賽馬會文物保育有限公司
The Jockey Club CPS Limited

Central Police Station Conservation and Revitalisation Project

Baseline Monitoring Report

February 2012

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ERM

The Jockey Club CPS Limited

Central Police Station Conservation and Revitalisation Project: *Baseline Monitoring Report*

October 2011

Reference 0095646

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed: _____

Position: Partner

Certified by: _____
(Environmental Team Leader – Winnie Ko)

Date: 1 February 2012

This report has been prepared by ERM-Hong Kong, Limited with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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EXECUTIVE SUMMARY

ERM-Hong Kong Ltd (ERM) was appointed by the Jockey Club CPS Limited ("the CPS Ltd") as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the conservation and revitalization of the Central Police Station (the Project).

This Baseline Monitoring Report has been prepared pursuant to Condition 3.2 of the Environmental Permit for the Project (EP-408/2011) and Environmental Monitoring and Audit Manual for the Project.

Baseline Noise Monitoring

Baseline noise monitoring was conducted between 9 and 23 September 2011 at designated monitoring station and alternative monitoring station established for the Project. The weather condition during the baseline monitoring period varied from sunny, fine to cloudy with scattered rain. No major activities were undertaken during baseline monitoring, and therefore the baseline noise monitoring data is representative of the baseline condition for the Project.

The measured baseline noise levels ($L_{eq, 30min}$) between 0700 and 1900 hours are well within 75dB(A), which is daytime construction noise limit under Environmental Impact Assessment Ordinance (EIAO). During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit under EIAO, ie 75 dB(A) will be adopted as the Limit Level.

1 INTRODUCTION

1.1 BACKGROUND

The Chief Executive (CE)'s 2007-2008 Policy Address highlighted revitalization as the guiding principle of heritage conservation and the Project was among one of the specific proposals put forward by the CE in the same Policy Address. At the meeting of the Executive Council (ExCo) on 15 July 2008, the ExCo advised and the CE ordered that Government should enter into a partnership with the Hong Kong Jockey Club (HKJC) in the form of an agreement (or agreements) to take forward the conservation and revitalization of the Central Police Station (hereafter "the Project") based on various guiding parameters.

The Project comprises the conservation and revitalisation of three Declared Monuments designated under the *Antiquities and Monuments Ordinance* in 1995. They are:

- Central Police Station;
- Former Central Magistracy; and
- Victoria Prison Compound.

They are collectively named the Central Police Station (CPS). The location of the Project Site and Site Plan are shown in *Figures 1.1* and *1.2*.

The Project will repair and conserve the historic buildings with alterations that are necessary to bring them back into beneficial use and to extend their useful lives. The construction and modification/refurbishment works are designed to match the requirements of the proposed uses and enhance the spaces and connections between the buildings and improve circulation throughout the Site. The key modification/refurbishment works will include repairs to internal finishes and necessary alterations, repair of facades, electrical and mechanical upgrading, improve the paving and site circulation between buildings and opening up part of the existing boundary wall to facilitate access to the Site.

The construction of the new buildings (the Old Bailey Wing and the Arbuthnot Wing) will involve typical activities including excavation, foundation and construction of basement and superstructure.

The potential environmental impacts of the Project have been presented in the Environmental Impact Assessment (EIA) report "Central Police Station Compound Conservation and Revitalisation" (Register No.: AEIAR-162/2011), and an Environmental Permit (EP-408/2010) (EP) for the Project was granted on 18 April 2011. Under the requirements of Condition 3.1 of Environmental Permit EP-408/2011, an EM&A programme as set out in the EM&A Manual is

