

#### CONTRACT NO: CV/2012/07

#### DEVELOPMENT AT ANDERSON ROAD -FOOTBRIDGE D AND ASSOCIATED WORKS AREA

#### **MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT**

- JUNE 2014 -

**CLIENTS:** 

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PREPARED BY:

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**CERTIFIED BY:** 

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DATE:

7 July 2014



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# EXECUTIVE SUMMARY

 This is the Environmental Monitoring and Audit (EM&A) Monthly Report – June 2014 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 12th month of EM&A report presenting the environmental monitoring findings and information recorded during the period of 1 June 2014 to 30 June 2014. The cut-off date of reporting is at the end of each reporting month.

#### Construction Activities for the Reported Period

- Drainage diversion
- Slope excavation
- Raft footing excavation

#### 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:
  - Drainage diversion
  - Slope excavation



• Raft footing excavation

# 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 June 2014 to 30 June 2014. 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	3656 3000	3656
		Resident	Leung		1000
		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:
  - Drainage diversion
  - Slope excavation
  - Raft footing excavation
- 2.3.4. In coming reporting month, the principal work activities of individual contracts are anticipated as follows:
  - Drainage diversion
  - Slope excavation
  - Raft footing excavation



# 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<sub>eq</sub>). L<sub>eq (30 minutes)</sub> 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<sub>eq (5 minutes)</sub> 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 m<sup>3</sup> 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 cm<sup>2</sup>;
- 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)
5-Jun-14	9:20-9:50	NM1	68.3
5-Juli-14	8:40-9:10	NM2	64.7
11-Jun-14	9:30-10:00	NM1	64.7
11-Juli-14	8:50-9:20	NM2	64.1
17-Jun-14	9:35-10:05	NM1	64.6
17-Juli-14	8:55-9:25	NM2	63.3
23-Jun-14	10:40-11:10	NM1	64.3
23-Juli-14	10:00-10:30	NM2	63.7
	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). In the reporting month, school examination is undertaken at Ning Po No.2 College (NM2) from 5 24 June 2014. Therefore, the noise Limited Level during that date would be reduced to 65dB(A).
- 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 <u>Appendix 5.2</u>.

# 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

Date	Time	TSP Level, (µg /m³)
4-Jun-14	08:00	66
10-Jun-14	08:00	36
16-Jun-14	08:00	32
21-Jun-14	08:00	35
27-Jun-14 08:00		36
Actio	n Level	200
Limit	Level:	260

Date	Time	TSP Level, (μg /m³)
5-Jun-14	8:32	33
5-Jun-14	9:40	23
5-Jun-14	10:50	19
11-Jun-14	8:45	96
11-Jun-14	9:50	53
11-Jun-14	10:55	51
17-Jun-14	8:40	56
17-Jun-14	9:55	56
17-Jun-14	11:00	41
23-Jun-14	8:40	62
23-Jun-14	9:55	48
23-Jun-14	11:00	12
28-Jun-14	8:24	81
28-Jun-14	9:30	115
28-Jun-14	10:35	117
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 <sup>3</sup>	0.7092	3.3923	TKO137
Inert C&D materials recycled, m <sup>3</sup>	0	0	N/A
Non-inert C&D materials disposed, m <sup>3</sup>	0.0012	0.00816	TKO137
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 *Appendix 6.1*.

#### 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 3, 11, 17 and 24 June 2014 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 Summar	y of Environmental Inspections for Contract no. CV/2012/07

Date	Observations	Follow-Up
3-June-2014	<ul> <li>Precaution measure(s) for silty water</li> </ul>	All items were rectified
	runoff from site should be deployed from	during inspection on 11 June
	portion C2 entrance	2014
	All fuel / chemical containers(with content	
	/ emptied) should be stored properly and	
	equipped with drip trays	
	• A side-door / cover for air-compressor at	
	portion C2 should be closed during	
	operation	
11-June-2014	No particulate finding.	N/A
17-June-2014	No particulate finding	N/A
24 June 2014	No porticulato finding	ΝΙ/Δ
24-June-2014	No particulate 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
June 2014	0
Project-to-Date	0

# 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		



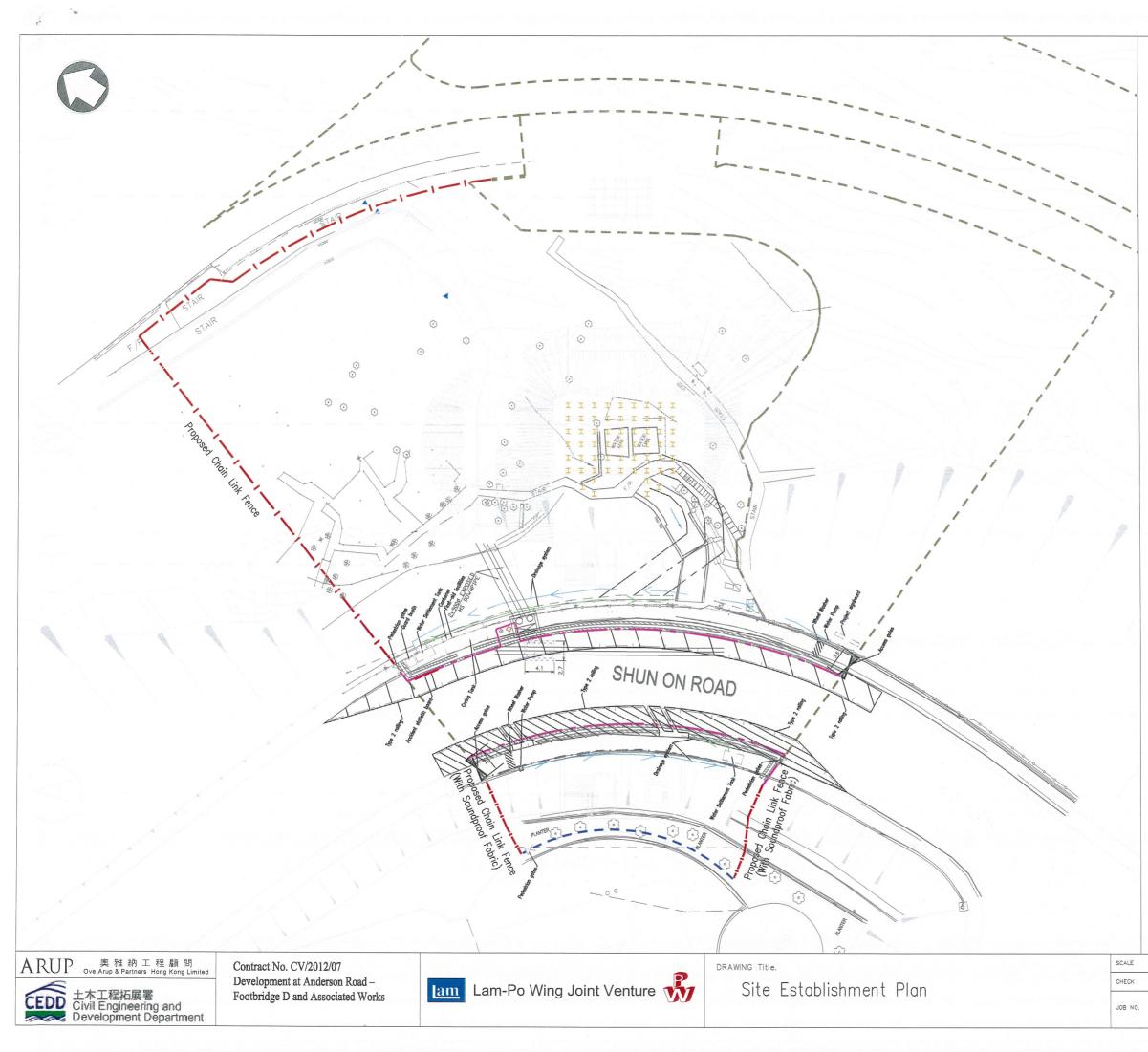
#### 9. Conclusion

- 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. In addition, during the wet season, muddy water or other water pollutants from site surface runoff into the public area will be key environment issue. Therefore, water mitigation measures to prevent surface runoff should be paid on special attention. Moreover, mosquito control should be performed to prevent mosquito breeding on site.



Figure 2.1

Project Layout



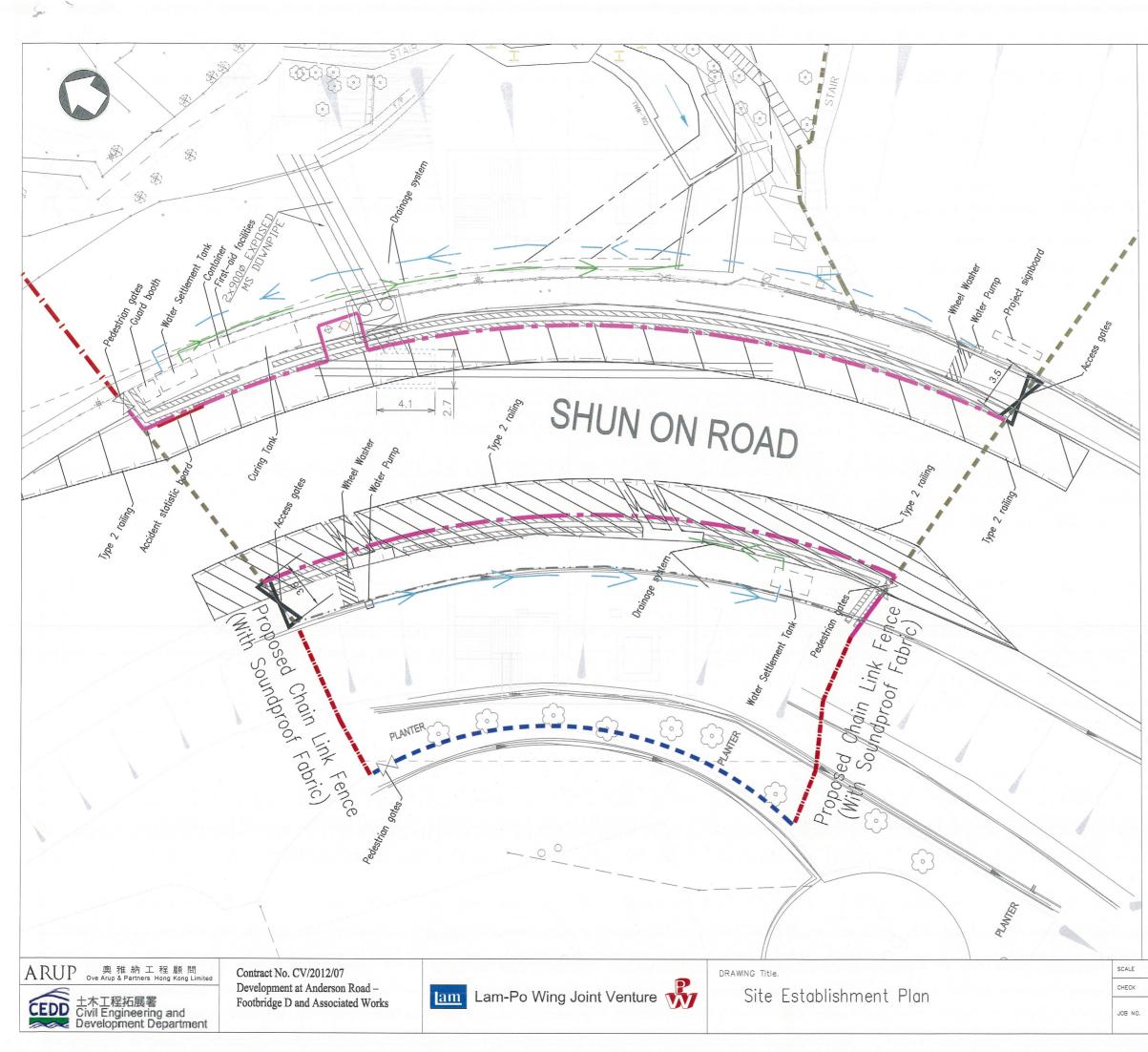
# NOTES:

- 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.

# Legend

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

1:500 @ A3	DATE	DATE 24 JULY 2013			
HUNG	DRAWN	HUNG			
	DRAWNG NO.	· · · · · · · · · · · · · · · · · · ·	REV		
CV/2012/07	SK011		В		
		(Sheet 1/2)			



# 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.

# Legend

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

1:250 @ A3	DATE 24 JULY 201			
HUNG	DRAWN	HUNG		
	DRAWING NO.		REV	
CV/2012/07	SK011		В	
		(Sheet 2/2)		

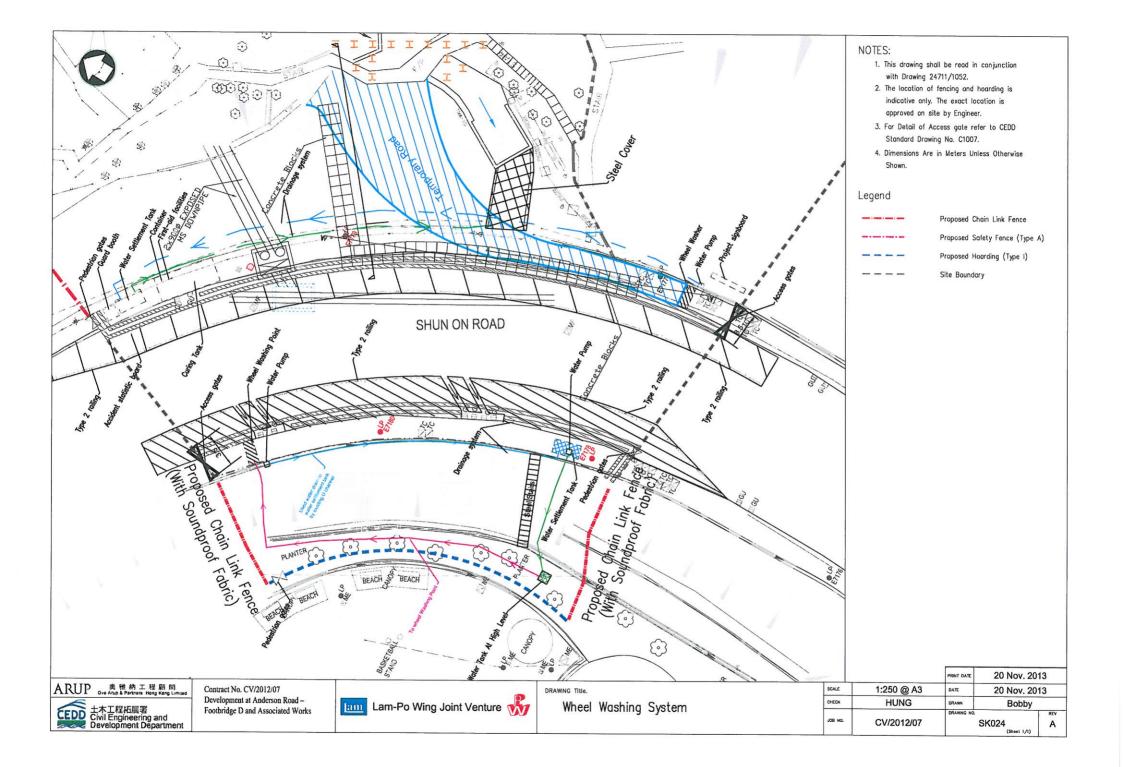




Figure 2.2

Project Organization Chart



#### **Project Organization Chart**

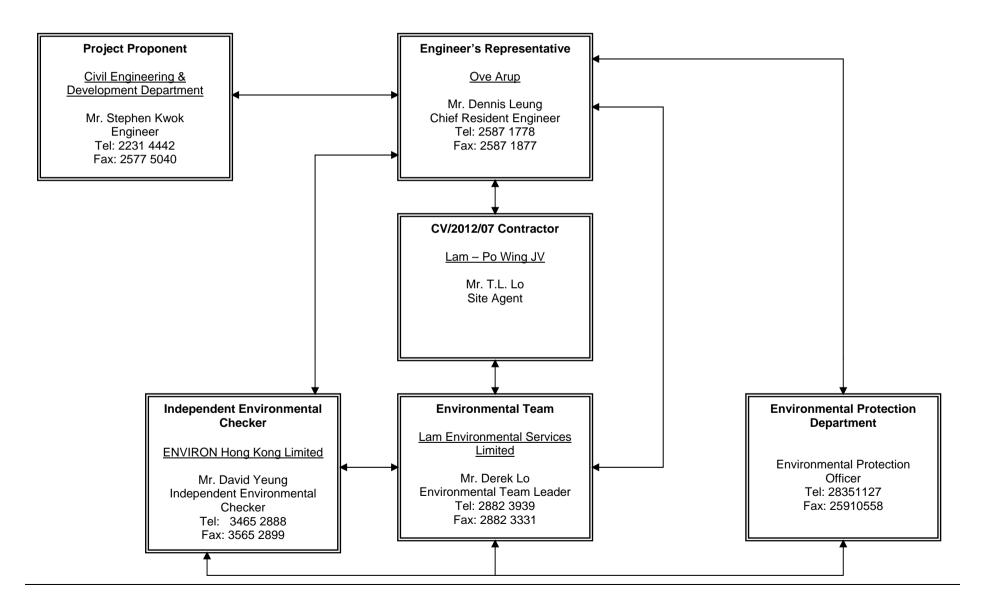
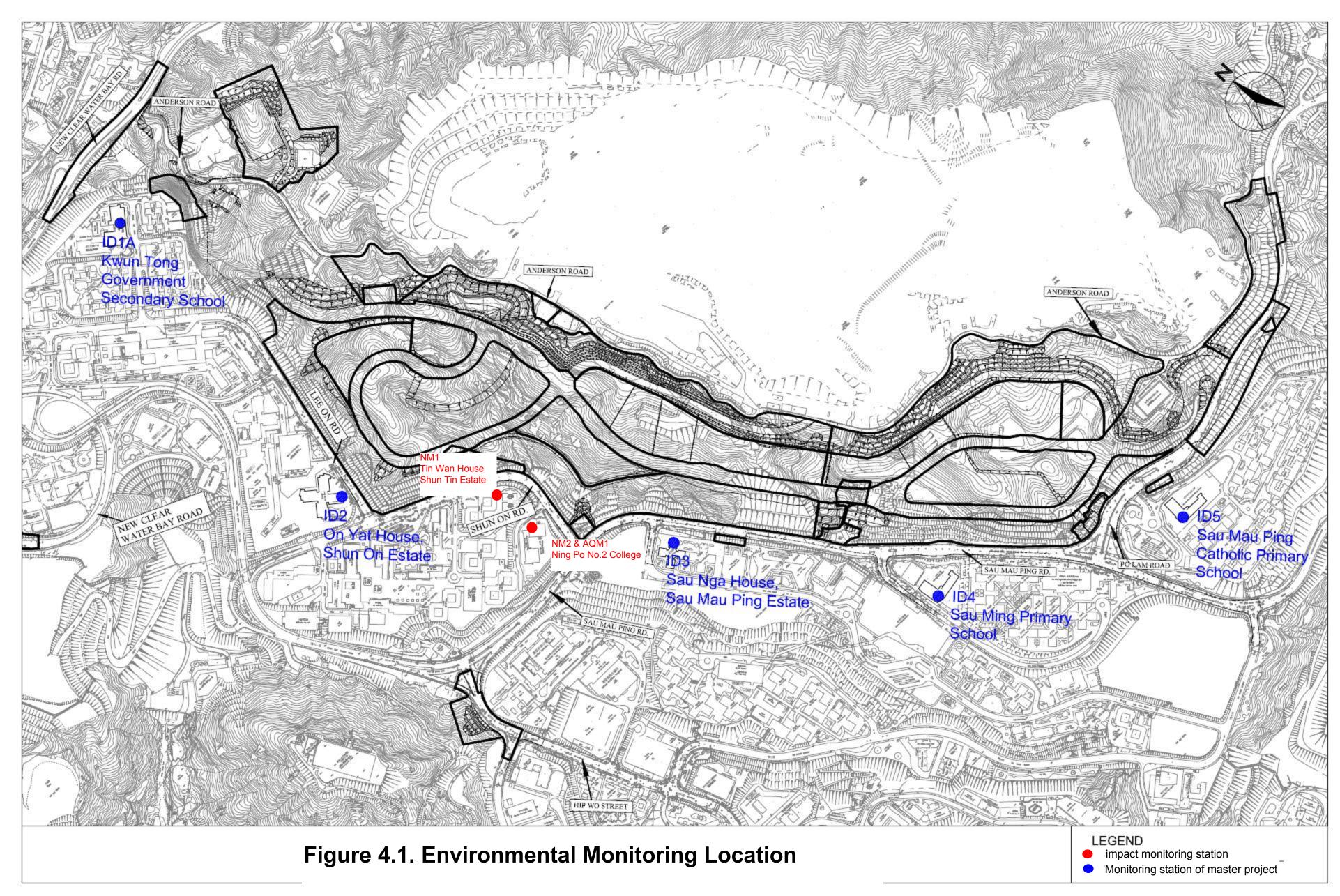




