

Lam Environmental Services Limited

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

CONTRACT NO: CV/2012/07

DEVELOPMENT AT ANDERSON ROAD -FOOTBRIDGE D AND ASSOCIATED WORKS AREA

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

-JANUARY 2015 -

CLIENTS:

Lam-Po Wing Joint Venture

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CERTIFIED BY:

Derek Lo Environmental Team Leader

DATE:

10 February 2015



Ref.: OAPANDSNEM00_0_1384L.15

12 February 2015

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,

Re: Contract No. CV/2012/07 Development at Anderson Road Footbridge D and Associated Works Area <u>Monthly EM&A Report for January 2015</u>

Reference is made to the Environmental Team's submission of the draft Monthly EM&A Report for January 2015 received by e-mail on 12 February 2015 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 kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

David Yeung Independent Environmental Checker

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 – January 2015 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 19th month of EM&A report presenting the environmental monitoring findings and information recorded during the period of 1 January 2015 to 31 January 2015. The cut-off date of reporting is at the end of each reporting month.

Construction Activities for the Reported Period

- Piling works
- Construction of retaining wall

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

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

Site Inspections and Audit

v. 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

- vi. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:
 - Piling works
 - Construction of retaining wall
 - Excavation of Φ 1500 trench



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 January 2015 to 31 January 2015. 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	Kenneth Lee	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			
ENVIRON	Independent	Independent	Mr. David	3465 2888	3465
Hong Kong	Environment	Environment	Yeung		2899
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:
 - Piling works
 - Construction of retaining wall
- 2.3.4. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:
 - Testing for Piling
 - Construction of retaining wall
 - Construction of Φ 1500 tranch



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



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 (L_{eq}). L_{eq (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, L_{eq (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)
9-Jan-15	8:45	NM1	64.7
9-Jan-15	9:50	NM2	63.4
15-Jan-15	8:50	NM1	60.4
15-Jan-15	10:00	NM2	62.1
21-Jan-15	13:00	NM1	60.1
21-Jan-15	13:40	NM2	65.2
07 Jon 15	10:00	NM1	62.9
27-Jan-15	11:00	NM2	60.7
	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.

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



Lam Environmental Services Limited

Date	Time	TSP Level, (µg /m³)	
2-Jan-15	8:00	102	
8-Jan-15	8:00	116	
14-Jan-15	8:00	51	
20-Jan-15	8:00	125	
26-Jan-15 8:00		83	
31-Jan-15 8:00		86	
Actio	n Level	200	
Limit	t Level:	260	

Date Time		TSP Level, (μg /m³)	
3-Jan-15	8:45	184	
3-Jan-15	9:49	196	
3-Jan-15	10:55	189	
9-Jan-15	8:15	95	
9-Jan-15	9:35	121	
9-Jan-15	10:05	180	
15-Jan-15	8:30	60	
15-Jan-15	9:37	38	
15-Jan-15	10:42	30	
21-Jan-15	8:40	189	
21-Jan-15	9:48	191	
21-Jan-15	13:00	188	
27-Jan-15	8:30	101	
27-Jan-15	9:34	83	
27-Jan-15 10:45		135	
Actio	n 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 *Appendix 5.3*.



5.3 Waste Monitoring Results

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

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

Waste Type	Quantity this month	Cumulative Quantity-to-Date	Disposal / Dumping Grounds
Inert C&D materials disposed, m ³	0.0654	7.84133	ТКО137
Inert C&D materials recycled, m ³	0	0	N/A
Non-inert C&D materials disposed, m ³	0.0027	0.01086	ТКО137
Non-inert C&D materials recycled, kg	0	0	N/A
Chemical waste disposed, kg	0	0	N/A



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 8.

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 sit inspections on 6, 13, 20 and 27 January 2015 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*.

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

Date	Observations	Follow-Up
6-Jan-2015	No particular finding	N/A
13-Jan-2015	No particular finding	N/A
20-Jan-2015	The contractor was reminded to label all chemical/fuel containers and place it properly on a drip-tray (Portion C2)	Drip-tray was provided.
27-Jan-2015	No particular finding	N/A



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
January 2015	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		