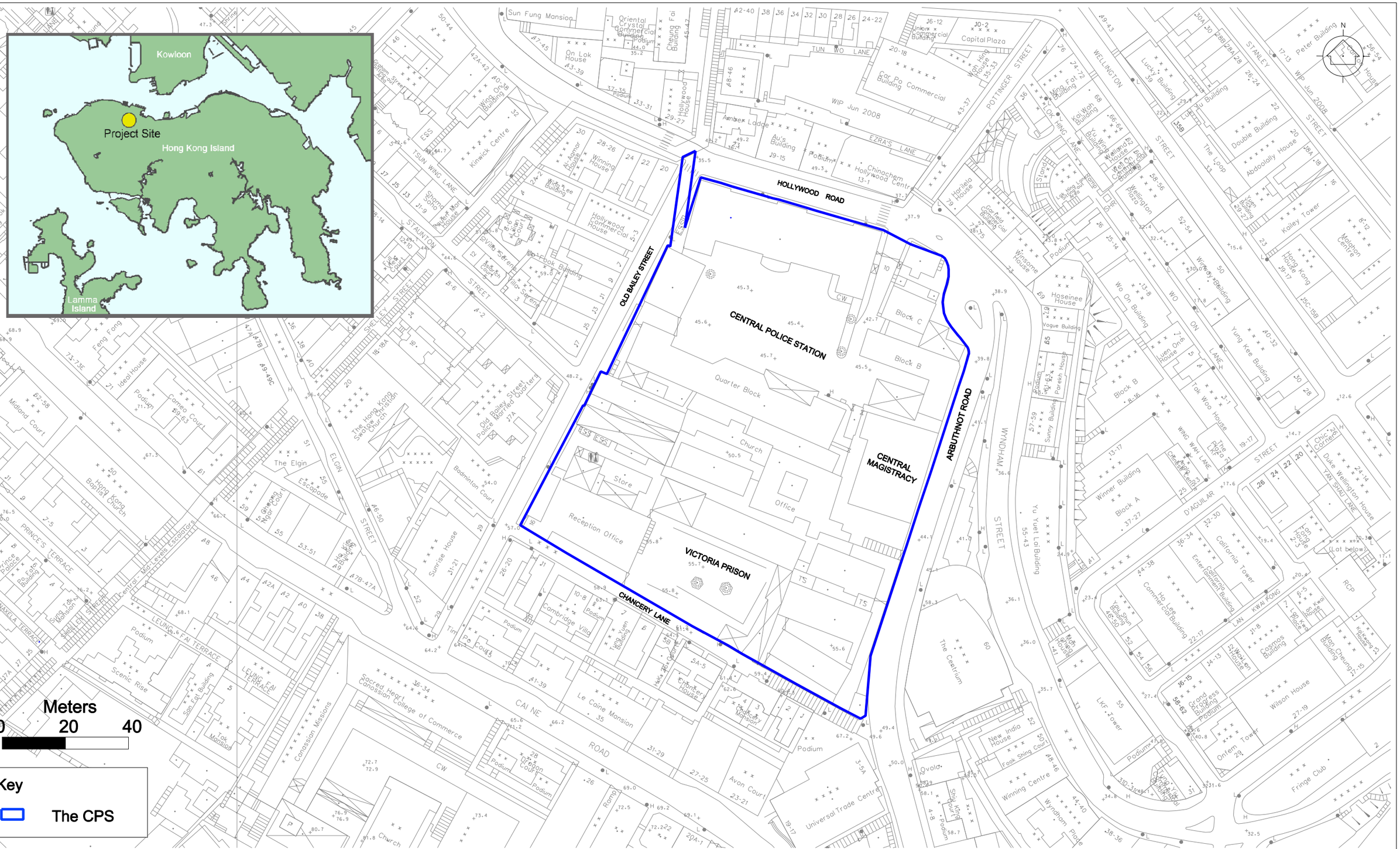

Figure 1.1

Project Location

FILE: 0095646a-A3.dgn

DATE: 27/08/2010

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Figure 1.2

Site Plan

File: 0095646_site plan.mxd
Date: 18/11/2010

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required to be implemented. In accordance with the EM&A Manual, baseline monitoring of noise is required for the Project.

ERM-Hong Kong, Limited (ERM) was appointed by the Jockey Club CPS Limited ("the CPS Ltd") as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the Project.

1.2 PURPOSE OF THE REPORT

The purpose of this Baseline Monitoring Report is to determine the baseline noise levels at the designated monitoring locations prior to the commencement of the Project works. The baseline noise levels will be used as a reference of future impact monitoring during the construction of the Project. This report presents the monitoring requirements, methodologies and results of the baseline noise measurements at the monitoring locations in accordance with the EM&A Manual.

Baseline vibration monitoring has not commenced during the preparation of this report. The baseline vibration monitoring result will be submitted separately to fulfil the condition in Appendix Part A (2)(k) of the Environmental Permit (EP 408/2011).

1.3 STRUCTURE OF THE REPORT

The structure of the report is as follows:

Section 1 : **Introduction**
details the background, purpose and structure of the report.

Section 2 : **Noise Monitoring**
summarizes the noise monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequency, monitoring locations and monitoring results.

Section 3 : **Conclusions**
concludes the representativeness of the baseline monitoring results and observations for the Project.

2 NOISE MONITORING

2.1 MONITORING LOCATION

Accesses to the proposed monitoring location, Chancery House (N5), stated in the EM&A Manual were rejected; alternative location of Chancery Mansion (N6), were therefore proposed and agreed by the Authorised Person (AP), the Independent Environmental Checker (IEC) and EPD.

Baseline noise monitoring was conducted at the monitoring stations listed in *Table 2.1* and shown in *Figure 2.1*. Photographs showing the monitoring stations are presented in *Annex A*.

Table 2.1 Noise Monitoring Station

Monitoring Station	Description
N2	Ho Fook Building
N6 [(a)]	Chancery Mansion

Note:
(a) Access to Chancery House (N5) was rejected. N6 is located next to the original proposed location.

2.2 MONITORING PARAMETERS, FREQUENCY AND PROGRAMME

Baseline noise monitoring was conducted between 9 September and 23 September 2011 at a logging interval of 5 minutes for daytime and evening, holidays and night-time. The baseline monitoring programme is shown in *Annex B*.

The construction noise levels were measured in terms of A-weighted equivalent continuous sound pressure level (L_{eq}) in decibels dB(A). Supplementary information for data auditing, two statistical sound levels L_{10} and L_{90}; the levels exceeded for 10 and 90 percent of the time respectively, were also recorded during the monitoring for reference.

2.3 MONITORING EQUIPMENT AND METHODOLOGY

Noise measurements were conducted in accordance with the calibration and measurement procedures as stated in *Annex – General Calibration and Measurement Procedures* of *Technical Memorandum on Noise from Construction Work other than Percussive Piling* (*GW-TM*) issued under the *Noise Control Ordinance* (*NCO*) (Cap.400).

The sound level meters and calibrator used for the noise measurement, as listed in *Table 2.2*, complies with IEC 651: 1979 and 804:1985 (Type 1) specification. The calibration certificates of the sound level meters and calibrator are given in *Annex C*.

