

MTR Corporation Limited

HONG KONG SECTION OF GUANGZHOU –
SHENZHEN – HONG KONG EXPRESS RAIL LINK
(No. EP-349/2009)

Baseline Monitoring Report (Part 2) Rev 1

Verified by: 
Position: Independent Environmental Checker
Date: 20 August 2010

MTR Corporation Limited

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SHENZHEN - HONG KONG EXPRESS RAIL LINK
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Baseline Monitoring Report (Part 2) Rev 1

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Date: 19 AUG 2010

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EXECUTIVE SUMMARY

The environmental baseline monitoring for the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link, hereinafter referred to “the XRL” was conducted at 2 noise monitoring locations in the vicinity of Works Area R, S and T (Figure 1). Noise measurements were taken in terms of Leq with L10 and L90 as reference. With reference to the EM&A Manual, there is no dust monitoring location in the vicinity of the said Works Areas, therefore no reporting of baseline air quality is included in this report.

Baseline noise monitoring was conducted at CN 27 and CN 28 in December 2009. The monitoring locations CN 27 and CN 28 were subsequently re-located due to availability of access. Supplementary baseline noise monitoring was conducted at the updated locations of CN 27 and CN 28 from 5/7/2010 to 18/7/2010. In this report, the measured noise levels on weekdays were presented separately from general holidays and Sundays for easy of reference. It was noted from the monitoring results that ambient noise level for daytime at Tower 6, Harbour Green (CN 28), 70 dB(A), is highest between the two monitoring locations. The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

1. INTRODUCTION

1.1 Background

Further to the Government's decision made in April 2008, MTR Corporation (MTR) commenced to plan and design the Hong Kong Section of Guangzhou-Shenzhen-Hong Kong Express Rail Link (hereinafter referred to "the XRL" or "the Project"), which is a committed cross boundary transport infrastructure project.

The XRL will provide high speed rail services between Hong Kong and Guangzhou, and a connection to the national high-speed passenger rail network serving major mainland cities outside of Guangdong province. The Hong Kong section of the XRL is about 26km from new terminus located in West Kowloon (i.e. West Kowloon Terminus (WKT)) to the boundary at Huang gang. Along the railway corridor, there will be a total of eight ventilation buildings/ emergency access point (EAP), stabling sidings and a maintenance facility at Shek Kong (SSS) and an Emergency Rescue Station (ERS) next to SSS serving the operation of the XRL.

1.2 Purpose of the report

In accordance with the Environmental Monitoring and Audit (EM&A) Manual, environmental baseline monitoring was carried out for noise. This Baseline Monitoring Report (Part 2) contains baseline monitoring findings in the vicinity of Works Area R, S and T (Figure 1). The purpose of this report is to summarize the findings of this baseline monitoring and to establish the compliance levels for the subsequent environmental impact monitoring during construction stage.

2. AIR QUALITY

With reference to Chapter 9 of the EM&A Manual, there is no dust monitoring location in the vicinity of the Works Areas R, S and T, therefore no reporting of baseline air quality is included in this report.

3. AIRBORNE CONSTRUCTION NOISE

3.1 Monitoring Methodology

Consecutive noise measurements were undertaken over a period of at least 14 days to establish the ambient noise levels at representative nearest sensitive receivers. Continuous 5 minute A-weighted noise levels were recorded throughout the daytime, evening and night-time on weekdays (Monday to Saturday) and also on Sundays.

As referred to 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. In this baseline monitoring, B&K 2250 sound level meters, which comply with the above-mentioned specifications, were used.

There should not be any construction activities in the vicinity of the monitoring stations during the baseline monitoring. Any non-project related construction activities in the vicinity of the monitoring stations during the baseline monitoring should be noted and the source and location of such activities should be recorded.

For these two noise monitoring stations, the monitoring stations were positioned at a point 1m from the exterior of the noise sensitive façade. The microphones were positioned to face towards the works area.

3.2 Monitoring Frequency

The baseline monitoring was measured daily for a continuous period of at least 14 consecutive days at a minimum logging interval of 30 minutes for daytime (between 0700 and 1900 hours of normal weekdays) and 15 minutes (as three consecutive Leq, (5 minutes) readings) for evening time (between 1900 and 2300 hours of normal weekdays), general holidays including Sundays (between 0700 and 2300 hours) and night-time (between 2300 and 0700 of all days). The Leq, L10 and L90 were recorded at the specified interval.

3.3 Monitoring location

Baseline noise monitoring was carried out during 5/7/2010 to 18/7/2010 at Noise Sensitive Receivers (NSRs) located in the vicinity of Works Area R, S and T. The locations of the NSR are shown in Figure 2. Monitoring was carried out at the following stations in accordance with the EM&A Manual:

Monitoring Station ID	Updated Noise Monitoring Location	Monitoring period
CN 27	Cheong Shun House, Nam Cheong Estate	5/7/2010 – 18/7/2010
CN 28	Tower 6, Harbour Green ¹	5/7/2010 – 18/7/2010

¹ The monitoring location was re-located to the podium level of Tower 6, Harbour Green

Table 3.1: Information of Noise Monitoring Stations

3.4 Calibration Requirements

B&K 2250 sound level meters which comply with the International Electrotechnical Commission Publication 651:1979 (Type 1) and 804:1985 (Type 1), specification as referred to in the Technical Memoranda to the NCO were used for the baseline monitoring. The sound level meters and calibrator are verified by the certified laboratory or manufacturer once every year to ensure they perform to the same level of accuracy as stated in the manufacturer's specifications. Calibration certificates of the sound level meters and calibrator are attached in Appendix B.

Immediately prior to and following each noise measurement the accuracy of the sound level meter should 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 difference between calibration levels obtained before and after the noise measurement is less than 1.0 dB.

3.5 Action and Limit Levels

The Action and Limit Levels defined in the EM&A Manual for airborne construction

noise is presented below for reference.

Time Period	Action	Limit
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A) for residential premises
		70 dB(A) for school and 65 dB(A) during examination period

Table 3.2: Action and Limit Levels for Airborne Construction Noise

3.6 Monitoring Results

Baseline noise monitoring was conducted between 5/7/2010 and 18/7/2010 at the updated locations of CN 27 and 28. The weather condition was generally fine with occasional rainfall events during the monitoring period. No façade correction has been made since measurements were taken at building façade at all two monitoring locations. The major noise sources at respective monitoring locations are summarized at the table below:

Monitoring location ID	Monitoring location	Major noise source
CN 27	Cheong Shun House, Nam Cheong Estate	Traffic noise
CN 28	Tower 6, Harbour Green	Traffic Noise

Table 3.3: Major noise source at noise monitoring locations

Baseline noise monitoring results are summarised in Table 3.3 over the monitoring periods. All monitoring data are contained in Appendix A. Graphical presentations of the monitoring results are shown in Appendix A.

Period	Monitoring Station	L_{eq}(30min) - dB(A) (Range)	L₁₀(30min) - dB(A) (Range)	L₉₀(30min) - dB(A) (Range)
0700 – 1900 (Daytime, Normal weekday)	CN 27	65 (63-66)	67 (66-68)	61 (60-62)
	CN 28	70 (68-71)	74 (72-74)	62 (60-63)
Period	Monitoring Station	L_{eq}(5min) - dB(A) (Range)	L₁₀(5min) - dB(A) (Range)	L₉₀(5min) - dB(A) (Range)
0700 – 2300 (General Holiday including Sunday)	CN 27	62 (60-65)	65 (62-68)	59 (57-63)
	CN 28	66 (62-68)	69 (66 -72)	57 (54-61)
1900 – 2300 (Evening, Normal weekday)	CN 27	63 (62-64)	66 (65-67)	60 (59-61)
	CN 28	68 (67-70)	71 (70-74)	60 (58-62)
2300 – 0700 (Night-time, all days)	CN 27	60 (56-63)	62 (58-66)	57 (55-60)
	CN 28	63 (58-67)	67 (61-71)	55 (52-59)

Table 3.4: Baseline noise monitoring results

As revealed from the monitoring results, baseline noise levels for daytime (0700-1900) during normal weekdays at the CN27 and CN28 range from 63-66 dB(A) and 68-71 dB(A) respectively. It was noted from the monitoring results that ambient noise level for daytime at Tower 6, Harbour Green (CN 28), 70 dB(A), is highest between the two monitoring locations. The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

4. CONCLUSION

4.1 Air

With reference to Chapter 9 of the EM&A Manual, there is no dust monitoring location in the vicinity of the Works Areas R, S and T, therefore no reporting of baseline air quality is included in this report.

4.2 Airborne Construction Noise

Supplementary baseline noise monitoring at the updated monitoring locations of CN 27 and CN 28 were carried out from 5/7/2009 to 18/7/2009. The weather during the baseline monitoring period was generally fine with occasional rainfall events.

