

Lam Environmental Services Limited

CONTRACT NO: CV/2012/07

DEVELOPMENT AT ANDERSON ROAD -FOOTBRIDGE D AND ASSOCIATED WORKS AREA

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

- JULY 2016 -

CLIENTS:

Lam-Po Wing Joint Venture

PREPARED BY:

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CERTIFIED BY:

Derek Lo Environmental Team Leader

DATE:

12 August 2016



Ref.: OAPANDSNEM00_0_1758L.16.docx

15 August 2016

By Post and Fax: 2407 8382

Engineer's Representative Ove Arup & Partners Level 5, Festival Walk 80 Tat Chee Avenue Kowloon Tong, Kowloon Hong Kong

Attention: Mr. Dennis Leung

Dear Sir/Madam,

Re: Contract No. CV/2012/07 Development at Anderson Road Footbridge D and Associated Works Area <u>Monthly EM&A Report for July 2016</u>

Reference is made to the Environmental Team's submission of the Monthly EM&A Report for July 2016 received by e-mail on 15 August 2016 for our review and comment.

We are pleased to inform you that we have no adverse comment on the captioned report.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,

David Yeung Managing Director

c.c. Lam LPWJV Attn.: Mr. Derek Lo Attn.: Mr. Tak-Leung Lo Fax: 2882 3331 Fax: 3171 7222

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EXECUTIVE SUMMARY

 This is the Environmental Monitoring and Audit (EM&A) Monthly Report – July 2016 of "Development at Anderson Road – Footbridge D and Associated Works Area" (Hereafter called "this Project"). The construction works of this project was commenced on 20 July 2013. This is the 37th month of EM&A report presenting the environmental monitoring findings and information recorded during the period of 1 July 2016 to 31 July 2016. The cut-off date of reporting is at the end of each reporting month.

Construction Activities for the Reported Period

- Construction of U-Channel at slope C2
- Construction of foot path at portion A

Noise Monitoring

ii. Noise monitoring during daytime was conducted at the stations NM1 and NM2 on a weekly basis in the reporting month. No exceedance was recorded in the reporting month.

Air Quality Monitoring

iii. Air quality monitoring has been conducted at station AQM1. No exceedance was recorded in the reporting month.

Complaints, Notifications of Summons and Successful Prosecutions

i. No complaint and notifications of summons or successful prosecutions were recorded in this reporting month.

Site Inspections and Audit

ii. The Environmental Team (ET) conducted weekly site inspections for Contract no. CV/2012/07 in the reporting month. Major observations and recommendations made during the audit sessions were rectified by the Contractors. No non-conformance was identified during the site inspections.

Future Key Issues

- iii. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:
 - Construction of U-Channel at slope C2
 - Construction of foot path at portion A
 - Backfilling walkway between Deck B-C



Reporting Change

vii. There are no reporting changes in this Reporting Period.



1. Introduction

1.1 Scope of the Report

- 1.1.1. Lam Environmental Services Limited (LES) has been appointed to work as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme as stipulated in the EM&A Manual of the approved Environmental Impact Assessment (EIA) Report for Development of Anderson Road.
- 1.1.2. This report presents the environmental monitoring and auditing work carried out in accordance to the Section 1.4 of EM&A Manual and "*Environmental Monitoring and Audit Requirements*" under Particular Specification Section 25.
- 1.1.3. The construction works of this project was commenced on 20 July 2013. This report documents the finding of EM&A works for this Project and during the period of 1 July 2016 to 31 July 2016. The cut-off date of reporting is at the end of each reporting month.

1.2 Structure of the Report

- **Section 1** *Introduction* details the scope and structure of the report.
- Section 2 *Project Background* summarizes background and scope of the project, site description, project organization and contact details of key personnel during the reporting period.
- Section 3 Status of Regulatory Compliance summarizes the status of valid Environmental Permits / Licenses during the reporting period.
- Section 4 *Monitoring Requirements* summarizes all monitoring parameters, monitoring methodology and equipment, monitoring locations, monitoring frequency, criteria and respective event and action plan and monitoring programmes.
- Section 5 *Monitoring Results* summarizes the monitoring results obtained in the reporting period.
- Section 6 Compliance Audit summarizes the auditing of monitoring results, all exceedances environmental parameters.
- Section 7 Cumulative Construction Impact due to the Concurrent Projects summarizes the relevant cumulative construction impact due to the concurrent



activities of the concurrent Projects.

- **Section 8** *Site Inspection* summarizes the findings of weekly site inspections undertaken within the reporting period, with a review of any relevant follow-up actions within the reporting period.
- Section 9 Complaints, Notification of summons and Prosecution summarizes the cumulative statistics on complaints, notification of summons and prosecution
- Section 10 Conclusion



2. Project Background

2.1 Background

- 2.1.1. The main objective of the project "Development at Anderson Road Footbridge D and Associated Works Area" (Hereafter called "this Project") is to construct a footbridge, Footbridge D, and associated lift towers across Shun On Road between the existing Shun Tin Estate and the future development platform.
- 2.1.2. For this project, Tin Wan House (NM1) and Ning Po No.2 College (NM2 and AQM1) are the designated monitoring station during the construction period. Owing to this contract is under the master project and on the other hand, the construction area is vicinity to the monitoring station (On Yat House) ID2 and (Sau Nga House) ID3 of the master project, so that the baseline noise and air quality monitoring will adopt the baseline data from those stations instead of conducting baseline monitoring. All the baseline data are referred to the baseline report from the public domain web site (www.anderson-road.com/main.htm).
- 2.1.3. The construction works of this project was commenced on 20 July 2013. During the construction phase of the project, air quality (dust) and noise impacts from the development site itself and the adjacent Anderson Road Quarry and other nearby construction sites are identified as the major environmental issues of concern. Besides, waste management is also identified in the EIA study as another environmental issue during the construction phase of the project that requires mitigation measures.

2.2 Scope of the Project and Site Description

- 2.2.1. The Project is located mainly near Shun Tin Estate and Ning Po No.2 College, as shown in *Figure 2.1.*
- 2.2.2. The scope of the Project comprises:
 - Construction of footbridge and associated lift towers between Shun On Road and future platform at +152mPD and across Shun On Road. In Conjunction with these footbridge works are the associated furniture, drainage system, irrigation system and traffic signs.
 - Construction of drainage system for diversion of an existing stream on the slope adjoining Footbridge D.
 - Site formation and associated slope works for Footbridge D adjacent to Shun On Road.



2.3 Project Organization and Contact Personnel

- 2.3.1. Civil Engineering and Development Department is the overall project controllers for this project. For the construction phase of the Project, Project Engineer, Contractor(s), Environmental Team and Independent Environmental Checker are appointed to manage and control environmental issues.
- 2.3.2. The proposed project organization and lines of communication with respect to environmental protection works are shown in *Figure 2.2.* Key personnel and contact particulars are summarized in *Table 2.1*.

Party	Role	Post	Name	Contact	Contact
				No.	Fax
Ove Arup	Engineer	Chief	Dennis	2407 0300	2407
		Resident	Leung		8382
		Engineer			
		Resident	Heidi Fung	3656 3000	3656
		Engineer			1000
Lam-Po Wing	Contractor	Project	K.C. Wong	2318 0281	3171
Joint Venture	under	Manager			7222
	Contract no. CV/2012/07	Site Agent	T.L. Lo	2318 0281	
		Safety Officer	K.W. Lau	2318 0281	
		Environment	K.I. Ip	2318 0281	
		al Officer			
Ramboll	Independent	Independent	Mr. David	3465 2888	3465
Environ Hong	Environment	Environment	Yeung		2899
Kong Limited	al Checker	al Checker			
	(IEC)	(IEC)			
Lam	Environment	Environment	Mr. Derek Lo	2882 3939	2882
Environmenta	al Team (ET)	al Team			3331
I Services		Leader (ETL)			
Limited					

Table 2.1 Contact Details of Key Personnel

8



2.3.3. For Contract no. CV/2012/07, the principal work activities in this reporting month included:

- Construction of U-Channel at slope C2
- Construction of foot path at portion A

In coming reporting month, the principal work activities of individual contracts are anticipated as follows:

- Construction of U-Channel at slope C2
- Construction of foot path at portion A
- Backfilling walkway between Deck B-C



3. Status of Regulatory Compliance

- 3.1 Status of Environmental Licensing and Permitting under the Project
- 3.1.1. A summary of the current status on licences and/or permits on environmental protection pertinent to the Project is shown in *Table 3.1*.

Table 3.1 Summary of the current status on licences and/or permits on environmentalprotection pertinent to the Project

Permits and/or Licences	Reference No.	Issued Date	Valid Period/ Expiry Date	Status
Discharge Licence	WT00015447-20 13	27 March 2013	31 March 2018	Valid
Billing Account under Waste Disposal Ordinance	7017083	15 March 2013	N/A	Valid
The Air Pollution Control (Construction Dust) Regulation	355705	14 February 2013	N/A	Valid
Form A – Application for Water Pollution Control Licence	355706	14 February 2013	N/A	Valid
Application for Registration as a Chemical Waste Producer	WPN5213-292-L 2825-01	28 November 2013	N/A	Valid
Application for Construction Noise Permit	GW-RE0694-16	24 July 2016	14 August 2016	Valid



4. Monitoring Requirements

4.1 Noise Monitoring

NOISE MONITORING STATIONS

4.1.1. The noise monitoring has been undertaken at the designated locations Tin Wan House (NM1) and Ning Po No.2 College (NM2). The detailed information of monitoring stations for the Project are listed and shown in *Table 4.1* and *Figure 4.1*. *Appendix 4.1* shows the established Action/Limit Levels for the monitoring works.

Table 4.1 Noise Monitoring Stations

Station ID	Monitoring Location
NM1	G/F of Tin Wan House
NM2	G/F of Ning Po No.2 College

NOISE MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.1.2. The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level (Leq). Leq (30 minutes) shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods, Leq (5 minutes) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria. Supplementary information for data auditing, statistical results such as L10 and L90 shall also be obtained for reference.
- 4.1.3. Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:
 - one set of measurements between 0700 and 1900 hours on normal weekdays.
- 4.1.4. If construction works are extended to include works during the hours of 1900 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the Contractor.

MONITORING EQUIPMENT

4.1.5. As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters 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. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound



pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.

4.1.6. Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

4.2 Air Monitoring

AIR QUALITY MONITORING STATIONS

4.2.1. The air monitoring has been conducted at the designated location Ning Po No.2 College (AQM1). The air monitoring stations for the Project are listed and shown in *Table 4.2* and *Figure 4.1*. *Appendix 4.1* shows the established Action/Limit Levels for the monitoring works.

 Table 4.2 Air Monitoring Station

Station ID	Monitoring Location
AQM1	Roof Top of Ning Po No.2 College

AIR MONITORING PARAMETERS, FREQUENCY AND DURATION

- 4.2.2. One-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The 24-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.
- 4.2.3. All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any other local atmospheric factors affecting or affected by site conditions, etc., shall be recorded down in detail.
- 4.2.4. For regular impact monitoring, the sampling frequency of at least once in every six-days, shall be strictly observed at all the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six-days should be undertaken when the highest dust impact occurs.

SAMPLING PROCEDURE AND MONITORING EQUIPMENT

- 4.2.5. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
 - 0.6 1.7 m³ per minute adjustable flow range;
 - equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
 - installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;



- capable of providing a minimum exposed area of 406 cm²;
- flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
- equipped with a shelter to protect the filter and sampler;
- incorporated with an electronic mass flow rate controller or other equivalent devices;
- equipped with a flow recorder for continuous monitoring;
- provided with a peaked roof inlet;
- incorporated with a manometer;
- able to hold and seal the filter paper to the sampler housing at horizontal position;
- easily changeable filter; and
- capable of operating continuously for a 24-hour period.
- 4.2.6. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognized primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by concerned parties such as the IEC. All the data should be converted into standard temperature and pressure equivalents.