Figure 4.1

Locations of Environmental Monitoring Stations





Appendix 3.1

Environmental Mitigation Implementation Schedule



# Environmental Mitigation Implementation Schedule

Implementation Schedule for Construction Dust Control

 M&A og Ref.	Environmental Protection Measures	Location (duration/ completion of	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
m	measures)			D	С		
S1, S2.8	<ul> <li>Site Practice <ul> <li>Mean vehicle speed of haulage trucks at 10 km/hr.</li> </ul> </li> <li>Twice daily watering of all open site areas.</li> <li>Regular watering (once every 1 hour) of all site roads and access roads with frequent truck movement.</li> <li>Tarpaulin covering of all dusty vehicle loads transported to, form and between site locations.</li> <li>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.</li> <li>Suitable side and tailboards on haulage vehicles.</li> <li>Watering of temporary stockpiles.</li> </ul> <li>Blasting <ul> <li>Use of select aggregate and fines to stem the charge with drill holes and watering of blast face.</li> <li>Use of vaccum extraction drilling methods.</li> <li>Carefully sequenced blasting.</li> </ul> </li> <li>Crushing <ul> <li>Fabric filters installed for the crushing plant.</li> <li>Water sprays on the crusher.</li> </ul> </li> <li>Loading and Unloading Points, and conyeyor Belt System</li> <li>Water sprays at all fixed loading and unloading points (at the crusher and conveyor belts).</li> <li>The loading point at the crusher is enclosed with dust curtains are used for controlling dust.</li> <li>When transferring materials from conveyor belt or crusher to the dump trucks, chutes or dust curtains are used for controlling dust.</li>	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 Ref.			Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines	
						D	С		
\$3.7	S1, S3.7	<ul> <li>Site Formation</li> <li>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.</li> <li>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.</li> </ul>	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.	l Ref.	Location (duration/ completion of	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
			measures)			D	С	
S6.4	S1	<ul> <li>Construction Phase</li> <li>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.</li> <li>Separate treatment facilities may be required for effluent from site offices, toilets (unless chemical toilets are used) and canteens.</li> <li>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.</li> <li>Relevant practice for dealing with various typr of construction discharges provided in EPD's ProPECC Note 1/94 should be adopted.</li> </ul>	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,



EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location (duration/ completion of measures)	Funding Agent	Implementation Agent	Implementation Stages**		Relevant Legislation & Guidelines
						D	С	
S8.4	S1,S4	<ul> <li>Waste Disposal</li> <li>Different types of wastes should be segregated, stored, transported and disposed of proper practice of waste management.</li> <li>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.</li> <li>Excavated spoil should be used as much as possible to minimize off-site fill material requirements and disposal of spoil.</li> <li>During road transportation of excavated spoil, vehicles should be installed at all site exits together with regular qatering of the site access roads.</li> <li>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 Treatment Facility and disposed of in accordance with the Chemical Waste (General) Regulation.</li> <li>Necessary mitigation measures should be adopted to prevent the uncontrolled disposal of chemical and hazardous waste into air, soil, surface waters and ground waters.</li> </ul>	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			
<ul> <li>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 furmes, 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.</li> </ul>			
<ul> <li>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.</li> </ul>			
<ul> <li>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.</li> </ul>			

\* 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) <sup>Note 1</sup>

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 $\mu$ g/m <sup>3</sup>	24-hour TSP Level in $\mu$ g/m <sup>3</sup>		
	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 :		Honkei Technology Hong Kong Limited	
		Unit 7, 18/F., Treasure Centre, 42 Hung To	Road,
		Kwun Tong, Kowloon	
2001 (2011 - 1903 - 2011 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 - 1904 -			
TEST CONDITIONS / 浿	脳	條件	

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

Relative Humidity / 相對濕度 :  $(55 \pm 20)\%$ 

# 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¢Lee	
	Project Engineer	
Certified By	:	Date of Issue
核證	K M Wu	簽發日期
	Engineer	

1

7 April 2014

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

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

Sun Creation Engineering Limited - Calibration & Testing Laboratory c/o 4/F, 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青山灣機樓四樓 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

- 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 :

- 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 Setting		Applie	UUT	
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
L <sub>F</sub>	A	94.00	1	95.0

# 6.1.1.2 After Self-calibration

UUT	UUT Setting		ng Applied Value		IEC 60651 Type 1
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)	Spec. (dB)
L <sub>F</sub>	A	94.00	1	94.0	$\pm 0.7$

# 6.1.2 Linearity

UUT	Setting Applied Value		1 Value	UUT
Time Weighting	Frequency Weighting	Level (dB)	Freq. (kHz)	Reading (dB)
L <sub>F</sub>	A	94.00	1	94.0 (Ref.)
		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		Applied 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.
Ls				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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# 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	Frequency	Level	Burst	Reading	Spec.
Weighting	Weighting	(dB) 106.00	Duration Continuous	(dB) 106.0	(dB) Ref.
$L_F$ L <sub>F</sub> Maximum	11	100.00	200 ms	105.0	$-1.0 \pm 1.0$
Ls			Continuous	106.0	Ref.
L <sub>S</sub> Maximum			500 ms	102.0	$-4.1 \pm 1.0$

# 6.3 Frequency Weighting

# 6.3.1 A-Weighting

UUT	Setting	Appli	ed Value	UUT	IEC 60651 Type 1
Time	Frequency	Level	Freq.	Reading	Spec.
Weighting	Weighting	(dB)		(dB)	(dB)
L <sub>F</sub>	A	94.00	31.5 Hz	54.3	$-39.4 \pm 1.5$
			63 Hz	67.7	$-26.2 \pm 1.5$
			125 Hz	77.7	$-16.1 \pm 1.0$
			250 Hz	85.3	$-8.6 \pm 1.0$
			500 Hz	90.7	$-3.2 \pm 1.0$
			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

UUT	Setting	Appli	ed Value	UUT	IEC 60651 Type 1
Time	Frequency	Level	Freq.	Reading	Spec.
Weighting	Weighting	(dB)		(dB)	(dB)
L <sub>F</sub>	С	94.00	31.5 Hz	90.8	$-3.0 \pm 1.5$
			63 Hz	93.1	$-0.8 \pm 1.5$
			125 Hz	93.8	$-0.2 \pm 1.0$
			250 Hz	94.0	0.0 ± 1.0
			500 Hz	94.0	$0.0 \pm 1.0$
			1 kHz	94.0	Ref.
			2 kHz	93.9	$-0.2 \pm 1.0$
	N 1		4 kHz	93.2	$-0.8 \pm 1.0$
			8 kHz	90.9	-3.0 (+1.5 ; -3.0)
			12.5 kHz	86.0	-6.2 (+3.0 ; -6.0)

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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

6.4 Time Averaging

UUT Setting					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 1 Spec. (dB)
LeqT	А	10 sec.	4	1	1/10	110.0	100	100.0	± 0.5
Doq1		1	510		1/10 <sup>2</sup>	]	90	90.0	± 0.5
		60 sec.			1/10 <sup>3</sup>		80	80.0	± 1.0
		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 :	104 dB 114 dB	:	250 Hz - 500 Hz 1 kHz 2 kHz - 4 kHz 8 kHz 12.5 kHz 1 kHz	: $\pm 0.35 \text{ dB}$ : $\pm 0.30 \text{ dB}$ : $\pm 0.20 \text{ dB}$ : $\pm 0.35 \text{ dB}$ : $\pm 0.45 \text{ dB}$ : $\pm 0.70 \text{ dB}$ : $\pm 0.10 \text{ dB}$ (Ref. 94 dB) : $\pm 0.10 \text{ dB}$ (Ref. 94 dB) : $\pm 0.2 \text{ dB}$ (Ref. 110 dB continuous sound level)
				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.





# CERTIFICATE OF CALIBRATION

Certificate No.:	14CA0311 02		Page:	1	of	2
Item tested						
Description:	Acoustical Calibra	tor (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.:	-					
Date of receipt:	11-Mar-2014					
Date of test:	13-Mar-2014					
Reference equipment	used in the calib	ration				
Description:	Model:	Serial No.	Expiry Date:	-	Fraceab	e to:
Lab standard microphone	B&K 4180	2341427	17-Apr-2014	S	SCL	
Preamplifier	B&K 2673	2239857	16-Apr-2014	C	CEPREI	
Measuring amplifier	B&K 2610	2346941	24-Apr-2014	C	CEPREI	
Signal generator	DS 360	61227	15-Apr-2014	C	CEPREI	
Digital multi-meter	34401A	US36087050	17-Dec-2014	C	CEPREI	
Audio analyzer	8903B	GB41300350	15-Apr-2014	C	CEPREI	
Universal counter	53132A	MY40003662	15-Apr-2014	C	CEPREI	
Ambient conditions						
Temperature:	22 ± 1 °C					
Relative humidity:	60 ± 10 %					
Air pressure:	1000 ± 10 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 Min/Feng Jun Qi

14-Mar-2014 **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:

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**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.