As revealed from the monitoring results, baseline noise levels for daytime (0700-1900) during normal weekdays at the CN27 and CN28 range from 63-66 dB(A) and 68-71 dB(A) respectively. It was noted from the monitoring results that ambient noise level for daytime at Tower 6, Harbour Green (CN 28), 70 dB(A), is highest between the two monitoring locations. The daytime baseline noise levels at all of the two locations were below the Limit Level for of 75 dB(A) for residential premises.

Appendix A

Baseline noise monitoring data

Baseline Noise Monitoring Result

Location: CN 27 Cheong Shun House, Nam Cheong Estate

Baseline monitoring period: 5/7/2010 - 18/7/2010

Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	63.4	66.1	59.8
07:30-08:00	64.2	66.6	60.8
08:00-08:30	64.5	66.9	61.6
08:30-09:00	64.8	67.0	61.9
09:00-09:30	64.9	67.3	61.6
09:30-10:00	64.9	67.2	61.8
10:00-10:30	64.8	67.2	61.8
10:30-11:00	64.6	67.0	61.7
11:00-11:30	64.5	66.9	61.4
11:30-12:00	64.4	66.9	61.1
12:00-12:30	65.4	68.3	61.1
12:30-13:00	64.5	67.0	60.8
13:00-13:30	64.6	67.0	61.2
13:30-14:00	64.4	66.8	61.1
14:00-14:30	64.5	66.9	61.4
14:30-15:00	64.5	66.9	61.4
15:00-15:30	64.5	66.9	61.4
15:30-16:00	64.5	67.0	61.3
16:00-16:30	65.5	67.9	61.8
16:30-17:00	64.4	66.8	61.2
17:00-17:30	64.9	67.5	61.1
17:30-18:00	64.9	67.4	61.1
18:00-18:30	64.5	66.7	61.5
18:30-19:00	64.0	66.5	60.7
Average	64.6	67.1	61.3
Max	65.5	68.3	61.9
Min	63.4	66.1	59.8

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	64.3	66.8	60.8
	63.7	66.2	60.4
	63.0	65.4	59.9
19:15-19:30	63.9	66.6	60.3
	63.9	66.6	60.3
	63.7	66.3	60.2
19:30-19:45	63.5	66.0	60.2
	63.0	65.5	59.6
	63.6	66.4	59.8
19:45-20:00	63.6	66.4	59.7
	63.6	66.2	60.3
	63.0	65.8	59.2
20:00-20:15	63.0	65.5	59.7
	63.5	66.1	60.0
	63.3	66.0	59.7
20:15-20:30	62.8	65.3	59.3
	62.6	64.8	59.4
	63.3	65.7	59.5
20:30-20:45	63.8	66.8	59.6
	62.9	66.0	59.2
	63.0	65.6	59.5
20:45-21:00	63.2	65.9	59.4
	63.4	66.1	59.7
	63.3	65.9	59.4
21:00-21:15	62.8	65.4	59.2
	62.8	65.5	59.4
	63.3	66.1	59.5
21:15-21:30	63.4	66.2	59.6
	62.6	65.3	59.0
	62.6	65.3	58.9
21:30-21:45	63.0	65.6	59.3
	63.9	66.5	60.7

Time Slot	Leq, 5min	L10	L90
	63.0	65.5	59.7
21:45-22:00	62.9	65.7	59.2
	62.8	65.5	59.2
	63.2	65.7	59.0
22:00-22:15	62.6	65.2	59.0
	62.6	65.3	58.9
	62.5	65.2	59.1
22:15-22:30	63.1	66.1	59.0
	62.1	64.6	59.0
	62.6	65.3	59.1
22:30-22:45	62.6	65.2	59.2
	62.2	65.0	58.8
	63.2	65.8	59.7
22:45-23:00	63.3	65.9	60.1
	62.2	64.6	59.1
	63.1	65.7	60.1
Average	63.1	65.8	59.6
Max	64.3	66.8	60.8
Min	62.1	64.6	58.8

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	62.7	65.6	58.9
	61.3	64.2	57.9
	61.7	64.7	57.6
07:15-07:30	62.4	65.2	58.7
	61.5	64.4	57.7
	61.2	63.7	57.5
07:30-07:45	63.1	66.4	58.9
	61.7	64.4	58.3
	61.0	63.8	57.7
07:45-08:00	62.3	65.2	58.9
	61.5	64.5	57.8
	62.4	65.6	58.5
08:00-08:15	61.6	64.0	58.6

Time Slot	Leq, 5min	L10	L90
	62.1	64.9	58.2
	62.1	65.1	58.2
08:15-08:30	63.0	66.0	59.3
	61.8	64.5	58.1
	62.2	64.6	58.9
08:30-08:45	62.4	64.8	59.1
	62.4	65.5	58.1
	63.6	66.6	59.8
08:45-09:00	61.3	64.0	57.7
	61.8	64.5	58.9
	62.4	65.4	58.6
09:00-09:15	62.0	64.8	58.8
	62.4	65.5	58.2
	61.5	63.9	58.6
09:15-09:30	63.0	65.9	58.9
	62.8	65.7	59.5
	62.3	64.9	58.6
09:30-09:45	62.7	65.4	58.7
	61.6	64.2	58.6
	63.2	66.1	59.5
09:45-10:00	62.1	64.3	58.8
	62.2	64.5	59.2
	62.0	64.6	58.7
10:00-10:15	62.3	64.8	59.0
	62.0	64.9	58.3
	62.7	65.3	58.8
10:15-10:30	63.6	66.5	59.5
	60.9	63.3	58.0
	62.6	65.2	58.9
10:30-10:45	61.9	64.2	58.7
	62.5	64.7	59.8
	62.6	65.4	59.1
10:45-11:00	63.0	65.2	59.7
	63.0	65.8	59.6
	64.6	66.3	62.5
11:00-11:15	64.5	67.7	59.5

Time Slot	Leq, 5min	L10	L90
	62.7	65.5	59.6
	62.5	65.0	59.8
11:15-11:30	63.2	65.5	60.3
	61.9	63.8	59.7
	63.1	65.4	59.9
11:30-11:45	62.2	64.7	59.8
	62.3	64.4	59.3
	63.2	65.9	59.3
11:45-12:00	62.2	64.7	59.0
	61.9	64.2	58.8
	62.4	65.3	58.5
12:00-12:15	62.2	64.8	58.5
	62.0	64.8	58.5
	62.2	65.3	58.3
12:15-12:30	62.9	65.9	59.0
	63.0	66.2	58.7
	63.0	65.9	59.1
12:30-12:45	62.5	65.1	59.8
	62.9	66.0	59.1
	61.9	65.1	58.3
12:45-13:00	62.7	65.4	59.2
	61.5	64.2	58.6
	62.3	64.8	59.0
13:00-13:15	63.1	65.1	60.4
	62.8	65.0	59.4
	62.5	65.5	59.0
13:15-13:30	62.6	65.0	58.5
	63.4	65.9	60.0
	62.5	65.2	59.1
13:30-13:45	62.0	64.5	59.1
	63.5	65.4	60.8
	63.1	65.2	60.0
13:45-14:00	61.5	63.8	59.0
	62.5	65.3	59.1
	63.2	66.1	59.0
14:00-14:15	62.3	65.0	59.1

Time Slot	Leq, 5min	L10	L90
	61.7	64.5	58.3
	62.7	65.5	58.8
14:15-14:30	63.6	66.7	59.7
	62.3	65.3	58.6
	62.7	64.9	59.3
14:30-14:45	61.9	64.5	58.5
	62.6	65.1	59.4
	62.4	65.7	58.3
14:45-15:00	62.2	65.0	58.9
	62.0	64.6	58.7
	62.2	65.1	58.7
15:00-15:15	62.2	65.0	58.6
	62.2	64.8	59.0
	62.0	65.1	58.3
15:15-15:30	63.2	66.1	59.5
	62.3	64.8	59.5
	62.2	64.5	59.6
15:30-15:45	62.3	64.8	59.1
	61.6	64.6	57.9
	62.1	64.5	58.2
15:45-16:00	62.3	64.9	58.6
	62.0	65.1	58.2
	62.5	65.4	58.8
16:00-16:15	62.4	65.5	58.3
	62.5	65.6	58.6
	61.4	64.0	58.1
16:15-16:30	62.4	64.7	58.8
	61.7	64.6	58.1
	62.1	64.5	58.6
16:30-16:45	61.5	63.8	58.6
	63.1	65.3	59.0
	63.6	66.1	59.3
16:45-17:00	62.2	65.4	58.7
	61.9	64.6	58.7
	61.7	65.3	58.0
17:00-17:15	62.2	65.0	58.9