LABORATORY MEASUREMENT / ANALYSIS

- 4.2.7. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory should be HOKLAS accredited.
- 4.2.8. If a site laboratory is set up or a non-HOKLAS accredited laboratory is retained for analysis, laboratory equipment shall be provided by the ER in consultation with the IC(E). Measurement performed by the laboratory shall be demonstrated to the satisfaction of the ER and the IC(E). The IC(E) shall conduct regular audit to the measurement performed by the laboratory to ensure the accuracy of measurement results. The ET leader shall provide the ER with one copy of the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), and Appendix B for his reference.
- 4.2.9. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling.
- 4.2.10. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.
- 4.2.11. All the collected samples shall be kept in a good condition for 6 months prior to disposal.



5. Monitoring Results

- 5.0.1. The environmental monitoring will be implemented based on the sensitive receivers which would be mostly affected. Overall layout showing the work area, latest status of work commencement and monitoring stations are shown in *Figure 2.1* and *Figure 4.1*.
- 5.0.2. The environment monitoring schedules for reporting month and coming month are presented in *Appendix 5.1*.

5.1 Noise Monitoring Results

5.1.1. The noise monitoring results for Contract no. CV/2012/07 are summarized in *Table 5.1* below:

Date	Time	Location	Leq (dB)	Limit Level
5 101 10	9:15	NM1	63.7	75
5-Jul-16	10:20	NM2	63.9	70
11-Jul-16	9:09	NM1	64.0	75
TT-Jui-To	10:15	NM2	63.8	70
22-Jul-16	13:15	NM1	64.0	75
22-Jui-10	14:20	NM2	63.1	70
28-Jul-16	14:30	NM1	63.0	75
20-Jui-10	15:41	NM2	62.9	70
	Limit Level		65 / 70 /75*	

Table 5.1 Summary of Noise Monitoring Results at NM1 and NM2

Note :

- 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.
- 5.1.2. Day time period noise monitoring was conducted at the Tin Wan House (NM1) and Ning Po No.2 College (NM2).
- 5.1.3. Noise monitoring results measured in this reporting period are reviewed and summarized. No exceedance was recorded in reporting month. Details of noise monitoring results and graphical presentation can be referred in *Appendix 5.2*.



5.2 Air Monitoring Results

5.2.1. The air monitoring results are summarized in *Table 5.2* and *Table 5.3* below. No exceedance was recorded in the reporting month.

Date	Time	TSP Level, (μg /m³)
4-Jul-16	8:00	19
9-Jul-16	8:00	105
15-Jul-16	8:00	45
21-Jul-16	8:00	27
27-Jul-16 8:00		27
Actio	n Level	200
Limit	t Level:	260

Table 5.2Summary of Air Monitoring Results at AQM1 - 24 hr TSP Monitoring

Table 5.3	Summary of Air M	onitoring Results at AQM1	- 1 hr TSP Monitoring
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Date	Time	TSP Level, (μg /m³)
5-Jul-16	10:00	15
5-Jul-16	11:00	15
5-Jul-16	13:00	15
11-Jul-16	14:00	72
11-Jul-16	15:03	71
11-Jul-16	16:06	56
16-Jul-16	8:35	65
16-Jul-16	9:38	57
16-Jul-16	10:40	61
22-Jul-16	13:00	20
22-Jul-16	14:04	27
22-Jul-16	15:16	17
28-Jul-16	13:30	21
28-Jul-16	14:40	30
28-Jul-16	15:55	22
Action Level		197
Limit Level:		500



5.2.2. Air monitoring results measured in this reporting period are reviewed and summarized. No exceedance was recorded in reporting month. Details of air monitoring results can be referred in <u>Appendix 5.3.</u>

5.3 Waste Monitoring Results

5.3.1. Inert and C&D waste and general refuse were disposed in this reporting month. Details of the waste flow table are summarized in *Table 5.4.*

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m ³	0.04936	11.9228	TKO137
Inert C&D materials recycled, m ³	0	0	N/A
Non-inert C&D materials disposed, m ³	0	0	N/A
Non-inert C&D materials recycled, kg	0	34.5436	N/A
Chemical waste disposed, kg	0	0	N/A
General refuse,m ³	0.00354	0.85739	NENT

Table 5.4 Details of Waste Disposal for Contract no. CV/2012/07



6. Compliance Audit

6.0.1. The Event Action Plan for construction noise, air quality and water quality are presented in <u>Appendix 6.1.</u>

6.1 Noise Monitoring

6.1.1. No exceedance was recorded in the reporting month.

6.2 Air Monitoring

6.2.1. No exceedance was recorded in the TSP monitoring in the reporting month.

6.3 Review of the Reasons for and the Implications of Non-compliance

6.3.1. There was no non-compliance from the site audits in the reporting period. The observations and recommendations made in each individual site audit session were presented in Section 7.

6.4 Summary of action taken in the event of and follow-up on non-compliance

6.4.1. There was no particular action taken since no project-related non-compliance was recorded from the site audits and environmental monitoring in the reporting period.



7. Environmental Site Audit

7.0.1. According to EM&A Manual stipulation, the regular weekly site inspections on 5, 12, 19 and 26 July 2016 were carried out by ET, IEC, the Contractor and ARUP for Contracts no. CV/2012/07 to ensure the environmental performance. Observations and findings are summarized in *Table 7.1*.

Date	Obs	ervations	Follow-Up
5 – July - 2016	•	Contractor was requested to prevent	
		leakage of silty water into public road at	
		Portion C2	
	•	Contractor was reminded to prevent	
		accumulating of refuse within the	
		drainage or silt removable system at	
		Portion C2	
12 – July-2016	•	Oil stain was observed at the site exit of	The findings were rectified
		Portion C1, contractor was requested to	before inspection on 19 July
		clean up and properly maintain the	2016.
		construction plant to prevent leakage.	
	•	Dusty stockpile should be covered/spray	
		with water at Portion A	
	•	Stagnant water in drip tray should be	
		cleaned up and the hole at drip tray	
		should be blocked	
	•	Breaker tip should be wrapped with	
		acoustic materials	
19 – July-2016	•	Pedestrian path should be cleaned up	The pedestrian path was
		more frequently	cleaned up during inspection
	•	Stagnant water in drip tray should be	on 26 July 2016
		removed regularly	
26 – July-2016	•	Contractor was reminded to prevent	The finding was rectified
		accumulating refuse in the drainage or silt	before inspection on 3 Aug
		removable system	2016

Table 7.1 Summary of Environmental Inspections for Contract no. CV/2012/07



8. Complaints, Notification of Summons and Prosecution

- 8.0.1. No complaint and notification of summons or successful prosecutions were recorded in this reporting month.
- 8.0.2. The details of cumulative complaint log and updated summary of complaints are presented in *Appendix 8.1*.
- 8.0.3. Cumulative statistic on complaints and successful prosecutions are summarized in *Table 8.1* and *Table 8.2* respectively.

Table 8.1 Cumulative Statistics on Complaints

Reporting Period	No. of Complaints
July 2016	0
Project-to-Date	1

Table 8.2 Cumulative Statistics on Successful Prosecutions

Environmental Parameters	Cumulative No. Brought Forward	No. of Successful Prosecutions this month (Offence Date)	Cumulative No. Project-to-Date
Air	-	0	0
Noise	-	0	0
Waste	-	0	0
Total	-	0	0



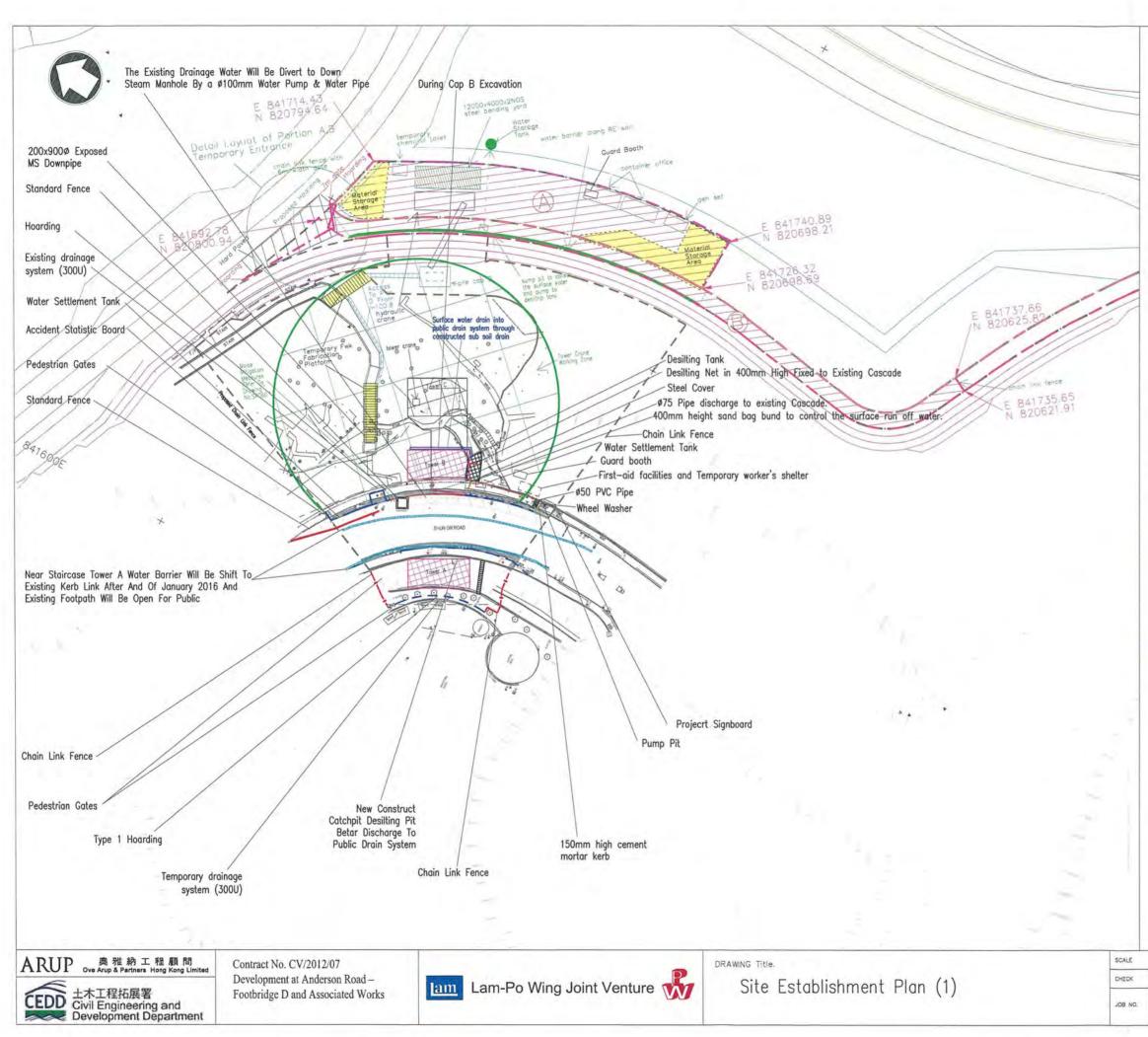
9. Conclusion

- 9.0.1. The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed were made in response to changing circumstances.
- 9.0.2. No construction air and noise monitoring results that triggered the Action and Limit Level was recorded. No complaint of air and noise were received by the ARUP and the contractor. Furthermore, no notification of summons or successful prosecution was received in this reporting month.
- 9.0.3. Construction noise should be a key environmental impact during the works. The noise mitigation measures such as use of quiet plants and installation of temporary noise barrier at the construction noise predominate area should be fully implemented as accordance with the EM&A requirement. Moreover, breaking works should be the potential construction dust impact since the construction site located nearby residential area of Shun Tin Estate. It is reminded that mitigation measures for dust should be properly implemented.



