER THE PROJECT
TABLE 3-4	DESIGNATED WATER QUALITY MONITORING STATIONS UNDER THE PROJECT
TABLE 3-5	AIR QUALITY MONITORING EQUIPMENT
TABLE 3-6	NOISE MONITORING EQUIPMENT
TABLE 3-7	WATER QUALITY MONITORING EQUIPMENT
TABLE 3-8	ACTION AND LIMIT LEVELS FOR AIR QUALITY MONITORING
TABLE 3-9	ACTION AND LIMIT LEVELS FOR CONSTRUCTION NOISE
TABLE 3-10	ACTION AND LIMIT LEVELS FOR WATER QUALITY
TABLE 4-1	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-1 UNDER CONTRACT 1
TABLE 4-2	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-2 UNDER CONTRACT 2
TABLE 4-3	SUMMARY OF AIR QUALITY MONITORING RESULTS AT ASR-3A UNDER CONTRACT 2
TABLE 5-1	SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS UNDER CONTRACT 1
TABLE 5-2	SUMMARY OF CONSTRUCTION NOISE MONITORING RESULTS UNDER CONTRACT 2
TABLE 6-1	SUMMARY OF WATER QUALITY MONITORING RESULTS – M3 UNDER CONTRACT 1
TABLE 6-2	SUMMARY OF WATER QUALITY MONITORING RESULTS (M1, M2 and M4) UNDER CONTRACT 2
TABLE 6-3	SUMMARY OF FIELD MEASUREMENTS FOR WATER QUALITY
TABLE 6-4	ACTION AND LIMIT (A/L) LEVELS EXCEEDANCE RECORD
TABLE 6-5	SUMMARY OF INVESTIGATION OF WATER QUALITY EXCEEDANCE IN THE REPORTING MONTH
TABLE 7-1	ACTION AND LIMIT LEVELS FOR WET WOODLAND HABITATS MONITORING
TABLE 7-2	ACTION AND LIMIT LEVELS FOR NON-WET WOODLAND HABITATS MONITORING
TABLE 7-3	SCHEDULE OF FAUNAL SURVEYS IN EACH YEAR DURING CONSTRUCTION PHASE
TABLE 7-4	RESULT OF FAUNAL SURVEY UNDER CONTRACT 1
TABLE 7-5	RESULT OF FRESHWATER COMMUNITIES SURVEY UNDER CONTRACT 1
TABLE 7-6	RESULT OF FAUNAL SURVEY UNDER CONTRACT 2
TABLE 7-7	RESULT OF FRESHWATER COMMUNITIES SURVEY UNDER CONTRACT 2
TABLE 8-1	LANDSCAPE & VISUAL INSPECTION FINDING FOR CONTRACT 1
TABLE 8-2	LANDSCAPE & VISUAL INSPECTION FINDING FOR CONTRACT 2
TABLE 9-1	SUMMARY OF QUANTITIES OF INERT C&D MATERIALS
TABLE 9-2	SUMMARY OF QUANTITIES OF C&D WASTES
TABLE 10-1	SITE OBSERVATIONS FOR THE WORKS OF CONTRACT 1
TABLE 10-2	SITE OBSERVATIONS FOR THE WORKS OF CONTRACT 2
TABLE 11-1	STATISTICAL SUMMARY OF ENVIRONMENTAL COMPLAINTS
TABLE 11-2	STATISTICAL SUMMARY OF ENVIRONMENTAL SUMMONS
TABLE 11-3	STATISTICAL SUMMARY OF ENVIRONMENTAL PROSECUTION
TABLE 12-1	Environmental Mitigation Measures

 TABLE 12-1
 ENVIRONMENTAL MITIGATION MEASURES



LIST OF APPENDICES

APPENDIX A	LAYOUT PLAN OF THE PROJECT
APPENDIX B	ORGANIZATION STRUCTURE AND CONTACT DETAILS OF RELEVANT PARTIES
APPENDIX C	THREE MONTHS ROLLING PROGRAMME
APPENDIX D	DESIGNATED MONITORING LOCATIONS
APPENDIX E	CALIBRATION CERTIFICATES OF MONITORING EQUIPMENT AND LABORATORY CERTIFICATE
APPENDIX F	EVENT AND ACTION PLAN OF AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX G	MONITORING SCHEDULES OF THE REPORTING MONTH AND COMING MONTH
APPENDIX H	MONITORING DATA OF 24-HOUR TSP AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX I	GRAPHICAL PLOTS OF AIR QUALITY, NOISE AND WATER QUALITY
APPENDIX J	METEOROLOGICAL DATA OF THE REPORTING MONTH
APPENDIX K	ECOLOGY SURVEY REPORT
APPENDIX L	LANDSCAPE & VISUAL INSPECTION CHECKLIST
APPENDIX M	MONTHLY SUMMARY WASTE FLOW TABLE
APPENDIX N	IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES (ISEMM)
APPENDIX O	IMPLEMENTATION OF WATER QUALITY MITIGATION MEASURES



1. INTRODUCTION

1.1 PROJECT BACKGROUND

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

A Designated Works under EP-534/2017/A

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

Non-Designated Works

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



- Construction of covered walkway along Fanling Station Road;
- Removal of planters and central divider along Fanling Station Road and San Wan Road;
- Associated drainage, sewerage, waterworks and utility works along Man Kam To Road and Lin Ma Hang Road;
- Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
- Associated landscaping works.
- 1.1.5 CEDD Contract No. (to be confirmed):-
 - Site Formation for the platform of the columbarium site;
 - Construction of two 2 at-grade access roads;
 - Construction of road junction between Man Kam To Road and the new access road;
 - Associated drainage, sewerage and waterworks along the two new access roads;
 - Associated geotechnical works including cut and fill slopes, soil nailing works and retaining structures; and
 - Associated landscaping works
- 1.1.6 Hsin Chong Tsun Yip Joint Venture (hereafter referred as "HCTYJV") has been awarded Contract 1 on 5 December 2017. According to the Contract requirement, HCTYJV shall take over the responsibility for part of the Environmental Permit No. EP-534/2017 for ease of management, therefore application for Further Environmental Permit was submitted by HCTYJV to EPD on 26 January 2018 and Further Environmental Permit No. FEP-01/534/2017 was granted to HCTYJV by EPD on 23 February 2018. Furthermore, EPD issued Environmental Permit No. FEP-01/534/2017/A on 24 December 2018.
- 1.1.7 Sang Hing Civil Contractors Company Limited (hereinafter referred as "Sang Hing") was awarded Contract 2 on 23 May 2018. The Contract Works is a Designated Project as under Environmental Permit (EP) No. EP-534/2017. Furthermore, EPD issued Environmental Permit No. EP-534/2017/A on 24 December 2018.
- 1.1.8 Action-United Environmental Services & Consulting (AUES) has been commissioned by the Contractors as an Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme in accordance with the approved EM&A Manual as well as the associated duties. As part of the EM&A programme, baseline monitoring to determine the ambient environmental conditions was completed before construction work commencement. The Baseline Monitoring Report (air, noise and water) certified by ET Leader (ETL) and verified by Independent Environmental Checker (IEC) was submitted to Environmental Protection Department (EPD) and it was approved by EPD on 25 October 2018.
- 1.1.9 Major construction work of Contract 1 was commenced on 16 August 2018 and Contract 2 on 5 November 2018.
- 1.1.10 This is the 20th Monthly EM&A Report summarizing the monitoring results and inspection findings for the period from 1 to 31 March 2020.

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.

Contract 1 (CV/2016/10)

- General site housekeeping
- Bulk Excavation
- Construction of Cut Slope, installation of soil nailing and construction of surface channel
- Construction of retaining wall for Fill Slope.
- Construction of Fill Slope and surface channel
- Construction of Detention tank
- Construction of Pick-up and Drop-off Point near Man Kam To Road

Contract 2 (CV/2017/02)

- Site Patrol and daily cleaning within the site boundary including the anti-mosquito measures.
- Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH380-430 Northbound & CH1165-1265 Northbound.
- Man Kam To Road DN800 DI Sewerage Pipe FM4.18-FM4.19-FM4.20 (50m) & FM4.21-FM4.22-FM4.23 (50m)
- Soil Nail Works at Lin Ma Hang Road Slope C225 & C231
- Works and drainage works for slope FS18 (Part A1)
- Backfilling of Retaining Wall 13
- Piling Works for Retaining Wall 14

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*.

	Survis of Environmental Encenses and Fermits 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 of	Account no.: 7029769	Valid			
	Construction Waste					
5	Construction Noise Permit	GW-RN0045-20 (expired on 31 Mar 2020)	Valid			
6	Construction Noise Permit	GW-RN0222-20 (expired on 30 Sep 2020)	Valid			

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



Item	Description	License/ Per	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)	
		Ref. no. 440402 Acknowledged by EPD on 14/12/2018	Lung Sum Avenue (near Landmark North)	Valid
2	Chemical waste Producer Registration	WPN: 5213-641-S4151-01 Issued by EPD on 04/02/20	19	Valid
3	Water Pollution Control Ordinance		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

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

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	Management organization of : i) the main construction companies; ii) ET; and iii) IEC and the supporting team	Submitted on 11 April 2018
2	Condition 2.11 of FEP	i) Detailed phasing programme of all construction works; and ii) Location plan of all construction works	Submitted on 12 April 2018
3	Condition 2.12 of FEP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May 2019
4	Condition 2.13 of FEP	Grassland Reinstatement Plan	Re-submitted on 31 May 2019
5	Condition 2.14 of FEP	Vegetation Survey Report for Contract 1	Approved by EPD on 12 October 2018
6	Condition 2.15 of FEP	Vegetation Transplantation Proposal Contract 1	Approved by EPD on 12 October 2018
7	Condition 2.17 of FEP	Woodland Compensation Plan (Rev.03)	Re-submitted on 23 Aug 2019
8	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



Item	EP and / or FEP Stipulation	Description	Status
9	Condition 2.20 of FEP	Landscape & Visual Mitigation and Tree	Re-submitted on 20 Sep 2019
		Preservation Plan(s) Contract 1 (Rev.03)	
10	Condition 2.22 of FEP	Traffic Noise Mitigation Plan Contract 1	Re-submitted on 10 Nov 2019
		(Rev. 4)	
11	Condition 3.3 of the FEP	Baseline Monitoring Report (Air, Noise	Approved by EPD on 25
		and Water)	October 2018
12	Condition 4.2 of the FEP	The Contract Internet website	Internet website address has
			notified EPD on 15 Jun 2018

Table 2-3Status of Submission as under EP

Item	EP and / or FEP Stipulation	Description	Status
1a	Condition 2.10 of EP	Management organization of : i) the main construction companies; ii) ET; and iii) IEC and the supporting team	Submitted on 24 September 2018
2a	Condition 2.11 of EP	i) Detailed phasing programme of all construction works; and ii) Location plan of all construction works	Submitted on 26 September 2018
3	Condition 2.13 of EP	Contamination Assessment Plan (CAP)	Approved by EPD on 27 May 2019
4	Condition 2.14 of EP	Grassland Reinstatement Plan	Re-submitted on 31 May 2019
5	Condition 2.15 of EP and	Vegetation Survey Report Contract 2	Re-submitted on 30 Oct 2019
6	Condition 2.16 of EP	Vegetation Transplantation Proposal Contract 2	Re-submitted on 30 Oct 2019
7	Condition 2.18 of EP	Woodland Compensation Plan (Rev.03)	Re-submitted on 23 Aug 2019
8	Condition 2.19 of EP	Monitoring and Survey Plan for Golden-headed Cisticola Contract 2	Re-submitted on 30 Oct 2019
9	Condition 2.22 of EP	Landscape & Visual Mitigation and Tree Preservation Plan(s) Contract 2	Re-submitted on 25 Mar 2019
10	Condition 2.24 of EP	Traffic Noise Mitigation Plan Contract 2	Re-submitted on 12 Aug 2019
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



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 (ppm) pH unit; Water depth (m); and Stream Flow Velocity (m/sec). Laboratory Analysis Suspended Solids (mg/L)
Ecology	Ecologically sensitive habitats (wetland habitats and non-wetland habitats)

3.3 MONITORING LOCATIONS

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

Air Quality

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



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

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

Remark: (#)

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

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

Construction Noise

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

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

Locatio n ID	Description in EM&A Manual	Location	Related Work Contract
CN-1	Village house to the west of	6	Contract 1
	Sha Ling Road	Road (free field condition)	
CN-2	Village house to the north of	Sha Ling Village House No. 25 (free	Contract 1
	Man Kam To Road	field condition)	& 3
CN-3	Village house near San Uk	San Uk Ling Village House No. 18 (free	Contract 2
	Ling	field condition)	
CN-4	Village house of Muk Wu	Muk Wu Village House No. 267 (1m	Contract 2
		façade from the building)	



Water Quality

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

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
M3	843 509	830 040	Wetland in the Conservation Area near Yuen Leng Chai	Contract 1
M4	843 997	831 783	Watercourse across Lin Ma Hang Road, running from east of San Uk Ling to Man Kam To Boundary Control Point	Contract 2

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

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 &



Equipment	Model
	Counter

Wind Data Monitoring Equipment

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

Noise Monitoring

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

Equipment	Model
Integrating Sound Level Meter	B&K Type 2238
Calibrator	B&K Type 4231
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.

pH Measurement

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

Water Depth Measurement

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

Stream Flow Velocity Equipment

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

Water Sampling Equipment

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

Sample Containers and Storage

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

Table 3-7Water 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 550A



Equipment	Model
pH meter	AZ8685 pH meter
Turbidimeter	Hach 2100Q
Salinometer	Atago refractometer Atago S Salinity Meter
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)	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 3-9	Action 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

Donomotor	Performance	Monitoring Location					
Parameter	criteria	M1	M2	M3	M4		
$\mathbf{DO}(\mathbf{rrr}_{\mathbf{r}})$	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 18 sessions of 1-hour TSP undertaken at each designated station for air quality monitoring. The air quality monitoring results are summarized in *Tables 4-1* to 4-3. The database of 24-hour TSP is shown in *Appendix H* and the graphical plots of monitoring result are shown in *Appendix I*.

Table 4-1	Summary of Air C	Duality Monitoring	Results at ASR-1	under Contract 1
	Summary of the C	juancy monitoring	I COULD at I D I C	unuer contract I

	24-hour	1-hour TSP (μg/m³)					
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured	
5-Mar-20	55	2-Mar-20	9:42	52	55	58	
11-Mar-20	99	7-Mar-20	9:23	89	92	98	
17-Mar-20	134	13-Mar-20	9:26	62	68	75	
23-Mar-20	70	19-Mar-20	9:21	58	64	69	
28-Mar-20	72	25-Mar-20	9:23	81	78	84	
-	-	31-Mar-20	14:03	42	45	48	
Average	86	Avera	C		68		
(Range)	(55 – 134)	(Rang	(Range)		(42 – 98)		

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

	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
5-Mar-20	20	2-Mar-20	9:37	55	63	67
11-Mar-20	54	7-Mar-20	9:29	76	79	84
17-Mar-20	36	13-Mar-20	9:31	55	60	67
23-Mar-20	23	19-Mar-20	9:25	53	60	63
28-Mar-20	35	25-Mar-20	9:29	66	71	78
-	-	31-Mar-20	9:21	32	36	40
Average	34	Avera	ge		61	
(Range)	(20 - 54)	(Range)		(32 – 84)		

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

	24-hour	1-hour TSP (μg/m³)				
Date	TSP (µg/m ³)	Date	Start Time	1 st hour measured	2 nd hour measured	3 rd hour measured
5-Mar-20	12	2-Mar-20	9:34	62	66	69
11-Mar-20	60	7-Mar-20	9:36	79	84	91
17-Mar-20	91	13-Mar-20	9:38	60	62	66
23-Mar-20	46	19-Mar-20	9:29	50	54	58
28-Mar-20	45	25-Mar-20	9:33	61	64	71
-	_	31-Mar-20	9:35	30	33	37
Average	51	Avera	ge		61	
(Range)	(12 – 91)	(Range)		(30 – 91)		

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, 5 sessions of noise monitoring were undertaken at each designated noise monitoring location. The sound level were set in a free field situation for CN1, CN2 and CN3 and therefore a façade correction of +3dB(A) has been added according to acoustical principles and EPD guidelines. The monitoring result of noise monitoring is show in *Tables 5-1 and 5-2* and the graphical plots are shown in *Appendix I*.

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

Construction Noise Level (L _{eq30min}), dB(A)					
Date	Start Time	CN1(*)	Start Time	CN2(*)	
2-Mar-20	9:44	67	10:21	67	
13-Mar-20	13:42	71	14:19	66	
19-Mar-20	14:59	71	14:22	68	
25-Mar-20	9:21	68	9:58	67	
31-Mar-20	14:06	74	10:45	67	
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	on Noise Monitoring	Results under Contract 2

	Construc	tion Noise Level	(L _{eq30min}), dB(A)	
Date	Start Time	CN3 ^(*)	Start Time	CN4
2-Mar-20	11:02	60	11:38	59
13-Mar-20	15:00	58	15:37	58
19-Mar-20	10:15	61	10:53	61
25-Mar-20	10:39	59	11:16	56
31-Mar-20	10:04	63	9:28	56
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. Moreover, no noise complaint (which triggered Action Level) was received. No Notification of Exceedance (NOE) of construction noise criterion was issued and no corrective action was therefore required.



6. WATER QUALITY

6.1 MONITORING RESULTS

- 6.1.1 In the Reporting Month, water quality monitoring was performed at all designated locations. Impact monitoring schedule provided to all relevant parties was shown in *Appendix G*.
- 6.1.2 In the Reporting Month, a total of 13 monitoring days were carried out for water quality impact monitoring. 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)	Turbidity (Averaged)	Suspended Solids (Averaged)
	(mg/L)	(NTU)	(mg/L)
2-Mar-20	6.90	5.4	4.0
4-Mar-20	7.51	2.7	3.5
6-Mar-20	7.53	2.3	4.0
9-Mar-20	7.38	1.8	4.5
11-Mar-20	7.24	1.9	4.5
13-Mar-20	7.43	2.4	4.5
16-Mar-20	7.52	4.1	6.5
18-Mar-20	7.38	2.9	4.5
20-Mar-20	7.58	3.5	4.5
23-Mar-20	7.65	2.8	3.5
25-Mar-20	7.31	2.7	4.0
27-Mar-20	7.37	4.1	4.5
30-Mar-20	7.79	2.9	5.0

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

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

				Pa	rametei	rs				
Date		(Average (mg/L)	d)	Turbidi	ity (Ave (NTU)	raged)	Suspended Solids (Averaged) (mg/L)			
	M1	M2	M4	M1	M2	M4	M1	M2	M4	
2-Mar-20	8.31	#	7.94	1.3	#	1.4	<2	#	2.5	
4-Mar-20	8.03	#	8.17	6.2	#	0.9	8.0	#	<2	
6-Mar-20	8.03	#	8.93	3.8	#	1.5	5.5	#	<2	
9-Mar-20	7.62	#	8.06	<u>9.9</u>	#	0.9	28.5	#	<2	
11-Mar-20	7.49	#	8.01	4.1	#	0.9	4.5	#	2.5	
13-Mar-20	7.64	#	7.96	6.9	#	0.9	8.0	#	2.0	
16-Mar-20	6.94	#	7.67	5.9	#	2.1	6.5	#	3.5	
18-Mar-20	7.69	#	8.33	5.1	#	1.7	2.0	#	2.5	
20-Mar-20	7.80	#	8.34	5.7	#	1.8	4.5	#	<2	
23-Mar-20	7.60	#	7.97	3.6	#	1.3	3.0	#	<2	
25-Mar-20	7.39	#	7.73	4.8	#	1.0	4.0	#	<2	
27-Mar-20	7.59	#	7.57	14.5	#	0.9	11.0	#	2.5	
30-Mar-20	8.19	#	8.27	1.8	#	1.7	4.5	#	<2	

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out; Bold and underlined indicated Limit Level exceedance

6.1.3 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 (Averaged) (unit)		Salinity (Averaged) (ppt)		Temp (Averaged) (°C)		Water Flow (Averaged) (m/s)				
	min	max	min	max	min	max	min	max			
M1	7.1	8.6	0.03	0.09	18.4	23.1	< 0.1	< 0.1			
M2	#	#	#	#	#	#	#	#			
M3	7.2	8.7	0	0.04	18.9	23.5	< 0.1	< 0.1			
M4	6.9	8.2	0.05	0.08	19.3	23.7	< 0.1	< 0.1			

 Table 6-3
 Summary of Field Measurements for Water Quality

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out

6.2 WATER QUALITY MONITORING EXCEEDANCE

6.2.1 In this Reporting Month, no Action Level and Limit Level water quality exceedances was recorded. The non-compliance of water quality performance is summarized in *Table 6-4*.

Station	D	0	Turbidity		SS		Total Exceedance		Project Related exceedance	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
M1	0	0	0	2	0	2	0	4	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 6-4Action 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 Location	Exceeded Parameter	Cause of Water Quality Exceedance
9 March 2020	M1	Turbidity& SS	There was no active construction area near monitoring location M1 and no discharge made into the stream of M1 was observed. The impact monitoring results of turbidity measured at M1 was within the respective baseline range (note: baseline range $2.6 - 37.4$ NTU at M1). Since there was no active construction near M1 and discharge and runoff from the site were not anticipated, investigation concluded that the exceedances were unlikely caused by the Project. No corrective is required
27 March 2020	M1	Turbidity& SS	There was no active construction area near monitoring location M1 and no discharge made into the stream of M1 was observed. There was no active construction area near monitoring location M1 and no discharge made into the stream of M1 was observed. Since there was no active construction near M1 and discharge and runoff from the site were not anticipated, investigation concluded that the exceedances were unlikely caused by the Project. No corrective is required.



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
	Investigate cause and if cause identified as related to the project instigate remedial action to remove or reduce source of disturbance.	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 7-2Action and Limit Levels for Non-Wet Woodland Habitats Monitoring

Action Level	Response	Limit Level	Response
Reduction in	Investigate cause and if	Reduction in species diversity	Investigate cause and if cause identified as related to the project instigate remedial action.
	disturbance.		

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

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

,	Fable 7-3	Schedul	le of Fa	unal S	urveys	in eacl	n year 🛛	During	g Const	ructior	n Phase	9	
	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Mammals	N											



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

Mammal Survey

7.2.4 Mammal surveys will be conducted along the proposed transects (shown in Appendix D of the survey report) during both daytime and night time periods. Along with direct observations, other field signs, such as scats and tracks, will be searched and recorded if present.

Bird Survey

7.2.5 Bird surveys will be conducted along the transects (shown in Appendix D of the survey report) 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 D of the survey report) 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 D of the survey report) 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 *10th March 2020* at work area of Contract 1. A sunny day. The day and night 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

<u>Mammal</u>

7.3.2 There was no mammal recorded in the monitoring area

Birds

7.3.3 There were total of 29 bird individuals from 12 species recorded in the monitoring area. Three species of conservation interests was recorded in the monitoring area: *Milvus migrans*, Black Kite (黑 鳶), *Halcyon smyrnensis*, White-throated Kingfisher(白胸翡翠) and *Corvus torquatus* Collared Crow(白頸 鴉).

<u>Herpetofauna</u>

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



the monitoring area.

<u>Dragonfly</u>

7.3.5 There was a total of 5 odonate individual from 1 species recorded in the monitoring area.

Butterfly

7.3.6 There were a total of 14 butterfly individuals from 7 species recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

7.3.7 There was no freshwater community recorded in the monitoring area.

7.3.8 The summaries of faunal survey result are shown in *Tables 7-4 and 7-5*.

Table 7-4Result of Faunal Survey under Contract 1

Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
Mammal Survey				_	
Avifauna Survey					_
Milvus migrans	Black Kite	黑鳶	Fellowes et al. (2002): RC; Appendix 2 of CITES		2
Eudynamys scolopaceus	Asian Koel	噪鵑		1	
Halcyon smyrnensis	White-throated Kingfisher	白胸翡翠	Fellowes et al. (2002): LC		1
Corvus torquatus	Collared Crow	白頸鴉	Fellowes et al. (2002): LC; IUCN Red List Status: NT	1	
Corvus macrorhynchos	Large-billed Crow	大嘴烏鴉		4	
Pycnonotus sinensis	Chinese Bulbul	白頭鵯			4
Pycnonotus	Sooty-headed Bulbul	白喉紅臀鵯			7
aurigaster Hirundo rustica	Barn Swallow	家燕			2
Prinia flaviventris	Yellow-bellied Prinia	家 売 し 意 腹 鵤 鶯		2	2
Calliope calliope	Siberian Rubythroat	紅喉歌鴝			1
Dicaeum	Scarlet-backed	朱背啄花鳥			2
cruentatum	Flowerpecker				2
Anthus godlewskii	Olive-backed Pipit	樹鷚			2
Reptile Survey					
Amphibian Survey					
Butterfly Survey				_	_
Potanthus	Common Dart	木黃室弄蝶		1	
pseudomaesa					
Abisara echerius	Plum Judy	蛇目褐蜆蝶			8
Phaedyma columella	Short-banded Sailer	柱菲蛺蝶			1
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶		1	
Graphium sarpedon	Common Bluebottle	青鳳蝶		1	
Papilio helenus	Red Helen	玉斑鳳蝶		1	
Papilio protenor	Spangle	藍鳳蝶		1	
Odonate Survey					
Pantala flavescens	Wandering Glider	黃蜻			5



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

		Chinasa	Chinese		[ar-20
Scientific Name	Common Name	Name	Conservation Status	Non- wetland	Wetland

7.4 ECOLOGICAL MONITORING SURVEY FINDINGS (CONTRACT 2)

7.4.1 In the Reporting Month, ecological monitoring was undertaken on *10th March 2020* at work area of Contract 2. A sunny day. The day and night 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. 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

Birds

7.4.3 There were a total of 20 bird individuals from 7 species recorded in the monitoring area. One species of conservation interests was recorded in the monitoring area: *Milvus migrans*, Black Kite (黑鳶).

<u>Herpetofauna</u>

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

Dragonfly

7.4.5 There was total one odonate individual from one species recorded in the monitoring area.

<u>Butterfly</u>

7.4.6 There were total 7 butterfly individuals from 7 species recorded in the monitoring area.

Aquatic Fauna Survey (Freshwater communities)

7.4.7 There were two 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	Non- wetland	Wetland
Mammal Survey					
Avifauna Survey					
Milvus migrans	Black Kite	黑鳶	Fellowes et al. (2002): RC; Appendix 2 of CITES	1	
Amaurornis phoenicurus	White-breasted Waterhen	白胸苦惡鳥			1
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		4	6
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1	
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		4	
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		2	
Phoenicurus auroreus	Daurian Redstart	北紅尾鴝			1
Reptile Survey					



Scientific Name	Common / Engineer Name	Chinese Name	Conservation Status	Non- wetland	Wetland
Amphibian Survey					
Butterfly Survey					
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶		1	
Papilio memnon	Great Mormon	美鳳蝶		1	
Papilio paris	Paris Peacock	巴黎翠鳳蝶		1	
Papilio polytes	Common Mormon	玉帶鳳蝶		1	
Pieris canidia	Indian Cabbage White	東方菜粉蝶			1
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶		1	
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶		1	
Odonate Survey					
Trithemis aurora	Crimson Dropwing	曉褐蜻			1

Scientific Name	Common Name	Chinese Name	Conservation Status	10-Mar-20
Gambusia affinis	Mosquito fish	食蚊魚		+
Puntius semifasciolatus	Chinese Barb	五線無鬚鰓		+

+: Species appeared but uncountable.

- 7.4.9 The detailed survey reports of Contract 1 and Contract 2 are attached in *Appendix K*.
- 7.4.10 The tentative ecology inspection and monitoring in the next Reporting Month (April 2020) is scheduled on 2nd April 2020.

7.5 MEASURE FOR PROTECTION OF NESTING BIRD

- 7.5.1 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.
- 7.5.2 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

In the Reporting Month, landscape & Visual inspection was carried out by the Registered Landscape 8.2.1 Architect (RLA) for works area of Contract 1 and Contract 2 on 25th March 2020. The findings / reminders recorded during the inspection are presented in Tables 8-1 and 8-2. Landscape & Visual Inspection Finding for Contract 1 **Table 8-1**

Date	Findings and Reminder	Follow-Up Status
25 th March 2020	1. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density.	• The Contractor will keep closely monitor on the health condition of transplanted trees.
	2. The Contractor was reminded to prevent the construction material pile within Tree Protection Zone (TPZ) and ensure no works is allowed within the TPZ.	• Reminder was noted by the Contractor.
	3. The Contractor was reminded to provide proper maintenance for transplanted tree (T2465, T2468 and T2928) according to the approved method statement.	• Reminder was noted by the Contractor.

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

Date	Findings and Reminder	Follow-Up Status
25 th March 2020	1. The Contractor was reminded to prevent the construction material pile within TPZ and ensure no work is allowed with in the TPZ.	
	2. Proper TPZ should be set up according to approved method statement.	• Reminder was noted by the Contractor.

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	Contract 1		tract 2
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
C&D Materials (Inert) ('000m ³)	0		11707.33 (#)	
Reused in this Contract (Inert) ('000m ³)	14.155	Within Contract area	0	
Reused in other Projects (Inert) ('000m ³)	0		0	
Disposal as Public Fill (Inert) ('000m ³)	2.256	Tuen Mun Area 38	11707.33 (#)	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

	Contract 1		Contract 2	
Type of Waste	Quantity	Disposal Location	Quantity	Disposal Location
Recycled Metal ('000kg)	0		0	
Recycled Paper / Cardboard Packing ('000kg)	0		0	
Recycled Plastic ('000kg)	0		0	
Chemical Wastes ('000kg)	0.498	License collector	0	
General Refuses ('000m ³)	0.222	NENT Landfill	6.710 (#)	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 5th, 12th, 19th and 26th March 2020 and IEC attended joint site inspection on 19th March 2020. No non-compliance was noted.
- 10.2.2 The findings / deficiencies that observed during the weekly site inspection are listed in *Table 10-1*.

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

Date	Findings / Deficiencies	Follow-Up Status
5 th March 2020	 Opened cement bags were observed on ground, the Contractor should provide mitigation measures to minimise dust impact. (RW11) Scattered general refuse was observed on 	 Opened cement bags and the scattered general refuse at RW11 were removed and disposed properly. Opened cement bags and the
	ground, the Contractor should maintain good housekeeping. (RW11)	scattered general refuse at RW11 were removed and disposed properly.
12 th March 2020	• The Contractor was reminded to provide water spraying on site regularly	• Reminder only.
19 th March 2020	• NRMM label should be properly displayed with proper colour. (CS15)	• NRMM label was proper displayed.
	• The Contractor was reminded to maintain good housekeeping on site	• Reminder only.
26 th March 2020	• Improper color of NRMM label of excavator was observed at RW4. The Contractor was advised to replace the NRMM label as soon as possible	• NRMM label with proper colour was displayed.

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 5th, 12th, 19th and 26th March 2020 and IEC attended joint site inspection on 19th March 2020. No 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
27 February 2020	 Chemical containers should be placed inside drip tray. (RW14) Engine door of air compressor should be closed during operation. (RW14) 	 Chemical containers were placed into drip tray Engine door of air compressor was closed
5 th March 2020	• Muddy trails were observed at the exit of TTA2, the Contractor should provide wheel washing facilities and ensure all vehicles were washed before leaving the site	 Muddy trail was cleaned and wheel washing facilities was provided



Date	Findings / Deficiencies	Follow-Up Status
	• The Contractor was reminded to maintain the tree protection zone for the retained tree properly	• Reminder only.
12 th March 2020	• NRMM label should be properly displayed for the roller (RW13)	• NRMM label was properly displayed on the roller.
	• The Contractor was reminded to dispose the empty cement bag properly (Slope 225)	• Reminder only.
19 th March 2020	• NRMM label should be properly displayed on the breaker (LMH Road TTA2)	NRMM label was properly displayed
	• The Contractor was reminded to prevent seepage of muddy water to public road.	• Reminder only.
26 th March 2020	• No adverse environmental issue was observed.	• NA.



11. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

11.1 Environmental Complaint, Summons and Prosecution

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

Table 11-1 Statistical Summary of Environmental Complaints

Reporting Month		Environmental Complaint Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2020	Contract 1	0	0	NA
1 – 31 March 2020	Contract 2	0	0	NA

Table 11-2 Statistical Summary of Environmental Summons

Reporting Month		Environmental Summons Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2020	Contract 1	0	0	NA
1 – 31 March 2020	Contract 2	0	0	NA

Table 11-3 Statistical Summary of Environmental Prosecution

Reporting Month		Environmental Prosecution Statistics		
		Frequency	Cumulative	Complaint Nature
1 – 31 March 2020	Contract 1	0	0	NA
1 – 31 March 2020	Contract 2	0	0	NA

11.1.2 In addition, no complaints received and emergency events 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 and they are summarized presented in *Appendix N*.
- 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*.

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 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 Chemical Management	 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 							
General	The site was generally kept tidy and clean.							

 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:
 - (i) General Site Housekeeping
 - (ii) Bulk Excavation
 - (iii) Construction of Cut Slope, installation of soil nailing and construction of surface channel.
 - (iv) Construction of retaining wall for Fill Slope
 - (v) Construction of Fill Slope and surface channel
 - (vi) Construction of Detention tank
 - (vii) Construction of Pick-up and Drop-off Point near Man Kam To Road



- 12.2.2 According to the information provided by Sang Hing, the forthcoming construction activities for Contract 2 are listed below:
 - Site Patrol and daily cleaning within the site boundary including the anti-mosquito measures.
 - Construction of Manhole, gullies, drainage pipe at Lin Ma Hang Road between CH380-430 Southbound & CH1165-1265 Southbound.
 - Man Kam To Road DN800 DI Sewerage Pipe FM4.19-FM4.23 (180m)
 - Filling works for slope FS18 (Part A1) & construction of Retaining Wall 13
 - Piling Works for Retaining Wall 14
 - Soil Nail Works at Lin Ma Hang Road Slope C225 & C231

12.3 KEY ISSUES FOR THE COMING MONTH

- 12.3.1 Key issues to be considered in the coming month for the works of Contract 1 include:
 - Implementation of control measures for rainstorm;
 - Regular clearance of stagnant water during wet season;
 - Implementation of dust suppression measures at all times;
 - Potential wastewater quality impact due to surface runoff;
 - Potential fugitive dust quality impact due from the dry/loose/exposure soil surface/dusty material;
 - Ensure dust suppression measures are implemented properly;
 - Sediment catch-pits and silt removal facilities should be regularly maintained;
 - Discharge of site effluent to the nearby wetland is prohibited;
 - Nearby wetland prohibited stockpiling and/or disposal of materials;
 - Follow-up of improvement on general waste management issues; and
 - Implementation of construction noise preventative control measures.
- 12.3.2 Since wet season is approaching, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area. The implementation of water quality mitigation measures conducted by the Contractors is shown in *Appendix O*.



13. CONCLUSIONS AND RECOMMENTATIONS

13.1 CONCLUSIONS

- 13.1.1 This is the 20th Monthly EM&A Report presenting the monitoring results and inspection findings for the period of 1 to 31 March 2020.
- 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 No noise complaint (which is an Action Level exceedance) was received and no construction noise measurement result that exceeded the Limit Level was recorded in this Reporting Month. No NOEs or the associated corrective actions were therefore issued.
- 13.1.4 In the Reporting Period, **4** Limit Level water quality exceedances were recorded. NOE were issued to relevant parties and the investigation has been conducted by ET. Investigation revealed that the Contractor had implemented water quality mitigation measures and the exceedances were unlikely caused by the work under the project.
- 13.1.5 Monthly ecological monitoring for sensitive habitat for area of Contract 1 and Contract 2 were undertaken on 10th March 2020. 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 by the RLA on 25th March 2020. The Contractor was reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 13.1.7 In the Reporting Month, no environmental complaint, summons and prosecution was received. In addition, no complaints received and emergency events relating to violation of environmental legislation for illegal dumping and landfilling were received.
- 13.1.8 In the Reporting Month, joint site inspections for Contract 1 to evaluate the site environmental performance were carried out by the RE, ET and the Contractor on 5th, 12th, 19th and 26th March 2020 and IEC attended joint site inspection on 19th March 2020. No non-compliance was noted.
- 13.1.9 Joint site inspections for Contract 2 to evaluate the site environmental performance carried out by the RE, ET and the Contractor was on 5th, 12th, 19th and 26th March 2020 and IEC attended joint site inspection on 19th March 2020. No non-compliance was noted.

13.2 RECOMMENDATIONS

- 13.2.1 Since wet season is approaching, the Contractors are reminded to pay special attention on water quality mitigation measures and should fully implement the measures as recommended in the EM&A Manual, in particular to prevent surface runoff and other pollutants from flowing to local stream and Conservation Area.
- 13.2.2 Air quality mitigation measures such as wheel wash facilities, watering of haul roads, loose soil construction surface and covering of dusty materials with tarpaulin sheet should be implemented as far as practicable.
- 13.2.3 Construction noise would be a key environmental issue during construction phase of the Project. Noise mitigation measures such as using quiet plants and mobile noise barriers should be implemented in accordance with the EM&A requirement.
- 13.2.4 Since some of the construction site under the Project is located near villages, both Contractors should fully implement air quality mitigation measures to reduce construction dust emission.
- 13.2.5 Furthermore, daily cleaning and weekly tidiness shall be properly performed and maintained. In addition, mosquito control should be performed to prevent mosquito breeding on site.



Appendix A

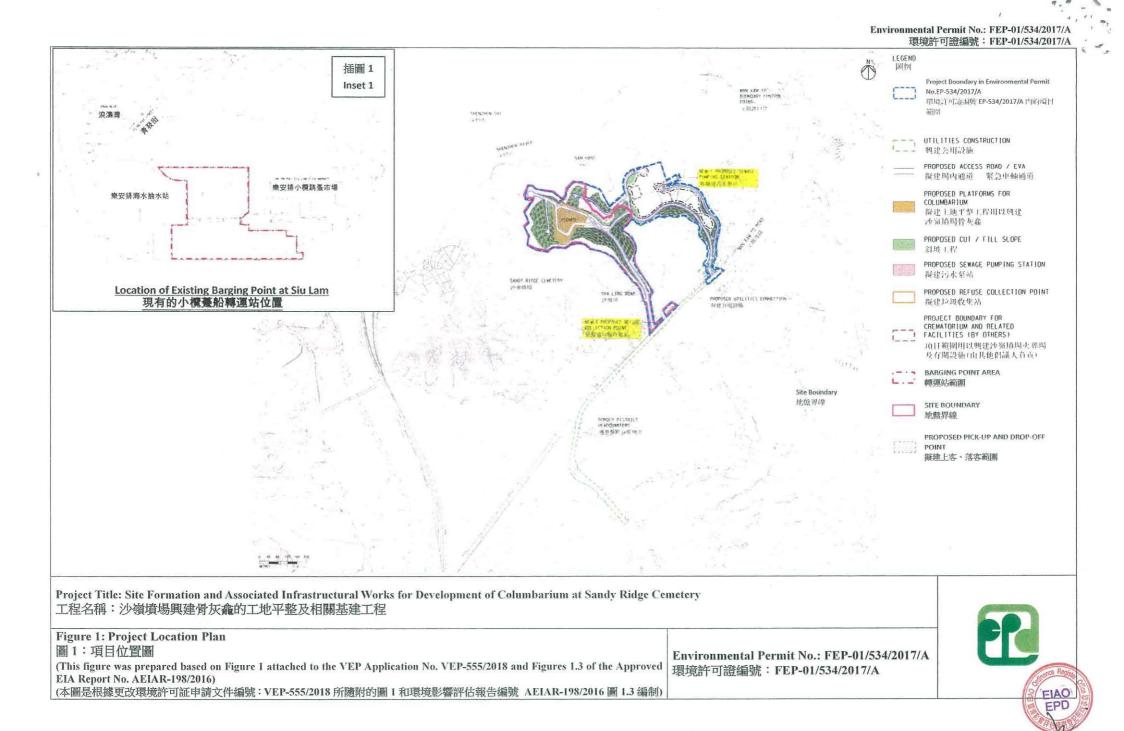
Layout Plan of the Project

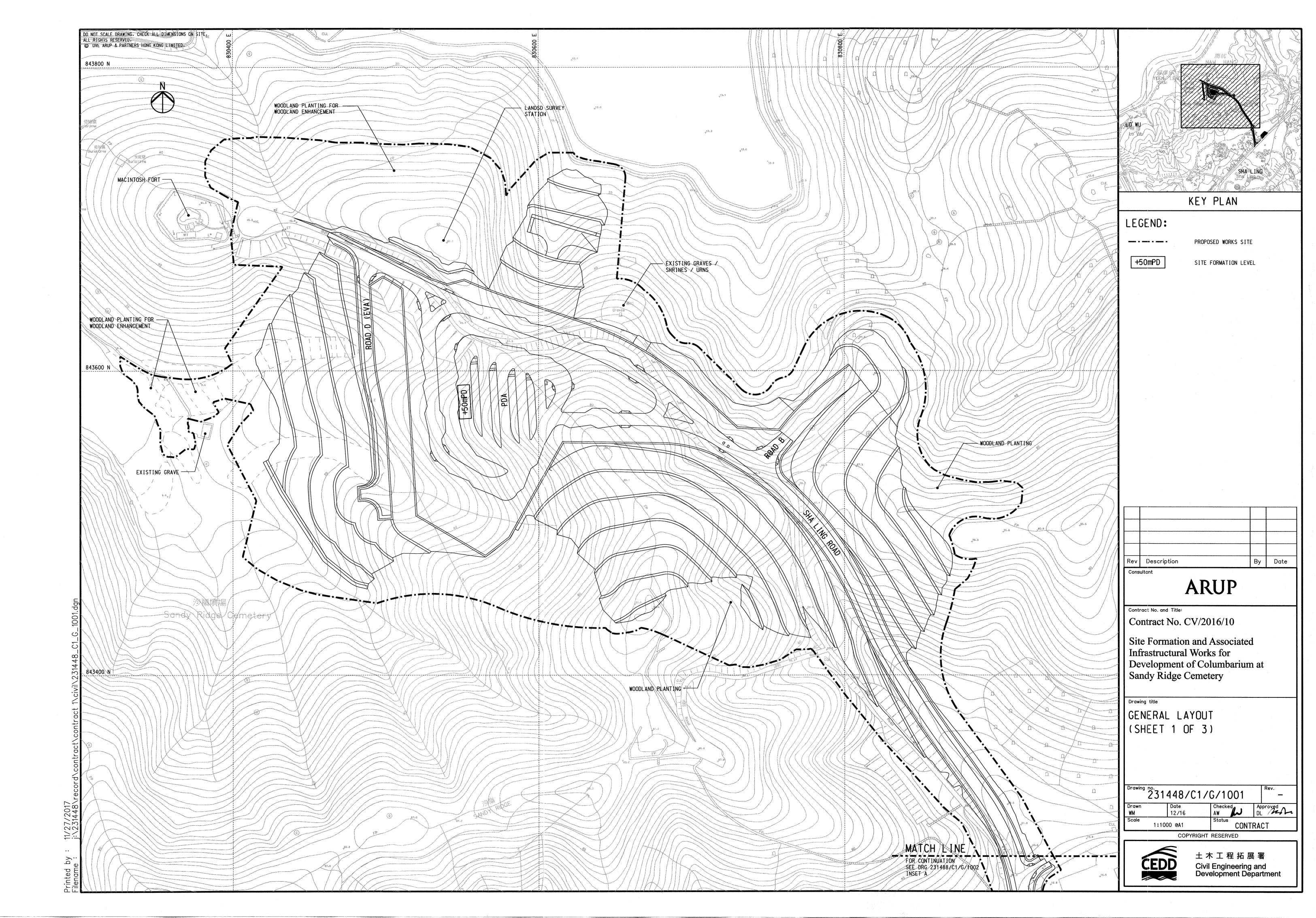
 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2020 \ 20th \ Month \ (March \ 2020) \ R0396v \ 2.doc \$

