



**CONTRACT NO: CV/2004/01  
WORK ORDER NO. N1/113/04**

**CONSTRUCTION OF PENG CHAU HELIPAD  
ENVIRONMENTAL MONITORING & AUDIT  
MONTHLY REPORT**

**- JUN 2007 -**

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Raymond Dai  
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**DATE:**

26 Jul 2007

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Priority  normal /  urgent

To Lam Environmental Services Ref. No. MCLF1732

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Attn. Mr. Raymond Dai Date 26 July 2007

From Mr. Joseph Poon No. of Pages 1 (Incl. this page)

C.c. To Mr. K. W. Li (Kin Shing Construction Co. Ltd.) Fax No. 2347 8229

Mr. P. L. Fung (CEDD) Fax No. 2714 2054

Subject **Contract No. CV/2004/01 – Works Order No. N1/113/04**  
**Construction of Peng Chau Helipad –**  
**Monthly Environmental Monitoring & Audit Report for June 2007**

We refer to the revised 3<sup>rd</sup> Monthly EM&A Report for June 2007 that we received through email on 26 July 2007 and are please to confirm we have no further comment on the report.

Should you require further information, please feel free to contact us.

Best regards,



Joseph Poon  
Independent Environmental Checker

JP/ry<sup>21</sup>

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***EXECUTIVE SUMMARY***

This is the Environmental Monitoring and Audit (EM&A) Monthly Report - Jun 2007 for Contract No. CV/2004/01, Work Order No. N1/113/04 – Construction of Peng Chau Helipad. This report presents the environmental monitoring findings and information recorded during the period 1<sup>st</sup> to 30<sup>th</sup> Jun 2007.

**Construction Activities for the Reported Period**

During this reporting period, the principal work activities at Peng Chau Helipad include:

- Repairing of the silt curtain
- Delivery of grade 200 rockfill from Tuen Mun Area and underlayer from Tsueng Kwan O area
- Backfilling of grade 200 gravels to +4.4 mPD
- Backfilling of the underlayer

**Noise Monitoring**

Monitoring of construction noise was carried out at the monitoring station M1 on 4 occasions. There was no exceedance reported during the reported period.

**Waste Management**

Sediment disposal was completed at South Cheung Chau Spoil Disposal Area since May so that no further marine disposal was necessary from this month onwards. No inert C&D material was disposed nor non-inert C&D material was disposed of at Peng Chau Outlying Island Transfer Facilities. No chemical waste was transported off-site in this reported period.

**Complaints, Notifications of Summons and Successful Prosecutions**

No complaint, notification of prosecutions or summons was received in this reporting period.

Site Inspections and Audit

4 site inspections were conducted by the Environmental Team (ET) in this reported period. Major observations by the ET, actions by the Contractor and outcome are summarized in the following table.

Item	Date	Observations	Action taken by Contractor	Outcome
1	7-Jun	The sea wall at the top of working area next to Sea Crest Villa was still not covered or protected against dust emission or potential erosion. Contractor is reminded to protect the edge properly.	Protect the edge with vegetation or stabilization material	Incomplete as observed on 15 Jun
2	7-Jun	Silt curtain was opened when dredging is not conducted. Contractor is reminded to maintain silt curtain closed properly at all times, even when dredging is not conducted.	Enhance the silt curtain protection to ensure no gap is found	Done as observed on 15 Jun
3	15-Jun	The sea wall at the top of working area next to Sea Crest Villa was still not covered or protected against dust emission or potential erosion. Contractor is reminded to protect the edge properly.	Protect the edge with vegetation or stabilization material	Done as observed on 21 Jun
-	21-Jun	No particular finding	-	-
4	28-Jun	Large floating objects were found within the dredging area. It should be removed from the sea as soon as possible when it was found.	Remove floating objects from the sea as soon as possible	Incomplete as observed on 5 Jul

## 1 INTRODUCTION

### 1.1 SCOPE OF THE REPORT

Lam Laboratories Limited (LAM) has been appointed to work as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for CEDD Contract No. CV/2004/01, Work Order No. N1/113/04 – Construction of Peng Chau Helipad.

This report presents the environmental monitoring and auditing work carried out in accordance to the “*Environmental Mitigation, Monitoring and Audit Requirements*” under Particular Specification Section 29 during the period 1<sup>st</sup> to 30<sup>th</sup> Jun 2007.

### 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**      **Implementation Status** – 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**      **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 8**     ***Complaints, Notification of Summons and Prosecution*** – summarizes the complaints, notification of summons and successful prosecution for breaches of environmental legislation and the actions taken within the reporting period.

**Section 9**     ***Conclusion***



**2 PROJECT BACKGROUND**

**2.1 SCOPE OF THE PROJECT AND SITE DESCRIPTION**

The works mainly comprise of construction of a helipad and a vehicular access for serving the helipad at Peng Chau and the associated installations, lighting and drainage. The construction period is around 9 months for the entire works.

The site layout plan is shown in [Figure 2.1](#).

**2.2 PROJECT ORGANIZATION AND CONTACT PERSONNEL**

Civil Engineering Office of Civil Engineering and Development Department is the overall project controller. For the construction phase of CV/2004/01, Project Engineer, Independent Environmental Checker, Contractor, Environmental Team are appointed to manage and control environmental issues.