# 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. 香港黃竹坑道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)

ID

Ning Po No.2 College

Calbration Due Dat :

:

**Calbration Date** 

25-Apr-14 25-Jun-14

CALIBRATION OF CONTINUOUS FLOW RECORDER

			A	mbient Co	ndition				
Temperature, T <sub>a</sub>	296			Kelvin <b>Pressure</b> , P <sub>a</sub>				1012	mmHg
			Orifice Tra	nsfer Stand	lard Inform	ation			
Equipment No.		EL086		Slope, m <sub>c</sub>	2.019	68	Intercept, b	oc	-0.02746
Last Calibration Date		15-Jul-1	3		(Hxl	P <sub>a</sub> / 10	13.3 x 298	$(/T_a)^{1/2}$	/2
Next Calibration Date		15-Jul-1	4				xQ <sub>std</sub> +b <sub>c</sub>		
			C	Calibration	of TSP				
Calibration	Manometer Reading			Q	std	nuous Flow	uous Flow IC		
Point	н (	inches of	water)	(m <sup>3</sup> /	(m <sup>3</sup> / min.)		Recorder, W		3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31
	(up)	(down)	(difference)	X-a	ixis	cis (CFM)			Y-axis
1	5.9	5.9	11.8	1.7	191		53 5		53.1446
2	4.6	4.6	9.2	1.5	195	43			43.1173
3	4.0	4.0	8.0	1.4	179	39		39 39. <sup>-</sup>	
4	2.4	2.4	4.8	1.1	013	26			26.0710
5	1.5	1.5	3.0	0.8	735		16		16.0437
By Linear Regression of	Y on X								
	Slope, m	=	43.1	590	Inte	ercept, b	= -;	21.7430	
Correlation Coefficient* = 0.9		0.99	993						
Calibration Accepted = Yes		Yes/	No**						

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



Lam Environmental Services Limited

# Calibration Data for High Volume Sampler (TSP Sampler)

Location	:	Ning Po No.2 College	Calbration Date :		24-Jun-14
ID	:	AQM1	Calbration Due Dat	:	24-Aug-14

# CALIBRATION OF CONTINUOUS FLOW RECORDER

Ambient Condition											
Temperature, T <sub>a</sub>		301		Kelvin	Pressure, P	a		1004			
Orifice Transfer Standard Information											
Equipment No.		EL086		Slope, m <sub>c</sub>	2.019	68	Intercept, b	c	-0.02746		
Last Calibration Date		15-Jul-1	3		(Hxl	P <sub>a</sub> / 10	13.3 x 298	/T <sub>a</sub> ) <sup>1/</sup>	2		
Next Calibration Date		15-Jul-1	4		=	m <sub>c</sub> >	$(Q_{std} + b_c)$				
Calibration of TSP											
Calibration	Manometer Reading			c	) <sub>std</sub>	Contir	uous Flow		IC		
Point	H (inches of water)		(m <sup>3</sup>	/ min.)	Rec	order, W	(W(P <sub>a</sub> /101:	3.3x298/T <sub>a</sub> ) <sup>1/2</sup> /35.31)			
	(up)	(down)	(difference)	x-	X-axis		(CFM)		Y-axis		
1	6.0	6.0	12.0	1.7	7124		55	54.4			
2	4.8	4.8	9.6	1.5	5330	46			45.5597		
3	4.1	4.1	8.2	1.4	4179	40		:	39.6171		
4	2.4	2.4	4.8	1.0	0880		25		24.7607		
5	1.5	1.5	3.0	0.8	3630		15	14.8564			
By Linear Regression of	Y on X										
	Slope, m	=	46.4	663	Int	ercept, b	= -2	25.6138			
Correlation Coefficient* = 0.9			996								
Calibration	Calibration Accepted = Yes		Yes/	No**							

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

\*\* Delete as appropriate.

Remarks :						
Calibrated by	:	Henry Lau	_	Checked by	:	Derek Lo
Date	:	24-Jun-14	-	Date	:	24-Jun-14



TISCH ENVIROMENTAL, INC. 145 SOUTH MIAMI AVE. VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX WWW.TISCH-ENV.COM

	ORIFICE 1	AIR POLLU RANSFER STAN	ITION MONITORII		VORKSHEET I	E-5025A
Date - Ju Operator	l 15, 2013 Tisch	Rootsmeter Orifice I.I	- /	138320 )005	Ta (K) - Pa (mm) -	300 759.46
======= 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	1.00 1.00 1.00 1.00 1.00	1.3910 0.9830 0.8800 0.8380 0.6930	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)
0.9884 0.9843 0.9822 0.9811 0.9760	0.7106 1.0013 1.1161 1.1708 1.4084	1.4090 1.9926 2.2278 2.3365 2.8180	0.9958 0.9916 0.9895 0.9884 0.9832	0.7159 1.0087 1.1244 1.1795 1.4188	0.8888 1.2570 1.4054 1.4740 1.7777
Qstd slor intercept coefficie	: (b) = ent (r) =	2.01968 -0.02746 0.99999 Pa/760) (298/5	 Qa slope intercept coefficie	c (b) =	1.26469 -0.01732 0.99999

## 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 June 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jun	2-Jun		4-Jun 24 hr TSP	5-Jun 1hr TSP x 3 Noise	6-Jun	7-Jun
8-Jun		24 hr TSP	11-Jun 1hr TSP x 3 Noise	12-Jun	13-Jun	14-Jun
15-Jun	24 hr TSP	17-Jun 1hr TSP x 3 Noise	18-Jun	19-Jun		21-Jun 24 hr TSP
22-Jun	23-Jun 1hr TSP x 3 Noise	24-Jun	25-Jun			28-Jun 1hr TSP x 3
29-Jun	30-Jun	1-Jul	2-Jul	24 hr TSP	4-Jul 1hr TSP x 3 Noise	5-Jul

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 July 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29-Jun	30-Jun	1-Jul	2-Jul		4-Jul 1hr TSP x 3 Noise	5-Jul
6-Jul	7-Jul	8-Jul	9-Jul 24 hr TSP	10-Jul 1hr TSP x 3 Noise	11-Jul	12-Jul
13-Jul		24 hr TSP	16-Jul 1hr TSP x 3 Noise	17-Jul	18-Jul	19-Jul
20-Jul	24 hr TSP	22-Jul 1hr TSP x 3 Noise	23-Jul	24-Jul		26-Jul 24 hr TSP
	28-Jul 1hr TSP x 3 Noise	29-Jul	30-Jul	31-Jul	1-Aug 24 hr TSP	2-Aug 1hr TSP x 3

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

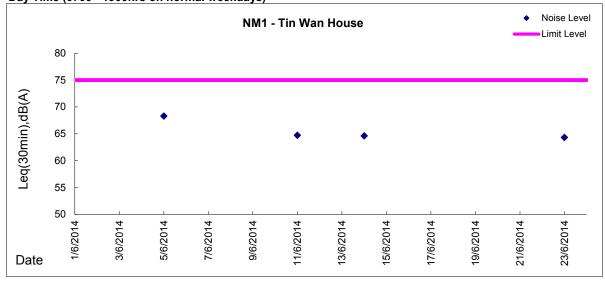
		Daytir	ne(07:00-19:00)		
Date	Time	Location	Leq (dB)	L10 (dB)	L90 (dB)
5-Jun-14	9:20-9:50	NM1	68.3	71.3	65.7
5-Juli-14	8:40-9:10	NM2	64.7	69.4	63.7
11-Jun-14	9:30-10:00	NM1	64.7	70.8	63.8
11-Jun-14	8:50-9:20	NM2	64.1	68.2	61.1
17-Jun-14	9:35-10:05	NM1	64.6	68.3	62.5
17-Juli-14	8:55-9:25	NM2	63.3	65.4	61.2
23-Jun-14	10:40-11:10	NM1	64.3	67.2	61.7
23-3011-14	10:00-10:30	NM2	63.7	66.8	61.2

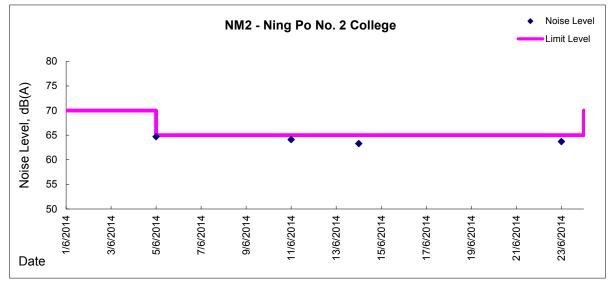
NM1 - Tin Wan House

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



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

Location: AQM1-Ning Po No.2 College

# Report on 24-hour TSP monitoring Action Level ( $\mu$ g/m3) - 200 Limit Level ( $\mu$ g/m3) - 260

Date	Sampling	Weather	Filter	Filter Weight,	g	Elapse Tim	Elapse Time, hr		Flo	w Rate, m <sup>3</sup> /ı	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, $Q_{sf}$	Average	Volume, m <sup>3</sup>	μg/m³
4-Jun-14	8:00	Fine	008639	2.8344	2.9609	1439.28	1463.28	24.00	1.34	1.34	1.34	1928	66
10-Jun-14	8:00	Rainy	008934	2.8279	2.8972	1466.28	1490.28	24.00	1.34	1.34	1.34	1931	36
16-Jun-14	8:00	Rainy	008929	2.8289	2.8912	1493.28	1517.28	24.00	1.34	1.34	1.34	1928	32
21-Jun-14	8:00	Rainy	008984	2.8276	2.8950	1520.28	1544.28	24.00	1.34	1.34	1.34	1932	35
27-Jun-14	8:00	Fine	008772	2.8481	2.9145	1547.30	1571.30	24.00	1.29	1.30	1.29	1865	36