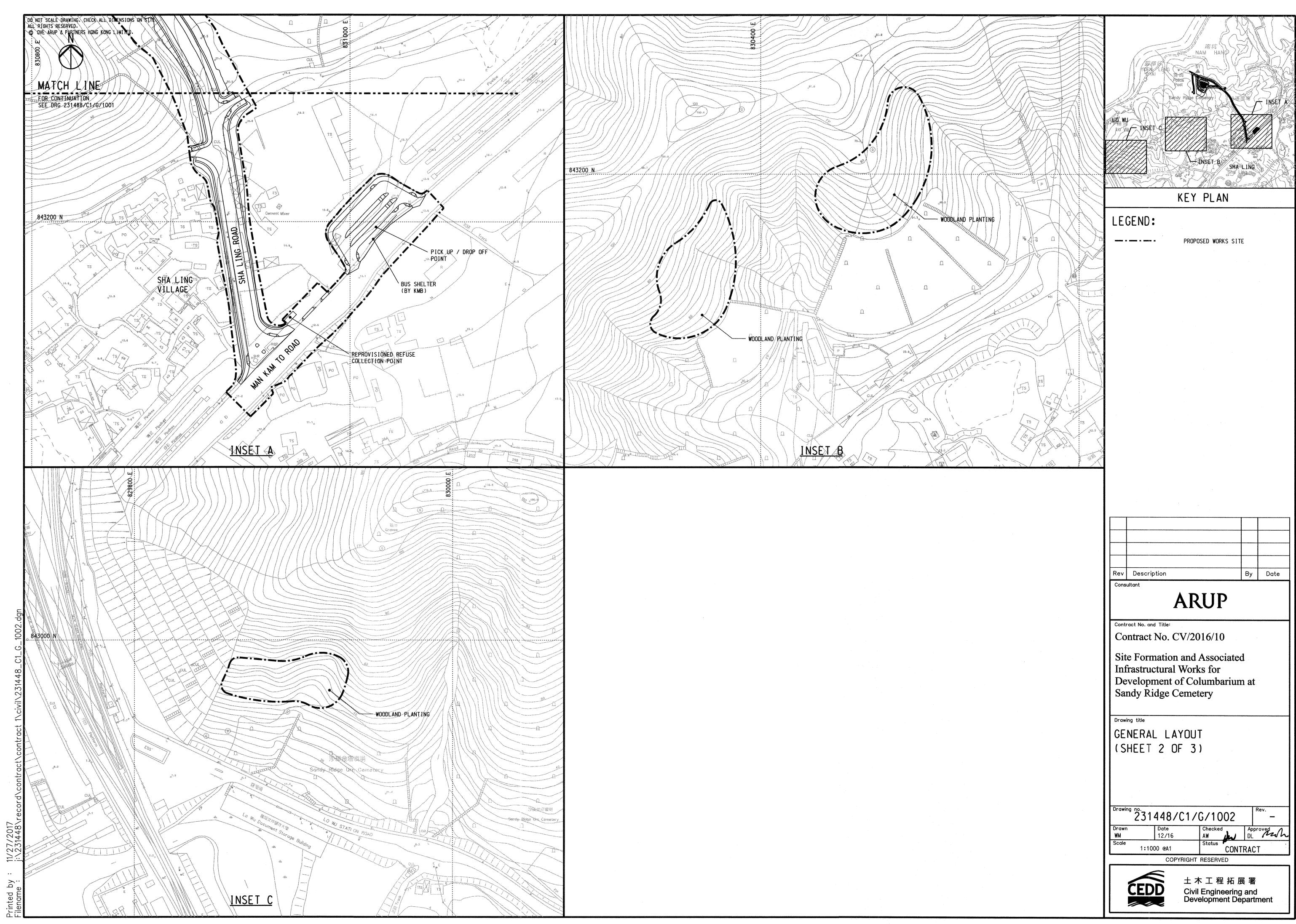


Layout Plan of Contract CV/2016/10

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2020 \ 20th \ Month \ (March \ 2020) \ R0396v \ 2.doc \$

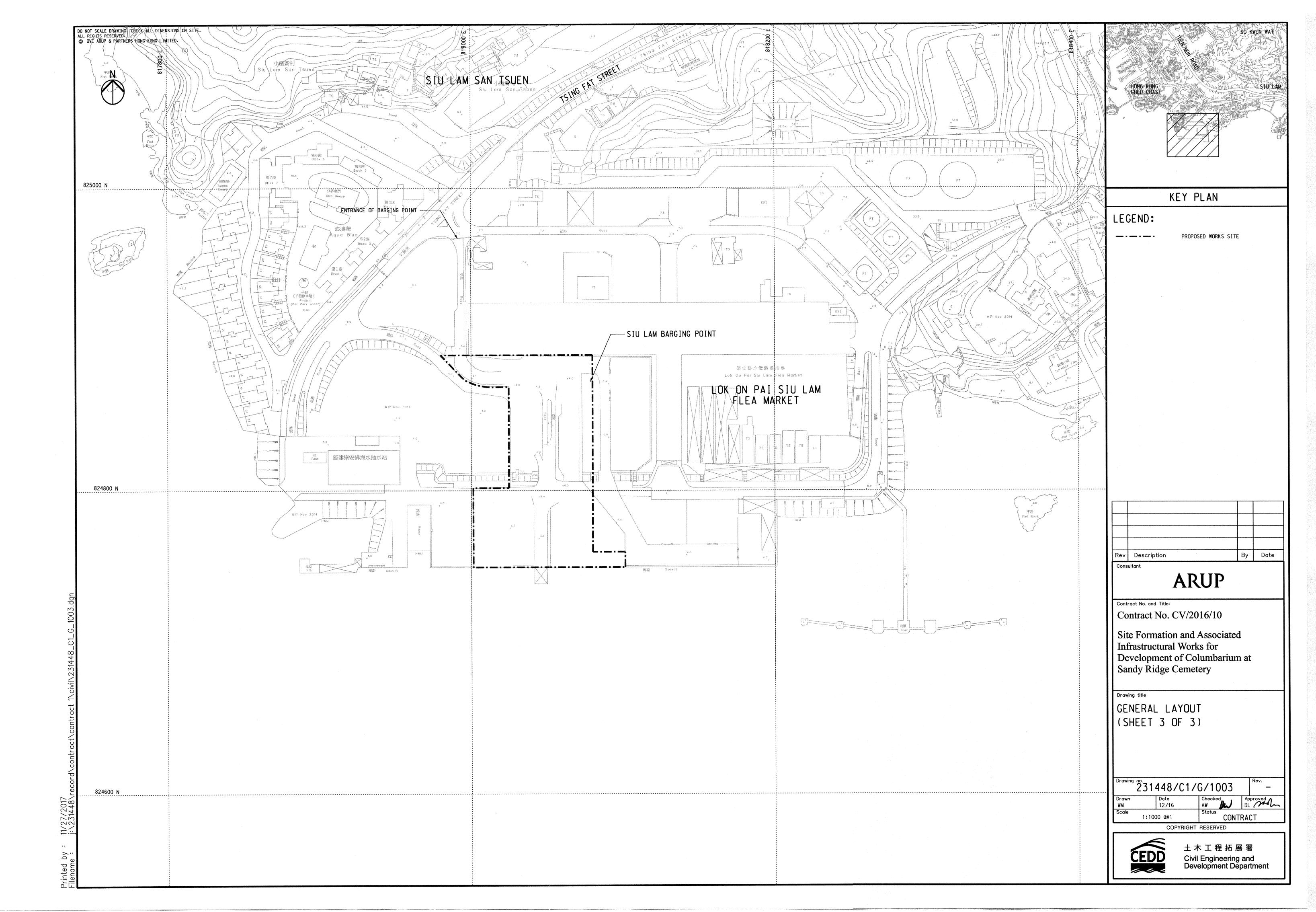






·					
Rev	Description	Ву	Date		
Consultant					

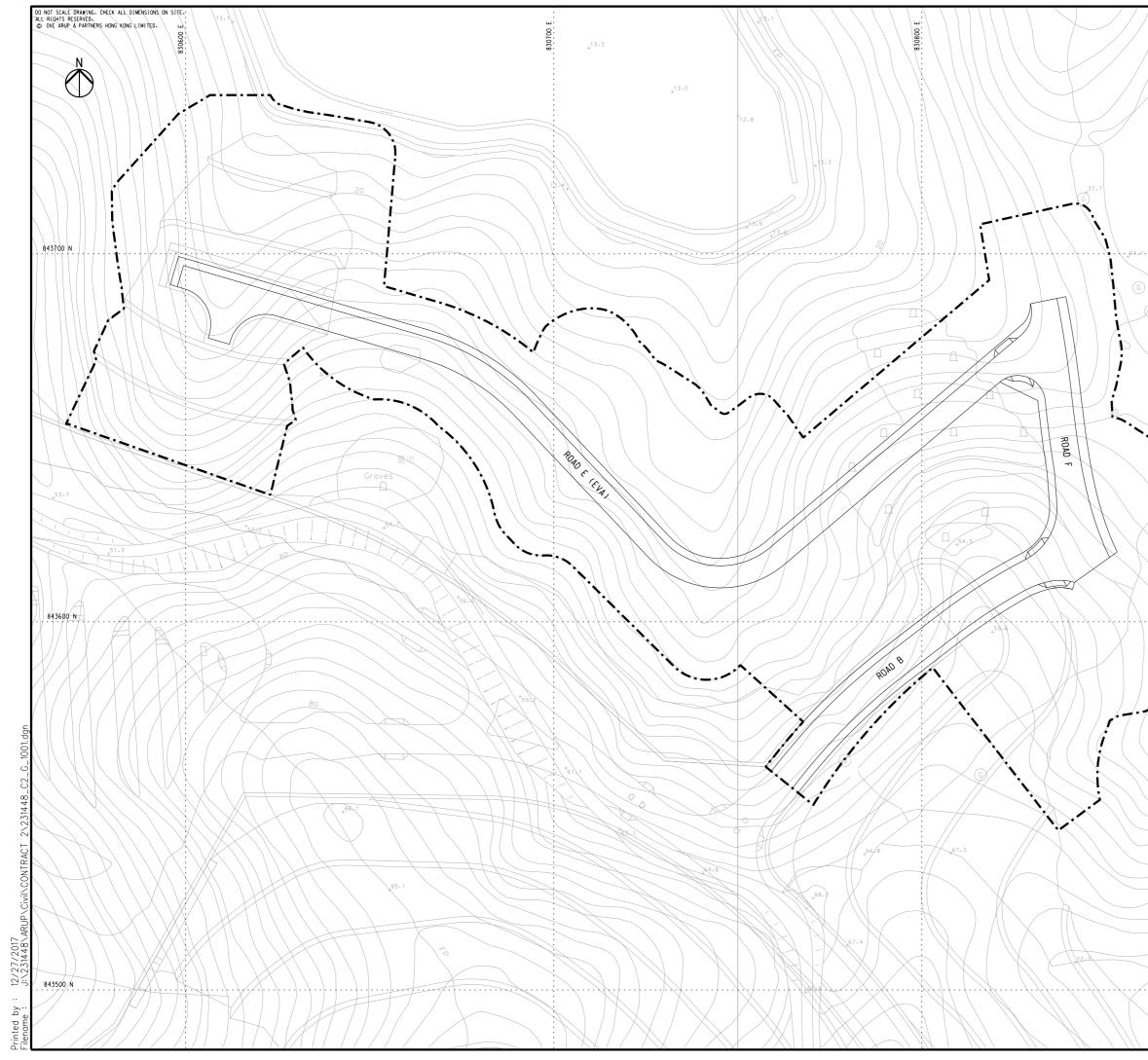
· · · ·			
Drawing no. 231	448/C1/	G/1002	Rev
Drawn WM	Date 12/16	Checked AW	Approved DL Manh
Scale 1:10	00 @A1	Status CONT	RACT
	COPYRIGHT	RESERVED	
CED		トエ程拓展 Engineering elopment De	and





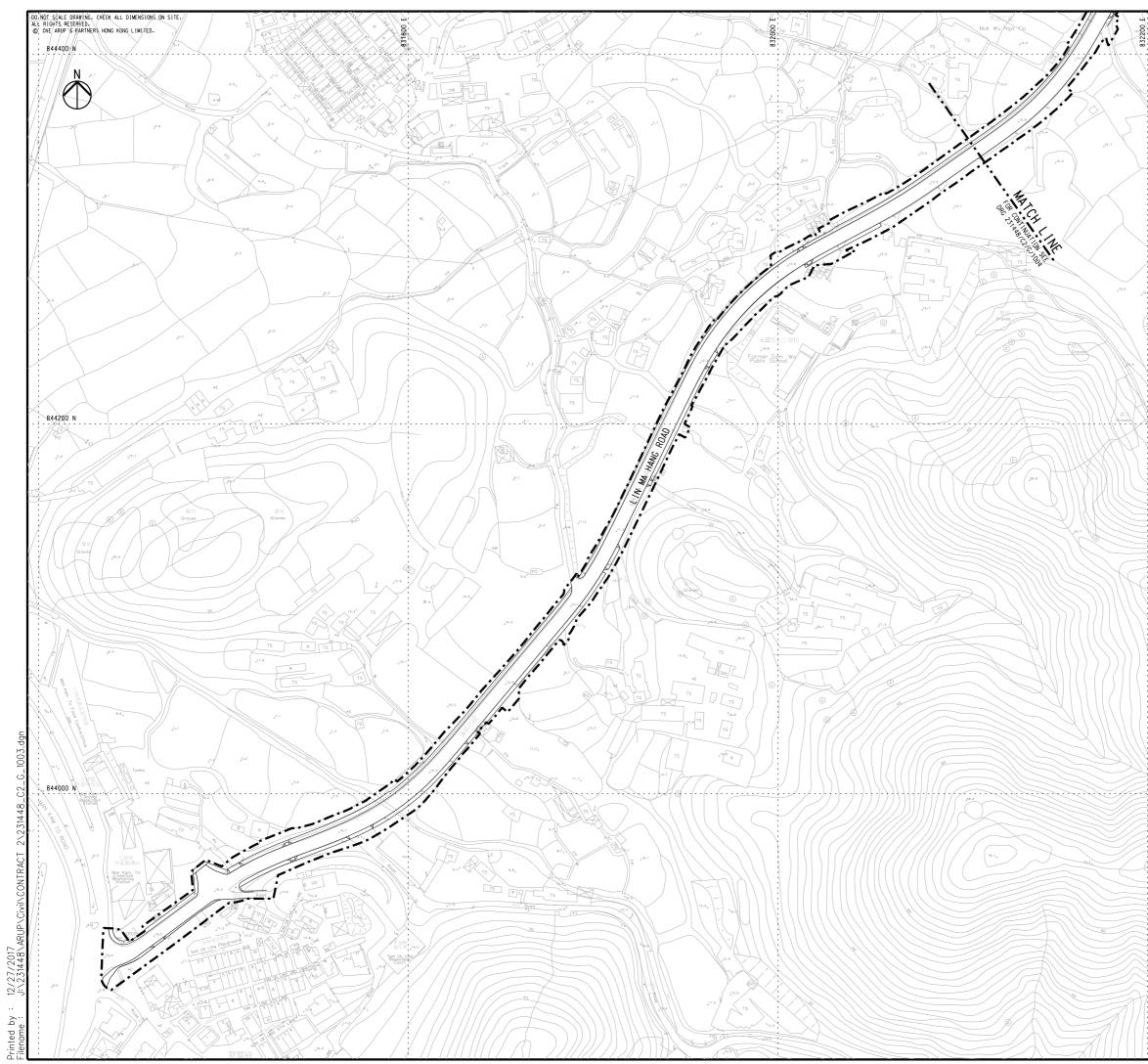
Layout Plan of Contract CV/2017/02

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2020 \ 20th \ Month \ (March \ 2020) \ R0396v \ 2.doc \$

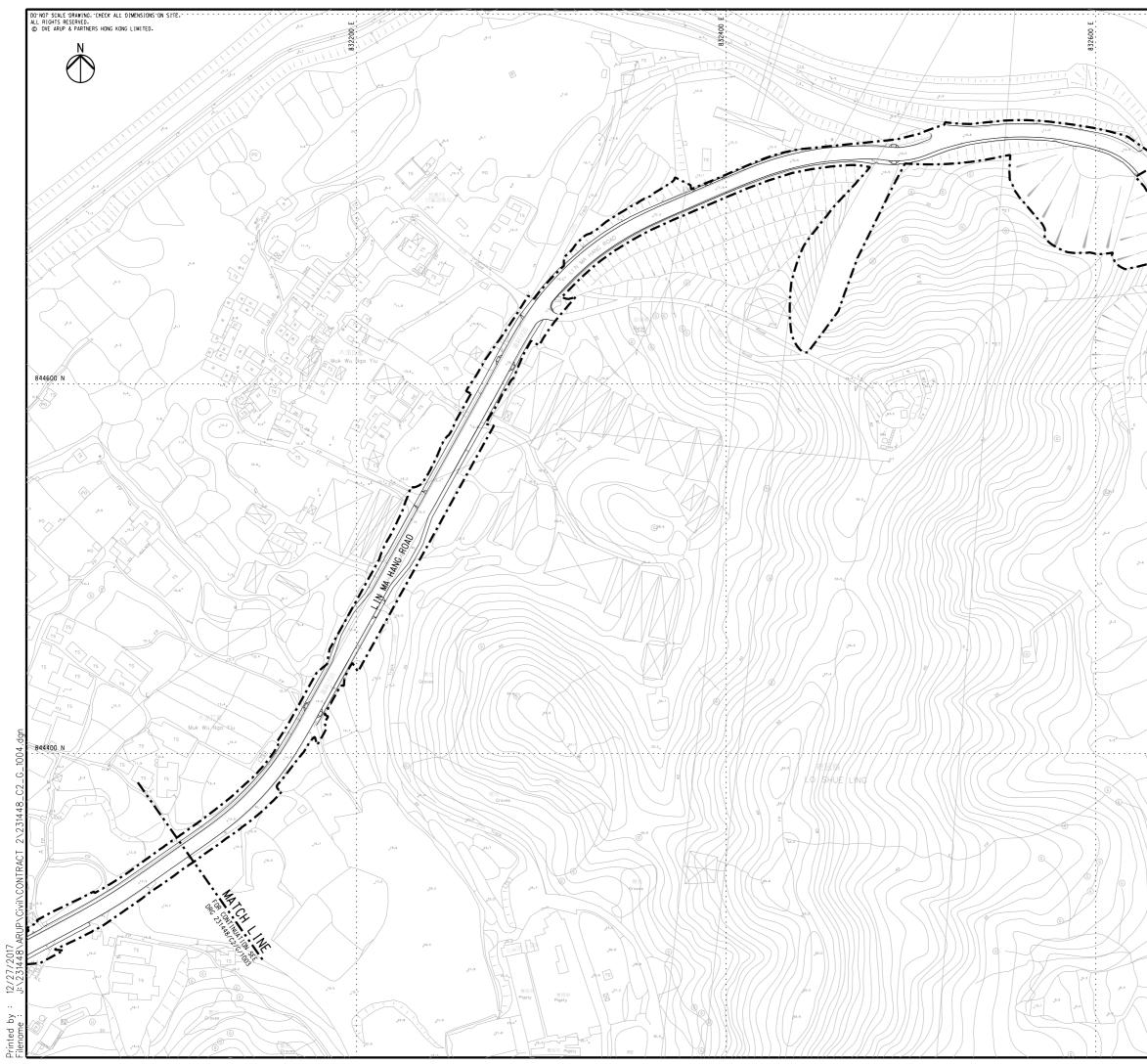


	SHA	LING
	KEY PLAN	
	LEGEND:	
E C C C C C C C C C C C C C C C C C C C	SITE BOUNDARY	
G 439.9		
₿9.4		
$\left\{ \left(\right) \right\} / \left[\right]$		
·····	- TENDER DRAWING	AW 11/17
i	Rev Description Consultant	By Date
····	ARUP	
	Contract No. CV/2017/02 Development of Columbarium	n
	at Sandy Ridge Cemetery - Infrastructural Works at	
	Man Kam To Road and Lin Ma Hang Road	
	GENERAL LAYOUT	
	(SHEET 1 OF 5)	
	Drawing no. 231448/C2/G/1001 Drawn Date Checked	Rev. — Approved
	WM 07/17 AW Scole 1:500 @A1 Status COPYRIGHT RESERVED	DL
+79.9	Development De	epartment





	KEY PLAN	
	LEGEND:	
27.4 27.4 27.4 27.4 27.4 27.4 27.4 27.4		
0.55 		
Y//////	- TENDER DRAWING	AW 11/17
	Rev Description Consultant Consultant Contract No. and Title:	By Dote
	Contract No. CV/2017/02 Development of Columbarium at Sandy Ridge Cemetery - Infrastructural Works at Man Kam To Road and Lin Ma Hang Road	n
	GENERAL LAYOUT (SHEET 3 OF 5)	
	Drowing no. 231448/C2/G/1003 Drown Date Checked WM 07/17 AW Scale 1:1000 @A1 Status COPYRIGHT RESERVED COPYRIGHT RESERVED	Rev Approved DL
	土木工程拓展 Civil Engineering Development De	and



		Nu.
	Level and the second se	
	A CONTRACTOR	
		AS-
	KEY PLAN	
	LEGEND:	
Rich .	SITE BOUNDARY	
φ ⁸⁻¹ ESS E		
2-3		
Pumping Station		
e ⁸⁻¹ e		
,5.4 E		
.E.		
3.41.5		
PH-		
5.7		├
	- TENDER DRAWING	AW 11/17
6.9 ₄	Rev Description Consultant	By Dote
"5.6	ARUP	
6-0, 5.9		
	Contract No. and Title: Contract No. CV/2017/02	
	Development of Columbarium	n
6-2 	at Sandy Ridge Cemetery -	
	Infrastructural Works at Man Kam To Road and	
	Lin Ma Hang Road	
	Drawing title	
4 ^{6.7} 4 ^{6.3}	GENERAL LAYOUT	
*6.6	(SHEET 4 OF 5)	
¢.7 v ^{6.6}	Drowing no.	Rev.
ð.¢	231448/C2/G/1004	Approved
47.3 46.4	WM 07/17 AW Scale 1:1000 @A1 Status	DL
4.0 4.5	COPYRIGHT RESERVED	
4 ^{1.0}		
2 ^{7,6}	CEDD Civil Engineering Development Development Development) and partment
]



	SHEUNG SHUT	N N
	SINE A	
Nock A		
		FANL ING
\sim		
//		HELL WONG® KONG SHAN
龍豐花園	TARGET VALLER STILLER	
Lung Fung Garden	KEY PLAN	
平台	LEGEND:	
(下層停車場	SITE BOUNDARY	
Podium (Car Park u		
$\langle \cdot \rangle \rangle$		
\land $\langle \land \rangle \land$ //		
Block C		
$\land \land $		
\sim		
/ // / / /		
L		
$\sim \sim ~$		
$\sum X = X = X$		
\rightarrow \checkmark \checkmark		
\geq \angle \times \sim		
332600 E		
28 28		
	- TENDER DRAWING Rev Description	AW 11/17 By Date
Cheung Ho	Consultant	-, 5000
	ARUP	
14.4+	Contract No. and Title:	
	Contract No. CV/2017/02	
	Development of Columbarium	n
	at Sandy Ridge Cemetery - Infrastructural Works at	
14.3+	Man Kam To Road and	
	Lin Ma Hang Road	
	Drawing title	
	GENERAL LAYOUT	
	(SHEET 5 OF 5)	
\land		
Block L	Drawing no. 231448/C2/G/1005	Rev
	Drawn Date Checked	Approved
\sim	WM 07/17 AW Scale Status 1:500 @A1 TFNDF	
	COPYRIGHT RESERVED	_π
K K		
•H Block		and
	Development De	partment
$\langle \cdot \rangle$		

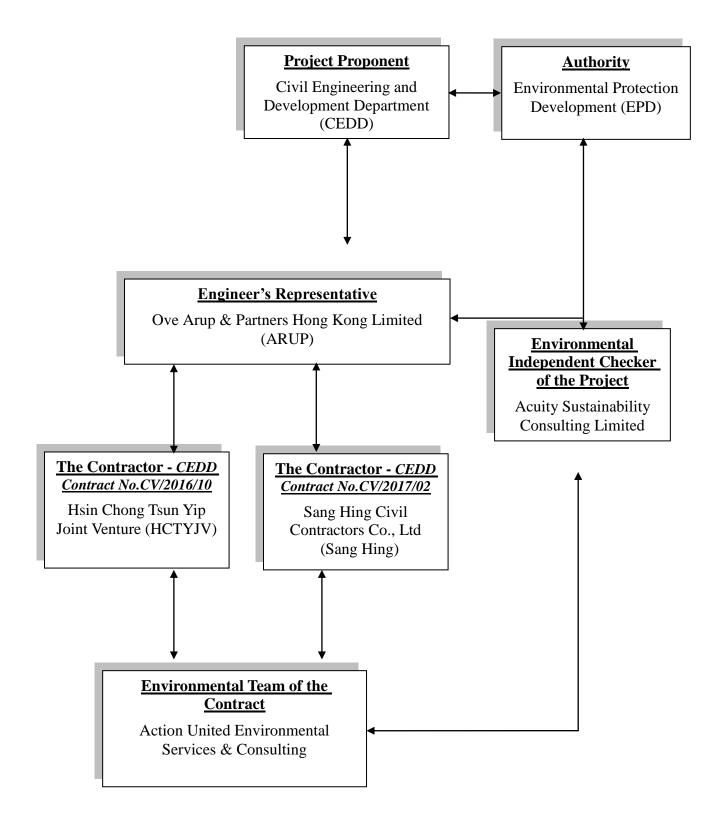


Appendix B

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	Ir. 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. Frankie Lam	6159-1140	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	Chan Ng jhon-keibi	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

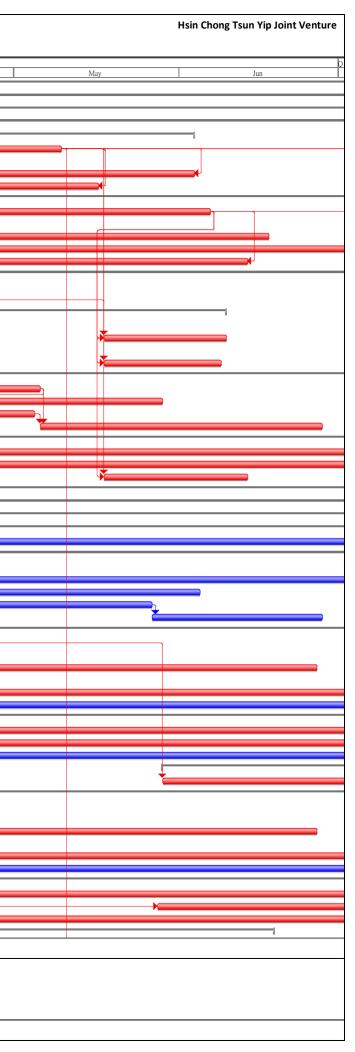
Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

3-month Rolling Programme (Mar 2020 to May 2020)

-	Task Name	Duration	Start	Finish			Qtr 2	2, 2020	
0		0400	E : 454047	E : 00/40/00		Mar			Apr
4			Fri 15/12/17	Fri 22/12/23					
9. 9.			Wed 17/7/19	Fri 22/12/23					
			Fri 15/12/17	Sat 11/7/20					
<u>a</u>			Thu 11/10/18	Fri 3/7/20					
2		453 days	Wed 14/11/18	Wed 3/6/20					
	FS1 South Backfilling Stage 5 (~7.6m height, Section 12 up to Proposed Platform, +50mPD), (Filter	83 days	Thu 23/1/20	Sat 9/5/20					
4		300 days	Tue 28/5/19	Wed 3/6/20					
1		220 days	Wed 14/8/19	Sat 16/5/20					
1	Fill Slope FS1 North (Section 14 at Drawing C1/GE/1030)	503 days	Thu 11/10/18	Fri 3/7/20					
7	FS1 North Backfilling Stage 5 (~7.5 m height, Section 14 up to Proposed Platform), (Filter blanket 44.3	83 days	Mon 24/2/20	Sat 6/6/20					
	to 46.8mPD)								
<u>a</u> .	Existing Slope Feature 3NW-C/F37 Upgrading Re-compaction	175 days	Tue 12/11/19	Wed 17/6/20					
<u>الم</u>		300 days	Wed 26/6/19	Fri 3/7/20					
а,	Geotechnical Instrumentation Works	220 days	Wed 11/9/19	Sat 13/6/20					
2		577 days	Mon 23/7/18	Sat 11/7/20					
2	• •	27 days	Mon 3/2/20	Wed 4/3/20					
2		27 days	Mon 3/2/20	Wed 4/3/20					
2		103 days	Mon 3/2/20	Tue 9/6/20					
2		46 days	Mon 3/2/20	Thu 26/3/20					
N		20 days	Mon 18/5/20	Tue 9/6/20					
2		20 days 27 days	Mon 2/3/20	Thu 2/4/20					
ž		19 days	Mon 18/5/20	Mon 8/6/20					
2		-		Sat 11/7/20					
		577 days	Mon 23/7/18				╈		
			Fri 27/3/20	Tue 5/5/20		<u></u>	-		
k k			Tue 24/3/20	Thu 28/5/20		· · · · · · · · · · · · · · · · · · ·			
			Fri 27/3/20	Mon 4/5/20		<u> </u>			
		45 days	Wed 6/5/20	Sat 27/6/20					
1			Tue 21/5/19	Sat 11/7/20					
1	Woodland Planting at Fill Slope	,	Wed 26/6/19	Fri 3/7/20					
1		300 days	Tue 2/7/19	Wed 8/7/20					
X		24 days	Mon 18/5/20	Sat 13/6/20					
1	Section 2 of the Works (Parts B1, B2, C, D, F, G1 & G2)	1292 days	Fri 15/12/17	Mon 28/6/21					
١,	Part B1	1034 days	Fri 15/12/17	Mon 28/6/21					
1			Fri 15/12/17	Wed 30/9/20					
1			Fri 15/12/17	Wed 30/9/20					
1			Thu 17/5/18	Wed 30/9/20					
1			Fri 31/1/20	Tue 29/9/20					
ų	Planter W1 & W2 Construction at CS1 & CS2		Fri 31/1/20	Wed 22/4/20					
2			Thu 23/4/20	Mon 13/7/20					
ų	Planter W2 Construction at CS3		Tue 4/2/20	Thu 4/6/20					
X									
			Thu 23/4/20	Tue 26/5/20					
) 		27 days	Wed 27/5/20	Sat 27/6/20					
2	Cut Slopes CS11 & CS12		Sat 1/9/18	Thu 8/4/21					
2	Excavate to +57 mPD, Pull Out Test, Soil Nails and Raking Drains (439 nos. of Soil Nail, 62 nos. of	78 days	Thu 5/12/19	Wed 11/3/20	ا				
	Raking Drain)				\				
	Excavate to +49.5 mPD, Pull Out Test, Soil Nails and Raking Drains (433 nos. of Soil Nail, 65 nos. of	84 days	Thu 12/3/20	Fri 26/6/20	🛓				
					1				
N			Thu 24/10/19	Thu 24/12/20					
1	Geotechnical Instrumentation Works		Wed 27/2/19	Tue 8/9/20					
			Tue 22/1/19	Fri 18/6/21	 				
ų		352 days	Fri 23/8/19	Wed 4/11/20					
9			Tue 10/3/20	Mon 24/5/21					
2	Hydroseeding Stage 2 from +72 mPD tp Toe Level		Sat 15/2/20	Wed 4/11/20					
a	Retaining Wall RW11		Fri 29/5/20	Sat 12/6/21					
2	Installation of Temporary Works		Fri 29/5/20	Thu 20/8/20	-				
2			Fri 4/5/18	Mon 11/1/21	 				
		78 days	Thu 5/12/19	Wed 11/3/20					
	Raking Drain)	, o duyo							
		84 days	Thu 12/3/20	Fri 26/6/20	— <u>+</u>				
	Raking Drain)	0- uays	110 12/3/20		- I - *				
		247 dovo	Thu 7/11/10	Mon 11/1/01					
(ک ع		347 days	Thu 7/11/19	Mon 11/1/21					
<u>a</u>	Geotechnical Instrumentation Works		Wed 10/7/19	Tue 20/10/20					
3			Thu 1/8/19	Tue 15/6/21					
12			Thu 1/8/19	Fri 20/11/20					
	Shrub Planting at Planter W2		Thu 28/5/20	Fri 29/1/21					
4				Man 20/12/20					/
(%) 134 134 134	Hydroseeding		Mon 5/8/19 Sat 1/9/18	Mon 28/12/20 Thu 18/6/20					

3-month Rolling Programme (Mar 2020 to May 2020) Task \diamond Project Summary External Milestone 🔶 Milestone Critical Progress _ T External Tasks Deadline 🗣 Split Critical Split Summary

Date: Mar 2020

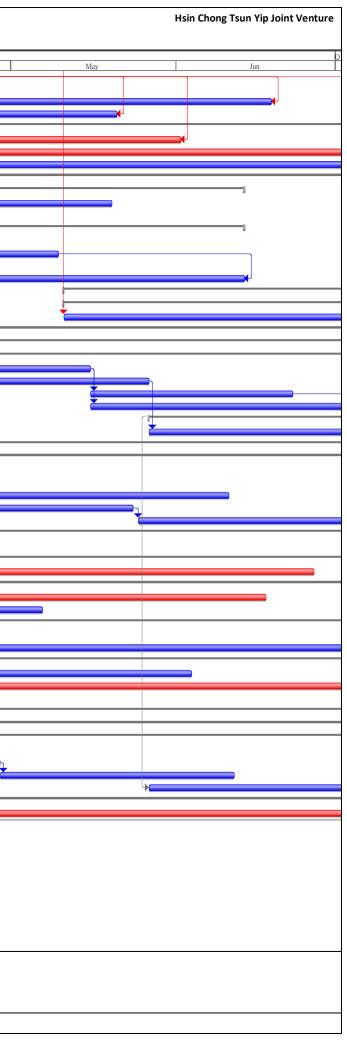


Contract No. CV/2016/10 Site Formation and Associated Infrastructural Works for Development of Columbarium at Sandy Ridge Cemetery

3-month Rolling Programme (Mar 2020 to May 2020)

Developm	ent of Columbarium at Sandy Ridge Cemetery							
ID 👩	Task Name	Duration	Start	Finish		Mar	Qtr 2, 2020	
276 炎	Excavate to +39.5mPD, Pull Out Test, Soil Nails and Raking Drains and Excavate to Proposed Toe Level (415 nos. of Soil Nail, 68 nos. of Raking Drain)	162 days	Thu 3/10/19	Fri 24/4/20		Mai	Apr	
277 🕪		213 days	Wed 25/9/19	Thu 18/6/20				
278 🔄	Geotechnical Instrumentation Works	460 days	Tue 23/10/18	Wed 20/5/20				
279 🖓		613 days	Thu 3/1/19	Wed 3/2/21				
280 🕪		288 days	Mon 10/6/19	Mon 1/6/20				
281 🖓	Shrub Planting at Planter W1 & W2	300 days	Fri 31/1/20	Wed 3/2/21				
282 🚰	Hydroseeding	450 days	Thu 3/1/19	Sat 18/7/20				
291	Fill Slope FS17	717 days	Thu 5/7/18	Thu 10/12/20				
308 🗳		172 days	Tue 12/11/19	Sat 13/6/20				
309 🚰	Existing Feature 3NW-C/F37 Upgrading Re-compaction	150 days	Tue 12/11/19	Tue 19/5/20				
310		70 days	Thu 5/12/19	Mon 2/3/20				
311 🛱		74 days	Thu 12/3/20	Sat 13/6/20				
312 🕺		21 days	Thu 12/3/20	Tue 7/4/20				
313 🤌		23 days	Wed 8/4/20	Sat 9/5/20			Č	
314 😥	Drainage and Maintenance Access	67 days	Fri 20/3/20	Sat 13/6/20				
315 🖓		310 days	Mon 11/5/20	Fri 28/5/21				
321 🖓		148 days	Mon 11/5/20	Fri 6/11/20				
322 🖗		48 days	Mon 11/5/20	Tue 7/7/20				
376		887 days	Fri 15/12/17	Wed 23/12/20				
387 🚰		602 days	Sat 1/12/18	Sat 19/12/20				
389 🚰		189 days	Tue 18/2/20	Wed 7/10/20				
390 🖗		69 days	Tue 18/2/20	Fri 15/5/20				
391 🔌		32 days	Fri 17/4/20	Tue 26/5/20				
392 🖗		32 days	Sat 16/5/20	Mon 22/6/20	_			
393 😥		120 days	Sat 16/5/20	Wed 7/10/20	_			
394		72 days	Wed 27/5/20	Thu 20/8/20	_			
395 剑		72 days	Wed 27/5/20	Thu 20/8/20	_			
396 🗳		355 days	Thu 18/7/19	Sat 26/9/20				
413		836 days	Fri 15/12/17	Wed 21/10/20	_			
415	- · · · · · · · · · · · · · · · · · · ·	56 days	Sat 4/1/20	Thu 12/3/20				
416		25 days	Fri 13/3/20	Thu 16/4/20	_			
417		45 days	Fri 17/4/20	Wed 10/6/20	_			
418 🖼 419 😥		30 days	Fri 17/4/20	Sat 23/5/20	_			
419		65 days	Mon 25/5/20	Mon 10/8/20				
	Other Utilities	749 days	Fri 8/6/18	Wed 23/12/20				
423	Works at Existing Sha Ling Road	298 days	Thu 19/12/19	Wed 23/12/20				
424		150 days	Thu 19/12/19	Fri 26/6/20				
440		158 days	Fri 31/1/20	Wed 12/8/20				
441		112 days	Fri 31/1/20	Wed 17/6/20				
442		76 days	Fri 31/1/20	Wed 6/5/20	_			
459		570 days	Tue 15/1/19	Wed 23/12/20				
461	ABWF Works Drainage and Sewerage Works and Connections TTA Stage 2	120 days	Fri 4/10/19	Mon 2/3/20 Thu 9/7/20	_ _]			
464		112 days	Thu 20/2/20	Wed 23/12/20	_			
404 466		570 days 100 days	Tue 15/1/19 Fri 31/1/20	Wed 3/6/20				
469	CLP Meter Application	90 days	Thu 9/4/20	Thu 30/7/20				
409 471	Electrial and Lighting Works	30 days	Tue 3/3/20	Wed 8/4/20	I ±			
472		586 days	Sat 15/12/18	Tue 15/12/20			— —	
474		300 days	Thu 18/7/19	Fri 24/7/20				
486 🗳		127 days	Tue 18/2/20	Fri 24/7/20	_ 			
487	Trial Pits Excavation and Preliminary Results Submission	25 days	Tue 18/2/20	Tue 17/3/20	—			
488		42 days	Wed 18/3/20	Tue 28/4/20				
489	Backfill to Proposed Ground Level (Max. 2.5m)	36 days	Wed 29/4/20	Thu 11/6/20	-			<u>+</u>
491		72 days	Wed 27/5/20	Thu 20/8/20	-			
	Section 6 of the Works		Fri 6/12/19	Mon 5/12/22	_			
550			Fri 6/12/19	Mon 5/12/22				



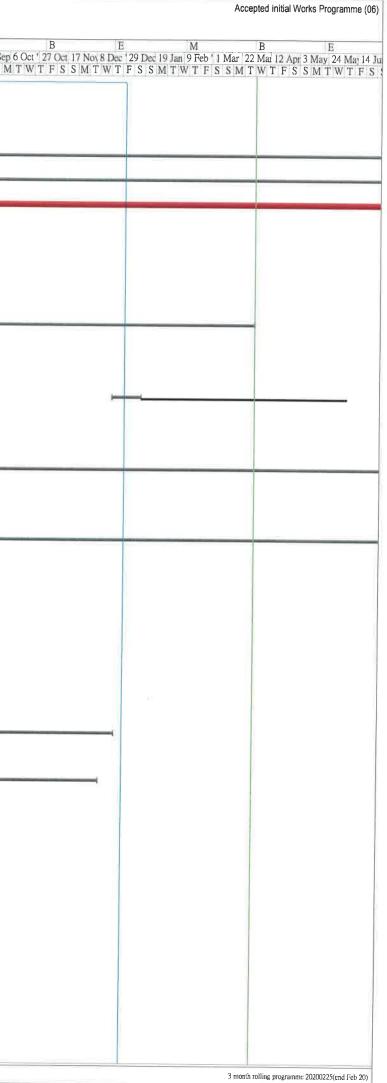




Three Months rolling Programme of Contract CV/2017/02

Z:\Jobs\2018\TCS00881(CV-2016-10)\600\EM&A Report Submission\Monthly Report\2020\20th Month (March 2020)\R0396v2.doc

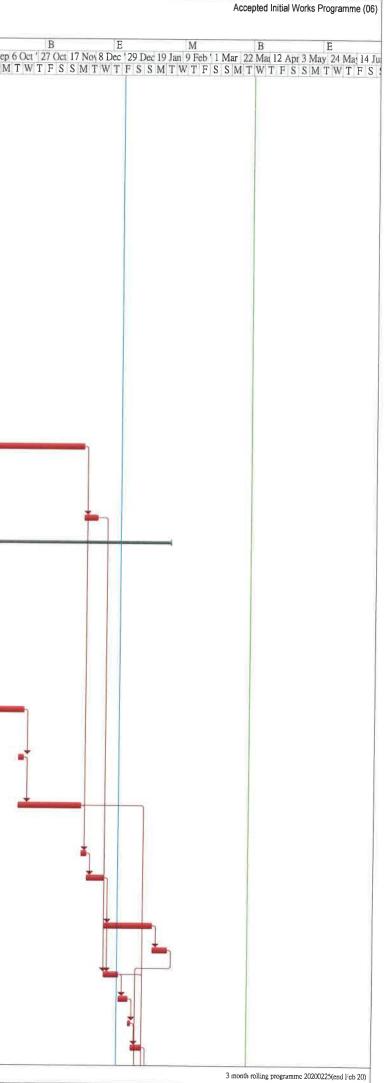
Deve	elopment	CV/2017/02 of Columbarium at Sandy Ridge Cemetery al Works at Man Kam To Road and Lin Ma Hang Road	1			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
lD	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Ma; 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun ' 23 Jun 14 Jul 4 Aug 25 Aug 15 Sep
2	2	Starting Date	0 days	Thu 31/5/18	Thu 31/5/18	I W I F S S M I W I F S S M I W I F S S M I W I F S S M I W I F S S M I W I F S S M T W T F S S M T W T F S S M
3	3	ET Submissions	9 days	Wed 26/9/18	Fri 5/10/18	
12	4	Applications to Government Department	27 days	Mon 4/6/18	Sat 30/6/18	
20	5	Submissions & acceptances	835 days	Mon 4/6/18	Tue 15/9/20	
44	6	Liaison with Utility Undertakers	979 days		Wed 3/2/21	P
47		Liaison with Contract CV/2016/01 regarding Parts A1 to			Wed 3/2/21	
10		A4 (refer PS Appendix A1)	·			
48	8	Liaison Meeting with Interface and associated contractors	389 days	Fri 1/6/18	Mon 24/6/19	F
53	9	Tree Survey Reporting	164 days	Fri 1/6/18	Sun 11/11/18	<u>i</u>
58	10	Street Lighting Designs by the Contractor	671 days	Fri 1/6/18	Wed 1/4/20	b-
66	11	Provision of Project Manager's Site Accommodation (PS1.08A(b) & 1.49)	28 days	Fri 1/6/18	Thu 28/6/18	
67	12	Design of irrigation system within the Sandy Ridge Cemetery (LS/2021, 2041, 2042, W/1041,1011)	21 days	Fri 20/12/19	Fri 10/1/20	
70	13	Condition Survey	81 days	Thu 23/8/18	Sun 11/11/18	
77	14	section 1 of the works - Completion of all works within Parts A1, A2 and B of the Site except Establishment works	979 days	Thu 31/5/18	Wed 3/2/21	b-
78	14.1	Parts A1	859 days	Fri 28/9/18	Wed 3/2/21	
79	14,1.1	access date for section 1 (Parts A1) - not more than 120 days after the starting date	0 days	Fri 28/9/18	Fri 28/9/18	
80	14.1.2	form temporary haul road from the south side to Parts A1	14 days	Tue 2/10/18	Mon 22/10/18	
81	14.1.3	general site clearance	30 days	Tue 23/10/18	Wed 28/11/18	3
82	14.1.4	initial survey	27 days	Thu 29/11/18	Wed 2/1/19	
83	14.1.5	construction of temporary drainage	21 days	Thu 3/1/19	Sat 26/1/19	
84	14.1.6	Site Formation works for Cut Slope CS22 (in Parts A1)	258 days	Mon 28/1/19	Mon 23/12/19	
101	l 14.1.7	A1) Construction of Retaining Wall RW13 (bays 1 to 5)	192 days	Mon 15/4/19	Thu 12/12/19	
102	2 14,1.7.1	excavation with installation of temporary soil nails work behind RW13 (bays 1 to 5)	56 days	Mon 15/4/19	Tue 25/6/19	
103	3 14.1.7.2	plate load tests	3 days	Wed 26/6/19	Fri 28/6/19	
104	4 14.1.7.3	concrete blinding layers for 5 bays	3 days	Sat 29/6/19	Wed 3/7/19	
105	5 14.1.7.4	formwork for bases of alternative first 3 bays	2 days	Wed 3/7/19	Thu 4/7/19	
100	6 14.1.7.5	steel fixing for 3 bases	3 days	Fri 5/7/19	Mon 8/7/19	
10	7 14.1.7.6	concrete and curing for 3 bases	5 days	Tue 9/7/19	Sat 13/7/19	
10	8 14.1.7.7	remove formwork	3 days	Mon 15/7/19	Wed 17/7/19	
109	9 14.1.7.8	falsework and formwork for alternative 3 walls	4 days	Thu 18/7/19	Mon 22/7/19	
0		il Contractore Company Limited				Page 1/20