Key personnel and contact particulars are summarized in **Table 2.2**:

**Table 2.2 Contact Details of Key Personnel**

Post	Name	Contact No.	Contact Fax
Resident Engineer	P L Fung	2762 5068	2714 2054
Project Manager	KW Li	2347 8223	2347 8229
Site Agent	Simon Pan	2347 8223	2347 8229
Independent Environmental Checker (IEC)	Joseph T L Poon	2452 7140	2450 6138
Environmental Team Leader (ETL)	Raymond Dai	2975 3300	2897 5509

**2.3 CONSTRUCTION PROGRAMME AND WORKS**

Construction works carried out at Peng Chau Helipad during this reporting period are:

- Repairing of the silt curtain
- Delivery of grade 200 rockfill from Tuen Mun Area and underlayer from Tsueng Kwan O area
- Backfilling of grade 200 gravels to +4.4 mPD
- Backfilling of the underlayer



**3 IMPLEMENTATION REQUIREMENTS**

**3.1 STATUS OF REGULATORY COMPLIANCE**

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 Cumulative Summary of Valid Licences and Permits**

Permits and/or Licences	Reference No.	Issued Date	Valid Period	Status
Dumping Permit under DASO	EP/MD/07-082	3 April 2007	10 April 2007 - 31 July 2007	Surrendered on 15 June 2007
Notification of Works Under APCO	001020509	16 Jun 2007	Throughout the project period	Notified
Construction Noise Permit	-	-	-	No work was conducted during restricted hours.

**4 MONITORING REQUIREMENTS**

Location of environmental monitoring station is referred in [Figure 4.1](#).

**4.1 NOISE MONITORING**

The project has 1 noise monitoring station, namely M1. Details of the noise monitoring station are summarized in **Table 4.1**.

**Table 4.1 Noise Monitoring Station**

Station	HK Metric Grid (Easting / Northing)	Description
M1	821 682.865E / 816 689.353N	Ground Level outside Block D of Sea Crest Villa

Monitoring Methodology

Monitoring was carried out in accordance to procedures recommended in the contractual EM&A requirement Manual for the monitoring of construction noise. Measurements shall be recorded to the nearest 0.1dB. Weather conditions, including a measurement of wind speed, should be recorded for the measurement. Where the steady wind speed exceeds 5 m/s, or gusts are above 10 m/s, or in the presence of fog or rain, measurements should be treated as invalid, and repeated in more appropriate conditions.

This noise meter was programmed to measure A-weighted equivalent continuous sound pressure level at 30-minute intervals. Acoustic information measured by the noise meter over 30-minute period were recorded. Additional supplementary acoustical data in terms of L<sub>10</sub> and L<sub>90</sub> were also recorded for reference and auditing.

*Monitoring Equipment and Calibration Details*

The noise levels were determined using ONO SOKKI sound level meter model LA-5110. The meter complies with the International Electrotechnical Commission Publication (IEC) 651:1979 (Type 1) and 804:1985 (Type 1) specifications as referred to in the Technical Memorandum issued under the Noise Control Ordinance (NCO).

ONO SOKKI sound level calibrator model SC-2110 was used for the on-site calibration of the meter. This calibrator complies with the IEC Publication 942 (1988) Class1 and ANSI S1.40 – 1984. Noise measurements were only accepted to be valid if the calibration levels from before and after the measurement agree to within 1.0dB. The sound level meter and calibrator are calibrated annually by a HOKLAS laboratory.

Wind speeds were measured by a portable digital anemometer, Dwyer PWM1 with direction being determined with a compass.

Calibration certificates are respectively presented in [Appendix A](#).

**4.2 MONITORING PARAMETERS AND FREQUENCY**

Noise monitoring programme has been scheduled according to the requirements stipulated in the EM&A Manual produced for the Project summarized in **Table 4.2**.

**Table 4.2 Environmental Monitoring Parameters and Frequencies**

Station(s)	Parameter	Frequency
M1 <sup>Note 1</sup>	L <sub>Aeq</sub> (30 min), L <sub>90</sub> & L <sub>10</sub>	Once per week between 0700-1900 hours on normal weekdays
	L <sub>Aeq</sub> (5 min), L <sub>90</sub> & L <sub>10</sub>	3 time slot whenever works is conducted during the time outside 0700-1900 hours of normal weekdays or anytime on any public holiday or Sunday

Note 1: Façade measurement

**4.3 NOISE CRITERIA**

Noise criteria were determined during the baseline monitoring prior to the commencement of the construction of the project for the purpose of impact monitoring. Action and limit levels for noise impact monitoring upon the commencement of work are summarized in **Table 4.3**.

**Table 4.3 Action and Limit Levels for Noise**

Time Period	Action Level	Limit Level
07:00 – 19:00 hours on normal weekdays	When one documented complaint is received from any one of the sensitive receivers	75 dB(A) <sup>Note 1</sup>
0700 – 2300 hours on public holidays including Sundays and 1900 – 2300 hours on all days		70 dB(A) <sup>Note 2</sup>
2300 – 0700 hours on all days		55 dB(A) <sup>Note 2</sup>

Note:

1. No school is presence in the vicinity of M1 and thus no examination noise level is applied.
2. Area Sensitivity Rating of C is selected due to the presence of non-construction noise due to traffic recorded during the baseline measurements.

Should non-compliance of the noise quality criteria occurs, Event and Action Plans detailed in [Appendix B](#) shall be followed accordingly.