Time Slot	Leq, 5min	L10	L90
	61.1	63.3	58.4
	62.8	65.3	59.5
17:15-17:30	62.2	64.7	59.2
	62.4	65.5	58.5
	62.0	64.9	58.4
17:30-17:45	61.5	63.7	58.8
	62.0	64.6	58.4
	62.2	65.2	58.0
17:45-18:00	61.7	64.5	58.0
	60.9	62.8	58.8
	62.7	65.6	59.1
18:00-18:15	64.0	66.4	58.8
	64.1	66.3	59.3
	61.9	64.6	58.8
18:15-18:30	62.9	65.4	59.5
	62.0	64.3	59.1
	62.2	64.8	58.7
18:30-18:45	63.3	65.5	59.4
	63.2	65.7	58.1
	64.5	67.0	59.4
18:45-19:00	62.0	64.3	58.8
	61.8	64.6	58.3
	61.5	63.6	58.9
19:00-19:15	62.2	64.1	59.3
	62.2	65.1	58.1
	61.5	64.1	58.7
19:15-19:30	62.9	65.9	59.4
	62.4	65.2	59.0
	62.2	65.8	58.8
19:30-19:45	61.2	64.1	57.8
	60.6	63.4	57.7
	62.3	65.0	58.5
19:45-20:00	61.3	64.2	58.2
	61.3	64.4	57.8
	61.9	64.6	58.3
20:00-20:15	60.5	62.7	58.5

Time Slot	Leq, 5min	L10	L90
	63.9	67.0	59.8
	61.0	63.5	57.8
20:15-20:30	62.1	64.7	57.8
	60.9	63.6	57.5
	61.7	64.5	58.3
20:30-20:45	62.1	65.0	58.7
	62.1	64.9	58.4
	61.9	64.7	58.6
20:45-21:00	61.9	64.4	58.3
	62.0	64.6	58.1
	63.2	66.9	57.9
21:00-21:15	62.8	65.8	59.4
	61.2	63.7	58.2
	61.4	63.8	58.1
21:15-21:30	62.5	65.2	58.8
	62.5	65.6	58.3
	63.0	64.7	58.4
21:30-21:45	62.4	64.8	59.4
	61.5	64.0	58.4
	62.4	64.6	59.8
21:45-22:00	61.7	64.3	58.4
	62.5	65.3	58.9
	62.6	65.6	59.1
22:00-22:15	61.6	64.1	57.9
	61.7	63.9	58.2
	62.5	65.6	58.6
22:15-22:30	61.4	64.1	58.1
	61.6	64.1	58.8
	61.8	65.0	57.8
22:30-22:45	61.4	64.1	57.5
	61.6	63.6	58.4
	60.6	63.3	57.6
22:45-23:00	61.4	64.3	57.2
	62.4	65.3	58.5
	60.2	62.4	57.3
Average	62.3	65.0	58.8

Time Slot	Leq, 5min	L10	L90
Max	64.6	67.7	62.5
Min	60.2	62.4	57.2

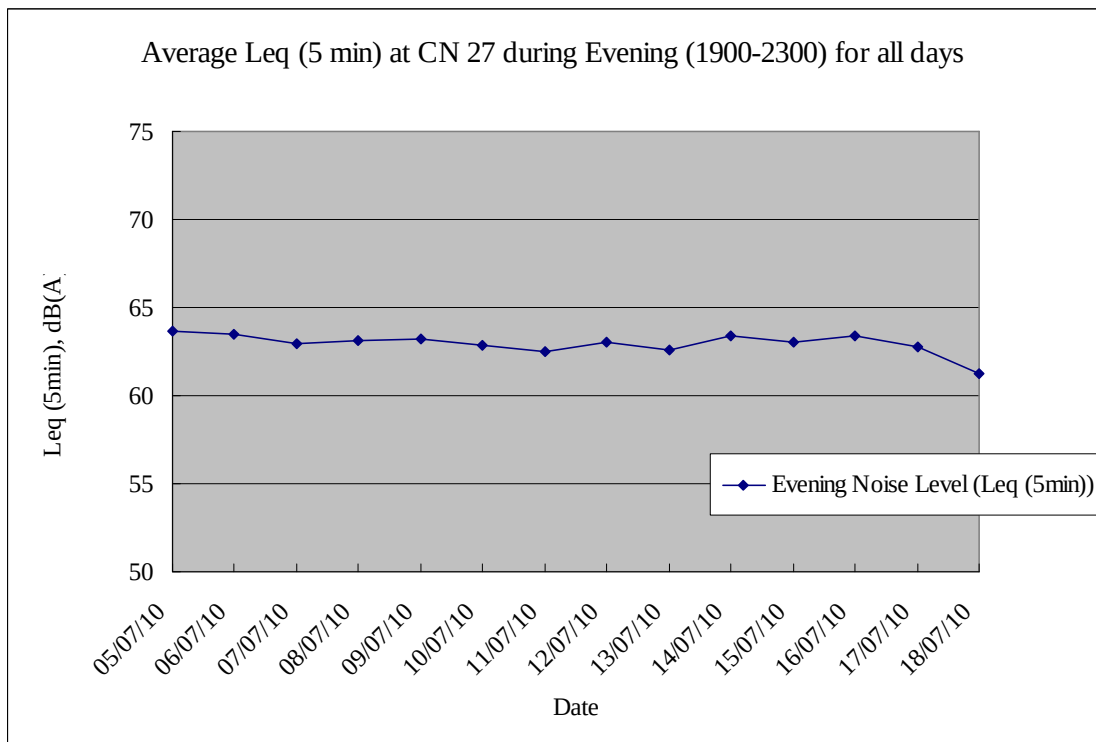
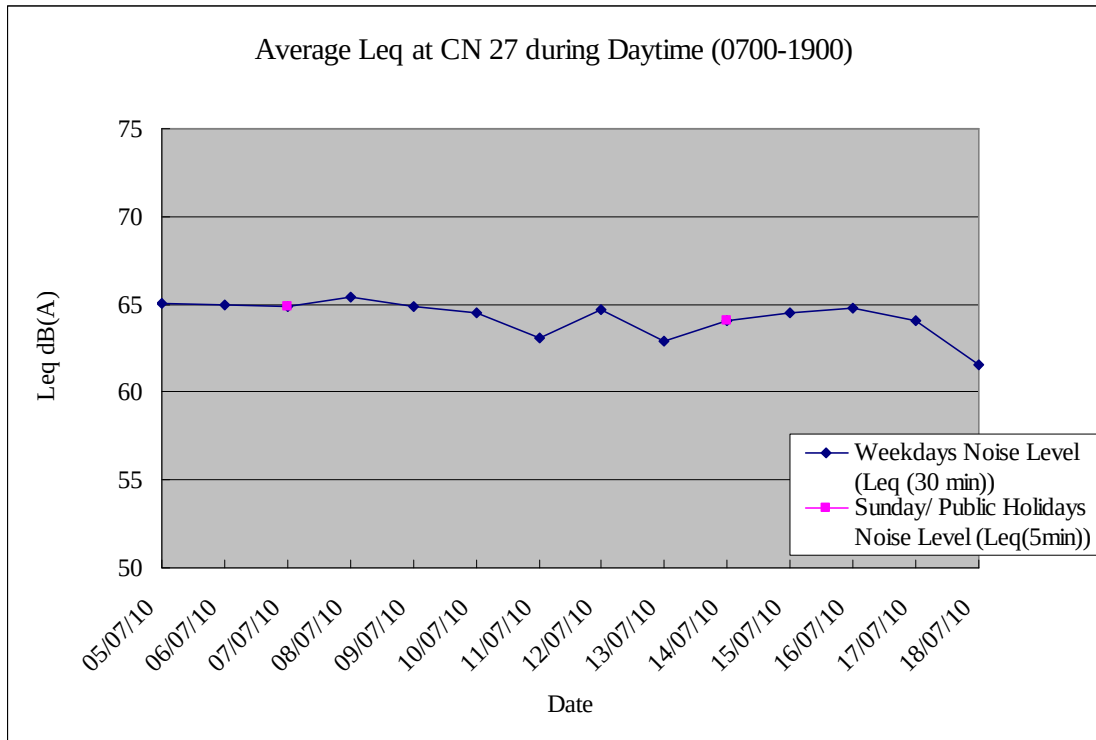
4) Night-time (for all days) Noise Level, dB(A)