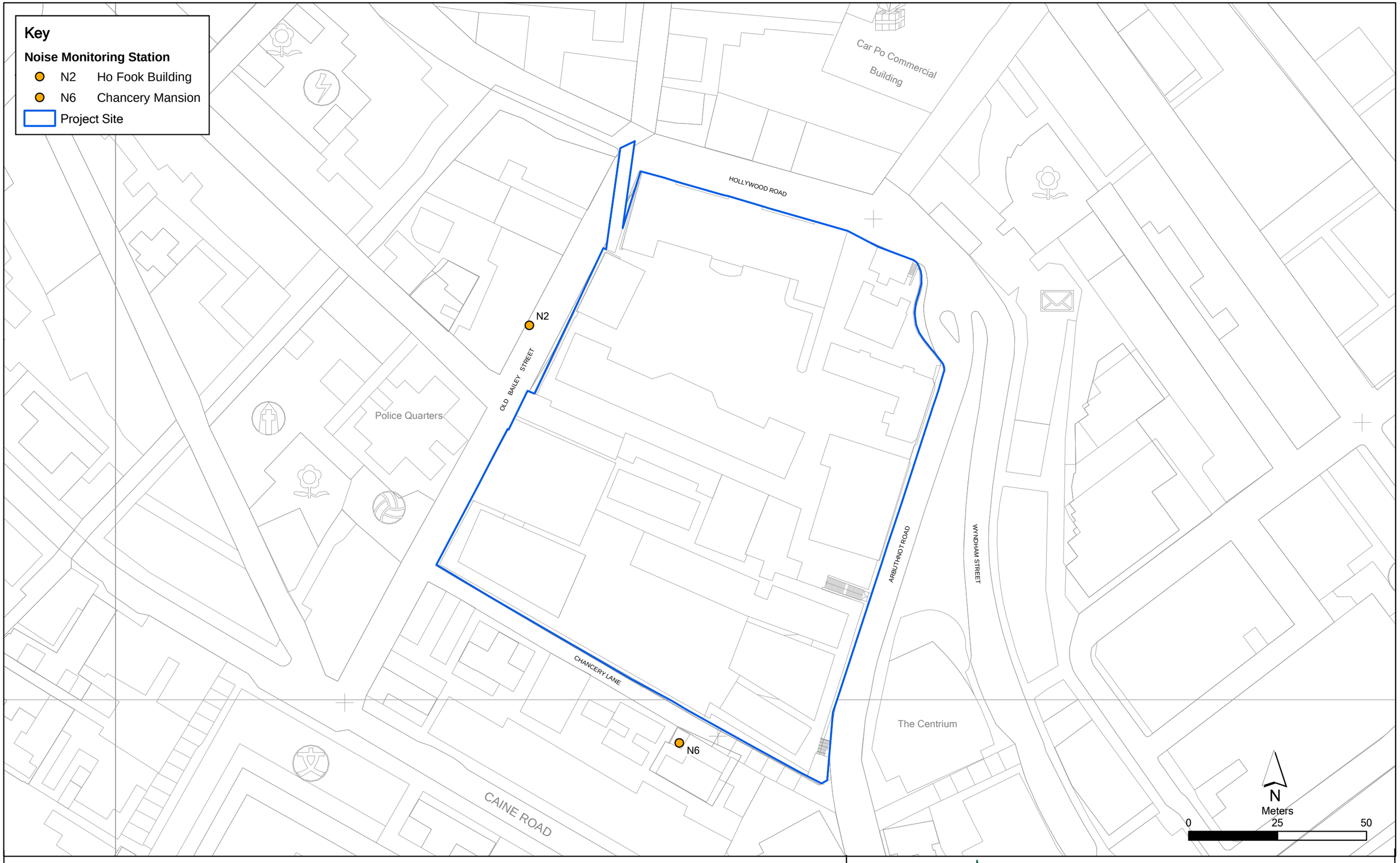

Figure 2.1

Location of Noise Monitoring Stations

File: 0095646_noise monitoring station.mxd
Date: 04/10/2011

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Table 2.2 Noise Monitoring Equipment

Monitoring Station	Monitoring Equipment (Sound Level Meter and Calibrator)
N2	Rion NL-31 (S/N 00603867), NC-73 (S/N 10786708)
N6	Rion NL-31 (S/N 00983400), NC-73 (S/N 10786708)

Immediately prior to and following the noise measurements, the accuracy of the measurement equipment was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as the calibration level from before and after the noise measurement agree to within 1.0 dB.

2.4 BASELINE MONITORING RESULTS

The baseline noise monitoring results are summarized in ***Table 2.3*** and the monitoring data together with graphical presentations are presented in *Annex D*.

Table 2.3 Summary of Noise Monitoring Results

Noise Monitoring Stations	Average $L_{Aeq, 30min}$, dB(A) (0700 – 1900 hours on normal weekday) (range of data)	Average $L_{eq, 5min}$, dB(A) during evening (1900 – 2300 hours) and general holidays (0700-2300 hrs including Sundays) (range of data)	Average $L_{eq, 5min}$, dB(A) (2300 – 0700 hours during night-time) (range of data)
N2	65.5 (61.0-77.0)	63.9 (59.4-82.4)	61.1 (53.5-79.7)
N6	64.5 (60.1-69.3)	62.8 (59.2-77.8)	60.7 (54.1-70.0)

Noise Monitoring Station	Average $L_{eq, 30min}$, dB(A) (0700 – 1900 hours)
N2	65.1
N6	64.2

The measured baseline noise levels ($L_{eq, 30min}$) between 0700 and 1900 hours are well within 75dB(A), which is daytime construction noise limit under Environmental Impact Assessment Ordinance (EIAO). During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit under EIAO, ie 75 dB(A) will be adopted as the Limit Level.

The weather condition during the baseline monitoring period varied from sunny, fine to cloudy with scattered rain. The local impacts observed near the monitoring stations were mainly aircraft noise and traffic noise from Caine Road, Old Bailey Street and Arbuthnot Road. There were no major construction activities influencing the ambient noise levels at N2 and N6. The noise monitoring results will be used as a reference of future impact monitoring period.

Monitoring results are presented in *Annex D* and indicate that noise levels measured at these monitoring stations are of similar magnitude. The monitoring at N2 and N6 are therefore considered to be representative of the baseline condition at the impact monitoring stations located at Ho Fook Building and alternative monitoring station at Chancery Mansion.