**4.4 MONITORING PROGRAMME**

Environmental monitoring programme for this reporting period was carried out in accordance with the required monitoring frequency. The actual completion of monitoring work during the reporting period is presented in **Table 4.4**.

**Table 4.4 Environmental Monitoring Programme – Jun 07**

Jun 2007		M1 Noise (L <sub>eq</sub> 30min)	Site inspection
1	Fri		
2	Sat		
3	Sun		
4	Mon		
5	Tue		
6	Wed		
7	Thu	X	X
8	Fri		
9	Sat		
10	Sun		
11	Mon		
12	Tue		
13	Wed		
14	Thu		
15	Fri	X	X
16	Sat		
17	Sun		
18	Mon		
19	Tue		
20	Wed		
21	Thu	X	X
22	Fri		
23	Sat		
24	Sun		
25	Mon		
26	Tue		
27	Wed		
28	Thu	(X)	X
29	Fri	X	
30	Sat		

Note:

- X: Impact monitoring conducted
- (X) : Impact monitoring re-scheduled due to heavy rain
- Schedule is formulated with consideration of statutory holidays (shaded in the table).

**5 MONITORING RESULTS**

**5.1 NOISE MONITORING RESULTS**

Noise monitoring results measured in this reporting period are reviewed and summarized in **Table 5.1**. Details of monitoring results can be referred in [Appendix C](#). Graphical trend is presented in [Figure 5.1](#).

**Table 5.1 Noise Monitoring Results at M1 – Jun 07**

Date	Time	L <sub>Aeq</sub> , dB(A)	Limit Level dB(A)	No. of Exceedance
7/06/2007	10:08	64.0	75	0 (AL); 0 (LL)
15/06/2007	9:27	68.4	75	0 (AL); 0 (LL)
21/06/2007	9:20	64.0	75	0 (AL); 0 (LL)
29/06/2007	8:55	62.3	75	0 (AL); 0 (LL)

**5.2 WASTE MONITORING RESULTS**

Sediment disposal was completed at South Cheung Chau Spoil Disposal Area since May so that no further marine disposal was necessary from this month onwards. No inert C&D material was disposed nor non-inert C&D material was disposed of at Peng Chau Outlying Island Transfer Facilities. No chemical waste was transported off-site in this reported period.



**6 COMPLIANCE AUDIT**

**6.1 NOISE MONITORING**

No exceedance was recorded in this reporting period.



**7 SITE INSPECTION**

Weekly inspection was undertaken by the ET. 4 inspections were carried out during this reporting period. The results of these inspections and outcomes are summarized in **Table 7**.

**Table 7 Summary of Environmental Inspection – Jun 07**

Item	Date	Observations	Action taken by Contractor	Outcome
1	7-Jun	The sea wall at the top of working area next to Sea Crest Villa was still not covered or protected against dust emission or potential erosion. Contractor is reminded to protect the edge properly.	Protect the edge with vegetation or stabilization material	Incomplete as observed on 15 Jun
2	7-Jun	Silt curtain was opened when dredging is not conducted. Contractor is reminded to maintain silt curtain closed properly at all times, even when dredging is not conducted.	Enhance the silt curtain protection to ensure no gap is found	Done as observed on 15 Jun
3	15-Jun	The sea wall at the top of working area next to Sea Crest Villa was still not covered or protected against dust emission or potential erosion. Contractor is reminded to protect the edge properly.	Protect the edge with vegetation or stabilization material	Done as observed on 21 Jun
-	21-Jun	No particular finding	-	-
4	28-Jun	Large floating objects were found within the dredging area. It should be removed from the sea as soon as possible when it was found.	Remove floating objects from the sea as soon as possible	Incomplete as observed on 5 Jul

**8 COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTION**

In this reporting period, no complaint, inspection notice, notification of summons or prosecution was received. Cumulative complaint log, summaries of complaints, notification of summons and successful prosecutions are presented in **Tables 8.1, 8.2** and **8.3** respectively.

**Table 8.1 Environmental Complaints Log**

Complaint Log No.	Date of Receipt	Received From and Received By	Nature of Complaint	Date Investigated	Outcome	Date of Reply
PC001	28-04-2007	EPD	Silt curtain was not properly secured to enclose the dredging area and muddy water was observed escaping into the open sea.	02-05-2007	Conduct full investigation and report the mitigation plan to EPD	03-05-2007
PC001 (same complaint)	23-05-2007	EPD	Silt curtain was not properly implemented to comply with EP condition to secure and enclose the dredging area.	Same as PC001	Formal letter of contractor respond on the mitigation measures conducted	30-05-2007

**Table 8.2 Cumulative Statistics on Complaints**

Environmental Parameters	Cumulative No. Brought Forward	No. of Complaints This Month	Cumulative No. Project-to-Date
Air	-	-	-
Noise	-	-	-
Water	1	-	1
Waste	-	-	-
<b>Total</b>	<b>1</b>	<b>-</b>	<b>1</b>

**Table 8.3 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	-	-	-
Noise	-	-	-
Water	-	-	-
Waste	-	-	-
<b>Total</b>	<b>-</b>	<b>-</b>	<b>-</b>

**9**
**CONCLUSION**

The EM&A programme was carried out in accordance with the EM&A Manual requirements, minor alterations to the programme proposed in the previous EM&A Report were made in response to changing circumstances. The proposed monitoring schedule for the coming month can be referred in [Appendix D](#).