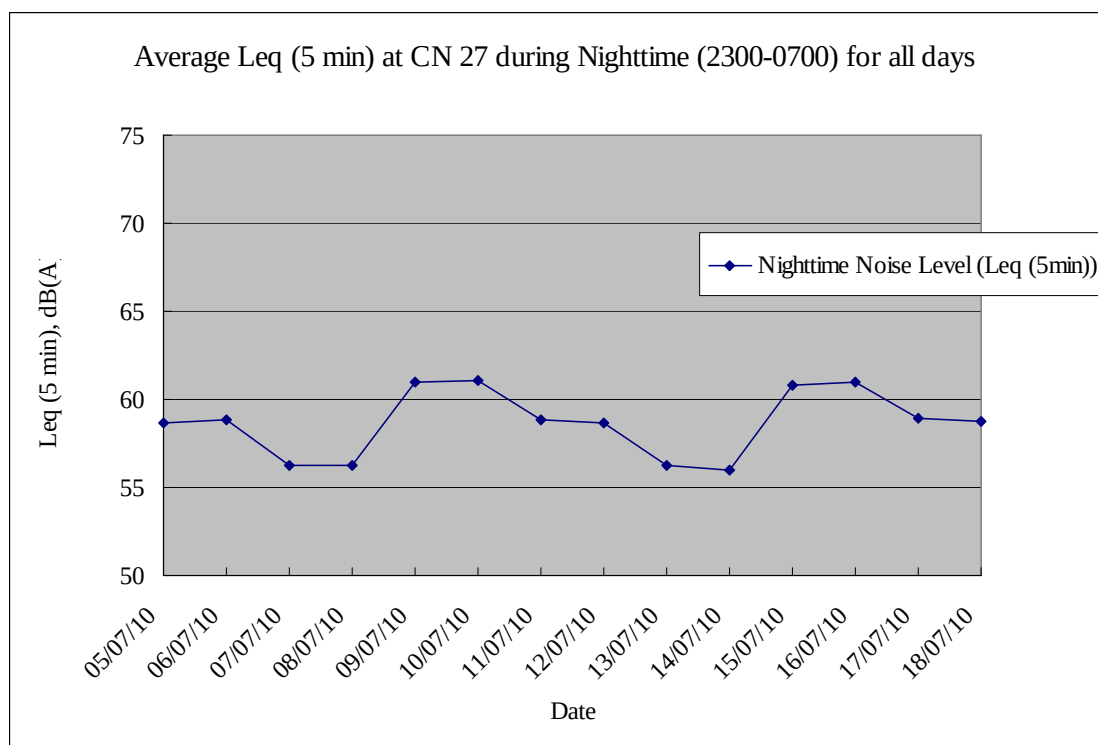
Time Slot	Leq, 5min	L10	L90
23:00-23:15	63.4	66.0	59.9
	62.9	65.6	59.3
	62.4	65.0	59.1
23:15-23:30	63.0	65.6	59.0
	62.5	65.2	58.6
	61.7	64.7	58.2
23:30-23:45	62.6	65.4	58.3
	62.4	65.2	58.1
	62.1	64.7	58.1
23:45-00:00	61.8	64.6	58.0
	61.1	63.8	57.9
	60.9	63.7	57.8
00:00-00:15	61.6	64.5	58.0
	61.2	63.7	57.6
	61.0	63.7	57.4
00:15-00:30	60.4	63.0	56.8
	61.6	64.7	57.4
	59.6	62.0	56.7
00:30-00:45	59.8	61.9	56.5
	59.3	61.5	56.4
	58.6	60.8	56.0
00:45:01:00	58.0	59.7	55.8
	57.8	59.7	55.7
	58.0	59.8	55.8
01:00-01:15	58.2	60.3	55.8
	58.0	59.7	55.7
	57.0	58.5	55.4
01:15-01:30	58.0	59.8	55.6
	58.0	60.1	55.6
	57.0	58.3	55.3

Time Slot	Leq, 5min	L10	L90
01:30-01:45	57.5	59.3	55.4
	58.0	59.7	55.9
	57.4	58.8	55.4
01:45-02:00	57.0	58.5	55.3
	57.4	59.0	55.4
	57.4	59.0	55.3
02:00-02:15	57.0	58.7	55.2
	57.2	58.7	55.3
	56.9	58.5	55.1
02:15-02:30	57.2	58.6	55.3
	57.6	59.5	55.4
	57.1	58.6	55.1
02:30-02:45	57.0	58.6	55.0
	57.6	59.5	55.3
	58.4	61.7	55.2
02:45-03:00	57.1	58.4	55.0
	56.8	58.1	55.1
	56.3	57.5	54.7
03:00-03:15	57.0	58.3	55.0
	57.4	59.2	55.1
	56.6	58.0	54.9
03:15-03:30	56.7	58.2	54.8
	56.7	58.0	54.8
	57.2	59.0	54.9
03:30-03:45	56.9	58.3	55.2
	56.8	58.4	55.1
	57.9	60.3	55.1
03:45-04:00	57.9	59.9	55.4
	56.8	58.2	55.0
	56.7	58.3	55.0
04:00-04:15	56.8	58.3	55.0
	56.7	58.2	54.8
	56.5	57.8	55.0
04:15-04:30	57.0	58.7	55.1
	56.6	57.8	55.0
	57.4	58.9	55.3

Time Slot	Leq, 5min	L10	L90
04:30-04:45	57.3	58.8	55.4
	57.9	60.1	55.5
	58.4	60.6	55.5
04:45-05:00	58.7	61.1	55.8
	57.4	58.8	55.7
	57.1	58.4	55.6
05:00-05:15	58.4	60.2	56.2
	58.8	60.3	56.4
	58.2	59.9	56.3
05:15-05:30	58.4	60.0	56.3
	58.6	60.4	56.3
	58.4	60.2	56.3
05:30-05:45	58.2	59.8	56.3
	58.5	60.4	56.5
	59.1	61.0	56.9
05:45-06:00	60.0	62.3	57.1
	59.9	62.3	56.9
	59.7	62.1	56.8
06:00-06:15	61.2	64.1	57.8
	61.4	64.3	57.9
	61.6	64.3	58.1
06:15-06:30	61.7	64.0	58.2
	61.4	64.0	58.2
	61.8	64.2	58.6
06:30-06:45	61.9	64.7	58.5
	61.7	64.4	58.7
	62.2	64.8	58.9
06:45-07:00	62.4	65.2	58.6
	62.8	65.5	59.2
	62.8	65.3	59.0
Average	59.5	61.8	56.6
Max	63.4	66.0	59.9
Min	56.3	57.5	54.7

Log average was used





Baseline Noise Monitoring Result

Location: CN 28 Tower 6, Harbour Green
Baseline monitoring period: 5/7/2010 - 18/7/2010
Parameter: Leq

Time Slot Averaged Baselines

1) Weekdays Daytime Noise Level, dB(A)

Time slot	Leq, 30 min	L10	L90
07:00-07:30	68.1	71.6	59.6
07:30-08:00	69.8	73.2	60.9
08:00-08:30	70.1	73.9	62.0
08:30-09:00	70.7	74.3	63.1
09:00-09:30	70.5	74.2	62.8
09:30-10:00	70.3	73.9	62.8
10:00-10:30	70.4	74.0	62.8
10:30-11:00	70.3	74.0	62.2
11:00-11:30	70.1	73.6	62.1
11:30-12:00	69.5	73.2	61.8
12:00-12:30	69.9	73.5	62.1
12:30-13:00	70.0	73.6	61.6
13:00-13:30	70.1	73.7	61.7
13:30-14:00	70.4	74.0	62.3
14:00-14:30	69.9	73.5	62.0
14:30-15:00	70.1	73.9	62.0
15:00-15:30	70.4	74.1	62.1
15:30-16:00	70.2	74.1	61.9
16:00-16:30	70.1	73.7	62.2
16:30-17:00	70.3	74.0	62.7
17:00-17:30	70.1	73.7	62.5
17:30-18:00	70.0	73.6	62.5
18:00-18:30	70.5	74.0	62.5
18:30-19:00	70.0	73.4	62.3
Average	70.1	73.7	62.2
Max	70.7	74.3	63.1
Min	68.1	71.6	59.6

Noise Control Period Averaged Baselines

2) Weekdays Evening Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
19:00-19:15	68.7	71.9	60.8
	69.8	73.6	61.7
	69.9	73.0	61.5
19:15-19:30	69.3	72.8	60.9
	68.9	72.6	60.7
	68.4	72.1	60.3
19:30-19:45	68.7	72.7	61.1
	68.7	72.0	59.9
	68.3	71.9	60.4
19:45-20:00	69.0	72.4	61.2
	67.9	71.5	60.0
	67.9	71.0	60.1
20:00-20:15	67.2	70.7	59.0
	68.0	71.5	60.2
	68.2	71.6	59.3
20:15-20:30	67.5	71.2	59.0
	67.6	71.2	58.9
	67.8	70.9	60.1
20:30-20:45	68.2	71.8	59.4
	67.9	71.2	58.5
	67.8	71.0	59.2
20:45-21:00	67.5	70.6	58.4
	67.7	71.2	59.2
	67.4	70.9	58.8
21:00-21:15	67.5	71.0	58.8
	67.4	70.7	58.7
	67.6	70.6	58.9
21:15-21:30	68.0	71.2	58.9
	67.7	70.6	59.3
	68.1	71.3	59.8
21:30-21:45	66.6	69.6	59.2
	67.3	70.3	60.1
	68.6	71.7	61.4