2.5 ACTION AND LIMIT LEVEL

During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit on normal weekdays under EIAO, ie 75 dB(A) will be adopted as the Limit Level.

3 CONCLUSION

Baseline noise monitoring was conducted between 9 and 23 September 2011 at the designated monitoring station Ho Fook Building (N2) and Chancery Mansion (N6). The weather condition during the baseline monitoring period varied from sunny, fine to cloudy with scattered rain. There was no major construction activity influencing the ambient noise at N2 and N6. Monitoring results indicate that the collected noise data is representative of the baseline condition at the impact monitoring locations.

During impact monitoring, the Action Level will be triggered when one complaint is received, and the daytime construction noise limit under EIAO, ie 75 dB(A) will be adopted as the Limit Level.

Annex A

Photographs showing Monitoring Stations

Noise Monitoring Station

Baseline Noise Monitoring Stations (N2)

Baseline Noise Monitoring Station (N2)

Alternative Baseline Noise Monitoring Station (N6)

Alternative Baseline Noise Monitoring Station (N6)

Annex B

Baseline Monitoring Schedule

Central Police Station Conservation and Revitalisation Project
Baseline Noise Monitoring Schedule - September 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Sep	2-Sep	3-Sep
4-Sep	5-Sep	6-Sep	7-Sep	8-Sep	9-Sep	10-Sep
					Noise Monitoring	Noise Monitoring
11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	17-Sep
Noise Monitoring	Noise Monitoring	Noise Monitoring Mid-Autumn Festival	Noise Monitoring	Noise Monitoring	Noise Monitoring	Noise Monitoring
18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	24-Sep
Noise Monitoring	Noise Monitoring	Noise Monitoring	Noise Monitoring	Noise Monitoring	Noise Monitoring	
25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	

Annex C

Calibration Certificates of Sound Level Meters

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Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C105886

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00983400

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C105886.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 26 October 2010

Certified by : K C Lee

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C105886

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00983400

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 25 October 2010 ***JOB NO.*** : IC10-2726

TEST RESULTS

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by : *L L Cheung* *Date : 26 October 2010*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C105886

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C100067
CL281	Multifunction Acoustic Calibrator	C1006860

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		114.1

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			93.9	± 0.3

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C105886

Calibration Report

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	63 Hz	67.6	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.5
					250 Hz	85.2	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	63 Hz	93.2	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.4	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.3	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Report No. : C105886

Calibration Report

Remarks : - Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB :	63 Hz - 125 Hz	: ± 0.35 dB
	250 Hz - 500 Hz	: ± 0.30 dB
	1 kHz	: ± 0.20 dB
	2 kHz - 4 kHz	: ± 0.35 dB
	8 kHz	: ± 0.45 dB
	12.5 kHz	: ± 0.70 dB
104 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB :	1 kHz	: ± 0.10 dB (Ref. 94 dB)

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

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

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Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C113827

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Meter

Manufacturer : Rion

Model No. : NL-31

Serial No. : 00603867

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C113827.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 8 July 2011

Certified by : H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C113827

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Meter
MANUFACTURER : Rion
MODEL NO. : NL-31
SERIAL NO. : 00603867

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 7 July 2011 ***JOB NO.*** : IC11-1657

TEST RESULTS

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by : K C Lee *Date : 8 July 2011*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

Report No. : C113827

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.

2. Self-calibration was performed before the test.

3. The results presented are the mean of 3 measurements at each calibration point.

4. Test equipment :

Equipment ID	Description	Certificate No.
CL280	40 MHz Arbitrary Waveform Generator	C110018
CL281	Multifunction Acoustic Calibrator	C1006860

5. Test procedure : MA101N.

6. Results :

6.1 Sound Pressure Level

6.1.1 Reference Sound Pressure Level

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	± 1.1

6.1.2 Linearity

UUT Setting				Applied Value		UUT Reading (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)	
30 - 120	L_A	A	Fast	94.00	1	94.0 (Ref.)
				104.00		104.0
				114.00		113.9

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

6.2 Time Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq. (kHz)		
30 - 120	L_A	A	Fast	94.00	1	94.0	Ref.
			Slow			93.9	± 0.3

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Calibration Report

6.3 Frequency Weighting

6.3.1 A-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_A	A	Fast	94.00	63 Hz	67.7	-26.2 ± 1.5
					125 Hz	77.7	-16.1 ± 1.5
					250 Hz	85.3	-8.6 ± 1.4
					500 Hz	90.7	-3.2 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	95.3	+1.2 ± 1.6
					4 kHz	95.1	+1.0 ± 1.6
					8 kHz	93.0	-1.1 (+2.1 ; -3.1)
					12.5 kHz	90.1	-4.3 (+3.0 ; -6.0)

6.3.2 C-Weighting

UUT Setting				Applied Value		UUT Reading (dB)	IEC 61672 Class 1 Spec. (dB)
Range (dB)	Mode	Frequency Weighting	Time Weighting	Level (dB)	Freq.		
30 - 120	L_C	C	Fast	94.00	63 Hz	93.1	-0.8 ± 1.5
					125 Hz	93.8	-0.2 ± 1.5
					250 Hz	94.0	0.0 ± 1.4
					500 Hz	94.0	0.0 ± 1.4
					1 kHz	94.0	Ref.
					2 kHz	93.9	-0.2 ± 1.6
					4 kHz	93.3	-0.8 ± 1.6
					8 kHz	91.1	-3.0 (+2.1 ; -3.1)
					12.5 kHz	88.2	-6.2 (+3.0 ; -6.0)

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Report No. : C113827

Calibration Report

Remarks : - Mfr's Spec. : IEC 61672 Class 1

- Uncertainties of Applied Value :

94 dB	:	63 Hz - 125 Hz	: ± 0.35 dB
		250 Hz - 500 Hz	: ± 0.30 dB
		1 kHz	: ± 0.20 dB
		2 kHz - 4 kHz	: ± 0.35 dB
		8 kHz	: ± 0.45 dB
		12.5 kHz	: ± 0.70 dB
104 dB	:	1 kHz	: ± 0.10 dB (Ref. 94 dB)
114 dB	:	1 kHz	: ± 0.10 dB (Ref. 94 dB)

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

Note :
The values given in this Calibration Report 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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Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C113972

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : Rion

Model No. : NC-73

Serial No. : 10786708

has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C113972.