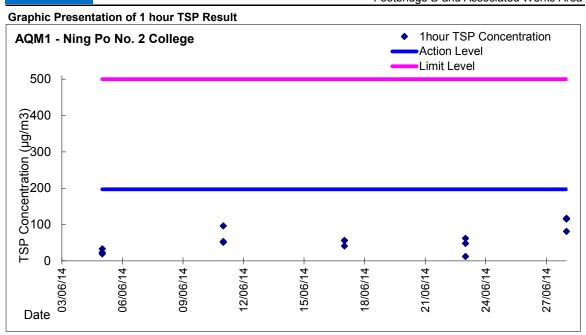
Report on 1-hour TSP monitoring

Action Level (μg/m3) - 197 Limit Level (μg/m3) - 500

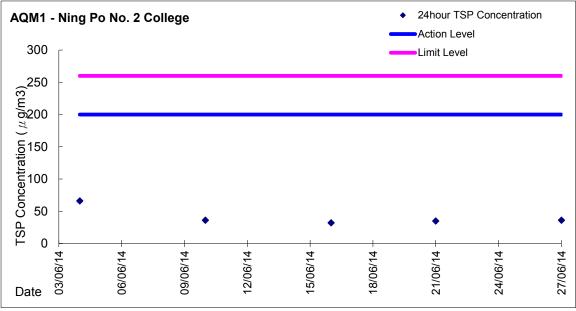
Date	Sampling	Weather	Filter	Filter Weight,	g	Elapse Tim	e, hr	Sampling	Flo	w Rate, m³/ı	min	Total	TSP Level,
	Time	Condition	paper no.	Initial	Final	Initial	Final	Time, hr	Initial, Q <sub>si</sub>	Final, Q <sub>sf</sub>	Average	Volume, m <sup>3</sup>	μg/m <sup>3</sup>
5-Jun-14	8:32	Fine	008929	2.8354	2.8381	1463.28	1464.28	1.00	1.38	1.38	1.38	83	33
5-Jun-14	9:40	Fine	008640	2.8265	2.8284	1464.28	1465.28	1.00	1.38	1.38	1.38	83	23
5-Jun-14	10:50	Fine	008935	2.8261	2.8276	1465.28	1466.28	1.00	1.34	1.34	1.34	80	19
11-Jun-14	8:45	Rainy	008770	2.8455	2.8537	1490.28	1491.28	1.00	1.43	1.43	1.43	86	96
11-Jun-14	9:50	Rainy	008931	2.8242	2.8285	1491.28	1492.28	1.00	1.34	1.34	1.34	80	53
11-Jun-14	10:55	Rainy	008930	2.8252	2.8293	1492.28	1493.28	1.00	1.34	1.34	1.34	80	51
17-Jun-14	8:40	Rainy	008985	2.8302	2.8347	1517.28	1518.28	1.00	1.34	1.34	1.34	80	56
17-Jun-14	9:55	Rainy	008981	2.8254	2.8299	1518.28	1519.28	1.00	1.34	1.34	1.34	80	56
17-Jun-14	11:00	Rainy	008771	2.8542	2.8575	1519.28	1520.28	1.00	1.34	1.34	1.34	80	41
23-Jun-14	8:40	Rainy	008982	2.8272	2.8322	1544.28	1545.28	1.00	1.34	1.34	1.34	81	62
23-Jun-14	9:55	Rainy	008983	2.8296	2.8335	1545.28	1546.28	1.00	1.34	1.34	1.34	81	48
23-Jun-14	11:00	Rainy	008773	2.8417	2.8427	1546.28	1547.28	1.00	1.34	1.34	1.34	81	12
28-Jun-14	8:24	Fine	008524	2.8509	2.8570	1571.30	1572.30	1.00	1.25	1.25	1.25	75	81
28-Jun-14	9:30	Fine	008208	2.8129	2.8215	1572.30	1573.30	1.00	1.25	1.25	1.25	75	115
28-Jun-14	10:35	Fine	008210	2.8201	2.8289	1573.30	1574.30	1.00	1.25	1.25	1.25	75	117

am

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



# 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	<ol> <li>Notify IC(E) and Contractor;</li> <li>Carry out investigation;</li> <li>Report the results of investigation to IC(E) and Contractor;</li> <li>Discuss with Contractor and formulate remedial measures;;</li> <li>Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol> <li>Review the analysed results submitted by ET;</li> <li>Review the proposed remedial measures by the Contractor and advise ER accordingly;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>Ensure remedial measures are properly implemented.</li> </ol>	<ol> <li>Submit noise mitigation proposals to IC(E);</li> <li>Implement noise mitigation proposals.</li> </ol>
Exceedance for Limited Level	<ol> <li>Notify IC(E), ER, EPD and Contractor;</li> <li>Identify sources;</li> <li>Repeat measurements to confirm finding;</li> <li>Increase monitoring frequency;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Inform IC(E), ER and EPD the causes and actions taken for the exceedances;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Require Contractor to propose remedial measures for the analysed noise problem;</li> <li>Ensure remedial measures are properly implemented;</li> <li>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.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>



# Event / Action Plan for Construction Air Quality

EVENT		ACTION		_
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sample	<ol> <li>Identify source;</li> <li>Inform IC(E) and ER;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method.</li> </ol>	1. Notify Contractor.	<ol> <li>Rectify any unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol> <li>Identify source;</li> <li>Inform IC(E) and ER;</li> <li>Repeat measurements to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Discuss with IC(E) and Contractor for remedial actions required;</li> <li>If exceedance continues, arrange meeting with IC(E) and ER;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise Implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>
LIMITED LEVEL		1		
1. Exceedance for one sample	<ol> <li>Identify source;</li> <li>Inform ER, Contractor and EPD;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol> <li>Notify IEC, ER, Contractor and EPD;</li> <li>Identify source;</li> <li>Repeat measurement to confirm findings;</li> <li>Increase monitoring frequency to daily;</li> <li>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>If exceedance stops, cease additional monitoring.</li> </ol>	<ol> <li>Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> <li>Supervise the implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of failure in writing;</li> <li>Notify Contractor;</li> <li>In consolidation with the IC(E), agree with the Contractor on the remedial measures to be implemented;</li> <li>Ensure remedial measures properly implemented;</li> <li>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.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IC(E) within 3 working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Resubmit proposals if problem still not under control;</li> <li>Stop the relevant portion of works as determined by the ER until the exceedance is abated.</li> </ol>



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		Nature of Complaint	Outcome	Status
Nil	Nil	Nil	Nil	Nil	Nil	Closed



Appendix 9.1

Construction Programme

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

D		Task Name		0	P' I D I	С	otal Slack	Deel Ion Each (or )	2013	2014 NovDec Jan FebMarAprMayJun Jul AugSepC	Oct Nov Dec Is
1	WBS 1	Development at Anderson Road - Footbridge D and	Duration 1119 days	Start Thu 31/01/13	Finish Predecessors Wed 30/11/16	Successors To	0 days		uni Jui Augsepioci	thood and the deviation of the second s	Jeipon Dec Ja
		Associated Works									
2	1.1	PRELIMINARY WORK	578 days	Thu 31/01/13	Sun 01/02/15		541 days	-			¢
3	1.1.1	Application of XP, Site Access from Highways	140 days	Thu 31/01/13	Wed 31/07/13	88	889 days				
4	1.1.2	Tree Survey	12 days	Mon 18/02/13	Sat 02/03/13	5	0 days				
5	1.1.3	Transplant	30 days	Mon 04/03/13	Thu 11/04/13 4		0 days				
6	1.1.4	Air & noise baseline monitoring	50 days	Mon 18/02/13	Sat 20/04/13	46,47	8 days		]	224 일종 2011년 대학원	
7	1.1.5	Record Survey, Condition Survey and Setting Out	90 days	Thu 31/01/13	Thu 30/05/13		1029 days				
8	1.1.6	Erect Fencing and Hoarding As Directed	48 days	Mon 08/04/13	Tue 04/06/13	16	491 days		*		
9	1.1.7	Design and material submission	120 days	Thu 31/01/13	Sat 06/07/13	38,79	128 days				
10	1.1.8	Handover of Portion A, B & C1	0 days	Sat 28/09/13	Sat 28/09/13	61	109 days		<b>♦</b> _28	8/09	
11	1.1.9	Handover of Portion E1	0 days	Fri 31/05/13	Fri 31/05/13		1029 days	•	31/05		
12	1.1.10	Handover of Portion E2	0 days	Sun 01/02/15	Sun 01/02/15		541 days				
13	1.2	Section 1	781 days	Mon 08/04/13	Tue 01/12/15		20 days				
14	1.2.1	Lift Tower D-A	475 days	Wed 05/06/13	Wed 14/01/15		491 days				
15	1.2.1.1	Method statement and material submission	30 days	Mon 23/09/13	Tue 29/10/13 18SS-60 days		905 days		<b>,</b>	g	
16	1.2.1.2	Excavation for Raft footing	150 days	Wed 05/06/13	Tue 03/12/13 8	17SS	491 days				
17	1.2.1.3	Rock Joint Mapping for founding material of raft footing	150 days	Wed 05/06/13	Tue 03/12/13 16SS	18	491 days				
18	1.2.1.4	Construct Raft footing	30 days	Wed 04/12/13	Fri 10/01/14 17	19,15SS-60 days	491 days				
19	1.2.1.5	Construct RC Lift Tower and Retaining Wall	80 days	Sat 11/01/14	Sat 26/04/14 18	20,41	491 days				
20	1.2.1.6	Erect Steelwork for Lift Shaft	70 days	Mon 28/04/14	Tue 22/07/14 19	21,22	491 days				
21	1.2.1.7	Installation of Lift	100 days	Wed 23/07/14	Wed 19/11/14 20	22FF+5 days,23,24FS-60 days,54	491 days				
						uu 5,5 1					
22	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	550 days				
23	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	553 days				
24	1.2.1.10	Finishing and Metal Works	100 days	Mon 15/09/14	Wed 14/01/15 21FS-60 days,22FS-60 days,23FF+7 days		550 days				
25	1.2.2	Lift Tower D-B	480 days	Tue 08/10/13	Mon 01/06/15		439 days		-		
26	1.2.2.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/13 27SS-60 days		893 days		<b>→</b>		
27	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				
28	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				
29	1.2.2.4	Construct Raft footing	30 days	Wed 30/04/14	Thu 05/06/14 28	30	379 days				
30	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			******	
31	1.2.2.6	Erect Steelwork for Lift Shaft	70 days	Thu 11/09/14	Wed 03/12/14 30	32,33	379 days				
32	1.2.2.7	Installation of Lift	100 days	Thu 04/12/14	Mon 13/04/15 31	33FF,34,35FS-60 days,54	379 days				
Date	e: Mon 10/	D6/13 Baseline	Milestone 🛇	<del>9</del> 7	Task	Mileston	ne 🔶	Base	eline		
	pared By: T.		Summary		Critical Task	Summar	y 🖛	Prog	gress		