Time Slot	Leq, 5min	L10	L90
21:45-22:00	68.1	71.3	60.2
	68.4	71.2	60.5
	67.3	70.4	60.3
22:00-22:15	67.4	70.5	59.9
	67.7	70.8	58.8
	67.9	71.1	59.9
22:15-22:30	66.5	70.0	58.5
	67.1	70.8	59.0
	66.8	70.3	58.8
22:30-22:45	66.5	69.9	59.0
	66.7	70.2	58.5
	67.0	70.4	58.6
22:45-23:00	66.6	70.2	58.9
	67.1	70.5	58.8
	68.1	71.3	60.4
Average	67.9	71.3	59.8
Max	69.9	73.6	61.7
Min	66.5	69.6	58.4

3) General Holidays (including Sundays) (0700-2300) Noise Level, dB(A)

Time Slot	Leq, 5min	L10	L90
0700-07:15	64.2	67.8	54.8
	65.5	67.9	54.8
	62.2	66.0	53.7
07:15-07:30	64.6	68.3	55.4
	64.3	68.1	54.9
	63.8	66.1	53.5
07:30-07:45	65.0	68.5	55.3
	64.4	68.0	54.3
	63.6	66.6	55.0
07:45-08:00	65.6	69.3	56.5
	66.8	69.7	59.5
	64.9	67.9	55.6
08:00-08:15	65.5	68.8	55.6
	66.9	71.0	55.7

Time Slot	Leq, 5min	L10	L90
	65.5	69.4	55.7
08:15-08:30	63.6	66.6	54.5
	64.8	68.9	56.5
	65.2	68.6	56.5
08:30-08:45	65.0	68.0	55.0
	66.3	69.5	56.0
	66.9	71.0	57.2
08:45-09:00	65.3	68.8	56.2
	65.6	68.8	58.5
	63.9	66.5	57.3
09:00-09:15	65.9	68.6	58.7
	67.4	70.5	60.0
	66.7	70.2	59.5
09:15-09:30	66.4	68.4	59.8
	66.2	70.0	59.8
	64.4	68.4	56.1
09:30-09:45	65.8	69.9	57.3
	64.3	68.0	56.1
	65.9	70.1	57.2
09:45-10:00	65.1	68.3	57.6
	64.9	69.1	57.8
	63.8	66.7	57.1
10:00-10:15	66.5	70.2	56.3
	65.1	69.0	55.3
	65.9	69.1	58.8
10:15-10:30	65.7	68.8	57.2
	65.6	68.8	57.2
	65.6	69.6	58.5
10:30-10:45	67.6	71.9	57.5
	65.9	69.3	56.9
	64.9	67.8	56.3
10:45-11:00	67.4	70.9	58.6
	64.2	67.6	55.9
	66.7	69.9	57.3
11:00-11:15	66.4	69.8	57.3
	65.3	68.9	56.4

Time Slot	Leq, 5min	L10	L90
	65.2	69.2	57.4
11:15-11:30	65.1	68.9	57.6
	65.6	69.1	56.7
	66.5	69.6	56.1
11:30-11:45	66.5	70.4	58.1
	64.5	68.5	55.6
	67.9	69.9	57.4
11:45-12:00	66.4	70.2	58.6
	65.9	69.5	57.3
	65.8	69.1	58.9
12:00-12:15	66.0	69.3	59.6
	66.9	70.4	57.5
	64.2	67.6	56.3
12:15-12:30	66.2	69.3	57.6
	64.7	68.0	57.7
	64.8	68.3	55.9
12:30-12:45	65.5	68.9	57.7
	66.8	71.5	56.0
	66.7	70.2	57.3
12:45-13:00	65.7	69.7	57.1
	65.1	68.2	56.0
	66.1	68.4	57.7
13:00-13:15	65.6	69.1	56.5
	65.7	70.3	56.7
	66.8	70.3	57.8
13:15-13:30	66.1	68.9	55.5
	66.7	70.0	57.1
	65.9	69.6	58.7
13:30-13:45	66.2	69.9	58.0
	66.6	70.2	57.5
	65.5	68.4	58.2
13:45-14:00	62.3	66.3	55.9
	67.5	70.3	58.7
	66.9	70.4	59.1
14:00-14:15	66.6	68.8	57.6
	67.0	70.7	57.2

Time Slot	Leq, 5min	L10	L90
	65.2	68.6	57.2
14:15-14:30	65.9	69.3	56.9
	65.1	68.7	55.8
	65.2	69.0	57.7
14:30-14:45	66.0	69.5	57.5
	66.8	70.5	58.6
	64.6	68.7	56.0
14:45-15:00	65.5	69.3	55.7
	66.6	70.4	57.0
	67.7	70.8	56.3
15:00-15:15	66.9	69.8	56.4
	65.0	68.5	57.3
	65.0	68.9	56.5
15:15-15:30	66.9	70.3	58.9
	64.3	66.4	56.3
	67.6	69.5	58.1
15:30-15:45	66.0	69.4	56.6
	67.6	71.1	57.5
	65.9	68.9	56.1
15:45-16:00	66.5	70.3	59.2
	66.2	69.7	57.0
	66.1	69.7	55.9
16:00-16:15	65.9	68.7	56.6
	65.9	69.7	56.8
	65.1	69.3	56.3
16:15-16:30	64.9	68.9	56.8
	63.9	67.4	56.5
	65.3	68.9	57.1
16:30-16:45	64.9	68.4	56.1
	66.5	70.3	58.0
	65.7	68.7	58.5
16:45-17:00	66.6	70.2	60.8
	66.0	69.9	57.8
	66.2	69.5	56.5
17:00-17:15	66.2	70.0	57.3
	63.1	66.8	55.3

Time Slot	Leq, 5min	L10	L90
	66.7	69.9	58.1
17:15-17:30	66.0	69.7	55.7
	64.8	68.4	57.1
	65.0	68.9	56.1
17:30-17:45	65.7	68.9	57.0
	68.2	70.2	56.6
	65.6	68.9	57.8
17:45-18:00	66.3	69.7	58.5
	64.9	68.8	59.4
	65.8	69.1	58.4
18:00-18:15	66.3	70.3	56.0
	66.0	69.8	57.3
	66.7	69.1	57.5
18:15-18:30	65.9	69.4	57.1
	66.7	69.6	59.5
	65.7	69.4	58.7
18:30-18:45	65.7	69.3	56.1
	65.3	68.8	57.9
	64.2	67.4	58.6
18:45-19:00	66.2	69.3	56.8
	66.4	69.2	56.1
	64.8	68.7	57.3
19:00-19:15	66.4	69.5	57.5
	64.2	67.5	55.3
	64.7	68.2	56.7
19:15-19:30	65.2	68.2	56.3
	64.6	67.8	58.1
	65.5	69.5	56.5
19:30-19:45	64.3	67.4	55.9
	64.0	67.5	55.7
	65.5	69.4	55.3
19:45-20:00	63.5	67.6	56.0
	64.7	68.5	56.5
	63.5	67.0	55.5
20:00-20:15	63.6	67.4	53.7
	64.7	67.8	55.9

Time Slot	Leq, 5min	L10	L90
	63.6	66.6	55.1
20:15-20:30	64.7	67.6	56.6
	65.2	68.8	57.7
	65.5	68.1	54.9
20:30-20:45	65.6	68.5	55.8
	65.2	68.7	54.0
	65.7	68.3	57.1
20:45-21:00	63.1	66.2	54.7
	64.1	67.8	55.5
	65.4	69.0	57.6
21:00-21:15	65.1	68.5	54.5
	62.5	66.0	54.6
	67.6	69.4	57.6
21:15-21:30	66.1	69.7	56.1
	63.5	67.0	55.7
	64.0	67.4	56.1
21:30-21:45	66.7	68.6	57.4
	64.7	68.2	57.5
	63.2	66.3	56.1
21:45-22:00	64.7	68.0	57.1
	63.3	67.3	55.9
	64.5	67.7	56.2
22:00-22:15	65.0	68.1	56.2
	65.1	68.4	56.7
	63.0	66.3	54.8
22:15-22:30	63.3	66.6	55.0
	64.5	68.9	54.5
	65.3	68.9	55.1
22:30-22:45	63.5	67.8	54.9
	65.2	67.5	54.6
	62.9	66.5	55.1
22:45-23:00	64.6	67.6	55.1
	62.4	66.0	55.4
	65.4	68.5	54.1
Average	65.6	69.0	57.0
Max	68.2	71.9	60.8