The equipment is supplied by

Co. Name : Envirotech Services Co.

Address : Shop 6, G/F., Casio Mansion, 209 Shaukeiwan Road, Hong Kong

Date of Issue : 18 July 2011

Certified by : H C Chan

The test equipment used for calibration are traceable to the National Standards as specified in this report.
This report shall not be reproduced except in full and with prior written approval from this laboratory.

Calibration and Testing Laboratory of Sun Creation Engineering Limited
c/o 4/F, Tsing Shan Wan Exchange Building, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong
Tel: 2927 2606 Fax: 2744 8986 E-mail: callab@suncreation.com Website: www.suncreation.com

輝創工程有限公司
Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C113972

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Calibrator
MANUFACTURER : Rion
MODEL NO. : NC-73
SERIAL NO. : 10786708

TEST CONDITIONS

AMBIENT TEMPERATURE : (23 ± 2)°C RELATIVE HUMIDITY : (55 ± 20)%
LINE VOLTAGE : ---

TEST SPECIFICATIONS

Calibration check

DATE OF TEST : 16 July 2011 ***JOB NO.*** : IC11-1746

TEST RESULTS

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
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA
- Agilent Technologies, USA

Tested by : *K C Lee* *Date : 18 July 2011*

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Report No. : C113972

Calibration Report

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment :

Equipment ID	Description	Certificate No.
TST150A	Measuring Amplifier	C101008
CL130	Universal Counter	C113350
CL281	Multifunction Acoustic Calibrator	C1006860

4. Test procedure : MA100N.

5. Results :

5.1 Sound Level Accuracy

UUT Nominal Value	Measured Value (dB)	Mfr's Spec. (dB)	Uncertainty of Measured Value (dB)
94 dB, 1 kHz	93.9	± 0.5	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)	Mfr's Spec.	Uncertainty of Measured Value (Hz)
1	0.991	1 kHz ± 2 %	± 1