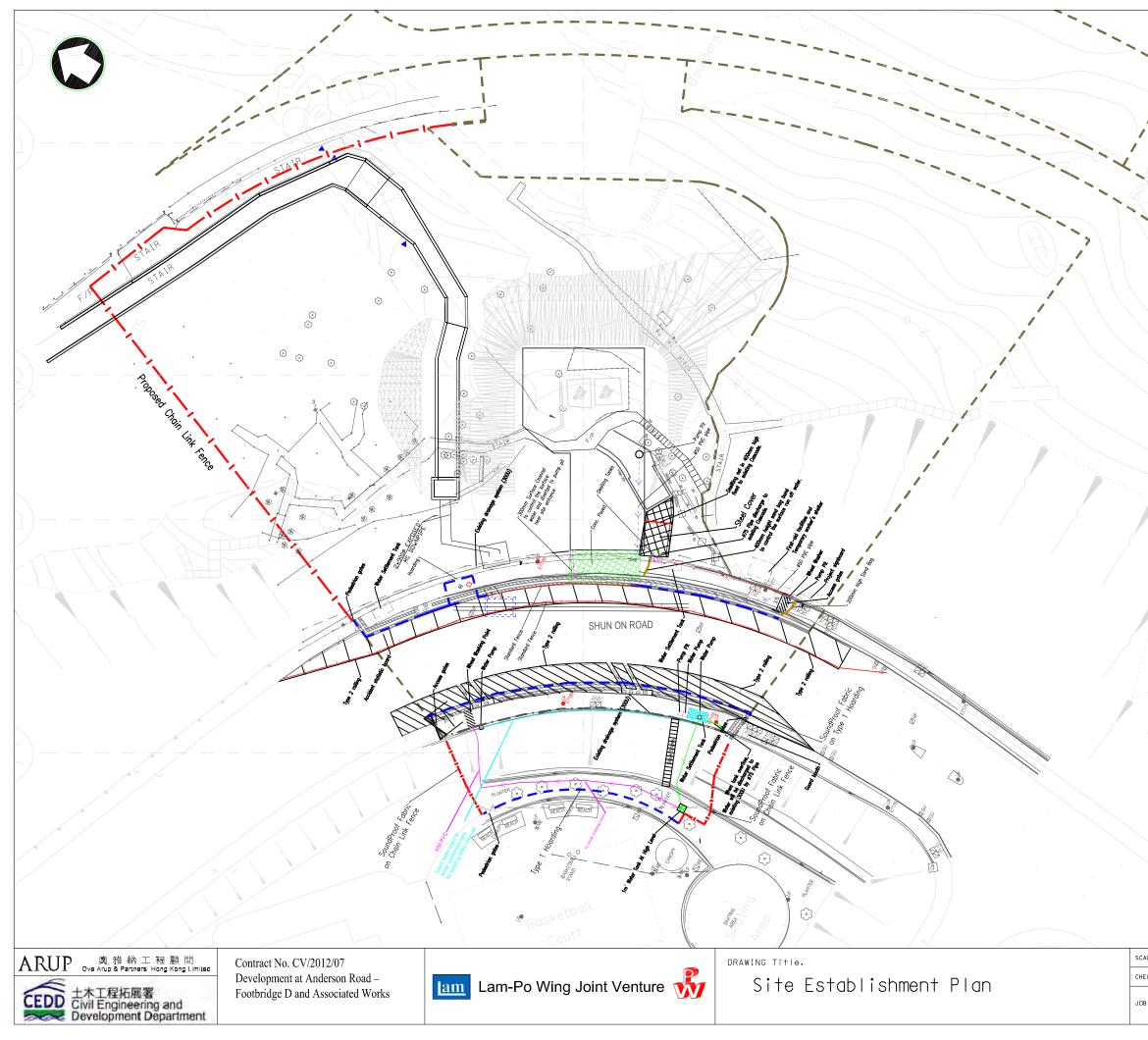
9. Conclusion

- 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 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, pay attention 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:

- 1. This drawing shall be read in conjunction with Drawing 24711/1052.
- 2. The location of fencing and hoarding is indicative only. The exact location is approved on site by Engineer.
- 3. 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 @75 pipe will discharge the overflow water into existing 300U on slope toe.

Legend

 Proposed Chain Link Fence
 Proposed Safety Fence (Type A)
 Proposed Hoarding (Type I)
 Site Boundary

ALE	1:500 @ A3	DATE	30 Sept. 20	13
ЕСК	HUNG	DRAWN	Bobby	
		DRAWING N	o .	REV
з мо.	CV/2012/07		SK011	I