Figure 2.1

Project Layout



NOTES:

- This drawing shall be read in conjunction with Drawing 24711/1052.
- The location of fencing and hoarding is indicative only. The exact location is approved on site by Engineer.
- For Detail of Access gate refer to CEDD Standard Drawing No. C1007.
- 4. Dimensions Are in Meters Unless Otherwise Shown.
- 5. The surface water inside Portion C3 will be collected by a pump pit and pump into water settlement tank for recycle purpose. In case the water inside the settlement tank is overflow, a Ø75 pipe will discharge the overflow water into existing 300U on slope toe.

Legend

CV/2012/07	DRAWING NO.		REV
SM NG	DRAWN	DAVID TO	
1:500 @ A3	B DATE	18-04-20	016
	Footprint O	f Stoircase A&B	
	Temporary Platfrom	Formwork Fabrica	tion
	12Mx4M Ste	eel Bending Yard	
	Material Sta	orage Area	
	Q	ater Barrier	
	Tower Cran (Not Encro	e Working radius ach to Shun On F	(baos
	Proposed H	oarding (Type I)	
	Proposed S	afety Fence (Type	e A)
	Proposed C	hain Link Fence	



Figure 2.2

Project Organization Chart



Project Organization Chart

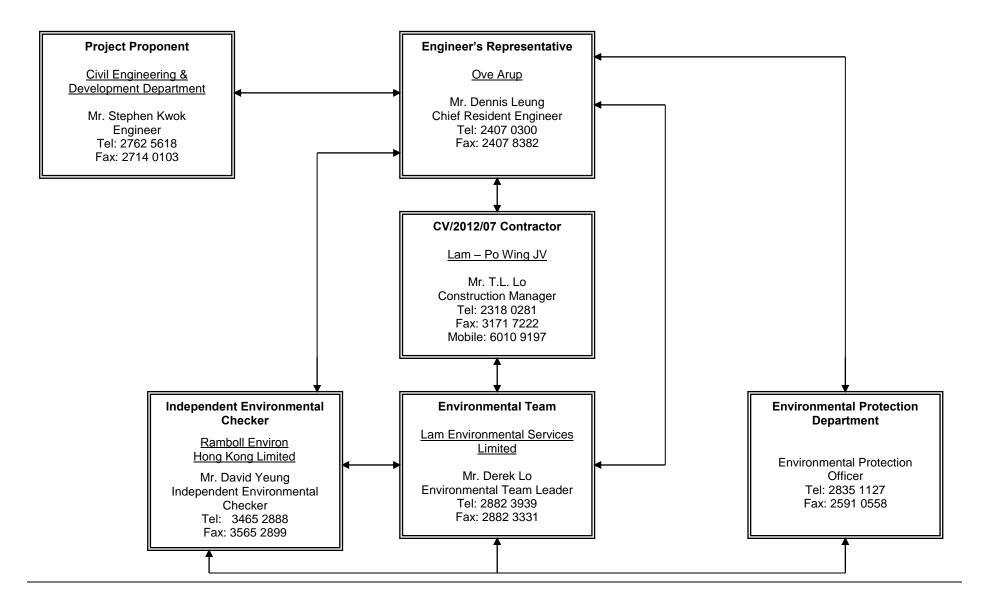
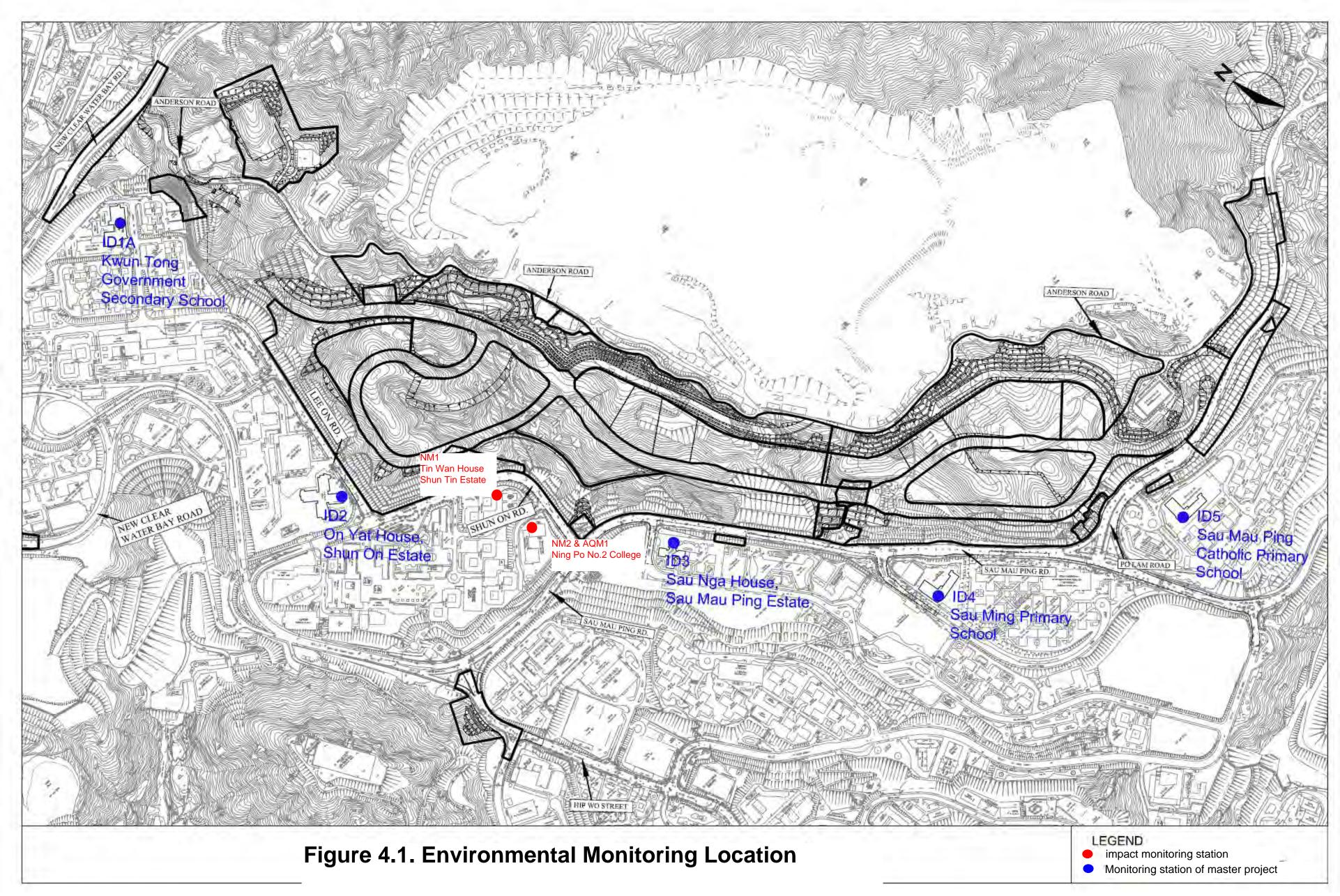




Figure 4.1

Locations of Environmental Monitoring Stations





Appendix 3.1

Environmental Mitigation Implementation Schedule



Environmental Mitigation Implementation Schedule

Implementation Schedule for Construction Dust Control

EIA EM&A Ref. Log Ref	Environmental Protection Measures	Location (duration/ completion of	Funding Agent	Implementation Agent	Impleme Stages**		Relevant Legislation & Guidelines
		measures)			D	С	
S2.7 S1, S2.8	 Site Practice Mean vehicle speed of haulage trucks at 10 km/hr. Twice daily watering of all open site areas. Regular watering (once every 1 hour) of all site roads and access roads with frequent truck movement. Tarpaulin covering of all dusty vehicle loads transported to, form and between site locations. Establishment and use of vehicle wheel and body washing facilities at the exit points of the site, combined with cleaning of public roads where necessary. Suitable side and tailboards on haulage vehicles. Watering of temporary stockpiles. Blasting Use of select aggregate and fines to stem the charge with drill holes and watering of blast face. Use of vaccum extraction drilling methods. Carefully sequenced blasting. Crushing Fabric filters installed for the crushing plant. Water sprays on the crusher. Loading and Unloading Points, and conyeyor Belt System Water sprays at all fixed loading and unloading points (at the crusher and conveyor belts). The loading point at the crusher is enclosed with dust curtains are used for controlling dust. Wohen transferring materials from conveyor belt or crusher to the dump trucks, chutes or dust curtains are used for controlling dust. 	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV			TM on EIA Process, APCO, Air Pollution Control (Construction Dust) Regulation

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,



EIA EM&A Ref. Log Ref.		completion of	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines	
			measures)			D	С	
S3.7	S1, S3.7	 Site Formation Silenced powered mechanical equipment (PME) for most equipment5 (including drill rig, backhoe, dump truck, breaker and crane) and the decrease of percentage on time usage of drill rig among the Central Area form 50% to 40% is prosed. Temporary movable noise barrier shall be used to shield the noise emanating from the drilling rig in order to provide adequate shielding for the affected NSRs. 	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	J	J	TM on EIA Process, NCO, TM on Noise from Construction Work other than Percussive Pilling, ProPECC Note PN2/93

Implementation Schedule for Construction Noise Control

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,



Implementation Schedule for Water Quality Control

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
			measures)			D	С	
S6.4	S1	 Construction Phase All active working areas should be bounded to retain storm water with sufficient retention time to ensure that suspended solids are not discharged from the site in concentrations above those specified in the TM for the Victor Harbour (Phase I) WCZ. All fuel storage areas should be bounded with drainage directed to an oil interceptor. Separate treatment facilities may be required for effluent from site offices, toilets (unless chemical toilets are used) and canteens. Discharged wastewater from the construction sites to surface water and /or public drainage systems should be controlled through licensing. Discharges should follow fully the terms and conditions in the licences. Relevant practice for dealing with various typr of construction discharges provided in EPD's ProPECC Note 1/94 should be adopted. 	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	1	J	TM on EIA Process, WPCO, ProPECC Note PN 1/94

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,



EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
			measures)			D	С	
S8.4	S1,S4	 Waste Disposal Different types of wastes should be segregated, stored, transported and disposed of proper practice of waste management. Sorting of wastes should be done on-site. Different types of wastes should be segregated and stored in different stockpiles, containers or skips to enhance recycling of materials and proper disposal of wastes. Excavated spoil should be used as much as possible to minimize off-site fill material requirements and disposal of spoil. During road transportation of excavated spoil, vehicles should be installed at all site exits together with regular qatering of the site access roads. Chemical waste should be recycled on-site or removed by licenced companies. It should be handled according to the Code of practice on the packaging, Labelling and Storage of Chemical Waste (General) Regulation. Necessary mitigation measures should be adopted to prevent the uncontrolled disposal of in accordance with the chemical Waste and disposal of in accordance with the uncontrolled disposal of chemical and hazardous waste into air, soil, surface waters and ground waters. 	All Construction sites (late 2007 to 2016)	CEDD	Lam – Po Wing JV	J	J	TM on EIA Process, WDO, DGO, Waste Disposal (Chemical Waste) (General) Regulation

Implementation Schedule for Construction Waste Management



Waste Storage			
 Chemical material storage areas should be bounded, constructed of impervious materials, and have the capacity to contain 120 percent of the total volume of the containers. Indoor storage areas must have sufficient ventilation to prevent the build-up of fumes, and must be capable of evacuating the space in the event of an accidental release. Outdoor storage areas must be covered with a canopy or contain provisions for the safe removal of rainwater. In both cases, storage areas must not be connected to the foul or stormwater sewer system. 			
 Dangerous materials as defined under the DGO, including fuel, oil and lubricants, should be stored and properly labeled on site in accordance with the requirements in the DGO. If transportation of hazardous materials is necessary, hazardous materials, chemical wastes and fuel should be packed or stored in containers or vessels of suitable design and construction to prevent leakage, spillage or escape. 			
 Human waste should be discharged into septic tanks provided by the contractors and removed regularly by a hygiene services company. Refuse containers such as open skips should be provided at every work site for use by the workforce; On-site refuse collection points must also be provided. 			