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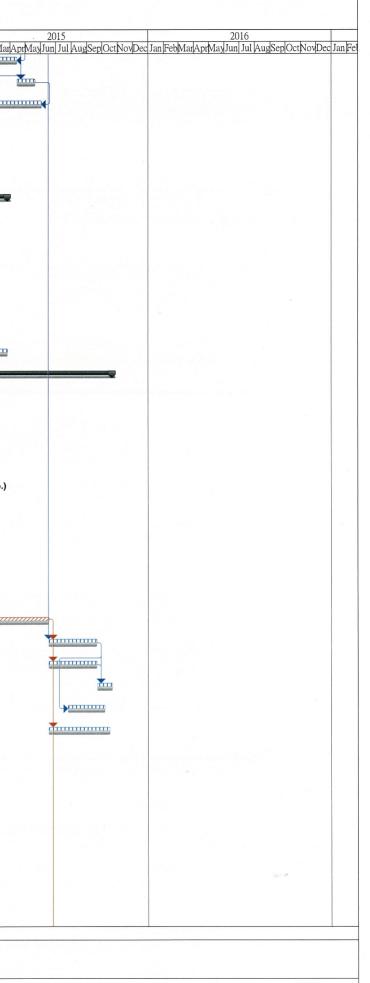
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2015	2016 Jan FebMarAprMayJun Jul AugSepOctNovDec	
ayJun Jul AugSepOctNovDec	Jan FebMarAprMayJun Jul AugSepOctNovDec	Jan
		. 8
	1. A. A.	
		-