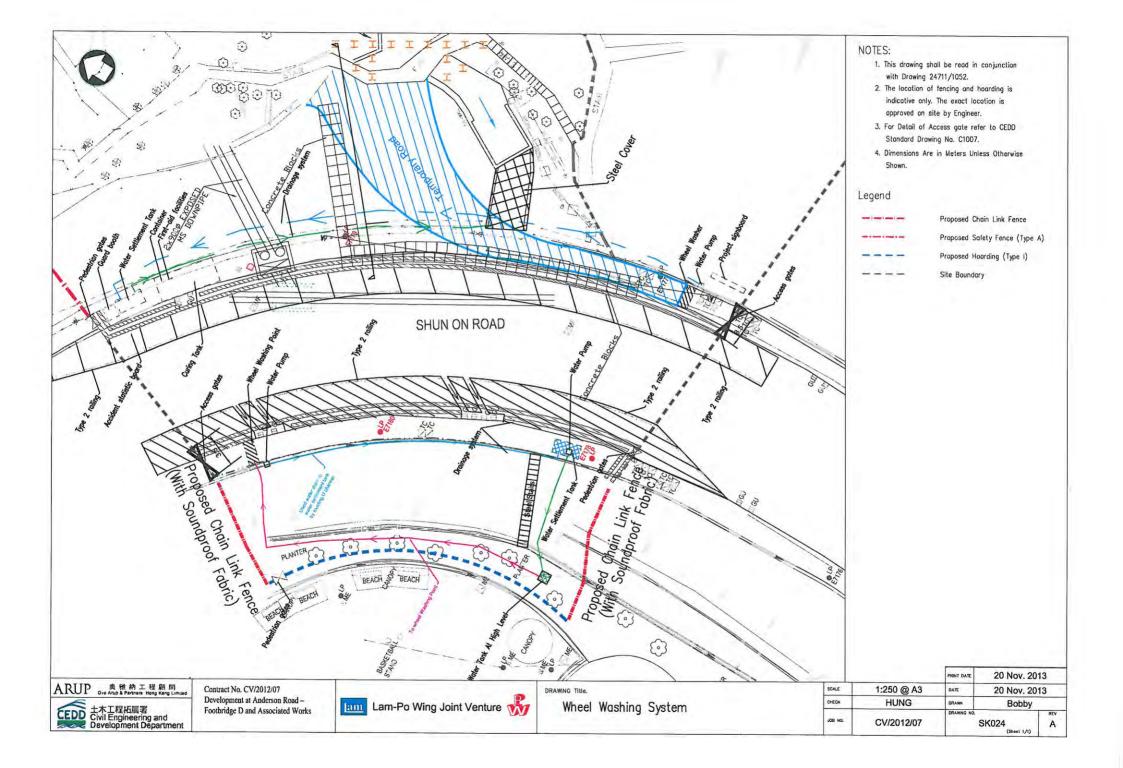




Figure 2.2

Project Organization Chart



Project Organization Chart

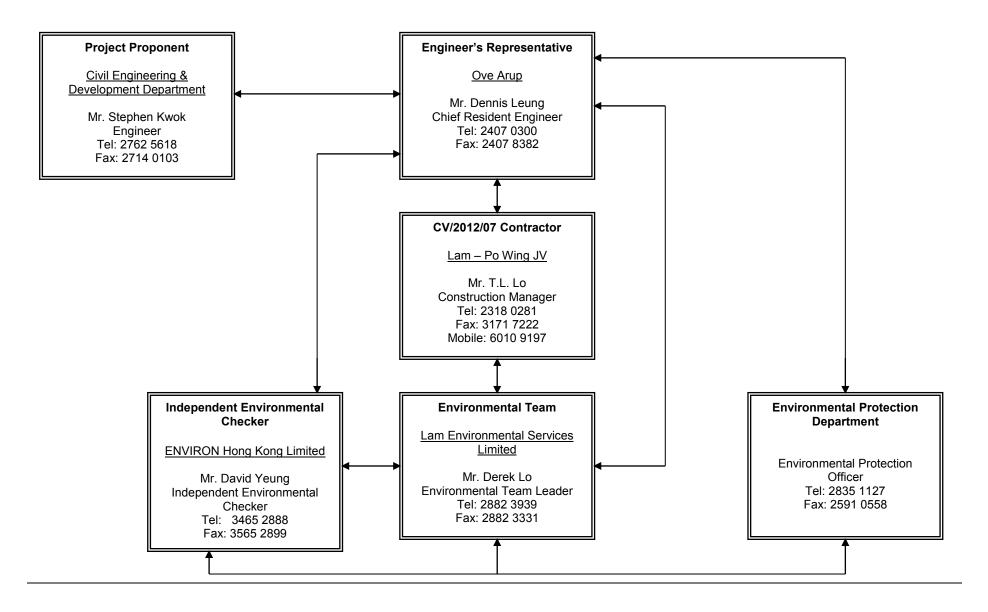
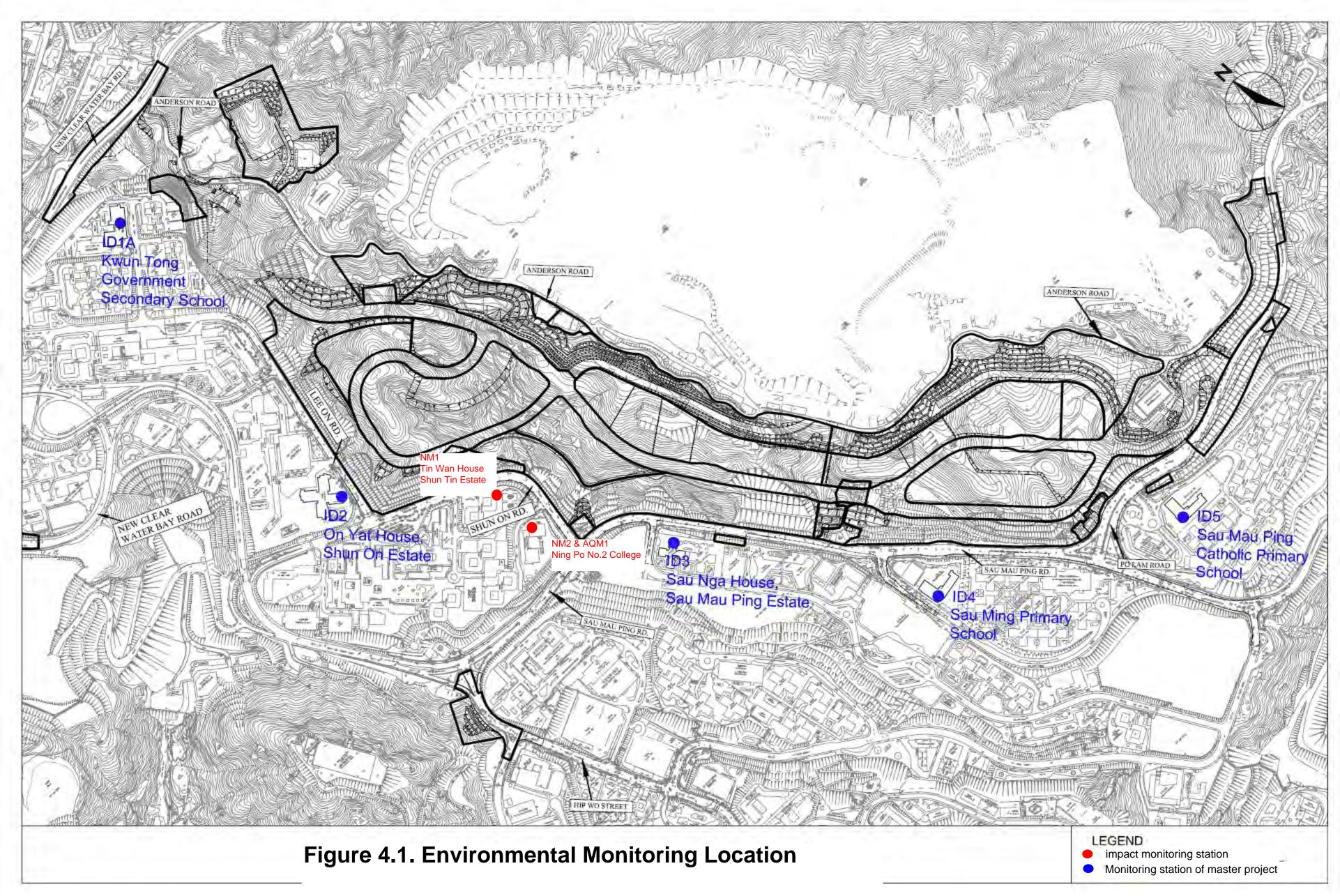




Figure 4.1

Locations of Environmental Monitoring Stations





Appendix 3.1

Environmental Mitigation Implementation Schedule



Environmental Mitigation Implementation Schedule

Implementation Schedule for Construction Dust Control

EIA Ref.	EM&A Log Ref.		Location (duration/ completion of	Funding Agent	Implementation Agent			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. 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. When 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,



	EM&A Log Ref.		Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	С	
\$3.7	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 Sche	dule for Water Quality Control
---------------------	--------------------------------

EIA Ref.	EM&A Log Ref.		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	J	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,



In	plementation Schedule for Construction Waste N	lanagement	

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	completion of	completion of	Funding Agent	gent 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 Wastes. When off-site disposal is required, it should be collected and delivered by licenced contractors to Tsing Yi Chemical Waste (General) Regulation. Necessary mitigation measures should be adopted to prevent the uncontrolled disposal of in accordance with the chemical waste 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	



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 i	in μ g/m ³	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 校正證書

Certificate No. : C142113 證書編號

	ITEM TESTED / 送檢項	目	(Job No. / 序引編號: IC14-0855)	Date of Receipt / 收件日期: 28 March 2014
	Description / 儀器名稱	:	Sound Level Meter (EN04)	
	Manufacturer / 製造商	:	Cesva	
	Model No. / 型號	:	SC-20e	
	Serial No. / 編號	:	T217501	
	Supplied By / 委託者	4	Honkei Technology Hong Kong Limited	
			Unit 7, 18/F., Treasure Centre, 42 Hung T	ſo Road,
			Kwun Tong, Kowloon	
_				

TEST CONDITIONS / 測試條件

Temperature / 溫度 : (23 ± 2)°C Line Voltage / 電壓 : --- Relative Humidity / 相對濕度 : (55 ± 20)%

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期 : 4 April 2014

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only. All results are within 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
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested By 測試	: K Ø Lee Project Engineer		
Certified By	: K M Wu	Date of Issue :	7 April 2014
核證	Engineer	簽發日期	

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 co 4F, Tsing Shan Wan Exchange Building, 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 eo 香港新界屯門興安里 –號青山濤機樓四樓 Tel 電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab(*a* suncreation.com Website/網址: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C142113 證書編號

Certificate No.

C140016 DC130171

- 1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- 2. Self-calibration using the 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 IDDescriptionCL28040 MHz Arbitrary Waveform GeneratorCL281Multifunction Acoustic Calibrator

- 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	etting	Applie	ed Value	UUT
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
LF	A	94.00	1	95.0

6.1.1.2 After Self-calibration

UUT	Setting	Applie	d Value	UUT	IEC 60651 Type 1
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
L _F	A	94.00	1	94.0	± 0.7

6.1.2 Linearity

UUT	Setting	Applied	l Value	UUT
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
L _F	A	94.00	1	94.0 (Ref.)
-1		104.00		104.1
		114.00		114.1

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

6.2 Time Weighting

6.2.1 Continuous Signal

UUT	Setting	Applie	d Value	UUT	IEC 60651 Type 1
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
LE	A	94.00	1	94.0	Ref.
Le				94.0	± 0.1

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.

