

MTR Corporation Limited

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

Baseline Monitoring Report (Part 13) Rev 2

Verified by:   
Position: Independent Environmental Checker  
Date: 12 April 2011

MTR Corporation Limited

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Baseline Monitoring Report (Part 13) Rev 2

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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 1 dust monitoring location and 3 noise monitoring locations in the vicinity of Works Areas D1 and K (Figure 1). Noise measurements were taken in terms of Leq with L10 and L90 as reference. Air quality was measured in terms of 1-hour and 24-hour average Total Suspended Particulates (TSP).

Monitoring of 1-hour and 24-hr TSP level were conducted at 630 Sheung Tsuen (AM 6). The average 1-hour TSP levels was  $58.6 \mu\text{g}/\text{m}^3$  at AM 6. The average 24-hour TSP levels were  $23.9 \mu\text{g}/\text{m}^3$  at AM 6. The Action Level at the monitoring location was derived based on the baseline monitoring results. The Action Level of 1-hour TSP levels was  $288.1 \mu\text{g}/\text{m}^3$  while the Action Level of 24-hour TSP level was  $145.6 \mu\text{g}/\text{m}^3$  at AM 6.

As no access was obtained for noise monitoring at CN 11 (Leung Uk Tsuen Village House), CN 12 (630 Sheung Tsuen) and CN 20 (No. 1, Ha Kwai Chung Village) in the EM&A Manual, noise monitoring locations were re-located to 182B, Wang Toi Shan San Tsuen (CN 11), DD108, Nam Hing Lei, Wing Hing Wai (CN 12) and VTC Kwai Chung Training Centre Complex (CN 20) close to construction site. Given that the original CN 20 (No. 1 Ha Kwai Chung Village) in the EM&A Manual (of domestic premises use) was re-located to VTC Kwai Chung Training Centre Complex (of educational institution use), the Limit Levels of 70 dB (A) during normal school days and 65 dB (A) during exam are adopted according to EIAO-TM.

Baseline noise monitoring was conducted during daytime (0700-1900 hours), evening time (1900-2300 hours) and night-time (2300-0700 hours) on all day during the above-mentioned period. In this report, the measured noise levels on weekdays were presented separately from general holidays and Sundays for easy of reference. The daytime baseline noise levels at CN 11 and CN 12 are both below the daytime Limit Level of 75 dB (A) for residential premises. The daytime baseline noise levels at CN 20 exceeded the Limit Level for exam period of 65 dB(A) and approached the daytime Limit Level of 70 dB(A). In consideration of this situation, the baseline noise level at CN 20 would be reviewed prior to construction and regularly once every six months to confirm its validity. The review of baseline noise level at CN 20 would be covered in the EM&A Report.

## **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 dust and noise. This Baseline Monitoring Report (Part 13) contains baseline monitoring findings in the vicinity of Works Areas D1 and K (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

### 2.1 Monitoring Methodology

Monitoring was undertaken to establish baseline levels for both 1-hour and 24-hour Total Suspended Particulates (TSP) at AM 6 located in the vicinity of the works area D1. This provides data against which any environmental impacts due to construction activities can be compared.

With reference to Chapter 9 of the EM&A Manual, there is no dust monitoring location located in the vicinity of works area K.

During the construction period impact monitoring will only be conducted for 24-hour TSP, although 1-hour TSP monitoring may also be conducted and used in following up on complaints or exceedances, in order to provide a more rapid indication of the source of the problem at hand.

Baseline monitoring was conducted for both 1-hour and 24-hour TSP using a direct reading meter (MIE Data-RAM Portable Real Time Aerosol Monitor) and a high volume sampler (HVS) according to Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA.

### 2.2 Monitoring Frequency

Three separate 1-hour TSP measurements daily for a period of at least 14 days were made at the monitoring station to establish the ambient 1-hour TSP levels. For 24-hour TSP, monitoring was carried out continuously over a period of at least 14 days at the monitoring stations to establish the ambient 24-hour TSP levels. The monitoring frequency for baseline monitoring of 1-hour and 24-hour TSP is summarized in the table below:

| Sampling Parameter     | Frequency         | Duration                                                    |
|------------------------|-------------------|-------------------------------------------------------------|
| 1 hour TSP             | • 3 times per day | Consecutive days of at least 2 weeks before commencement of |
| Continuous 24-hour TSP | • Daily           |                                                             |

|  |  |                    |
|--|--|--------------------|
|  |  | construction works |
|--|--|--------------------|

Table 2.1: Monitoring frequency for baseline monitoring of 1-hour and 24-hour TSP

### 2.3 Monitoring location

According to the EM&A Manual, baseline air quality monitoring was carried out during the period shown in Table 2.2 to determine the ambient levels of both 1-hour and 24-hour TSP levels respectively at 630 Sheung Tsuen (AM 6) in the vicinity of Works Area D1. The locations of the works area and the respective ASR are shown in Figures 1 and 2 respectively. The information of the ASR where baseline air monitoring had been conducted is summarized in the table below:

| <b>Monitoring Station ID</b> | <b>Air Quality Monitoring Location</b> | <b>Monitoring period</b>                |
|------------------------------|----------------------------------------|-----------------------------------------|
| AM 6                         | 630 Sheung Tsuen                       | 8/7/2010 – 21/7/2010<br>(1hr and 24-hr) |

Table 2.2: Information of Air Sensitive Receiver where dust monitoring was conducted

### 2.4 Calibration requirements

The flow rate of the high volume sampler with mass flow controller was calibrated using an orifice calibrator. Initial calibration (five points) was conducted upon installation and prior to commissioning. Calibration was carried out every six months. Calibration certificate is attached in Appendix C. Calibration of the MIE by certified laboratory or manufacturer was carried out every two years and properly documented. Calibration certificate at AM 6 is attached in Appendix C.

The samplers shall be properly maintained. Prior to dust monitoring commencing, appropriate checks shall be made to ensure that all equipment and necessary power supply are in good working condition.

### 2.5 Monitoring Procedures

### *1-Hour TSP Levels Monitoring*

TSP is sampled by drawing air into the MIE where particulate concentrations are measured instantaneously with an in-built detector sensing light scattered by the particles in the sampled air (optical sensing stage). Continuous TSP levels are indicated on the MIE along with a 'Time Weighted Average' value.