No exceedance was reported in routine environmental monitoring due to the construction operation of CV/2004/01. Such results indicate that the construction operation of CV/2004/01 was performed acceptable against the noise limits.

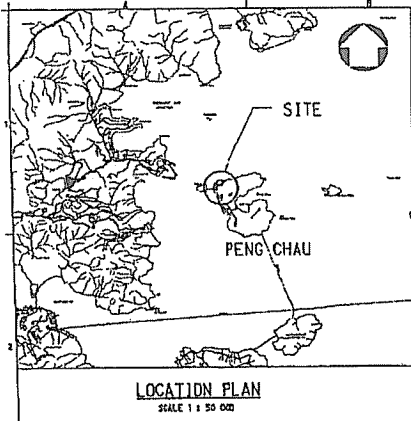
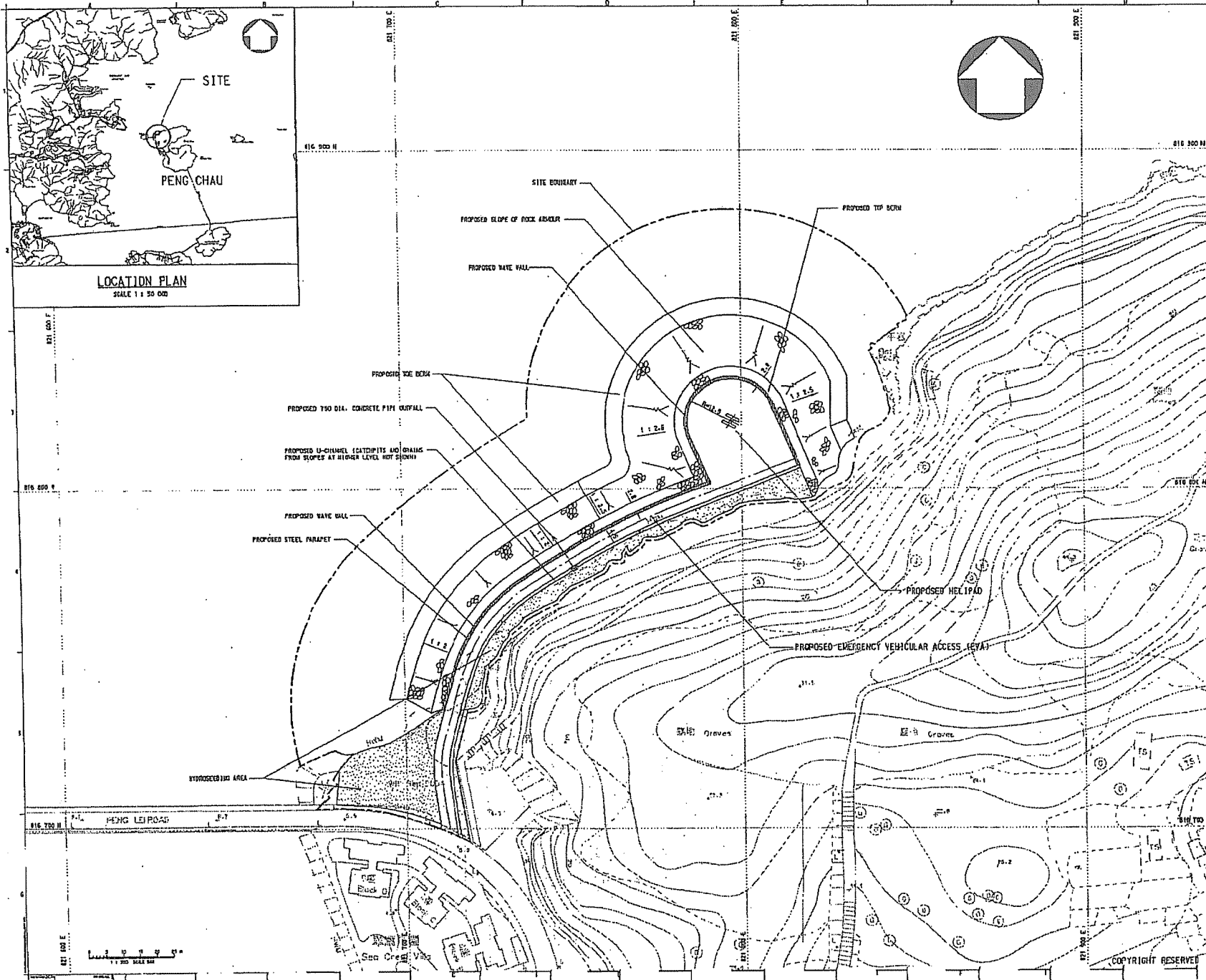
The scheduled construction activities and the recommended mitigation measures for the coming month are listed in **Table 9**.

**Table 9 Construction Activities and Recommended Mitigation Measures – Jul 2007**

Location	Construction Works	Proposed Mitigation Measures
General	<ul style="list-style-type: none"> <li>Delivery of rock fill material from Tuen Mun Area and Tseung Kwan O Area</li> </ul>	<ul style="list-style-type: none"> <li>Avoid stacking too high on the barge to prevent dropping into the sea during delivery</li> </ul>
Helipad	<ul style="list-style-type: none"> <li>Backfilling of the underlayer to design level (-0.5mPD approximately)</li> <li>Backfilling of rock armour</li> </ul>	<ul style="list-style-type: none"> <li>Secure the silt curtain at all times</li> <li>Avoid concurrent noisy operation</li> </ul>



***Figure 2.1***  
***Location Plan***



- NOTES:
1. ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
  2. ALL LEVELS REFER TO PRINCIPAL DATUM (P.D.) AND ARE IN METRES.
  3. ALL CO-ORDINATES REFER TO HONG KONG GEODETIC DATUM 1950 AND ARE IN METRES.
  4. HYDROSEEDING TO THE HYDROSEEDING AREA SHALL BE CARRIED OUT IN ACCORDANCE WITH FS SECTION 7.