* All recommendations and requirements are summarized from approved EIA resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project,



Appendix 4.1

Action and Limit Level



Action and Limit Level

Action and Limit Level for Noise Monitoring

Time Period	Action Level	Limit Level		
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received.	75 dB(A)/ 70 dB(A)/ 65 db(A) ^{Note 1}		

Note 1:

- 70dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

- If works are to be carried out during the restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

Action and Limit Level for Air Monitoring

Monitoring Location	1-hour TSP Level in μ g/m ³ 2		24-hour TSP Level in μ g/m ³		
	Action Level	Limit Level	Action Level	Limit Level	
AQM1	197	500	200	260	



Appendix 4.2

Copies of Calibration Certificates





CERTIFICATE OF CALIBRATION

Certificate No.:	15CA1203 04-02	2	Page:	1 of 2
tem tested				
Description:	Acoustical Calibr	ator (Class 1)		
Manufacturer:	Rion Co., Ltd.			
Type/Model No.:	NC-73			
Serial/Equipment No.:	10707358			
Adaptors used:	5			
tem submitted by				
Curstomer:	Lam Geotechnic	s Ltd.		
Address of Customer:				
Request No .:	-			
Date of receipt:	03-Dec-2015			
Date of test:	04-Dec-2015			
Reference equipment	used in the cali	bration		
Description:	Model:	Serial No.	Expiry Date:	Traceable to:
ab standard microphone	B&K 4180	2341427	15-Apr-2016	SCL
Preamplifier	B&K 2673	2239857	22-Apr-2016	CEPREI
Aeasuring amplifier	B&K 2610	2346941	22-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI
)igital multi-meter	34401A	US36087050	17-Apr-2016	CEPREI
udio analyzer	8903B	GB41300350	17-Apr-2016	CEPREI
Iniversal counter	53132A	MY40003662	16-Apr-2016	CEPREI
mbient conditions				

22 ± 1 °C	
50 ± 10 %	
1010 ± 5 hPa	

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B 1, and the lab calibration procedure SMTP004-CA-156.
- 2, The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3, The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Huang Jian Mir/Feng Jun Qi

05-Dec-2015



Approved Signatory:

Company Chop:

Comments: The results reported in this certificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

Date:

Soils & Materials Engineering Co., Ltd

Form No. CARP156-1/Issue 1/Rev. D/01/03/2007

Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. 028 - CAL) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific calibration activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation. Such terms of accreditation stipulate that the results shall be traceable to the International System of Units (S.I.) or recognised measurement standards. This certificate shall not be reproduced except in full.



综合試驗有限公司 SOILS & MATERIALS ENGINEERING CO., LTD.

G/F, 9/F, 12/F, 13/F. & 20/F., Leader Centre, 37 Wong Chuk Hang Road, Aberdeen, Hong Kong. 香港黄竹坑道37號利達中心地下,9樓,12樓,13樓及20樓 E-mail: smec@cigismec.com Website: www.cigismec.com Tel : (852) 2873 6860 Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.:

15CA1203 04-02

Page: 2 of 2

1. Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency	Output Sound Pressure	Measured Output	Estimated Expanded
Shown	Level Setting	Sound Pressure Level	Uncertainty
Hz	dB	dB	dB
1000	94.00	94.05	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz	STF = 0.002 dB
Estimated expanded uncertainty	0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

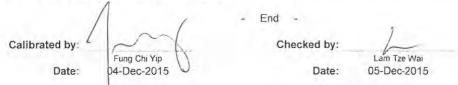
At 1000 Hz	Actual Frequency = 992.8 Hz	
Estimated expanded uncertainty	0.1 Hz	Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz	TND = 0.3 %
Estimated expanded uncertainty	0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

Soils & Materials Engineering Co., Ltd.	Form No.CARP156-2/Issue 1/Rev.C/01/05/2005
Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. 028 - C	AL) under the Hong Kong Laboratory Accreditation Scheme
(HOKLAS) for specific calibration activities as listed in the HOKLAS Directory of Accredite	ed Laboratories. The results shown in this certificate were
determined by this laboratory in accordance with its terms of accreditation. Such terms of a	ccreditation stipulate that the results shall be traceable to the
International System of Units (S.I.) or recognised measurement standards. This	is certificate shall not be reproduced except in full.



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Tel : (852) 2873 6860 Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

Certificate No.:	16CA0226 04-02	Page:	1	of	2	
Item tested						
Description:	Acoustical Calibrator (Class 1L)					
Manufacturer:	CESVA, SPAIN					
Type/Model No.:	CB-5					
Serial/Equipment No.:	0035092					
Adaptors used:	8					
Item submitted by						
Customer:	Lam Geotechnics Ltd.					
Address of Customer:	-					
Request No .:	-					
Date of receipt:	26-Feb-2016					

Date of test:

Reference equipment used in the calibration

27-Feb-2016

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	15-Apr-2016	SCL
Preamplifier	B&K 2673	2239857	22-Apr-2016	CEPREI
Measuring amplifier	B&K 2610	2346941	22-Apr-2016	CEPREI
Signal generator	DS 360	61227	16-Apr-2016	CEPREI
Digital multi-meter	34401A	US36087050	17-Apr-2016	CEPREI
Audio analyzer	8903B	GB41300350	17-Apr-2016	CEPREI
Universal counter	53132A	MY40003662	16-Apr-2016	CEPREI

Ambient conditions

Temperature:	*21 ± 1 °C	
Relative humidity:	55 ± 10 %	
Air pressure:	1010 ± 5 hPa	

Test specifications

- 1, The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156
- 2. The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- 3. The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

Details of the performed measurements are presented on page 2 of this certificate.

Huana tia Fena Jun Qi

Date: 01-Mar-2016



Approved Signatory:

Comments: The results reported in this sertificate refer to the conditon of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.

C Soils & Materials Engineering Co., Ltd.

Form No CARP156-1/Issue 1/Rev D/01/03/2007

Company Chop:

Hong Kong Accreditation Service (HKAS) has accredited this laboratory (Reg. No. 028 - CAL) under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific calibration activities as listed in the HOKLAS Directory of Accredited Laboratories. The results shown in this certificate were determined by this laboratory in accordance with its terms of accreditation. Such terms of accreditation stipulate that the results shall be traceable to the International System of Units (S.I.) or recognised measurement standards. This certificate shall not be reproduced except in full.



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Tel : (852) 2873 6860 Fax : (852) 2555 7533



CERTIFICATE OF CALIBRATION

(Continuation Page)

16CA0226 04-02

2 Page: 2 of

Measured Sound Pressure Level 1.

Certificate No.:

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	(Output level in dB re 20 μPa) Estimated Expanded Uncertainty dB
1000	94.00	94.04	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz	STF = 0.002 dB
Estimated expanded uncertainty	0 005 dB

Estimated expanded uncertainty

Actual Output Frequency 3.

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz	Actual Frequency = 1000.6 Hz		
Estimated expanded uncertainty	0.1 Hz	Coverage factor k = 2.2	

4 **Total Noise and Distortion**

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz	TND = 0.7 %
Estimated expanded uncertainty	0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.



The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.

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Calibration Certificate

Issued By: Castle Group Ltd

Date Of Issue : 26/01/15 Certificate No : 069819/63570

All instruments are tested to check compliance with particular specifications. These specifications may be appropriate British Standards, or if the instrument was not originally designed to meet any British Standard, or when the instrument was originally manufactured a relevant British Standard did not exist, the instrument will be tested to the manufacturer's original specification.

Absolute acoustic calibration of acoustic calibrators and sound level meters is checked at one or more standard frequencies against an independent sound source with calibration directly traceable to the National Physical Laboratory (NPL) in the United Kingdom. The NPL reference applicable for the calibration of the test equipment is shown below.

The performance of the instrument was determined by comparison with the manufacturers' specification as found in the instrument handbook or other technical publication. Any significant uncertainty of the measuring system will also be included.

The instrument was allowed to stabilise for a period of 30 minutes prior to measurements made.

The ambient temperature and relative humidity throughout calibration were 23 ± 2 °C and 37% RH respectively.

Instruments used to carry out this calibration are as follows: -Multifunction Calibrator 4226 Serial No: 1551589 Applicable Reference: S6312.

Subject of Calibration: GA116L Instrument: Safety / Environmental Data-logging Sound Meter Serial No: 069819

Preamplifier Data Preamplifier Type: MK580P1B Preamplifier Serial No: 3133

Microphone Data Microphone Type: MK80 Microphone Serial No: 59018

Basis Of Test: Compliance to IEC 61672-1 : 2002 Class 1, IEC 61252 : 1993

Calibrated By: H. Aistrop (Approved Signatory)

Date of Calibration: 26 Jan 2015 Completed Status: Pass

completed Status: Pass

Client: Address: O. L. Wrightson [Approved Signatory] Recalibration Due: 01 Oct 2016

Checked By:

Client Reference:

Castle Group Ltd

Salter Road, Scarborough Business Park, Scarborough, North Yorkshire YO11 3UZ United Kingdom t: +44 (0)1723 584250 f: +44 (0)1723 583728 e: sales@castlegroup.co.uk www.castlegroup.co.uk



Calibration Data for High Volume Sampler (TSP Sampler)

Location ID

: Ning Po No.2 College HVS003

Calbration Date	-	18-May-16	
Calbration Due Date	+	18-Jul-16	

CALIBRATION OF CONTINUOUS FLOW RECORDER

;

				Ambient Cond	lition							
Temperature, T _a		29	3	Kelvin Pi	ressure, P _a	- P.	1012	mmHg				
			Orlfice Tr	ansfer Standa	rd Information							
Equipment No.		Ori001		Slope, m _c	2.00072	Intercept, b	c	-0.01209				
Last Calibration Date		30-Jun-1	5		(HxPa/	1013.3 x 298	/Ta) 1/	2				
Next Calibration Date	-	30-Jun-1	6		= m.	$x Q_{std} + b_c$						
				Calibration of	TSP							
Calibration Point				(m ³ / min.) Reco		uous Flow order, W (W(P_/1013. CFM)						
1	6.0	6.0	12.0	1.736		52				52		Y-axis 51.9666
2	4.8	4.8	9.6	1.55	37	44		43.9718				
3	3.5	3.5	7.0	1.32	76	32	-	31.9795				
4	2.1	2.1	4.2	1.029	97	22		21.9859				
5	1.4	1.4	2.8	0.84	19	12		11.9923				
By Linear Regression of Y				5.4	STRUCT BU							
1.1	Slope, m			783	Intercept,	b =	24.5679					
Correlation Co	pefficient*	=	0.9	975								
Calibration	Accepted	е.	Yes	No**								

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

emarks : As p	er client's p	rovided information, the equipment rel	ference no. of the calibrated High Volume	e Sampler	has been
<u>re-a</u>	ssigned fror	n EL086 to HVS003 with respect to the	e update in quality management system.		
alibrated by	4	Kit Au	Checked by	:	Derek Lo
ate	1	18-May-16	Date	:	18-May-16



Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	Ning Po No.2 College	Calbration Date	:	13-Jul-16
ID	- 4	HVS003	Calbration Due Date	:	13-Sep-16

CALIBRATION OF CONTINUOUS FLOW RECORDER

				Ambient Condi	tion			
Temperature, T _a		302	2	Kelvin Pre	ssure, P _a		1005	mmHg
	-		Orifice Tr	ansfer Standar	d Information			
Equipment No.		Ori002		Slope, m _c	2.10714	Intercept, b	oc	-0.05158
Last Calibration Date		20-May-	16		(HxPa/	1013.3 x 298	/Ta) 1/2	
Next Calibration Date		20-May-	17	í	= <i>m</i> ,	$c x Q_{std} + b_c$		
				Calibration of	rsp			
Calibration	n Manometer Reading		Q std	Cor	ntinuous Flow		IC	
Point	H (inches of water)		(m ³ / mi	n.) R	lecorder, W	(W(P _e /101	3.3x298/T _a) ^{1/2} /35.31	
	(up)	(down)	(difference)	X-axis		(CFM)		Y-axis
1	5.9	5.9	11.8	1.6372	2	54		53.4211
2	4.7	4.7	9.4	1.463)	44		43.5283
3	3.6	3.6	7.2	1.2842	2	39		38.5819
4	2.2	2.2	4.4	1.0093	3	20		19.7856
5	1.4	1.4	2.8	0.810		14		13.8499
By Linear Regression of Y	on X							
	Slope, m	i cě.	49.1	800	Intercept,	b = -	27.0983	
Correlation Co	pefficient*	÷.	0.9	922				
Calibration	Accepted	=	Yes	No**				

* if Correlation Coefficient < 0.990, check and recalibration again.

** Delete as appropriate.

Remarks : As per client's provided information, the equipment reference no. of the calibrated High Volume Sampler has been

re-as	signed from	n EL086 to HVS003 with respect to th	e update in quality management system.		
Calibrated by	:	Kit Au	Checked by	1	Pauline Wong
Date	:	13-Jul-16	Date		13-Jul-16

Pilot Testing Limited

Room B12, Block B, 5/F, Tonic Industrial Centre, 19 Lam Hing Street, Kowloon Bay, Kowloon. Tel: (852) 2527 6691 email: info@pilot-testing.com



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Ju Operator	11 14, 2014 Tisch	A Rootsmeter Orifice I.I		138320 0005	Ta (K) - Pa (mm) -	298 - 749.3
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1 2 3 4 5	NA NA NA NA NA	NA NA NA NA NA	1.00 1.00 1.00 1.00 1.00 1.00	1.3870 0.9830 0.8760 0.8340 0.6860	3.2 6.4 7.9 8.8 12.7	2.00 4.00 5.00 5.50 8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9817 0.9775 0.9754 0.9743 0.9692	0.7078 0.9944 1.1135 1.1683 1.4128	1.4042 1.9859 2.2203 2.3286 2.8084	0.9957 0.9915 0.9894 0.9882 0.9830	0.7179 1.0086 1.1294 1.1849 1.4330	0.8919 1.2613 1.4101 1.4790 1.7837
Qstd slo intercep coeffici y axis =	ot (b) = .ent (r) =	1.99175 -0.00041 0.99991 Pa/760)(298/Ta)]	Qa slop intercep coeffici y axis =	t (b) =	1.24720 -0.00026 0.99991 Fa/Pa)]

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

Qstd = $1/m\{ [SQRT(H2O(Pa/760)(298/Ta))] - b \}$ Qa = $1/m\{ [SQRT(H2O(Ta/Pa)] - b \}$



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

	ay 20, 2010 Tisch	6 Rootsmeter Orifice I.I		438320 3166	Ta (K) - Pa (mm) -	293 - 748.03
PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.4270	3.2	2.00
2	NA	NA	1.00	1.0220	6.4	4.00
3	NA	NA	1.00	0.9100	7.9	5.00
4	NA	NA	1.00	0.8730	8.8	5.50
5	NA	NA	1.00	0.7180	12.7	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9967 0.9925 0.9904 0.9892 0.9840	0.6985 0.9711 1.0883 1.1332 1.3705	1.4150 2.0010 2.2372 2.3464 2.8299	0.9957 0.9915 0.9893 0.9882 0.9830	0.6977 0.9701 1.0872 1.1320 1.3691	0.8851 1.2517 1.3995 1.4678 1.7702
Qstd slop intercep coefficie y axis =	t (b) = ent (r) =	2.10714 -0.05158 0.99978 	Qa slop intercep coeffici y axis =	t (b) =	1.31946 -0.03226 0.99978

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta)
Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

Qstd = $1/m\{ [SQRT(H2O(Pa/760)(298/Ta))] - b \}$ Qa = $1/m\{ [SQRT H2O(Ta/Pa)] - b \}$



Appendix 5.1

Monitoring Schedules for Reporting Month and Coming Reporting Month



Contract No. CV/2012/07 Development at Anderson Road - Footbridge D and Associated Works Area Tentative Environmental Monitoring Schedule July 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26-Jun					1-Jul	2-Jul
3-Jul	4-Jul 24 hr TSP	5-Jul 1hr TSP x 3 Noise	6-Jul	7-Jul		9-Jul 24 hr TSP
	11-Jul 1hr TSP x 3 Noise	12-Jul	13-Jul	14-Jul		16-Jul 1hr TSP x 3
17-Jul	18-Jul	19-Jul			22-Jul 1hr TSP x 3 Noise	23-Jul
24-Jul	25-Jul		24 hr TSP	28-Jul 1hr TSP x 3 Noise	29-Jul	30-Jul

Noise Monitoring Station NM1: Tin Wan House NM2: Ning Po No. 2 College Air Monitoring Station AQM1: Ning Po No.2 College



Contract No. CV/2012/07 Development at Anderson Road - Footbridge D and Associated Works Area Tentative Environmental Monitoring Schedule August 2016

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31-Jul	1-Aug	24 hr TSP	3-Aug 1hr TSP x 3 Noise	4-Aug	5-Aug	6-Aug
7-Aug	24 hr TSP	9-Aug 1hr TSP x 3 Noise	10-Aug	11-Aug		13-Aug 24 hr TSP
	15-Aug 1hr TSP x 3 Noise	16-Aug	17-Aug		19-Aug 24 hr TSP	20-Aug 1hr TSP x 3
21-Aug	22-Aug	23-Aug		25-Aug 24 hr TSP	26-Aug 1hr TSP x 3 Noise	27-Aug
28-Aug	29-Aug		31-Aug 24 hr TSP			

Noise Monitoring Station NM1: Tin Wan House NM2: Ning Po No. 2 College Air Monitoring Station AQM1: Ning Po No.2 College



Appendix 5.2

Noise Monitoring Results and Graphical Presentations



Contract No. CV/2012/07 Development at Anderson Road -Footbridge D and Associated Works Area

JOB NO : CS_J2013-02_CV201207 CLIENT : LPWJV

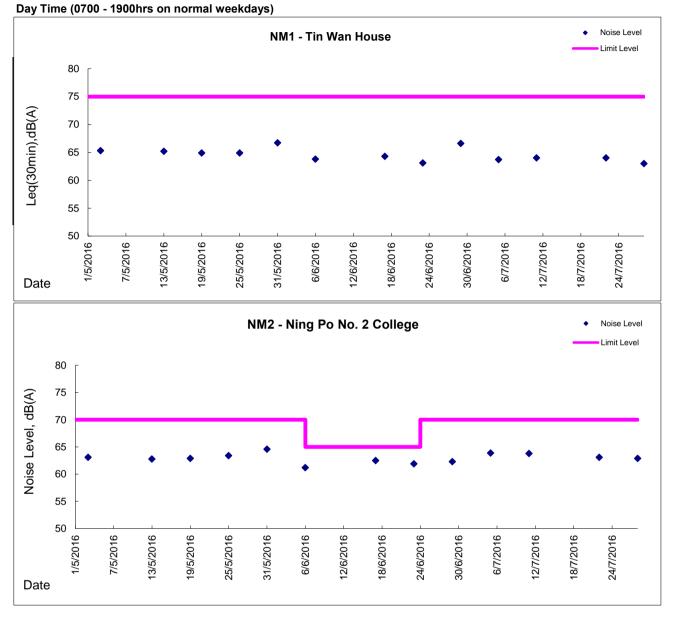
		Daytir	ne(07:00-19:00)		
Date	Time	Location	Leq (dB)	L10 (dB)	L90 (dB)
5-Jul-16	9:15	NM1	63.7	64.2	61.5
3-3ul-10	10:20	NM2	63.9	64.9	61.8
11-Jul-16	9:09	NM1	64.0	65.8	61.3
11-501-10	10:15	NM2	63.8	65.8	60.8
22-Jul-16	13:15	NM1	64.0	65.1	62.2
22-Jui-10	14:20	NM2	63.1	65.2	61.8
28-Jul-16	14:30	NM1	63.0	63.9	60.1
20-501-10	15:41	NM2	62.9	64.0	59.3

NM1 - Tin Wan House

NM2 - Ning Po No. 2 College



Graphic Presentation of Noise Monitoring Result





Appendix 5.3

Air Quality Monitoring Results and Graphical Presentations

Location: AQM1-Ning Po No.2 College

Report on 24-hour TSP monitoring Action Level (µg/m3) - 200 Limit Level (µg/m3) - 260

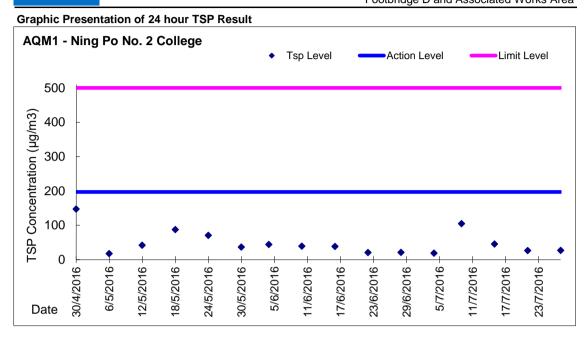
Date	Sampling	Weather	Filter	Filter Weig	ht, g	Elapse Tim	ne, hr	Sampling	Flow	/ Rate, m [®]	³/min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q _{si}	Final, Q _{sf}	Average	/olume, m	µg/m ³
4-Jul-16	8:00	Cloudy	016255	2.8146	2.8492	5200.21	5224.21	24.00	1.28	1.28	1.28	1843	19
9-Jul-16	8:00	Cloudy	016412	2.8413	3.0416	5227.21	5251.21	24.00	1.33	1.33	1.33	1916	105
15-Jul-16	8:00	Cloudy	016254	2.8220	2.9090	5254.21	5278.21	24.00	1.34	1.33	1.34	1922	45
21-Jul-16	8:00	Fine	016476	2.9252	2.9763	5281.30	5305.30	24.00	1.34	1.34	1.34	1926	27
27-Jul-16	8:00	Cloudy	016499	2.8723	2.9235	5308.30	5332.30	24.00	1.34	1.34	1.34	1925	27

Report on 1-hour TSP monitoring Action Level (µg/m3) - 197 Limit Level (µg/m3) - 500