Time Slot	Leq, 5min	L10	L90
Min	62.2	66.0	53.5

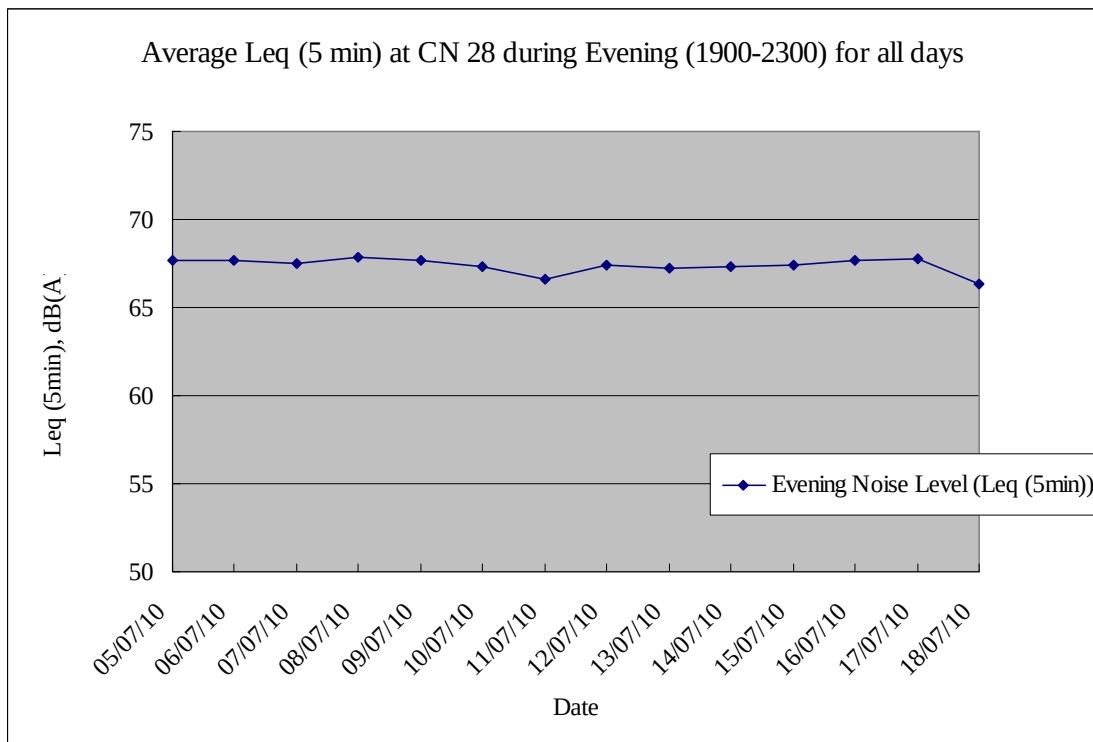
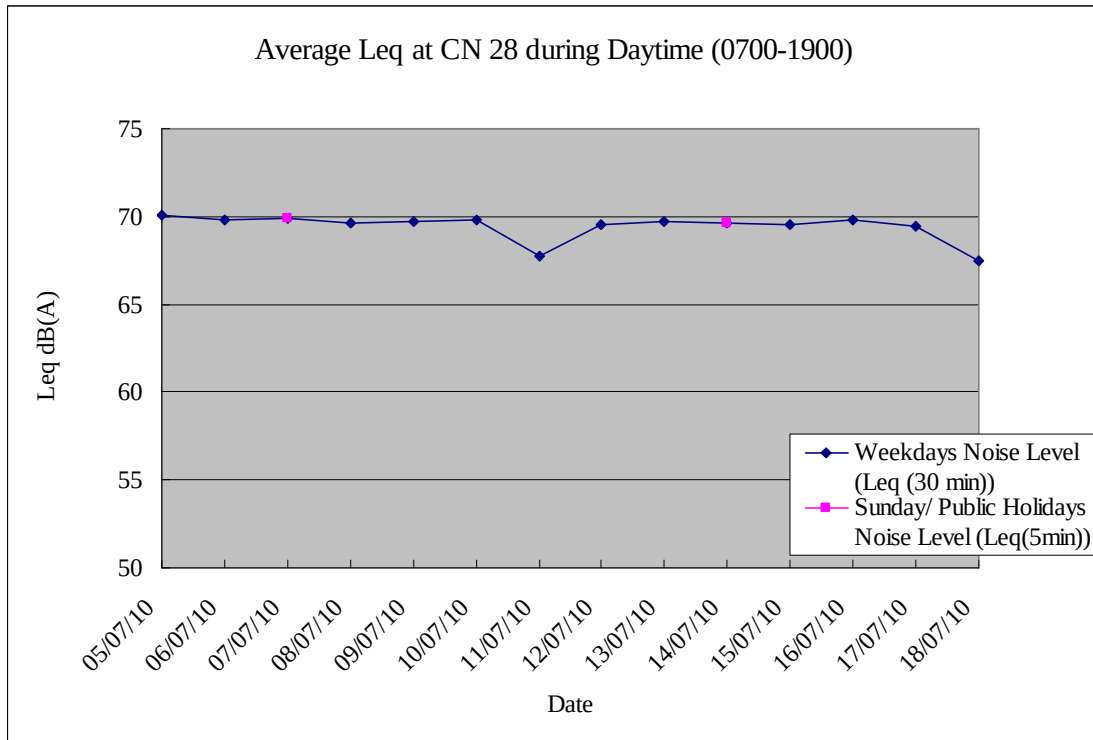
4) Night-time (for all days) Noise Level, dB(A)

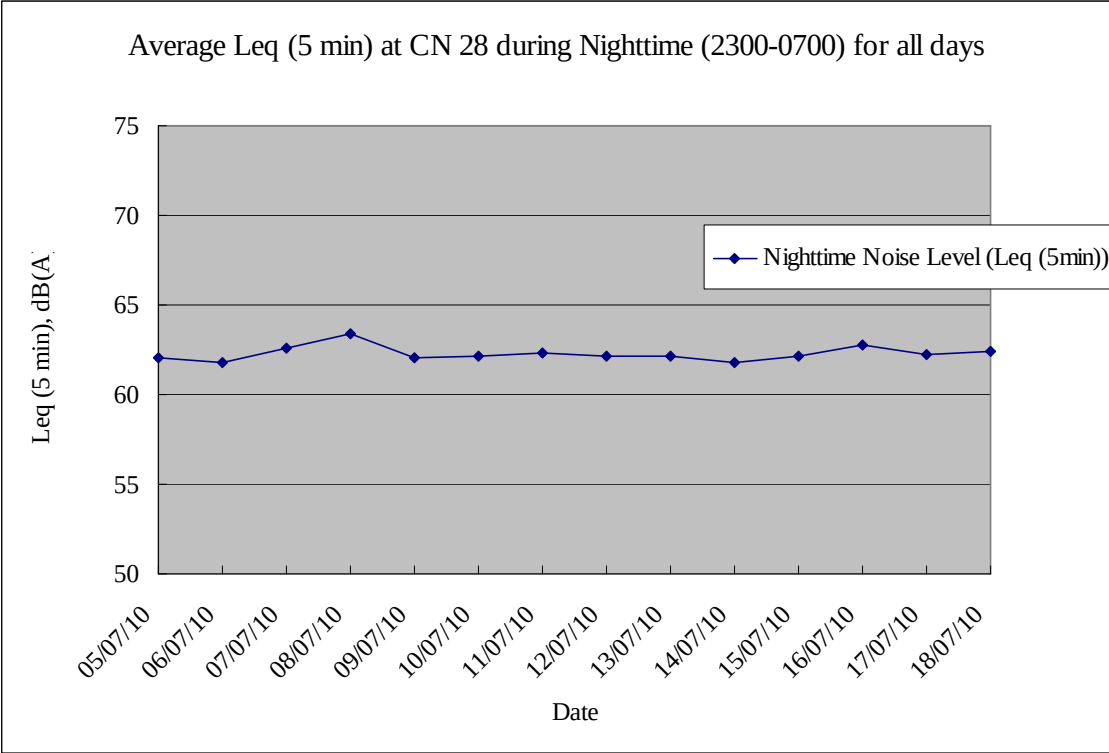
Time Slot	Leq, 5min	L10	L90
23:00-23:15	67.1	70.3	58.6
	66.9	70.2	57.7
	66.4	69.7	58.4
23:15-23:30	67.3	70.2	57.7
	66.2	69.8	57.3
	66.2	69.5	56.9
23:30-23:45	65.7	69.4	57.1
	65.7	69.1	56.4
	66.6	69.6	56.1
23:45-00:00	65.7	69.1	56.4
	64.6	68.0	56.2
	65.3	68.3	55.7
00:00-00:15	66.1	69.0	57.8
	65.9	69.2	56.1
	65.0	68.2	55.6
00:15-00:30	65.9	68.2	55.8
	67.3	70.2	56.6
	64.8	67.5	56.0
00:30-00:45	63.2	66.2	55.0
	63.1	66.4	54.5
	65.9	69.3	58.3
00:45:01:00	63.4	65.8	54.3
	61.1	64.3	54.1
	61.3	64.4	53.8
01:00-01:15	63.1	66.4	54.3
	63.5	66.0	53.7
	61.5	64.1	53.7
01:15-01:30	61.8	64.9	53.5
	61.6	65.0	53.0
	61.3	64.6	52.9
01:30-01:45	60.8	63.9	52.8