- LEGEND:
- PROPOSED SITE BOUNDARY
  - [Stippled Area] HYDROSEEDING AREA

REVISED	DATE	BY	FOR	REASON
Approved	P. L. FENG	SIGNED	5.6.2006	
Drawn	C. K. LI	SIGNED	5.6.2006	
Checked	C. K. LI	SIGNED	5.6.2006	
Checked	S. K. YONG	SIGNED	5.6.2006	

Contract no. **CY205/14**  
 Date: **5.6.2006**  
 Project no.  
 Contract

**CONSTRUCTION OF PENG CHAU AND YUNG SHUE WAN HELIPADS**

Drawing title  
**PENG CHAU HELIPAD - GENERAL LAYOUT**

Drawing no. **PW-0514-001**  
 Scale: **1 : 500**  
 Date: **5.6.2006**

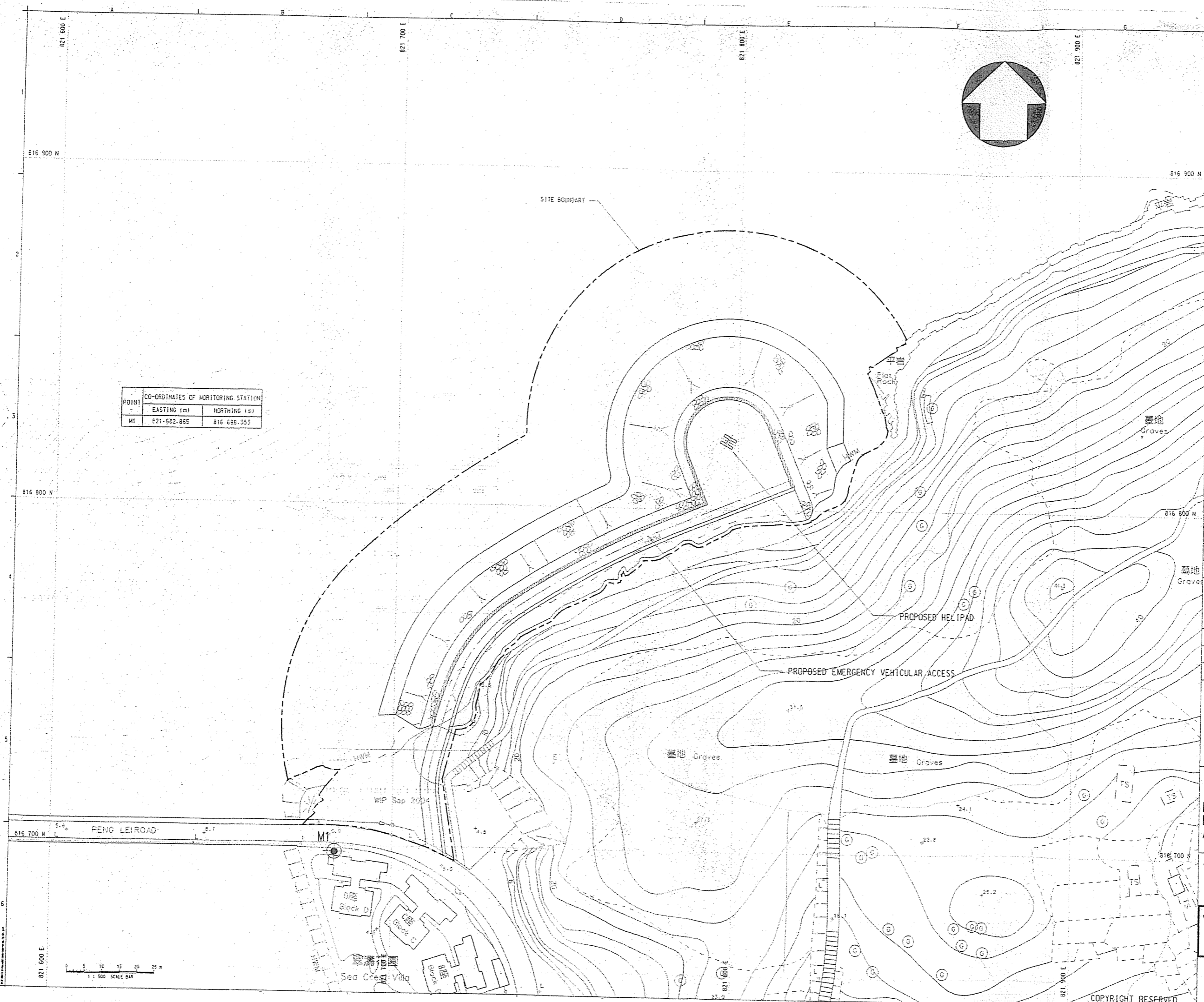
Office  
**PORT WORKS DIVISION  
 CIVIL ENGINEERING OFFICE**