### *24-Hour TSP Levels Monitoring*

The sampling procedure follows to that described Part 50 Chapter 1 Appendix B, Title 40 of the Code of Federal Regulations of the USEPA. TSP is sampled by drawing air through a conditioned, pre-weighed filter paper inside the high volume sampler at a controlled rate. After 24-hour sampling the filter paper with retained particles shall be collected and returned to HOKLAS accredited laboratory (ALS Technichem (HK) Pty Ltd) for drying in a desiccators followed by accurate weighing. TSP levels are calculated from the ratio of the mass of particulate retained on the filter paper to the total volume of air sampled.

## **2.6 Monitoring Results**

Monitoring results of 1-hour and 24-hour TSP at AM 6 are summarised in Table 2.3 and 2.4. The detailed monitoring data of 1-hour and 24-hour of AM 6 is shown in Appendix A. The weather condition was generally fine with occasional rainfall during the baseline monitoring period. No major source of dust was identified during the baseline monitoring period.

| <b>Monitoring Location</b> | <b>Average 1-hr TSP Concentration, <math>\mu\text{g}/\text{m}^3</math><br/>(Range)</b> |
|----------------------------|----------------------------------------------------------------------------------------|
| 630 Sheung Tsuen<br>(AM 6) | 58.6<br>(33.6-126.2)                                                                   |

Table 2.3: Summary of baseline 1-hour TSP level

| <b>Monitoring Location</b> | <b>Average 24-TSP Concentration, <math>\mu\text{g}/\text{m}^3</math><br/>(Range)</b> |
|----------------------------|--------------------------------------------------------------------------------------|
| 630 Sheung Tsuen<br>(AM 6) | 23.9<br>(14.8-32.0)                                                                  |

Table 2.4: Summary of baseline 24-hour TSP level

## 2.7 Action and Limit Levels

In accordance with the EM&A Manual, the baseline TSP levels form the basis for derivation of the Action Levels for subsequent impact monitoring, which is summarised in the table below:

| Parameter             | Action Level <sup>(1)</sup>                                                                                                                                                                                     | Limit Level             |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| TSP (24 hour average) | <ul style="list-style-type: none"> <li>• <math>BL \leq 200\mu\text{g m}^{-3}</math>, <math>AL = (BL * 1.3 + LL)/2</math></li> <li>• <math>BL &gt; 200\mu\text{g m}^{-3}</math>, <math>AL = LL</math></li> </ul> | $260\mu\text{g m}^{-3}$ |
| TSP (1 hour average)  | <ul style="list-style-type: none"> <li>• <math>BL \leq 384\mu\text{g m}^{-3}</math>, <math>AL = (BL * 1.3 + LL)/2</math></li> <li>• <math>BL &gt; 384\mu\text{g m}^{-3}</math>, <math>AL = LL</math></li> </ul> | $500\mu\text{g m}^{-3}$ |

(1) BL = Baseline level, AL = Action level, LL = Limit Level.

Table 2.5: Basis for establishing the Action and Limit Levels for Air Quality

In accordance with Table 2.3 and 2.4 regarding results from baseline monitoring, the Action Level for air quality impact monitoring are calculated and presented below:

| Location                | Parameter             | Action Level              | Limit Level             |
|-------------------------|-----------------------|---------------------------|-------------------------|
| 630 Sheung Tsuen (AM 6) | TSP (24-hour average) | $145.6\mu\text{g m}^{-3}$ | $260\mu\text{g m}^{-3}$ |
|                         | TSP (1-hour average)  | $288.1\mu\text{g m}^{-3}$ | $500\mu\text{g m}^{-3}$ |

Table 2.6: Action and Limit Levels for Air Quality Impact Monitoring

### **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 meter, which complies with the above-mentioned specifications, was 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. Façade correction of +3 dB (A) was applied to the CN 11, CN 12 and CN 20 where free-field measurement was taken.

With reference to Section 3.7 of the EM&A Manual, noise measurements should not be made in the presence of fog, rain, wind with a steady speed exceeding 5ms<sup>-1</sup> or wind with gusts exceeding 10ms<sup>-1</sup>. The wind speed was checked with a portable wind speed meter capable of measuring wind speeds in m/s.

#### **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 at CN 11, CN 12 and CN 20 located in the vicinity of Works Areas D1 and K. As no access was obtained for noise monitoring at Leung Uk Tsuen Village House (CN 11), 630 Sheung Tsuen (CN 12) and No. 1, Ha Kwai Chung Village (CN 20) in the EM&A Manual and their adjacent buildings, noise monitoring location was relocated to the locations in close proximity to the construction site. The alternative monitoring locations were agreed by IEC. Given that the original CN 20 (No. 1 Ha Kwai Chung Village) in the EM&A Manual (of domestic premises use) was re-located to VTC Kwai Chung Training Centre Complex (of educational institution use), the Limit Levels of 70 dB (A) during normal school days and 65 dB (A) during exam are adopted according to EIAO-TM. The location of the NSR is shown in Figure 3. Monitoring was carried out at the following station in accordance with the EM&A Manual:

| <b>Monitoring Station ID</b> | <b>Noise Monitoring Location</b>                    | <b>Monitoring period</b> |
|------------------------------|-----------------------------------------------------|--------------------------|
| CN 11                        | 182B, Wang Toi Shan San Tsuen <sup>1</sup>          | 10/3/2011 to 23/3/2011   |
| CN 12                        | DD108, Nam Hing Lei, Wing Hing Wai                  | 15/10/2010 to 28/10/2010 |
| CN 20                        | VTC Kwai Chung Training Centre Complex <sup>2</sup> | 25/10/2010 to 7/11/2010  |

Note:

1. The monitoring location at CN 11 was further re-located to 182B, Wang Toi Shan San Tsuen for complete coverage of the SSS works area.

2: Given that the original CN 20 (No. 1 Ha Kwai Chung Village) in the EM&A Manual (of domestic premises use) was re-located to VTC Kwai Chung Training Centre Complex (of educational institution use), the Limit Levels of 70 dB (A) during normal school days and 65 dB (A) during exam are adopted according to EIAO-TM.

Table 3.1: Details of noise monitoring locations

### 3.4 Calibration Requirements

B&K 2250 sound level meter which complied 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 at CN 11, CN 12 and CN 20. The sound level meter 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 at CN 11, CN 12 and CN 20 are attached in Appendix C.