Time Slot	Leq, 5min	L10	L90
	60.8	63.9	52.8
	59.9	63.5	52.6
01:45-02:00	59.9	63.1	52.7
	59.1	62.0	52.5
	60.4	63.6	52.7
02:00-02:15	59.4	62.4	52.5
	60.1	63.2	52.7
	59.4	62.9	52.7
02:15-02:30	60.3	63.3	52.7
	59.4	62.4	52.2
	59.9	63.5	52.4
02:30-02:45	61.1	64.7	52.3
	60.8	63.9	52.6
	59.7	62.7	52.5
02:45-03:00	59.2	61.7	52.3
	59.9	62.1	51.9
	59.8	62.3	51.8
03:00-03:15	59.5	62.6	51.8
	58.2	61.3	51.7
	58.7	62.0	51.7
03:15-03:30	59.2	62.4	52.0
	58.8	61.8	51.8
	58.4	61.3	51.9
03:30-03:45	58.2	61.8	52.4
	58.0	61.0	51.7
	58.9	62.2	52.4
03:45-04:00	58.0	61.2	52.0
	58.0	61.2	51.8
	58.0	60.8	51.6
04:00-04:15	58.4	61.4	52.0
	60.0	63.1	52.0
	59.0	61.7	51.8
04:15-04:30	58.8	62.5	51.8
	58.5	61.0	51.8
	58.9	61.8	52.1
04:30-04:45	60.6	63.1	52.3

Time Slot	Leq, 5min	L10	L90
	60.0	62.8	52.2
	60.6	63.8	52.3
04:45-05:00	61.1	64.1	52.8
	61.6	64.5	52.9
	60.8	64.1	52.5
05:00-05:15	61.9	64.9	53.0
	63.5	67.2	53.4
	63.5	67.4	54.0
05:15-05:30	63.1	67.3	54.0
	62.0	65.1	53.8
	62.2	65.2	53.3
05:30-05:45	63.3	66.4	54.0
	62.3	65.7	54.1
	64.2	67.3	54.1
05:45-06:00	66.2	69.3	54.6
	63.9	67.4	54.6
	63.4	66.5	54.8
06:00-06:15	64.0	66.7	54.6
	65.5	68.8	55.4
	63.3	66.6	54.9
06:15-06:30	64.5	68.3	55.7
	66.5	70.3	56.4
	66.0	68.9	56.1
06:30-06:45	66.4	70.6	56.5
	66.4	69.8	56.4
	65.7	69.6	56.6
06:45-07:00	67.4	70.9	58.6
	66.7	70.1	57.3
	67.2	71.1	58.3
Average	63.4	66.6	54.6
Max	67.4	71.1	58.6
Min	58.0	60.8	51.6

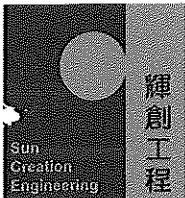
Log average was used





Appendix B

Calibration Certificates for Monitoring Equipments



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C101749

Certificate of Calibration

This is to certify that the equipment

Description : Sound Level Calibrator

Manufacturer : ---

Model No. : ND9

Serial No. : N435849

*has been calibrated for the specific items and ranges.
The results are shown in the Calibration Report No. C101749.*

The equipment is supplied by

Co. Name : EDMS Tech Ltd.

*Address : Room 1009, 10/F., World Wide House,
19 Des Voeux Road Central, Hong Kong*

Date of Issue : 30 March 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

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Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Report No. : C101749

Calibration Report

ITEM TESTED

DESCRIPTION : Sound Level Calibrator
MANUFACTURER : ---
MODEL NO. : ND9
SERIAL NO. : N435849

TEST CONDITIONS

AMBIENT TEMPERATURE : $(23 \pm 2)^{\circ}\text{C}$
LINE VOLTAGE : ---

RELATIVE HUMIDITY : $(55 \pm 20)\%$

TEST SPECIFICATIONS

Calibration

DATE OF TEST : 30 March 2010

JOB NO. : IC10-0777

TEST RESULTS

The results apply to the particular unit-under-test only.
All results are within manufacturer's specification. (after adjustment)
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
- Agilent Technologies, USA
- Fluke Everett Service Center, USA
- Rohde & Schwarz Laboratory, Germany

Tested by :


L L Cheung

Date : 30 March 2010

The test equipment used for calibration are traceable to the National Standards as specified in this report.
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Page 1 of 2

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.
CL130	Universal Counter	C093122
CL281	Multifunction Acoustic Calibrator	DC090052
TST150A	Measuring Amplifier	C101008

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)
	Before Adj.	After Adj.		
94 dB, 1 kHz	* 95.1	94.0	± 0.3	± 0.2
114 dB, 1 kHz	* 115.3	114.1		± 0.3

* Out of Mfr's Spec.

5.2 Frequency Accuracy

UUT Nominal Value (kHz)	Measured Value (kHz)		Mfr's Spec.	Uncertainty of Measured Value (Hz)
	Before Adj.	After Adj.		
1	1.000	1.000	1 kHz ± 0.1 %	± 0.1

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.



CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100504-2

Page 1 of 2

Calibration of :

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2709426		2678188

Client :

EDMS Tech Ltd
1009, 10/F World Wide House
19 Des Douex Road, Central
Hong Kong

Calibration Conditions :

Air Temperature :	23	°C
Air Pressure :	101.9	kPa
Relative Humidity :	62	%

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 11 May, 2010

Calibrated By :

Certificate issued : 11 May, 2010

Approved signatory :

Dai Bin

Jacky Leung

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CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100504-2

Page 2 of 2

Results :

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999

Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSCS (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1843103	14 Aug 2009	NPL via B&K (DANAK)

Calibrated By : *Dan B.M.*
Date : 11 May, 2010

Checked By : *J. L. J.*
Date : 11 May, 2010

CERTIFICATE OF CALIBRATION**Certificate No. :** 2KS100208-2**Page** 1 **of** 2**Calibration of :**

Description :	Sound Level Meter	,	Microphone
Manufacture :	Brüel & Kjær		
Type No. :	2250	,	4950
Serial No. :	2701817		2678775

Client :

EDMS Tech Ltd
1009, 10/F World Wide House
19 Des Douex Road, Central
Hong Kong

Calibration Conditions :

Air Temperature :	23	°C
Air Pressure :	101.9	kPa
Relative Humidity :	62	%

Test Specifications :

The Sound Level Meter has been calibrated in accordance with the requirements as specified in IEC 60651 and IEC 60804 type 1, and vendor specific procedures.

The measurements has been performed with the assistance of :
Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999
The standard(s) and instrument(s) used in the calibration are traceable to international standard and are calibrated on a schedule which is adjusted to maintain the required accuracy level.

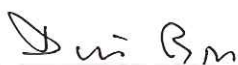
Test Result :

A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 19 February, 2010
Calibrated By :

Certificate issued : 22 February, 2010
Approved signatory :

Dai Bin



Jacky Leung



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CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100208-2

Page 2 of 2

Results :

List of performed (sub) test with test status:

“OK” Means the result of the (sub)test is Inside the tolerances stated in the test specifications.

“ - ” Means the result of the (sub)test is Outside these tolerances.