4/1       3.1       Bridge Deck D.AB       553 days       Ved 2400/15       Ved 2500/15       588 days         5/7       1.2.5.1       Method softwarent tod material administion       30 days       Wed 2400/15       Tot 30005133885 60 days       1020 days         5/7       1.2.5.1       Method softwarent tod material administion       30 days       Wed 2400/15       Tot 30005133885 60 days       1020 days         5/7       1.2.3.3       Concenting the Biblings on the       60 days       Fei 1400/14       425 2800/15       94.13       582 days         1/2       L.2.3.5       Exercising Seed bridge finanz       7 days       Tot 1000405       Wel 2600/14       10.43       456 days         1/2       L.2.3.7       Roofing and lineiting works on bridge       0.04 days       Tot 2010/15 4005 cdd days       466 days         1/2       L.2.4       Untertower De       72 days       Tot 2010/15 4005 cdd days       887 days         1/2       L.2.4       Denoidin dot existing streament       30 days       Tot 2010/15 405.6       48       120 days         1/2       L.2.4       Denoidin dot existing streament       30 days       Tot 2010/15 405.6       48       120 days         1/2       L.2.4       Denoidin dot existing streament       30 days       Tot						De	velopment at A	nderson Road	or Contract No. CV I - Footbridge D an (Rev. 2)	d Associate	d Works		
No.         Dist.         D		Name	Duration	Start	Finish	Predecessors	Successors	Total Slack D	ec Ian FebMarAprMayJun	13 Jul AugSepOct	NovDec Jan FebMar	2014 AprMayJun Jul Au	SepOctNovDec
S       2.3.0       Finding and Mail Wals       100 day       Ph 1500/13       Man B3503 3277-0 day       44 day         S       2.3.1       Endog Lack D.4       55 day       Vel 240403       Wel 250035       184 day         S       2.3.1       Ordering to Mail And Mail       100 day       No 1860013       78.1500/13       29.3575-60 day       12.4 day         S       2.3.2       Ordering to Mail An Static Mail       100 day       No 1860013       78.1500/13       29.3575-60 day       12.4 day         S       2.3.2       Ordering to Mail An Static Mail       100 day       No 1860013       78.1500/13       29.3575-60 day       12.4 day         S       12.4 day       Contrain to Mail An Static Mail       100 day       No 1860014       29.05013       41.8 day         S       12.1 day       Mail Mail Mail       No 1860014       20.250013 4       42.4 day         S       12.1 day       Mail Mail Mail Mail Mail       No 1860014       20.250013 4       42.4 day         S       12.1 day       Mail Mail Mail Mail Mail Mail Mail Mail		M&E Installation		Thu 04/12/14	Mon 13/04/	15 32FF,31							
All         Social State         Social State         Social State         Social State           All         2.3.3         Bodge Dash Dall         Social State         Med 2404/13         Med 2404/14	34 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					
No.         No. <td>35 1.2.2.10</td> <td>Finishing and Metal Works</td> <td>100 days</td> <td>Fri 30/01/15</td> <td>Mon 01/06/</td> <td>days,33FS-60 days,34FF+7</td> <td></td> <td>443 days</td> <td></td> <td></td> <td></td> <td></td> <td></td>	35 1.2.2.10	Finishing and Metal Works	100 days	Fri 30/01/15	Mon 01/06/	days,33FS-60 days,34FF+7		443 days					
IDEA         Decked Statute and Statutes         Decked St	6 1.2.3	Bridge Deck D-AB	563 days	Wed 24/04/13	Wed 25/03/	15		188 days	-				
12.22         Outman and Markan         10.000         Number 100.000         10.0000           12.33         Presention of Skill orket of aire         01.000         10.0001/80         40.000         10.2001/80         40.000         10.2001/80           12.33         Presention of Skill orket of aire         71.400         10.0001/80         40.000         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00         10.2001/80         40.00	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					
9         12.5.5         Prantame and accent use in balance         100 days         Fit Loop /	38 1.2.3.2	Ordering of Material	100 days	Mon 08/07/13	Tue 05/11/	139	39,37SS-60 days	128 days			ካ		
Dial Lab.         Constraint get higher is the         Outget is in the intervent of	39 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					
Image: Construct matrix modulation         Guidan         Sci 201/14/41         43         496 days           Image: Construct modulation         Guidan         Sci 201/14/41         43         496 days           Image: Construct modulation         Guidan         Sci 201/14/41         43         496 days           Image: Construct modulation         Guidan         Sci 201/14/41         43         496 days           Image: Construct modulation         Guidan         Sci 201/14/41         14/1         Media document and matrixia domination         Guidant         Guidant <thguidant< th="">         Guidant         <thguida< td=""><td>40 1.2.3.4</td><td>Connecting the Bridge on site</td><td>60 days</td><td>Fri 14/03/14</td><td>Wed 28/05/</td><td>14 39</td><td>41</td><td>582 days</td><td></td><td></td><td><b></b></td><td></td><td>- </td></thguida<></thguidant<>	40 1.2.3.4	Connecting the Bridge on site	60 days	Fri 14/03/14	Wed 28/05/	14 39	41	582 days			<b></b>		-
2       12.30       Exclamate infinite vectors on bridge       00 days       Million (174)       40       200001         12.12.7       Excling and finite vectors on bridge       00 days       Million (174)       90       400       12.4         12.4       Likh Tower D-C       728 days       Tuo 0200513       Tuo 2010/15       90       303 days         6       12.4.1       Medical durament and material oblishion       30 days       Tuo 0200513       Tuo 2010/15       90       303 days         47       12.4.3       Demolshic floc collars of indicad all necessary       40 days       Tuo 2000713       Fin 2500713 46.6       48       120 days         46       12.4.4       Cemence by E-bored 11 High: 60 ms/ (indicad all necessary       40 days       Fin 2500714 47.72.74       40.4555-60 days       0 days         47       12.4.5       Fit Testing       40 days       Fit 2500714 40       51       0 days         48       12.4.4       Construct gale cap       30 days       Tue 0701014       Mon 10/11/14 50       52       0 days         51       12.4.5       Backilling showe file cap       110 days       Tue 10/10/15 52       54.555.52       0 days         52       12.4.10       Insalinton of Lith       80 days       Tue 10/	41 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					<b>T</b>
13.         12.1.7         Recording and Hittoring works minutage         90.000         Note 2000         Note 2000         Note 2000           14.         12.4.1         Uth Tower DC         72 days         Tow 2000/15         72 days         7000         9000/13         7000/13         <	42 1.2.3.6	Irrigation system installation	60 days	Fri 19/09/14	Sat 29/11/	14 41	43	496 days					to compare the second
Interface         Number of the civiting structure:         Number	43 1.2.3.7	Roofing and finishing works on bridge	90 days	Mon 01/12/14	Wed 25/03/	15 42		496 days					
Interpretation         Prechail & determine FL (included all necessary preparation doll les)         Into QUOVI3         Wed 19/00/13 6         47.70.73         O days preparation           47         12.4.3         Demolish the existing structure         30 days         Fin 2000/13         Fin 2000/13         66         48         120 days preparation         120 days	44 <b>1.2.4</b>	Lift Tower D-C	726 days	Thu 02/05/13	Tue 20/10/	15		0 days	s <del></del> -				
Internation and test)         preparation and test)         Product of the existing structure         30 days         The 2007/13 46,6         48         120 days           47         12.4.3         Denodish the existing structure         30 days         The 2007/13 46,6         48         120 days           48         12.4.4         Construct Pre-burdel H pile (60 no) (included all necessary         100 days         Mon 1407/14         The 2008/14 48         50         0 days           51         12.4.5         Pit: Testing         40 days         Mon 1407/14         The 2008/14 48         50         0 days           51         12.4.7         Construct superstructure to level 103.8         30 days         The 2008/14 48         50         0 days           52         12.4.8         Backfilling above pile cap         12 days         The 2008/14 48         50         0 days           53         12.4.1         Construct superstructure to level 103.8         10 days         The 2017/14         Mon 1506/15 52         54.58.58.2         0 days           54         12.4.10         Mathematican of Lat         80 days         The 2010/15 54.55         327 days         37         32.4.13         Rocing Cramecian Tower D-3 & D-C         10 days         The 2010/15 54.55         327 days         331 days         <	45 1.2.4.1	Method statement and material submission	30 days	Tue 08/10/13	Tue 12/11/	13 48SS-60 days		893 days		<b>*</b>	9		
12.4.1       Definition the locking balance       1.0 about 1 in locking in the locking in t	46 1.2.4.2		40 days	Thu 02/05/13	Wed 19/06/	13 6	47,70,73	0 days	22223-				
12.24       Construct related in Figure (00 fb) (included all necessary)       100 alps       Not 10/2713       0.0000 (00 alps)       0.0000         44       12.45       Pile Testing       40 days       Mon 10/1714       Thu 220/074/144       50       0.0000         50       12.46       Construct pile cap       30 days       Fit 290/8714       Mon 06/10/14 49       51       0.0000         51       12.4.7       Construct pile cap       30 days       Fit 290/8714       Mon 06/10/14 49       51       0.0000         52       12.4.8       Backfilling above pile cap       12 days       Tac 11/11/14       Mon 1500/15 52       54.58.55.52       0.00000         53       12.4.9       Construct superstructure level 103.8-158.05       160 days       Tac 100/105 53.21.3.2       56.5778-49 days       327 days         54       12.4.10       Installation of Lift       80 days       Tue 1600/15       Stat 1900/15 53.3       56       327 days         55       12.4.13       Roofing Connection Tower Da Be D-C       60 days       Fit 2407/16       Mon 02/00/15       Stat 1900/15 548-49 days       331 days         59       12.4.1       Method statement and material submission       30 days       The 1200/13 follos/548-49 days       900 days       1331 days      <	47 1.2.4.3	Demolish the exixting structure	30 days	Thu 20/06/13	Fri 26/07/	13 46,6	48	120 days					
50       1.2.4.6       Construct pile cap       30 days       Fri 2908/14       Mon 09/10/14 49       51       0 days         51       1.2.4.7       Construct superstructure to level 103.8       30 days       Tue 07/10/14       Mon 10/11/14 50       52       0 days         52       1.2.4.8       Backfilling above pile cap       1.2 days       Tue 11/11/14       Mon 20/11/14 51       53       0 days         53       1.2.4.9       Construct superstructure level 103.8-158.05       160 days       Tue 25/11/14       Mon 1506/15 52       54.58.55.82       0 days         54       1.2.4.10       Installation of Lift       80 days       Tue 1606/15       Sat 1909/15 53.21.32       56.5718-49 days       327 days         55       1.2.4.12       T.& C of M&E Equipment       24 days       Mon 2009/15       Tue 2010/15 54/78-49 days       331 days         56       1.2.4.12       T.& C of M&E Equipment       24 days       Mon 2009/15       Tue 2010/15 54/78-49 days       331 days         57       1.2.4.13       Roofing Connection Tower D-B & D-C       60 days       Thu 10/01/15       Mon 2002/15       109 days         58       1.2.4.14       Finishing and Metal Works       100 days       Tue 10/01/13       100 202/15       109 days         50 <td>48 1.2.4.4</td> <td></td> <td>160 days</td> <td>Wed 18/12/13</td> <td>Sat 12/07/</td> <td>14 47,72,74</td> <td>49,45SS-60 days</td> <td>0 days</td> <td></td> <td></td> <td></td> <td>Bore</td> <td>ed pile machine</td>	48 1.2.4.4		160 days	Wed 18/12/13	Sat 12/07/	14 47,72,74	49,45SS-60 days	0 days				Bore	ed pile machine
1.2.4.7       Construct uperstructure to level 103.8       30 days       Tue 07/10/14       Mon 10/11/14 50       52       0 days         52       1.2.4.8       Backfilling above pile cap       12 days       Tue 11/11/14       Mon 24/11/14 51       53       0 days         53       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         54       1.2.4.10       Installation of Lift       80 days       Tue 16/06/15       Sat 1900/15 53.21.32       56,57F8-49 days       327 days         55       1.2.4.10       Installation of Lift       80 days       Tue 16/06/15       Sat 1900/15 54,55       327 days         56       1.2.4.12       T.& C of M&E Equipment       24 days       Mon 21/101/15 54/55       327 days         57       1.2.4.13       Roofing Connection Tower D-B & D-C       60 days       Tue 201/015 54/55       327 days         58       1.2.4.14       Finishing and Metal Works       100 days       Tue 16/06/15       Tue 15/10/15 53       331 days         59       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 22/08/13 6188-60 days       960 days         61       1.2.5.2       Slope Cutting	49 1.2.4.5	Pile Testing	40 days	Mon 14/07/14	Thu 28/08/	14 48	50	0 days					η
12.12.4.8       Baackfilling above pile cap       12 days       Tue 11/11/4       Mon 24/11/14 51       53       0 days         53       1.24.4.9       Construct superstructure level 103.8-158.0.5       160 days       Tue 25/11/14       Mon 1506/15 52       54,58,55.8.2       0 days         54       1.24.10       Installation of Lift       80 days       Tue 100/015       Sat 1909/15 53.21.32       56,57ES-49 days       327 days         55       1.24.11       M&E Installation       80 days       Tue 100/015       Sat 1909/15 53.2       327 days         56       1.24.12       T & C of M&E Equipment       24 days       Mon 21/09/15       Tue 201/01/5 54/ES-49 days       301 days         57       1.24.14       Finishing and Metal Works       100 days       Tue 160/01/5       Tue 15/01/15 53       31 days         58       1.24.14       Finishing and Metal Works       100 days       Tue 160/01/5       Tue 120/01/15 54/ES-49 days       301 days         59       1.25.       Pier D-D       450 days       Tue 160/01/13       Mon 02/02/15       169 days         61       1.25.2       Slope Cutting       10 days       5a1 28/11/13       Thu 02/08/13 61SS-60 days       109 days         62       1.25.4       Predrill & determine F/L (included all necessa	50 1.2.4.6	Construct pile cap	30 days	Fri 29/08/14	Mon 06/10/	14 49	51	0 days					2000
a 10.0       Construct superstructure level 103.8-158.05       160 days       Tue 25/11/14       Mon 1506/15 52       54,58,55,82       0 days         53       1.2.4.10       Installation of Lift       80 days       Tue 1606/15       Sat 1909/15 53,21,32       56,57FS-49 days       327 days         55       1.2.4.10       M&E Installation       80 days       Tue 1606/15       Sat 1909/15 53       56       327 days         56       1.2.4.12       T & C of M&E Equipment       24 days       Mon 2109/15       Tue 2010/15 54,55       327 days         57       1.2.4.13       Roofing Connection Tower D-B & D-C       60 days       Fri 2407/15       Mon 2020/15       31 days         59       1.2.4.14       Finishing and Metal Works       100 days       Tue 1606/15       Thu 15/10/15 53       331 days         59       1.2.5.1       Method statement and material submission       30 days       Thu 120/07/13       Thu 2208/13 61SS-60 days       960 days         61       1.2.5.2       Slope Cutting       10 days       Fri 20/12/13 62       64       109 days         62       1.2.5.4       Predrill & determine F/L (included all necessary preparation and test)       20 days       St 21/12/13       Thu 170/1/16 63       65       109 days         64       1.	51 1.2.4.7	Construct superstructure to level 103.8	30 days	Tue 07/10/14	Mon 10/11/	14 50	52	0 days					T
35       12.4.9       Construct subjects tubelity level 105.8-158.05       100 days	52 1.2.4.8	Backfilling above pile cap	12 days	Tue 11/11/14	Mon 24/11/	14 51	53	0 days					<b>E</b>
12.4.11       M&E Installation       80 days       Tue 16/06/15       Sat 19/09/15 53       56       327 days         56       1.2.4.12       T & C of M&E Equipment       24 days       Mon 21/09/15       Tue 20/10/15 54.55       327 days         57       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         58       1.2.4.14       Finishing and Metal Works       100 days       Tue 16/06/15       Thu 15/10/15 53       331 days         59       1.2.5       Pier D-D       450 days       Thu 18/07/13       Mon 02/02/15       169 days         60       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 22/08/13 61SS-60 days       960 days         61       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         62       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         64       1.2.5.5       Construct mini pile (30 nos) (included all necessary       90 days       Sat 21/12/13       Thu 17/04/14 63       65       109 days <td>53 1.2.4.9</td> <td>Construct superstructure level 103.8~158.05</td> <td>160 days</td> <td>Tue 25/11/14</td> <td>Mon 15/06/</td> <td>15 52</td> <td>54,58,55,82</td> <td>0 days</td> <td></td> <td></td> <td></td> <td></td> <td></td>	53 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					
12.4.112       T & C of M&E Equipment       24 days       Mon 21/09/15       Tue 20/10/15 54,55       327 days         17       1.2.4.12       T & C of M&E Equipment       24 days       Mon 21/09/15       Tue 20/10/15 54,55       327 days         17       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         18       1.2.4.14       Finishing and Metal Works       100 days       Tue 16/06/15       Thu 15/10/15 53       331 days         19       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 20/8/13 61SS-60 days       960 days         10       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         10       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         10       41.2.5.5       Construct mini pile (30 nos) (included all necessary preparation and test)       90 days       53 10/12/13       65       109 days	54 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					
a hand       b b connection Tower D-B & D-C       60 days       Fri 24/07/15       Mon 05/10/15 54FS-49 days       340 days         57       1.2.4.13       Roofing Connection Tower D-B & D-C       60 days       Twe 160/6/15       Thu 15/10/15 53       331 days         58       1.2.4.14       Finishing and Metal Works       100 days       Twe 160/6/15       Thu 15/10/15 53       331 days         59       1.2.5       Pier D-D       450 days       Thu 18/07/13       Thu 22/08/13 61SS-60 days       960 days         60       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 22/08/13 61SS-60 days       960 days         61       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         62       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         64       1.2.5.5       Construct mini pile (30 nos) (included all necessary 90 days       Sat 21/12/13       Thu 17/04/14 63       65       109 days       Fri 20/12/13 62       64       109 days	55 1.2.4.11	M&E Installation	80 days	Tue 16/06/15	Sat 19/09/	15 53	56	327 days					
1.2.4.14       Finishing and Metal Works       100 days       Tue 16/06/15       Thu 15/10/15 53       331 days         59       1.2.5       Pier D-D       450 days       Thu 18/07/13       Mon 02/02/15       169 days         60       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 22/08/13 61SS-60 days       960 days         61       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         62       1.2.5.3       Working platform for mini pile       40 days       Fri 11/10/13       Wed 27/11/13 61       63       109 days         63       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         64       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       109 days	56 1.2.4.12	T & C of M&E Equipment	24 days	Mon 21/09/15	Tue 20/10/	15 54,55		327 days					
Solution       Finance	57 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					
60       1.2.5.1       Method statement and material submission       30 days       Thu 18/07/13       Thu 22/08/13 61SS-60 days       960 days         61       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         62       1.2.5.3       Working platform for mini pile       40 days       Fri 11/10/13       Wed 27/11/13 61       63       109 days         63       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         64       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       109 days	58 1.2.4.14	Finishing and Metal Works	100 days	Tue 16/06/15	Thu 15/10/	15 53		331 days					
61       1.2.5.2       Slope Cutting       10 days       Sat 28/09/13       Thu 10/10/13 10       62,60SS-60 days       109 days         62       1.2.5.3       Working platform for mini pile       40 days       Fri 11/10/13       Wed 27/11/13 61       63       109 days         63       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         64       1.2.5.5       Construct mini pile (30 nos) (included all necessary 90 days       Sat 21/12/13       Thu 17/04/14 63       65       109 days	59 1.2.5	Pier D-D	450 days	Thu 18/07/13	Mon 02/02/	15		169 days					
61       1.2.5.3       Working platform for mini pile       40 days       Fri 11/10/13       Wed 27/11/13 61       63       109 days         62       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         64       1.2.5.5       Construct mini pile (30 nos) (included all necessary 90 days       Sat 21/12/13       Thu 17/04/14 63       65       109 days	60 1.2.5.1	Method statement and material submission	30 days	Thu 18/07/13	Thu 22/08/	13 61SS-60 days		960 days					
02       1.2.5.5       working platform for mini pile       40 days       11111015       wed 211115 01       05       109 days         63       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         64       1.2.5.5       Construct mini pile (30 nos) (included all necessary       90 days       Sat 21/12/13       Thu 17/04/14 63       65       109 days	61 1.2.5.2	Slope Cutting	10 days	Sat 28/09/13	Thu 10/10/	/13 10	62,60SS-60 days	109 days		<b>_</b>			
64     1.2.5.5     Construct mini pile (30 nos) (included all necessary     90 days     Sat 21/12/13     Thu 17/04/14 63     65     109 days	62 1.2.5.3	Working platform for mini pile	40 days	Fri 11/10/13	Wed 27/11/	/13 61	63	109 days					
1.2.5.5 Construct mini pie (50 nos) (included an necessary 50 days bla 21/12/15 mid monthes	63 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		- vix	<b>*</b>		
	64 1.2.5.5		90 days	Sat 21/12/13	Thu 17/04,	/14 63	65	109 days				₩_Mini pile mach	nine - A (1no)