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

Note :
The values given in this Calibration Report only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environment changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Sun Creation Engineering Limited shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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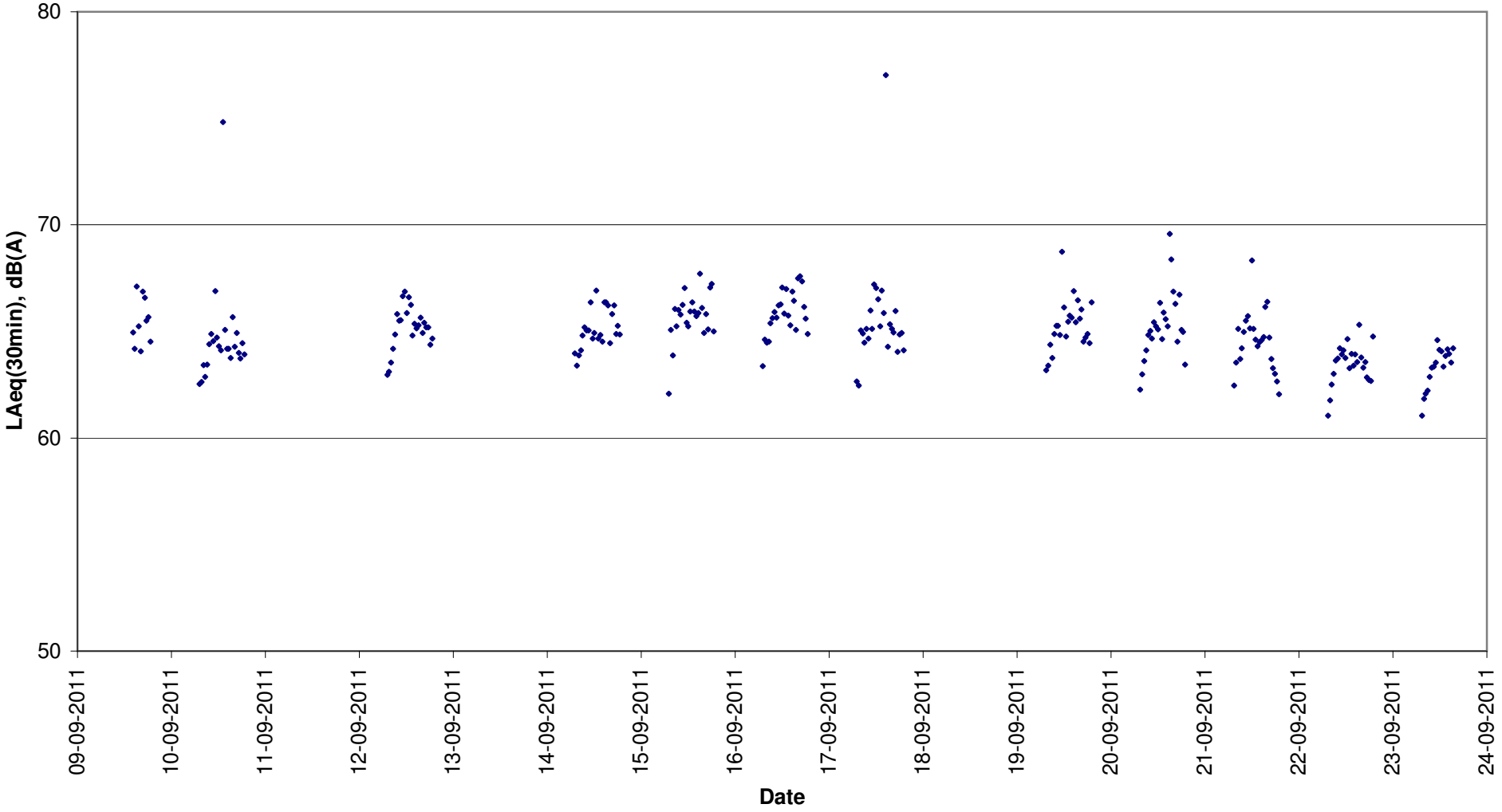
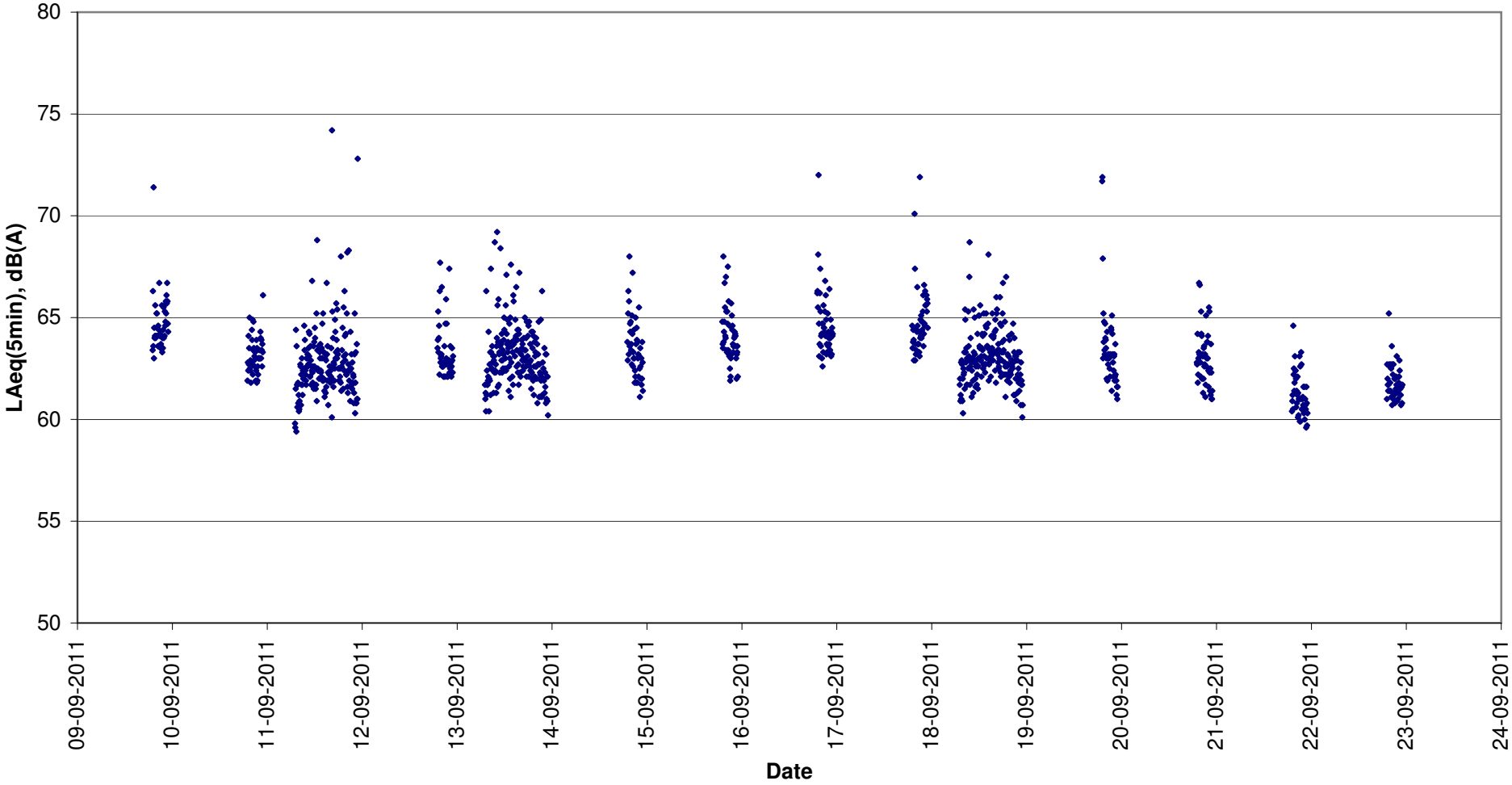
Annex D