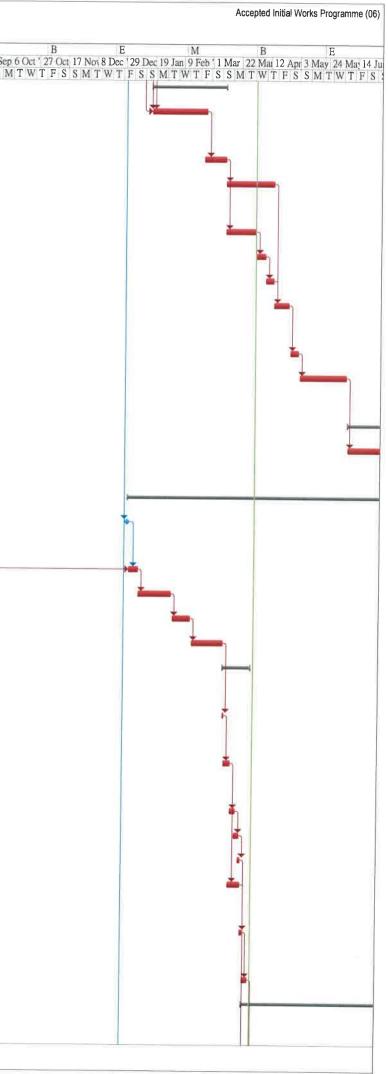
Contract No. CV/201 Development of Colu Infrastructural Work	7/02 mbarium at Sandy Ridge Cemetery s at Man Kam To Road and Lin Ma Hang Road	t			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
D WBS Task	Name	Duration	Start Date	Completion Date	20 Mat 10 Jun 1 Jul '122 Jul 12 Aus 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mat 31 Mat 21 Apr 12 Mat 2 Jun '4 Jul 4 Aug 25 Apr 15 Sep
110 14.1.7.9	steel fixing for 3 walls	9 days	Tue 23/7/19	Thu 1/8/19	TWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSM
111 14.1.7.10	close formwork for 3 walls	3 days	Fri 2/8/19	Mon 5/8/19	
112 14.1.7.11	concrete and curing for 3 walls	6 days	Mon 5/8/19	Sat 10/8/19	
113 14.1.7.12	remove formwork	3 days	Sat 10/8/19	Tue 13/8/19	
114 14.1.7.13	formwork for bases of alternative second two bays	2 days	Tue 13/8/19	Wed 14/8/19	
115 14.1.7.14	steel fixing for two bases	2 days	Wed 14/8/19	Thu 15/8/19	
116 14.1.7.15	concrete and curing for two bases	4 days	Fri 16/8/19	Tue 20/8/19	
117 14.1.7.16	remove formwork	2 days	Tue 20/8/19	Wed 21/8/19	
118 14.1.7.17	falsework and formwork of alternative second two walls	3 days	Wed 21/8/19	Fri 23/8/19	s i la seconda de la second
119 14.1.7.18	steel fixing for two walls	6 days	Fri 23/8/19	Thu 29/8/19	
120 14.1.7.19	close formwork for two walls	2 days	Thu 29/8/19	Fri 30/8/19	et la
121 14.1.7.20	concrete and curing for two walls	4 days	Sat 31/8/19	Wed 4/9/19	
122 14.1.7.21	remove falsework & formwork	2 days	Wed 4/9/19	Thu 5/9/19	· · · · · · · · · · · · · · · · · · ·
123 14.1.7.22	after completion of RW13 (bay 1 to 5) , backfilling & compaction behind wall to formation (A1) (Drg GE/1101)	66 days	Fri 6/9/19	Mon 2/12/19	
124 14.1.7.23	install instrument for RW13 (bay 1 to bay 5)	9 days	Tue 3/12/19	Thu 12/12/19	
125 14.1.8	Site Formation works for Fill Slope FS18	231 days	Mon 15/4/19	Mon 3/2/20	
126 14.1.8.1	excavate top 3.5m from the existing slope profile (extent to be directed by PM)(Drg.GE/2305)	15 days	Mon 15/4/19	Mon 6/5/19	
127 14.1.8.2	prepare formation for filter blanket	2 days	Tue 7/5/19	Wed 8/5/19	
128 14.1.8.3	slope backfill FS18 with 2.1m filter blanket (GE/2601)	9 days	Wed 8/5/19	Sat 18/5/19	
129 14.1.8.4	backilling from top of filter blanket to formation level (including SRT tests)	126 days	Thu 16/5/19	Mon 21/10/19	9
130 14.1.8.5	construction of 1.5m width maintenance berm	2 days	Fri 18/10/19	Mon 21/10/19	
131 14.1.8.6	construction of U channel/ stepped channel and catchpits	37 days	Fri 18/10/19	Mon 2/12/19	
132 14.1.8.7	construction of U channel in front of RW13	4 days	Tue 3/12/19	Fri 6/12/19	
133 14.1.8.8	600mm width concrete maintenance staircase with handrailing boxing out		Sat 7/12/19	Thu 19/12/19	
134 14.1.8.9	landscaping (hydroseeding)	27 days	Fri 20/12/19	Thu 23/1/20	
135 14.1.8.10	install instrument for FS18	6 days	Fri 24/1/20	Mon 3/2/20	
136 14.1.9	CS21 - slope cutting	7 days	Fri 20/12/19	Mon 30/12/19	
e agente a construction de la co	install instrument for CS21		Tue 31/12/19		
138 14.1.11	placement of erosion control mat/ hydroseeding	2 days	Tue 7/1/20	Wed 8/1/20	
	minor cutting CS26 (Parts A1) (for Road E)	7 days	Thu 9/1/20	Thu 16/1/20	
50D25	tors Company Limited	,-			Page 2/20

Sang Hing Civil Contractors Company Limited

Page 2/20

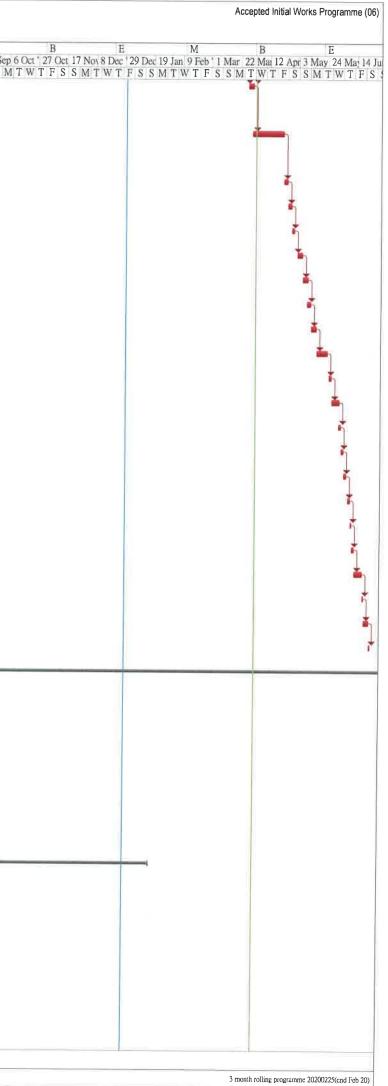


Infra	structural \	Columbarium at Sandy Ridge Cemetery Vorks at Man Kam To Road and Lin Ma Hang Road									Rolling Programm 3/2020 to 25/6/202		
)	WBS	Task Name	Duration	Start Date	Completion Date	20 Ma 1	M B 10 Jun 1 Jul *1 22 Jul E S S M T W T J	E 12 Aug 2 Sep ' 2 E S S M T W	3 Sep 14 O	M Oct 4 Nov	B 25 Nov 16 Dec 6 Jan * 27 Jan T E S S M T W T E S S	E M B 17 Feb 10 Mai 31 Mai 21 Apr 12 May 2 Ju M T W T F S S M T W T F S S M	E M n ' 23 Jun 14 Jul 4 Aug 25 Aug 15 S
140	14.1.13	Drainage works at Road E	43 days	Fri 17/1/20	Tue 10/3/20	1	1 3 3 101 1 10 1 1	r 3 3 M I W	1 1 3 3	WIIW	1 - 5 3 W 1 W 1 - 5 3	MIWIFSSMIWIFSSN	IIWIFSSMTWTFSS
141	14.1.13.1	main pipe laying	31 days	Fri 17/1/20	Tue 25/2/20								
142	14.1.13.2	gully pipe and pots	14 days	Mon 24/2/20	Tue 10/3/20								
.43	14.1.14	Waterworks at Road E	24 days	Wed 11/3/20	Tue 14/4/20								
44	14.1.15	CS23 - slope cutting & 300U channel	17 days	Wed 11/3/20	Wed 1/4/20								
145	14.1.16	install instrument for CS23	5 days	Thu 2/4/20	Wed 8/4/20								
146	14.1.17	placement of erosion control mat/ hydroseeding	2 days	Thu 9/4/20	Tue 14/4/20								
147	14.1.18	backfilling of pipe trench to formation (including SRT test)	9 days	Wed 15/4/20	Sat 25/4/20								
148	14.1.19	300U channel behind RW13	4 days	Mon 27/4/20	Sat 2/5/20								
149	14.1.20	300U channel and planter wall at south side of Road E	30 days	Mon 4/5/20	Sat 6/6/20								
150	14.1.21	Roadworks of Road E (A1-ch66-243)	164 days	Mon 8/6/20	Wed 30/12/20								
151	14.1.21.1	ducting for road lighting (RD/2091) & construction of irrigation system	20 days	Mon 8/6/20	Thu 2/7/20								
59	14.2	Parts A2	400 days	Tue 31/12/19	Wed 3/2/21								
160	14.2.1	access date for section 1 (Parts A2) - not more than 580 days after the starting date	0 days	Tue 31/12/19	Tue 31/12/19								
161	14.2.2	form temporary haul road to Parts A2	6 days	Thu 2/1/20	Wed 8/1/20								
162	14.2.3	general site clearance	18 days	Thu 9/1/20	Sat 1/2/20								
163	14.2,4	initial survey	12 days	Mon 3/2/20	Sat 15/2/20								
164	14.2.5	construction of temporary drainage	20 days	Mon 17/2/20	Tue 10/3/20								
165	14.2.6	Site Formation works for Cut Slope CS22 (in Parts A2)	15 days	Wed 11/3/20	Mon 30/3/20								
166	14.2.6.1	slope excavation works	1 day	Wed 11/3/20	Wed 11/3/20								
167	14,2,6.2	drill, install steel bars and grout soil nails (TB01-06, TA01-07) & 3nrs. raking drain	4 days	Thu 12/3/20	Mon 16/3/20								
168	14.2.6.3	TDR test allowance	4 days	Tue 17/3/20	Fri 20/3/20								
	14.2.6.4	soil nail head works	2 days	Fri 20/3/20	Mon 23/3/20								
170	14.2.6.5	install rest of instrument for CS22		Mon 23/3/20									
171	14 2.6.6	300U channel, 300 stepped channel & catchpits with planter walls	7 days	Mon 16/3/20	Tue 24/3/20								
172	14.2.6.7	600mm width concrete maintenance staircase with handrailing	2 days	Wed 25/3/20	Thu 26/3/20								
173	14.2.6.8	placement of erosion control mat/ hydroseeding	2 days	Fri 27/3/20	Mon 30/3/20								
	14.2.7	Construction of Retaining Wall RW13 Bay 6 to Bay 8			Mon 10/8/20								

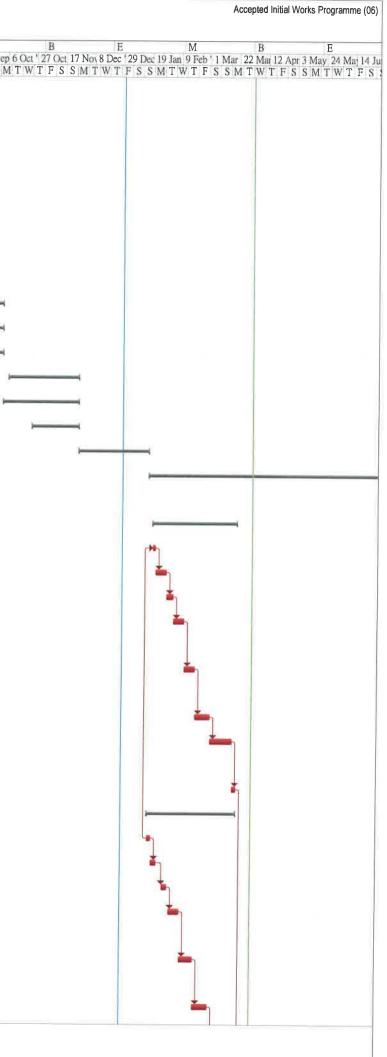


³ month rolling programme 20200225(end Feb 20)

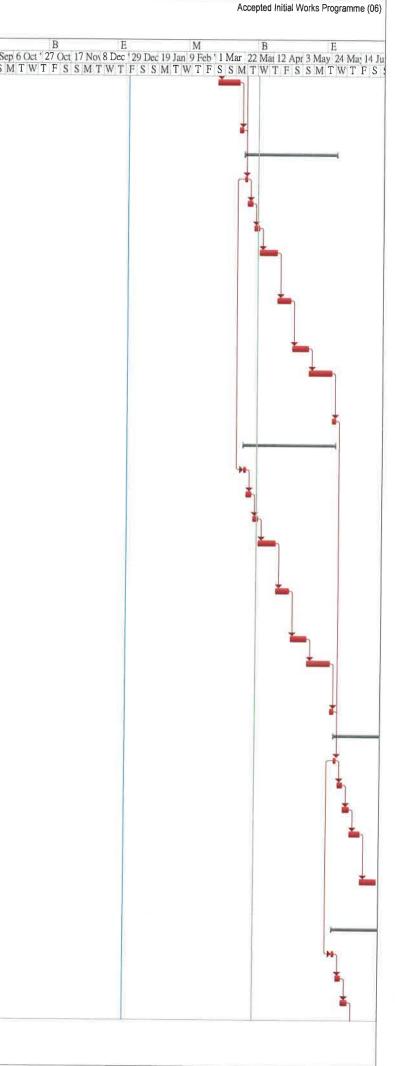
Develo - Infra	opment o structura	V/2017/02 If Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road			1	3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
D	WBS	Task Name	Duration	Start Date	Completion Date	m M B E M B E M B E M B E M B E M B E M B E M B E M B T T T T T T T T T T T T T T T T T T
175	14.2.7.1	temporary cutting for retaining wall RW13 Bay 6 to 8	2 days	Fri 27/3/20	Mon 30/3/20	0
176	14,2,7.2	temporary soil nails works for retaining wall RW13 Bay 6-8	15 days	Mon 30/3/20	Tue 21/4/20	0
177	14.2.7.3	plate load tests	3 days	Wed 22/4/20	Fri 24/4/20	
178	14.2.7.4	blinding concrete for bay 6 to 8	2 days	Sat 25/4/20	Mon 27/4/20	10
179	14.2.7.5	base formwork for bay 6 and 8	2 days	Tue 28/4/20	Wed 29/4/20	20
180	14.2.7.6	base steel fixing for bay 6 and 8	3 days	Sat 2/5/20	Tue 5/5/20	
181	14.2.7.7	base concreting & curing for bay 6 & 8	4 days	Wed 6/5/20	Sat 9/5/20	
182	14.2.7.8	remove base formwork	2 days	Sat 9/5/20	Mon 11/5/20	20
183	14.2.7.9	falsework and formwork for walls bay 6&8	4 days	Tue 12/5/20	Fri 15/5/20	
184	14.2.7.10	steel fixing for walls of bay 6 & 8	7 days	Sat 16/5/20	Sat 23/5/20	0
185	14.2.7.11	close formwork for walls of bay 6 & 8	2 days	Mon 25/5/20	Tue 26/5/20	:0
186	14.2.7.12	concreting and curing for walls of bay 6&8	5 days	Wed 27/5/20	Mon 1/6/20	0
187	14.2.7.13	remove falsework and formwork for walls	2 days	Mon 1/6/20	Tue 2/6/20	
188	14.2,7.14	base formwork for bay 7	2 days	Wed 3/6/20	Thu 4/6/20	
189	14,2,7.15	base steel fixing for bay 7	2 days	Fri 5/6/20	Sat 6/6/20	
190	14.2.7_16	base concreting & curing for bay 7	2 days	Mon 8/6/20	Tue 9/6/20	α
191	14.2.7.17	remove base formwork	1 day	Wed 10/6/20	Wed 10/6/20	20
192	14.2.7.18	falsework and formwork for walls of bay 7	2 days	Thu 11/6/20	Fri 12/6/20	
193	14.2.7.19	steel fixing for walls of bay 7	5 days	Sat 13/6/20	Thu 18/6/20	:0
194	14.2.7.20	close formwork for walls of bay 7	1 day	Fri 19/6/20	Fri 19/6/20	
195	14.2.7.21	concreting and curing for walls of bay 7	3 days	Sat 20/6/20	Tue 23/6/20	:0
196	14.2.7.22	remove falsework and formwork for walls	1 day	Wed 24/6/20	Wed 24/6/20	20
228	14.3	Parts B - refer Appendix MKTR01A & Appendix MKTR01B	979 days	Thu 31/5/18	Wed 3/2/21	1
229	14.3,1	access date for section 1 (Parts B) - the starting date	0 days	Thu 31/5/18	Thu 31/5/18	8
230	14.3.2	Initial Survey	104 days	Fri 1/6/18	Thu 4/10/18	8
231	14.3.3	utility detection and submit reports	30 days	Fri 5/10/18	Fri 9/11/18	3
232	14.3.4	Temporary Traffic Arrangement (TTA) Scheme for Man Kam Road	134 days	Fri 1/6/18	Fri 9/11/18	3
236	14.3.5	Construction of Fresh Water Mains (DN400)-refer to Drawings No. MKTR Programme/W/001 & 002	352 days	Sat 10/11/18	Fri 17/1/20	
237	14.3.5.1	Phase 1: TTA 1s	52 days	Sat 10/11/18	Sat 12/1/19	9
	14.3.5.2	Phase 1: TTA 8s		Wed 14/11/18		
	14.3.5.3	Phase 1: TTA 15s		Tue 20/11/18		
	14.3.5.4	Phase 2: TTA 2s		Tue 15/1/19	Mon 4/3/19	
	14.3.5.5	Phase 2: TTA 9s		Tue 15/1/19	Mon 4/3/19	
	14.3.5.6	Phase 2: TTA 16s		Mon 14/1/19	Mon 4/3/19	



Develo	poment of	//2017/02 ⁻ Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road	t			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)	
		Task Name	Duration	Start Date	Completion Date	M B E M B E M B E 20 Ma; 10 Jun 1 Jul '1 22 Jul '1 2 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun ' 23 Jun '14 Jul 4 Aug 25 A T W T F S S M T W T F	M Aug 15 Se
291	14.3.5.7	Phase 3: TTA3s	39 days	Tue 5/3/19	Tue 23/4/19	1 W 1 1 5 5 M 1 W 1 1 5 5 M 1 W 1 1 5 5 M 1 W 1 1 5 5 M 1 W 1 P 5 5 M 1	FSS
300	14.3.5.8	Phase 3: TTA10s	39 days	Tue 5/3/19	Tue 23/4/19		
309	14.3.5.9	Phase 3: TTA17s	39 days	Tue 5/3/19	Tue 23/4/19		
318	14.3 5 10	Phase 4: TTA4s	38 days	Mon 29/4/19	Fri 14/6/19		
327	14.3.5.11	Phase 4: TTA11s	38 days	Mon 29/4/19	Fri 14/6/19		
336	14.3.5.12	Phase 4: TTA18s	42 days	Wed 24/4/19	Fri 14/6/19		
345	14.3.5.13	Phase 5: TTA5s	42 days	Wed 19/6/19	Wed 7/8/19		
354	14.3.5.14	Phase 5: TTA12s	45 days	Sat 15/6/19	Wed 7/8/19		
363	14.3.5.15	Phase 5: TTA19s	45 days	Sat 15/6/19	Wed 7/8/19		
372	14.3.5.16	Phase 6: TTA6s	46 days	Fri 9/8/19	Thu 3/10/19		
381	14.3.5.17	Phase 6: TTA13s	42 days	Wed 14/8/19	Thu 3/10/19		
390	14.3.5.18	Phase 6: TTA20s	47 days	Thu 8/8/19	Thu 3/10/19		
399	14.3.5.19	Phase 7: TTA7s	44 days	Tue 8/10/19	Wed 27/11/19		
408	14.3.5.20	Phase 7: TTA14s	46 days	Fri 4/10/19	Wed 27/11/19		ĭ
417	14.3.5.21	Phase 7: additional TTA21s	29 days	Thu 24/10/19	Wed 27/11/19		
427	14.3.5.22	additional Phase 8: additional TTA 0s	41 days	Wed 27/11/19	Fri 17/1/20		
437	14.3.6	Construction of Sewerage (DN630) - refer to Drawing No. MKTR Programme/DR/001	311 days	Sat 18/1/20	Wed 3/2/21		
438	14.3.6.1	Phase A: TTA 1n	50 days	Tue 21/1/20	Sat 21/3/20		
439	14.3.6.1.1	mobilisation & set up TTA	2 days	Tue 21/1/20	Wed 22/1/20		
440	14.3.6.1.2	saw cut existing pavement and removal	4 days	Thu 23/1/20	Thu 30/1/20		
441	14.3.6.1.3	trial pits	4 days	Fri 31/1/20	Tue 4/2/20		
442	14.3.6.1.4	trench sheetpiling	7 days	Wed 5/2/20	Wed 12/2/20		
443	14.3.6.1.5	excavate trench & shoring	7 days	Thu 13/2/20	Thu 20/2/20		
444	14.3.6.1.6	pipe laying & construct manhole	9 days	Fri 21/2/20	Mon 2/3/20		
445	14.3.6.1.7	backfill trench & remove sheetpile, rail & strut	14 days	Tue 3/3/20	Wed 18/3/20		
446	14.3.6.1.8	reinstate trench & curing	3 days	Thu 19/3/20	Sat 21/3/20		
447	14.3.6.2	Phase A: TTA 7n	52 days	Sat 18/1/20	Sat 21/3/20		
448	14.3.6.2.1	mobilisation & set up TTA	2 days	Sat 18/1/20	Mon 20/1/20		
449	14.3.6.2.2	saw cut existing pavement and removal	4 days	Tue 21/1/20	Fri 24/1/20		
450	14.3.6.2.3	trial pits	4 days	Wed 29/1/20	Sat 1/2/20		
451	14.3.6.2.4	trench sheetpiling	7 days	Mon 3/2/20	Mon 10/2/20		
452	14.3.6.2.5	excavate trench & shoring	9 days	Tue 11/2/20	Thu 20/2/20		
150	14.3.6.2.6	pipe laying & construct manhole	9 days	Fri 21/2/20	Mon 2/3/20		

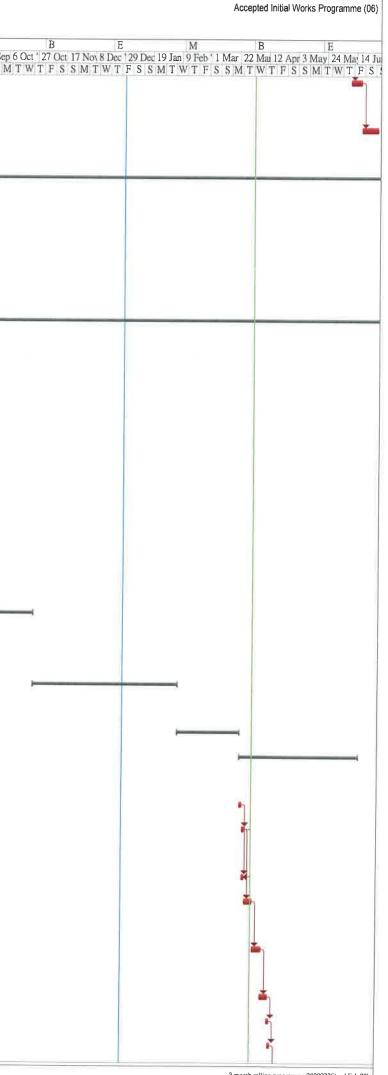


Devel	opment o	V/2017/02 f Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road	1			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
D	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M B E M 20 Mar 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov. 25 Nov 16 Dec 6 Jan.'' 27 Jun 17 Feb 10 Mar 21 Mar 21 Aug 12 Mar 21 Jun 1/22 Jun 14 Jul 4 Jun 25 feb 10 Mar 21
454	14.3.6.2.7	backfill trench & remove sheetpile, rail & strut	14 days	Tue 3/3/20	Wed 18/3/20	20 Ma; 10 Jun 1 Jul 1 22 Jul 12 Aug 2 Sep 12 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun 2 Jun 2 Jun 14 Jul 4 Aug 25 Aug 15 Sep 14 WT F S S M T W T F S S M T
455	14.3.6.2.8	reinstate trench & curing	3 days	Thu 19/3/20	Sat 21/3/20	
456	14.3,6.3	Phase B: TTA 2n	52 days	Mon 23/3/20	Thu 28/5/20	
457	14,3.6.3.1	mobilisation & set up TTA	2 days	Mon 23/3/20	Tue 24/3/20	
458	14.3,6.3,2	saw cut existing pavement and removal	4 days	Wed 25/3/20	Sat 28/3/20	
459	14.3.6.3.3	trial pits	4 days	Mon 30/3/20	Thu 2/4/20	
460	14.3.6.3.4	trench sheetpiling	7 days	Fri 3/4/20	Wed 15/4/20	
461	14,3,6,3,5	excavate trench & shoring	9 days	Thu 16/4/20	Sat 25/4/20	
462	14 3 6 3 6	pipe laying & construct manhole	9 days	Mon 27/4/20	Fri 8/5/20	
463	14,3,6,3,7	backfill trench & remove sheetpile, rail & strut	14 days	Sat 9/5/20	Mon 25/5/20	
464	14.3.6.3.8	reinstate trench & curing	3 days	Tue 26/5/20	Thu 28/5/20	
465	14.3.6.4	Phase B: TTA 8n	52 days	Mon 23/3/20	Thu 28/5/20	
466	14.3.6.4.1	mobilisation & set up TTA	2 days	Mon 23/3/20	Tue 24/3/20	
467	14.3.6.4.2	saw cut existing pavement and removal	4 days	Wed 25/3/20	Sat 28/3/20	
468	14.3.6.4.3	trial pits	4 days	Mon 30/3/20	Thu 2/4/20	
469	14.3.6.4.4	trench sheetpiling	7 days	Fri 3/4/20	Wed 15/4/20	
470	14.3.6.4.5	excavate trench & shoring	9 days	Thu 16/4/20	Sat 25/4/20	
471	14.3.6.4.6	pipe laying & construct manhole	9 days	Mon 27/4/20	Fri 8/5/20	
472	14.3.6.4.7	backfill trench & remove sheetpile, rail & strut	14 days	Sat 9/5/20	Mon 25/5/20	
473	14.3.6.4.8	reinstate trench & curing	3 days	Tue 26/5/20	Thu 28/5/20	
474	14.3.6.5	Phase C: TTA 3n	52 days	Fri 29/5/20	Thu 30/7/20	
475	14.3.6.5.1	mobilisation & set up TTA	2 days	Fri 29/5/20	Sat 30/5/20	
476	14.3.6.5.2	saw cut existing pavement and removal	4 days	Mon 1/6/20	Thu 4/6/20	
477	14.3.6.5.3	trial pits	4 days	Fri 5/6/20	Tue 9/6/20	
478	14,3.6.5.4	trench sheetpiling	7 days	Wed 10/6/20	Wed 17/6/20	
479	14.3.6.5.5	excavate trench & shoring	9 days	Thu 18/6/20	Mon 29/6/20	
483	14.3.6.6	Phase C: TTA 9n	52 days	Fri 29/5/20	Thu 30/7/20	
484	14.3.6.6.1	mobilisation & set up TTA	2 days	Fri 29/5/20	Sat 30/5/20	
485	14.3.6.6.2	saw cut existing pavement and removal	4 days	Mon 1/6/20	Thu 4/6/20	
486	14.3.6.6.3	trial pits	4 days	Fri 5/6/20	Tue 9/6/20	



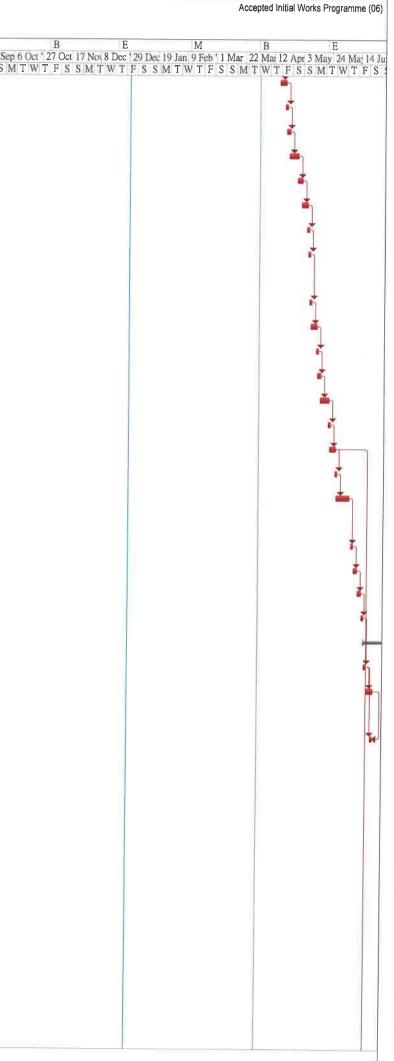
3 month rolling programme 20200225(end Feb 20)

)evelo	opment of	V/2017/02 f Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road	d			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Mai 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep ' 23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 2 Jun ' 23 Jun 14 Jul 4 Aug 25 Aug 15 Sep
487	14.3.6.6.4	trench sheetpiling	7 days	Wed 10/6/20	Wed 17/6/20	TWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSS
188	14.3.6.6.5	excavate trench & shoring	9 days	Thu 18/6/20	Mon 29/6/20	
100	14.0.0.0.0	excavate trench & shoring	5 udys	1110 10/0/20	WOIT 23/0/20	
557	17	section 2 of the works - Completion of all works within Parts C1 and C2 of the Site except Establishment works	979 days	Thu 31/5/18	Wed 3/2/21	
558	17.1	access date for section 2 (Part C1)	0 days	Thu 31/5/18	Thu 31/5/18	•
559	17.2	Temporary Traffic Arrangement (TTA) Scheme for Lin Ma Hang Road	162 days	Fri 1/6/18	Fri 9/11/18	
565	17.3	works at Lin Ma Hang Road (section 2 Part C1) refer Appendice LMHR01a to d	817 days	Sat 10/11/18	Wed 3/2/21	
566	17.3.1	Phase I (stage 1)-south lane (chainage 240-283)	23 days	Sat 10/11/18	Thu 6/12/18	i i i i i i i i i i i i i i i i i i i
577	17.3.2	Phase I (stage 2)-north lane (chainage 240-283)	16 days	Fri 7/12/18	Thu 27/12/18	
587	17,3.3	Phase I (stage 3)-south lane (chainage 283-335)	26 days	Fri 28/12/18	Mon 28/1/19	
598	17.3.4	Phase I (stage 4)-north lane (chainage 283-335)	17 days	Tue 29/1/19	Wed 20/2/19	
608	17.3.5	Phase I (stage 5)-south lane (chainage 335-380)	18 days	Thu 21/2/19	Wed 13/3/19	
618	17.3.6	Phase I (stage 6)-north lane (chainage 335-380)	16 days	Thu 14/3/19	Mon 1/4/19	
627	17.3.7	Phase I (stage 7)-south lane (chainage 380-435)	23 days	Tue 2/4/19	Fri 3/5/19	
638	17.3.8	Phase I (stage 8)-north lane (chainage 380-435)	15 days	Sat 4/5/19	Wed 22/5/19	
648	17.3.9	Phase I (stage 9)-south lane (chainage 190-240)	18 days	Thu 23/5/19	Thu 13/6/19	
659	17.3.10	Phase I (stage 10)-north lane (chainage 190-240)	16 days	Fri 14/6/19	Wed 3/7/19	
669	17.3.11	Phase II (stage 1)-south lane (chainage 32-85)-Noise Barrier MM6 (bays 1-3) & MM7 (bays 1-2)	95 days	Thu 4/7/19	Fri 25/10/19	
703	17.3.12	Phase II (stage 2)-north lane (chainage 32-85)-Noise Barrier MM9 (bays 1-4)	84 days	Sat 26/10/19	Fri 7/2/20	
735	17.3.13	Phase II (stage 3)-south lane (chainage 85-138)	38 days	Sat 8/2/20	Mon 23/3/20	
746	17,3,14	Phase II (stage 4)-north lane (chainage 85-138)-Noise Barrier MM10 (bays 1-4)	68 days	Tue 24/3/20	Wed 17/6/20	
747	17.3.14.1	TTA, UU detection	2 days	Tue 24/3/20	Wed 25/3/20	
748	17.3.14.2	tree felling	2 days	Thu 26/3/20	Fri 27/3/20	
749	17.3.14.3	saw cut & remove existing pavement	2 days	Thu 26/3/20	Fri 27/3/20	
750	17.3.14.4	install sheetpiles	5 days	Sat 28/3/20	Thu 2/4/20	
751	17.3.14.5	excavate and install rails and struts	5 days	Fri 3/4/20	Thu 9/4/20	
752	17.3.14.6	concrete blinding layers for 4 bays	2 days	Thu 9/4/20	Tue 14/4/20	
753	17.3.14.7	formwork for bases of alternative first two bays	2 days	Tue 14/4/20	Wed 15/4/20	
754	17.3.14.8	steel fixing for two bases	2 days	Wed 15/4/20	Thu 16/4/20	

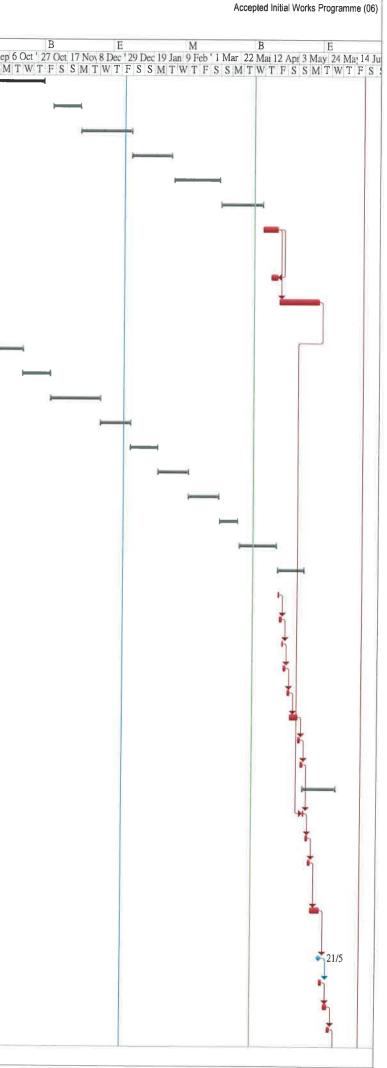


3 month rolling programme 20200225(end Feb 20)

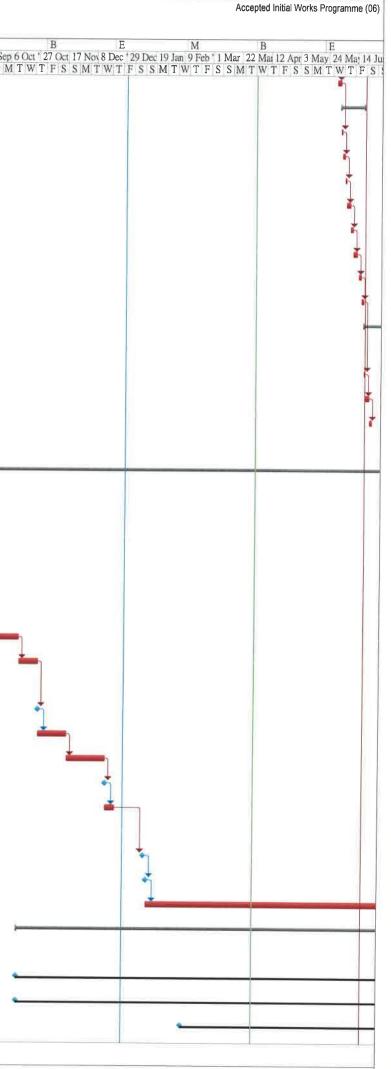
Develo	opment o	V/2017/02 f Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
D	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Mai 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug 15 Sep T W T F S M T F S M T F S M T F S M W T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S M T F S </th
755	17,3,14.9	concrete and curing for two bases	4 days	Thu 16/4/20	Mon 20/4/20	
756	17.3.14.10	remove formwork	2 days	Mon 20/4/20	Tue 21/4/20	
757	17.3.14.11	falsework and formwork for two walls	3 days	Tue 21/4/20	Thu 23/4/20	
758	17.3,14,12	steel fixing for two walls	6 days	Thu 23/4/20	Wed 29/4/20	
759	17.3.14.13	close formwork for two walls	2 days	Wed 29/4/20	Sat 2/5/20	
760	17.3.14_14	concrete and curing for two walls	4 days	Sat 2/5/20	Wed 6/5/20	
761	17.3.14.15	remove formwork	2 days	Wed 6/5/20	Thu 7/5/20	
762	17,3,14.16	formwork for bases of alternative second two bays	2 days	Thu 7/5/20	Fri 8/5/20	
763	17.3.14.17	steel fixing for two bases	2 days	Fri 8/5/20	Sat 9/5/20	
764	17.3.14.18	concrete and curing for two bases	4 days	Sat 9/5/20	Wed 13/5/20	
765	17.3.14.19	remove formwork	2 days	Wed 13/5/20	Thu 14/5/20	
766	17.3 14 20	falsework and formwork for two walls	3 days	Thu 14/5/20	Sat 16/5/20	
767	17.3.14.21	steel fixing for two walls	6 days	Sat 16/5/20	Fri 22/5/20	
768	17.3.14,22	close formwork for two walls	2 days	Fri 22/5/20	Sat 23/5/20	
769	17.3.14.23	concrete and curing for two walls	4 days	Sat 23/5/20	Wed 27/5/20	
770	17.3.14.24	remove formwork	2 days	Wed 27/5/20	Thu 28/5/20	
771	17.3.14.25	backfill formation & SRT test	9 days	Thu 28/5/20	Sat 6/6/20	
	17,3,14,26	, ,	2 days	Mon 8/6/20	Tue 9/6/20	
	17.3.14.27		3 days	Wed 10/6/20	Fri 12/6/20	
	17.3.14.28		2 days			
	17.3.14.29	·	2 days	Tue 16/6/20	Wed 17/6/20	
	17.3 15	Phase II (stage 5)-south lane (chainage 138-190)	36 days	Thu 18/6/20	Fri 31/7/20	
	17.3 15 1	TTA & UU detection	2 days	Thu 18/6/20	Fri 19/6/20	
778	17,3 15,2	tree felling	4 days	Sat 20/6/20	Wed 24/6/20	
779	17.3.15.3	saw cut & remove existing pavement	2 days	Tue 23/6/20	Wed 24/6/20	
894	17.3.23	Phase Ia (stage 101)-south lane (chainage 633-685)	20 days	Sat 10/11/18	Mon 3/12/18	
904	17.3.24	Phase Ia (stage 102)-north lane (chainage 633-685)	16 days	Tue 4/12/18	Fri 21/12/18	
914	17.3.25	Phase Ia (stage 103)-south lane (chainage 685-740)	25 days	Sat 22/12/18	Wed 23/1/19	
925	17.3.26	Phase Ia (stage 104)-north lane (chainage 685-740)	17 days	Thu 24/1/19	Fri 15/2/19	
934	17.3.27	Phase Ia (stage 105)-south lane (chainage 740-790)	24 days	Sat 16/2/19	Fri 15/3/19	h h h h h h h h h h h h h h h h h h h
945	17.3.28	Phase Ia (stage 106) north lane (chainage 740-790)	17 days	Sat 16/3/19	Thu 4/4/19	
955	17.3.29	Phase Ia stage 107)-south lane (chainage 790-840)	21 days	Sat 6/4/19	Sat 4/5/19	
966	17.3.30	Phase Ia (stage 108)-north lane (chainage 790-840)	29 days	Mon 6/5/19	Mon 10/6/19	
976	17.3.31	Phase Ia (stage 109)-south lane (chainage 840-890)	31 days	Tue 11/6/19	Wed 17/7/19	
988	17.3.32	Phase Ia (stage 110)-north lane (chainage 840-890)	18 days	Thu 18/7/19	Wed 7/8/19	
998	17.3.33	Phase III (stage 1)-south lane (chainage 435-490)	20 days	Thu 8/8/19	Fri 30/8/19	
1009	17.3.34	Phase III (stage 2)-north lane (chainage 435-490)	16 days	Sat 31/8/19	Thu 19/9/19	