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.

| <b>Time Period</b>                 | <b>Action</b>                             | <b>Limit</b>                                               |
|------------------------------------|-------------------------------------------|------------------------------------------------------------|
| 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 during the period shown in Table 3.3 at CN 11, CN 12 and CN 20. The weather condition was generally fine during the monitoring period. The major noise sources at respective monitoring locations are summarized at the table below:

| <b>Monitoring location ID</b> | <b>Monitoring location</b>    | <b>Major noise source</b> |
|-------------------------------|-------------------------------|---------------------------|
| CN 11                         | 182B, Wang Toi Shan San Tsuen | Domestic noise            |

| <b>Monitoring location ID</b> | <b>Monitoring location</b>             | <b>Major noise source</b>                                |
|-------------------------------|----------------------------------------|----------------------------------------------------------|
| CN 12                         | DD108, Nam Hing Lei, Wing Hing Wai     | Traffic noise from Nam Hing West Road and domestic noise |
| CN 20                         | VTC Kwai Chung Training Centre Complex | Traffic noise from Tai Lin Pai Road                      |

Table 3.3: Major noise source at noise monitoring locations

Baseline noise monitoring result at CN 11, CN 12 and CN 20 is summarised in Table 3.3 over the monitoring periods. Detailed monitoring data at CN 11, CN 12 and CN 20 is contained in Appendix B. Graphical presentations of the monitoring results at CN 11, CN 12 and CN 20 are shown in Appendix B.

| <b>Period</b>                                               | <b>Monitoring Station</b> | <b>L<sub>eq</sub>(30min) – dB(A)<br/>(Range)</b> | <b>L<sub>10</sub>(30min) – dB(A)<br/>(Range)</b> | <b>L<sub>90</sub>(30min) – dB(A)<br/>(Range)</b> |
|-------------------------------------------------------------|---------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| <i>Monitoring result at CN 11</i>                           |                           |                                                  |                                                  |                                                  |
| 0700 – 1900<br>(Daytime,<br>Normal<br>weekday)              | CN 11                     | 64<br>(54 - 66)                                  | 68<br>(57 - 70)                                  | 51<br>(44 - 54)                                  |
| 0700 – 2300<br>(General<br>Holiday<br>including<br>Sunday ) | CN 11                     | 57<br>(41 - 70)                                  | 60<br>(42 - 72)                                  | 45<br>(40 - 57)                                  |
| 1900 – 2300<br>(Evening,<br>Normal<br>weekday)              | CN 11                     | 58<br>(43 - 64)                                  | 62<br>(45 - 68)                                  | 45<br>(40 - 49)                                  |
| 2300 – 0700<br>(Night-time, all<br>days)                    | CN 11                     | 47<br>(40 - 55)                                  | 50<br>(41 - 58)                                  | 40<br>(37 - 46)                                  |
| <i>Monitoring result at CN 12</i>                           |                           |                                                  |                                                  |                                                  |
| 0700 – 1900<br>(Daytime,<br>Normal<br>weekday)              | CN 12                     | 60<br>(54 - 63)                                  | 62<br>(56 - 65)                                  | 56<br>(48 - 61)                                  |
| 0700 – 2300<br>(General<br>Holiday<br>including<br>Sunday ) | CN 12                     | 55<br>(45 - 63)                                  | 58<br>(46 - 66)                                  | 46<br>(41 - 52)                                  |
| 1900 – 2300<br>(Evening,<br>Normal<br>weekday)              | CN 12                     | 49<br>(45 – 54)                                  | 51<br>(47 – 56)                                  | 46<br>(42 – 52)                                  |
| 2300 – 0700<br>(Night-time, all<br>days)                    | CN 12                     | 46<br>(43 – 52)                                  | 48<br>(45 – 55)                                  | 42<br>(40 – 46)                                  |

| <b>Period</b>                                               | <b>Monitoring Station</b> | <b>L<sub>eq</sub>(30min) – dB(A)<br/>(Range)</b> | <b>L<sub>10</sub>(30min) – dB(A)<br/>(Range)</b> | <b>L<sub>90</sub>(30min) – dB(A)<br/>(Range)</b> |
|-------------------------------------------------------------|---------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| <i>Monitoring result at CN 20</i>                           |                           |                                                  |                                                  |                                                  |
| 0700 – 1900<br>(Daytime,<br>Normal<br>weekday)              | CN 20                     | 70<br>( 68 - 71 )                                | 72<br>( 70 - 73 )                                | 68<br>( 66 - 69 )                                |
| 0700 – 2300<br>(General<br>Holiday<br>including<br>Sunday ) | CN 20                     | 66<br>( 64 - 71 )                                | 68<br>( 66 - 73 )                                | 64<br>( 61 - 69 )                                |
| 1900 – 2300<br>(Evening,<br>Normal<br>weekday)              | CN 20                     | 67<br>( 65 - 69 )                                | 69<br>( 67 - 71 )                                | 64<br>( 63 - 66 )                                |
| 2300 – 0700<br>(Night-time, all<br>days)                    | CN 20                     | 63<br>( 60 - 67 )                                | 66<br>( 63 - 69 )                                | 60<br>( 57 - 64 )                                |

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 CN 11, CN 12 and CN 20 range from 54 to 66 dB(A), 54 to 63 dB(A) and 68 to 71 dB(A) respectively. The daytime baseline noise levels at CN 11 and CN 12 are both below the daytime Limit Level of 75 dB (A) for residential premises. In addition, it was noted from the monitoring results that the daytime baseline noise levels at CN 20, 70 dB(A), exceeded the Limit Level for exam period of 65 dB(A) and approached the daytime Limit Level of 70 dB(A).

In consideration of this situation, the baseline noise level at CN 20 would be reviewed prior to construction and regularly once every six months to confirm its validity. The review of baseline noise level at CN 20 would be covered in the EM&A Report.

During impact monitoring, observations of project-related construction activities and/or non-project related noise sources in the vicinity of CN 20 would be recorded. In case exceedance is recorded, the dominant noise source would be determined based on site observations. The monitoring results and observations would be verified by the

IEC and reported in the monthly EM&A Report.

## **4. CONCLUSION**

### **4.1 Air**

#### *1-hour TSP*

Baseline 1-hour TSP monitoring was conducted at AM 6 during the period 31/7/2010 – 13/8/2010. The weather condition was mostly fine with occasional rainy days.

Baseline 1-hour TSP monitoring at AM 6 was found in the range of 33.6 to 126.2  $\mu\text{g}/\text{m}^3$  respectively. The average 1-hour TSP level at AM 6 was recorded to be 58.6  $\mu\text{g}/\text{m}^3$ .

#### *24-hour TSP*

Baseline 24-hour TSP monitoring was conducted at AM 6 during the period 31/7/2010 – 13/8/2010. Baseline 24-hour TSP monitoring at AM 6 was found in the range of 14.8 to 32.0  $\mu\text{g}/\text{m}^3$ . The average 24-hour TSP level at AM 6 was recorded to be 23.9  $\mu\text{g}/\text{m}^3$ .