Noise Monitoring Results

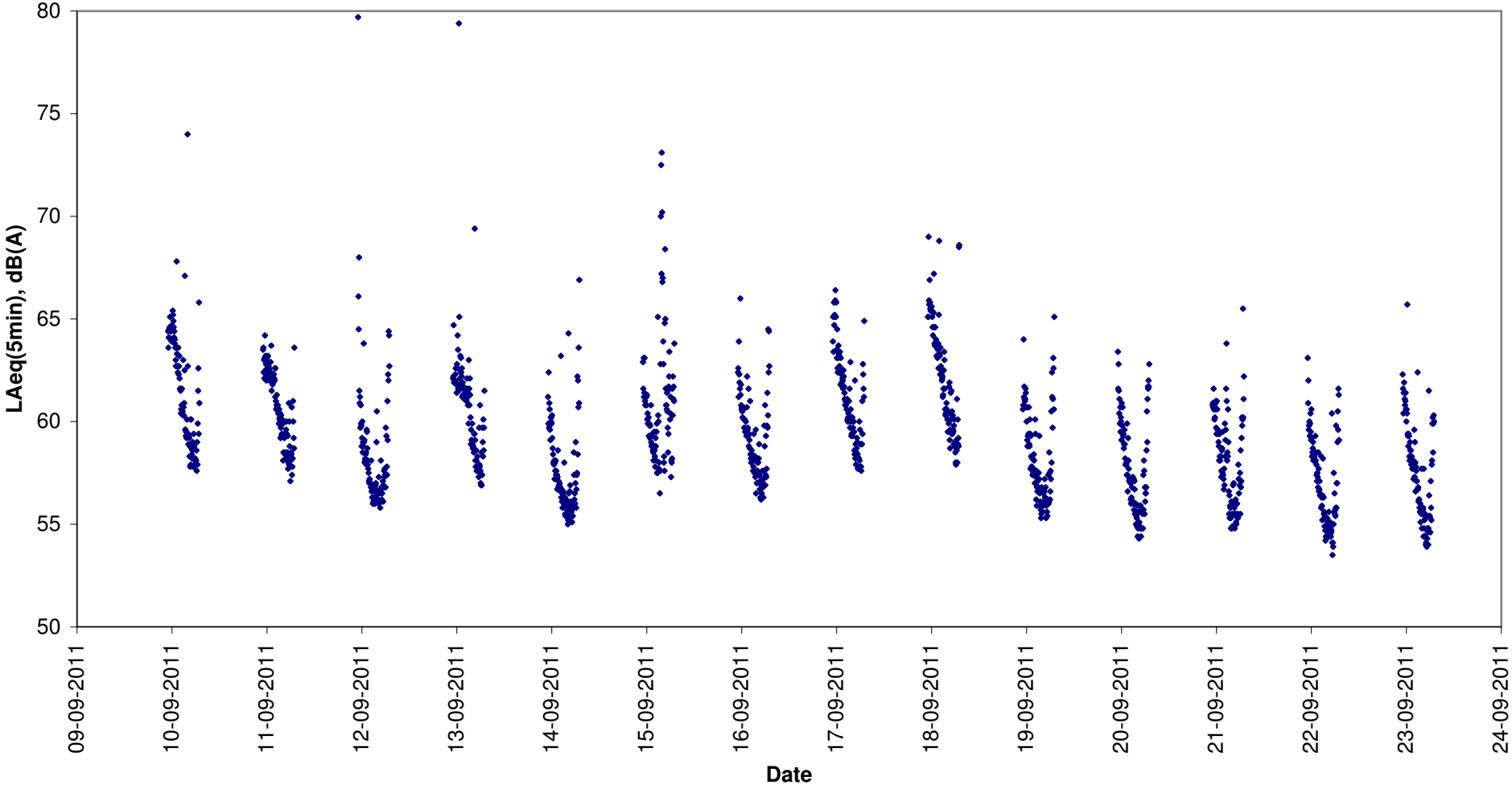
LAeq(30min) during Normal Working Hours (0700 - 1900) at N2 Ho Fook Building



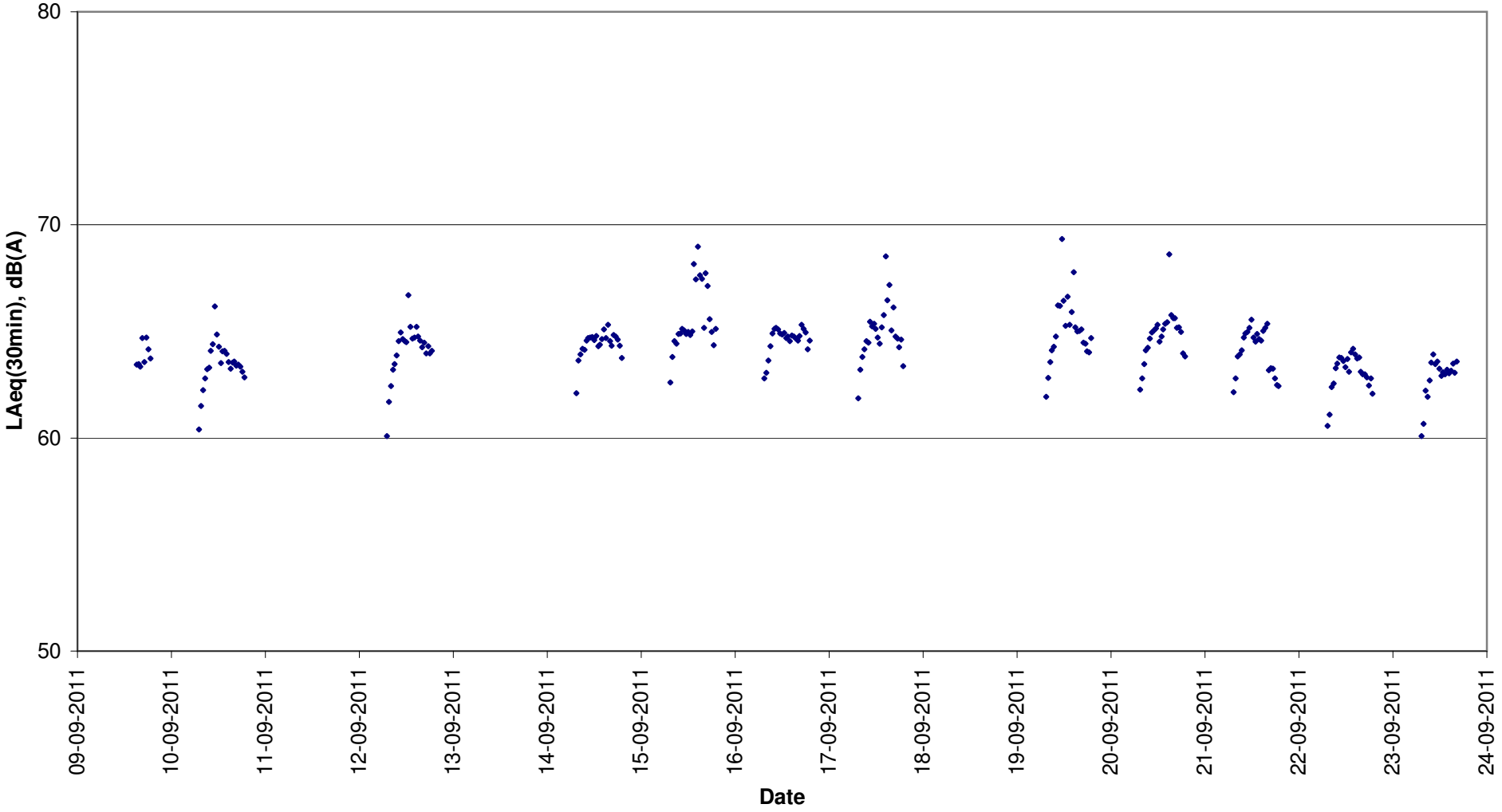
LAeq(5min) measured at N2 Ho Fook Building
(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))