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Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創二程有限公司 - 枝正及檢測實驗所 c o 香港新界屯門與安里一號青山灣機機四樓 Tel/電話: 2927 2606 Fax/傳真: 2744 8986 E-mail/電郵: callab@suncreation.com Website/網址: www.suncreation.com



Certificate of Calibration 校正證書

Certificate No.: C142113 證書編號

6.2.2 Tone Burst Signal (2 kHz)

UUT S	Setting	Appli	ed Value	UUT	IEC 60651 Type 1
Time Weighting	Frequency Weighting	Level (dB)	Burst Duration	Reading (dB)	Spec. (dB)
L _F	A	106.00	Continuous	106.0	Ref.
L _F Maximum			200 ms	105.0	-1.0 ± 1.0
Ls			Continuous	106.0	Ref.
L _s Maximum			500 ms	102.0	-4.1 ± 1.0

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT	Setting	Appli	ed Value	UUT	IEC 60651 Type 1	
Time Weighting	Frequency Weighting	Level (dB)	Freq.	Reading (dB)	Spec. (dB)	
L _F	А	94.00	31.5 Hz	54.3	-39.4 ± 1.5	
			63 Hz	67.7	-26.2 ± 1.5	
			125 Hz	77.7	-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	95.3	$+1.2 \pm 1.0$	
			4 kHz	95.0	$+1.0 \pm 1.0$	
			8 kHz	92.8	-1.1 (+1.5 ; -3.0)	
			12.5 kHz	88.0	-4.3 (+3.0 ; -6.0)	

6.3.2 C-Weighting

Tel."電話: 2927 2606 Fax/傳真: 2744 8986

UUT	Setting	Appli	ed Value	UUT	IEC 60651 Type 1
Time Weighting	Frequency Weighting	Level (dB)	Freq.	Reading (dB)	Spec. (dB)
L _F	С	94.00	31.5 Hz	90.8	-3.0 ± 1.5
			63 Hz	93.1	-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	93.9	-0.2 ± 1.0
			4 kHz	93.2	-0.8 ± 1.0
			8 kHz	90.9	-3.0 (+1.5 ; -3.0)
			12.5 kHz	86.0	-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.

Website/網山: www.suncreation.com

Sun Creation Engineering Limited – Calibration & Testing Laboratory c'o 4/F, Tsing Shan Wan Exchange Building, 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背山灣機樓四樓

E-mail 電郵: callab@suncreation.com

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Sun Creation Engineering Limited

Calibration and Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.: C142113 證書編號

6.4

Timo Auoroging
Time Averaging

	UUT Setting		Applied Value					UUT	IEC 60804
Time Weighting	Frequency Weighting	Integrating Time	Freq. (kHz)	Burst Duration (ms)	Burst Duty Factor	Burst Level (dB)	Equivalent Level (dB)	Reading (dB)	Type I Spec. (dB)
LeqT	А	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
			1.1		$1/10^{2}$		90	90.0	± 0.5
		60 sec.		1/10 ³		80	80.0	± 1.0	
	1.	5 min.			1/104		70	69.9	± 1.0

Remarks : - UUT Microphone Model No. : C-130 & S/N : 12624

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

- Uncertainties of Applied Value :	94 dB	:	31.5 Hz - 125 Hz	: ± 0.35 dB
			250 Hz - 500 Hz	: ± 0.30 dB
			1 kHz	: ± 0.20 dB
			2 kHz - 4 kHz	: ± 0.35 dB
			8 kHz	$\pm 0.45 \text{ dB}$
			12.5 kHz	$\pm 0.70 \text{ dB}$
	104 dB	:	1 kHz	: ± 0.10 dB (Ref. 94 dB)
	114 dB	÷	1 kHz	; ± 0.10 dB (Ref. 94 dB)
	Burst equivalent level			: ± 0.2 dB (Ref. 110 dB continuous sound level)

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

Note :

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.

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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.



E-mail: smec@cigismec.com

Website: www.cigismec.com



CERTIFICATE OF CALIBRATION

Certificate No.:	14CA0311 02		Page:	1 of 2
Item tested				
Description:	Acoustical Calibrat	or (Class 1L)		
Manufacturer:	CESVA, SPAIN			
Type/Model No.:	CB-5			
Serial/Equipment No.:	0035092			
Adaptors used:	Yes			
Item submitted by				
Customer:	Pilot Testing Ltd.			
Address of Customer:				
Request No.:	2			
Date of receipt:	11-Mar-2014			
Date of test:	13-Mar-2014			
Reference equipment	used in the calibr	ation		
Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	SCL
Preamplifier	B&K 2673	2239857	16-Apr-2014	CEPREI
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	CEPREI
Signal generator	DS 360	61227	15-Apr-2014	CEPREI
Digital multi-meter	34401A	US36087050	17-Dec-2014	CEPREI
Audio analyzer	8903B	GB41300350	15-Apr-2014	CEPREI
Universal counter	53132A	MY40003662	15-Apr-2014	CEPREI

Ambient conditions

22 ± 1 °C
60 ± 10 %
1000 ± 10 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.

 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 M n/Feng Jun Qi

14-Mar-2014 Company Chop:



Comments: The results reported in the 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.

Approved Signatory:

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

Hong Kong Accreditation Service (HKAS) has accredited this laboratory under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for specific laboratory 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.



綜合試驗有限公司 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.:

14CA0311 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	93.92	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

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:

0.005 dB

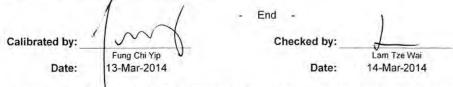
At 1000 Hz	Actual Frequency = 1000.9 Hz	
Estimated expanded uncertainty	0.1 Hz	Coverage factor k = 2.2

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 = 0.9 %
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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Form No.CARP156-2/Issue 1/Rev.C/01/05/2005

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Lam Environmental Services Limited

Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	Ning Po No.2 College	Calbration Date	:	17-Dec-14
ID	:	AQM1	Calbration Due Date	:	17-Feb-15

CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition									
Temperature, T _a		286		Kelvin Pressure, P a				1027 mmHg	
			Orifice Tra	ansfer Sta	ndard Inforn	nation			
Equipment No.		EL086		Slope, m _c	1.991	75	Intercept, bo	-0.00041	
Last Calibration Date		14-Jul-14	4		(Hx	P _a / 10	13.3 x 298	$(T_a)^{1/2}$	
Next Calibration Date		14-Jul-1	5		=	m_c >	$Q_{std} + b_c$		
Calibration of TSP									
Calibration	Manometer Reading			c	Q _{std}	Contir	uous Flow	IC	
Point	H (inches of water)		(m ³	/ min.)	Rec	order, W	(W(P _a /1013.3x298/T _a) ^{1/2} /35.31)		
	(up)	(down)	(difference)	х.	axis	(CFM)	Y-axis	
1	6.8	6.8	13.6	1.9	9029		57	58.5755	
2	5.0	5.0	10.0	1.0	6318		47	48.2991	
3	4.2	4.2	8.4	1.4	4956		40	41.1056	
4	2.5	2.5	5.0	1.	1539		30	30.8292	
5	1.3	1.3	2.6	0.8	8321		22	22.6081	
By Linear Regression of	Y on X								
Slope, m = 33.6			6306 Intercept, b = -6.9091						
Correlation Co	pefficient*	=	0.99	931					
Calibration	Accepted	=	Yes/	No**					

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

** Del	ete a	s ap	prop	riate.
--------	-------	------	------	--------

Remarks :					
Calibrated by	:	Henry Lau	Checked by	:	Derek Lo
Date	:	17-Dec-14	Date	:	17-Dec-14



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



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 January 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	29-Dec 1hr TSP x 3 Noise	30-Dec	31-Dec		2-Jan 24 hr TSP	3-Jan 1hr TSP x 3
4-Jan	5-Jan	6-Jan	7-Jan	24 hr TSP	9-Jan 1hr TSP x 3 Noise	10-Jan
11-Jan	12-Jan	13-Jan	14-Jan 24 hr TSP	15-Jan 1hr TSP x 3 Noise	16-Jan	17-Jan
18-Jan	19-Jan		21-Jan 1hr TSP x 3 Noise	22-Jan	23-Jan	24-Jan
25-Jan	24 hr TSP	27-Jan 1hr TSP x 3 Noise	28-Jan	29-Jan		31-Jan 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

am

Contract No. CV/2012/07 Development at Anderson Road - Footbridge D and Associated Works Area Tentative Environmental Monitoring Schedule February 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Feb	2-Feb	3-Feb	4-Feb	5-Feb	6-Feb	7-Feb
	1hr TSP x 3				24 hr TSP	1hr TSP x 3
	Noise					
8-Feb	9-Feb	10-Feb	11-Feb	12-Feb		14-Feb
					1hr TSP x 3	
					Noise	
15-Feb	16-Feb	17-Feb		19-Feb	20-Feb	21-Feb
10-1 00	10-1 05		1hr TSP x 3	104 00	201 05	21-100
			Noise			
22-Feb	23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb
	24 hr TSP	1hr TSP x 3			24 hr TSP	1hr TSP x 3
		Noise				

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

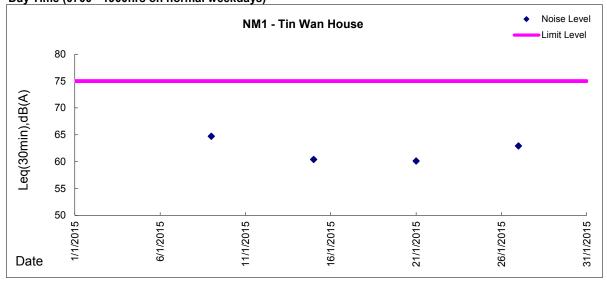
		Dayti	me(07:00-19:00)		
Date	Time	Location	Leq (dB)	L10 (dB)	L90 (dB)
9-Jan-15	8:45	NM1	64.7	68.3	55.6
9-3411-15	9:50	NM2	63.4	67.5	56.1
15-Jan-15	8:50	NM1	60.4	63.2	58.9
15-5411-15	10:00	NM2	62.1	64.3	59.4
21-Jan-15	13:00	NM1	60.1	62.7	55.4
2 1-Jan-15	13:40	NM2	65.2	68.6	57.1
27-Jan-15	10:00	NM1	62.9	64.8	59.8
27-541-15	11:00	NM2	60.7	63.2	53.7

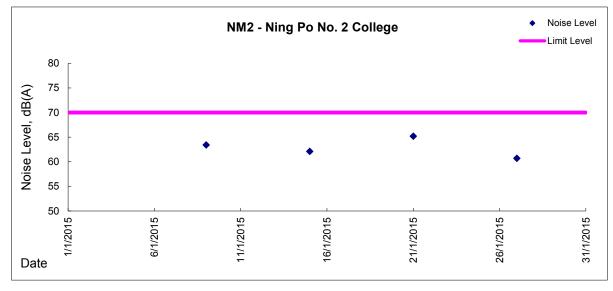
NM1 - Tin Wan House

NM2 - Ning Po No. 2 College



Graphic Presentation of Noise Monitoring Result Day Time (0700 - 1900hrs on normal weekdays)







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	ie, hr	Sampling	Flow	/ Rate, m ^a	/min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q _{si}	Final, Q _{sf}	Average	Volume, m ³	mg/m ³
2-Jan-15	8:00	Fine	010067	2.7663	2.9336	2490.73	2514.73	24.00	1.14	1.14	1.14	1639	102
8-Jan-15	8:00	Fine	010734	2.7208	2.9492	2517.73	2541.73	24.00	1.37	1.37	1.37	1975	116
14-Jan-15	8:00	Fine	010632	2.7763	2.8839	2544.73	2568.73	24.00	1.46	1.46	1.46	2103	51
20-Jan-15	8:00	Cloudy	010636	2.7690	3.0042	2571.73	2595.73	24.00	1.31	1.31	1.31	1886	125
26-Jan-15	8:00	Fine	010105	2.7627	2.9254	2598.74	2622.74	24.00	1.36	1.36	1.36	1962	83
31-Jan-15	8:00	Rainy	010603	2.7569	2.9341	2625.74	2649.74	24.00	1.43	1.43	1.43	2060	86