Develo	opment o	V/2017/02 if Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road	I			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E 20 Mai 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mai 31 Maj 21 April 2 Mai 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug T W T F S S M T W T F S
1019	17.3.35	Phase III (stage 3)-south lane (chainage 490-540)	34 days	Fri 20/9/19	Thu 31/10/19	9
1030	17.3.36	Phase III (stage 4)-north lane (chainage 490-540)	17 days	Fri 8/11/19	Wed 27/11/19	19
1039	17.3.37	Phase III (stage 5)-south lane (chainage 540-590)	29 days	Thu 28/11/19	Fri 3/1/20	
1049	17.3.38	Phase III (stage 6)-north lane (chainage 540-590)	22 days	Sat 4/1/20	Sat 1/2/20	
1059	17.3.39	Phase III (stage 7)-south lane (chainage 590-633)	29 days	Tue 4/2/20	Sat 7/3/20	
1069	17.3.40	Phase III (stage 8)-north lane (chainage 590-633)	25 days	Mon 9/3/20	Tue 7/4/20	
1079	17.3.41	Street lighting (drawpits, abandon existing public lighting & cable, 100uPVC ducts) (ch435-890)	7 days	Wed 8/4/20	Sat 18/4/20	
1080	17.3.42	tree planting	5 days	Tue 14/4/20	Sat 18/4/20	
1081	17.3.43	Street furniture & construction of footpath (ch435-890)	23 days	Mon 20/4/20	Mon 18/5/20	D
1082	17.3.44	Phase IV (stage 1)-south lane (chainage 890-940)	22 days	Fri 20/9/19	Thu 17/10/19	9
1093	17.3.45	Phase IV (stage 2)-north lane (chainage 890-940)	17 days	Fri 18/10/19	Wed 6/11/19	9
1103	17.3.46	Phase IV (stage 3)-south lane (chainage 940-983)	31 days	Thu 7/11/19	Thu 12/12/19	9
1113	17.3,47	Phase IV (stage 4)-north lane (chainage 940-983)	16 days	Fri 13/12/19	Fri 3/1/20	
1122	17.3.48	Phase V (stage 1)-south lane (chainage 983-1035)	17 days	Sat 4/1/20	Thu 23/1/20	ι
1132	17 3 49	Phase V (stage 2)-north lane (chainage 983-1035)	16 days	Fri 24/1/20	Fri 14/2/20	
1141	17.3,50	Phase V (stage 3)-south lane (chainage 1035-1087)	19 days	Sat 15/2/20	Sat 7/3/20	
1151	17.3.51	Phase V (stage 4)-north lane (chainage 1035-1087)	12 days	Mon 9/3/20	Sat 21/3/20	
1160	17.3 52	Phase V (stage 5)-south lane (chainage 1087-1139)	20 days	Mon 23/3/20	Sat 18/4/20	
1170	17.3.53	Phase V (stage 6)-north lane (chainage 1087-1139)	15 days	Mon 20/4/20	Fri 8/5/20	
1171	17.3.53.1	TTA & UU detection	1 day	Mon 20/4/20	Mon 20/4/20	ο
1172	'17.3.53.2	saw cut & remove existing pavement	2 days	Tue 21/4/20	Wed 22/4/20	0
1173	17.3.53.3	excavate gully trench and gully pot(s)	1 day	Thu 23/4/20	Thu 23/4/20	
1174	'17.3.53.4	lay& connect gully pipes& construct gully pot(s)	2 days	Fri 24/4/20	Sat 25/4/20	
1175	17.3.53.5	lay kerb, sub-base	2 days	Mon 27/4/20	Tue 28/4/20	
1176	17.3.53.6	sub-base SRT test	3 days	Wed 29/4/20	Mon 4/5/20	
1177	17.3.53.7	DBM (Roadbase)	2 days	Tue 5/5/20	Wed 6/5/20	
1178	17.3.53.8	base course and wearing course	2 days	Thu 7/5/20	Fri 8/5/20	
1179	17.3.54	Phase V (stage 7)-south lane (chainage 1139-1190)	20 days	Sat 9/5/20	Mon 1/6/20	
1180	17.3.54.1	TTA & UU detection	1 day	Sat 9/5/20	Sat 9/5/20	
1181	17.3.54.2	saw cut & remove existing pavement	2 days	Mon 11/5/20	Tue 12/5/20	
1182	17.3.54.3	excavate pipe trench and manhole(s)	2 days	Wed 13/5/20	Thu 14/5/20	
1183	17.3.54.4	lay pipes & construct manhole(s)	6 days	Fri 15/5/20	Thu 21/5/20	
1184	17,3,54.5	backfill formation & SRT test	0 days	Thu 21/5/20	Thu 21/5/20	
1185	17.3.54.6	lay kerb, sub-base	2 days	Fri 22/5/20	Sat 23/5/20	
1186	17.3.54.7	sub-base SRT test	3 days	Mon 25/5/20	Wed 27/5/20	
1187	17,3.54.8	DBM (Roadbase)	2 days	Thu 28/5/20	Fri 29/5/20	



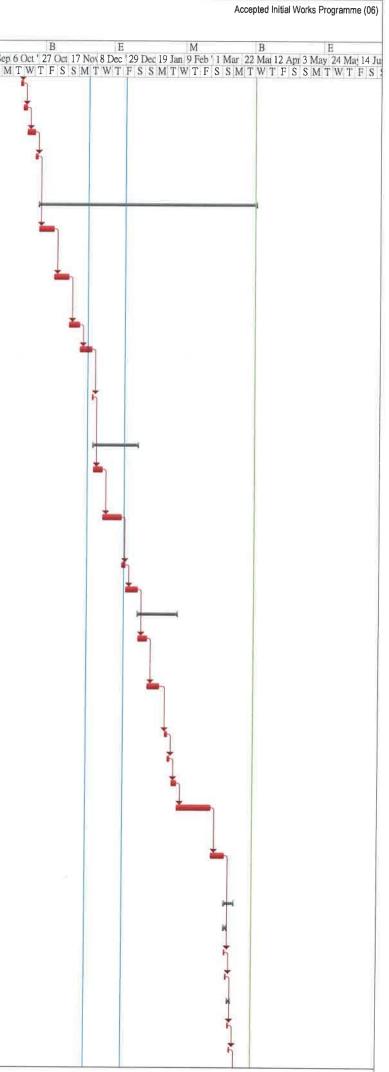
Devel	opment o	V/2017/02 f Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M 20 Ma; 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug 15 St M B E M T W T F S S M T W T
1188	17.3.54.9	base course and wearing course	2 days	Sat 30/5/20	Mon 1/6/20	1 W 1 F 5 5 M 1
1189	17.3.55	Phase V (stage 8)-north lane (chainage 1139-1190)	15 days	Tue 2/6/20	Thu 18/6/20	
190	17.3.55 1	TTA & UU detection	1 day	Tue 2/6/20	Tue 2/6/20	
1191	17.3.55.2	saw cut & remove existing pavement	2 days	Wed 3/6/20	Thu 4/6/20	
1192	17.3,55,3	excavate gully trench and gully pot(s)	1 day	Fri 5/6/20	Fri 5/6/20	
1193	17.3.55.4	lay& connect gully pipes& construct gully pot(s)	2 days	Sat 6/6/20	Mon 8/6/20	
1194	17.3.55.5	lay kerb, sub-base	2 days	Tue 9/6/20	Wed 10/6/20	
1195	17.3.55.6	sub-base SRT test	3 days	Thu 11/6/20	Sat 13/6/20	
1196	17.3.55.7	DBM (Roadbase)	2 days	Mon 15/6/20	Tue 16/6/20	
1197	17.3.55.8	base course and wearing course	2 days	Wed 17/6/20	Thu 18/6/20	
1198	17.3.56	Phase VI (stage 1)-south lane (chainage 1190-1240)	21 days	Fri 19/6/20	Wed 15/7/20	
1199	17.3.56.1	TTA & UU detection	1 day	Fri 19/6/20	Fri 19/6/20	
1200	17.3.56.2	saw cut & remove existing pavement	2 days	Sat 20/6/20	Mon 22/6/20	
1201	17.3.56.3	excavate pipe trench and manhole(s)	2 days	Tue 23/6/20	Wed 24/6/20	
1278	17.4	Noise Barrier works above the concrete substructure of the noise barrier (section 2 Part C1)	674 days	Mon 29/10/18	Wed 3/2/21	
1279	17.4.1	seek specialist subcontractor to design and build	210 days	Mon 29/10/18	Sun 26/5/19	
1280	17.4.2	propose specialist subcontractor to PM for acceptance	0 days	Sun 26/5/19	Sun 26/5/19	
1281	17.4.3	acceptance of propose specialist subcontractor by Project Manager	0 days	Sun 16/6/19	Sun 16/6/19	
1282	17.4.4	prepare design & liaise with designer & PM	120 days	Mon 17/6/19	Mon 14/10/19	a
1283	·17.4.5	submit a proposal detailing the changes to PM's design, if any	14 days	Tue 15/10/19	Mon 28/10/19	9
1284	17.4.6	submit 1st design for PM's comment	0 days	Mon 28/10/19	Mon 28/10/19	a
1285	17.4.7	PM's comments	21 days	Tue 29/10/19	Mon 18/11/19	
1286	17.4.8	revise design	28 days	Tue 19/11/19	Mon 16/12/19	
1287	17.4.9	re-submit design for PM's acceptance	0 days	Mon 16/12/19	Mon 16/12/19	
1288	17.4.10	submit 3 sample panels for each type & colour for acceptance	7 days	Tue 17/12/19	Mon 23/12/19)
1289	17.4.11	PM's & relevant authorities' acceptance	0 days	Mon 13/1/20	Mon 13/1/20	
1290	17.4.12	ordering of noise barrier panel	0 days	Wed 15/1/20	Wed 15/1/20	
1291	17.4.13	fabricating of panel and steelworks	180 days	Thu 16/1/20	Mon 13/7/20	
1293	17.4.15	completion of concrete curing of substructure of Nosie Barriers	463 days	Mon 14/10/19	Tue 19/1/21	
1295	17.4.15.2	MM6	0 days	Mon 14/10/19	Mon 14/10/19	
1296	17.4.15.3	MM7	0 days	Mon 14/10/19	Mon 14/10/19	
1298	17.4.15.5	MM9	0 days	Mon 10/2/20	Mon 10/2/20	



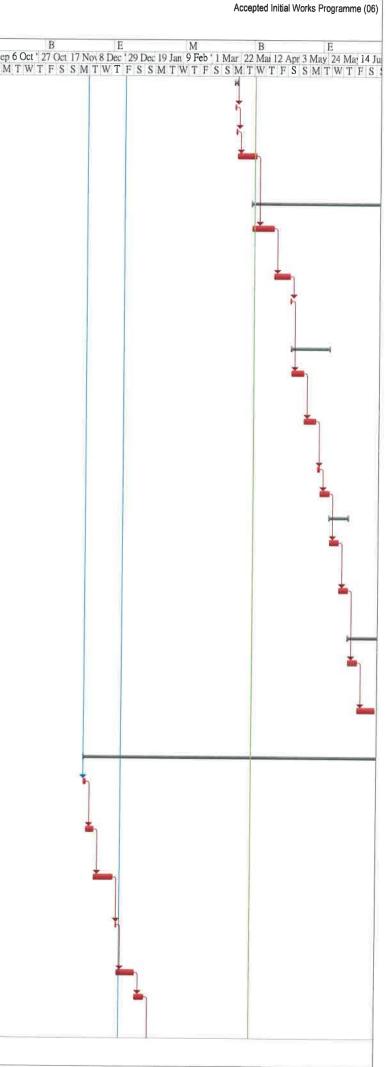
3 month rolling programme 20200225(end Feb 20)

ontract evelopr Infrastro	t No. CV/2 ment of C ructural W	2017/02 Columbarium at Sandy Ridge Cemetery /orks at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme Accepted Initial Works Programme (from 26/3/2020 to 25/6/2020)
W	VBS 7	ask Name	Duration	Start Date	Completion Date	M B E M B B E M B B E M B B B E M B B E M B B B E M B B E M B B B E M B B B E M B B B E M B B B E M B B B E M B B B
299 17	7 4 15 6	MM10 (Dov: 1.4)	0 dovo	Sun 21/6/20	Sup 21/6/20	M B E M B
		MM10 (Bay 1-4)	,		0uii 2 1/0/20	
323 17		access date for section 2 (Part C2)		Sun 24/2/19		
324 17	7.6	additional site possession for areas outside site boundary {for 3NW-C/C470 (existing D-DH7), C224 (existing D-DH11) & C225 new drillholes DHA1,A2 & A3 }		Sun 24/2/19	Sun 24/2/19	
325 17	7.7	Slope Upgrading works (section 2 Part C2)	578 days	Mon 25/2/19	Wed 3/2/21	×
326 17	7.7.1	general site clearance	45 days	Mon 25/2/19	Thu 18/4/19	
327 17	7.7.2	Initial topographic survey	45 days	Thu 11/4/19	Sat 8/6/19	
328 17	7.7.3	utility detection and submit reports	21 days	Wed 22/5/19	Sat 15/6/19	
329 17	7.7.4	drilling of verification boreholes DHA1,A2 & A3	21 days	Mon 17/6/19	Thu 11/7/19	
330 17	7.7.5	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	7.76	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	7.7.7	Slopeworks: 3NW-C/C470 (ch490-540S/B)	59 days	Fri 16/8/19	Sat 26/10/19	
333 17		removal of existing trees		Fri 16/8/19	Tue 27/8/19	
		, and the second s	,			
1334 17	7.7.7.2	hoarding & fencing	6 days	Wed 28/8/19	Tue 3/9/19	
335 17	7,7.7,3	slope excavation works	1 day	Wed 4/9/19	Wed 4/9/19	F
336 17	7.7.7.4	temporary scaffolding	5 davs	Thu 5/9/19	Tue 10/9/19	
1337 17		proposed slope stripping for mapping or rock and				
		relict discontinuities (AS5-A,B, AS6-A,B)	/•			
1338 17	7.7.7.6	Phase I	8 davs	Sat 21/9/19	Mon 30/9/19	
1339 17		install test nail PN02 & pull out test	-	Sat 21/9/19		
1340 17	7.7.7.6.2	drill, install steel bars and grout soil nails (B01-12)	2 days	Sat 28/9/19	Mon 30/9/19	
1341 17	7.7.7.7	Phase II	8 days	Wed 2/10/19	Fri 11/10/19	
1342 17		install test nail PN01 & pull out test		Wed 2/10/19		
	7.7.7.2	drill, install steel bars and grout soil nails		Thu 10/10/19		
1344 17	7770	(A01-17)	1 dev	Sat 12/10/19	Cot 10/10/10	
10991 17	1.1.1.0	raking drains	i day	Sat 12/10/19	oat 12/10/19	

evelo	ct No. CV/2 pment of C structural W	columbarium at Sandy Ridge Cemetery /orks at Man Kam To Road and Lin Ma Hang Road	i			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)	
1	WBS T	ask Name	Duration	Start Date	Completion Date	M B E M B E M B E 20 Maj 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Maj 31 Maj 21 Apr 12 Maj 2 Jun ' 23 Jun 14 Jul 4 Aug E E	25 A
45	17.7.7.9	TDR Test (including test & wait issue result)	2 days	Mon 14/10/19	Tue 15/10/19	TWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTW	V T F
46	17,7.7.10	soil nail head works	3 days	Wed 16/10/19	Fri 18/10/19		
47	17.7.7.11	UC & catchpit (38m & 1 nr)	5 days	Sat 19/10/19	Thu 24/10/19		
348 j	17.7.7.12	biodegradable erosion control mat with hydroseeding	2 days	Fri 25/10/19	Sat 26/10/19		
349	17.7.8	Slopeworks: - 3NW-C/C230 (ch1240-1330S/B)	130 days	Mon 28/10/19	Thu 2/4/20		
350	17.7.8.1	removal of existing trees	10 days	Mon 28/10/19	Thu 7/11/19		
351	17.7.8.2	hoarding & fencing	9 days	Fri 8/11/19	Mon 18/11/19		
352	17.7.8.3	temporary scaffolding	7 days	Tue 19/11/19	Tue 26/11/19		
353	17.7.8.4	proposed slope stripping for mapping or rock and relict discontinuities (AS3-A,B, AS4-A,B)	8 days	Wed 27/11/19	Thu 5/12/19		
354	17.7.8.5	slope excavation works	1 day	Fri 6/12/19	Fri 6/12/19		
355	17.7.8.6	Phase I	25 days	Sat 7/12/19	Wed 8/1/20		
356	17.7.8.6.1	install test nail PN22 & pull out test	6 days	Sat 7/12/19	Fri 13/12/19		
357	17.7.8.6.2	drill, install steel bars and grout soil nails (K01-22, N01-05, M01-11, J01-25)	10 days	Sat 14/12/19	Fri 27/12/19		
358	17.7.8.6,3	TDR Test (including test & wait issue result)	2 days	Sat 28/12/19	Mon 30/12/19		
359	17.7.8.6.4	soil nail head works	7 days	Tue 31/12/19	Wed 8/1/20		
360	17.7.8.7	Phase II	22 days	Thu 9/1/20	Thu 6/2/20		
361	17.7.8.7.1	install test nail PN21 & pull out test	6 days	Thu 9/1/20	Wed 15/1/20		
362	17.7.8.7.2	drill, install steel bars and grout soil nails (H01-25, L01-16)	8 days	Thu 16/1/20	Fri 24/1/20		
363	17.7.8.7.3	raking drains	2 days	Wed 29/1/20	Thu 30/1/20		
364	17.7.8.7.4	TDR Test (including test & wait issue result)	2 days	Fri 31/1/20	Sat 1/2/20		
365	17.7.8.7.5	soil nail head works	4 days	Mon 3/2/20	Thu 6/2/20		
366	17.7.8.8	225UC, 300SC & catchpits	21 days	Fri 7/2/20	Mon 2/3/20		
367	17.7.8.9	600mm width concrete maintenance staircase with handrailing	9 days	Tue 3/3/20	Thu 12/3/20		
368	17,7.8.10	soil replacement by no-fines concrete	6 days	Fri 13/3/20	Thu 19/3/20		
369	17.7.8.10.1	stage 1	2 days	Fri 13/3/20	Sat 14/3/20		
370	17.7.8.10.1.1	temporary cut & excavation of soil	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	stage 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	17.7.8.10.2.2	placement of no-fine concrete	1 day	Tue 17/3/20	Tue 17/3/20		

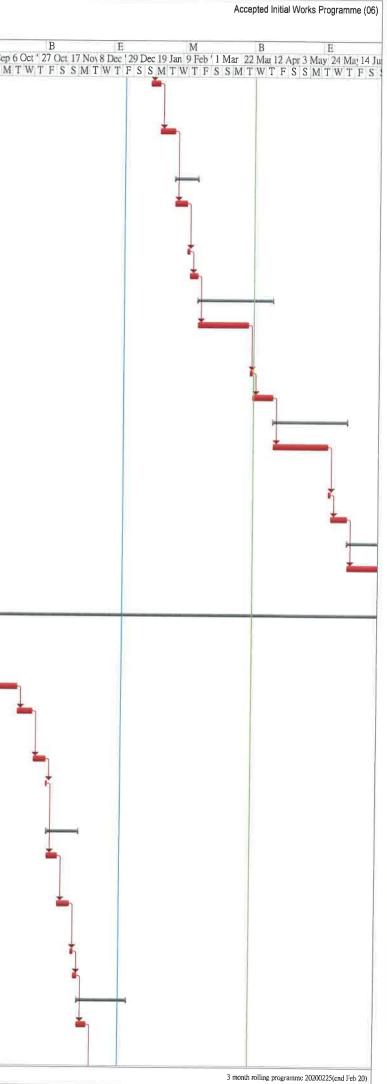


evelo	ct No. CV/2 pment of C tructural W	olumbarium at Sandy Ridge Cemetery orks at Man Kam To Road and Lin Ma Hang Road	ł			3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
	WBS T	ask Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Ma; 10 Jun 1 Jul '1 22 Jul '12 Aus 2 Sep' 23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun '23 Jun 14 Jul 4 Aug 25 Aus TW T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S M T W T F S S M T W T F S<
375	17.7.8.10.3	stage 3	2 days	Wed 18/3/20	Thu 19/3/20	1.0110001011000101100010110001011000010110000
376	17.7.8.10.3.1	temporary cut & excavation of soil	1 day	Wed 18/3/20	Wed 18/3/20	
377	17.7.8.10.3.2	placement of no-fine concrete	1 day	Thu 19/3/20	Thu 19/3/20	
378	17,7.8.11	biodegradable erosion control mat with hydroseeding & shrub planting	12 days	Fri 20/3/20	Thu 2/4/20	
379	17.7.9	Slopeworks: - 3NW-C/C224 (ch1040-1120N/B)	117 days	Tue 31/3/20	Sat 22/8/20	
80	17.7.9.1	hoarding & fencing	10 days	Tue 31/3/20	Wed 15/4/20	
81	17.7.9.2	temporary scaffolding	10 days	Thu 16/4/20	Mon 27/4/20	
82	17.7.9.3	slope excavation works	1 day	Tue 28/4/20	Tue 28/4/20	
83	17.7.9.4	Phase I	22 days	Wed 29/4/20	Tue 26/5/20	
84	17.7.9.4_1	install test nail PN14 & pull out test	6 days	Wed 29/4/20	Thu 7/5/20	
85	17.7.9.4.2	drill, install steel bars and grout soil nails (G01-21, F01-31)	8 days	Fri 8/5/20	Sat 16/5/20	
86	17.7.9.4.3	TDR Test (including test & wait issue result)	2 days	Mon 18/5/20	Tue 19/5/20	
87	17.7.9.4.4	soil nail head works	6 days	Wed 20/5/20	Tue 26/5/20	
88	17.7.9.5	Phase II	12 days	Wed 27/5/20	Tue 9/6/20	
89	17.7.9.5.1	install test nail PN13 & pull out test	6 days	Wed 27/5/20	Tue 2/6/20	
90	17.7.9.5.2	drill, install steel bars and grout soil nails (E01-46)	6 days	Wed 3/6/20	Tue 9/6/20	
391	17.7.9.6	Phase III	28 days	Wed 10/6/20	Tue 14/7/20	
92	17.7.9.6.1	install test nail PN12 & pull out test	6 days	Wed 10/6/20	Tue 16/6/20	
193	17.7.9.6.2	drill, install steel bars and grout soil nails (D01-D51)	10 days	Wed 17/6/20	Mon 29/6/20	
04	17.7.10	Slopeworks: - 3NW-C/C225 (ch1300-1376N/B)	348 days	Tue 3/12/19	Wed 3/2/21	
05	17.7.10.1	tree transplant	2 days	Tue 3/12/19	Wed 4/12/19	
06	17.7.10.2	removal of existing trees	5 days	Thu 5/12/19	Tue 10/12/19	
07	17.7.10.3	hoarding & fencing	12 days	Wed 11/12/19	Tue 24/12/19	
08	17.7.10.4	slope excavation works	1 day	Fri 27/12/19	Fri 27/12/19	
09	17.7.10.5	temporary scaffolding	10 days	Sat 28/12/19	Thu 9/1/20	
	17.7.10.6	install test nail PN31-PN33, grout & pull out tests	-			

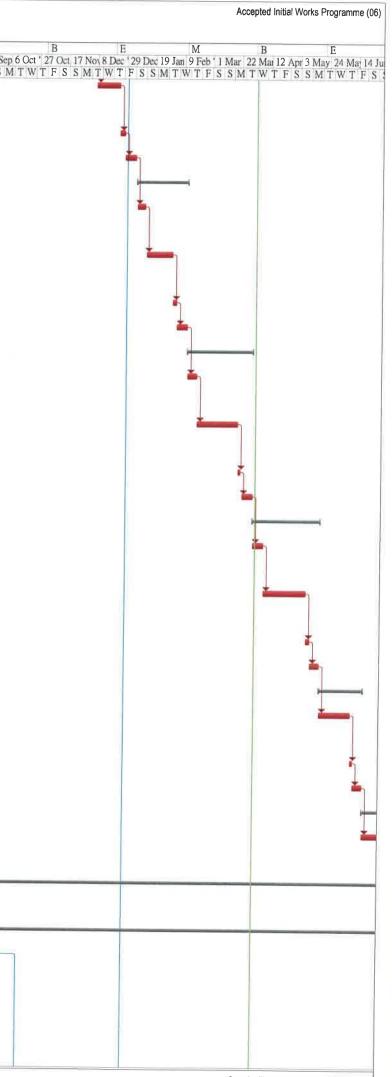


3 month rolling programme 20200225(end Feb 20)

evelo Infras	structural Wo	olumbarium at Sandy Ridge Cemetery orks at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)	
Ŋ.	WBS Ta	sk Name	Duration	Start Date	Completion Date	M B E M B	M Aug 15
411	17.7.10.7	install test nail PN34-PN36, grout & pull out tests	6 days	Fri 17/1/20	Thu 23/1/20		F S
12	17.7.10.8	install test nail PN37-PN39, grout & pull out tests	6 days	Fri 24/1/20	Mon 3/2/20		
13	17.7.10.9	Phase I	15 days	Tue 4/2/20	Thu 20/2/20		
14	17.7.10.9.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	8 days	Tue 4/2/20	Wed 12/2/20		
15	'17.7.10.9.2	TDR Test (including test & wait issue result)	2 days	Thu 13/2/20	Fri 14/2/20		
116	17.7.10.9.3	soil nail head works	5 days	Sat 15/2/20	Thu 20/2/20		
417	17.7.10.10	Phase II	43 days	Fri 21/2/20	Wed 15/4/20		
418	17.7.10.10.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days	Fri 21/2/20	Sat 28/3/20		
419	17.7.10.10.2	TDR Test (including test & wait issue result)	2 days	Mon 30/3/20	Tue 31/3/20		
420	17.7.10.10.3	soil nail head works	9 days	Wed 1/4/20	Wed 15/4/20		
421	17.7.10.11	Phase III	44 days	Thu 16/4/20	Mon 8/6/20		
422	17.7.10.11.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days	Thu 16/4/20	Mon 25/5/20		
423	17,7.10.11.2	TDR Test (including test & wait issue result)	2 days	Tue 26/5/20	Wed 27/5/20		
424	17.7.10.11.3	soil nail head works	10 days	Thu 28/5/20	Mon 8/6/20		
425	17.7.10.12	Phase IV	44 days	Tue 9/6/20	Fri 31/7/20		
426	17.7.10.12.1	drill, install steel bars and grout soil nails (AJ01-18, Y01-07, AH01-18, X01-08)	32 days	Tue 9/6/20	Fri 17/7/20		
438	17.7.11	Slopeworks: - 3NW-C/C231 (ch1220-1240N/B)	415 days	Thu 12/9/19	Wed 3/2/21		
439	17.7.11.1	hoarding & fencing	12 days	Thu 12/9/19	Thu 26/9/19		-
440	:17.7.11.2	temporary scaffolding	14 days	Fri 27/9/19	Tue 15/10/19		3
441	17.7.11.3	proposed slope stripping for mapping or rock and relict discontinuities (AS1-A,B, AS2-A,B)	10 days	Wed 16/10/19	Sat 26/10/19		
442	17.7.11.4	trial pits (A1, A2, A3)	8 days	Mon 28/10/19	Tue 5/11/19		
443	17.7.11.5	slope excavation works	1 day	Wed 6/11/19	Wed 6/11/19		
444	17.7.11.6	Phase 1	20 days	Thu 7/11/19	Fri 29/11/19		
1445	17.7.11.6.1	install test nails PN41-42 & pull out tests	7 days	Thu 7/11/19	Thu 14/11/19		
446	17.7.11.6.2	drill, install steel bars and grout soil nails (BP01-08, BT01-05, BN01-08, BS01-08))	8 days	Fri 15/11/19	Sat 23/11/19		
447	17.7.11.6.3	TDR Test (including test & wait issue result)	2 days	Mon 25/11/19	Tue 26/11/19		
448	17.7.11.6.4	soil nail head works	3 days	Wed 27/11/19	Fri 29/11/19		
449	17.7.11.7	Phase II		Sat 30/11/19	Sat 4/1/20		
	1						
450	17.7.11.7.1	install test nails PN43-44 & pull out tests	6 davs	Sat 30/11/19	Fri 6/12/19		

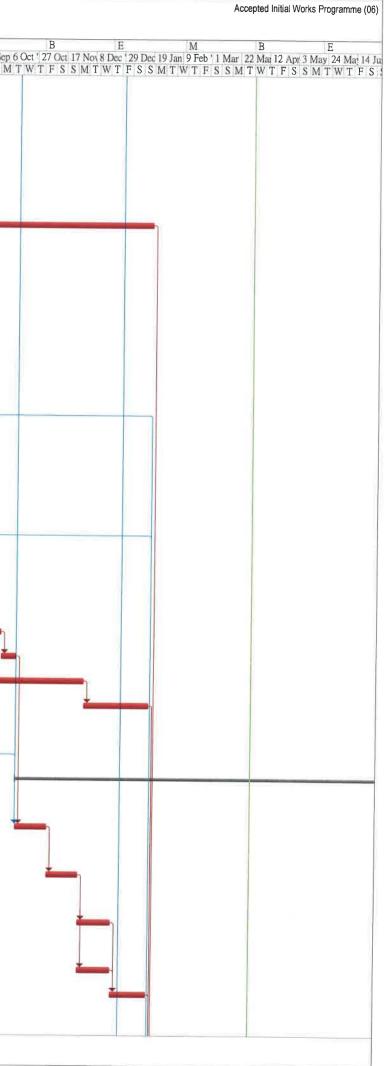


)evelo Infras	pment of structural	/2017/02 Columbarium at Sandy Ridge Cemetery Norks at Man Kam To Road and Lin Ma Hang Road			2	3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E 20 Mai 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 2 Jun '23 Jun 14 Jul 4 Aug 25 A T W T F S M W T F S M W T F S M W T F S M W T F S M T W T F S M W T F S M T F S M T T S M T T S M T T S M T T S M T T S M T T S M T T S M T T S M T T S M T T S M T T S M T T
1451	17.7.11.7.2	drill, install steel bars and grout soil nails (BM01-09, BR01-13, BL01-09, BQ01-22)	14 days	Sat 7/12/19	Mon 23/12/19	
452	17.7.11.7.3	TDR Test (including test & wait issue result)	2 days	Tue 24/12/19	Fri 27/12/19	
453	17.7.11.7.4	soil nail head works	6 days	Sat 28/12/19	Sat 4/1/20	
454	17.7.11.8	Phase III	29 days	Mon 6/1/20	Tue 11/2/20	
455	17.7.11.8.1	install test nails PN45-46 & pull out tests	6 days	Mon 6/1/20	Sat 11/1/20	
1456	17.7.11.8.2	drili, install steel bars and grout soil nails (BJ01-09, BK01-27, BG01-12, BH01-20)	14 days	Mon 13/1/20	Fri 31/1/20	
1457	17.7.11.8.3	TDR Test (including test & wait issue result)	2 days	Sat 1/2/20	Mon 3/2/20	
1458	17.7.11.8.4	soil nail head works	7 days	Tue 4/2/20	Tue 11/2/20	
1459	17.7.11.9	Phase IV	41 days	Wed 12/2/20	Mon 30/3/20	
1460	17.7.11.9.1	install test nails PN47-48 & pull out tests	6 days	Wed 12/2/20	Tue 18/2/20	
1461	17.7.11.9.2	drill, install steel bars and grout soil nails (BE01-13, BF01-19, BC01-11, BD01-20)	26 days	Wed 19/2/20	Thu 19/3/20	
1462	17.7.11.9.3	TDR Test (including test & wait issue result)	2 days	Fri 20/3/20	Sat 21/3/20	
1463	17.7.11.9.4	soil nail head works	7 days	Mon 23/3/20	Mon 30/3/20	
1464	17.7.11.10	Phase V	36 days	Tue 31/3/20	Mon 18/5/20	
1465	17.7.11.10.1	install test nails PN49-50 & pull out tests	6 days	Tue 31/3/20	Tue 7/4/20	
1466	17.7.11.10.2	drill, install steel bars and grout soil nails (BA01-24, BB01-06, AY01-24, AZ01-06)	22 days	Wed 8/4/20	Fri 8/5/20	
1467	17.7.11.10.3	TDR Test (including test & wait issue result)	2 days	Sat 9/5/20	Mon 11/5/20	
1468	17,7.11.10.4	soil nail head works	6 days	Tue 12/5/20	Mon 18/5/20	
1469	17.7.11.11	Phase VI	28 days	Tue 19/5/20	Fri 19/6/20	
1470	17,7.11.11.1	drill, install steel bars and grout soil nails (AW01-24, AX01-05, AU01-21, AV01-08)	20 days	Tue 19/5/20	Wed 10/6/20	
1471	17.7.11.11.2	TDR Test (including test & wait issue result)	2 days	Thu 11/6/20	Fri 12/6/20	
1472	17.7.11.11.3	soil nail head works	6 days	Sat 13/6/20	Fri 19/6/20	
1473	17,7.11.12	Phase VII	23 days	Sat 20/6/20	Sat 18/7/20	
1474	17.7.11.12.1	drill, install steel bars and grout soil nails (AS01-18, AT01-11, AQ01-19, AR01-07)	14 days	Sat 20/6/20	Wed 8/7/20	
1507		section 3 of the works - Completion of all works within Parts D and E of the Site	797 days	Thu 31/5/18	Wed 3/2/21	b.
1508	20.1	Parts D	800 days	Mon 26/11/18	Wed 3/2/21	
1509	20.1.1	access date for section 3 (Parts D) - not more than 180 days after the starting date		Mon 26/11/18		
1510	20.1.2	seek specialist for design, supply and installation of the covered walkway	59 days	Tue 27/11/18	Thu 24/1/19	
	20.1.3	acceptance of specialist	0 davs	Thu 14/2/19	Thu 14/2/19	

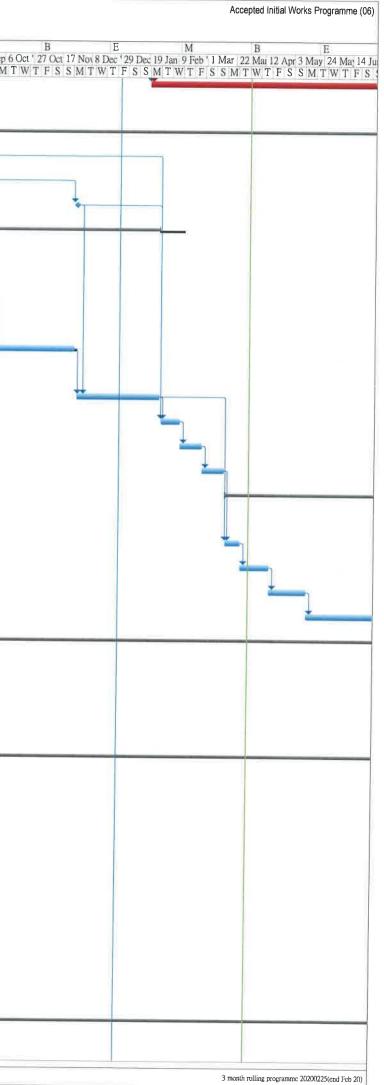


3 month rolling programme 20200225(end Feb 20)

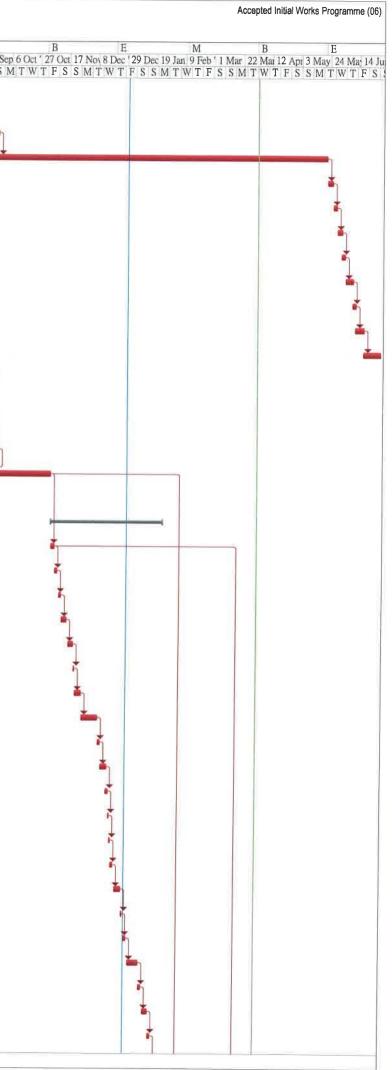
Develo	opment of	//2017/02 ⁵ Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	n M B E M B E M B E M B E M B E M B E M B E M B E M B E M B E M B E M B E M B E M B B B B
1512	20.1.4	design for approval for lighting system for the covered walkway	150 days	Fri 15/2/19	Sun 14/7/19	9
513	20.1.5	submit for approval for lighting system for the covered walkway	0 days	Sun 14/7/19	Sun 14/7/19	9
514	20.1.6	acceptance of lighting system for the covered walkway	0 days	Sun 4/8/19	Sun 4/8/19	Э
515	20.1.7	Coordination with CLP to obtain the electricity supply for the street lighting system (Design for Road B, Road E, Road F(part), Lin Ma Hang Road and Sheung Shui Landmark PTI & Lighting system for the covered walkway)	168 days	Mon 5/8/19	Sun 19/1/20	0.
516	20.1.8	design for glazing system of the proposed covered walkway at Fanling Station Road	150 days	Fri 15/2/19	Sun 14/7/19	9
1517	20.1.9	submission of glazing system	0 days	Sun 14/7/19	Sun 14/7/19	9
1518	20.1.10	acceptance of glazing system and fall arrest system by Project Manager	0 days	Sun 4/8/19	Sun 4/8/19	3
1519	20.1.11	design for fall arrest system of the proposed covered walkway at Fanling Station Road	150 days	Fri 15/2/19	Sun 14/7/19	9
520	20.1.12	submission of fall arrest system	0 days	Sun 14/7/19	Sun 14/7/19	9
521	20.1.13	acceptance of fall arrest system by Project Manager	0 days	Sun 4/8/19	Sun 4/8/19	Э
1522	20.1.14	Liaison with MTRC for the works arrangement	30 days	Mon 5/8/19	Tue 3/9/19	9
1523	20.1.15	general site clearance	12 days	Wed 4/9/19	Wed 18/9/19	
1524	20.1.16	initial survey	12 days	Thu 19/9/19	Thu 3/10/19	9
1525	20.1.17	utility detection and submit reports	8 days	Fri 4/10/19	Mon 14/10/19	19
1526	20.1.18	Fabrication of Steelworks & glass panel	100 days	Mon 5/8/19	Mon 2/12/19	.9
1527	20.1.19	delivery steelworks & glass panel to site	38 days	Tue 3/12/19	Sat 18/1/20	ο
1528	20.1.20	application of XP (for Parts D)	0 days	Thu 29/11/18	Thu 29/11/18	18
1529	20.1.21	acceptance of XP (for Parts D)	0 days	Thu 30/5/19	Thu 30/5/19	9
1530	20.1.22	Construction of Covered Walkway at Fanling Station	390 days	Tue 15/10/19	Wed 3/2/21	1
1531	20.1.22.1	construct the concrete foundation of covered walkway (first 20m)	20 days	Tue 15/10/19	Wed 6/11/19	9
1532	20.1.22.2	construct the concrete foundation of covered walkway (2nd 20m)	20 days	Thu 7/11/19	Fri 29/11/19	9
1533	20.1.22.3	construct the concrete foundation of covered walkway (3rd 20m)	20 days	Sat 30/11/19	Mon 23/12/19	19
1534	20.1.22.4	demolished existing planter (drg.WY/1051)	20 days	Sat 30/11/19	Mon 23/12/19	19
1535	20.1.22.5	construct the concrete foundation of covered walkway (4th 20m)	-	Tue 24/12/19		



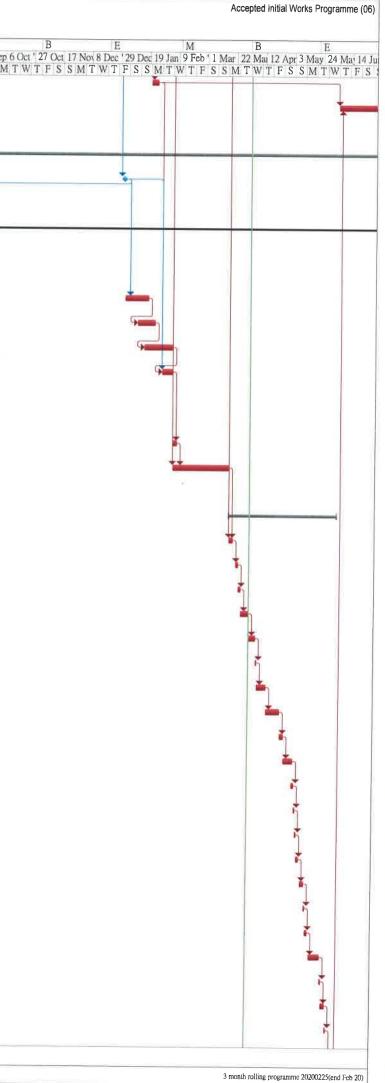
Develo Infras	opment o structural	f Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Ma; 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Ma; 31 Ma; 21 Apr 12 Ma; 2 Jun ' 23 Jun 14 Jul 4 Aug 25 Aug 15 Sep 6
536	20.1.22.6	construction of covered walkway including steelworks, glass panel and electrical works	265 days	Mon 20/1/20	Wed 9/12/20	TWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSM
538	20.2	Parts E	782 days	Thu 31/5/18	Sat 16/1/21	
1539	20.2.1	access date for section 3 (Parts E)	0 days	Thu 31/5/18	Thu 31/5/18	↓
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	Thu 28/11/19	
542	20.2.4	Temporary Traffic Arrangement (TTA) Scheme for Sheung Shui Landmark North PTI and Fanling Station Road	242 days	Fri 31/5/19	Mon 27/1/20	
543	20.2.4.1	Preparation of TTA for TMLG and acceptance from TD and RMO	120 days	Fri 31/5/19	Fri 27/9/19	
544	20.2.4.2	Comment & acceptance of TTA scheme by TD & RMO	60 days	Sat 28/9/19	Tue 26/11/19	
545	20.2.4.3	Obtain roadwork advice from RMO	60 days	Fri 29/11/19	Mon 27/1/20	
1546	20.2.5	general site clearance	12 days	Wed 29/1/20	Tue 11/2/20	
1547	20.2.6	initial Survey	14 days	Wed 12/2/20	Thu 27/2/20	
1548	20.2.7	utility detection and submit reports	14 days	Fri 28/2/20	Sat 14/3/20	
1549	20.2.8	Road Improvement works at Sheung Shui Landmark North PTI	250 days	Mon 16/3/20	Sat 16/1/21	
1550	20.2.8.1	saw cut and remove existing pavement	10 days	Mon 16/3/20	Thu 26/3/20	
1551	20.2.8.2	remove existing kerb and railings	14 days	Fri 27/3/20	Thu 16/4/20	
1552	20.2.8.3	demolish existing slope planter wall	21 days	Fri 17/4/20	Wed 13/5/20	
1553	20.2.8.4	construct slope planter wall	60 days	Thu 14/5/20	Fri 24/7/20	
1569	29	section 6 of the works (section Subject to Excision) - Completion of all works within Parts A3 and A4 of the Site except Establishment works. Extent of works under section 6 of the works is defined in Drawing No.: 231448/C2/G/1031	859 days	Fri 28/9/18	Wed 3/2/21	
1570	29.1	Parts A3	859 days	Fri 28/9/18	Wed 3/2/21	
1571	29.1.1	access date for section 6 (Part A3) - not more than 120 days after the starting date	0 days	Fri 28/9/18	Fri 28/9/18	
1572	29.1.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 days	Mon 24/6/19	Mon 24/6/19	
1573	29.1.3	form temporary haul road from the south side to Parts A3	5 days	Tue 25/6/19	Sat 29/6/19	
1574	29.1.4	general site clearance & tree felling	12 days	Tue 2/7/19	Mon 15/7/19	
1575	29.1.5	initial survey	12 days	Tue 2/7/19	Mon 15/7/19	
576	29.1.6	construction of temporary drainage	14 days	Mon 15/7/19	Tue 30/7/19	
1577	29.1.7	Construction of Retaining Wall RW14 (Bay 1-Bay 6)	312 days	Fri 26/7/19	Sat 22/8/20	