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**Figure 4.1**

***Layout of Environmental Monitoring Stations***



- NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES.
  2. ALL CO-ORDINATES REFER TO HONG KONG GEODETIC DATUM 1980 AND ARE IN METRES.
  3. ALL LEVELS REFER TO PRINCIPAL DATUM (P.D.) AND ARE IN METRES.
  4. MONITORING METHODOLOGY AND PROCEDURE SHALL BE AS OUTLINED IN PS SECTION 26 AND AS REQUIRED BY ENVIRONMENTAL PERMIT ISSUED BY EPD.
  5. ENVIRONMENTAL MITIGATION MEASURES SHALL BE CARRIED OUT AS OUTLINED IN PS SECTION 26 AND AS REQUIRED BY ENVIRONMENTAL PERMIT ISSUED BY EPD.
  6. ENVIRONMENTAL MITIGATION MEASURES TO MITIGATE WATER QUALITY IMPACTS DURING DREDGING AND RECALAMATION ARE ALSO SHOWN ON DRAWING NO. SK-006.

- LEGEND:**
- SITE BOUNDARY
  - ⊙ PROPOSED NOISE MONITORING LOCATION

POINT	CO-ORDINATES OF MONITORING STATION	
	EASTING (m)	NORTHING (m)
M1	821-582.865	816-698.353

no.	date	description	checked	approved
<b>REVISION</b>				
designed		P. L. FUNG		
drawn		C. K. LI		
traced		C. K. LI		
checked		S. K. TONG		
approved				
T.S. LI Chief Engineer date: _____				