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	/min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q _{si}	Final, Q _{sf}	Average	Volume, m ³	mg/m ³
3-Jan-15	8:45	Fine	010737	2.7269	2.7427	2514.73	2515.73	1.00	1.43	1.43	1.43	86	184
3-Jan-15	9:49	Fine	010733	2.7149	2.7331	2515.73	2516.73	1.00	1.54	1.54	1.54	93	196
3-Jan-15	10:55	Fine	010101	2.7633	2.7795	2516.73	2517.73	1.00	1.43	1.43	1.43	86	189
9-Jan-15	8:15	Fine	010629	2.7827	2.7902	2541.73	2542.73	1.00	1.31	1.31	1.31	79	95
9-Jan-15	9:35	Fine	010630	2.7835	2.7930	2542.73	2543.73	1.00	1.31	1.31	1.31	79	121
9-Jan-15	10:05	Fine	010631	2.7828	2.7970	2543.73	2544.73	1.00	1.31	1.31	1.31	79	180
15-Jan-15	8:30	Fine	010633	2.7849	2.7898	2568.73	2569.73	1.00	1.37	1.37	1.37	82	60
15-Jan-15	9:37	Fine	010634	2.7823	2.7856	2569.73	2570.73	1.00	1.43	1.43	1.43	86	38
15-Jan-15	10:42	Fine	010635	2.7820	2.7845	2570.73	2571.73	1.00	1.37	1.37	1.37	82	30
21-Jan-15	8:40	Cloudy	010102	2.7663	2.7818	2595.73	2596.73	1.00	1.37	1.37	1.37	82	189
21-Jan-15	9:48	Cloudy	010103	2.7586	2.7749	2596.73	2597.73	1.00	1.42	1.42	1.42	85	191
21-Jan-15	13:00	Cloudy	010104	2.7490	2.7644	2597.73	2598.73	1.00	1.37	1.37	1.37	82	188
27-Jan-15	8:30	Fine	010637	2.7863	2.7942	2622.74	2623.74	1.00	1.30	1.30	1.30	78	101
27-Jan-15	9:34	Fine	010638	2.8087	2.8155	2623.74	2624.74	1.00	1.36	1.36	1.36	82	83
27-Jan-15	10:45	Fine	010602	2.7398	2.7504	2624.74	2625.74	1.00	1.30	1.30	1.30	78	135

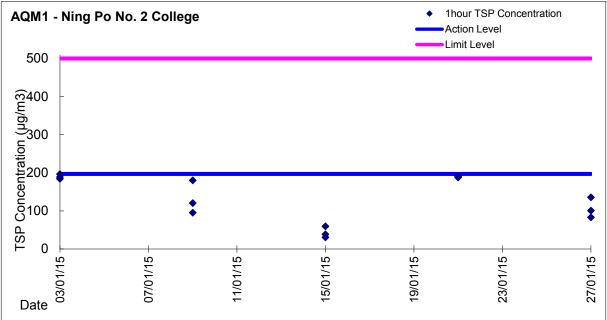
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Contract No. CV/2012/07