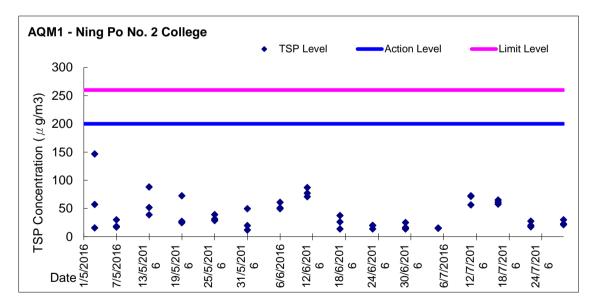
Date	Sampling	Weather	Filter	Filter Weig	ht, g	Elapse Tim	ne, hr	Sampling	Flow	/ Rate, m ³	²/min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q _{si}	Final, Q _{sf}	Average	/olume, m	µg/m ³
5-Jul-16	10:00	Cloudy	015751	2.8181	2.8193	5224.21	5225.21	1.00	1.34	1.34	1.34	80	15
5-Jul-16	11:00	Cloudy	016413	2.8413	2.8425	5225.21	5226.21	1.00	1.34	1.34	1.34	80	15
5-Jul-16	13:00	Cloudy	015749	2.8247	2.8259	5226.21	5227.21	1.00	1.34	1.34	1.34	80	15
11-Jul-16	14:00	Cloudy	016411	2.8340	2.8398	5251.21	5252.21	1.00	1.33	1.33	1.33	80	72
11-Jul-16	15:03	Cloudy	016410	2.8490	2.8547	5252.21	5253.21	1.00	1.33	1.33	1.33	80	71
11-Jul-16	16:06	Cloudy	016409	2.8426	2.8471	5253.21	5254.21	1.00	1.33	1.33	1.33	80	56
16-Jul-16	8:35	Cloudy	016473	2.9271	2.9323	5278.21	5279.21	1.00	1.33	1.33	1.33	80	65
16-Jul-16	9:38	Cloudy	016474	2.9302	2.9348	5279.21	5280.21	1.00	1.33	1.33	1.33	80	57
16-Jul-16	10:40	Cloudy	016475	2.9157	2.9206	5280.21	5281.21	1.00	1.33	1.33	1.33	80	61
22-Jul-16	13:00	Fine	016682	2.9222	2.9238	5305.30	5306.30	1.00	1.34	1.34	1.34	80	20
22-Jul-16	14:04	Fine	016253	2.8079	2.8101	5306.30	5307.30	1.00	1.34	1.34	1.34	80	27
22-Jul-16	15:16	Fine	016252	2.8135	2.8149	5307.30	5308.30	1.00	1.34	1.34	1.34	80	17
28-Jul-16	13:30	Fine	016251	2.8250	2.8267	5332.30	5333.30	1.00	1.34	1.34	1.34	80	21
28-Jul-16	14:40	Fine	016250	2.8182	2.8206	5333.30	5334.30	1.00	1.34	1.34	1.34	80	30
28-Jul-16	15:55	Fine	016249	2.8189	2.8207	5334.30	5335.30	1.00	1.34	1.34	1.34	80	22

am

Contract No. CV/2012/07 Development at Anderson Road -Footbridge D and Associated Works Area



Graphic Presentation of 1 hour TSP Result





Appendix 6.1

Event Action Plans



Event/Action Plan for Construction Noise

EVENT		A	CTION	
	ET	IC(E)	ER	CONTRACTOR
Exceedance for Action Level	 Notify IC(E) and Contractor; Carry out investigation; Report the results of investigation to IC(E) and Contractor; Discuss with Contractor and formulate remedial measures;; Increase monitoring frequency to check mitigation effectiveness. 	 Review the analysed results submitted by ET; Review the proposed remedial measures by the Contractor and advise ER accordingly; Supervise the implementation of remedial measures. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented. 	 Submit noise mitigation proposals to IC(E); Implement noise mitigation proposals.
Exceedance for Limited Level	 Notify IC(E), ER, EPD and Contractor; Identify sources; Repeat measurements to confirm finding; Increase monitoring frequency; Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; Inform IC(E), ER and EPD the causes and actions taken for the exceedances; Assess effectiveness of Contractor's remedial actions and keep IC(E), 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 ER accordingly. 	 Confirm receipt of notification of failure in writing; Notify Contractor; Require Contractor to propose remedial measures for the analysed noise problem; Ensure remedial measures are properly implemented; If exceedance continues, consider what portion of the work is responsible and instruct 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 IC(E) 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.



Event / Action Plan for Construction Air Quality

EVENT		ACTION		
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	 Identify source; Inform IC(E) 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.
2. Exceedance for two or more consecutive samples	 Identify source; Inform IC(E) and ER; Repeat measurements to confirm findings; Increase monitoring frequency to daily; Discuss with IC(E) and Contractor for remedial actions required; If exceedance continues, arrange meeting with IC(E) 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 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. 	 Submit proposals for remedial actions to IC(E) within 3 working days of notification; Implement the agreed proposals; Amend proposal if appropriate.
LIMITED LEVEL		1		
1. Exceedance for one sample	 Identify source; Inform ER, Contractor and EPD; Repeat measurement to confirm finding; Increase monitoring frequency to daily; Assess effectiveness of Contractor's remedial actions and keep IC(E), 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.
2. 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 consolidation with the IC(E), 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 IC(E) 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.



Appendix 6.2

Summary for Notification of Exceedance_Air and Noise

Summary for Notification of Exceedance

Ref. No.	Date	Time	Location	Measured TSP Level	Unit	Action Level	Limit Level	Follow-up action	
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

Summary for Notification of Exceedance

Ref. No.	Date	Time	Location	Construction Noise Level	Unit	Action Level	Limit Level	Follow-up action
N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A



Appendix 8.1

Complaint Log



Environmental Complaints Log

	Date of omplaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
140813 13 A	Aug 2014	Resident complained via hotline by RE	The slope opposite to Tin Wan House, Shun Tin Estate, Kowloon	Noise was emanated from the construction site at the slope opposite to Tin Wan House, Shun Tin Estate, Kowloon at around 1620 hrs on 13 Aug 2014 and requested follow up action by relevant department.	2)	RSS notified ET on 15 Aug 2014 ET confirmed with site staff the major noise generating construction activities undertaken at works area at the slope opposite to Tin Wan House including slope works After reviewing the noise monitoring data at monitoring stations (NM1 - Tin Wan House and NM2 - Ning Po No.2 College), no limit level exceedances were recorded during routine noise monitoring event on 14 Aug 2014. As similar construction works activities conducted on 13 Aug 2014 was continued across the above monitoring period, the noise emanated from the construction activities under Contract CV/2012/07 was considered to comply with the statutory requirement. In addition, weekly environmental site inspection was conducted on 12 Aug 2014 at around 10:00. According to the inspection record, no particular observation regarding noise impact was recorded and the mitigation measures including erection of temporary noise barrier was observed in place.	Closed