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

.



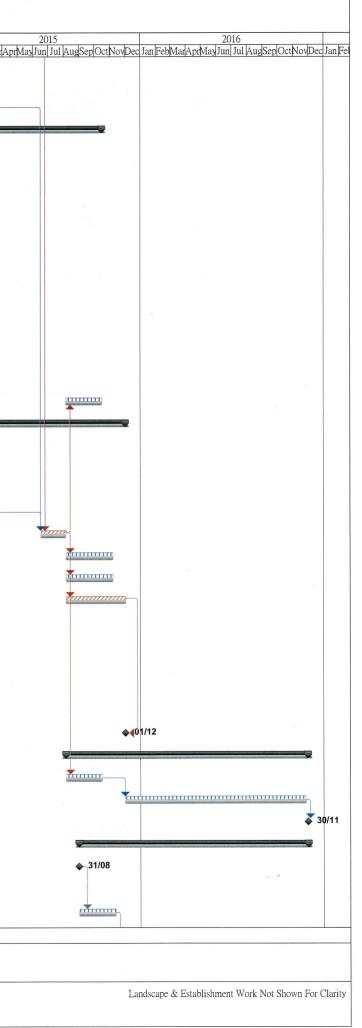
Landscape & Establishment Work Not Shown For Clarity

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

(Rev. 2) 2013 2014 2015 2016 ec Jan FebMarAprMayJun Jul AugSepOctNovDec Jan FebMarAprMayJun Jul Aug ID Task Name Total Slack Star Finish Successors WBS Duration 65 1.2.5.6 Pile Testing 40 days Tue 22/04/14 Mon 09/06/14 64 66 109 day ..... 67 109 days 66 1.2.5.7 100 days Tue 10/06/14 Thu 09/10/14 65 Construct pile cap 109 day: 82 ····· Fri 10/10/14 Mon 02/02/15 66 67 1.2.5.8 Construct pier to level 152.1 90 days 60 days 742 days Mon 08/04/13 Thu 15/10/15 68 1.2.6 Slope Works 1043 days 69 1.2.6.1 Method statement and material submission 30 days Mon 08/04/13 Mon 13/05/13 70SS-60 days Soil nail machine-A (1no. 71SS.72.69SS-60 50 days 50 days Thu 20/06/13 Mon 19/08/13 46 70 1.2.6.2 Slope Cutting, Soil Nail and Raking Drain (Row D-F) days (included all necessary preparation and test) 31nos 893 days 71 1.2.6.3 Construct Cascade and down pipe 120 days Thu 20/06/13 Tue 12/11/13 70SS Soil nail machine-A (1no.) 48 50 days Tue 20/08/13 Sat 19/10/13 70 72 1.2.6.4 Slope Cutting, Soil Nail and Raking Drain (Row C-A) 50 days (included all necessary preparation and test) 40nos 74 Soil nail machine-B (1no.) 0 days 73 1.2.6.5 Slope Cutting, Soil Nail and Raking Drain (Row S-L) 90 days Thu 20/06/13 Mon 07/10/13 46 (included all necessary preparation and test) 103nos Soil nail machine-B (1no.),Soil nail machine-A (1no.) Slope Cutting, Soil Nail and Raking Drain (Row K-G) Tue 08/10/13 Tue 17/12/13 73 75,27,48 0 days 74 1.2.6.6 60 days (included all necessary preparation and test) 102nos 743 days ...... 75 1.2.6.7 Construction of Inspection Access to Slope 120 days Wed 18/12/13 Fri 23/05/14 74 Wed 05/08/15 Thu 15/10/15 82 331 days 76 1.2.6.8 Constructio of Footpath (Portion B) 60 days 767 days Wed 24/04/13 Tue 01/12/15 208 days 77 1.2.7 Bridge Deck D-CE Wed 24/04/13 Thu 30/05/13 79SS-60 days 1029 days 78 1.2.7.1 Method statement and material submission 30 days 79 1.2.7.2 Mon 08/07/13 Tue 18/02/14 9 80,78SS-60 days 148 days ..... Ordering of Material 180 days 81 128 days 80 1.2.7.3 Fabrication of Steel work off site 150 days Fri 14/03/14 Mon 15/09/14 79,39 ...... 82 128 days Tue 16/09/14 Sat 03/01/15 80 81 1.2.7.4 Connecting the Bridge on site 90 days 83.85.93.76.84 0 days Tue 16/06/15 Tue 04/08/15 81,67,53 82 1.2.7.5 Erecting Steel bridge frame 40 days Wed 05/08/15 Fri 06/11/15 82 313 days 83 1.2.7.6 M&E Installation 78 days 313 days Wed 05/08/15 Fri 06/11/15 82 84 1.2.7.7 Irrigation system installation 78 days 85 1.2.7.8 Roofing and finishing works on bridge 99 days Wed 05/08/15 Tue 01/12/15 82 91FF 0 days Tue 20/08/13 Wed 18/02/15 526 days 86 1.2.8 Drainage Works at Shun On Road 437 days 87 1.2.8.1 Method statement and material submission 30 days Tue 20/08/13 Tue 24/09/13 88SS-60 days 933 days 88 1.2.8.2 Fri 01/11/13 Tue 25/02/14 3 87SS-60 days 813 days DN1500 drainage construction 90 days ······ 90 526 days 89 1.2.8.3 DN375 and DN225 Drainage construction 60 days Fri 19/09/14 Sat 29/11/14 41 Toluno 526 days 90 1.2.8.4 Mon 01/12/14 Wed 18/02/15 89 Road Works and Reinstatement Works 60 days 0 days Tue 01/12/15 Tue 01/12/15 85FF 91 1.2.9 Completion of Section 1 0 days 92 1.3 390 days Wed 05/08/15 Wed 30/11/16 1 day Section 2 94 42 days 93 1.3.1 Wed 05/08/15 Thu 15/10/15 82 60 days Landscape Softworks for Footbridge D 95 94 1.3.2 Establishment Works for Footbridge D 289 days Tue 01/12/15 Fri 25/11/16 93 4 days 1 day 95 1.3.3 Completion of Section 2 0 days Wed 30/11/16 Wed 30/11/16 94 369 days Mon 31/08/15 Wed 30/11/16 0 days 96 1.4 Section 3 0 days 97 1.4.1 0 days Mon 31/08/15 Mon 31/08/15 98 Notified by The Engineer for commencing (Subject to Excision) 99 20 days 60 days Mon 31/08/15 Wed 11/11/15 97 98 1.4.2 Landscape Softworks for Footbridge D Baseline Milestone Task Milestone . Baseline Date: Mon 10/06/13 mm Progress Prepared By: T.L. Lo Critical Task Summary Baseline Summary

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

Lam - Po Wing Joint Venture



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ID 99	WBS 1.4.3	Task Name Landscape Softworks and Establishment Works for Footbridge A, B and C	Duration 289 days	Start Thu 12/11/15	Finish Mon 07/11/	Predecessors 16 98	Successors 100	Total Slack ) 20 day		2013 Jun  Jul AugSep OctNovDec	2014 c Jan FebMarAprMayJun Jul AugSepOctNovD	ec Jan FebMarApr
100	1.4.4	Completion of Section 3	0 days	Wed 30/11/16	Wed 30/11/	16 99		0 day	/S			

Date: Mon 10/06/13     Baseline Milestone     Task     Infinition     Milestone     Baseline       Prepared By: T.L. Lo     Baseline Summary     Critical Task     Critical Task     Summary     Progress	_
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Date: Mon 10/06/13 Baseline Milestone A Task Milestone A Baseline	

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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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