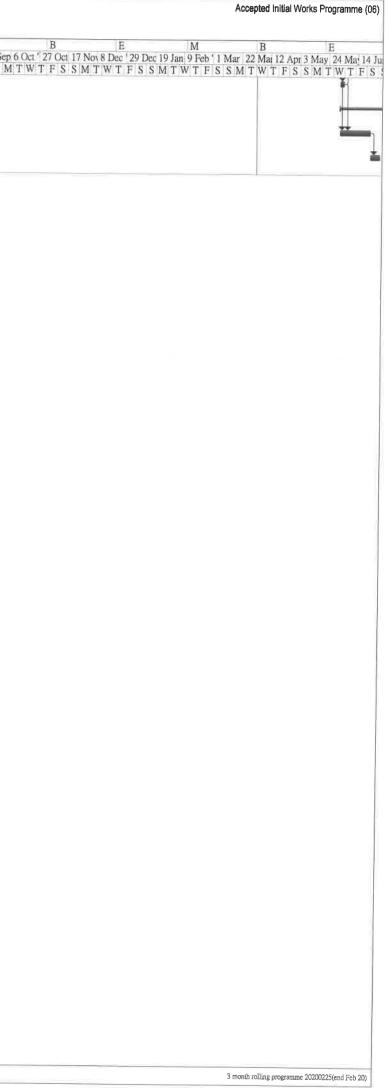
Develo	pment o	V/2017/02 f Columbarium at Sandy Ridge Cemetery I Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
)	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Mai 10 Juni 1 Juli 1 22 Juli 12 Aug 2 Sep 1 23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan ' 27 Jan 17 Feb 10 Mai 31 Mai 21 Apr 12 Mai 2 Juni ' 23 Juni 14 Juli 4 Aug 25 Aug 15 Sep
578	29,1.7.1	excavation (open cut) to formation (bays 1 to 4)	5 days	Fri 26/7/19	Wed 31/7/19	TWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSMTWTFSSM
1579	29.1.7.2	temporary soil nails (bays 5 to 7)	23 days	Wed 31/7/19	Mon 26/8/19	
1580	29.1.7.3	predrilling for socketed H-Piling	25 days	Tue 27/8/19	Thu 26/9/19	
581	29.1.7.4	construction of socketed H-Pile	185 days	Tue 24/9/19	Thu 21/5/20	
582	29.1.7.5	post drilling for socketed H-Piling	3 days	Fri 22/5/20	Mon 25/5/20	
583	29.1.7.6	blinding concrete for bays 1 to 7	3 days	Tue 26/5/20	Thu 28/5/20	
584	29.1.7.7	base formwork for bay 2, 4 & 6	3 days	Fri 29/5/20	Mon 1/6/20	
585	29.1.7.8	base steel fixing for bay 2, 4 & 6	3 days	Mon 1/6/20	Wed 3/6/20	
1586	29.1.7.9	base concreting & curing for bay 2, 4 & 6	5 days	Thu 4/6/20	Tue 9/6/20	
1587	29,1.7.10	remove base formwork	3 days	Tue 9/6/20	Thu 11/6/20	
1588	29.1.7.11	falsework and formwork for walls of bay 2, 4 & 6	6 days	Thu 11/6/20	Wed 17/6/20	
589	29.1.7.12	steel fixing for walls of bay 2, 4 & 6	10 days	Wed 17/6/20	Mon 29/6/20	
631	29.1.23	Site Formation works for Cut Slope CS24 (include temporary cutting from top of RW12 to toe of CS24) (for RW12 bays 1-3)	4 days	Tue 17/9/19	Fri 20/9/19	
1632	29,1.24	install instrument for CS24	5 days	Mon 23/9/19	Fri 27/9/19	
.633	29.1.25	temporary soil nails between CS20 & RW12 (for RW12 bays 1-3)	30 days	Mon 23/9/19	Mon 4/11/19	
624	29.1.26	Construction of Potnining Wall DW/12 CH 0 20	67 dovo	Tue 5/11/19	Fri 24/1/20	
	29.1.26.1	Construction of Retaining Wall RW12 CH 0-20	67 days	Tue 5/11/19	Thu 7/11/19	
	29.1.26.2	plate load tests blinding concrete for bay 1 to 3	3 days 2 days	Fri 8/11/19	Sat 9/11/19	
	29.1.26.3	base formwork for bay 1 & 3		Mon 11/11/19		
	29.1.26.4	base steel fixing for bay 1 & 3		Wed 13/11/19		
	29.1.26.5	base concreting & curing for bay 1 & 3		Mon 18/11/19		
	29.1.26.6	remove base formwork	1 day	Fri 22/11/19		
	29.1.26.7	falsework and formwork for walls of bay 1 & 3	4 days	Sat 23/11/19		
	29.1.26.8	steel fixing for walls of bay 1 & 3		Thu 28/11/19		
	29.1.26.9	close formwork for walls of bay 1 & 3		Tue 10/12/19		
	29.1.26.10			Thu 12/12/19		
	29.1.26.11			Mon 16/12/19		
	29.1.26.12			Wed 18/12/19		
	29.1.26.13	•		Thu 19/12/19		
	29.1.26.14	·	2 days	Fri 20/12/19		
	29.1.26.15			Mon 23/12/19		
	29.1.26.16		1 day	Sat 28/12/19		
	29.1.26.17			Mon 30/12/19		
	29.1.26.18		7 days	Thu 2/1/20	Thu 9/1/20	
	29.1.26.19	-	2 days	Fri 10/1/20	Sat 11/1/20	
1654	29.1.26.20		4 days	Mon 13/1/20	Thu 16/1/20	
1655	29.1.26.21		2 days	Fri 17/1/20	Sat 18/1/20	



Develo	opment of	/2017/02 Columbarium at Sandy Ridge Cemetery Works at Man Kam To Road and Lin Ma Hang Road				3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)
K	WBS	Task Name	Duration	Start Date	Completion Date	M B E M B E M B E M 20 Mar 10 Jun 1 Jul '1 22 Jul 12 Aug 2 Sep '23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun 14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Dec 6 Jan '27 Jan 17 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '23 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 10 Mar 31 Mar 21 Apr 12 Mar 2 Jun '14 Jul 4 Aug 25 Aug 15 Sep (23 Sep 14 Oct 4 Nov 25 Nov 16 Feb 1
1656	29.1.26.22	install instrument for RW12	5 days	Mon 20/1/20	Fri 24/1/20	1 w 1 1 5 5 M 1 w 1 F 5 5 M 1 w 1 F 5 5 M 1 W 1 F 5 5 M 1 W 1 F 5 5 M 1 W 1 F 5 5 M 1 W 1 F 5 5 M 1 W 1 F 5 5 M
657	29,1.27	backfilling along Retaining Wall RW12	40 days	Thu 4/6/20	Wed 22/7/20	
671	29.2	Parts A4	590 days	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	Tue 31/12/19	
1673	(29.2.2	The time for ordering the "section Subject to Excision" for section 6 and 7 is within 390 days commencing from and including the starting date	0 days	Mon 24/6/19	Mon 24/6/19	
1674	29.2.3	general site clearance	15 days	Thu 2/1/20	Sat 18/1/20	
1675	29,2,4	initial survey	11 days	Sat 11/1/20	Thu 23/1/20	
1676	29.2.5	construction of temporary drainage	15 days	Thu 16/1/20	Wed 5/2/20	
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	
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	
1680	29.2.9	Construction of Retaining Wall RW12 CH 21-40	58 days	Wed 18/3/20	Wed 3/6/20	
1681	29.2.9.1	plate load tests	3 days	Wed 18/3/20	Fri 20/3/20	
682	29.2.9.2	blinding concrete for bay 4 to 6	2 days	Mon 23/3/20	Tue 24/3/20	
683	29.2.9.3	base formwork for bay 4 & 6	2 days	Wed 25/3/20	Thu 26/3/20	
1684	29.2.9.4	base steel fixing for bay 4 & 6	4 days	Fri 27/3/20	Wed 1/4/20	
1685	29.2.9.5	base concreting & curing for bay 4 & 6	3 days	Thu 2/4/20	Mon 6/4/20	
1686	29.2.9.6	remove base formwork	1 day	Tue 7/4/20	Tue 7/4/20	
1687	29.2.9.7	falsework and formwork for walls of bay 4 & 6	3 days	Wed 8/4/20	Tue 14/4/20	
1688	29.2.9.8	steel fixing for walls of bay 4 & 6	8 days	Wed 15/4/20	Fri 24/4/20	
1689	29.2.9.9	close formwork for walls of bay 4 & 6	2 days	Sat 25/4/20	Mon 27/4/20	
1690	29.2.9.10	concreting & curing for walls of bay 4 & 6	4 days	Tue 28/4/20	Mon 4/5/20	
1691	29.2.9.11	remove falsework and formwork for walls	2 days	Mon 4/5/20	Tue 5/5/20	
1692	29.2.9.12	blinding concrete for bay 5	1 day	Wed 6/5/20	Wed 6/5/20	
1693	29.2.9.13	base formwork for bay 5	1 day	Thu 7/5/20	Thu 7/5/20	
1694	29.2.9.14	base steel fixing for bay 5	2 days	Fri 8/5/20	Sat 9/5/20	
1695	29.2.9.15	base concreting & curing for bay 5	3 days	Mon 11/5/20	Wed 13/5/20	
1696	29.2.9.16	remove base formwork	1 day	Thu 14/5/20	Thu 14/5/20	
1697	29.2.9.17	falsework & formwork for walls of bay 5	2 days	Fri 15/5/20	Sat 16/5/20	
1698	29.2.9.18	steel fixing for walls of bay 5	7 days	Mon 18/5/20	Mon 25/5/20	
1699	29.2.9.19	close formwork for walls of bay 5	1 day	Tue 26/5/20	Tue 26/5/20	
	29.2.9.20	concreting & curing for walls of bay 5	3 days	Wed 27/5/20	Fri 29/5/20	
	29.2.9.21	remove falsework and formwork for walls	1 day	Sat 30/5/20	Sat 30/5/20	



Devel	opment o	V/2017/02 f Columbarium at Sandy Ridge Cernetery l Works at Man Kam To Road and Lin Ma Hang I	3 Month Rolling Programme (from 26/3/2020 to 25/6/2020)												
ID	WBS	Task Name	Duration	Start Date	Completion Date	M 20 Ma: 10 T W T F	B Jun 1 Jul '1 22 Jul 'S S M T W T	E 12 Au _ž 2 Sep ' 23 Sep F S S M T W T F	M 14 Oct 4 Nov 25 S S M T W T F	B Nov 16 Dec 6 Jan ' 27 S S M T W T F	E Jan 17 Feb J S S M T W	M 0 Mai 31 Mai 21 J T F S S M T	B Apr 12 Mar 2 Jun W T F S S M	E 1 23 Jun 14 Jul T W T F S S	M 4 Aug 25 Aug 15 Sep 6 M T W T F S S M
1702	29.2.9.22	install instrument for RW12	3 days	Mon 1/6/20	Wed 3/6/20									1 11 1 1 2 0	M 1 W 1 1 3 3 M
1703	29.2.10	Site Formation works for Cut Slope CS20	125 days	Mon 1/6/20	Tue 3/11/20										
1704	29.2.10.1	slope excavation work	19 days	Mon 1/6/20	Mon 22/6/20										
1705	29.2.10.2	temporary scaffolding	5 days	Tue 23/6/20	Mon 29/6/20										





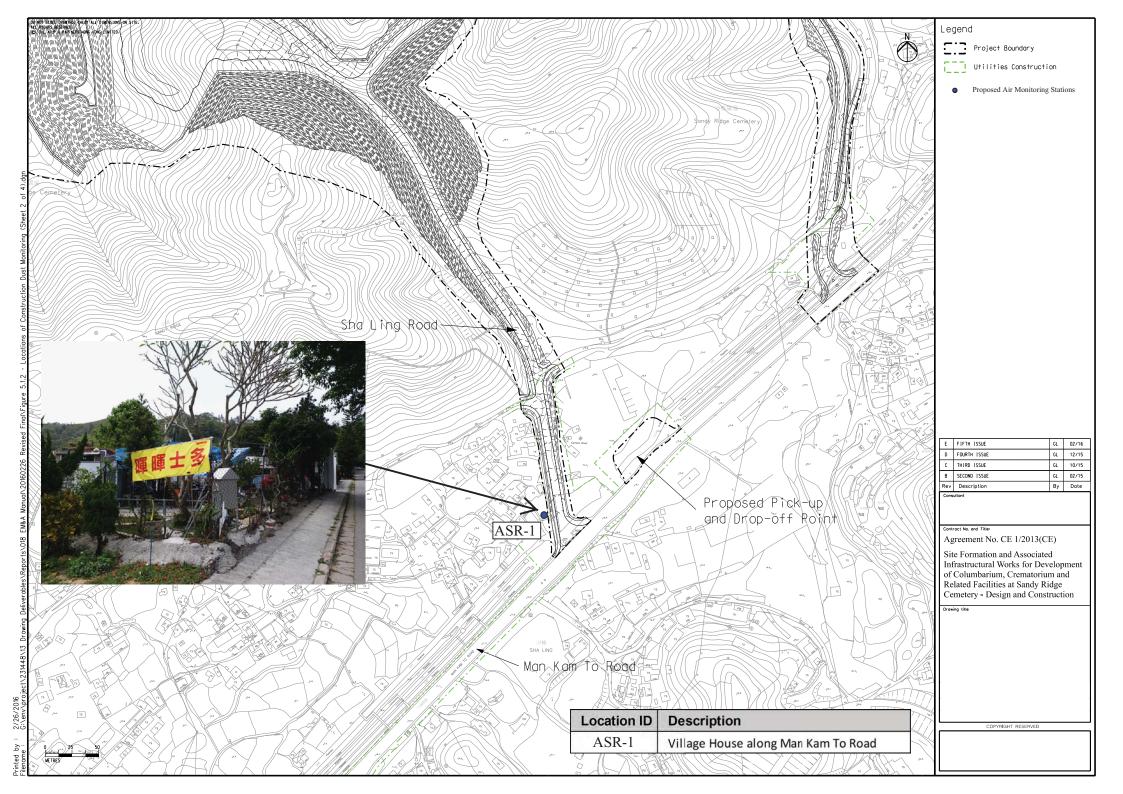
Appendix D

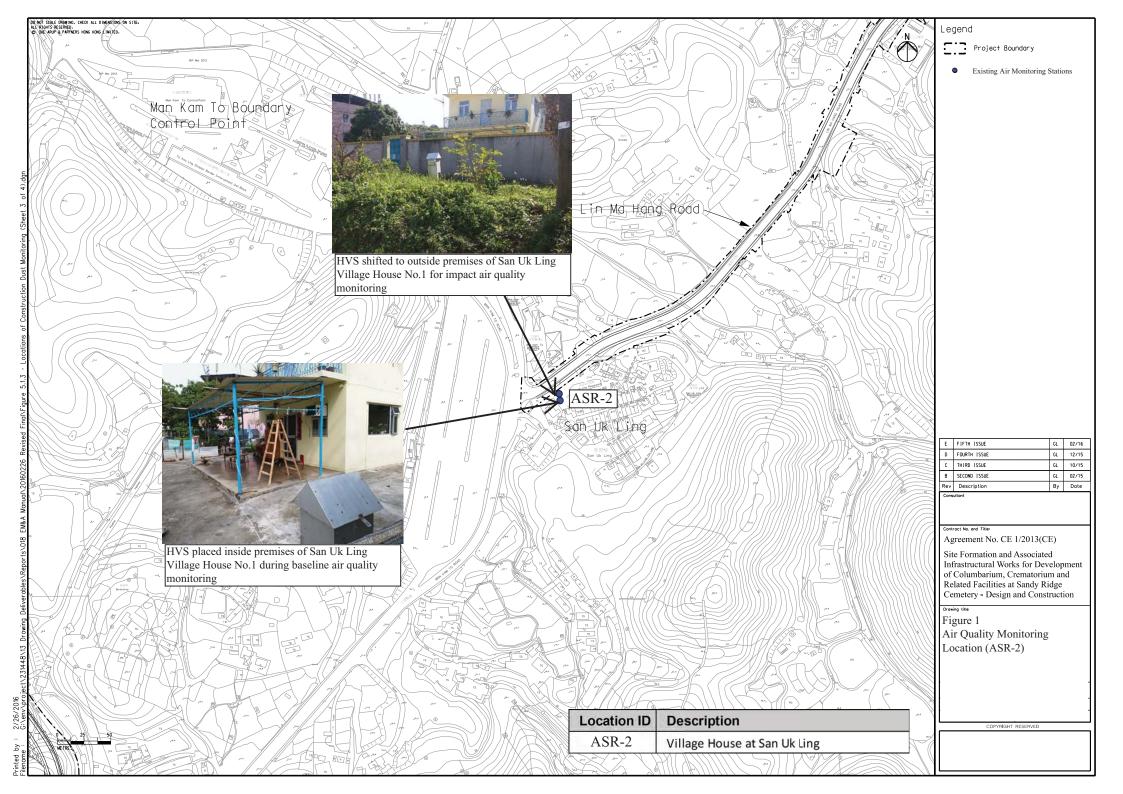
Monitoring Locations

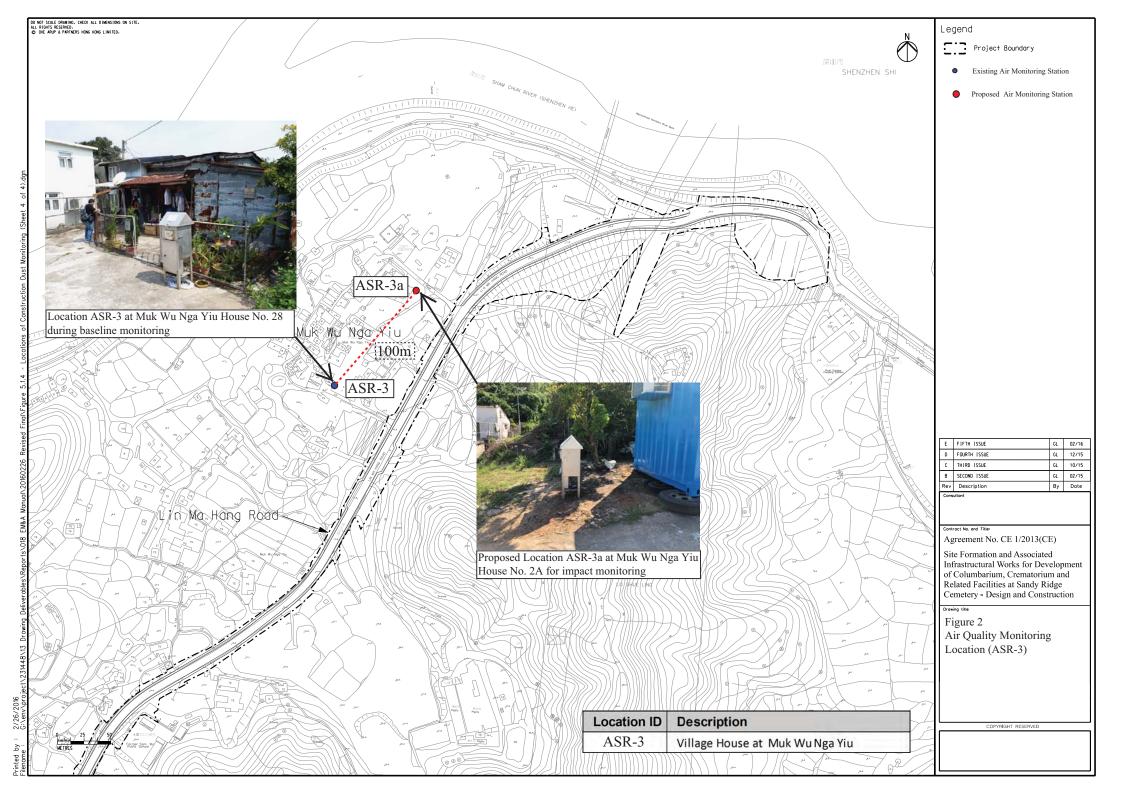
 $Z:\label{eq:loss} CV-2016-10)\black Report Submission\black Monthly Report 2020\black Month (March 2020)\black R0396v2.doc Monthly Report 2020\black R0396v2.doc Monthly Report 2020\black R0396v2.doc Monthly R0396v2.doc Month$



Air Quality Monitoring Location





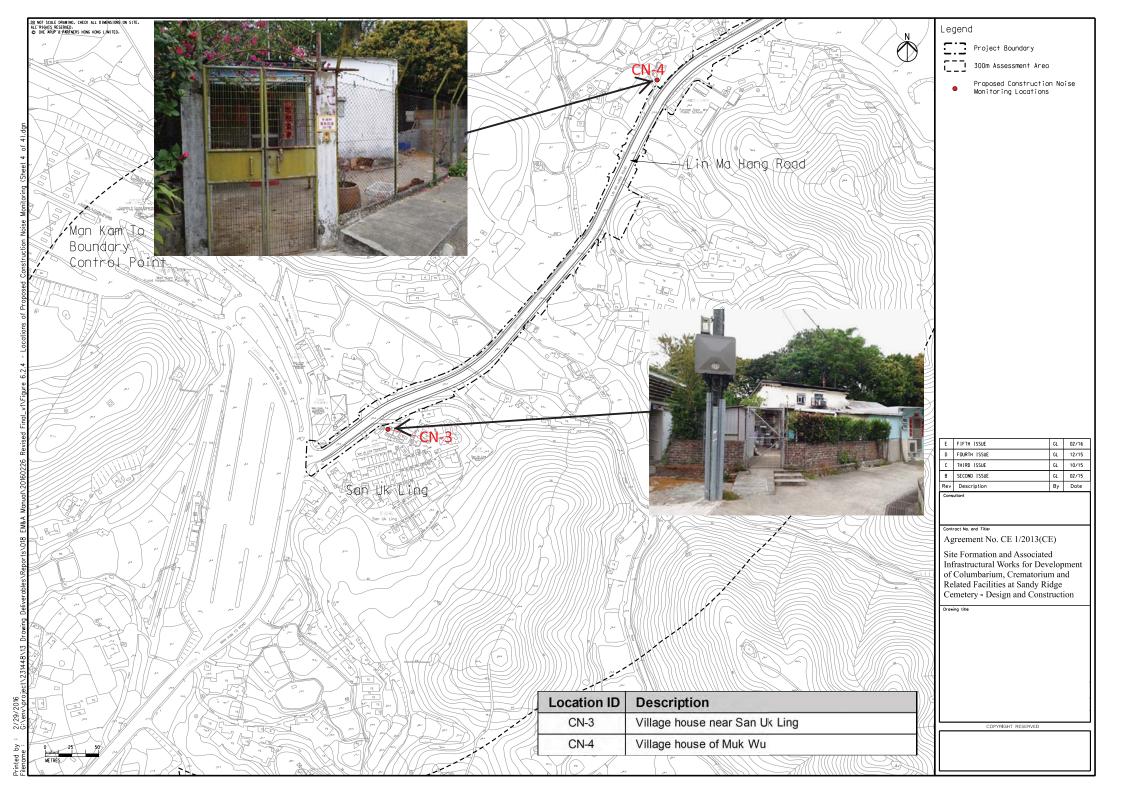




Noise Monitoring Location

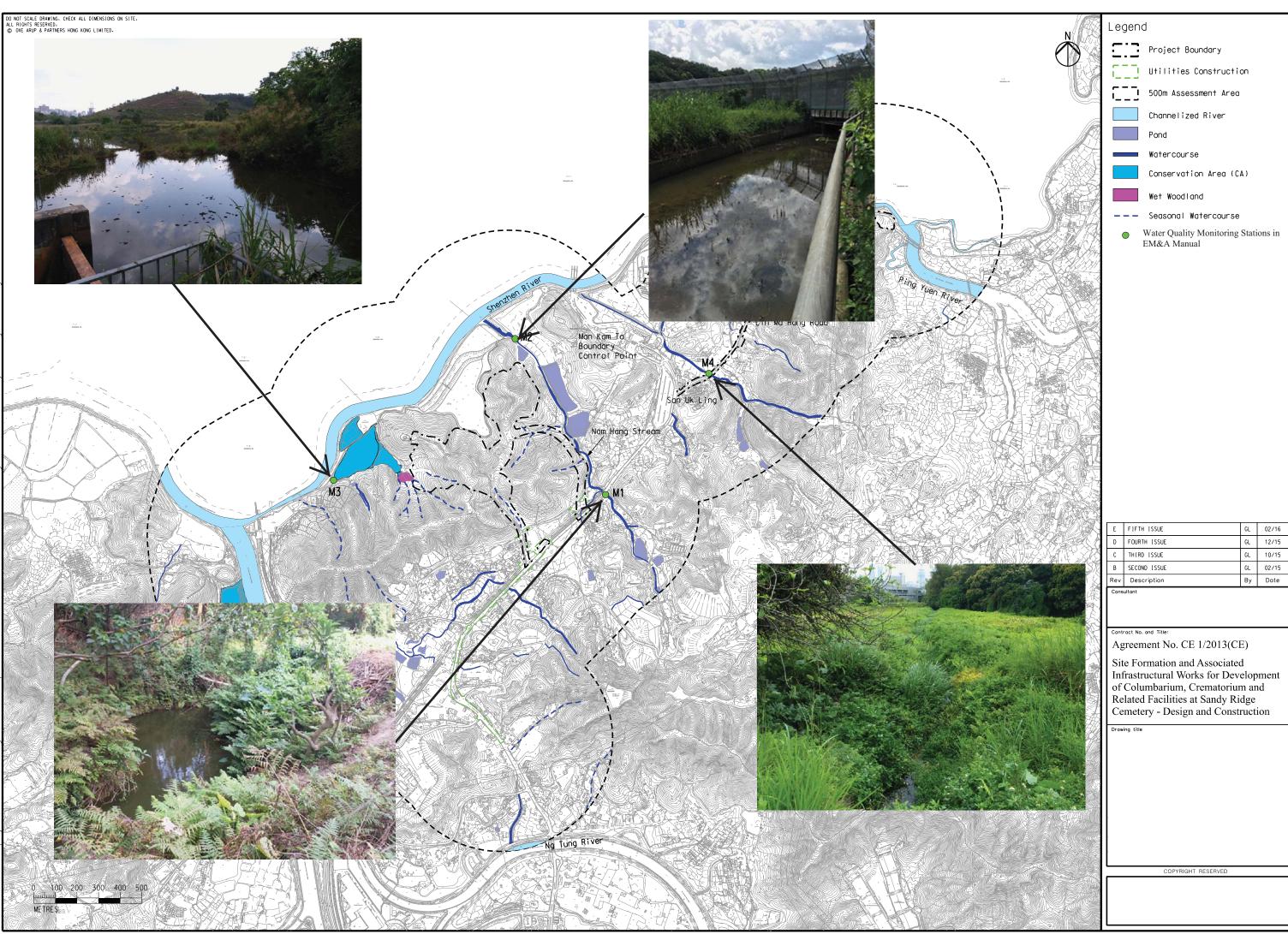








Water Quality Monitoring Station



Ε	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							
Cons	Consultant									



Appendix E

Calibration Certificate of Monitoring Equipment and Laboratory Certificate

 $Z:\label{eq:loss} CV-2016-10)\black Report Submission\black Monthly Report 2020\black Month (March 2020)\black R0396v2.doc Monthly Report 2020\black R0396v2.doc Monthly Report 2020\black R0396v2.doc Monthly R0396v2.doc Month$



CALIBRATION CERTIFICATES FOR MONITORING EQUIPMENT USED IN THE REPORTING MONTH

Items	Aspect	Description of Equipment	Date of Calibration	Date of Next Calibration
1		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	21 Feb 20	6 Mar 20
1a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	10 Mar 20	24 Mar 20
1b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-1	26 Mar 20	9 Apr 20
2		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	21 Feb 20	6 Mar 20
2a		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	10 Mar 20	24 Mar 20
2b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-2	26 Mar 20	9 Apr 20
3		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	21 Feb 20	6 Mar 20
3a	Air	TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	10 Mar 20	24 Mar 20
3b		TISCH High Volume Air Sampler, HVS Model TE-5170 TSP Sampler Calibration Spreadsheet for ASR-3a	26 Mar 20	9 Apr 20
4		Calibration Kit TISCH Model TE-5025A Orifice ID 1941 and Rootsmeter S/N 438320	7 Feb 20	7 Feb 21
6		Laser Dust Monitor, Model LD-3B (Serial No. 366410) – EQ110	6 Jan 20	6 Jan 21
7		Laser Dust Monitor, Model LD-3B (Serial No. 366410) – EQ110	6 Jan 20	6 Jan 21
8		Laser Dust Monitor, Model AM510 (Serial No. 11008017) – EQ102	6 Jan 20	6 Jan 21
9		Laser Dust Monitor, Model LD-3B (Serial No. 2X6145) – EQ105	6 Jan 20	6 Jan 21
10		Laser Dust Monitor, Model LD-3B (Serial No. 3Y6503) – EQ112	6 Jan 20	6 Jan 21
11		Brüel & Kjær 2238 Sound Level Meter (Serial No. 3012330) – EQ017	12 Jun 19	12 Jun 20
12	Noise	Brüel & Kjær 2238 Sound Level Meter (Serial No. 2285690) – EQ008	22 Jul 19	22 Jul 20
13		Brüel & Kjær 4231 Acoustical Calibrator (Serial No. 2713428) – EQ082	12 Jun 19	12 Jun 20
14		YSI 550A (Serial No. 05F2063AZ)	16 Jan 20	16 Apr 20
15		HACH 2100Q Turbidimeter (Serial No. 11030C008499)	16 Jan 20	16 Apr 20
16	Water	AZ 8685 pH Meter (Serial No. 1168272)	26 Feb 19	26 May 20
17		AZ8371 Salinity Meter (Serial No. 1219381)	16 Jan 19	16 Apr 20
18		Global Water FP211 Flow Meter (Serial No. 1449006330)	9 Oct 19	9 Oct 20

-												
Location :	Sha Lin	g Village	e House	No.6			Date of C	alibration: 21-Feb-20				
Location I	D :	ASR-1				Ν	Vext Calibra	tion Date: 6-Mar-20				
Name and	Model: '	TISCH H	IVS Mo	del TE-517	0		Т	echnician: Leung Ka	Wai			
					CO	NDI	TIONS					
							r					
	Se	a Level I	Pressure	(hPa)		26.7		Corrected Pressur				
		Temp	erature	(°C)	1	18.9		Temperatur	re (K)	292		
				C	ALIBR/	ATIC	ON ORIFICE					
				Make->	TISCH	ł		Qstd Slope -	>	2.03014		
				Model->	5025A			Qstd Intercept -	>	-0.04616		
				Serial # ->	1612							
					CAL	.IBR	ATION					
Plate	H20 (L)	H2O (R)	H20	Qstd	Ι		IC	LIN	EAR			
No.	(in)	(in)	(in)	(m3/min)	(chai	rt)	corrected		ESSION			
18	6.20	6.20	12.4	1.787	56		57.55		= 32.0472	2		
13	5.05	5.05	10.1	1.615	50		51.38	Intercept = 0.2850				
10	3.70	3.70	7.4	1.386	44		45.21	Corr. coeff.	= 0.998	5		
7	2.40	2.40	4.8	1.120	36		36.99					
5	1.35	1.35	2.7	0.846	26		26.72					
Calculatio	ne i											
Qstd = $1/r$		$\Omega(D_0/D_0)$	td)(Tetd	/Ta)) bl				FLOW RATE CI	HART			
$Q_{SIU} = 1/1$ IC = I[Sq1				<i>[1a])</i> -0]		70	0.00					
10 – 1[041		1)(1300/1	a)]									
Qstd = sta	ndard flo	w rate				6	0.00					
IC = correction			es									
I = actual		-				ව 50	0.00					
m = calibi						use (y = 32.047x +	0.285			
b = calibra	ator Qstd	intercep	t				0.00					
Ta = actua	al temper	ature dur	ing calil	oration (de	gK)	r.		*				
Pstd = act	ual press	ure durin	g calibra	ation (mm	Hg)	Ϋ́ς Β ³⁰	0.00					
			_			Actua	0.00	▲				
	-			npler flow:			0.00					
1/m((I)[S	Sqrt(298/	Tav)(Pav	r/760)]-t))								
m = samp	ler slope					1(0.00					
b = samp		ept										
I = chart r		-					0.00					
Tav = dail	-	e temper	ature				0.000	0.500 1.000 Standard Flow Rate	1.500 (m3/min)	2.000		
Pav = dail									-			
	2											

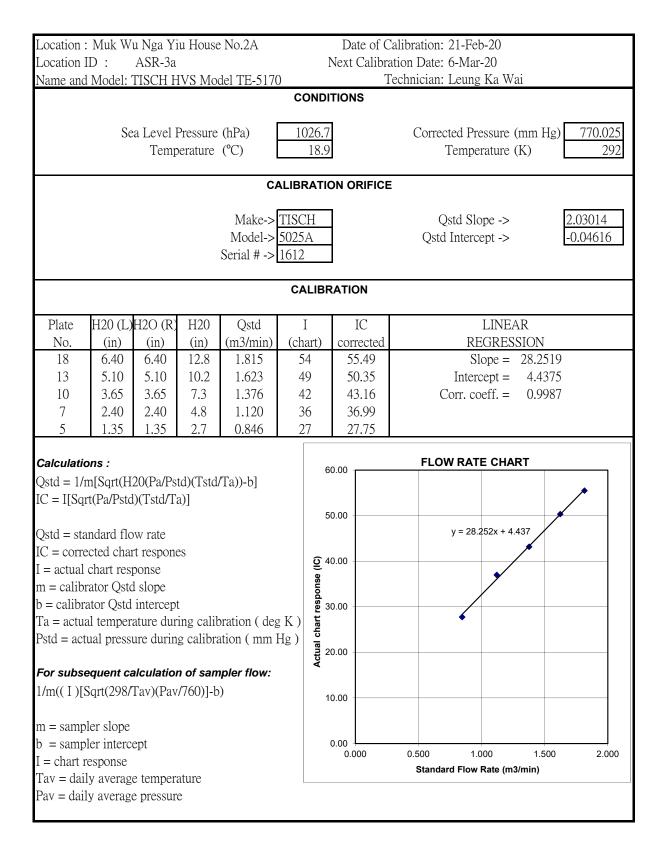
Location :	: Sha Lin	g Village	e House	No.6					alibration: 10-Mar-20				
Location 1		ASR-1				N	Vext C		tion Date: 24-Mar-20				
Name and	Model:	TISCH H	IVS Mo	del TE-517					echnician: Leung Ka Wai				
					CO	NDI.	TIONS	5					
	G	T 11		(1.D.)	10	1							
	Se	a Level I		. ,		13.5			Corrected Pressure (mm H				
		Temp	erature	(°C)	4	23.4]		Temperature (K)	296			
				C	ALIBR	ATIC	ON OR	IFICE					
					maar	T	1		0.101	2 0 0 0 1 4			
				Make->			-		Qstd Slope ->	2.03014			
				Model->		1	-		Qstd Intercept ->	-0.04616			
				Serial # ->	1612]						
					CAL	IBR	ATIO	N					
Plate	H20 (L)	H2O (R)	H20	Qstd	I		I	С	LINEAR				
No.	(in)	(in)	(in)	(m3/min)	(cha	rt)	corre		REGRESSION				
18	6.10	6.10	12.2	1.748	56	-	56		Slope = 31.7753				
13	5.00	5.00	10.0	1.585	49		49.	.27	Intercept = 0.1389				
10	3.70	3.70	7.4	1.366	44		44	.24	Corr. coeff. $=$ 0.99	79			
7	2.40	2.40	4.8	1.105	35		35	.19					
5	1.30	1.30	2.6	0.819	26		26	.14					
Calculatio	ons:								FLOW RATE CHART				
Qstd = 1/r		20(Pa/Ps	td)(Tstd	/Ta))-b]									
IC = I[Square II]						6	^{60.00} T						
		., (= = = = = =	/]							*			
Qstd = sta	indard flo	w rate				ŗ	50.00						
IC = corrections	ected cha	rt respon	es						y = 31.775x + 0.139				
I = actual	chart res	ponse				<u></u>							
m = calibr	rator Qsto	d slope				use	40.00 - 30.00 - 20.00 -						
b = calibra	ator Qstd	intercep	t			odse			*				
Ta = actua	al temper	ature dur	ing cali	oration (de	gK)	ar re	30.00 -						
Pstd = act	ual press	ure durin	g calibr	ation (mm	Hg)	l ch							
						ctua							
For subse	equent c	alculatio	n of san	npler flow:		₹2	20.00 -						
1/m((I)[\$	Sqrt(298/	Tav)(Pav	r/760)]-ł))									
m = samp	ler clone						10.00						
h = samp b = samp		ont											
I = chart r		υpι					0.00						
T = chart T Tav = dai	-	e temner	ature				0.0	00	0.500 1.000 1.50 Standard Elow Pate (m3/min)	00 2.000			
Pav = dai		_							Standard Flow Rate (m3/min)				
1 av – udl	iy averag	e pressui	C										

Location :	Sha Lin	g Village	e House	No.6			Dat	e of Ca	libration: 26-Mar-	-20		
Location I	D :	ASR-1				Ν	Next (Calibrat	tion Date: 9-Apr-2	20		
Name and	Model:	TISCH H	IVS Mo	del TE-517	0			Те	chnician: Leung H	Ka Wai		
	CONDITIONS											
							Ŧ					
	Se	a Level I	Pressure	(hPa)		13.5 23.3			Corrected Pres		Hg) 760.12	5
Temperature (°C)							ļ		Tempera	ture (K)	29	6
	CALIBRATION ORIFICE											
			Make->	TISCH	H			Qstd Slop	e ->	2.03014		
				Model->	5025A	Α			Qstd Intercer	ot ->	-0.04616	
				Serial # ->	1612							
					CAL	IBR	ATIO	N				
Plate	H20(L)	H2O (R)	H20	Qstd	Ι		I	С	I	JNEAR		
No.	(in)	(in)	(in)	(m3/min)	(cha	rt)		ected		GRESSION	[
18	6.10	6.10	12.2	1.748	56			.33	Slo	pe = 31.8	200	
13	5.10	5.10	10.2	1.601	50		50	.29	Interce	.0.0	471	
10	3.70	3.70	7.4	1.367	43	43		.25	Corr. coer	ff. = 0.9	991	
7	2.50	2.50	5.0	1.127	36	36		.21				
5	1.30	1.30	2.6	0.819	26)	26	.15				
Coloulatio					Ē							٦
		$20(D_0/D_0)$	td)(Tatd	/Ta)) b1					FLOW RATE	CHART		
Qstd = 1/n IC = I[Sqr				/1a))-0]		6	0.00 T					
IC – I[Sqi	u(1 a/1 Sic	1)(1510/1	a)]								•	
Qstd = sta	ndard flo	w rate				E	0.00 -					
IC = corre			es			50	0.00 +		y = 21.820y	1 0 047		
I = actual		-	0.5			<u>í</u>			y = 31.820x	+ 0.047		
m = calibr						est 4	0.00 +					
b = calibra	ator Qstd	intercep	t			lods				*		
Ta = actua	al temper	ature dui	ring calil	oration (de	gK)	2 13	0.00 +					
Pstd = act	ual press	ure durin	ig calibra	ation (mm	Hg)	l cha						
						ctua	0.00 -					
	For subsequent calculation of sampler flow:											
1/m((I)[S	1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)											
m												
	m = sampler slope											
	b = sampler intercept I = chart response											
T = chart T Tav = dail	-	e temner	ature				+ 0.00 0.00	00	0.500 1.000 Standard Flow R		00 2.000	
	Pav = daily average pressure											

r												
Location :	: San Ul	k Ling V	illage H	ouse No.1			Dat	te of Ca	libration: 21-Feb-20	0		
Location 1	ID :	ASR-2				l	Next (Calibrat	ion Date: 6-Mar-20			
Name and	l Model: '	TISCH H	IVS Mo	del TE-517	0			Те	chnician: Leung Ka	a Wai		
	CONDITIONS											
							_					
	Se	a Level I	Pressure	(hPa)	10	26.7	Ĩ		Corrected Pressu	ure (mm	Hg) 77	70.025
Temperature (°C)							Ī		Temperatu	ure (K)		292
		_					•		-			
				C	ALIBR	ATIC	ON OF	RIFICE				
				Make->	TISC	H	Ţ		Qstd Slope	->	2.030	014
				Model->			1		Qstd Intercept		-0.04	
				Serial # ->			1					
					СА	LIBR		N				
Plate	H20 (L)	H2O (R)	H20	Qstd	I		I	С	LI	NEAR		
No.	(in)	(in)	(in)	(m3/min)	(cha	art)	corr	ected		RESSION	I	
18	6.10	6.10	12.2	1.773	56			.55		e = 34.4		
13	4.95	4.95	9.9	1.599	50		51	.38	Intercept	t = -3.5	047	
10	3.85	3.85	7.7	1.413		44		.21	Corr. coeff.		993	
7	2.55	2.55	5.1	1.154		36		.99				
5	1.50	1.50	3.0	0.890		26		.72				
	•			•			•	*				
Calculatio	ons :						70.00		FLOW RATE (CHART		
Qstd = 1/r	n[Sqrt(H	20(Pa/Ps	td)(Tstd	/Ta))-b]		'	70.00 -					
IC = I[Squ	rt(Pa/Pstc	l)(Tstd/T	'a)]									
						6	60.00 -		у	= 34.468x -	3.505	_
Qstd = sta	indard flo	ow rate										
IC = corrections	ected char	rt respon	es				50.00 -				/	
I = actual	chart res	ponse				ି ପ୍				*		
m = calibi	rator Qsto	d slope) use	10.00					
b = calibra	ator Qstd	intercep	t			esbo	+0.00			•		
Ta = actua	al temper	ature du	ring calil	oration (de	gK)	artr				/		
Pstd = act	ual press	ure durin	ng calibra	ation (mm	Hg)	l di	40.00 -					
						ctua			•			
For subse	equent ca	alculatio	n of san	npler flow:		4	20.00 -					
1/m((I)[S	Sqrt(298/	Tav)(Pav	/760)] - t))								
						10.00 -						
m = samp												
b = sampler intercept												
I = chart r	esponse						0.00 - 0.0	000	0.500 1.000	1.	500	2.000
Tav = dai	ly averag	e temper	ature						Standard Flow Rat			
Pav = dail						L						

	~						-	2.9			
Location :			illage Ho	ouse No.1					libration: 10-Mar		
Location I		ASR-2				1	Next C		ion Date: 24-Mar		
Name and	Model:	TISCH H	IVS Mo	del TE-517					chnician: Leung I	Ka Wai	
	CONDITIONS										
							1				
	Se	a Level I		. ,		13.5			Corrected Pres		
	Temp	berature	(°C)	2	23.4			Tempera	ature (K)	296	
				C	ALIBR/	ATIC	ON OR	IFICE			
				27.1	TT O OT	T	1		0 . 1 01		2 0201 (
				Make->			_		Qstd Slop		2.03014
				Model->		L	_		Qstd Intercer	pt ->	-0.04616
				Serial # ->	1612]				
					C A I						
					CAL	IDR	AHOr	N			
Plate	H20 (L)	$H_{2}^{(R)}$	H20	Qstd	T		I	r	I	LINEAR	
No.	(in)	(in)	(in)	(m3/min)	(chai	rt)	corre			GRESSION	
110.	6.15	6.15	12.3	1.755	56		56.			pe = 34.70)11
13	4.95	4.95	9.9	1.577		49		27		pc = -4.57	
10	3.80	3.80	7.6	1.384		44		24	Corr. coe	-	
10 7	2.60	2.60	7.0 5.2	1.149		36		24		11. – 0.72	//0
5	1.50	2.00 1.50	3.0	0.878	25		25.				
	1.50	1.50	5.0	0.070		1	<i>LJ</i> .	14			
Calculatio	ons :								FLOW RATI	E CHART	
Qstd = 1/r	n[Sart(H	20(Pa/Ps	td)(Tstd	/Ta))-b]			60.00 -			y = 34.701x - 4	1.573
IC = I[Sqn	·			14)) 0]							▶
10 1001		<i>•)</i> (1000,1					50.00 -				
Qstd = sta	ndard flo	w rate					50.00				
IC = correction			es							*	
I = actual		-				୍ୱିତ୍ର	40.00 -				
m = calibr	-	-				nse				◆	
b = calibra	-	-	t			odse	30.00 - 20.00 -				
	-	_		oration (de	gK)	LT LE	30.00 -			,	
	-		_	ation (mm		cha			▲		
	1		2		2,	ctual	20.00 -				
For subsequent calculation of sampler flow:							20.00				
1/m((I)[S	1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)										
							10.00 -				
m = sampler slope											
b = sampler intercept											
I = chart r							0.00 - 0.0	00	0.500 1.00	00 1.5	00 2.000
Tav = dail	-	e temper	ature				0.0		Standard Flow		
Pav = dail											
	- 0	-									