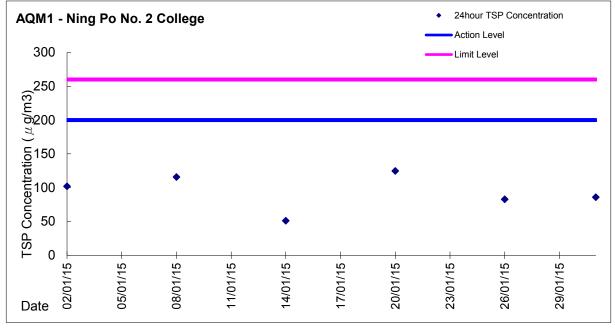
Development at Anderson Road -

Footbridge D and Associated Works Area

Graphic Presentation of 1 hour TSP Result



Graphic Presentation of 24 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

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Out	tcome	Status
140813 1	13 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 Ext UP // P Ext D1 // P P // P M DELECCY VOID Hind // P Hold 2011 Hold 2011 Hold 2011 A DELECCY VOID Hind // P Hold 2011 Hold 2011<		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 c Jan FebMarlAprMayJun Jul AugSepOctNovDec Jan FebMarlAprMayJun Jul AugSepO
NameN	1		1119 days	Thu 31/01/13	Wed 30/11/16	5400035013 [10		anti columi fulturali mi un turgoobloori o absepanti ookumi dutuzaleni as turgoobloori o lee	
Name									
13 Barbierry 10.40 Workshorty 5 6.40 2.3 Standow Standow Standow Standow Standow 2.4 Ark Stankow Standow Standow Standow Standow Standow 2.4 Ark Stankow Standow	1.1	PRELIMINARY WORK							
11 langer Web Web <t< td=""><td>1.1.1</td><td>Application of XP, Site Access from Highways</td><td></td><td></td><td></td><td>88</td><td></td><td></td><td></td></t<>	1.1.1	Application of XP, Site Access from Highways				88			
1 Gate Acce Audio consider No. N	1.1.2	Tree Survey				5			
1 Rest Stree, Callin Stree, et Along, One and Str									
15.5 Des: Rening allowing, 40 Blood 4 way None (Sec) $2 way 3 way 3 way 3 way<$						46,47			
11 Design and matrixit stratistics 134 des Test 10000000 90.0000000 90.000000 90.000000 90.000000 90.000000 90.000000 90.000000 90.000000 90.000000 90.0000000 90.0000000 90.00000000000000000000000000000000000	1.1.5								
10 Long - Market of Federal A & 84 (1) 0.00 0.00001 0.00001 0.00001 12 Sackword Federal R & 10 0.00 0.00001 0.00001 0.00001 10 Sackword Federal R & 10 0.00 0.00001 0.00001 0.00001 12 Mark interare allocation 0.00 0.00001 0.00001 0.00001 12 Mark interare allocation 0.00 0.00001 0.00001 0.00001 13 Scotter Federal D Markon 0.00 0.00001 0.00001 0.00001 14 Markon information allocation 0.00 0.00001 0.00001 0.00001 14.1 Markon information allocation 0.00 0.000011 0.00001 0.00001 12.1 Markon information allocation 0.00 0.000011 0.00001 0.00001 12.1 Markon information allocation 0.00 0.000011 0.00001 0.00001 12.1 Markon information allocation 0.00 0.000010 0.000001 0.000000 12.1 Markon information allocation 0.00 0.000001 0.000000 0.000000 12.1 Markon information allocation 0.00 0.0000000 0.0000000 12.1 Markon inform	1.1.6								
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L1.1 Bandor of Partial L2 6 as Set 10 9 as 0.01/213 Set 10/19 Set 10/19 Set 10/19 L2 Set 10 11/10 11/10 11/10 11/10 11/10 11/10 11/10 L3.1 Microf cristeres ref amerid schrististic 10/20 10/20 10/20 10/20 10/20 L3.1 Microf cristeres ref amerid schrististic 10/20 10/20 10/20 10/20 10/20 L3.1 Constract field field schrististic 10/20 10/200 10/200 10/200 10/200 L3.1 Constract field field schrististic 10/200 10/200 10/200 10/200 10/200 L3.1 Constract field field schrististic 10/200 10/200 10/200 10/200 10/200 L3.1 Constract field field schrististic 10/200 10/200 10/200 10/200 10/200 L3.1 Constract field field schrististic 10/200 10/200 10/200 10/200 10/200 L3.1 Constract field schrististic 10/200 10/200 10/200 10/200 10/200 L3.2 Constract field schrististic 10/200 10/200 10/200 10/200 10/200 L3.1 Micrit f	1.1.8					61			
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12.12 Bacovatice for Rath feedings 100 day Wed 056001 Tee 0012011 88 128 491 day 12.14 Combrane Rath feedings 100 day Wed 056001 Tee 0012011 MSS 18 491 day 12.14 Combrane Rath feedings 100 day Wed 0560013 Tee 001201 MSS 18 491 day 12.16 Exect Stachwark dor Lift Staft 70 day Wed 190114 10 12.122 491 day 12.17 traditions 01 day Wed 1901114 20 23.2075-00 days 591 day 12.18 Math feedings Tae 200114 71 Tee 201111 20.21767-50 day 23.2075-00 days 591 day 12.19 Tak Cof Math Espinjuenci 100 days Wed 190111 20 23.2075-00 days 591 day 12.19 Tak Cof Math Espinjuenci 100 days Wed 190111 212 2477-7 day 553 day 12.10 Brinsdawg and Meed Machaines 100 days Wed 190101 212.20 2477-7 day 553 days 12.21 Meed Instament and mathemat distanciation 100 days Wed 190101 22 378 days 978 days 12.22 Execonation Rub folicitig 100 days Wed 190101 23	1.2.1	Lift Tower D-A							
1.1.3 Body Joint Mapping for Society material of rul Isosing 10 days	1.2.1.1								
12.1.4 Construct Ref Ciaft Tower and Remining Will 90 days Wei M9U1213 Fin 100/1/17 19.135540 days 491 days 12.1.6 Construct Ref Ciaft Tower and Remining Will 90 days Main 2200714 92.1200 91 days 12.1.6 Exect Skeehook for Lift Shaft: 100 days Wei 2200714 92.1201 91 days 12.1.7 Innallation of Lift 100 days Wei 2200714 Wei 2200714 92.12015 90 days 12.1.8 M&E Insultation 100 days Wei 2200714 Wei 2201714 5 days 23.2458-60 days 550 days 12.1.9 T & C of MAE Experpreent 100 days Wei 2001104 200 Cirtis 6 days 550 days 12.1.0 Finiting and Minal Works 100 days Yei 200714 Wei 200115 2122 24478-77 days 550 days 12.2.1 Method Statement and material submission 30 days Yei 200113 1258 200 days 950 days 12.2.1 Method Statement and material submission 30 days Yei 2001137 20558.660 days 797 days 12.2.2 Donowise for full toxing 100 days Wei 1000147 123 352.8656.00 days 797 days 199 days <td>1.2.1.2</td> <td>Excavation for Raft footing</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	1.2.1.2	Excavation for Raft footing							
12.15 Constrait RC Linh Tower and Retaining Wall 80 days Sas 100/14 Sas 260/14/18 0.44 491 days 12.16 Exect Steelwack for Linh Tower and Retaining Wall 100 days Wei 2007/14 12.22 491 days 12.17 Isstallation of Linh 100 days Wei 2007/14 Wei 191/14 20 days 23/2017/3 491 days 12.18 Mate Installation 100 days Tee 2017/14 Vei 191/14 20 days 23/2017/4 91 days 12.18 Mate Installation 100 days Tee 2017/14 Vei 191/14 20 days 23/2017/4 S55 days 12.19 T & C of MAES Equipment 30 days Mei 160/101/15 S52 days S50 days 12.10 Finishing and Menil Warks 30 days No 00/101/15 S52 days S50 days 12.21 Method suttentiation framing with Works 30 days Tee 200/14/17 2855/2085/0 days S50 days 12.21 Method suttentiation framing with Works 30 days Tee 200/14/17 2855/2085/0 days 595 days 12.22 Exervation for Rult fooring 30 days Weil 100/101/13 282/2055/0 days 595 days 12.23	1.2.1.3	Rock Joint Mapping for founding material of raft footing	150 days	Wed 05/06/13					
12.15 Constant of the final final in f	1.2.1.4		30 days						
12.15 EMEN Subwork for Lin Sami 70 days Model above for Lin Sami 70 days Model above for Lin Sami 12.17 Installation of Lin 100 days Wei 2207/14 Wei 2201/14 30.21FF4-5 days 23.24F5-60 491 days 12.18 M&E. Installation 100 days The 2501/1/14 30.21FF4-5 days 23.24F5-60 491 days 12.19 T. & C of M&E. Equipment 30 days Wei 2501/1/14 Fit 000/105 21.22 24FF1-7 days 553 days 12.10 Pranching and Metal Works 100 days Wei 1000/15 21.22 24FF1-7 days 550 days 12.110 Pranching and Metal Works 100 days Wei 1000/15 21.22 24FF1-7 days 550 days 12.12 Mecho statement and material submission 30 days Wei 1000/15 21.22 24FF1-7 days 550 days 12.22 Excavation for Rut fooring 100 days Wei 1000/15 1 Wei 255.255.650 days 379 days 12.23 Rock Joint Majning for foronding material or ath fooring 100 days Wei 2000/14 17375 29 379 days 12.24 Construct Raft fooring 30 days 30 days 379 days 379 days 12.25 <	1.2.1.5	Construct RC Lift Tower and Retaining Wall							
1 12.1.7 Histination of Lift 100 days Wei 250/1/4	0 1.2.1.6	Erect Steelwork for Lift Shaft							
2 1.2.1.9 Fite Control Mathematical 100 days 100 days 100 days 100 days 2.2.4FF+7 days 553 days 3 1.2.1.9 T & C of M&EE Equipment 30 days Wed 26/11/4 Fite 20/01/5 21.22 2.4FF+7 days 553 days 4 1.2.1.10 Finishing and Menil Works 100 days Wed 14/01/15 21.E5-60 days.22FF+7 days 550 days 5 1.2.2 Lift Tower D-B 400 days Tue 08/10/13 Tue 12/11/13 27S5-60 days 893 days 7 1.2.2.2 Excavation for Ruft footing 100 days Wed 18/01/14 27SS 29 379 days 8 1.2.2.3 Rock Joint Mapping for founding material of raft footing 100 days Wed 18/01/14 27SS 29 379 days 9 1.2.2.4 Construct Raft footing 100 days Wed 18/01/14 29 31.41 379 days 9 1.2.2.5 Construct Raft footing 30 days Wed 03/02/14 20 32.33 379 days 9 1.2.2.6 Erect Steelwork for Lift Staft 70 days 31.41 379 days 31.41 379 days 1 1.2.2.6 Erect Steelwork for Lift Staft	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		
12.1.9 T& C of M&E Equipment 30 days Wed 26/11/14 Fit 020/175 21.22 24FF+7 days 553 days 12.1.9 T & C of M&E Equipment 30 days Wed 140/1/5 21ES-60 days.22ES-60 days.22ES-60 days.22ES-60 12.2.1 Method statement and material submission 30 days Tue 08/10/13 Mon 150/0/14 Wed 140/1/5 21ES-60 days.22ES-60 12.2.1 Method statement and material submission 30 days Tue 08/10/13 Tue 12/11/13 27SS-60 days 893 days 12.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/0/14 74 28SS2,8SS-60 days 379 days 12.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/0/14 72/SS 29 379 days 12.2.2 Excavation for Raft footing 100 days Wed 18/12/13 Tue 29/0/14 21/SS 29 379 days 12.2.2 Excavation for Raft footing 100 days Wed 10/0/1/2 13 379 days 379 days 12.2.5 Construct R Laft footing 30 days 91.11/1 379 days 379 days 12.2.6 Erect Steelwork for Lift Tower and Retaining Wall 80 days 379 days <td></td> <td></td> <td>100 1</td> <td>T 20/07/14</td> <td>Tue 05/11/14/20 01/07: 5 Januar</td> <td>22 24ES 60 down</td> <td>550 dava</td> <td></td> <td></td>			100 1	T 20/07/14	Tue 05/11/14/20 01/07: 5 Januar	22 24ES 60 down	550 dava		
1.2.1.10 Finishing and Metal Works 100 days Mon 1509/14 Wed 140/1/5 21FS-60 days.22FS-60 days.22FF-7 days \$50 days 1.2.2 Lift Tower D-B 480 days Two 08/10/13 Mon 0106/15 439 days 1.2.2.1 Method statement and material submission 30 days Two 08/10/13 Two 12/11/13 27SS-60 days 893 days 1.2.2.2 Excavation for Raft footing 100 days Wel 18/12/13 Two 290/1/14 74 28SS.26SS-60 days 379 days 1.2.2.4 Construct Raft footing 100 days Wel 18/12/13 Two 290/1/14 74 28SS.26SS-60 days 379 days 1.2.2.4 Construct Raft footing 100 days Wel 18/12/13 Two 290/1/14 72SS 2.9 379 days 1.2.2.5 Construct Raft footing 100 days Wel 200/1/14 2/2SS 30 379 days 1.2.2.5 Construct Raft footing 80 days Fino 606/14 Wel 010/9/14 29 31.41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Tim 05/06/14 Wel 010/9/14 29 31.41 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days 32.33 379 days Tim 05/06/14<									n
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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 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 Raft footing 30 days Fit 06/06/14 Wed 03/12/14 30 32.33 379 days 1.2.2.6 Erect Steelwork for Lift Shaft 70 days Thu 01/09/14 Wed 03/12/14 30 32.33 379 days 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mo1 30/04/15 31 33FF;34:35FS-60 379 days	25 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 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 0 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 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 2 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF;34,35FS-60 379 days							893 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 03/12/14 30 32,33 379 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 01/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days						28SS,26SS-60 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 2.12.2.7 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 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 2 1.2.2.7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days							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							379 days		
2 1 2 2 7 Installation of Lift 100 days Thu 04/12/14 Mon 13/04/15 31 33FF,34,35FS-60 379 days				Thu 11/09/14	Wed 03/12/14 30		379 days		
days,54				Thu 04/12/14	Mon 13/04/15 31	33FF,34,35FS-60			
						days,54			