#### *1-hr and 24-hour Action Levels*

The Action Levels at the monitoring locations were derived based on the baseline monitoring results. The Action Level of 1-hour average TSP levels at AM 6 was 288.1  $\mu\text{g}/\text{m}^3$ . The Action Levels of 24-hour average TSP levels at AM 6 was 145.6  $\mu\text{g}/\text{m}^3$ .

### **4.2 Airborne Construction Noise**

Baseline noise monitoring was carried at from 10/3/2011 to 23/3/2011 (for CN 11), 15/10/2010 to 28/10/2010 (for CN 12) and 25/10/2010 to 7/11/2010 (for CN 20). The weather during the baseline monitoring period was generally fine.

As revealed from the monitoring results, baseline noise levels for daytime (0700-1900) during normal weekdays at the CN 11, CN 12 and CN 20 range from 54 to 66 dB(A),

54 to 63 dB(A) and 68 to 71 dB(A) respectively. The daytime baseline noise levels at CN 11 and CN 12 are both below the daytime Limit Level of 75 dB (A) for residential premises. In addition, it was noted from the monitoring results that the daytime baseline noise levels at CN 20, 70 dB(A), exceeded the Limit Level for exam period of 65 dB(A) and approached the daytime Limit Level of 70 dB(A). In consideration of this situation, the baseline noise level at CN 20 would be reviewed prior to construction and regularly once every six months to confirm its validity. The review of baseline noise level at CN 20 would be covered in the EM&A Report.

## **Appendix A**

### **Baseline air quality (1-hr and 24-hr TSP)**

#### **Monitoring data**

### Details of 1-hour TSP Level monitoring at AM 6

| Month  | Date      | Receptor No. | Set No. | Time periods |        | Weather condition | Site condition | Temp. (°C) | Pressure (mmHg) | 1-hour TSP Level (µg/m³) | Remarks |
|--------|-----------|--------------|---------|--------------|--------|-------------------|----------------|------------|-----------------|--------------------------|---------|
|        |           |              |         | Start        | Finish |                   |                |            |                 |                          |         |
| Jul-10 | 08-Jul-10 | AM6          | 1       | 12:57        | 13:57  | Fine              | Normal         | 31.0       | 756.0           | 49.4                     |         |
| Jul-10 | 08-Jul-10 | AM6          | 2       | 14:57        | 15:57  | Fine              | Normal         | 31.0       | 756.0           | 50.2                     |         |
| Jul-10 | 08-Jul-10 | AM6          | 3       | 15:57        | 16:57  | Fine              | Normal         | 31.0       | 756.0           | 50.7                     |         |
| Jul-10 | 09-Jul-10 | AM6          | 1       | 8:17         | 9:17   | Fine              | Normal         | 30.0       | 756.0           | 49.7                     |         |
| Jul-10 | 09-Jul-10 | AM6          | 2       | 13:27        | 14:27  | Fine              | Normal         | 30.0       | 756.0           | 44.9                     |         |
| Jul-10 | 09-Jul-10 | AM6          | 3       | 16:57        | 17:57  | Fine              | Normal         | 30.0       | 756.0           | 45.3                     |         |
| Jul-10 | 10-Jul-10 | AM6          | 1       | 8:02         | 9:02   | Fine              | Normal         | 30.0       | 757.0           | 48.8                     |         |
| Jul-10 | 10-Jul-10 | AM6          | 2       | 9:32         | 10:32  | Fine              | Normal         | 30.0       | 757.0           | 45.2                     |         |
| Jul-10 | 10-Jul-10 | AM6          | 3       | 16:22        | 17:22  | Fine              | Normal         | 30.0       | 757.0           | 73.4                     |         |
| Jul-10 | 11-Jul-10 | AM6          | 1       | 8:07         | 9:07   | Fine              | Normal         | 30.0       | 757.0           | 48.0                     |         |
| Jul-10 | 11-Jul-10 | AM6          | 2       | 12:17        | 13:17  | Fine              | Normal         | 30.0       | 757.0           | 47.8                     |         |
| Jul-10 | 11-Jul-10 | AM6          | 3       | 15:07        | 16:07  | Fine              | Normal         | 30.0       | 757.0           | 54.1                     |         |
| Jul-10 | 12-Jul-10 | AM6          | 1       | 11:42        | 12:42  | Fine              | Normal         | 30.0       | 756.0           | 53.6                     |         |
| Jul-10 | 12-Jul-10 | AM6          | 2       | 15:52        | 16:52  | Fine              | Normal         | 30.0       | 756.0           | 53.9                     |         |
| Jul-10 | 12-Jul-10 | AM6          | 3       | 16:57        | 17:57  | Fine              | Normal         | 30.0       | 756.0           | 55.3                     |         |
| Jul-10 | 13-Jul-10 | AM6          | 1       | 8:02         | 9:02   | Fine              | Normal         | 31.0       | 756.0           | 56.7                     |         |
| Jul-10 | 13-Jul-10 | AM6          | 2       | 9:12         | 10:12  | Fine              | Normal         | 31.0       | 756.0           | 56.7                     |         |