Location :	: San Ul	k Ling V	illage H	ouse No.1		Date of Calibration: 26-Mar-20						
Location 1		ASR-2				ľ	Next Calibration Date: 9-Apr-20					
Name and	l Model: '	TISCH H	IVS Mo	del TE-517					echnician: Le	eung Ka Wai		
					CC	NDI	TIONS	S				
	So	a Level I	Draggura	(hD_0)	10	12.5	I		Correcto	d Pressure (mm	Hg) 760.125	
	36		perature	. ,		<u>13.5</u> 23.3				mperature (K)	296	
	TCHIL	Mature	(\mathbf{C})		23.3	l		10	inperature (IX)	290		
	CALIBRATION ORIFICE											
				Make->	TISC	H			Qsto	d Slope ->	2.03014	
				Model->		4			Qstd In	itercept ->	-0.04616	
				Serial # ->	1612							
					CA	LIBR	ΑΤΙΟ	N				
Plate	H20(L)	H2O (R)	H20	Qstd	I		T	С		LINEAR		
No.	(in)	(in)	(in)	(m3/min)	(cha			ected		REGRESSION	J	
18	6.10	6.10	12.2	1.748		56		.33		Slope = 34.1		
13	4.85	4.85	9.7	1.561	49	49		.29	I	ntercept = -3.6	5575	
10	3.80	3.80	7.6	1.385	43	43		.25	Cor	r. coeff. = 0.9	9993	
7	2.60	2.60	5.2	1.149		36		.21				
5	1.40	1.40	2.8	0.849	24	5	25	.15				
Calculatio	ons :								FLOW	RATE CHART		
Qstd = 1/r		20(Pa/Ps	td)(Tstd	/Ta))-b]		60.00 y = 34.140x - 3.657						
IC = I[Squ				(1u)) 0]						,	*	
			.1			5	50.00 -					
Qstd = sta	undard flo	ow rate										
IC = corrections	ected char	rt respon	es									
I = actual	chart res	ponse				2j4	- 00.04					
m = calibr	-	-				ouse				*		
b = calibr	-	-				resp	30.00 -					
	-		0	oration (de	<i>,</i>	hart						
Pstd = act	ual press	ure durin	ig calibra	ation (mm	Hg)	ual c	+0.00 - 30.00 - 20.00 -			•		
For subs	equent c	alculatio	n of san	pler flow:		Act	20.00 -					
1/m((I)[S	-			-								
1/111((1)[)	iuv)(iu)	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<i>)</i>)		1	0.00 -						
m = samp												
b = samp	ept					0.00 -						
	I = chart response								0.500	1.000 1.	.500 2.000	
Tav = dai	ly averag	e temper	ature						Standard	Flow Rate (m3/min)		
Pav = dail	ly averag	e pressui	e		I							



Location : Location I		u Nga Yi ASR-3a		No.2A		Ν			: 10-Mar-20 : 24-Mar-20		
				del TE-517	0	1			: Leung Ka W	ai	
					CC	NDI	TIONS				
	Se	a Level I Temp	Pressure perature	. ,		13.5 23.4		Corre	Corrected Pressure (mm Hg) 760.125 Temperature (K) 296		
				C	ALIBR	ΑΤΙΟ		E			
				Make-> Model-> Serial # ->	50257				Qstd Slope -> d Intercept ->		03014 0.04616
					CA	LIBR	ATION				
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	Qstd (m3/min)	I (cha		IC corrected	1	LINE. REGRES		
18 13	6.40 5.10	6.40 5.10	12.8 10.2	1.790 1.600	5: 5(5	55.30 50.27			30.1249 1.6865	
10 7	3.70 2.40	3.70 2.40	7.4 4.8	1.366 1.105	42 36		42.23 36.20		Corr. coeff. =	0.9976	
5	1.35	1.35	2.7	0.834	26		26.14				
Calculatio	ons:							FL	OW RATE CH	ART	
Qstd = 1/r IC = I[Sqr	n[Sqrt(H			/Ta))-b]			i0.00 i0.00				^
Qstd = sta IC = corre I = actual	cted char	rt respon	es			() 4	0.00		y = 30.125x + 1.	686	
m = calibr b = calibra	ator Qsta	d slope	t			response	0.00				
				oration (deg ation (mm			20.00		•		
	For subsequent calculation of sampler flow: 1/m((I)[Sqrt(298/Tav)(Pav/760)]-b)										
m = sampl b = sampl		ent					0.00				
I = chart r	esponse	_	ature				0.000	0.500 Stan	1.000 dard Flow Rate (n	1.500 n 3/min)	2.000
	Pav = daily average pressure										

Location : Muk Wu Nga Yiu Ho	use No.2A		Date of C	Calibration: 26-Mar-20			
Location ID : ASR-3a				ation Date: 9-Apr-20			
Name and Model: TISCH HVS I	viodel 1E-5170			Cechnician: Leung Ka Wai			
Sea Level Press Temperatu		1013.5 23.3		Corrected Pressure (m Temperature (K			
	C	ALIBRATIO		1			
	Make-> Model-> Serial # ->	5025A]	Qstd Slope -> Qstd Intercept ->	2.03014 -0.04616		
		CALIBR	RATION				
Plate H20 (L)H2O (R) H2 No. (in) (in) (in	-	I (chart)	IC corrected	LINEAR REGRESSI			
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	6 1.776 2 1.601 2 1.348 3 1.105	56 50 41 35 26	56.33 50.29 41.24 35.20 26.15	Slope = 3 Intercept =	-		
S1.301.302.0Calculations :Qstd = 1/m[Sqrt(H20(Pa/Pstd)(TIC = I[Sqrt(Pa/Pstd)(Tstd/Ta)]Qstd = standard flow rateIC = corrected chart responseI = actual chart responsem = calibrator Qstd slopeb = calibrator Qstd slopeb = calibrator Qstd interceptTa = actual temperature during calFor subsequent calculation of s1/m((I)[Sqrt(298/Tav)(Pav/760)]m = sampler slopeb = sampler interceptI = chart response	std/Ta))-b] alibration (deg ibration (mm] sampler flow:	6 5 (1) 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	0.00	FLOW RATE CHART y = 31.235x + 0.301 y = 31.235x + 0.301 0.500 0.500 1.000 Standard Flow Rate (m3/m	1.500 2.000		
Tav = daily average temperature Pav = daily average pressure							

								ALIBRATION
							D	UE DATE:
)		Febru	uary 7, 202
nvir	o n m	ent	al	- Construction of the Article				
	0		2 .		0	0.0		
	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 subsequent flow rate calculations:							1
	Qstd=	1/m ((_ \[\[\] \[\] \[\] H (Pa \/ Tstd	-))-b)		11	н(Та/Ра))-b)	
[Standard Conditions]
Tstd:				Г		RECA	LIBRATION]
Pstd:		mm Hg						
	ŀ	(ey					nnual recalibrati	
ΔH: calibrate							Regulations Part	
ΔP: rootsme		eter reading perature (°K)			Appendix B to Part 50, Reference Method for the			
		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 HK2001299
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 : 6-JAN-2020
	KONG	DATE OF ISSUE : 10-JAN-2020
PROJECT	:	NO. OF SAMPLES : 1
		CLIENT ORDER +

General Comments

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
- Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

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.

Results apply to sample(s) as submitted. 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

: HK2001299

¹ ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING :



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2001299-001	S/N: 11008017	AIR	06-Jan-2020	S/N: 11008017

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	TSI AM510
Serial No.	11008017
Equipment Ref:	EQ102
Work Order:	HK2001299

Standard Equipment:

Standard Equipment:	Higher Volume Sampler (TSP)
Location & Location ID:	AUES Office (Calibration Room)
Equipment Ref:	HVS 018
Last Calibration Date:	3 December 2019

Equipment Verification Results:

Verification Date:

27 & 31 December 2019

0.5354

0.9984

6 January 2020

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Concentration in mg/m ³ (Calibrated Equipment)	Tolerance (mg/m ³)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	0.076	+0.036
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	0.087	+0.039
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	0.066	+0.032

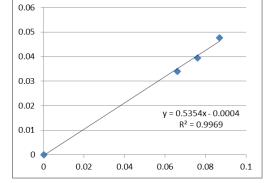
Linear Regression of Y or X

Slope (factor):	
Correlation Coefficient (R)	
Date of Issue	

Remarks:

- 1. **Strong** Correlation (R>0.8)
- 2. Factor 0.5354 should be apply for TSP monitoring

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





Location : Gold King Industrial Building, Kwai Chun Location ID : Calibration Room						nung		Date of Calibration: 3-Dec-19 Next Calibration Date: 3-Mar-20				
						COND	ITIONS					
Sea Level Pressure (hPa) 1 Temperature (°C)						.023.1 16.4			Corrected Pressure (mm Hg) Temperature (K)			767.325 289
					CALI	BRATI	ON ORIFIC	CE				
						SCH 25A eb-19			Qstd Slope -> Qstd Intercept -> Expiry Date->			2.0968 -0.00065 5-Feb-20
						CALIB	RATION					
Plate No.	H20 (L) (in)	H2O (R) (in)	H20 (in)	-		I art)	IC corrected		LINEAR REGRESSION			
18 13 10 8 5	6.5 5.2 4.1 2.6 1.6	6.5 5.2 4.1 2.6 1.6	13.0 10.4 8.2 5.2 3.2	1.754 1.569 1.393 1.109 0.870	4 4 3	53 54.04 48 48.94 41 41.80 30 30.59 22 22.43			Slope = 36.7338 Intercept = -9.6198 Corr. coeff. = 0.9986			
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 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					Actual chart response (IC) 05 05 07	2.00 2.00 2.00 2.00 2.00 2.00 2.00		FLOW RATE		r •		
 b = sampler intercept I = chart response Tav = daily average temperature Pav = daily average pressure 					0	0.000	0.50	00 1.0 Standard Flow F		1.500 iin)	2.000	



Key

ΔH: calibrator manometer reading (in H2O) ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

Pa: actual barometric pressure (mm Hg)

RECALIBRATION DUE DATE:

February 5, 2020

	0e	rufu	cate	of	Oal	wri	tion	
			Calibration	Certificati	on Informat	tion		
Cal. Date:	February 5	, 2019	Roots	438320	Ta:	°К		
Operator: Jim Tisch						Pa:	753.1	mm Hg
Calibration	Model #:	TE-5025A	Cali	brator S/N:	1941			-
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ	1
•	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4830	3.2	2.00	-
	2			1	1.0430	6.4	4.00	1
	3	5	6	1	0.9300	7.9	5.00	1
	4	7	8	1	0.8870	8.7	5.50	1
	5	5 9 10		1	0.7320	12.7	8.00]
			I	Data Tabula	tion			1
	Vstd	Qstd)(<u>Tstd</u>)		Qa	$\sqrt{\Delta H(Ta/Pa)}$		
	(m3)	(x-axis)	(y-ax	(is)	Va	(x-axis)	(y-axis)	
	1.0036	0.6767	1.41	97	0.9958	0.6714	0.8821	1
	0.9993	0.9581	2.00	78	0.9915	0.9506	1.2475	1
	0.9973	1.0723	2.24	48	0.9895	1.0640	1.3947]
	0.9962	1.1231	2.35	44	0.9884	1.1144	1.4628	
	0.9908 1.3536 m=			95	0.9831	1.3431	1.7642	1
				580		m=	1.31298	
•	QSTD	b=	-0.00		QA	b=	-0.00040	1
		r=	0.999	999		r=	0.99999	
			Alberte beregen ander an opfangen het en spin aller verstat in seine eine	Calculatio	ns	****	*****	1
	Vstd=	ΔVol((Pa-ΔP))/Pstd)(Tstd/T	a)	Va=ΔVol((Pa-ΔP)/Pa)			1
		Vstd/∆Time			Qa=	1		
			ns:	1				
	Qstd=	1/m ((\\ \[\Delta H (Pa <u>Tstd</u> Pstd Ta	Qa=				
[Standard	Conditions						_
Tstd:	1					RECA	LIBRATION	
Pstd:	760	mm Hg					nnual racalibrati	on nor 100

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

Tisch Environmental, Inc. 145 South Miami Avenue

www.tisch-env.com TOLL FREE: (877)263-7610 FAX: (513)467-9009

Village of Cleves, OH 45002

b: intercept m: slope

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES





CONTACT	: MR BEN TAM	WORK ORDER HK2001293					
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 : 6-JAN-2020					
	KONG	DATE OF ISSUE : 10-JAN-2020					
PROJECT	:	NO. OF SAMPLES : 1					
		CLIENT ORDER +					

General Comments

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
- Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

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

Signatories	Position
Richard Jong.	
Richard Fung	Managing Director

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

Results apply to sample(s) as submitted. 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

: HK2001293

¹ ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING :



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2001293-001	S/N: 3Y6503	AIR	06-Jan-2020	S/N: 3Y6503

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	3Y6503
Equipment Ref:	EQ112
Job Order	HK2001293

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	3 December 2019

Equipment Verification Results:

Testing Date:

27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2371	19.8
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2479	20.7
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1899	14.1

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



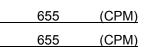
Slope (K-factor):	0.0022
Correlation Coefficient	0.9889
Date of Issue	6 January 2020

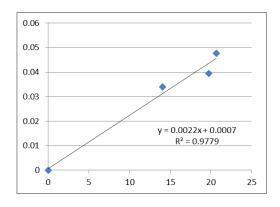
Remarks:

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





Operator :	Fai So	Signature :	Sal	Date :	6 January 2020
QC Reviewer :	Ben Tam	Signature :	46	Date :	6 January 2020

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Gold King Industrial Building, Kwai Chung Location ID : Calibration Room						nung		of Calibration: 3-I libration Date: 3-N	
					COND	ITIONS			
	Sea Level] Temp	Pressure perature	. ,	1	.023.1 16.4		Corrected Pressu Temperatu		767.325 289
				CALI	BRATI	ON ORIFICE			
Make-> TIS Model-> 502 Calibration Date-> 5-Fe							Qstd Slope Qstd Intercept Expiry Date	->(2.0968 0.00065 -Feb-20
					CALIB	RATION			
Plate H20 No. (ir	(L)H2O (R) 1) (in)	H20 (in)	Qstd (m3/min)		I art)	IC corrected		INEAR RESSION	
18 6. 13 5. 10 4. 8 2. 5 1.	2 5.2 1 4.1 6 2.6	13.0 10.4 8.2 5.2 3.2	1.754 1.569 1.393 1.109 0.870	4	53 54.04 48 48.94 41 41.80 30 30.59 22 22.43		Slope = 36.7338 Intercept = -9.6198 Corr. coeff. = 0.9986		
Calculations : Qstd = 1/m[Squ IC = I[Sqrt(Pa/ Qstd = standard IC = corrected I = actual chart m = calibrator (C Ta = actual ten Pstd = actual p For subsequen 1/m((I)[Sqrt(2 m = sampler she	Pstd)(Tstd/T I flow rate chart response Qstd slope Qstd intercep nperature du ressure durin t calculation (98/Tav)(Pay	ra)] es t ring cali ng calibr n of san	bration (de ation (mm apler flow:		00 90 90 90 90 90 90 90 90 90 90 90 90 9	.00	FLOW RATE C	CHART	
 b = sampler intercept I = chart response Tav = daily average temperature Pav = daily average pressure 				0	0.000	0.500 1.000 Standard Flow Rate	1.500 e (m3/min)	2.000	



Key

ΔH: calibrator manometer reading (in H2O) ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

Pa: actual barometric pressure (mm Hg)

RECALIBRATION DUE DATE:

February 5, 2020

	0e	rtifa	cate	of	Oal	iori	tion	
			Calibration	Certificati	on Informat	ion		
Cal. Date:	February 5	, 2019	Roots	meter S/N:	438320	Ta:	293	°K
Operator:	Jim Tisch					Pa:	753.1	mm Hg
Calibration I	Model #:	TE-5025A	Cali	brator S/N:	1941			-
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ]
4	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4830	3.2	2.00	
	2	3	4	1	1.0430	6.4	4.00	1
	3	5	6	1	0.9300	7.9	5.00]
	4	7	8	1	0.8870	8.7	5.50]
	5	9	10	1	0.7320	12.7	8.00	
				Data Tabula	tion]
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstc}\right)}$	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$		Qa	$\sqrt{\Delta H(Ta/Pa)}$	
	(m3)	(x-axis)	(y-ax	(is)	Va	(x-axis)	(y-axis)	
	1.0036	0.6767	1.41	97	0.9958	0.6714	0.8821	1
	0.9993	0.9581	2.00	78	0.9915	0.9506	1.2475	1
	0.9973	1.0723	2.24	48	0.9895	1.0640	1.3947]
	0.9962	1.1231	2.35	44	0.9884	1.1144	1.4628]
	0.9908	1.3536	2.83		0.9831	1.3431	1.7642	
		m=	2.096			m=	1.31298	
,	QSTD	b=	-0.00		QA	b=	-0.00040	1
		r=	0.999	999		<u>r=</u>	0.99999]
				Calculatio	ns	216/100418/04/1004-044118/04/04/04/04/04/04/04/04/04/04/04/04/04/]
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T	a)	Va=	ΔVol((Pa-Δ	P)/Pa)	1
	Qstd=	Vstd/∆Time	******		Qa=	Va/∆Time		1
	For subsequent flow rate calculations:							
	$\mathbf{Qstd=1/m}\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right) \qquad \mathbf{Qa=1/m}\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$							
	Standard	Conditions			_			
Tstd:	298.15		de diving to the second se			RECA	LIBRATION	
Pstd:	760	mm Hg					nnual racalibrati	100

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

Tisch Environmental, Inc. 145 South Miami Avenue

Village of Cleves, OH 45002

b: intercept m: slope

> <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 HK2001300					
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 : 6-JAN-2020					
	KONG	DATE OF ISSUE : 10-JAN-2020					
PROJECT	:	NO. OF SAMPLES : 1					
		CLIENT ORDER					

General Comments

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
- Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

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

Signatories	Position
Richard Jong.	
Richard Fung	Managing Director

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

Results apply to sample(s) as submitted. 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

: HK2001300

¹ ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING :



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2001300-001	S/N: 366410	AIR	06-Jan-2020	S/N: 366410

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	366410
Equipment Ref:	EQ110
Job Order	HK2001300

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	3 December 2019

Equipment Verification Results:

Testing Date:

27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2298	19.2
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2477	20.6
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1941	14.4

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



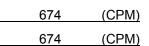
Slope (K-factor):	0.0022
Correlation Coefficient	0.9937
Date of Issue	6 January 2020

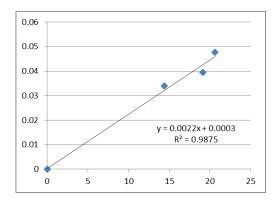
Remarks:

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





Operator :	Fai So	Signature : _	far	Date :	6 January 2020
QC Reviewer :	Ben Tam	Signature : _	K	Date :	6 January 2020

TSP SAMPLER CALIBRATION CALCULATION SPREADSHEET

Location : Location ID :	Gold Ki Calibrat	-		of Calibration: 3-I libration Date: 3-N					
					COND	ITIONS			
	Sea Level] Temp	Pressure perature	. ,	1	.023.1 16.4		Corrected Pressu Temperatu		767.325 289
				CALI	BRATI	ON ORIFICE			
Make-> TIS Model-> 502 Calibration Date-> 5-Fe							Qstd Slope Qstd Intercept Expiry Date	->(2.0968 0.00065 -Feb-20
					CALIB	RATION			
Plate H20 No. (ir	(L)H2O (R) 1) (in)	H20 (in)	Qstd (m3/min)		I art)	IC corrected		INEAR RESSION	
18 6. 13 5. 10 4. 8 2. 5 1.	2 5.2 1 4.1 6 2.6	13.0 10.4 8.2 5.2 3.2	1.754 1.569 1.393 1.109 0.870	4	53 18 11 50 22	54.04 48.94 41.80 30.59 22.43	Slope Intercep Corr. coeff	t = -9.6198	
Calculations : Qstd = 1/m[Squ IC = I[Sqrt(Pa/ Qstd = standard IC = corrected I = actual chart m = calibrator (C Ta = actual ten Pstd = actual p For subsequen 1/m((I)[Sqrt(2 m = sampler she	Pstd)(Tstd/T I flow rate chart response Qstd slope Qstd intercep nperature du ressure durin t calculation (98/Tav)(Pay	ra)] es t ring cali ng calibr n of san	bration (de ation (mm apler flow:		00 90 90 90 90 90 90 90 90 90 90 90 90 9	.00	FLOW RATE C	CHART	
 b = sampler intercept I = chart response Tav = daily average temperature Pav = daily average pressure 				0	0.000	0.500 1.000 Standard Flow Rate	1.500 e (m3/min)	2.000	



Key

ΔH: calibrator manometer reading (in H2O) ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

Pa: actual barometric pressure (mm Hg)

RECALIBRATION DUE DATE:

February 5, 2020

	0e	rtifa	cate	of	Oal	iori	tion	
			Calibration	Certificati	on Informat	ion		
Cal. Date:	February 5	, 2019	Roots	meter S/N:	438320	Ta:	293	°К
Operator:	Jim Tisch					Pa:	753.1	mm Hg
Calibration I	Model #:	TE-5025A	Cali	brator S/N:	1941			-
		Vol. Init	Vol. Final	ΔVol.	ΔTime	ΔΡ	ΔΗ]
4	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)	
	1	1	2	1	1.4830	3.2	2.00	
	2	3	4	1	1.0430	6.4	4.00	1
	3	5	6	1	0.9300	7.9	5.00]
	4	7	8	1	0.8870	8.7	5.50]
	5	9	10	1	0.7320	12.7	8.00	
				Data Tabula	tion]
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstc}\right)}$)(<u>Tstd</u>)		Qa	$\sqrt{\Delta H(Ta/Pa)}$	
	(m3)	(x-axis)	(y-ax	(is)	Va	(x-axis)	(y-axis)	
	1.0036	0.6767	1.41	97	0.9958	0.6714	0.8821	1
	0.9993	0.9581	2.00	78	0.9915	0.9506	1.2475	1
	0.9973	1.0723	2.24	48	0.9895	1.0640	1.3947]
	0.9962	1.1231	2.35	44	0.9884	1.1144	1.4628]
	0.9908	1.3536	2.83		0.9831	1.3431	1.7642	
		m=	2.096			m=	1.31298	
,	QSTD	b=	-0.00		QA	b=	-0.00040	1
		r=	0.999	999		<u>r=</u>	0.99999]
				Calculatio	ns	216/100418/04/1004-044118/04/04/04/04/04/04/04/04/04/04/04/04/04/]
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T	a)	Va=	ΔVol((Pa-Δ	P)/Pa)	1
	$Qstd=Vstd/\DeltaTime$ $Qa=Va/\DeltaTime$						1	
	For subsequent flow rate calculations:							1
	$\mathbf{Qstd=1/m}\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) \cdot b\right) \qquad \mathbf{Qa=1/m}\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right) \cdot b\right)$							
	Standard	Conditions						
Tstd:	298.15		de diving to the second se			RECA	LIBRATION	
Pstd:	760	mm Hg				nnual racalibrati	100	

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

Tisch Environmental, Inc. 145 South Miami Avenue

Village of Cleves, OH 45002

b: intercept m: slope

> <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 HK2001298				
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 : 6-JAN-2020				
	KONG	DATE OF ISSUE : 10-JAN-2020				
PROJECT	:	NO. OF SAMPLES : 1				
		CLIENT ORDER +				

General Comments

- Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in ambient condition. The result(s) related only to the item(s) tested.
- Sample information (Project name, Sample ID, Sampling date/time, etc., if any) is provided by client.
- Calibration was subcontracted to and analysed by Action United Enviro Services.

Signatories

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

Signatories	Position
Richard Jong.	
Richard Fung	Managing Director

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

Results apply to sample(s) as submitted. 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

: HK2001298

¹ ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING :



ALS Lab ID	Client's Sample ID	Sample Type	Sample Date	External Lab Report No.
HK2001298-001	S/N: 2X6145	AIR	06-Jan-2020	S/N: 2X6145

Equipment Verification Report (TSP)

Equipment Calibrated:

Туре:	Laser Dust monitor
Manufacturer:	Sibata LD-3B
Serial No.	2X6145
Equipment Ref:	EQ105
Job Order	HK2001298

Standard Equipment:

Standard Equipment:	Higher Volume Sampler
Location & Location ID:	AUES office (calibration room)
Equipment Ref:	HVS 018
Last Calibration Date:	3 December 2019

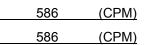
Equipment Verification Results:

Testing Date:

27&31 December 2019

Hour	Time	Mean Temp °C	Mean Pressure (hPa)	Concentration in mg/m ³ (Standard Equipment)	Total Count (Calibrated Equipment)	Count/Minute (Total Count/60min)
2hr	09:08 ~ 11:10	18.0	1020.3	0.040	2254	18.8
2hr	11:15 ~ 13:16	19.2	1024.9	0.048	2561	21.3
2hr15min	13:22 ~ 15:23	19.2	1024.9	0.034	1841	13.6

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



Linear Regression of Y or X

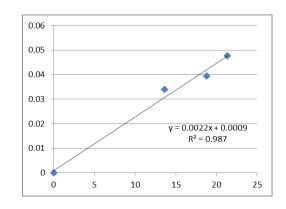
Slope (K-factor):	0.0022
Correlation Coefficient	0.9935
Date of Issue	6 January 2020

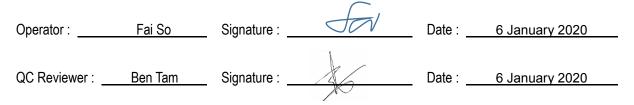
Remarks:

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, Kwa Location ID : Calibration Room				wai Cł	nung		of Calibration: 3-I libration Date: 3-N		
					COND	ITIONS			
	Sea Level] Temp	Pressure perature	. ,	1	.023.1 16.4		Corrected Pressu Temperatu		767.325 289
				CALI	BRATI	ON ORIFICE			
		Calibrat	Make-> Model-> ion Date->		SCH 25A 26-19		Qstd Slope Qstd Intercept Expiry Date	->(2.0968 0.00065 -Feb-20
					CALIB	RATION			
Plate H20 No. (ir	(L)H2O (R) 1) (in)	H20 (in)	Qstd (m3/min)		I art)	IC corrected		INEAR RESSION	
18 6. 13 5. 10 4. 8 2. 5 1.	2 5.2 1 4.1 6 2.6	13.0 10.4 8.2 5.2 3.2	1.754 1.569 1.393 1.109 0.870	4	53 18 11 50 22	54.04 48.94 41.80 30.59 22.43	Slope Intercep Corr. coeff	t = -9.6198	
Calculations : Qstd = 1/m[Sqr IC = I[Sqrt(Pa/ Qstd = standard IC = corrected I = actual chart m = calibrator (Ta = actual ten Pstd = actual ten Pstd = actual pr For subsequen 1/m((I)[Sqrt(2 m = sampler slo b = sampler in	Pstd)(Tstd/T I flow rate chart response Qstd slope Qstd intercep nperature du ressure durin t calculation (98/Tav)(Pay	ra)] es t ring cali ng calibr n of san	bration (de ation (mm apler flow:		00 90 90 90 90 90 90 90 90 90 90 90 90 9	.00	FLOW RATE C	CHART	
I = chart responses Tay = daily ave	ise				0	0.000	0.500 1.000 Standard Flow Rate	1.500 e (m3/min)	2.000



Key

ΔH: calibrator manometer reading (in H2O) ΔP: rootsmeter manometer reading (mm Hg)

Ta: actual absolute temperature (°K)

Pa: actual barometric pressure (mm Hg)

RECALIBRATION DUE DATE:

February 5, 2020

	0e	rtifa	cate	of	Oal	iori	tion		
			Calibration	Certificati	on Informat	ion			
Cal. Date: February 5, 2019 Rootsmeter S/N: 438320 Ta: 293 °K									
Operator: Jim Tisch Pa: 753.1								mm Hg	
Calibration Model #: TE-5025A Calibrator S/N: 1941									
	Vol. Init Vol. Final ΔVol. ΔTime ΔΡ ΔΗ								
4	Run	(m3)	(m3)	(m3)	(min)	(mm Hg)	(in H2O)		
	1	1	2	1	1.4830	3.2	2.00		
	2	3	4	1	1.0430	6.4	4.00	1	
	3	5	6	1	0.9300	7.9	5.00]	
	4	7	8	1	0.8870	8.7	5.50]	
	5	9	10	1	0.7320	12.7	8.00		
				Data Tabulation					
	Vstd	Qstd	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$			Qa	$\sqrt{\Delta H(Ta/Pa)}$		
	(m3)	(x-axis)	(y-ax	(is)	Va	(x-axis)	(y-axis)		
	1.0036	0.6767	1.41	1.4197		0.6714	0.8821	1	
	0.9993	0.9581	2.0078		0.9915	0.9506	1.2475	1	
	0.9973	1.0723	2.24	48	0.9895	1.0640	1.3947]	
	0.9962	1.1231	2.35	44	0.9884	1.1144	1.4628]	
	0.9908	1.3536	2.83		0.9831	1.3431	1.7642		
		m=	2.096			m=	1.31298		
,	QSTD	b=	-0.00		QA	b=	-0.00040	1	
		r=	0.999	999		<u>r=</u>	0.99999		
				Calculatio	ns	216/100418/04/1004-044118/04/04/04/04/04/04/04/04/04/04/04/04/04/]	
	Vstd=	ΔVol((Pa-ΔP)	/Pstd)(Tstd/T	a)	Va=	ΔVol((Pa-Δ	P)/Pa)	1	
	Qstd=	Vstd/∆Time	******		Qa=	Va/∆Time		1	
			For subsequ	ent flow ra	te calculatio	ns:		1	
$\mathbf{Qstd} = 1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right) - b\right) \qquad \mathbf{Qa} = 1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right) - b\right)$							l(Ta/Pa))-b)		
	Standard	Conditions							
Tstd:	298.15					RECA	LIBRATION		
Pstd:	760	mm Hg					nnual racalibrati	100	

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

Tisch Environmental, Inc. 145 South Miami Avenue

Village of Cleves, OH 45002

b: intercept m: slope

> <u>www.tisch-env.com</u> TOLL FREE: (877)263-7610 FAX: (513)467-9009



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C193784 證書編號

ITEM TESTED / 送檢項目	(Job No./序引編號:IC19-1098)	Date of Receipt / 收件日期:5 July 2019
Description / 儀器名稱 :	Integrating Sound Level Meter (EQ008)	
Manufacturer / 製造商 :	Brüel & Kjær	
Model No. / 型號 :	2238	
Serial No. / 編號 :	2285690	
Supplied By / 委託者 :	Action-United Environmental Services and Co	onsulting
	Unit A, 20/F., Gold King Industrial Building,	
	35-41 Tai Lin Pai Road, Kwai Chung, N.T.	

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°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 : 17 July 2019

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

:

- Fluke Everett Service Center, USA

Tested By 測試

	1		Í
			-
		ner	C

K P Cheuk Assistant Engineer

> K C Lee Engineer

Certified By 核證 Date of Issue 簽發日期

:

22 July 2019

The test equipment used for calibration are traceable to the Nation 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 — 枝正及檢測實驗所 c/o 香港新界屯門興安里—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. : C193784 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 laboratory acoustic calibrator was performed before the test from 6.1.1.2 to 6.4.
- 3. The results presented are the mean of 3 measurements at each calibration point.
- 4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C190176
CL281	Multifunction Acoustic Calibrator	CDK1806821

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

	UUT S	Setting	Applied	Value	UUT	
Range	Parameter	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.2

6.1.1.2 After Self-calibration

UUT Setting					d Value	UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.0	± 0.7

6.1.2 Linearity

	UU	Г Setting	Applied	d Value	UUT	
Range	Parameter	Frequency	Time	Level	Freq.	Reading
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)
50 - 130	L _{AFP}	А	F	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

IEC 60651 Type 1 Spec. : \pm 0.4 dB per 10 dB step and \pm 0.7 dB for overall different.

The test equipment used for calibration are traceable to the Nation 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. : C193784 證書編號

6.2 Time Weighting

6.2.1 Continuous Signal

- <u>-</u>										
		Applie	d Value	UUT	IEC 60651					
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.			
(dB)		Weighting	Weighting	(dB)	(kHz)	(dB)	(dB)			
50 - 130	L _{AFP}	А	F	94.00	1	94.0	Ref.			
	L _{ASP}		S			94.0	± 0.1			
	L _{AIP}		I			94.0	± 0.1			

6.2.2 Tone Burst Signal (2 kHz)

	UUT	Setting		App	lied Value	UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Burst	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	Duration	(dB)	(dB)
30 - 110	L _{AFP}	А	F	106.0	Continuous	106.0	Ref.
	L _{AFMax}				200 ms	105.0	-1.0 ± 1.0
	L _{ASP}		S		Continuous	106.0	Ref.
	L _{ASMax}				500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

	UUT Setting				ed Value	UUT	IEC 60651
Range	Parameter	Frequency	Time	Level	Freq.	Reading	Type 1 Spec.
(dB)		Weighting	Weighting	(dB)	_	(dB)	(dB)
50 - 130	L _{AFP}	A	F	94.00	31.5 Hz	54.7	-39.4 ± 1.5
					63 Hz	67.8	-26.2 ± 1.5
					125 Hz	77.8	-16.1 ± 1.0
					250 Hz	85.3	-8.6 ± 1.0
					500 Hz	90.7	-3.2 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	95.2	$+1.2 \pm 1.0$
					4 kHz	95.0	$+1.0 \pm 1.0$
					8 kHz	92.9	-1.1 (+1.5 ; -3.0)
					12.5 kHz	89.8	-4.3 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the Nation 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



Certificate of Calibration 校正證書

Certificate No. : C193784 證書編號

6.3.2 C-Weighting

C weighting							
	UUT	Setting		Applied Value		UUT	IEC 60651
Range (dB)	Parameter	Frequency Weighting	Time Weighting	Level (dB)	Freq.	Reading (dB)	Type 1 Spec. (dB)
50 - 130	L _{CFP}	C	F	94.00	31.5 Hz	91.1	-3.0 ± 1.5
					63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.0
					250 Hz	94.0	0.0 ± 1.0
					500 Hz	94.0	0.0 ± 1.0
					1 kHz	94.0	Ref.
					2 kHz	93.8	-0.2 ± 1.0
					4 kHz	93.2	-0.8 ± 1.0
					8 kHz	91.0	-3.0 (+1.5 ; -3.0)
					12.5 kHz	87.8	-6.2 (+3.0; -6.0)

6.4

Time Ave	Time Averaging									
	UUT	Setting		Applied Value					UUT	IEC 60804
Range	Parameter	Frequency	Integrating	Frequency	Burst	Burst	Burst	Equivalent	Reading	Type 1
(dB)		Weighting	Time	(kHz)	Duration	Duty	Level	Level	(dB)	Spec.
					(ms)	Factor	(dB)	(dB)		(dB)
30 - 110	L _{Aeq}	А	10 sec.	4	1	1/10	110.0	100	99.9	± 0.5
						$1/10^{2}$		90	90.1	± 0.5
			60 sec.			$1/10^{3}$		80	79.8	± 1.0
			5 min.			1/10 ⁴		70	69.7	± 1.0

Remarks : - UUT Microphone Model No. : 4188 & S/N : 2812705

- Mfr's Spec. : IEC 60651 Type 1 & IEC 60804 Type 1

- Uncertainties of Applied Value :	250 Hz - 500 Hz 1 kHz	: $\pm 0.30 \text{ dB}$: $\pm 0.20 \text{ dB}$: $\pm 0.35 \text{ dB}$: $\pm 0.45 \text{ dB}$: $\pm 0.70 \text{ dB}$: $\pm 0.10 \text{ dB}$ (Ref. 94 dB) : $\pm 0.10 \text{ dB}$ (Ref. 94 dB) : $\pm 0.2 \text{ dB}$ (Ref. 110 dB
	Burst equivalent level	$\pm 0.2 \text{ dB}$ (Ref. 110 dB continuous sound level)

- 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 are traceable to the Nation 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. : C192956 證書編號

(Job No./序引編號:IC19-1098)	Date of Receipt / 收件日期: 30 May 2019
Sound Calibrator (EQ082)	
Brüel & Kjær	
4231	
2713428	
Action-United Environmental Services and C	Consulting
Unit A, 20/F., Gold King Industrial Building	,
35-41 Tai Lin Pai Road, Kwai Chung, N.T.	
	Brüel & Kjær 4231 2713428 Action-United Environmental Services and C Unit A, 20/F., Gold King Industrial Building

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 check

DATE OF TEST / 測試日期 : 7 June 2019

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

:

- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

K 🕻 Lee Engineer

Certified By 核證

Date of Issue 簽發日期 •

12 June 2019

The test equipment used for calibration are traceable to the Nation 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. : C192956 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	C183775
CL281	Multifunction Acoustic Calibrator	CDK1806821
TST150A	Measuring Amplifier	C181288

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

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	94.0	± 0.2	± 0.2
114 dB, 1 kHz	114.1		

5.2 Frequency Accuracy

UUT Nominal Value Measured Value		Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 0	$1 \text{ kHz} \pm 0.1 \%$	± 0.1

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 are traceable to the Nation 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. : C192957 證書編號

ITEM TESTED / 送檢項目	(Job No. / 序引編號: IC19-1098)	Date of Receipt / 收件日期: 30 May 2019
Description / 儀器名稱 :	Sound Level Meter (EQ017)	
Manufacturer / 製造商 :	Brüel & Kjær	
Model No. / 型號 :	2250	
Serial No. / 編號 :	3012330	
Supplied By / 委託者 :	Action-United Environmental Services and	Consulting
	Unit A, 20/F., Gold King Industrial Buildin	
	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 check

DATE OF TEST / 測試日期 : 7 June 2019

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

- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies

:

- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

K C Lee Engineer

Technical Officer

Certified By 核證 Date of Issue 簽發日期 1

12 June 2019

The test equipment used for calibration are traceable to the Nation 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



Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C192957 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 laboratory acoustic calibrator 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 :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C190176
CL281	Multifunction Acoustic Calibrator	CDK1806821

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

ſ	UUT Setting		Applied	Value	UUT Reading
	Range (dB)	Main	Level (dB)	Freq. (kHz)	(dB)
	20 - 140	LAF (SPL)	94.00	1	94.1

6.1.1.2 After Self-calibration

UUT Setting		Applied Value		UUT Reading	IEC 61672 Class 1
Range (dB)	Main	Level (dB)	Freq. (kHz)	(dB)	Spec. (dB)
20 - 140	LAF (SPL)	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUTS	Setting	Applied Value		UUT Reading
Range (dB)	Main	Level (dB)	Freq. (kHz)	(dB)
20 - 140	LAF (SPL)	94.00	1	94.0 (Ref.)
		104.00		104.0
		114.00		114.0

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

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



輝創工程有限公司 Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No. : C192957 證書編號

6.2 Time Weighting

UUT	Setting	Applie	ed Value	UUT Reading	IEC 61672 Class 1
Range (dB)	Main	Level (dB)	Freq. (kHz)	(dB)	Spec. (dB)
20 - 140	LAF (SPL)	94.00	1	94.0	Ref.
	LAS (SPL)			94.0	± 0.3

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Se	UT Setting Applied Value		d Value	UUT Reading	IEC 61672 Class 1 Spec.
Range (dB)	Main	Level (dB)	Freq.	(dB)	(dB)
20 - 140	LAF (SPL)	94.00	63 Hz	67.8	-26.2 ± 1.5
			125 Hz	77.8	-16.1 ± 1.5
			250 Hz	85.3	-8.6 ± 1.4
			500 Hz	90.7	-3.2 ± 1.4
			1 kHz	94.0	Ref.
			2 kHz	95.2	$+1.2 \pm 1.6$
			4 kHz	95.0	$+1.0 \pm 1.6$
			8 kHz	92.9	-1.1(+2.1;-3.1)
			12.5 kHz	89.3	-4.3(+3.0;-6.0)

6.3.2 C-Weighting

C weighting					
UUT Se	etting	Applied Value		UUT Reading	IEC 61672 Class 1 Spec.
Range (dB)	Main	Level (dB)	Freq.	(dB)	(dB)
20 - 140	LCF (SPL)	94.00	63 Hz	93.2	-0.8 ± 1.5
			125 Hz	93.8	-0.2 ± 1.5
			250 Hz	94.0	0.0 ± 1.4
			500 Hz	94.0	0.0 ± 1.4
			1 kHz	94.0	Ref.
			2 kHz	93.8	-0.2 ± 1.6
			4 kHz	93.2	-0.8 ± 1.6
			8 kHz	91.0	-3.0 (+2.1 ; -3.1)
			12.5 kHz	87.4	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the Nation 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. : C192957 證書編號

Remarks : - UUT Microphone Model No. : 4189 & S/N : 3130396

- Mfr's Spec. : IEC 61672 Class 1
- Uncertainties of Applied Value : 94 dB : 63 Hz 125 Hz : ± 0.35 dB 250 Hz - 500 Hz ± 0.30 dB 1 kHz $:\pm 0.20 \text{ dB}$ 2 kHz - 4 kHz $\pm 0.35 \text{ dB}$ $:\pm 0.45 \text{ dB}$ 8 kHz $:\pm 0.70 \text{ dB}$ 12.5 kHz $:\pm 0.10 \text{ dB}$ (Ref. 94 dB) 104 dB : 1 kHz : 1 kHz $\pm 0.10 \text{ dB}$ (Ref. 94 dB) 114 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 are traceable to the Nation 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 ENVIRONMENT SERVICES AND CONSULTING	WORK ORDER:	HK2001852
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 13-Jan-2020 17-Jan-2020

<u>COMMENTS</u>

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 ALS Hong Kong laboratory or quoted from relevant international standards.

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

Scope of Test:	Dissolved Oxygen and Temperature
Equipment Type:	Dissolved Oxygen Meter
Brand Name/ Model No.:	YSI 550A
Serial No./ Equipment No.:	05F2063AZ
Date of Calibration:	16-Jan-2020

<u>NOTES</u>

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

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK2001852			A
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 17-Jan-2020 ACTION UNITED ENVIRONMEN	T SERVICES AND CONSULTING		
Equipment Type:	Dissolved Oxygen Meter			
Brand Name/ Model No.:	YSI 550A			
Serial No./ Equipment No.:	05F2063AZ			
Date of Calibration:	16-Jan-2020	Date of Next Calibration:	16-Apr-2020	

PARAMETERS:

Dissolved Oxygen Method Ref: APHA (21st edition), 4500-O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
4.95	4.87	-0.08
6.06	6.08	+0.02
7.20	7.39	+0.19
	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)
11.0	11.1	+0.1
21.0	20.2	-0.8
41.0	39.4	-1.6
	Tolerance Limit (°C)	±2.0

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

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: CLIENT:	MR BEN TAM ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING	WORK ORDER:	HK2001850
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 13-Jan-2020 17-Jan-2020

<u>COMMENTS</u>

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 ALS Hong Kong laboratory or quoted from relevant international standards.

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

Scope of Test:	Turbidity
Equipment Type:	Turbidimeter
Brand Name/ Model No.:	Hach 2100Q
Serial No./ Equipment No.:	11030C008499
Date of Calibration:	16-Jan-2020

NOTES

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

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK2001850			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 17-Jan-2020 ACTION UNITED ENVIRONMEN	T SERVICES AND CONSULTING		
Equipment Type:	Turbidimeter			
Brand Name/ Model No.:	Hach 2100Q			
Serial No./ Equipment No.:	11030C008499			
Date of Calibration:	16-Jan-2020	Date of Next Calibration:	16-Apr-2020	
PARAMETERS: Turbidity	Method Ref [.] APHA (21st edition). 2130B		

lurbidity

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

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.39	
4	4.22	+5.5
40	36.8	-8.0
80	73.6	-8.0
400	385	-3.8
800	739	-7.6
	Tolerance Limit (%)	±10.0

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

1:5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: CLIENT:	MR BEN TAM ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING	WORK ORDER:	HK2006620
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 21-Feb-2020 26-Feb-2020

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 ALS Hong Kong laboratory or quoted from relevant international standards.