contract no. \_\_\_\_\_

file no. \_\_\_\_\_

project no. \_\_\_\_\_

contract \_\_\_\_\_

drawing title

**PENG CHAU HELIPAD - ENVIRONMENTAL MITIGATION AND MONITORING MEASURES**

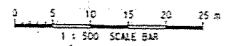
drawing no. ~~SK-044~~

scale: 1 : 500 OR AS SHOWN

office

PORT WORKS DIVISION  
CIVIL ENGINEERING OFFICE

**CEDD** CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT



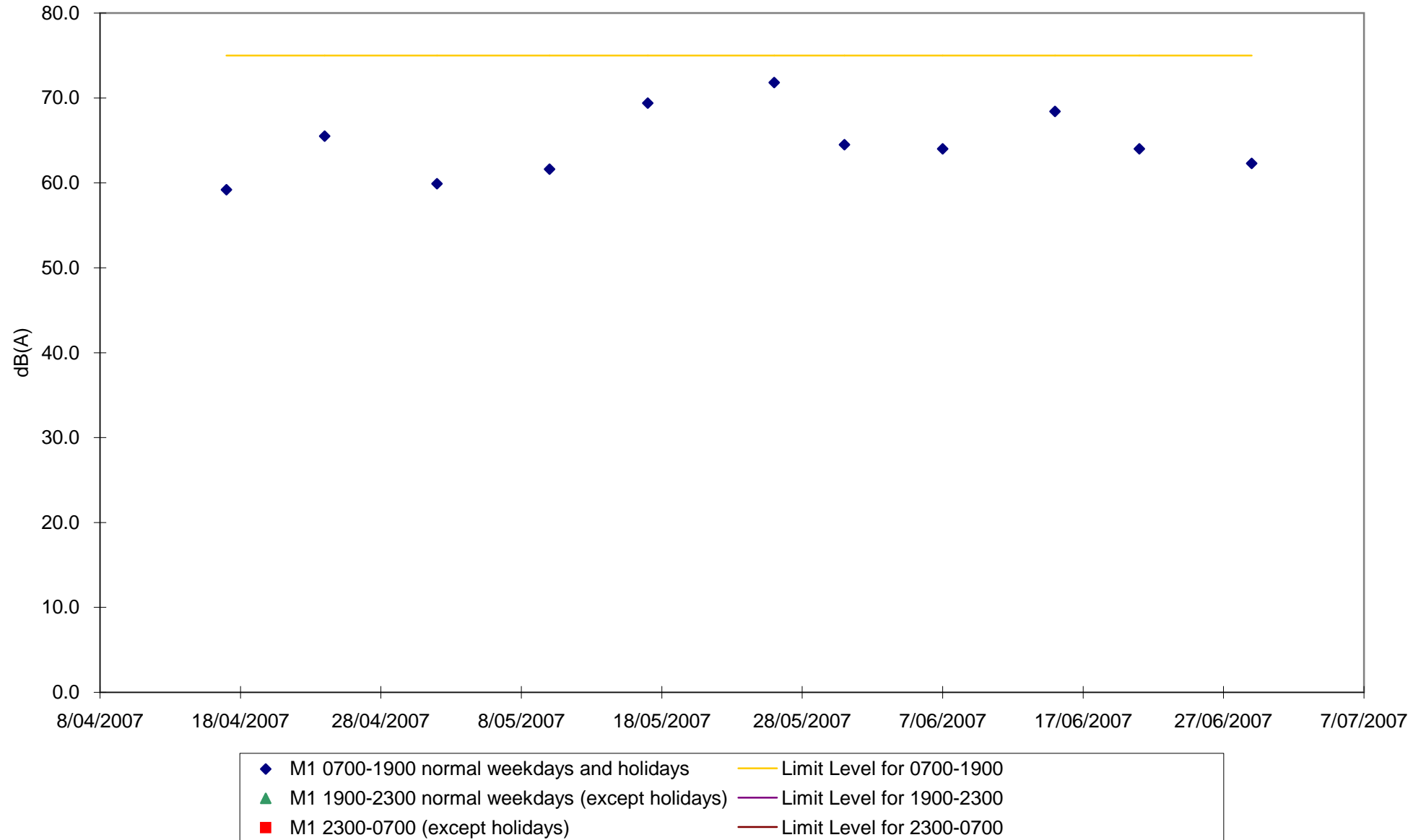


*Figure 5.1*

*Graphical Plot of Noise Levels*



Figure 5.1 - Graphical Plot of Noise Levels at M1





*Appendix A*

*Calibration Certificates for Monitoring Equipment*



# Calibration Certificate

Certificate No. 72420

Page 1 of 3 Pages

Customer : Lam Laboratories Ltd.

Address : 1412-1416 Honour Industrial Centre, 6 Sun Yip Street, Chaiwan, Hong Kong

Order No. : Q70963

Date of receipt : 23-May-07

## Item Tested

Description : Precision Integrating Sound Level Meter ( EL 077 )

Manufacturer : ONO SOKKI

Model : LA-5110

Serial No. : 72302293

## Test Conditions

Date of Test : 25-May-07

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : Z01.

## Test Results

All results were within the IEC 651 Type 1 & IEC 804 Type 1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

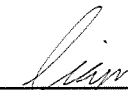
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C071115	14-Mar-08	SCL-HKSAR
S024	Sound Level Calibrator	62691	19-Jul-07	NIM-PRC & SCL-HKSAR

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.


The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :

  
P.F. Wong

Approved by :

  
Dorothy Cheuk

Date: 28-May-07

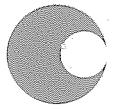
This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

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# Calibration Certificate

Certificate No. 72420

Page 2 of 3 Pages

Results :

## 1. SPL Accuracy

UUT Setting			Dynamic Characteristic	Applied Value (dB)	UUT Reading (dB)
Level Range	Filter	Frequency Weighting			
40 - 100 dB	OFF	A	FAST	94.07	94.4
			SLOW		94.4
		C	FAST		94.3
60 - 120 dB	OFF	A	FAST	94.07	94.4
			SLOW		94.4
		C	FAST		94.3
60 - 120 dB	OFF	A	FAST	113.95	114.3
			SLOW		114.3
		C	FAST		114.2

IEC 651 Type 1 Spec. :  $\pm 0.7$  dB

Uncertainty :  $\pm 0.1$  dB

## 2. Level Stability : 0.0 dB

IEC 651 Type 1 Spec. :  $\pm 0.3$  dB

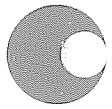
Uncertainty :  $\pm 0.01$  dB

## 3. Linearity

### 3.1 Level Linearity

UUT Range	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec. (Primary Indicator Range)
130	114.0	114.4	0.0	$\pm 0.7$ dB
130	104.0	104.4	0.0	
120	94.0	94.3 (Ref.)	--	
110	84.0	84.4	0.0	
100	74.0	74.4	0.0	
90	64.0	64.4	0.0	
80	54.0	54.4	0.0	

Uncertainty :  $\pm 0.1$  dB



# Calibration Certificate

Certificate No. 72420

Page 3 of 3 Pages

### 3.2 Differential level linearity

UUT Range	Applied Value (dB)	UUT Rdg (dB)	Variation (dB)	IEC 651 Type 1 Spec.
120	84.0	84.4	0.0	± 0.4
	94.0	94.4 (Ref.)	--	
	95.0	95.4	0.0	± 0.2
	104.0	104.4	0.0	± 0.3
	105.0	105.4	0.0	± 1.0

Uncertainty : ± 0.1 dB

### 4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 651 Type 1 Spec.
31.5 Hz	- 40.2	- 39.4 dB, ± 1.5 dB
63 Hz	- 26.5	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.3	- 16.1 dB, ± 1 dB
250 Hz	- 8.8	- 8.6 dB, ± 1 dB
500 Hz	- 3.3	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1 dB
2 kHz	+ 1.2	+ 1.2 dB, ± 1 dB
5 kHz	+ 0.8	+ 1.0 dB, ± 1 dB
8 kHz	- 1.5	- 1.1 dB, + 1.5 dB ~ - 3 dB
16 kHz	- 7.5	- 6.6 dB, + 3 dB ~ ∞

Uncertainty : ± 0.1 dB

### 5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.7	± 0.5 dB
1/10 <sup>2</sup>	40.0	40.0	
1/10 <sup>3</sup>	40.0	40.0	± 1.0 dB
1/10 <sup>4</sup>	40.0	40.0	

Uncertainty : ± 0.1 dB

Remarks : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 997 hPa.

----- END -----



# Calibration Certificate

Certificate No. 72421

Page 1 of 2 Pages

Customer : Lam Laboratories Ltd.

Address : 1412-1416 Honour Industrial Centre, 6 Sun Yip Street, Chaiwan, Hong Kong

Order No. : Q70963

Date of receipt : 23-May-07

## Item Tested

Description : Sound Level Calibrator ( EL 078 )

Manufacturer : ONO SOKKI

Model : SC-2110

Serial No. : 00393

## Test Conditions

Date of Test : 25-May-07

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

## Test Specifications

Calibration check.

Calibration procedure : F21, Z02.