| Month  | Date      | Receptor No. | Set No. | Time periods |        | Weather condition | Site condition | Temp. (°C) | Pressure (mmHg) | 1-hour TSP Level (µg/m³) | Remarks |
|--------|-----------|--------------|---------|--------------|--------|-------------------|----------------|------------|-----------------|--------------------------|---------|
|        |           |              |         | Start        | Finish |                   |                |            |                 |                          |         |
| Jul-10 | 13-Jul-10 | AM6          | 3       | 10:12        | 11:12  | Fine              | Normal         | 31.0       | 756.0           | 53.3                     |         |
| Jul-10 | 14-Jul-10 | AM6          | 1       | 14:22        | 15:22  | Cloudy            | Normal         | 30.0       | 757.0           | 126.2                    |         |
| Jul-10 | 14-Jul-10 | AM6          | 2       | 15:22        | 16:22  | Cloudy            | Normal         | 30.0       | 757.0           | 64.2                     |         |
| Jul-10 | 14-Jul-10 | AM6          | 3       | 16:27        | 17:27  | Cloudy            | Normal         | 30.0       | 757.0           | 47.5                     |         |
| Jul-10 | 15-Jul-10 | AM6          | 1       | 14:37        | 15:37  | Cloudy            | Normal         | 28.0       | 757.0           | 93.3                     |         |
| Jul-10 | 15-Jul-10 | AM6          | 2       | 15:47        | 16:47  | Cloudy            | Normal         | 28.0       | 757.0           | 56.9                     |         |
| Jul-10 | 15-Jul-10 | AM6          | 3       | 16:57        | 17:57  | Cloudy            | Normal         | 28.0       | 757.0           | 65.6                     |         |
| Jul-10 | 16-Jul-10 | AM6          | 1       | 8:02         | 9:02   | Fine              | Normal         | 30.0       | 756.0           | 73.7                     |         |
| Jul-10 | 16-Jul-10 | AM6          | 2       | 9:12         | 10:12  | Fine              | Normal         | 30.0       | 756.0           | 64.4                     |         |
| Jul-10 | 16-Jul-10 | AM6          | 3       | 15:52        | 16:52  | Fine              | Normal         | 30.0       | 756.0           | 81.4                     |         |
| Jul-10 | 17-Jul-10 | AM6          | 1       | 9:32         | 10:32  | Fine              | Normal         | 30.0       | 756.0           | 61.5                     |         |
| Jul-10 | 17-Jul-10 | AM6          | 2       | 10:27        | 11:27  | Fine              | Normal         | 30.0       | 756.0           | 44.5                     |         |
| Jul-10 | 17-Jul-10 | AM6          | 3       | 12:17        | 13:17  | Fine              | Normal         | 30.0       | 756.0           | 44.3                     |         |
| Jul-10 | 18-Jul-10 | AM6          | 1       | 8:40         | 9:40   | Fine              | Normal         | 30.0       | 756.0           | 46.7                     |         |
| Jul-10 | 18-Jul-10 | AM6          | 2       | 10:00        | 11:00  | Fine              | Normal         | 30.0       | 756.0           | 45.9                     |         |
| Jul-10 | 18-Jul-10 | AM6          | 3       | 14:10        | 15:10  | Fine              | Normal         | 30.0       | 756.0           | 92.3                     |         |
| Jul-10 | 19-Jul-10 | AM6          | 1       | 9:37         | 10:37  | Fine              | Normal         | 30.0       | 757.0           | 46.7                     |         |
| Jul-10 | 19-Jul-10 | AM6          | 2       | 15:17        | 16:17  | Fine              | Normal         | 30.0       | 757.0           | 52.5                     |         |
| Jul-10 | 19-Jul-10 | AM6          | 3       | 16:52        | 17:52  | Fine              | Normal         | 30.0       | 757.0           | 52.5                     |         |

| Month  | Date      | Receptor No. | Set No. | Time periods |        | Weather condition | Site condition | Temp. (°C) | Pressure (mmHg) | 1-hour TSP Level (µg/m³) | Remarks |
|--------|-----------|--------------|---------|--------------|--------|-------------------|----------------|------------|-----------------|--------------------------|---------|
|        |           |              |         | Start        | Finish |                   |                |            |                 |                          |         |
| Jul-10 | 20-Jul-10 | AM6          | 1       | 8:02         | 9:02   | Cloudy            | Normal         | 30.0       | 757.0           | 71.1                     |         |
| Jul-10 | 20-Jul-10 | AM6          | 2       | 9:02         | 10:02  | Cloudy            | Normal         | 30.0       | 757.0           | 68.8                     |         |
| Jul-10 | 20-Jul-10 | AM6          | 3       | 13:57        | 14:57  | Cloudy            | Normal         | 30.0       | 757.0           | 68.7                     |         |
| Jul-10 | 21-Jul-10 | AM6          | 1       | 8:22         | 9:22   | Rainy             | Normal         | 27.0       | 755.0           | 72.3                     |         |
| Jul-10 | 21-Jul-10 | AM6          | 2       | 9:22         | 10:22  | Rainy             | Normal         | 27.0       | 755.0           | 50.6                     |         |
| Jul-10 | 21-Jul-10 | AM6          | 3       | 10:42        | 11:42  | Rainy             | Normal         | 27.0       | 755.0           | 33.6                     |         |
|        |           |              |         |              |        |                   |                |            | Average         | 58.6                     |         |
|        |           |              |         |              |        |                   |                |            | Max             | 126.2                    |         |
|        |           |              |         |              |        |                   |                |            | Min             | 33.6                     |         |
|        |           |              |         |              |        |                   |                |            | Action Level    | 288.1                    |         |
|        |           |              |         |              |        |                   |                |            | Limit Level     | 500.0                    |         |