Appendix 9.1

Construction Programme

Descention for Society Ed. Use of Normal Activity Ed. <th< th=""><th></th><th>Task Name</th><th>Duration</th><th>Start</th><th>Finish Predecessors</th><th>Successors To</th><th>otal Slack D</th><th>2013 Jan FebMar Apr May Jun Jul Aug Sep Oct Nov Dec Jan FebMar Apr May Jun Jul Aug Sep Oct Nov Dec</th><th>2015 Jan FebMarlAmMay Juni Jul AudSenOctNovDed Jan FebMarlAmMay Juni Jul AudSenOct</th></th<>		Task Name	Duration	Start	Finish Predecessors	Successors To	otal Slack D	2013 Jan FebMar Apr May Jun Jul Aug Sep Oct Nov Dec Jan FebMar Apr May Jun Jul Aug Sep Oct Nov Dec	2015 Jan FebMarlAmMay Juni Jul AudSenOctNovDed Jan FebMarlAmMay Juni Jul AudSenOct
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15.5 Desc. Pendry at Houndy, 40 Blood 4 way None State at Houndy, 140 Blood $2 + 4 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	1234					46,47			
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12.15 Creativet RC Lthl Tower and Bealining Wall 80 days See 100/14 See 25007/4 18 20.41 491 days 12.16 Ever Seelwork for Life Staft 70 days Mon 2800/14 Tie 2207/14 12.12 491 days 12.17 Insultation of Lift 100 days Wei 19/1/14 20 days 23/27/14 91 days 12.18 Moze Insultation 100 days Tie 29/1/14 Vol 19/1/14 20 days 23/27/14 91 days 12.19 T & C of M&E Exautheman 100 days Tie 29/1/14 Vol 19/1/14 20 days 23/27/14 S50 days 12.10 Feinsing and Metal Works 100 days New 100/1015 S50 days S50 days 12.11 Medeatiment and material works 30 days New 100/1014 28/28/28/80 days S50 days 12.22 Exervation for Ruf forting 100 days New 100/1017 28/28/28/80 days S98 days 12.23 Canavita for Ruf forting 100 days Wei 100/11/3 28/28/28/80 days 590 days 12.24 Ccanavita for Ruf forting 100 days Wei 100/11/3 28/28/28/80 days 597 days 12.25 Canavita for Ruf forting 10	1.2.1.3	Rock Joint Mapping for founding material of raft footing	150 days	Wed 05/06/13					
12.1.5 Construct Lin Lin Mark Notions An 100/0 Te 2200714 9 4.0.5 401 days 12.1.6 Exci Scherbed Keir Lin Mark 100 days Wed 1240714 Wed 1240714 91 days 401 days 12.1.7 Installation of Lift 100 days Wed 1240714 Wed 12911/14 2.0 227945 401 days 12.1.7 Installation of Lift 100 days The 200714 The 200714 The 200714 500 days 500 days 12.1.8 M&E Installation 100 days Wed 1201175 2122 242FFr7 days 550 days 12.1.9 The Cof M&E Enginement 100 days Wed 1201175 21252 242FFr7 days 550 days 12.1.10 Finishing and Menil Works 100 days Wed 1201173 2125-801 300 days 500 days 12.2.1 Mefed diamenent and material submission 30 days The 20070141 2858,2658-60 days 500 days 12.2.2 Exervation for Ref forolang motions of raft fooding 100 days Wed 1201123 The 20070141 2858,2658-60 days 300 days 12.2.2 Construct Ref fooding 100 days Wed 1301213 The 20070141/2785 29 379 d	1.2.1.4		30 days						
12.15 Executing intervent ind Lin statil 100 days Note 200/14 10 100 days 100 days 100 days 400 days 401 days	1.2.1.5	Construct RC Lift Tower and Retaining Wall							
12.1.7 Instantion for Lift 100 days Wei 250/1/4 Twe 25711/4 20.21F4-5 days 530 days 12.1.8 M&E Installation 100 days Twe 25711/4 20.21F4-5 days 530 days 12.1.9 T & C of M&E Equipment: 30 days Wei 260/11/4 Fit 0201/15 21.2.2 24FF+7 days 550 days 12.1.0 Fusishing and Meal Works 100 days Wei 160/01/5 212.2 24FF+7 days 550 days 12.1.0 Fusishing and Meal Works 100 days Wei 160/01/5 439 days 550 days 12.2.1 Method statement and material submission 30 days Twe 01/06/15 439 days 12.2.2 Exervation for Suft forting 100 days Wei 18/1/13 The 29/01/14 74 2885.2658-60 days 12.2.2 Exervation for Suft forting 100 days Wei 18/1/13 The 29/01/14 74 2885.2658-60 days 379 days 12.2.2 Exervation for Suft forting 100 days Wei 18/1/13 The 29/01/14 74 2885.2658-60 days 379 days 12.2.4 Canstruck RL fL fit Tower and Resining Wall 80 days Fit 06/06/14 Wei 18/1/14 3/9 days 122.4 Canstruck RL fit forting 100 days <td>1.2.1.6</td> <td>Erect Steelwork for Lift Shaft</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1.2.1.6	Erect Steelwork for Lift Shaft							
2 1.2.1.8 INEC. 2011/14 INEC. 2011/14 (2011/15 21.22) 2.4/FF+7 days 553 days 3 1.2.1.9 T & C of M&E Equipment 30 days Wed 2011/14 Fin 6201/15 21.22 2.4/FF+7 days 553 days 4 1.2.1.0 Finishing and Metal Works 100 days Wed 1400/1/5 21.ES-60 days.22/FF-67 days 550 days 5 1.2.2 Lik Tower D-B 480 days Tue 08/10/13 Tue 1211/13 27SS-60 days 593 days 7 1.2.2.2 Excavation for Raft footing 100 days Wed 180/1/14 288S2.6SS-60 days 379 days 8 1.2.2.5 Construct Raft footing 100 days Wed 180/1/4 27/SS 29 379 days 9 1.2.2.4 Construct Raft footing 100 days Wed 100/14 29 31.41 379 days 9 1.2.2.5 Construct Raft footing 100 days Wed 100/14 29 31.41 379 days 9 1.2.2.6 Erect Steelwook for Lift Shaft 70 days 31.41 379 days 11.09/1 days 11.09/14 29 31.24.3 379 days 1 1.2.2.6 Erect Steelwok for Lift Shaft 70 days 31.3797 da	1 1.2.1.7	Installation of Lift	100 days	Wed 23/07/14	Wed 19/11/14 20	days,23,24FS-60	491 days		
12.1.0 Note finantiation 100 days Note 2001/15 12.2.0 24FF+7 days 553 days 12.1.10 Finshing and Metal Works 100 days Wed 14001/15 21F5-60 days.22FF-60 days.22FF-60 days.22FF-60 days.22FF-60 550 days 5 1.2.1 Metod Statement and material submission 30 days Tue 08/10/13 Tue 10/10/15 439 days 6 1.2.1 Metod Statement and material submission 30 days Tue 08/10/13 Tue 10/11/3 172FS-60 days 7 1.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/04/14 7/15 2853.2685-60 days 379 days 8 1.2.2.5 Construct Raft footing 100 days Wed 18/12/13 Tue 29/04/14 2/75S 29 379 days 9 1.2.2.4 Construct Raft footing 100 days Wed 10/09/14 29 31.41 379 days 9 1.2.2.5 Construct Raft footing 100 days Wed 00/0/14 29 31.41 379 days 1 1.2.2.6 Erect Steelwork for Lift Staft 70 days 31.41 379 days 1 1.2.2.6 Erect Steelwork for Lift Staft 70 days 31.3377							-		
1.2.1.10 Finishing and Metal Works 100 days Mon 1509/14 Wed 140/1/5 2/ES-60 days.22FS-60 days.22FF-7 days 550 days 1.2.2 Lift Tower D-B 480 days Tue 08/10/13 Mon 0106/15 439 days 1.2.2.1 Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days 1.2.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 290/1/4 74 28SS.26SS-60 days 379 days 1.2.2.4 Construct Raft footing 100 days Wed 18/12/13 Tue 290/1/4 72/1SS 29 379 days 1.2.2.4 Construct Raft footing 100 days Wed 18/12/13 Tue 290/1/4 2/TSS 29 379 days 1.2.2.5 Construct Raft footing 100 days Wed 18/12/13 Tue 290/1/4 2/TSS 29 379 days 1.2.2.5 Construct Raft footing 30 days Fino 05/6/14 28 30 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 31.41 379 days 31.41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 31.41 379 days 379 days 31.41 <td< td=""><td>1.2.1.8</td><td>M&E Installation</td><td>100 days</td><td>Tue 29/07/14</td><td>Tue 25/11/14 20,21FF+5 days</td><td>23,24FS-60 days</td><td></td><td></td><td></td></td<>	1.2.1.8	M&E Installation	100 days	Tue 29/07/14	Tue 25/11/14 20,21FF+5 days	23,24FS-60 days			
1.2.2 Lift Tower D-B 480 days Tue 08/10/13 Mon 01/06/15 439 days 1.2.1 Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days 1.2.2.1 Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days 1.2.2.2 Excavation for Rati footing 100 days Wed 18/12/13 Tue 29/04/14 74 28SS.26SS-60 days 379 days 1.2.2.4 Construct Raft footing 100 days Wed 18/12/13 Tue 29/04/14 72 28SS.26SS-60 days 379 days 1.2.2.5 Construct Raft footing 30 days Wed 30/04/14 Thu 05/06/14 28 30 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 31/14 379 days 11/14 10/06/14 28 30 32,233 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 31/24 33/278-56-60 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 31/24 33/278-56-60 379 days 1.2.2.7 Installation of Lift 100 days Tue 0/02/14/30 32,233	1.2.1.9	T & C of M&E Equipment	30 days	Wed 26/11/14	Fri 02/01/15 21,22	24FF+7 days	0.000		
And built Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days Variation I.2.2.1 Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days Variation I.2.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/04/14 74 28SS,26SS-60 days 379 days Variation I.2.2.3 Rock Joint Mapping for founding material of raft footing 100 days Wed 18/12/13 Tue 29/04/14 27SS 29 379 days Variation I.2.2.5 Construct Raft footing 30 days Fit i 0.00/04/1 Wed 30/12/14 30 32.33 379 days Variation I.2.2.6 Erect Steelwork for Lift Shaft Tu 0.01/02/1 Mon 13/04/15 31 33FF 34.35FS-60 379 days Variation I.2.2.7 Installation of Lift Ito 00 days Tu 0.01/02/14 Mon 13/04/15 31 33FF 34.35FS-60 379 days	1.2.1.10	Finishing and Metal Works	100 days	Mon 15/09/14	days,22FS-60 days,23FF+7		550 days		
1.2.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/04/14 74 28SS,26SS-60 days 379 days 8 1.2.2.3 Rock Joint Mapping for founding material of raft footing 100 days Wed 18/12/13 Tue 29/04/14 27SS 29 379 days 9 1.2.2.4 Construct Raft footing 30 days Wed 30/04/14 Thu 05/06/14 28 30 379 days 10 1.2.2.5 Construct RC Lift Tower and Retaining Wall 80 days Fri 06/06/14 Wed 03/12/14 30 32.33 379 days 11 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 11/09/14 Wed 03/12/14 30 32.33 379 days 12 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF;34;35FS-60 379 days	5 1.2.2	Lift Tower D-B	480 days	Tue 08/10/13	Mon 01/06/15		439 days		
1.2.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/04/14 74 28SS,26SS-60 days 379 days 1.2.2.3 Rock Joint Mapping for founding material of raft footing 100 days Wed 18/12/13 Tue 29/04/14 27SS 29 379 days 1.2.2.4 Construct Raft footing 30 days Wed 30/04/14 Thu 05/06/14 28 30 379 days 1.2.2.5 Construct RC Lift Tower and Retaining Wall 80 days Fri 06/06/14 Wed 10/09/14 29 31,41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 11/09/14 Wed 03/12/14 30 32,33 379 days 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF.34,35FS-60 379 days	1.2.2.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/13 27SS-60 days		893 days		
1.2.2.4 Construct Raft footing 30 days Wed 30/04/14 Thu 05/06/14 28 30 379 days 1.2.2.5 Construct RC Lift Tower and Retaining Wall 80 days Fri 06/06/14 Wed 10/09/14 29 31,41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 11/09/14 Wed 03/12/14 30 32,33 379 days 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days	1.2.2.2	Excavation for Raft footing	100 days	Wed 18/12/13	Tue 29/04/14 74	28SS,26SS-60 days	379 days		
1.2.2.5 Construct RC Lift Tower and Retaining Wall 80 days Fri 06/06/14 Wed 10/09/14 29 31,41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 11/09/14 Wed 03/12/14 30 32,33 379 days 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days	3 1.2.2.3	Rock Joint Mapping for founding material of raft footing	100 days	Wed 18/12/13	Tue 29/04/14 27SS	29	379 days		
1.2.2.5 Construct Re Lift Fower and Retaining wait 60 days Fit 000014 00 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 11/09/14 Wed 03/12/14 30 32,33 379 days 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days	1.2.2.4	Construct Raft footing	30 days	Wed 30/04/14	Thu 05/06/14 28	30	379 days	*	
1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days	1.2.2.5	Construct RC Lift Tower and Retaining Wall	80 days	Fri 06/06/14	Wed 10/09/14 29	31,41	379 days		
100 days 110 04/12/14 1000 15/04/15 51 557 0 577 0 37	1 1.2.2.6	Erect Steelwork for Lift Shaft	70 days	Thu 11/09/14	Wed 03/12/14 30	32,33	379 days		
days,54	32 1.2.2.7	Installation of Lift	100 days	Thu 04/12/14	Mon 13/04/15 31	33FF,34,35FS-60	379 days		
						days,54			

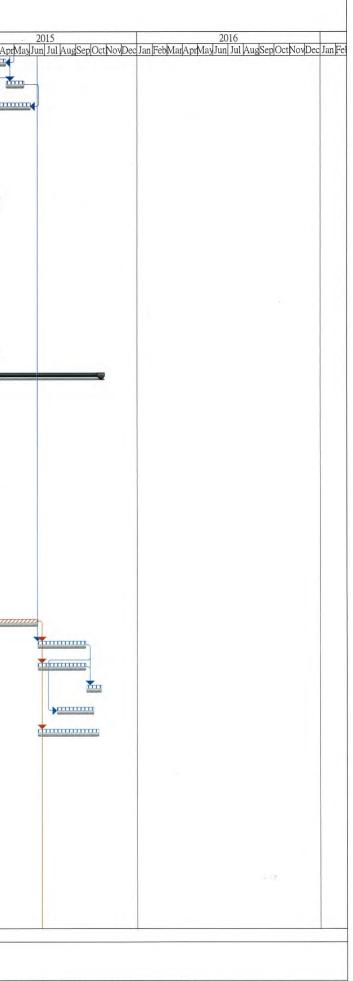
and Finish On 30-Nov-2016 (1399 days) Duration as shown by week day