## Test Results

All results were within the IEC 942 Class 2 specification.

The results are shown in the attached page(s).


Main Test equipment used:

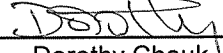
<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Due Date</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	62914	7-Jul-07	NIM-PRC & SCL-HKSAR
S024	Sound Level Calibrator	62691	19-Jul-07	NIM-PRC & SCL-HKSAR
S041	Universal Counter	63839	22-Aug-07	SCL-HKSAR

The values given in this Calibration 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 environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

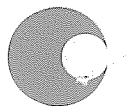
The test equipment used for calibration are traceable to International System of Units (SI).

The test results apply to the above Unit-Under-Test only

Calibrated by :   
P.F. Wong

Approved by :   
Dorothy Cheuk

Date: 28-May-07



# Calibration Certificate

Certificate No. 72421

Page 2 of 2 Pages

Results :

**1. Level Accuracy (at 1 kHz)**

UUT Nominal Value	Measured Value	IEC 942 Class 2 Spec.
94 dB	93.75 dB	$\pm 0.5$ dB

Uncertainty :  $\pm 0.1$  dB

**2. Frequency Accuracy**

UUT Nominal Value	Measured Value	IEC 942 Class 2 Spec.
1 kHz	1.000 kHz	$\pm 4$ %

Uncertainty :  $\pm 0.1$  %

**3. Level Stability : 0.0 dB**

IEC 942 Class 2 Spec.:  $\pm 0.2$  dB

Uncertainty :  $\pm 0.01$  dB

**4. Total Harmonic Distortion :  $< 0.4$  %**

IEC 942 Class 2 Spec. :  $< 3$  %

Uncertainty :  $\pm 2.3$  % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. The above measured values are the mean of 3 measurement.

4. Atmospheric Pressure : 997 hPa

----- END -----



***Appendix B***

***Event and Action Plan***



### APPENDIX 5.1 – Event / Action Plan for Construction Noise

Event	ACTION			
	ET Leader	IC (E)	ER	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify IC(E) and Contractor</li> <li>2. Carry out investigation</li> <li>3. Report the results of investigation to the IC(E) and Contractor</li> <li>4. Discuss with the Contractor and formulate remedial measures</li> <li>5. Increase monitoring frequency to check mitigation effectiveness</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the analysed results submitted by the ET</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem</li> <li>4. Ensure remedial measures are properly implemented</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposal to IC(E)</li> <li>2. Implement noise mitigation proposals</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify IC(E), ER, EPD and Contractor</li> <li>2. Identify source</li> <li>3. Repeat measurement to confirm findings</li> <li>4. Increase monitoring frequency</li> <li>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</li> <li>6. Inform IE(E), ER and EPD the causes &amp; actions taken for the exceedances</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their the ER accordingly</li> <li>3. Supervise the implementation of remedial measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing</li> <li>2. Notify Contractor</li> <li>3. Require Contractor to propose remedial measures for the analysed noise problem</li> <li>4. Ensure remedial measures are properly implemented</li> <li>5. 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 style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance</li> <li>2. Submit proposal for remedial actions to IC(E) within 3 working days of notification</li> <li>3. Implement the agreed proposals</li> <li>4. Resubmit proposals if problem still not under control</li> <li>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated</li> </ol>



*Appendix C*

*Noise Monitoring Results*

**Report on Noise Monitoring**

*Location: M1 (Ground Level outside Block D of Sea Crest Villa, façade measurement)*

*Time Period: 0700-1900 hours*

Date	Start Time	Wind Speed, m/s	Calibration before measurement, dB(A)	Calibration after measurement, dB(A)	Noise Sources	Noise Level, dB(A)			Averaged Noise Levels <small>L<sub>eq (30 mins)</sub>, dB(A)</small>
						L <sub>max</sub>	L <sub>90</sub>	L <sub>10</sub>	
7-Jun-07	10:08	4.5	94.3	94.2	Traffic vehicles	82.9	57.8	66.0	64.0
15-Jun-07	9:27	4	94.2	94.2	Cicadas, Traffic vehicles	84.5	61.9	68.8	68.4
21-Jun-07	9:20	1	94.3	94.3	Traffic vehicles	86.1	51.7	63.5	64.0
29-Jun-07	8:55	1.6	94.2	94.3	Trolley movement	84.9	50.9	62.5	62.3



*Appendix D*

*Monitoring Schedule - Upcoming month*

## Environmental Monitoring Schedule

Contract No. CV/2004/01  
Construction of Ping Chau Helipad  
July 2007

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Jul	2-Jul Public Holiday	3-Jul	4-Jul	5-Jul Impact Leq30 x 1	6-Jul	7-Jul
8-Jul	9-Jul	10-Jul	11-Jul	12-Jul Impact Leq30 x 1	13-Jul	14-Jul
15-Jul	16-Jul	17-Jul	18-Jul	19-Jul Impact Leq30 x 1	20-Jul	21-Jul
22-Jul	23-Jul	24-Jul	25-Jul	26-Jul Impact Leq30 x 1	27-Jul	28-Jul
29-Jul	30-Jul	31-Jul				

*Notes :*

1. Monitoring events are scheduled to monitor contractor's operation during their most active working days.
2. Monitoring events for noise are tentatively scheduled and will be conducted within a week in accordance with contract in case of sudden changes.
3. Contractor needs to notify ET Leader on any work conducted on Sunday or public holidays.