### Details of 24-hour TSP Level monitoring at AM 6

| Month  | Date      | Time periods |        | Weather condition | Site condition   | Filter Weight (g) |        | TSP weight (g) | Flow Rate (m <sup>3</sup> /min) |        | Average Flow Rate (m <sup>3</sup> /min) | Elapse Time |         | Sampling Time (mins.) | Total vol. (m <sup>3</sup> ) | 24-hour TSP Level (µg/m <sup>3</sup> ) |
|--------|-----------|--------------|--------|-------------------|------------------|-------------------|--------|----------------|---------------------------------|--------|-----------------------------------------|-------------|---------|-----------------------|------------------------------|----------------------------------------|
|        |           | Start        | Finish |                   |                  | Initial           | Final  |                | Initial                         | Final  |                                         | Start       | Finish  |                       |                              |                                        |
| Jul-10 | 08-Jul-10 | 14:10        | 14:10  | Fine              | Normal Operation | 2.7520            | 2.8105 | 0.0585         | 1.2617                          | 1.2917 | 1.2767                                  | 4429.24     | 4453.24 | 1440.00               | 1838.45                      | 31.8                                   |
| Jul-10 | 09-Jul-10 | 14:15        | 14:15  | Fine              | Normal Operation | 2.7391            | 2.7986 | 0.0595         | 1.2917                          | 1.2926 | 1.2922                                  | 4453.24     | 4477.24 | 1440.00               | 1860.70                      | 32.0                                   |
| Jul-10 | 10-Jul-10 | 14:19        | 14:19  | Fine              | Normal Operation | 2.7454            | 2.7754 | 0.0300         | 1.2926                          | 1.2926 | 1.2926                                  | 4477.24     | 4501.24 | 1440.00               | 1861.34                      | 16.1                                   |
| Jul-10 | 11-Jul-10 | 14:24        | 14:24  | Fine              | Normal Operation | 2.7511            | 2.7974 | 0.0463         | 1.2926                          | 1.2917 | 1.2922                                  | 4501.24     | 4525.24 | 1440.00               | 1860.70                      | 24.9                                   |
| Jul-10 | 12-Jul-10 | 14:25        | 14:25  | Fine              | Normal Operation | 2.7630            | 2.8130 | 0.0500         | 1.2917                          | 1.2897 | 1.2907                                  | 4525.24     | 4549.24 | 1440.00               | 1858.61                      | 26.9                                   |
| Jul-10 | 13-Jul-10 | 14:36        | 14:36  | Fine              | Normal Operation | 2.7570            | 2.8038 | 0.0468         | 1.2897                          | 1.2926 | 1.2912                                  | 4549.24     | 4573.24 | 1440.00               | 1859.26                      | 25.2                                   |
| Jul-10 | 14-Jul-10 | 14:40        | 14:40  | Cloudy            | Normal Operation | 2.7551            | 2.7939 | 0.0388         | 1.2926                          | 1.2965 | 1.2946                                  | 4573.24     | 4597.24 | 1440.00               | 1864.15                      | 20.8                                   |
| Jul-10 | 15-Jul-10 | 14:45        | 14:45  | Cloudy            | Normal Operation | 2.7480            | 2.8031 | 0.0551         | 1.2965                          | 1.2636 | 1.2801                                  | 4597.24     | 4621.24 | 1440.00               | 1843.27                      | 29.9                                   |
| Jul-10 | 16-Jul-10 | 14:50        | 14:50  | Fine              | Normal Operation | 2.7430            | 2.7878 | 0.0448         | 1.2917                          | 1.3198 | 1.3058                                  | 4621.24     | 4645.24 | 1440.00               | 1880.28                      | 23.8                                   |
| Jul-10 | 17-Jul-10 | 14:56        | 14:56  | Fine              | Normal Operation | 2.7541            | 2.8083 | 0.0542         | 1.2917                          | 1.2917 | 1.2917                                  | 4645.24     | 4669.24 | 1440.00               | 1860.05                      | 29.1                                   |
| Jul-10 | 18-Jul-10 | 15:00        | 15:00  | Fine              | Normal Operation | 2.7612            | 2.7891 | 0.0279         | 1.3198                          | 1.2926 | 1.3062                                  | 4669.24     | 4693.24 | 1440.00               | 1880.93                      | 14.8                                   |
| Jul-10 | 19-Jul-10 | 15:05        | 15:05  | Fine              | Normal Operation | 2.7690            | 2.8115 | 0.0425         | 1.2926                          | 1.2926 | 1.2926                                  | 4693.24     | 4717.24 | 1440.00               | 1861.34                      | 22.8                                   |
| Jul-10 | 20-Jul-10 | 15:10        | 15:10  | Cloudy            | Normal Operation | 2.7658            | 2.8029 | 0.0371         | 1.2926                          | 1.2969 | 1.2948                                  | 4717.24     | 4741.24 | 1440.00               | 1864.44                      | 19.9                                   |
| Jul-10 | 21-Jul-10 | 15:17        | 15:17  | Rainy             | Normal Operation | 2.7512            | 2.7833 | 0.0321         | 1.2969                          | 1.2969 | 1.2969                                  | 4741.24     | 4765.24 | 1440.00               | 1867.54                      | 17.2                                   |
|        |           |              |        |                   |                  |                   |        |                |                                 |        |                                         |             |         |                       | Average                      | 23.9                                   |
|        |           |              |        |                   |                  |                   |        |                |                                 |        |                                         |             |         |                       | Max                          | 32.0                                   |

|                 |       |
|-----------------|-------|
| Min             | 14.8  |
| Action<br>Level | 145.6 |
| Limit Level     | 260.0 |

## **Appendix B**

### **Baseline noise monitoring data**

## Baseline Noise Monitoring Result

Location: CN 11 182B, Wang Toi Shan San Tsuen

Baseline monitoring period: 10/3/2011 to 23/3/2011

Parameter: Leq

Time Slot Averaged Baselines

### 1) Weekdays Daytime Noise Level, dB(A)

| Time slot   | Leq, 30 min | L10  | L90  |
|-------------|-------------|------|------|
| 07:00-07:30 | 53.5        | 56.8 | 44.1 |
| 07:30-08:00 | 57.1        | 60.8 | 45.5 |
| 08:00-08:30 | 63.9        | 69.1 | 49.4 |
| 08:30-09:00 | 64.2        | 68.0 | 52.2 |
| 09:00-09:30 | 64.4        | 68.1 | 51.1 |
| 09:30-10:00 | 63.8        | 67.3 | 52.1 |
| 10:00-10:30 | 65.6        | 69.7 | 52.4 |
| 10:30-11:00 | 63.7        | 67.5 | 53.1 |
| 11:00-11:30 | 63.5        | 67.2 | 53.5 |
| 11:30-12:00 | 64.1        | 67.9 | 50.7 |
| 12:00-12:30 | 59.0        | 62.7 | 47.3 |
| 12:30-13:00 | 61.2        | 65.2 | 48.2 |
| 13:00-13:30 | 64.9        | 69.1 | 51.9 |
| 13:30-14:00 | 64.9        | 69.4 | 51.6 |
| 14:00-14:30 | 64.9        | 68.3 | 52.5 |
| 14:30-15:00 | 65.0        | 69.3 | 52.5 |
| 15:00-15:30 | 64.3        | 68.2 | 53.1 |
| 15:30-16:00 | 64.1        | 67.9 | 52.6 |
| 16:00-16:30 | 65.2        | 69.3 | 52.5 |
| 16:30-17:00 | 64.2        | 67.8 | 52.9 |
| 17:00-17:30 | 65.1        | 69.2 | 53.4 |
| 17:30-18:00 | 62.4        | 66.6 | 50.8 |
| 18:00-18:30 | 60.8        | 65.0 | 48.2 |
| 18:30-19:00 | 59.2        | 62.4 | 46.7 |
| Average     | 63.6        | 67.6 | 51.4 |

|     |      |      |      |
|-----|------|------|------|
| Max | 65.6 | 69.7 | 53.5 |
| Min | 53.5 | 56.8 | 44.1 |