Test :	Subtest :	Status :
Noise	A	OK
Noise	C	OK
Noise	Lin	OK
Frequency Weighting	A	OK
Frequency Weighting	C	OK
Frequency Weighting	Lin	OK
Level Range Control	1000 Hz	OK
Linearity Range	SPL 10dB 4000 Hz	OK
Linearity Range	SPL 1dB 1000 Hz	OK
Linearity Range	Leq	OK
Linearity Range	SEL	OK
RMS Detector	CF 3	OK
RMS Detector	CF 5	OK
RMS Detector	CF 10	OK
RMS Detector	Symmetry	OK
Time Weighting	Difference Indication	OK
Time Weighting	Single Burst FAST	OK
Time Weighting	Single Burst SLOW	OK
Time Weighting	Single Burst IMPULSE	OK
Time Weighting	Repetitive Burst	OK
Time Weighting	Peak	OK
Time Averaging		OK
Pulse Range		OK
Overload	SPL	OK
Overload	SEL	OK
Acoustic Response	A	OK
Acoustic Response	Lin	OK

Calibration Equipment :

Brüel & Kjær's Sound Level Meter Calibration System B&K 9600 CAL2238A, Ver.25.10.1999				
Description :	Make & Model :	Serial No. :	Last Cal. Date :	Traceable to:
Digital Multi-meter	Datron 1281	27361	30 Sept, 2009	HKSL (HOKLAS)
Sine/Noise Generator	B&K 1049	1314978	Test	B&K Conformance
Test Waveform Generator	B&K 5918	1482949	Test	B&K Conformance
Acoustical Calibrator	B&K 4226	1551627	13 May 2009	NPL via B&K (DANAK)

Calibrated By : *Dai Rm*
Date : 19 February, 2010

Checked By : *Farly*
Date : 22 February, 2010

Appendix C

Figures

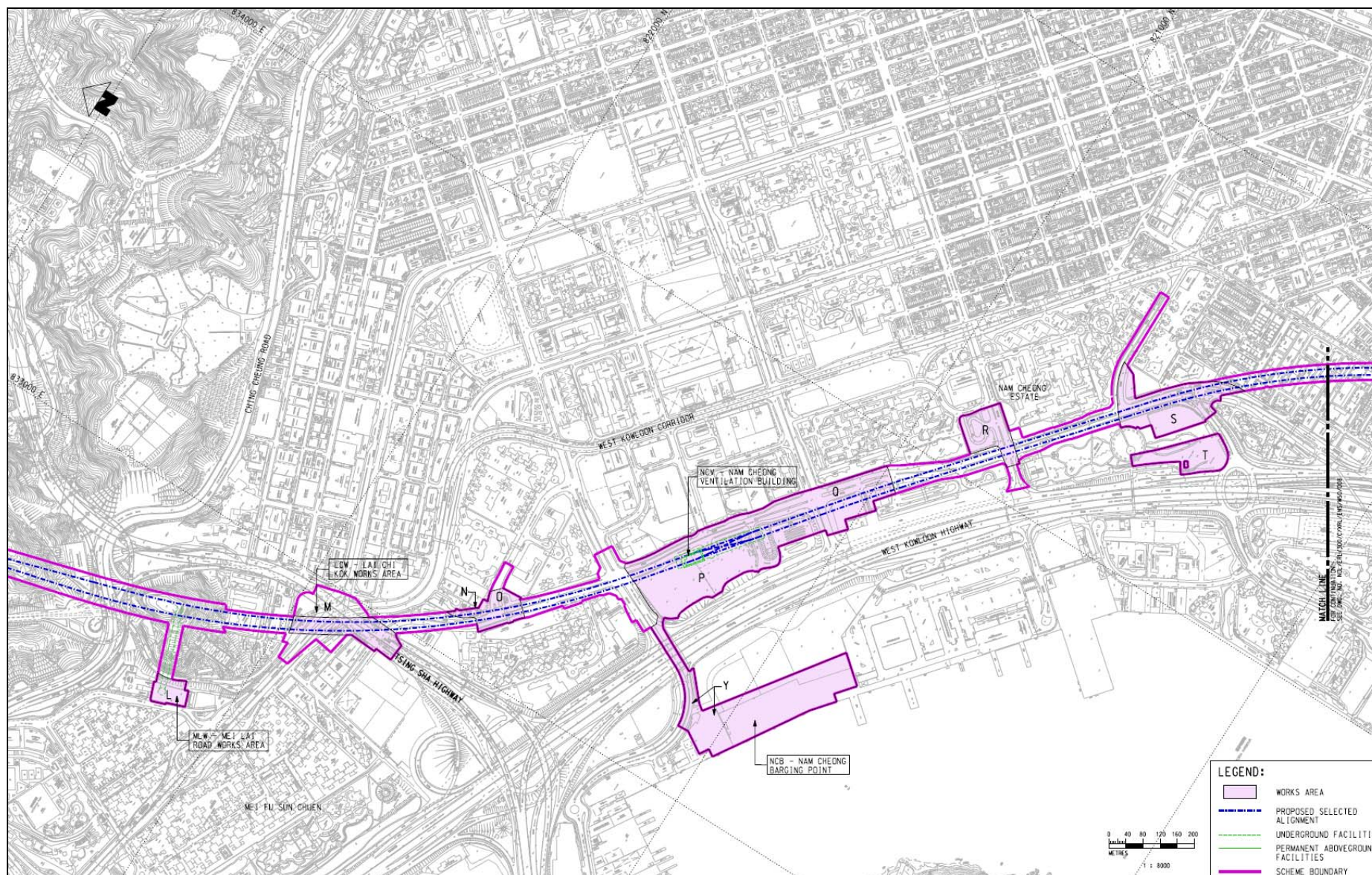


Figure 1 - Works Areas R, S and T

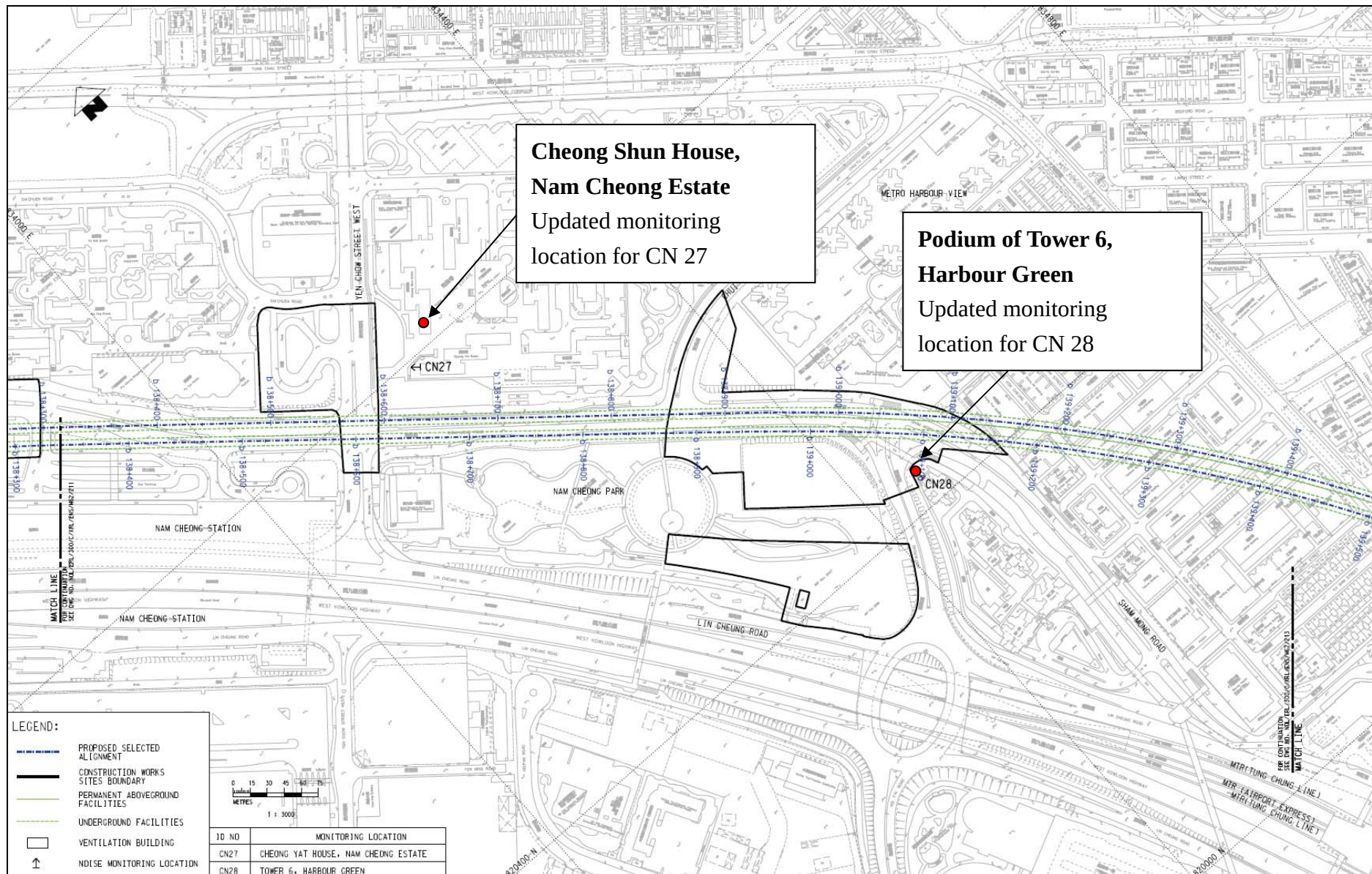


Figure 2 - Noise Monitoring Locations