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

Scope of Test: pH Value and Temperature

Equipment Type:pH meterBrand Name/ Model No.:AZ8685Serial No./ Equipment No.:1168272Date of Calibration:26-Feb-2020

GENERAL COMMENTS

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.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK2006620		ALS	
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 26-Feb-2020 ACTION UNITED ENVIRONMENT	SERVICES AND CONSULTING		
Equipment Type:	pH meter			
Brand Name/ Model No.:	AZ8685			
Serial No./ Equipment No.:	1168272			
Date of Calibration:	26-Feb-2020	Date of Next Calibration:	26-May-2020	
PARAMETERS:				
pH Value	Method Ref: APHA (21st edition),	4500H:B		
	Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)	
	4.0	4.00	+0.00	
	7.0	7.10	+0.10	

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

10.0

	Suide No. 9 Second Cattler March 2000. Working mermometer Cambration Procedure.			
Expected Reading (°C)		Displayed Reading (°C)	Tolerance (°C)	
	10.0	10.0	+0.0	
	20.0	20.0	+0.0	
39.0		38.5	-0.5	
		Tolerance Limit (°C)	±2.0	

10.00

Tolerance Limit (pH unit)

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

1:5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

+0.00

±0.20



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 ENVIRONMENT SERVICES AND CONSULTING	WORK ORDER:	HK2001857
ADDRESS:	RM A 20/F., GOLD KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG	SUB-BATCH: LABORATORY: DATE RECEIVED: DATE OF ISSUE:	0 HONG KONG 13-Jan-2020 17-Jan-2020

<u>COMMENTS</u>

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 ALS Hong Kong laboratory or quoted from relevant international standards.

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

Scope of Test:	Salinity
Equipment Type:	Salinity Meter
Brand Name/ Model No.:	AZ8371
Serial No./ Equipment No.:	1219381
Date of Calibration:	16-Jan-2020

<u>NOTES</u>

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

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER:	HK2001857			ALS
SUB-BATCH: DATE OF ISSUE: CLIENT:	0 17-Jan-2020 ACTION UNITED ENVIRONMEN	IT SERVICES AND CONSULTING		
Equipment Type:	Salinity Meter			
Brand Name/ Model No.:	AZ8371			
Serial No./ Equipment No.:	1219381			
Date of Calibration:	16-Jan-2020	Date of Next Calibration:	16-Apr-2020	
PARAMETERS:				

Salinity

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

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	9.61	-3.9
20	18.0	-10.0
30	30.0	+0.0
	Tolerance Limit (%)	±10.0

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

1:5

Ms. Lin Wai Yu, Iris Assistant Manager - Inorganic



ALS Technichem (HK) Pty Ltd 11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong

T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT:	MR BEN TAM	WORK ORDER:	HK1946056
CLIENT:	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTI	SUB-BATCH:	0
ADDRESS:	RM A 20/F., GOLD KING IND BLDG,	LABORATORY:	HONG KONG
	NO. 35-41 TAI LIN PAI ROAD,	DATE RECEIVED:	11-Oct-2019
	KWAI CHUNG, N.T. HONG KONG	DATE OF ISSUE:	28-Oct-2019

COMMENTS

The calibration of flow rate performed by AUES staff on 09 October 2019.

Flow rate
Flow Meter
Global Water
FP211
1449006330
314
09 October, 2019

NOTES

This is the Final Report and supersedes any preliminary report with this batch number. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr. Fung Lim Chee, Richard Managing Director, Life Sciences Hong Kong

This report may not be reproduced except with prior written approval from ALS Technichem (HK) Pty Ltd.

Page 1 of 2

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order:	HK1946056
Sub-batch:	0
Date of Issue:	28-Oct-2019
Client:	ACTION UNITED ENVIRONMENT SERVICES AND CONSULTING

Reference Equipment:

Model: SonTek IQ Standard Serial Number : IQ1217004

Equipment to be calibrated:

Equipment Type:	Flow Meter
Brand Name:	Global Water
Model No.:	FP211
Serial No.:	1449006330
Equipment No.:	
Calibration Factor:	314

Date of Calibration: 09 October, 2019

Parameters: The calibration of flow meter is verified with standard flow meter on site by AUES Staff.

Flow rate

Trial	Reading of Reference Equipment (m/s)	Reading of Equipment to be calibrated (m/s)
	SonTek IQ Standard Serial No: IQ1217004	Global Water FP211 Serial No. 1449006330
		81
1	0.11	0.1
2	0.19	0.2
3	0.46	0.4
4	0.77	0.8
5	1.02	1.0
6	1.17	1.1

Mr. Fung Lim Chee, Richard Managing Director, Life Sciences Hong Kong



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

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a 為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory

「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence 此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求, of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as 獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定 listed in the HOKLAS Directory of Accredited Laboratories within the test category of 測試或校正工作

Environmental Testing 環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005. 本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。 This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory 這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作 quality management system (see joint IAF-ILAC-ISO Communiqué). (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 the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive 香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator 執行幹事 陳成城 Issue Date : 5 May 2009 簽發日期:二零零九年五月五日

Registration Number : HCKLAS 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

∟ 000552



Appendix F

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

Event and Action Plan for air quality

F =4		Actio	n	
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	 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 monitoring. 	 Discuss amongst ER, ET, and Contractor on the potential remedial actions; Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; Supervise the implementation of remedial measures. 	 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		Ac	tion	
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 remedial measures.	 failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analyzed noise problem; 4. Ensure remedial measures are properly implemented 	 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 effectiveness and advise the ER	 failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analyzed noise problem; 4. Ensure remedial measures properly 	3. Implement the agreed proposals;4. Resubmit proposals if problem still not under control;

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



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

✓	Monitoring Day
	Sunday or Public Holiday



	Data	Noize Monitoriu a	Air Qualit	y Monitoring	Weter Orality
	Date	Noise Monitoring	1-Hour TSP	24-Hour TSP	Water Quality
Wed	1-Apr-20				√
Thu	2-Apr-20				
Fri	3-Apr-20			✓	\checkmark
Sat	4-Apr-20				
Sun	5-Apr-20				
Mon	6-Apr-20	✓	\checkmark		\checkmark
Tue	7-Apr-20				
Wed	8-Apr-20		√		\checkmark
Thu	9-Apr-20			✓	
Fri	10-Apr-20				
Sat	11-Apr-20				
Sun	12-Apr-20				
Mon	13-Apr-20				
Tue	14-Apr-20	✓	√		√
Wed	15-Apr-20			✓	
Thu	16-Apr-20		√		√
Fri	17-Apr-20				
Sat	18-Apr-20				\checkmark
Sun	19-Apr-20				
Mon	20-Apr-20				\checkmark
Tue	21-Apr-20			✓	
Wed	22-Apr-20	✓	\checkmark		\checkmark
Thu	23-Apr-20				
Fri	24-Apr-20				\checkmark
Sat	25-Apr-20				
Sun	26-Apr-20				
Mon	27-Apr-20			✓	\checkmark
Tue	28-Apr-20	✓	\checkmark		
Wed	29-Apr-20				\checkmark
Thu	30-Apr-20				

Impact Monitoring Schedule of Air Quality, Noise and Water Quality – April 2020

Remark: There will be no construction activity during Easter holiday on 10 to 13 April 2020.

✓	Monitoring Day
	Sunday or Public Holiday



Appendix H

Monitoring Data

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



Air Quality (24-hour TSP)



	24-Hour TSP Monitoring Data for ASR-1														
DATE	SAMPLE ELAPSED TIME NUMBER		ME	CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE		FILTER WEIGHT (g		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)	
5-Mar-20	25389	22184.19	22208.19	1440.00	33	34	33.5	17.8	1017.9	1.05	1514	2.7566	2.8404	0.0838	55
11-Mar-20	25370	22208.19	22232.19	1440.00	32	33	32.5	19.2	1017.7	1.03	1484	2.7899	2.9362	0.1463	99
17-Mar-20	25502	22232.19	22256.19	1440.00	31	32	31.5	19.8	1015	1.00	1435	2.8300	3.0225	0.1925	134
23-Mar-20	25521	22256.19	22280.19	1440.00	31	32	31.5	24.6	1014.2	0.99	1423	2.8461	2.9455	0.0994	70
28-Mar-20	ar-20 25542 22280.19 22304.20 1440.6					32	31.5	20.2	1014.9	1.00	1437	2.8572	2.9610	0.1038	72

	24-Hour TSP Monitoring Data for ASR-2														
DATE	SAMPLE NUMBER				CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER W	EIGHT (g)	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)	
5-Mar-20	25404	19586.07	19610.08	1440.60	34	35	34.5	17.8	1017.9	1.12	1609	2.7748	2.8070	0.0322	20
11-Mar-20	25499	19610.08	19634.09	1440.60	33	33	33.0	19.2	1017.7	1.09	1576	2.7228	2.8080	0.0852	54
17-Mar-20	25500	19634.09	19658.09	1440.00	33	34	33.5	19.8	1015	1.11	1593	2.7168	2.7736	0.0568	36
23-Mar-20	25520	19658.09	19682.09	1440.00	33	34	33.5	24.6	1014.2	1.10	1581	2.8410	2.8772	0.0362	23
28-Mar-20	8-Mar-20 25541 19682.09 19706.09 1440.00 33 34 33.						33.5	20.2	1014.9	1.10	1580	2.8602	2.9157	0.0555	35

	24-Hour TSP Monitoring Data for ASR-3a														
DATE	SAMPLE NUMBER		APSED TI	ME	CHART READING			AVG TEMP	AVG AIR PRESS	STANDARD FLOW RATE	AIR VOLUME	FILTER WEIGHT (g)		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)	
5-Mar-20	25405	13389.30	13413.01	1422.60	28	28	28.0	17.8	1017.9	0.85	1207	2.7902	2.8047	0.0145	12
11-Mar-20	25446	13413.01	13436.71	1422.00	28	30	29.0	19.2	1017.7	0.92	1306	2.7646	2.8424	0.0778	60
17-Mar-20	25501	13436.71	13460.52	1428.60	30	30	30.0	19.8	1015	0.95	1356	2.8099	2.9334	0.1235	91
23-Mar-20	25322	13460.52	13484.52	1440.00	31	32	31.5	24.6	1014.2	0.99	1427	2.8849	2.9503	0.0654	46
28-Mar-20	-Mar-20 25540 13484.52 13508.52 1440.00 31 32 31					31.5	20.2	1014.9	1.01	1451	2.8437	2.9086	0.0649	45	



Noise



	Noise Measurement 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 _{30min}	Façade Collection (*)
2-Mar-20	9:44	60.6	58.6	57.1	58.1	59.0	56.5	58.5	60.5	56.7	62.3	62.4	57.0	59.6	60.1	56.6	62.2	63.0	57.2	64	67
13-Mar-20	13:42	66.6	69.2	62.3	64.5	66.7	60.1	61.3	63.5	59.1	65.5	68.0	60.7	62.7	64.3	58.5	61.4	63.5	57.6	68	71
19-Mar-20	14:59	67.3	62.1	55.9	61.6	62.3	55.8	62.7	63.5	55.9	66.0	65.4	57.9	63.0	63.7	55.0	62.4	62.7	54.5	68	71
25-Mar-20	9:21	59.7	59.2	56.6	60.5	59.3	56.9	63.7	63.1	58.9	62.2	62.5	56.4	59.4	60.6	56.5	60	62.6	57.7	65	68
31-Mar-20	14:06	71.2	69.9	61.6	66.7	63.4	61.5	68.3	76	61.6	63.2	63	61.7	65.8	68.1	61.1	66.4	69	61.9	71	74

(*) 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	$\begin{array}{c} 2^{nd} \\ Leq_{5min} \end{array}$	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}	Façade Collection (*)
2-Mar-20	10:21	65.5	68.6	54.3	64.7	68.9	50.7	64.6	68.8	51.9	64.2	58.7	52.1	63.4	67.9	50.1	64.3	68.2	51	64	67
13-Mar-20	14:19	62.8	66.6	51.9	63	57.2	52.4	64.5	67.4	52.5	63	66	51.4	63.3	66.5	51.7	64	67.3	52.4	63	66
19-Mar-20	14:22	64.6	66.3	57.3	65.1	67.6	58.6	64.5	66.6	56.7	65.7	67.5	56.4	64.3	66.8	55.5	67	69.7	58.9	65	68
25-Mar-20	9:58	64.1	68.6	53.6	65.6	68.1	54.9	65.2	68.5	55.8	63.3	66.1	52.9	64.5	67.1	55.9	63.5	66.3	52.1	64	67
31-Mar-20	10:45	63	67.2	48.4	65.3	66.6	50.9	63	66.9	50.7	64.4	67.9	49.7	63.6	66.8	48.6	63.8	66.9	48	64	67

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

								Nois	e Measu	irement	Results (dB(A))	of CN-3	•							
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}	Façade Collection (*)
2-Mar-20	11:02	57	60.3	53.4	58.6	60.1	52.2	56.4	58.5	52.1	56.1	58.8	52.5	56.5	57.1	51.7	53	57.6	51.5	57	60
13-Mar-20	15:00	52.8	55.3	47.3	53.4	56.6	48.1	55.1	56.6	48.5	56.6	60.8	48.7	53	56.7	47.6	55.5	59.7	48.6	55	58
19-Mar-20	10:15	57.9	58.2	49	56.6	60.4	49.6	53.8	57.8	49	59.7	61.8	47.7	58.8	60.4	47.5	59.6	62.4	49.1	58	61
25-Mar-20	10:39	56.7	59.2	51.6	57.6	60.8	51.6	55.6	60.3	50.9	54.5	58	49	56.1	60.3	51.8	55.7	59.3	51	56	59
31-Mar-20	10:04	60.4	61.7	54.2	56.9	60.1	51.4	62.8	68	52.4	60.9	65.6	52.2	58.5	63.1	51.7	57.5	61	51.3	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-4							
Date	Start Time	1 st Leq _{5min}	L10	L90	$\begin{array}{c} 2^{nd} \\ Leq_{5min} \end{array}$	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}
2-Mar-20	11:38	57.6	60.3	44.3	58.5	62.2	44.6	60.9	65.3	44.2	58.5	60.6	43.6	58.7	62.4	43.0	56.2	59.5	42.7	59
13-Mar-20	15:37	57.6	58.3	42.9	56.7	59.5	43.9	58.0	60.6	42.4	59.5	62.0	43.8	57.4	58.3	42.7	57.6	59.3	41.7	58
19-Mar-20	10:53	63.4	67.5	43.3	61.0	66.7	43.1	60.5	65.3	45.3	58.0	63.3	42.5	58.6	62.6	42.7	60.5	64.5	42.0	61
25-Mar-20	11:16	56.9	58.6	42.9	54.6	59.1	43.4	57.9	60.7	42.8	53.9	56.5	39.1	55.9	59.3	39.4	56.5	60.1	43.3	56
31-Mar-20	9:28	58.5	62.2	43.3	56.7	56.2	42.9	54.0	56.8	42.9	56.6	58.6	43.1	55.2	57.9	43.6	54.2	56.9	42.8	56



Water Quality



Water Quality Impact Monitoring Result for M1

Date	2-Mar-20																	
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	9:50	0.12	21.3 21.3	21.3	<0.1 <0.1	<0.1	8.3 8.31	8.31	97.9 97.9	97.9	1.29 1.4	1.3	7.90 7.90	7.9	0.06	0.06	<2 <2	<2

Date	4-Mar-20																	
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	0.20	0.12	19.9	10.0	< 0.1	<0.1	8.02	<u>۹ 02</u>	92.0	92.0	6.55	60	8.10	01	0.07	0.07	8	8.0
IVI I	9:30	0.12	19.9	19.9	< 0.1	<0.1	8.03	8.03	92.0	92.0	5.92	6.2	8.10	8.1	0.07	0.07	8	8.0

Date	6-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	Н	Sali	nity	SS(1	mg/L)
M1	0.50	0.12	18.9	10.0	< 0.1	-0.1	8.02	0.02	91.4	91.5	3.65	2.0	7.90	7.0	0.09	0.00	5	5.5
M1	9:50	0.13	18.9	18.9	< 0.1	<0.1	8.03	8.03	91.5	91.5	3.98	3.8	7.90	7.9	0.09	0.09	6	5.5

Date	9-Mar-20																	
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	21.4	21.4	< 0.1	<0.1	7.61	7.62	89.3	89.4	9.83	9.9	8.00	8.0	0.03	0.03	36	28.5
1111	2.30	0.15	21.4	21.4	< 0.1	<0.1	7.62	7.02	89.5	09.4	9.92	7.9	8.00	0.0	0.03	0.05	21	20.3

Date	11-Mar-20																	
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)
M1	9:30	0.12	18.4	10 /	< 0.1	-0.1	7.48	7.40	87.8	87.9	4.25	4.1	8.00	8.0	0.06	0.06	5	4.5
IVIII	9:50	0.13	18.4	18.4	< 0.1	<0.1	7.49	7.49	87.9	87.9	3.87	4.1	8.00	8.0	0.06	0.06	4	4.5



Date	13-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	9:30	0.12	21.3	21.3	< 0.1	<0.1	7.63	7.64	90.6	90.6	6.56	6.9	8.10	8 1	0.05	0.05	8	8.0
1011	9.30	0.12	21.3	21.3	< 0.1	<0.1	7.64	7.04	90.6	90.0	7.14	0.9	8.10	8.1	0.05	0.05	8	0.0

Date	16-Mar-20																	
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	11.25	0.12	19.5	10.5	< 0.1	-0.1	6.89	6.04	80.1	<u> </u>	6.16	5.0	8.00	8.0	0.05	0.05	7	65
M1	11:25	0.15	19.5	19.5	< 0.1	<0.1	6.98	6.94	80.9	80.5	5.71	5.9	8.00	8.0	0.05	0.05	6	6.5

Date	18-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	0.20	0.12	21.1	21.1	< 0.1	-0.1	7.68	7.00	90.0	00.0	5.21	5 1	8.50	05	0.07	0.07	2	2.0
M1	9:30	0.13	21.1	21.1	< 0.1	<0.1	7.69	7.69	90.0	90.0	4.9	5.1	8.50	8.5	0.07	0.07	2	2.0

Date	20-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	9:40	0.14	20.5	20.5	< 0.1	<0.1	7.79	7.80	90.2	90.3	5.73	57	7.90	7.9	0.04	0.04	4	15
IVI I	9:40	0.14	20.5	20.3	< 0.1	<0.1	7.8	7.80	90.4	90.5	5.69	5.7	7.90	7.9	0.04	0.04	5	4.5

Date	23-Mar-20																	
Location	Time	Depth (m)	Temp	9 (0C)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	ng/L)
M 1	0.20	0.12	23.1	22.1	< 0.1	-0.1	7.6	7.00	90.1	00.0	3.52	2.6	8.60	9.6	0.06	0.00	<2	2.0
M1	9:30	0.13	23.1	23.1	< 0.1	<0.1	7.59	7.60	89.9	90.0	3.58	3.6	8.60	8.6	0.06	0.06	3	3.0



Date	25-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M1	0.25	0.12	22.2	22.2	< 0.1	-0.1	7.37	7 20	90.1	00.2	5.31	1.0	7.10	7 1	0.04	0.04	4	4.0
M1	9:25	0.13	22.2	22.2	< 0.1	<0.1	7.4	7.39	90.5	90.3	4.27	4.8	7.10	/.1	0.04	0.04	4	4.0

Date	27-Mar-20																	
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	10.50	0.12	23.1	22.1	< 0.1	<0.1	7.58	7.50	92.3	02.4	14.8	145	7.80	7 0	0.08	0.08	12	11.0
M1	10:50	0.15	23.1	25.1	< 0.1	<0.1	7.6	7.59	92.5	92.4	14.2	14.5	7.80	7.8	0.08	0.08	10	11.0

Date	30-Mar-20																	
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	14.05	0.12	21.2	21.2	< 0.1	-0.1	8.19	9.10	96.3	06.2	1.81	1.0	8.10	0 1	0.08	0.08	5	4 5
M1	14:05	0.13	21.2	21.2	< 0.1	< 0.1	8.18	8.19	96.0	96.2	1.76	1.8	8.10	8.1	0.08	0.08	4	4.5

Action Level
Limit Level



Water Quality Impact Monitoring Result for M2

Date	2-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(n	ng/L)
M2	10:25	0.00 (#)																

Date	4-Mar-20																
Location	Time	Depth (m)	Temp (oC)	Flow Vel	locity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	mg/L)
M2	10:20	0.00 (#)			-												

Date	6-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(r	ng/L)
M2	10:15	0.00 (#)																

Date	9-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(r	ng/L)
M2	10:10	0.00 (#)																

Date	11-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(n	ng/L)
M2	10:10	0.00 (#)																



Date	13-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(n	ng/L)
M2	10:00	0.00 (#)																

Date	16-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M2	10:25	0.00 (#)																

Date	18-Mar-20																	
Location	Time	Depth (m)	Temp ((oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	ng/L)
M2	9:55	0.00 (#)																

Date	20-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(r	ng/L)
M2	10:20	0.00 (#)																

Date	23-Mar-20																	
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)
M2	10:10	0.00 (#)																



Date	25-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	ng/L)
M2	10:05	0.00 (#)																

Date	27-Mar-20																	
Location	Time	Depth (m)	Temp ((oC)	Flow V	elocity (m/s)	DO (r	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(r	mg/L)
M2	10:15	0.00 (#)		-														

Date	30-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	velocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(1	ng/L)
M2	10:05	0.00 (#)																

Remarks: (#) During the water monitoring, the channel of M2 was observed dried up and water sampling was unable be carried out;



Water Quality Impact Monitoring Result for M3

Date	2-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M3	10:40	2.45	21.9 21.9	21.9	<0.1 <0.1	<0.1	6.89 6.9	6.90	78.6 78.8	78.7	5.4 5.36	5.4	8.10 8.10	8.1	0.0	0.02	4	4.0

Date	4-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p	H	Sali	nity	SS(1	mg/L)
M3	10:30	2.45	20.7	20.7	< 0.1	<01	7.5	7.51	86.7	86.8	2.55	27	8.40	8.4	0.0	0.02	3	35
IVI.5	10.50	2.45	20.7	20.7	< 0.1	<0.1	7.52	7.51	86.8	80.8	2.75	2.7	8.40	0.4	0.0	0.02	4	5.5

Date	6-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	ng/L)
М3	10:25	2.45	19.1	10.1	< 0.1	<0.1	7.51	7.52	86.1	86.2	2.17	2.2	8.40	0 1	0.0	0.02	4	4.0
M3	10:23	2.43	19.1	19.1	< 0.1	<0.1	7.54	7.53	86.3	80.2	2.35	2.5	8.40	8.4	0.0	0.02	4	4.0

Date	9-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow V	velocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	H	Sali	nity	SS(r	ng/L)
М3	10:20	2.45	21.8	21.9	< 0.1	-0.1	7.37	7.38	86.5	86.7	1.78	1.0	8.00	8.0	0.0	0.00	4	4.5
M3	10:20	2.45	21.8	21.8	< 0.1	<0.1	7.39	7.38	86.8	80.7	1.82	1.8	8.00	8.0	0.0	0.00	5	4.3

Date	11-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(1	mg/L)
M3	10:20	2.45	18.9 18.9	18.9	<0.1 <0.1	<0.1	7.23 7.25	7.24	85.5 85.6	85.6	1.8 1.91	1.9	8.40 8.40	8.4	0.0	0.02	5 4	4.5



Date	13-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	velocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ity (NTU)	p	H	Sali	nity	SS(r	ng/L)
M3	10:10	2.45	21.6 21.6	21.6	<0.1 <0.1	<0.1	7.42 7.44	7.43	88.4 88.8	88.6	2.44 2.29	2.4	8.30 8.30	8.3	0.0 0.0	0.02	4 5	4.5

Date	16-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	elocity (m/s)	DO (I	ng/L)	DO	(%)	Turbidi	ty (NTU)	р	Н	Sali	nity	SS(1	mg/L)
M3	10:35	2.45	20.3	20.3	< 0.1	<0.1	7.51	7.52	87.8	88.0	4.36	4.1	8.00	8.0	0.0	0.04	6	65
M3	10:55	2.45	20.3	20.5	< 0.1	<0.1	7.53	1.32	88.2	88.0	3.8	4.1	8.00	8.0	0.0	0.04	7	6.5

Date	18-Mar-20																	
Location	Time																	
M2	10.05	2.45	21.6	21.6	< 0.1	-0.1	7.37	7 29	86.6	967	2.73	2.0	8.70	07	0.0	0.02	5	15
M3	10:05	2.45	21.6	21.6	< 0.1	< 0.1	7.39	7.38	86.8	86.7	3.12	2.9	8.70	8.7	0.0	0.02	4	4.5

Date	20-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ity (NTU)	p]	H	Sali	nity	SS(1	mg/L)
М3	10:30	2.46	21.3	21.2	< 0.1	-0.1	7.56	7.58	87.6	87.9	3.38	25	7.80	70	0.0	0.02	4	15
IN15	10:50	2.46	21.3	21.5	< 0.1	<0.1	7.59	7.38	88.2	87.9	3.55	5.5	7.80	7.8	0.0	0.02	5	4.3

Date	23-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	ng/L)
M3	10:20	2.45	22.4	22.4	< 0.1	< 0.1	7.64	7.65	90.5	90.6	2.83	2.8	8.10	81	0.0	0.04	4	35
1413	10.20	2.43	22.4	22.4	< 0.1	<0.1	7.65	7.65	90.7	90.0	2.78	2.0	8.10	0.1	0.0	0.04	3	5.5



Date	25-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow V	elocity (m/s)	DO (I	mg/L)	DO	(%)	Turbidi	ty (NTU)	pl	H	Sali	nity	SS(r	ng/L)
M3	10:15	2.45	22.8 22.8	22.8	<0.1 <0.1	<0.1	7.3 7.31	7.31	89.6 89.8	89.7	2.66 2.7	2.7	7.20 7.20	7.2	0.0	0.02	4	4.0

Date	27-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow V	elocity (m/s)	DO (1	ng/L)	DO	(%)	Turbidi	ty (NTU)	p]	H	Sali	nity	SS(1	mg/L)
M3	10:30	2.45	23.5	22.5	< 0.1	<0.1	7.36	7 27	89.5	89.6	4.28	4.1	8.10	0 1	0.0	0.02	5	4.5
115	10:50	2.45	23.5	25.5	< 0.1	<0.1	7.38	1.37	89.6	09.0	3.86	4.1	8.10	0.1	0.0	0.02	4	4.5

Date	30-Mar-20																	
Location	Time Depth (m) Temp (oC) Flow Velocity (m/s) DO (mg/L) DO (%) Turbidity (NTU) pH Salinity SS(mg/L)																	
M2	10.15	2.45	21.5	21.5	< 0.1	-0.1	7.78	7 70	91.9	02.0	2.84	2.0	8.30	0.2	0.0	0.02	5	ГО
M3	10:15	2.45	21.5	21.5	< 0.1	<0.1	7.8	1.19	92.1	92.0	2.99	2.9	8.30	8.5	0.0	0.02	5	5.0



Water Quality Impact Monitoring Result for M4

Date	2-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow Veloc	city (m/s)	DO (1	mg/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	11.00	0.44	21.8	21.9	< 0.1	-0.1	7.93	7.04	93.3	02.4	1.2	1 4	7.60	76	0.08	0.09	3	2.5
M4	11:00	0.44	21.8	21.8	< 0.1	<0.1	7.95	7.94	93.5	93.4	1.6	1.4	7.60	/.6	0.08	0.08	2	2.5

Date	4-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow Veloc	city (m/s)	DO (I	mg/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10.45	0.42	20.9	20.0	< 0.1	-0.1	8.16	0.17	94.1	04.2	0.9	0.0	7.80	7.0	0.07	0.07	<2	
M4	10:45	0.43	20.9	20.9	< 0.1	<0.1	8.18	8.17	94.3	94.2	0.8	0.9	7.80	7.8	0.07	0.07	<2	<2

Date	6-Mar-20																	
Location	Time	Depth (m)Temp (oC)Flow Velocity (m/s)DO (mg/L)DO (%)Turbidity (NTU)pHSalinitySS(mg/L)										mg/L)						
MA	10.40	0.42	19.3	10.2	< 0.1	-0.1	8.92	0.02	96.8	06.0	1.4	15	8.10	0.1	0.06	0.00	<2	-2
M4	10:40	0.43	19.3	19.3	< 0.1	< 0.1	8.94	8.93	96.9	96.9	1.6	1.5	8.10	8.1	0.06	0.06	<2	<2

Date	9-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow Veloc	city (m/s)	DO (I	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
N/4	10.25	0.42	21.9	21.0	< 0.1	.0.1	8.06	0.06	94.6	04.6	0.9	0.0	7.50	75	0.05	0.05	<2	-0
M4	10:35	0.43	21.9	21.9	< 0.1	<0.1	8.05	8.06	94.6	94.6	1.0	0.9	7.50	7.5	0.05	0.05	<2	<2

Date	11-Mar-20																	
Location											SS(1	mg/L)						
M4	10:40	0.45	19.5	19.5	< 0.1	<0.1	8.01	9.01	94.6	047	1.1	0.9	7.90	7.9	0.07	0.07	2	2.5
11/14	10:40	0.45	19.5	19.5	< 0.1	<0.1	8.01	8.01	94.7	94.7	0.8	0.9	7.90	7.9	0.07	0.07	3	2.5



Date	13-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Velo	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	10.20	0.44	22.3	22.2	< 0.1	<0.1	7.95	7.06	94.6	04.8	1.0	0.0	7.80	70	0.05	0.05	2	2.0
1014	10:30	0.44	22.3	22.5	< 0.1	<0.1	7.97	7.96	95.0	94.8	0.9	0.9	7.80	7.8	0.05	0.03	2	2.0

Date	16-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow Veloc	city (m/s)	DO (I	ng/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	mg/L)
M4	10.50	0.42	21.3	21.2	< 0.1	-0.1	7.65	7 (7	89.3	20.7	2.2	2.1	7.20	7.2	0.07	0.07	3	25
M4	10:50	0.43	21.3	21.3	< 0.1	< 0.1	7.69	7.67	90.0	89.7	2.1	2.1	7.20	1.2	0.07	0.07	4	3.5

Date	18-Mar-20																	
Location	Time	Depth (m)	Temp	o (oC)	Flow Velo	city (m/s)	DO (I	mg/L)	DO	(%)		bidity TU)	pl	H	Sali	nity	SS(1	mg/L)
MA	10.20	0.40	21.5	21.5	< 0.1	<0.1	8.32	0 22	94.0	04.1	1.4	17	8.20	°)	0.08	0.08	2	2.5
M4	10:20	0.40	21.5	21.5	< 0.1	<0.1	8.33	8.33	94.2	94.1	2.0	1./	8.20	8.2	0.08	0.08	3	2.5

Date	20-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	ty (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
N/4	10.50	0.45	21.6	21.6	< 0.1	.0.1	8.33	0.24	96.7	06.0	1.7	1.0	7.50	75	0.05	0.05	<2	
M4	10:50	0.45	21.6	21.6	< 0.1	<0.1	8.34	8.34	97.0	96.9	1.8	1.8	7.50	7.5	0.05	0.05	<2	<2

Date	23-Mar-20																	
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	10.40	0.42	22.6	22.6	< 0.1	-0.1	7.97	7.07	94.7	047	1.4	1.2	7.60	7.6	0.06	0.00	<2	-2
M4	10:40	0.43	22.6	22.6	< 0.1	< 0.1	7.96	7.97	94.7	94.7	1.2	1.5	7.60	7.6	0.06	0.06	<2	<2



Date	25-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	ty (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(r	ng/L)
M4	10.25	0.43	22.5	22.5	< 0.1	<0.1	7.72	7 72	94.3	04.5	1.1	1.0	6.90	6.0	0.05	0.05	<2	2
1014	10:35	0.45	22.5	22.5	< 0.1	<0.1	7.74	1.13	94.7	94.5	1.0	1.0	6.90	6.9	0.05	0.05	<2	<2

Date	27-Mar-20																	
Location	Time	Depth (m)	Temp	(oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M 4	0.50	0.42	23.7	23.7	< 0.1	-0.1	7.56	7 57	92.0	02.1	0.9	0.0	7.40	74	0.07	0.07	2	2.5
M4	9:50	0.43	23.7	23.7	< 0.1	<0.1	7.57	7.57	92.1	92.1	0.9	0.9	7.40	7.4	0.07	0.07	3	2.5

Date	30-Mar-20																	
Location	Time	Depth (m)	Temp) (oC)	Flow Veloc	city (m/s)	DO (1	ng/L)	DO	(%)		bidity TU)	p]	H	Sali	nity	SS(1	mg/L)
M4	14.25	0.44	21.5	21.5	< 0.1	<0.1	8.26	8 27	97.3	07.4	1.6	17	7.80	70	0.07	0.07	<2	-2
M4	14:25	0.44	21.5	21.5	< 0.1	< 0.1	8.27	8.27	97.5	97.4	1.8	1./	7.80	7.8	0.07	0.07	<2	<2

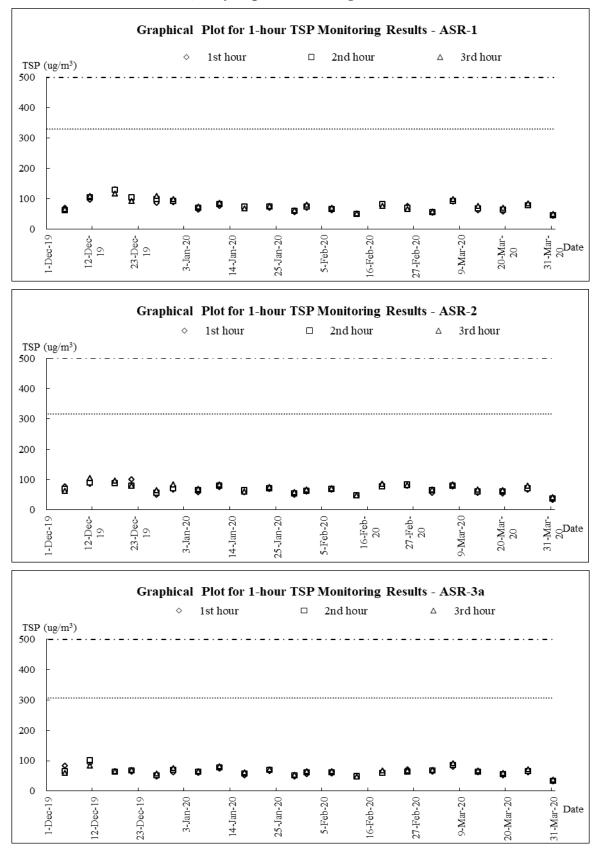


Appendix I

Graphical Plots of Air Quality, Noise and Water Quality

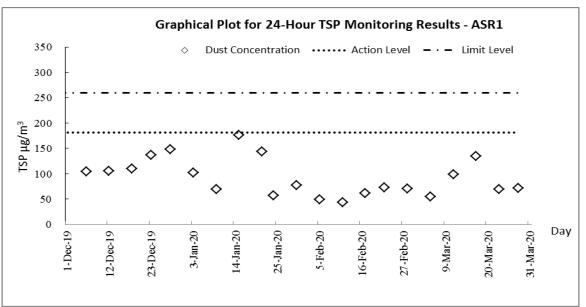


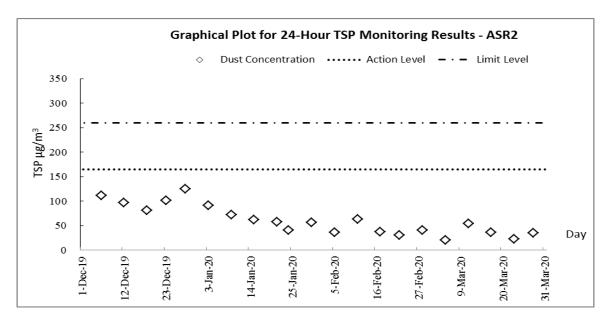
Air Quality Impact Monitoring – 1-hour TSP