### Noise Control Period Averaged Baselines

### 2) Weekdays Evening Noise Level, dB(A)

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 19:00-19:15 | 62.2      | 66.1 | 49.1 |
|             | 61.9      | 65.2 | 48.7 |
|             | 60.6      | 64.7 | 47.8 |
| 19:15-19:30 | 63.1      | 68.2 | 48.7 |
|             | 64.2      | 68.2 | 47.9 |
|             | 63.6      | 66.9 | 48.6 |
| 19:30-19:45 | 60.0      | 61.2 | 46.7 |
|             | 58.8      | 61.7 | 46.3 |
|             | 56.0      | 58.1 | 45.3 |
| 19:45-20:00 | 60.6      | 61.9 | 46.1 |
|             | 61.9      | 63.5 | 45.9 |
|             | 60.2      | 61.9 | 43.9 |
| 20:00-20:15 | 54.1      | 55.8 | 44.1 |
|             | 58.4      | 62.8 | 43.7 |
|             | 60.2      | 64.4 | 44.8 |
| 20:15-20:30 | 63.1      | 66.2 | 45.6 |
|             | 63.3      | 68.4 | 45.9 |
|             | 63.1      | 67.1 | 45.3 |
| 20:30-20:45 | 57.9      | 61.5 | 43.9 |
|             | 57.2      | 59.4 | 44.8 |
|             | 57.5      | 60.2 | 44.6 |
| 20:45-21:00 | 59.6      | 61.1 | 44.2 |
|             | 58.4      | 61.8 | 43.3 |
|             | 59.2      | 61.3 | 42.7 |
| 21:00-21:15 | 56.7      | 57.9 | 43.5 |
|             | 52.7      | 56.4 | 42.3 |
|             | 61.3      | 65.1 | 43.8 |
| 21:15-21:30 | 58.9      | 62.4 | 46.0 |
|             | 49.1      | 52.6 | 42.2 |
|             | 44.1      | 45.8 | 41.5 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 21:30-21:45 | 44.5      | 46.4 | 41.6 |
|             | 44.4      | 45.6 | 41.4 |
|             | 44.0      | 45.4 | 41.9 |
| 21:45-22:00 | 43.5      | 44.9 | 41.3 |
|             | 43.9      | 46.2 | 40.4 |
|             | 44.3      | 46.0 | 41.0 |
| 22:00-22:15 | 42.7      | 44.5 | 40.1 |
|             | 44.9      | 48.2 | 40.5 |
|             | 43.6      | 46.7 | 40.4 |
| 22:15-22:30 | 44.7      | 47.1 | 41.8 |
|             | 50.7      | 54.6 | 41.4 |
|             | 44.2      | 46.0 | 41.7 |
| 22:30-22:45 | 47.2      | 49.5 | 43.8 |
|             | 45.8      | 47.9 | 43.0 |
|             | 44.7      | 46.9 | 41.0 |
| 22:45-23:00 | 45.4      | 47.5 | 42.1 |
|             | 43.3      | 45.1 | 40.9 |
|             | 46.7      | 48.0 | 44.1 |
| Average     | 58.4      | 61.8 | 44.6 |
| Max         | 64.2      | 68.4 | 49.1 |
| Min         | 42.7      | 44.5 | 40.1 |