				Dev	Master velopment at A	nderson Roa	For Contract No. CV/2012/07 ad - Footbridge D and Associated Works (Rev. 2)
WBS T	ask Name	Duration	Start	Finish Predecessors	Successors	Total Slack	2013 Dec Jan FebMar AprMayJun Jul AugSepOctNovDec Jan FebMar AprMayJun Jul AugSepOctNovDec Jan Fe
1.2.2.8	M&E Installation	100 days	Thu 04/12/14	Mon 13/04/15 32FF,31	34,35FS-60 days		
1.2.2.9	T & C of M&E Equipment	30 days	Tue 14/04/15	Tue 19/05/15 32,33	35FF+7 days	446 days	
5 1.2.2.10	Finishing and Metal Works	100 days	Fri 30/01/15	Mon 01/06/15 32FS-60 days,33FS-60 days,34FF+7 days		443 days	
5 1.2.3	Bridge Deck D-AB	563 days	Wed 24/04/13	Wed 25/03/15		188 days	
7 1.2.3.1	Method statement and material submission	30 days	Wed 24/04/13	Thu 30/05/13 38SS-60 days		1029 days	
8 1.2.3.2	Ordering of Material	100 days	Mon 08/07/13	Tue 05/11/13 9	39,37SS-60 days	128 days	
1.2.3.3	Fabrication of Steel work off site	100 days	Wed 06/11/13	Thu 13/03/14 38	40,80	128 days	
1.2.3.4	Connecting the Bridge on site	60 days	Fri 14/03/14	Wed 28/05/14 39	41	582 days	
1 1.2.3.5	Erecting Steel bridge frame	7 days	Thu 11/09/14	Thu 18/09/14 40,30,19	89,42	496 days	
2 1.2.3.6	Irrigation system installation	60 days	Fri 19/09/14	Sat 29/11/14 41	43	496 days	
3 1.2.3.7	Roofing and finishing works on bridge	90 days	Mon 01/12/14	Wed 25/03/15 42		496 days	
4 1.2.4	Lift Tower D-C	726 days	Thu 02/05/13	Tue 20/10/15		0 days	
5 1.2.4.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/13 48SS-60 days		893 days	
5 1.2.4.2	Predrill & determine F/L (included all necessary preparation and test)	40 days	Thu 02/05/13	Wed 19/06/13 6	47,70,73	0 days	
1.2.4.3	Demolish the exixting structure	30 days	Thu 20/06/13	Fri 26/07/13 46,6	48	120 days	
3 1.2.4.4	Construct Pre-bored H pile (60 no) (included all necessary preparation and test)	160 days	Wed 18/12/13	Sat 12/07/14 47,72,74	49,45SS-60 days	s 0 days	Bored pile machine - A (*
1.2.4.5	Pile Testing	40 days	Mon 14/07/14	Thu 28/08/14 48	50) 0 days	
) 1.2.4.6	Construct pile cap	30 days		Mon 06/10/14 49	51	0 days	
1 1.2.4.7	Construct superstructure to level 103.8	30 days	Tue 07/10/14	Mon 10/11/14 50	52	2. 0 days	
2 1.2.4.8	Backfilling above pile cap	12 days	Tue 11/11/14	Mon 24/11/14 51	53	0 days	
3 1.2.4.9	Construct superstructure level 103.8~158.05	160 days	Tue 25/11/14	Mon 15/06/15 52	54,58,55,82	2. 0 days	Tunnan ta
4 1.2.4.10	Installation of Lift	80 days	Tue 16/06/15	Sat 19/09/15 53,21,32	56,57FS-49 days	s 327 days	
5 1.2.4.11	M&E Installation	80 days	Tue 16/06/15	Sat 19/09/15 53	56	5 327 days	
6 1.2.4.12	T & C of M&E Equipment	24 days	Mon 21/09/15	Tue 20/10/15 54,55		327 days	
7 1.2.4.13	Roofing Connection Tower D-B & D-C	60 days	Fri 24/07/15	Mon 05/10/15 54FS-49 days		340 days	
3 1.2.4.14	Finishing and Metal Works	100 days	Tue 16/06/15	Thu 15/10/15 53		331 days	
9 1.2.5	Pier D-D	450 days	Thu 18/07/13	Mon 02/02/15		169 days	
1.2.5.1	Method statement and material submission	30 days	Thu 18/07/13	Thu 22/08/13 61SS-60 days		960 days	
1 1.2.5.2	Slope Cutting	10 days	Sat 28/09/13	Thu 10/10/13 10	62,60SS-60 days	s 109 days	
2 1.2.5.3	Working platform for mini pile	40 days	Fri 11/10/13	Wed 27/11/13 61	63	3 109 days	and the second sec
3 1.2.5.4	Predrill & determine F/L (included all necessary preparation and test)	20 days	Thu 28/11/13	Fri 20/12/13 62	64	4 109 days	··· · · ·
1.2.5.5	Construct mini pile (30 nos) (included all necessary preparation and test)	90 days	Sat 21/12/13	Thu 17/04/14 63	65	5 109 days	Mini pile machine - A (1no)
ate: Mon 10/06		Milestone 🛇			Milest		Baseline
epared By: T.L.	Lo Baseline	Summary	/	Critical Task	Summ	nary 🛡	Progress

and Finish On 30-Nov-2016 (1399 days) Duration as shown by week day

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Landscape & Establishment Work Not Shown For Clarity

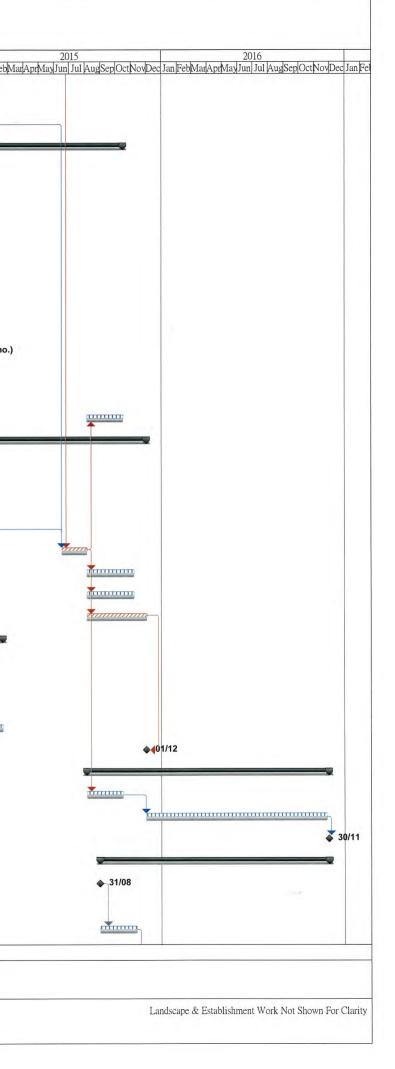
Master Programme For Contract No. CV/2012/07	
Development at Anderson Road - Footbridge D and Associated Wo	rks
(Rev. 2)	

								(Rev. 2)			
ID	WBS	Fask Name	Duration	Start	Finish Predecessors	Successors	Fotal Slack	2 Dec Jan FebMarAprMayJur	013 1 Jul AugSepOctNovDec	2014 2 Jan FebMarAprMay Jun Jul Aug	SepOctNovDec Jan FebN
65	1.2.5.6	Pile Testing	40 days	Tue 22/04/14		66	109 days				
66	1.2.5.7	Construct pile cap	100 days	Tue 10/06/14	Thu 09/10/14 65	67	109 days				
67	1.2.5.8	Construct pier to level 152.1	90 days	Fri 10/10/14	Mon 02/02/15 66	82	109 days				
68	1.2.6	Slope Works	742 days	Mon 08/04/13	Thu 15/10/15		60 days	-			
69	1.2.6.1	Method statement and material submission	30 days	Mon 08/04/13	Mon 13/05/13 70SS-60 days		1043 days				
70	1.2.6.2	Slope Cutting, Soil Nail and Raking Drain (Row D-F) (included all necessary preparation and test) 31nos	50 days	Thu 20/06/13	Mon 19/08/13 46	71SS,72,69SS-60 days	50 days		Soil nail mach	ine-A (1no.)	
71	1.2.6.3	Construct Cascade and down pipe	120 days	Thu 20/06/13	Tue 12/11/13 70SS		893 days				
72	1.2.6.4	Slope Cutting, Soil Nail and Raking Drain (Row C-A) (included all necessary preparation and test) 40nos	50 days	Tue 20/08/13	Sat 19/10/13 70	48	50 days		Soil na	il machine-A (1no.)	
73	1.2.6.5	Slope Cutting, Soil Nail and Raking Drain (Row S-L) (included all necessary preparation and test) 103nos	90 days	Thu 20/06/13	Mon 07/10/13 46	74	0 days	Ĩ	Soil nail	machine-В (1no.)	
74	1.2.6.6	Slope Cutting, Soil Nail and Raking Drain (Row K-G) (included all necessary preparation and test) 102nos	60 days	Tue 08/10/13	Tue 17/12/13 73	75,27,48	0 days		Tanaa	Soil nail machine-B (1no.),Soi	l nail machine-A (1no.)
75	1.2.6.7	Construction of Inspection Access to Slope	120 days	Wed 18/12/13	Fri 23/05/14 74		743 days				
1.1.2	1.2.6.8	Construction of Footpath (Portion B)	60 days				331 days				
	1.2.7	Bridge Deck D-CE	and the second second		Tue 01/12/15		208 days	_			
	1.2.7.1	Method statement and material submission	30 days	Wed 24/04/13	Thu 30/05/13 79SS-60 days		1029 days				
	1.2.7.2	Ordering of Material	180 days			80,78SS-60 days	148 days				
	1.2.7.3	Fabrication of Steel work off site	150 days		Mon 15/09/14 79,39	81	128 days			1	B 1
	1.2.7.4	Connecting the Bridge on site	90 days	Tue 16/09/14		82	128 days			· · · · · ·	*
	1.2.7.5	Erecting Steel bridge frame	40 days	Tue 16/06/15		83,85,93,76,84	0 days				
	1.2.7.6	M&E Installation	78 days	Wed 05/08/15	Fri 06/11/15 82		313 days				
	1.2.7.7	Irrigation system installation	78 days	Wed 05/08/15	Fri 06/11/15 82		313 days				
	1.2.7.8	Roofing and finishing works on bridge	99 days	Wed 05/08/15	Tue 01/12/15 82	91FF	0 days				
86	1.2.8	Drainage Works at Shun On Road	437 days	Tue 20/08/13	Wed 18/02/15		526 days				
	1.2.8.1	Method statement and material submission	30 days	Tue 20/08/13	Tue 24/09/13 88SS-60 days		933 days				
	1.2.8.2	DN1500 drainage construction	90 days	Fri 01/11/13	Tue 25/02/14 3	87SS-60 days	813 days				
		DN375 and DN225 Drainage construction	60 days		Sat 29/11/14 41	90	526 days				
90	1.2.8.4	Road Works and Reinstatement Works	60 days		Wed 18/02/15 89		526 days				
91	1.2.9	Completion of Section 1	0 days	Tue 01/12/15	Tue 01/12/15 85FF		0 days				
	1.3	Section 2	390 days	Wed 05/08/15	Wed 30/11/16		1 day				
	1.3.1	Landscape Softworks for Footbridge D	60 days	Wed 05/08/15	Thu 15/10/15 82	94	42 days				
94	1.3.2	Establishment Works for Footbridge D	289 days			95	4 days				
	1.3.3	Completion of Section 2	0 days		Wed 30/11/16 94		1 day				
	1.4	Section 3	369 days	Mon 31/08/15	Wed 30/11/16		0 days				
	1.4.1	Notified by The Engineer for commencing (Subject to Excision)	0 days	Mon 31/08/15	Mon 31/08/15	98	0 days	5			
98	1.4.2	Landscape Softworks for Footbridge D	60 days	Mon 31/08/15	Wed 11/11/15 97	99	20 days	5			
	: Mon 10/0 ared By: T.L		ne Milestone 🔷 ne Summary 🔺			Milesto		Basel Progr			

Assume Contract Start On 31-Jan-2013 and Finish On 30-Nov-2016 (1399 days) Duration as shown by week day

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Lam - Po Wing Joint Venture



					De	Maste evelopment at	r Programme Anderson Ro	For Contract No. ad - Footbridge D (Rev. 2)	CV/2012/07 and Associated Wo	orks		
ID WBS 99 1.4.3	Task Name	Duration	Start	Finish	Predecessors	Successors	Total Slack		2013 Jun Jul AugSepOctNovDe	2014 c Jan FebMarAprMayJun Jul AugSepOctNovD	2015 ec Jan FebMarAprMayJun Jul AugSepOctNovDet	2016 Jan FebMarAprMayJun Jul AugSepOctNovDec Jan
99 1.4.3	Landscape Softworks and Establishment Works for Footbridge A, B and C	289 days	Thu 12/11/1	5 Mon 07/11	/16 98	10	00 20 day	5				
100 1.4.4	Completion of Section 3	0 days	Wed 30/11/1	6 Wed 30/11	/16 99		0 day	5		a		3 0/1

Date: Mon 10/06/13	Baseline Milestone 🛇	Task	Milestone	٠	Baseline		
Prepared By: T.L. Lo	Baseline Summary	Critical Task	Summary	-	Progress		
Assume Contract Start On 31-Jan-2013 and Finish On 30-Nov-2016 (1399 days) Duration as shown by week day			Lam -	Po Wing	g Joint Vent	ture	

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Landscape & Establishment Work Not Shown For Clarity