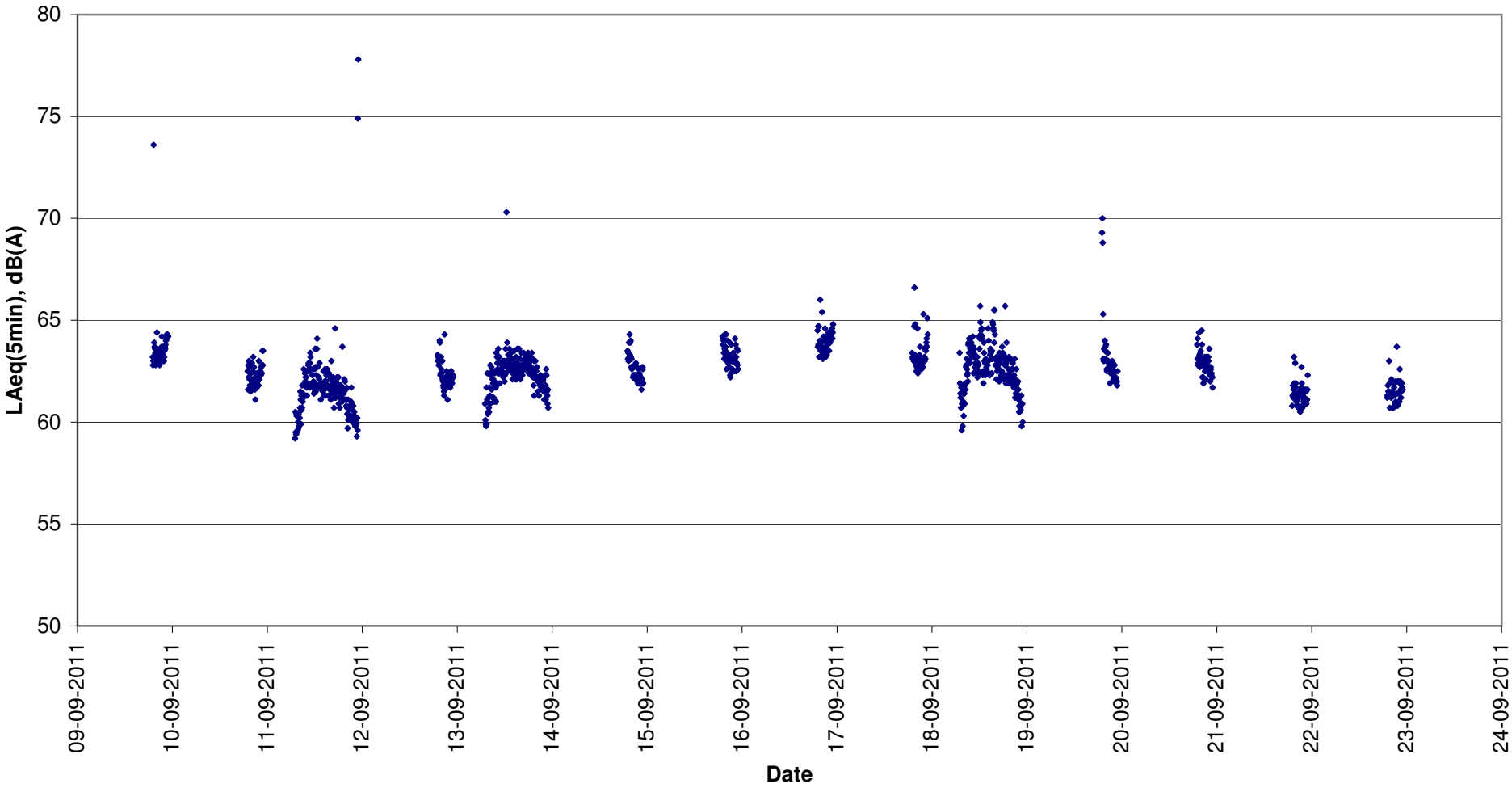
LAeq(5min) measured at N2 Ho Fook Building
Night-time (2300-0700 hours)



LAeq(30min) during Normal Working Hours (0700 - 1900) at N6 Chancery Mansion



LAeq(5min) measured at N6 Chancery Mansion
(Evening on normal weekdays (1900-2300 hours) and holidays (0700-2300 hours))



LAeq(5min) measured at N6 Chancery Mansion
Night-time (2300-0700 hours)