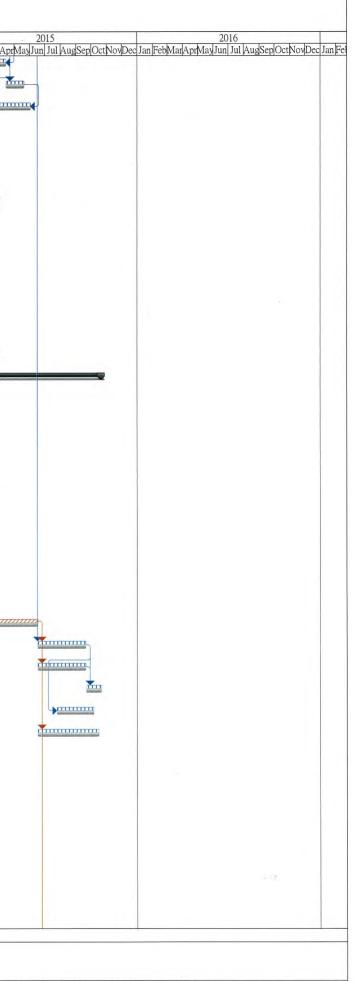
and Finish On 30-Nov-2016 (1399 days) Duration as shown by week day

				Dev	Master I velopment at A	nderson Road	For Contract No. CV/2012/07 ad - Footbridge D and Associated Works (Rev. 2)
D 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	
0 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	0 days	Bored pile machine - A (1
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	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	0 days	The second se
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	327 days	
5 1.2.4.11	M&E Installation	80 days	Tue 16/06/15	Sat 19/09/15 53	56	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	
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	109 days	
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	109 days	
4 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
repared By: T.L.	Lo Baseline	Summary	A	Critical Task	Summ	ary	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

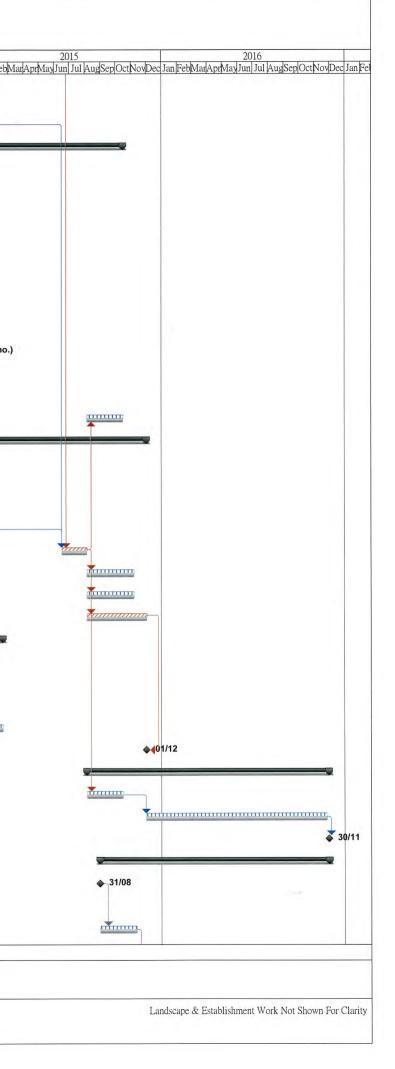
Master Programme For Contract No. CV/2012/07	
Development at Anderson Road - Footbridge D and Associated Wo	rks
(Rev. 2)	

								(Rev. 2)			
ID	WBS	Fask Name	Duration	Start	Finish Predecessors	Successors	Total Slack	2 Dec Jan FebMarAprMayJur	013 1 Jul AugSepOctNovDec	2014 S 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		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		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			
1	: Mon 10/0 ared By: T.L		ne Milestone 🔷 ne Summary 🔺			Milesto		Baseli			

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