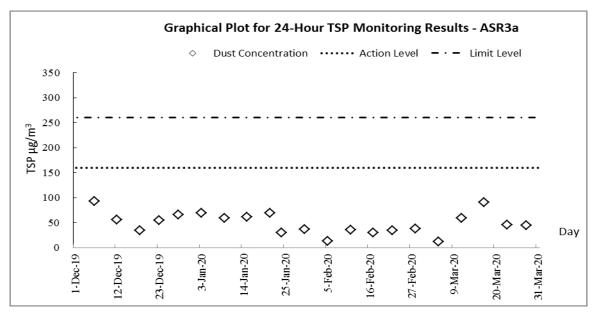






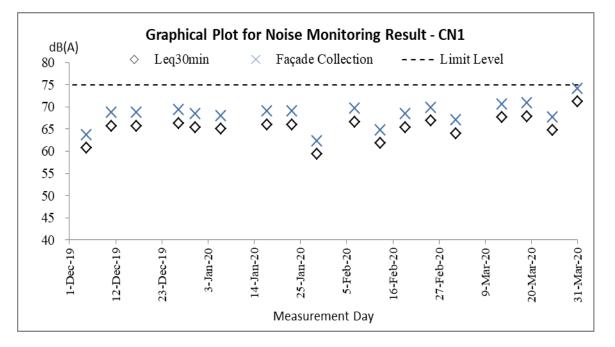


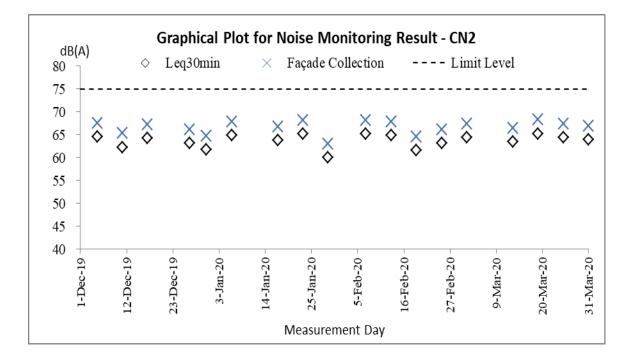




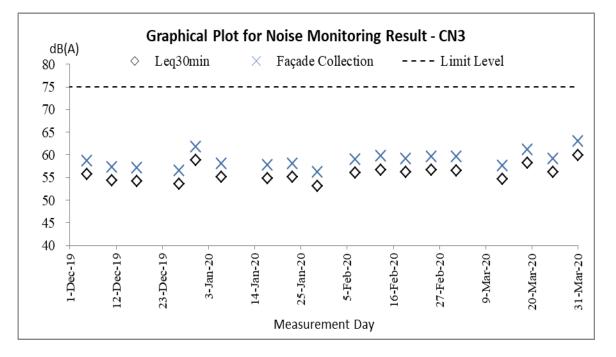


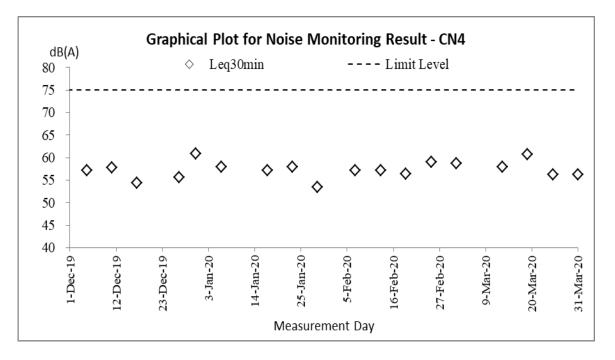
Construction Noise Impact Monitoring





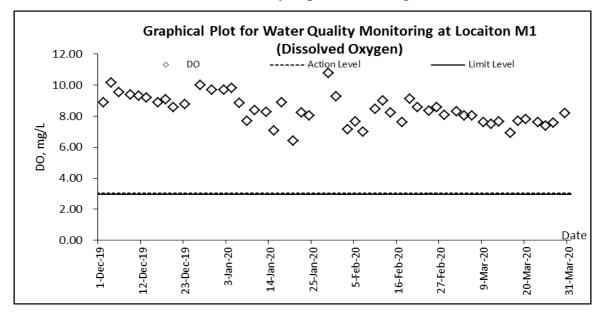


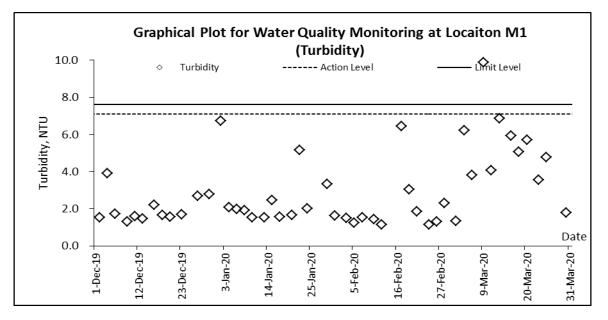


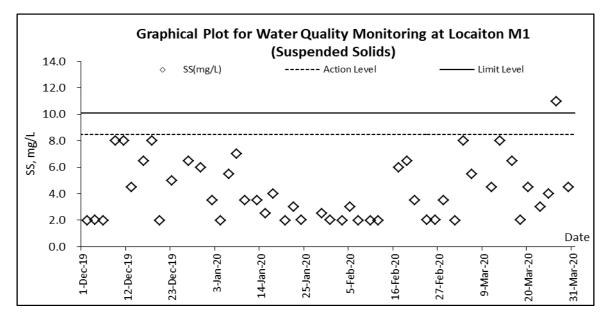




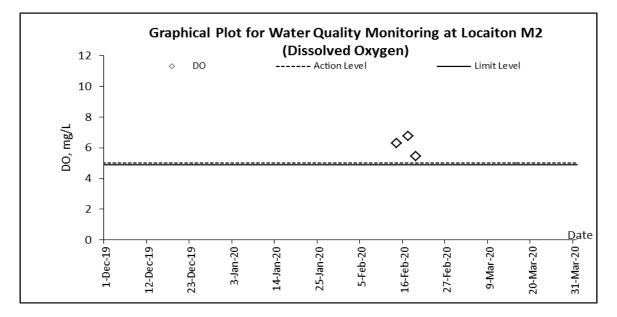
Water Quality Impact Monitoring

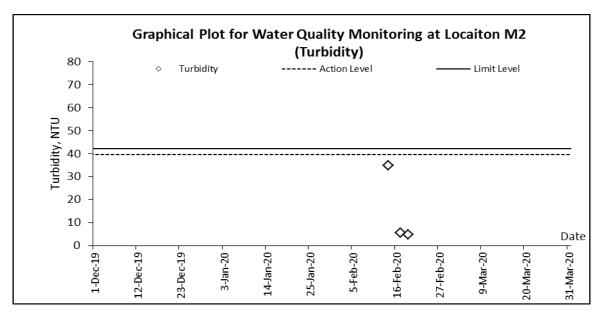


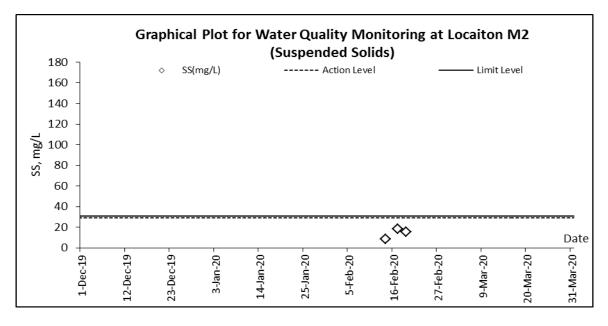




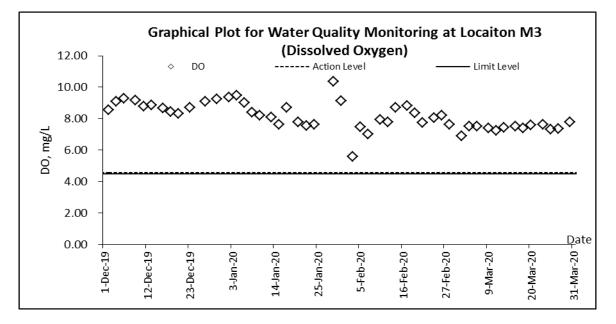


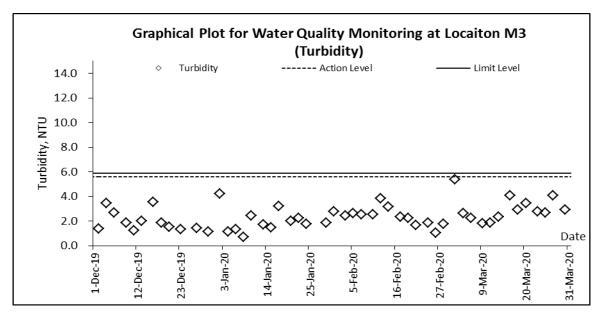


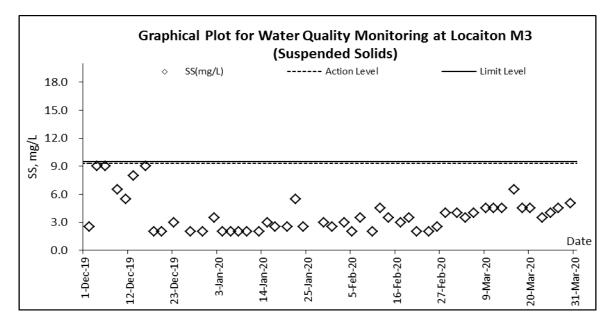




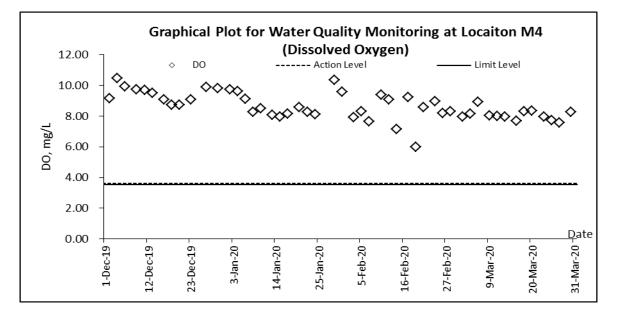


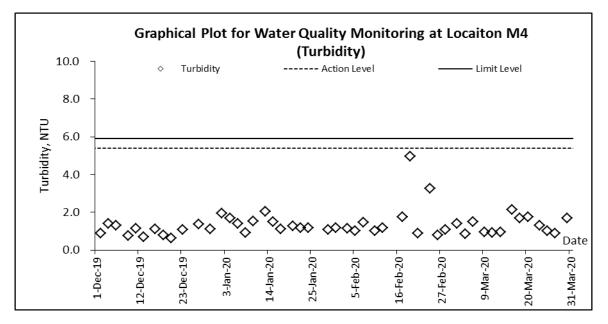


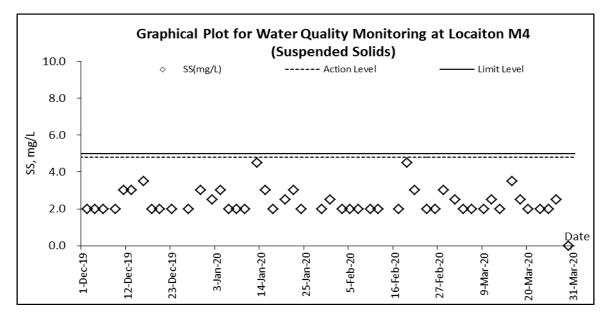














Appendix J

Meteorological Data of the Reporting Month



					Ta Kwu	Ling Station	
Date		Weather	Total Rainfall (mm)	Mean Air Temp. (°C)	Wind Speed (km/h)	Mean Relative Humidity (%)	Wind Direction
1-Mar-20	Sun	Mainly cloudy. Visibility rather low at first.	0	22.3	10.2	79	Е
2-Mar-20	Mon	A few showers in the morning and at night.	24.2	18.7	9.5	84.7	E
3-Mar-20	Tue	Sunny periods during the day tomorrow.	Trace	20.2	12.5	76.2	E/SE
4-Mar-20	Wed	Moderate southerly winds	3.1	19.3	6	82.5	Е
5-Mar-20	Thu	becoming moderate to fresh northerly winds shortly after midnight.	0.4	17.4	6	81.5	Е
6-Mar-20	Fri	Sunny periods.Dry during the day.	Trace	19.1	10.8	73	E/SE
7-Mar-20	Sat	Moderate to fresh northerly winds	Trace	22	11.5	69.2	E
8-Mar-20	Sun	Moderate southerly winds	Trace	22.1	9.5	84.5	E
9-Mar-20	Mon	becoming moderate to fresh northerly winds shortly after midnight.	Trace	24	10.7	80.7	E
10-Mar-20	Tue	Moderate to fresh northerly winds	Trace	22.4	13	70.5	N
11-Mar-20	Wed	A few showers in the morning and at night.	Trace	17.7	8.5	68.5	E
12-Mar-20	Thu	Sunny periods during the day tomorrow.	Trace	20.2	14.5	82	Е
13-Mar-20	Fri	Moderate southerly winds	0	22.9	12.5	84.2	E
14-Mar-20	Sat	becoming moderate to fresh northerly winds shortly after midnight.	0.4	22.4	10.5	69.5	Е
15-Mar-20	Sun	Moderate southerly winds	0	21	7.5	62.5	E/SE
16-Mar-20	Mon	Moderate to fresh northerly winds	0	20.9	10	62.5	E
17-Mar-20	Tue	A few showers in the morning and at night.	0	20.1	8.7	77.5	Е
18-Mar-20	Wed	Sunny periods during the day tomorrow.	10.7	20.4	8.7	85	Е
19-Mar-20	Thu	Moderate southerly winds	0.8	20.4	5.5	87	E/SE
20-Mar-20	Fri	Sunny periods during the day tomorrow.	0.4	21.3	7	86.7	Е
21-Mar-20	Sat	Moderate southerly winds	0.2	21.8	5	81.2	E
22-Mar-20	Sun	becoming moderate to fresh northerly winds shortly after midnight.	0	24.7	6	74.5	E/SE
23-Mar-20	Mon	Moderate southerly winds	0	24.7	6.2	74.7	W/SW
24-Mar-20	Tue	Mainly cloudy. A few rain patches in the morning	Trace	24	11.5	74.5	E
25-Mar-20	Wed	Sunny periods during the day tomorrow.	Trace	24.3	10.5	73	Е
26-Mar-20	Thu	Moderate southerly winds	1	24.2	8.7	83.5	Е
27-Mar-20	Fri	Cloudy and windy in the next couple of days	Trace	25.4	8.5	77	E/SE
28-Mar-20	Sat	A few showers in the morning and at night.	9.8	22.3	9	79	E/SE
29-Mar-20	Sun	Cloudy and windy in the next couple of days	2.2	19.2	10.5	87.0	Е
30-Mar-20	Mon	Moderate northerly winds, freshening from the east later.	6.5	18.9	10	91.5	E/SE
31-Mar-20	Tue	Mainly cloudy. A few rain patches in the morning	5.8	19.5	8.7	90.5	Е



Appendix K

Ecology Survey Report



Ecology Survey Report for Contract CV/2016/10



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

Monthly Report of Ecologically Sensitive Habitats Monitoring – March 2020

Revision	0	
Date of issue	28 Mar 2020	
Prepared by	Alan Lam	A
Reviewed by	Edwina Yeung	- Animo
Verified by	Mike Leung	1



Table of Contents

		RODUCTION	4
	1.1	BACKGROUND	4
	1.2	OBJECTIVE	4
2	ECO	DLOGICALLY SENSITIVE HABITATS	5
	2.1	DESCRIPTION OF HABITATS	5
	2.2	MONITORING MEASURES OF WETLAND HABITATS	6
	2.3	MONITORING MEASURES OF NON-WETLAND HABITATS	6
3	MET	THODOLOGY	7
	3.1	MAMMAL SURVEY	7
	3.2	BIRD SURVEY	7
	3.3	HERPETOFAUNA SURVEY	7
	3.4	DRAGONFLY SURVEY	7
	3.5	BUTTERFLY SURVEY	8
	3.6	AQUATIC FAUNA SURVEY	8
4	RES	ULT	9
	ndir I	- Transect Routes for Contract CV/2016/10	13



LIST OF TABLE	
Table 1	Action and Limit Levels and Responses to Evidence of Declines
	in Aquatic Fauna
Table 2	Action and Limit Levels and Responses to Evidence of Declines
	in Non-Aquatic Fauna
Table 3	Survey Schedule
Table 4	Result of mammal in survey
Table 5	Result of Avifauna in survey
Table 6	Result of reptile in survey
Table 7	Result of amphibian in survey
Table 8	Result of butterfly in survey
Table 9	Result of Odonate in survey
Table 10	Result of freshwater communities in survey

LIST OF APPENI	DIX
Appendix I	Transect Routes for Contract CV/2016/10



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 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		\checkmark	\checkmark						
Birds (night)				\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			
Herpetofau na				\checkmark								
Dragonflies			\checkmark									
Butterflies			\checkmark									
Aquatic fauna	V	\checkmark	\checkmark	\checkmark	\checkmark			\checkmark	\checkmark	\checkmark	\checkmark	\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 dragonflies 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 10th March 2020. 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 29 bird individuals from 12 species recorded in the monitoring area. 3 species of conservation interests were recorded in the monitoring area: *Milvus migrans* Black Kite (黑鳶), *Halcyon smyrnensis* White-throated Kingfisher(白胸翡翠) and *Corvus torquatus* Collared Crow(白頸鴉).

Herpetofauna

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

■ Butterfly

There was a total of 14 butterfly individuals from 7 species recorded in the monitoring area.

Dragonfly

There was a total of 5 odonate individuals from 1 species recorded in the monitoring area.

Freshwater communities

There was no freshwater community recorded in the monitoring area.



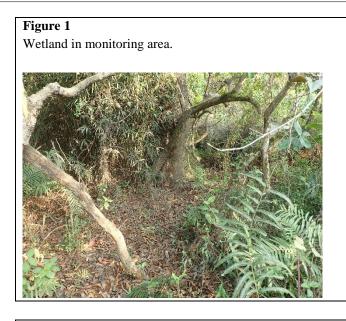


Figure 2 Potanthus pseudomaesa, Common Dart(木黃室弄蝶) in project site.





Table 4Result of mammal in survey

Scientific Name	English Name	Chinece Name	Conservation	11-Feb-2020			
			Status	Non- wetland	Wetland		
N/A							

Table 5Result of Avifauna in survey

Scientific Name	English Name	Chinese Name	Conservation Status	10-Mar-2020		
Scientific Ivanie		Chinese Name	Conservation Status	Non- wetland	Wetland	
Milvus migrans	Black Kite	黑鳶	Fellowes et al. (2002): RC; Appendix 2 of CITES		2	
Eudynamys scolopaceus	Asian Koel	噪鵑		1		
Halcyon smyrnensis	White-throated Kingfisher	白胸翡翠	Fellowes et al. (2002): LC		1	
Corvus torquatus	Collared Crow	白頸鴉	Fellowes et al. (2002): LC; IUCN Red List Status: NT	1		
Corvus macrorhynchos	Large-billed Crow	大嘴烏鴉		4		
Pycnonotus sinensis	Chinese Bulbul	白頭鵯			4	
Pycnonotus aurigaster	Sooty-headed Bulbul	白喉紅臀鵯			7	
Hirundo rustica	Barn Swallow	家燕			2	
Prinia flaviventris	Yellow-bellied Prinia	黃腹鷦鶯		2		
Calliope calliope	Siberian Rubythroat	紅喉歌鴝			1	
Dicaeum cruentatum	Scarlet-backed Flowerpecker	朱背啄花鳥			2	
Anthus godlewskii	Olive-backed Pipit	樹鷚			2	

Table 6Result of reptile in survey

	~		10-Mar-2020			
Scientific Name	Common Name	Chinese Name	Non-wetland	Wetland		
N/A						



Table 7I	Result of amphibian in s	survey				
Scientific Name	Common Name	Chinese Name	Conservation	10-Mar-2020		
			Status	Non- wetland	Wetland	
		N/A				

Table 8Result of butterfly in survey

Scientific Name	Common Name	Chinese Name	10-Mar-2020		
			Non-wetland	Wetland	
Potanthus pseudomaesa	Common Dart	木黃室弄蝶	1		
Abisara echerius	Plum Judy	蛇目褐蜆蝶		8	
Phaedyma columella	Short-banded Sailer	柱菲蛺蝶		1	
Mycalesis mineus	Dark Brand Bush Brown	小眉眼蝶	1		
Graphium sarpedon	Common Bluebottle	青鳳蝶	1		
Papilio helenus	Red Helen	玉斑鳳蝶	1		
Papilio protenor	Spangle	藍鳳蝶	1		

Table 9Result of Odonate in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	n 10-Mar-2020		
				Non- wetland	Wetland	
Pantala flavescens	Wandering Glider	黄蜻			5	

Table 10Result of freshwater communities in survey

					Concernation	10-Ma	r-2020
Scientific Name	Common Name	Chinese Name	Conservation Status	Non- wetland	Wetland		
		N/A					

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





Ecology Survey Report for Contract CV/2017/02



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

Monthly Report of Ecologically Sensitive Habitats Monitoring – March 2020

Revision	0	
Date of issue	28 Mar 2020	
Prepared by	Alan Lam	AR.
Reviewed by	Edwina Yeung	and a
Verified by	Mike Leung	M



Table of Contents

1 IN	TRODUCTION	
1.1	BACKGROUND	
1.2	OBJECTIVE	
2 EC	OLOGICALLY SENSITIVE HABITATS	
2.1	DESCRIPTION OF HABITATS	
2.2	MONITORING MEASURES OF WETLAND HABITATS	
2.3	MONITORING MEASURES OF NON-WETLAND HABITATS	
3 MI	THODOLOGY	
3.1	MAMMAL SURVEY	
3.2	BIRD SURVEY	
3.3	HERPETOFAUNA SURVEY	
3.4	DRAGONFLY SURVEY	
	BUTTERFLY SURVEY	
3.5		
3.5 3.6	AQUATIC FAUNA SURVEY	



LIST OF TABLE	
Table 1	Action and Limit Levels and Responses to Evidence of Declines
	in Aquatic Fauna
Table 2	Action and Limit Levels and Responses to Evidence of Declines
	in Non-Aquatic Fauna
Table 3	Survey Schedule
Table 4	Result of mammal in survey
Table 5	Result of Avifauna in survey
Table 6	Result of reptile in survey
Table 7	Result of amphibian in survey
Table 8	Result of butterfly in survey
Table 9	Result of Odonate in survey
Table 10	Result of freshwater communities in survey

LIST OF APPENI	DIX
Appendix I	Transect Routes for Contract CV/2017/02



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.
- 1.1.4 According to Clause 3.1 of the EP (EP-534/2017/A), "The Permit Holder shall implement the EM&A programme in accordance with the procedures and requirements as set out in the EM&A Manual. Any changes to the programme shall be justified by the ET Leader and verified by the IEC as conforming to the information and requirements contained in the EM&A Manual before submission to the Director for approval".
- 1.1.5 This Ecologically Sensitive Habitats Monitoring Methodology articulates the protocol of monitoring the ecology of concerned habitats as specified in EM&A Manual.

1.2 OBJECTIVE

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



2 ECOLOGICALLY SENSITIVE HABITATS

2.1 DESCRIPTION OF HABITATS

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

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

- 2.1.2 Wet woodland is small patch present on northwest of the project boundary, and is confined by the marsh area to the north and the secondary woodland to the east, south and south-west parts. A number of mature trees *Cleistocalyx nervosum* and *Acronychia pedunculata* form the tree canopy, with other self-sown shrubs (including *Psychotria asiatica, Ligustrum sinense* and *Glochidion lanceolarium*) and trees (*Aporosa dioica* and *Litsea monopetala*). Whilst botanically it comprises of naturally regenerated secondary woodland and ground level are a series of small braided streams and weep points which even during the dry season remain wet. This creates a rather uncommon habitat in Hong Kong offering suitable conditions for a good assemblage of common wetland species. The wet woodland provides a good assemblage of micro-habitats, which is relatively undisturbed and has good linkages to other natural habitats. Several species of conversation importance were recorded in EIA report from this habitat: East Asian Porcupine, Leopard Cat, Red Muntjac, Two-striped Grass Frog, Small Snakehead, *Somanniathelphusa zanklon*, Dancing Shadow-emerald.
- 2.1.3 Seasonal watercourse running west to east in the eastern part of the area inside the Project boundary is shallower in gradient than those running off the hillside. This seasonal watercourse is heavily vegetated with wetland-associated herbs including *Commelina diffusa*, *Polygonum chinense*, *Colocasia esculenta* and *Dracaena sanderiana*. A mature tree of *Aquilaria sinensis* was recorded at the bank of the seasonal watercourse to the west of the Sandy Ridge Cemetery Office. Seasonal watercourses are restricted to the steeper slopes within the project boundary and are characterised by being entirely dry for much of the dry season. However, endemic crab *S. zanklon* population is supported by ephemeral watercourses close to the project boundary.
- 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								
Herpetofau na				\checkmark								
Dragonflies			\checkmark									
Butterflies			\checkmark									
Aquatic fauna	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark		\checkmark	\checkmark	\checkmark	\checkmark	\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 dragonflies 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 10th March 2020. 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 total of 20 bird individuals from 7 species recorded in the monitoring area. One species of conservation interests was recorded in the monitoring area: *Milvus migrans*, Black Kite(黑鳶).

Herpetofauna

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

■ Butterfly

There was total 7 butterfly individuals from 7 species recorded in the monitoring area.

- Dragonfly There was total one odonate individuals from one species recorded in the monitoring area.
- Freshwater communities There were two species of freshwater fish recorded in the monitoring area.





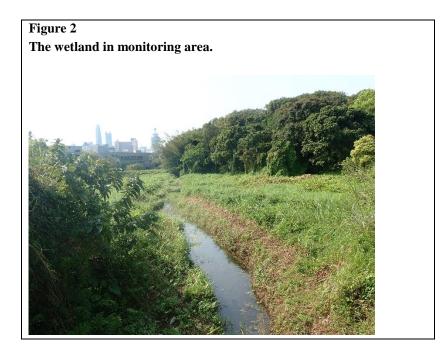




Table 4Result of mammal in survey

Scientific Name	English Name	('hinoco Nomo	Conservation	10-Mar-2020		
Scientific Name			Status	Non- wetland	Wetland	
		N/A				

Table 5Result of Avifauna in survey

Scientific Name	English Name	Chinese Name	Conservation	10-Mar-2020		
Scientific Funic			Status	Non- wetland	Wetland	
Milvus migrans	Black Kite	黑鳶	Fellowes et al. (2002): RC; Appendix 2 of CITES	1		
Amaurornis phoenicurus	White-breasted Waterhen	白胸苦惡鳥			1	
Pycnonotus jocosus	Red-whiskered Bulbul	紅耳鵯		4	6	
Phylloscopus inornatus	Yellow-browed Warbler	黃眉柳鶯		1		
Garrulax perspicillatus	Masked Laughingthrush	黑臉噪鶥		4		
Zosterops japonicus	Japanese White-eye	暗綠繡眼鳥		2		
Phoenicurus auroreus	Daurian Redstart	北紅尾鴝			1	

Table 6Result of reptile in survey

Scientific Name	Common Name	Chinese Name	10-Mar-2020		
			Non-wetland	Wetland	
		N/A			

Table 7Result of amphibian in survey

Scientific Name	Common Name	Chinese Name		10-Mar-2020		
Section Comme				Non- wetland	Wetland	
		N/A				



Table 8Result of butterfly in survey

Scientific Name	Common Name	Chinese Name	10-Mar-2020			
Scientific Name	Common Name		Non-wetland	Wetland		
Mycalesis mineus	Dark Brand Bush	小眉眼蝶	1			
	Brown	小旧叱坏	1			
Papilio memnon	Great Mormon	美鳳蝶	1			
Papilio paris	Paris Peacock	巴黎翠鳳蝶	1			
Papilio polytes	Common Mormon	玉帶鳳蝶	1			
Pieris canidia	Indian Cabbage White	東方菜粉蝶		1		
Delias pasithoe	Red-base Jezebel	報喜斑粉蝶	1			
Eurema hecabe	Common Grass Yellow	寬邊黃粉蝶	1			

Table 9Result of Odonate in survey

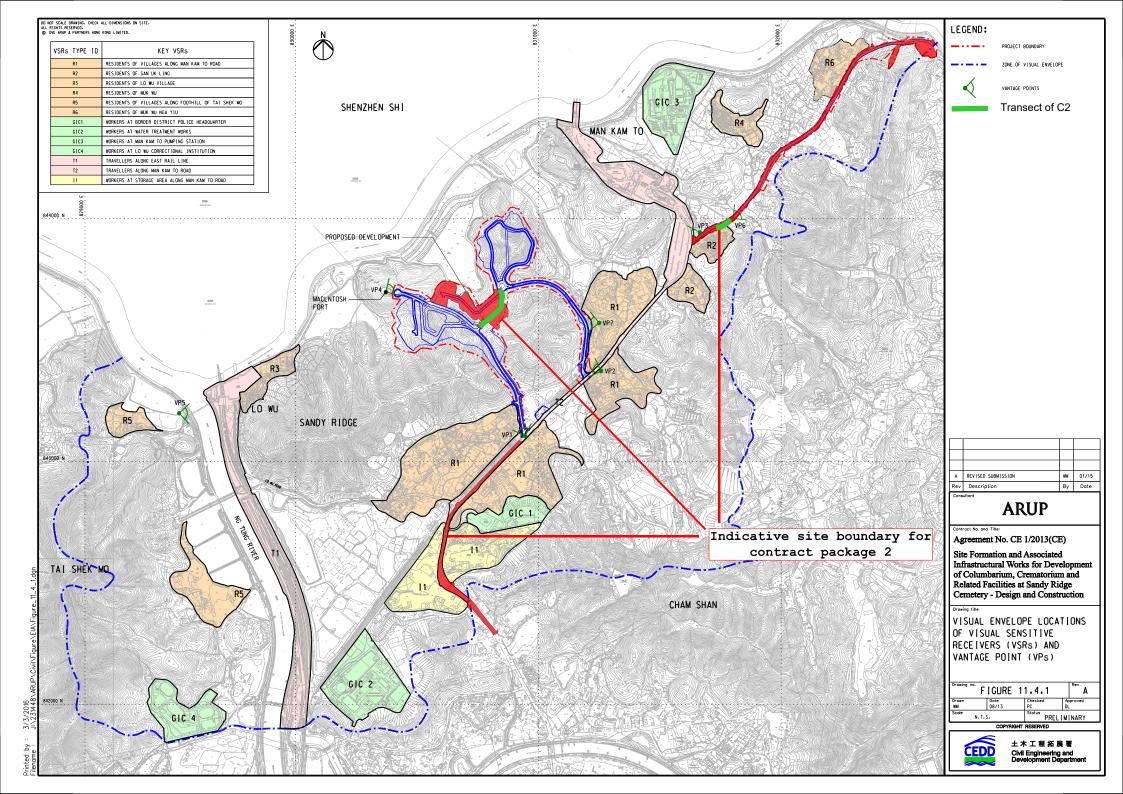
Scientific Name	Common Name	Chinese Name	Conservation Status	10-Mar-2020		
				Non- wetland	Wetland	
Trithemis aurora	Crimson Dropwing	曉褐蜻			1	

Table 10Result of freshwater communities in survey

Scientific Name	Common Name	Chinese Name	Conservation Status	10-Mar-2020
Gambusia affinis	Mosquito fish	食蚊魚		+
Puntius semifasciolatus	Chinese Barb	五線無鬚鮑		+

+: Species appeared but uncountable

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





Appendix L

Landscape & Visual Inspection Checklist



Contract No. CV/2016/10

Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery Landscape and Visual Impact Assessment Checklist for Site Audit

Date/ Time: 25/3/2020 09:30 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures		olemei	itation	Actions/ Remarks
			No	N/A	_
1	Landscape and Visual				
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:

1. Transplanted trees T2465, T2468 and T2928 were in fair health condition with normal foliage color and density.

Reminders:

- 1. Contractor is reminded to prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 2. Contractor is reminded to provide proper maintenance for transplanted tree (T2465, T2468 and T2928) according to approved method statement.

Photo Record:



General view (1)

General view (2)



General view (3)

Tree protection zone





Transplanted tree (T-2465)

Fig G.



Tree protection zone (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: 25/3/2020 10:30 Weather: Fine/ Overcast/ Rain/ Windy

Item	Mitigation Measures		olemei	ntation	Actions/ Remarks
			No	N/A	
1	Landscape and Visual				
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?			~	Tree transplanting works have not yet been commenced
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 prevent the construction material pile within TPZ and ensure no works is allowed within the TPZ.
- 2. Proper TPZ should be set up according to approved method statement.

Photo Record:



General view (1)



General view (2)



General view (3)



Signature:

		Signature Registration Board	Date
Recorded by	Registered Landscape Architect		25 Mar 2020
Checked by	Environmental Team Leader	Am	8/4/2020
Checked by	Independent Environmental Checker	h	9 April 2020



Appendix M

Monthly Summary Waste Flow Table

Monthly Summary Waste Flow Table for March 2020

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

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

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

		Actual Quantities	s of Inert C&D N	Iaterials Generated	d Monthly			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 (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	34.748	0.000	9.595	0.000	25.153	0.000	0.000	0.000	0.000	0.000	0.070
Feb	48.481	0.000	5.352	0.000	43.129	0.000	0.000	0.000	0.000	0.000	0.214
Mar	16.411	0.000	14.155	0.000	2.256	0.000	0.000	0.000	0.000	0.498	0.222
Apr											
May											
June											
Sub-total	99.640	0.000	29.102	0.000	70.538	0.000	0.000	0.000	0.000	0.498	0.506
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	99.640	0.000	29.102	0.000	70.538	0.000	0.000	0.000	0.000	0.498	0.506

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.

Name of Department: CEDD

	<u>ittointing Summary Waster 10W 14010 101 2020</u>										
	A	ctual Quantities	of Inert C&D M	Iaterials Gener	ated Monthl	у	Actual Q	uantities of C	C&D Wastes	Generated	Monthly
Month	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)
JAN	8926.560	0.000	0.000	0.000	8926.56	0.000	0.000	0.000	0.000	0.000	50.290
FEB	588.150	0.000	0.000	0.000	588.15	0.000	0.000	0.000	0.000	0.000	40.800
MAR	11707.330	0.000	0.000	0.000	11707.33	0.000	0.000	0.000	0.000	0.000	6.710
APRIL											
MAY											
JUN											
Sub Total	21222.040	0.000	0.000	0.000	21222.040	0.000	0.000	0.000	0.000	0.000	97.800
JUL											
AUG											
SEP											
ОСТ											
NOV											
DEC											
Total	21222.040	0.000	0.000	0.000	21222.040	0.000	0.000	0.000	0.000	0.000	97.800

Monthly Summary Waste Flow Table for 2020

Notes:

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	350	30	4	2	1	4

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

Implementation Schedule for Environmental Mitigation Measures

 $Z: \label{eq:loss} 2018 \ CV-2016-10) \ 600 \ EM\&A \ Report \ Submission \ Monthly \ Report \ 2020 \ 20th \ Month \ (March \ 2020) \ R0396v \ 2.doc \$

Note: Chapters 1 to 3 of the EIA report present the background information of the Project, identified concurrent projects, objectives and scope for various environmental aspects, and description on alternative options and construction description. Chapters 4 to 12 of the EIA report present the EIA findings and mitigation measures are described below with cross-reference to the EIA report. Chapters 13 to 15 describe the environmental monitoring requirements and conclusion.

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
Common Mitig	ation Measures (Applicable to ALL Project Components, including D	Ps and Non-DPS)				
Construction D	ust Impact					
S4.4.5.2	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Minimise dust impact at the nearby sensitive receivers	Contractor	All construction sites	Construction phase	APCO To control the dusi impact to meet HKAQO and TM-EIAC criteria
S4.4.5.3	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
S4.4.5.2	 Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading; Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads; A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones; The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle; Vehicle wheel washing facilities should be provided at each construction 	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

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
	site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels;					
	• When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;					
	• The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;					
	• Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;					
	• Any area that involves demolition activities should be sprayed with water or a 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 sheeting;					
	• Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;					
	• 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, 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.					

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
S4.4.5.1	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitoring of dust impact	Contractor	Selected representative dust monitoring station	Construction phase	• TM-EIAO
S4.4.5.3	 All road surface within the barging facilities will be paved. Dust enclosures will be provided for the loading ramp, installation of 3-sided screen with top cover and the provision of water sprays at the discharge point would be provided. Vehicles will be required to pass through designated wheel wash facilities. Continuous water spray at the loading point. 	Minimise dust impact at the nearby sensitive receivers	Contractor	Barging point at Siu Lam	Construction phase	• TM-EIAO

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
Construction Noise						
\$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; 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; plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs; silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; 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 activities. 	Control construction noise	Contractor	All construction sites	Construction phase	• Annex 5, TM-EIAO
S5.5.5.5	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		• Annex 5, 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
S5.5.5.6	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
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/m^2 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
\$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
S13.2.1.1 – S13.4.1.2	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at the selected representative locations	Contractor	Selected representativ e noise monitoring station	Construction phase	• TM-EIAO
Operational Noise (Road	d Traffic Noise)			1	L	
S5.6.6.4	 Provide a series of noise mitigation measures including absorptive noise barriers and low noise road surfacing materials along Lin Ma Hang Road and Sha Ling Road before operation of the proposed project for existing and planned representative NSRs. Locations of noise mitigation measures are stated as following: <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); 	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.	

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
	• Approx. 28m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM3);					
	• Approx. 51m of absorptive noise barrier 3m above road level along Project Road near Sha Ling Road (MM4);					
	• Approx. 25m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM5);					
	• Approx. 21m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM6);					
	• Approx. 14m of absorptive noise barrier 4m above road level along Lin Ma Hang Road near San Uk Ling (MM7);					
	• Approx. 18m of absorptive noise barrier 3m above road level along Lin Ma Hang Road near San Uk Ling (MM8);					
	• Approx. 42m of absorptive noise barrier 3m above road level along temporary pullover space opposite San Uk Ling (MM9);					
	• Approx. 93m of absorptive noise barrier 3m above road level along Lin Ma Hang Road opposite San Uk Ling (MM10);					
	• Approx. 185m of low noise surfacing materials along Lin Ma Hang Road near San Uk Ling (MM11);					
	For planned representative NSRs					
	 Approx. 36m of absorptive noise barrier 5m above road level along Lin Ma Hang Road near Muk Wu Nga Yiu (MM12); 					
	 Approx. 47m of absorptive noise barrier 5m above road level along Lin Ma Hang 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);					

EIA Ref.	Recommended Mitigation Measures	ObjectivesoftheRecommendedMeasures &Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	• Approx. 340m of low noise surfacing materials along Lin Ma Hang Road near Muk Wu Nga Yiu (MM17).					

EIA Ref.	Recommended Mitigation Measures	ObjectivesoftheRecommendedMeasures&Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
Water Quality (Constru	ction 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; The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary diches should be incorporated in the permanent drainage channels to enhance deposition rates; The design of efficient silt removal facilities should be based on the 	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
	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;					

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
	the sand/silt traps 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 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 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 regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rainstorms. Deposited silt and grit should be removed regularly and disposed of by spreading evenly over stable, vegetated areas;					
	• All open stockpiles of construction materials (for example, aggregates, sand and fill material) of more than 50m ³ should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system;					
	• Manholes (including newly constructed ones) should always be covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers;					
	• Precautions be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecasted, and actions to be taken during 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;					

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
	 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 adequately designed and sited wheel washing facilities should be provided at every construction site exit where practicable. Washwater 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 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 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; 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; 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. 					
S6.4.4.4 – S6.4.4.5	 Sewage from workforce Portable chemical toilets and sewage holding tanks are recommended for handling the construction sewage generated by the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance; 	To minimise water quality from sewage effluent	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS

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
	 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. 					
S6.4.4.6	 Operation of Barging Point at Siu Lam All barges should be fitted with tight bottom seals to prevent leakage of materials during transport; Barges or hoppers should not be filled to a level that will cause overflow of materials or polluted water during loading or transportation; All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash; and Loading of barges and hoppers should be controlled to prevent splashing of material into the surrounding water. Mitigation measures for land-based activities as outlined in Section 6.4.4 should be applied to minimise water quality impacts from site runoff and open stockpile spoils at the proposed barging facilities where appropriate. 	To minimise water quality from operation of barging point at Siu Lam	Contractor	All construction sites where practicable	Construction phase	Water Pollution Control Ordinance TM-DSS
Water Quality (Operat	tional Phase)					
S6.5.4.1 – S6.5.4.6	 The following mitigation measures during operational phase are recommended: Sewage and wastewater discharge should be connected to foul sewerage system; Proper drainage systems with silt traps and oil interceptors should be installed; 	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

EIA Ref.	Recommended Mitigation Measures	ObjectivesoftheRecommendedMeasures&Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
	 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. 					

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
Waste Managemen	nt (Construction Waste)					
S7.3.3.8	 <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 50,000m³. 	To enhance the management of construction and demolition (C&D) material including rock in public works projects	Contractor	All construction sites	Construction phase	 Project Administrative Handbook for Civil Engineering Works, 2012 Edition
\$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
\$7.3.4.3	Waste Reduction Measures Waste reduction is best achieved at the planning and design phase, as well as by ensuring the implementation of good site practices. The following recommendations are proposed to achieve reduction: • segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance

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
	 proper storage and site practices to minimise the potential for damage and contamination of construction materials; plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste; sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); provide training to workers on the importance of appropriate works 					
	 provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling. 					
S7.3.4.5	 <u>Storage of Waste</u> The following recommendation should be implemented to minimise the impacts: non-inert C&D materials such as soil should be handled and stored well to ensure secure containment; stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; different locations should be designated to stockpile each material to enhance reuse; 	Good site practice to minimise the waste generation and recycle the C&D materials as far as practicable so as to reduce the amount for final disposal	Contractor	All construction sites	Construction phase	 Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance ETWB TCW No. 19/2005
S7.3.4.6	 <u>Collection and Transportation of Waste</u> The following recommendation should be implemented to minimise the impacts: remove waste in timely manner; employ the trucks with cover or enclosed containers for waste transportation; obtain relevant waste disposal permits from the appropriate authorities; and disposal of waste should be done at licensed waste disposal facilities. 	Minimise waste impacts from storage	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
S7.3.4.8 – S7.3.4.15	 <u>Excavated and C&D Materials</u> Wherever practicable, C&D materials should be segregated from other wastes to avoid contamination and ensure acceptability at public filling areas or reclamation sites. The following mitigation measures should be implemented in handling the excavated and C&D materials: maintain temporary stockpiles and reuse excavated fill material for 	Minimise waste impacts from excavated and C&D materials	Contractor	All construction sites	Construction phase	Land (Miscellaneous Provisions) Ordinance Waste Disposal Ordinance

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
	backfilling;					• ETWB TCW No.
	• carry out on-site sorting;					19/2005
	• make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate; and					• Project Administrative
	• implement a recording system for the amount of waste generated, recycled and disposed of for checking.					Handbook for Civil Engineering Works,
	The recommended C&D materials handling should include:					2012 Edition
	• On-site sorting of C&D materials;					
	• Reuse of C&D materials; and					
	Use of Standard Formwork and Planning of Construction Materials purchasing.					
\$7.3.4.17 - \$7.3.4.18	Chemical Waste	Control the chemical waste and	Contractor	All	Construction phase	• Waste Disposal
	If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producer. Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste Contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	ensure proper storage, handling and disposal.		construction sites		 (Chemical Waste) General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Waste
\$7.3.4.19	General Refuse • General refuse should be stored in enclosed bins separately from construction and chemical wastes. Recycling bins should also be placed to encourage recycling. • Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean. • A reputable waste collector should be employed to remove general refuse on a daily basis.	Minimise production of the general refuse and avoid odour, pest and litter impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance
\$7.3.4.20	Sewage • The WMP should document the locations and number of portable chemical toilets depending on the number of workers, land availability,	Minimise production of sewage impacts	Contractor	All construction sites	Construction phase	• Waste Disposal Ordinance

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
Waste Management (Oper	 site condition and activities. Regularly collection by licensed collectors should be arranged to minimise potential environmental impacts. 					
S7.4.4.1		Remove general refuse during routine road cleaning activities on the roads network and avoid odour, pest and litter impacts	Contractor	Roads network for the C&C facilities and Lin Ma Hang Road	Operational phase	• Waste Disposal Ordinance

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
Land Contamination						
S8.9.1.1	Re-appraisal of the potentially contaminated site (SRC-1)	Identify any hot spots for SI within the southeast and western portions of SRC-1	• •	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
S8.11.1.1	Preparation and submission of Contamination Assessment Plan (CAP) to EPD for review and approval, if required	Present the findings of the re- appraisal and strategy of the recommended SI, if required		Potentially contaminated site (SRC-1)	After land resumption and prior to the construction phase	Ditto
\$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

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
S8.11.1.2	Preparation and submission of Remediation Action Plan (RAP) to EPD for review and approval if contamination is identified	Recommend appropriate mitigation measures for the contaminated soil and groundwater identified in the assessment if remediation is required	Detailed Design Consultant	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto
S8.11.1.2	Preparation and submission of Remediation Report (RR) to EPD for review and approval following the completion of any necessary remediation works	Demonstrate that the decontamination work is adequate and is carried out in accordance with the endorsed CAR and RAP	Detailed Design	Potentially contaminated site (SRC-1)	Prior to the construction phase	Ditto

Environmental Mitigation Implementatio	n 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
Ecology (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 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.	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
S9.7.2.5 – S9.7.2.6	Preparation and submission of a Vegetation Survey Report and Transplantation Proposal (if needed as concluded in the Vegetation Survey Report) to EPD for agreement.	The Vegetation Survey will report the presence, as well as update the conditions, number, locations and habitat types of any identified floral species of conservation importance to be impacted by the development,	Project Proponent/ Detailed Design Consultant (qualified ecologist/ botanist) for	Within the Project Area where applicable	Prior to construction phase	• Survey findings and transplantation methodology to be detailed in Vegetation Survey Report and Transplantation Plan

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
		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 and maintenance programme.	Vegetation Survey Report and Transplantation Proposal.			respectively. • TM-EIAO.
\$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
S9.7.3.1 – S9.7.3.3	Indirect impacts due to potential changes in water quality, hydrology and sedimentation could occur to a series of downstream watercourses and wetland systems (including the wet woodland, marsh and mitigation ponds) during both the construction (for the Platform and LMHR widening works) and operational stages. Generally, indirect water impact to any aquatic fauna during the construction phase should easily be avoided by implementing water control measures (ETWB TCW No. 5/2005) to avoid direct or indirect impacts any watercourses and good site practices (further details are discussed in Section 6 of the EIA Report).	Minimise the indirect impacts to Water Quality and Hydrology	Contractor /detailed design consultant.	On the edge of any active works area, 30m from the watercourse	Prior to commencement and during construction phase	• ETWB TCW No. 5/2005 • TM-EIAO

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
	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.					
S9.7.3.4 – S9.7.3.6	Mitigation for noise disturbance (details refer to \$5.5.5 to \$5.6.6 of this table). Site formation and construction are tentatively proposed to cover a 65-month period from mid 2017 to late 2022. As a precautionary approach, consideration should be given at the detailed design stage to avoid the use of highly reflective materials in the design and implementing the use of opaque materials, fritting, breaking up external reflections with stickers or plastic wrap and/or any other bird-friendly design for noise barriers. Works will be restricted to daytime and any construction lighting should be designed and positioned as to not impact on adjacent ecologically sensitive areas.	The construction work and site formation will be phased in order to reduce overall noise disturbance impacts in particular areas. Collisions usually occurs as a result of birds perceiving a clear path through an 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	Contractor Project Proponent	All construction sites	Prior to commencement and during construction phase	• 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
\$.9.7.3.7	 In order to demonstrate ecological awareness and to minimise the risk of indirect impacts from water pollution and hill fires, a series of good site practices should be adopted by site staff throughout the construction phase at each works site. These are as follows: Put up signs to alert site staff about any locations which are ecologically sensitive and measures to prevent accidental impacts; Erection of temporary geotextile silt or sediment fences/oil traps around any earth-moving works to trap any sediments and prevent them from entering 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. 	Minimise impacts on hydrological condition and water quality of hillside watercourses and reduce chances of hillfires.	Contractor	All construction sites	Prior to commencement and during construction phase	• TM-EIAO.
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

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
\$9.7.2	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.
S9.7.5.3 – S9.7.5.6	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 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	Operational phase	 Enhancement planting and establishment requirements to be detailed in Wooded Area Proposal. TM-EIAO.
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	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

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
		proposed platform. The surface runoff collected on the platform will be captured by a stormwater drainage system, which will be further developed at the detailed design stage The proposed small diameter bore pile system at the foundation of the proposed platform structure would allow a notional free area of about 87 – 91% for groundwater to pass through				
\$9.7.4.6 – \$9.7.4.7	 <u>Minimise the potential indirect light disturbance on the Street Lighting on</u> <u>fireflies surrounding the Project Site during operational phase</u> It is considered that at the detailed design stage, street lighting of similar lux/light intensity as to what is currently present is utilised. Furthermore, as a precautionary measure, it is suggested that deflectors are fixed to the back of the street lights to prevent additional light reaching the marsh and causing adverse impacts to fireflies. 	Reduce light pollution and impact on the nearby habitats and their associated wildlife groups, particularly nocturnal fireflies.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO
S9.7.4.9 – S9.7.4.9	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. This will require input in the detailed design phase.	Minimise the risk of hill fires.	Detailed Design/ Consultant/ Operator	The whole Project area	Detailed Design phase/Operational phase	• TM-EIAO

EIA Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Implementation	Location / Timing	Implementation	Requirements and / or standards to be achieved
Fisheries						
S10.5.1.1	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.	-	-	-	-	-

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
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	-
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	-
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	-
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	-

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
S11.8.1.3, 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
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 (GLTM) Section, DevB Latest recommended horticultural practices from GLTM Section, DevB

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
S11.8.1.3, Table 11.9	CM8 - Implementing precautionary control measures during construction stage accordingly to ETWB TCW No. 5/2005 – Protection of natural streams/rivers from adverse impacts arising from construction works to avoid direct or indirect impacts any watercourses and good site practices.	Minimize landscape impact	Funded by CEDD and implemented by Contractor	Work site/ during construction	Design and Construction phase	• ETWB TCW No. 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

EIA Ref.	Recommended Mitigation Measures	ObjectivesoftheRecommendedMeasures&Main Concerns to address	Implementation Agent	Location / Timing	Implementation Stage	Requirements and / or standards to be achieved
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 – 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
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.

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
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	-
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	-
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 system.
S11.8.1.3, Table 11.9	OM8 - 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 Contractor	Within Project Site	Construction Phase	

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.

Recommended Mitigation Measures Recommended Measures & Main Concerns to address Agent Timing Stage / or standards to be 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.

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	
EM&A Project							
S13.1.1.1, S13.2.1.2	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Highways Department	All construction sites	Construction phase	 • EIAO Guidance Note No.4/2010 • TM-EIAO 	
S13.2.1.1 – S13.4.1.2	 An Environmental Team needs to be employed as per the EM&A Manual. Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. 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. 	Perform environmental monitoring & auditing	Highways Department / Contractor	All construction sites	Construction phase	 • EIAO Guidance Note No.4/2010 • TM-EIAO 	



Appendix O

Implementation of Water Quality Mitigation Measures



Water Quality Mitigation Measures under CV/2016/10 (Contract 1)

area. Removal was silt was conducted by the Contractor regularly.





Water Quality Mitigation Measures under CV/2017/02 (Contract 2)



Water Quality Mitigation Measures under CV/2017/02 (Contract 2)



Water Quality Mitigation Measures under CV/2017/02 (Contract 2)