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

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 0700-07:15  | 48.7      | 51.0 | 43.9 |
|             | 55.1      | 58.2 | 47.4 |
|             | 49.3      | 51.1 | 43.1 |
| 07:15-07:30 | 53.5      | 54.6 | 43.3 |
|             | 49.5      | 53.1 | 42.7 |
|             | 53.3      | 57.1 | 44.4 |
| 07:30-07:45 | 53.2      | 56.7 | 44.5 |
|             | 54.1      | 57.8 | 44.0 |
|             | 53.1      | 57.4 | 43.8 |
| 07:45-08:00 | 53.2      | 56.1 | 46.1 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 55.9      | 60.1 | 43.0 |
|             | 56.4      | 57.8 | 41.8 |
| 08:00-08:15 | 52.5      | 55.3 | 42.6 |
|             | 47.4      | 50.7 | 42.0 |
|             | 49.7      | 52.3 | 42.4 |
| 08:15-08:30 | 51.3      | 54.1 | 44.1 |
|             | 51.2      | 54.2 | 44.7 |
|             | 50.6      | 54.4 | 44.3 |
| 08:30-08:45 | 52.8      | 55.2 | 45.4 |
|             | 51.8      | 53.6 | 44.4 |
|             | 50.8      | 53.0 | 44.0 |
| 08:45-09:00 | 51.7      | 54.8 | 45.3 |
|             | 52.7      | 56.1 | 43.4 |
|             | 49.4      | 52.2 | 43.3 |
| 09:00-09:15 | 54.7      | 57.4 | 43.6 |
|             | 52.2      | 56.4 | 43.0 |
|             | 48.9      | 52.7 | 42.4 |
| 09:15-09:30 | 51.1      | 54.3 | 42.9 |
|             | 54.0      | 55.7 | 42.9 |
|             | 56.2      | 60.0 | 42.8 |
| 09:30-09:45 | 52.5      | 56.5 | 42.4 |
|             | 58.2      | 60.0 | 42.7 |
|             | 57.5      | 60.3 | 42.6 |
| 09:45-10:00 | 65.7      | 70.1 | 41.8 |
|             | 59.1      | 63.3 | 41.1 |
|             | 56.0      | 59.9 | 41.9 |
| 10:00-10:15 | 51.1      | 55.4 | 42.7 |
|             | 62.3      | 62.9 | 43.6 |
|             | 54.7      | 57.3 | 43.1 |
| 10:15-10:30 | 48.3      | 49.2 | 42.8 |
|             | 50.4      | 54.2 | 42.3 |
|             | 51.3      | 55.4 | 42.4 |
| 10:30-10:45 | 49.7      | 51.1 | 42.7 |
|             | 51.4      | 53.8 | 44.4 |
|             | 54.2      | 56.7 | 44.7 |
| 10:45-11:00 | 55.7      | 59.6 | 42.6 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 59.7      | 64.6 | 45.6 |
|             | 60.3      | 61.1 | 45.7 |
| 11:00-11:15 | 47.3      | 49.7 | 43.4 |
|             | 55.7      | 57.8 | 44.1 |
|             | 57.6      | 60.7 | 43.0 |
| 11:15-11:30 | 58.4      | 62.7 | 44.5 |
|             | 59.8      | 64.4 | 42.8 |
|             | 55.7      | 57.5 | 42.5 |
| 11:30-11:45 | 59.3      | 64.1 | 45.8 |
|             | 54.7      | 59.8 | 41.3 |
|             | 55.5      | 56.6 | 41.4 |
| 11:45-12:00 | 48.4      | 50.5 | 43.3 |
|             | 51.7      | 53.0 | 41.8 |
|             | 46.2      | 48.3 | 41.2 |
| 12:00-12:15 | 64.7      | 66.7 | 41.7 |
|             | 66.2      | 69.8 | 48.2 |
|             | 65.1      | 68.5 | 46.9 |
| 12:15-12:30 | 52.6      | 55.4 | 45.7 |
|             | 60.5      | 64.4 | 48.5 |
|             | 57.5      | 61.3 | 47.7 |
| 12:30-12:45 | 59.6      | 63.5 | 48.0 |
|             | 57.3      | 61.6 | 43.8 |
|             | 57.2      | 61.4 | 46.4 |
| 12:45-13:00 | 57.2      | 60.8 | 48.0 |
|             | 57.1      | 61.2 | 44.7 |
|             | 58.8      | 60.0 | 46.1 |
| 13:00-13:15 | 61.9      | 65.9 | 48.9 |
|             | 68.0      | 71.5 | 49.3 |
|             | 69.8      | 72.2 | 45.3 |
| 13:15-13:30 | 65.1      | 68.6 | 47.5 |
|             | 54.9      | 59.5 | 44.2 |
|             | 49.8      | 53.2 | 44.1 |
| 13:30-13:45 | 54.3      | 58.1 | 45.4 |
|             | 54.4      | 57.7 | 44.2 |
|             | 52.4      | 56.5 | 44.6 |
| 13:45-14:00 | 52.0      | 56.4 | 45.0 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 51.5      | 54.9 | 44.9 |
|             | 51.0      | 53.7 | 44.9 |
| 14:00-14:15 | 55.7      | 56.8 | 44.2 |
|             | 63.4      | 65.7 | 44.0 |
|             | 57.8      | 60.4 | 44.4 |
| 14:15-14:30 | 52.0      | 55.1 | 44.6 |
|             | 61.9      | 66.7 | 46.8 |
|             | 54.8      | 59.5 | 45.0 |
| 14:30-14:45 | 57.2      | 61.4 | 44.7 |
|             | 54.0      | 56.9 | 45.0 |
|             | 56.5      | 60.1 | 46.1 |
| 14:45-15:00 | 54.9      | 57.7 | 45.3 |
|             | 55.5      | 59.0 | 47.1 |
|             | 56.2      | 58.6 | 47.3 |
| 15:00-15:15 | 53.8      | 56.3 | 45.2 |
|             | 54.7      | 57.8 | 44.5 |
|             | 54.0      | 56.8 | 46.1 |
| 15:15-15:30 | 62.7      | 66.5 | 49.5 |
|             | 54.9      | 59.0 | 45.7 |
|             | 54.5      | 57.8 | 44.4 |
| 15:30-15:45 | 51.3      | 55.2 | 43.4 |
|             | 49.6      | 51.9 | 43.4 |
|             | 50.0      | 53.2 | 44.6 |
| 15:45-16:00 | 55.7      | 60.2 | 43.6 |
|             | 51.7      | 54.1 | 44.1 |
|             | 54.7      | 58.7 | 45.0 |
| 16:00-16:15 | 48.7      | 51.6 | 42.8 |
|             | 55.1      | 58.6 | 46.3 |
|             | 58.2      | 62.3 | 47.6 |
| 16:15-16:30 | 59.6      | 63.4 | 46.8 |
|             | 57.6      | 61.5 | 45.3 |
|             | 63.3      | 64.7 | 45.7 |
| 16:30-16:45 | 57.4      | 60.2 | 44.0 |
|             | 52.7      | 55.3 | 43.3 |
|             | 56.2      | 60.8 | 45.1 |
| 16:45-17:00 | 58.2      | 61.9 | 45.8 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 59.9      | 62.7 | 45.9 |
|             | 58.4      | 63.0 | 45.3 |
| 17:00-17:15 | 58.8      | 62.6 | 49.5 |
|             | 55.8      | 60.6 | 45.0 |
|             | 53.5      | 55.6 | 44.0 |
| 17:15-17:30 | 49.6      | 51.9 | 43.4 |
|             | 54.6      | 56.2 | 43.8 |
|             | 59.5      | 62.4 | 45.5 |
| 17:30-17:45 | 57.7      | 62.3 | 44.1 |
|             | 57.9      | 61.9 | 44.1 |
|             | 60.1      | 63.9 | 44.7 |
| 17:45-18:00 | 54.0      | 58.2 | 44.1 |
|             | 56.0      | 59.7 | 48.4 |
|             | 53.9      | 56.2 | 45.0 |
| 18:00-18:15 | 52.1      | 54.9 | 43.4 |
|             | 48.6      | 51.7 | 42.4 |
|             | 52.0      | 55.0 | 42.3 |
| 18:15-18:30 | 47.5      | 50.2 | 41.1 |
|             | 48.9      | 51.8 | 44.2 |
|             | 46.6      | 48.5 | 42.9 |
| 18:30-18:45 | 49.8      | 54.8 | 42.2 |
|             | 48.2      | 50.1 | 41.9 |
|             | 47.3      | 49.7 | 42.4 |
| 18:45-19:00 | 45.4      | 47.8 | 42.4 |
|             | 44.2      | 45.4 | 42.3 |
|             | 46.8      | 48.5 | 43.8 |
| 19:00-19:15 | 47.8      | 49.9 | 45.7 |
|             | 47.8      | 49.9 | 45.2 |
|             | 49.9      | 51.3 | 47.1 |
| 19:15-19:30 | 52.3      | 54.1 | 49.4 |
|             | 50.8      | 52.1 | 49.2 |
|             | 52.2      | 54.1 | 48.5 |
| 19:30-19:45 | 56.9      | 58.3 | 50.1 |
|             | 57.5      | 58.1 | 56.9 |
|             | 56.2      | 57.5 | 47.6 |
| 19:45-20:00 | 47.4      | 48.7 | 45.5 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 48.2      | 49.2 | 47.4 |
|             | 51.8      | 53.0 | 47.6 |
| 20:00-20:15 | 51.1      | 52.4 | 49.6 |
|             | 48.7      | 51.3 | 46.4 |
|             | 47.4      | 49.7 | 45.1 |
| 20:15-20:30 | 44.4      | 45.5 | 40.5 |
|             | 48.8      | 49.9 | 47.7 |
|             | 44.2      | 47.5 | 40.3 |
| 20:30-20:45 | 48.3      | 49.6 | 43.3 |
|             | 50.9      | 51.4 | 48.3 |
|             | 42.0      | 42.7 | 39.8 |
| 20:45-21:00 | 44.9      | 45.6 | 43.2 |
|             | 41.0      | 41.9 | 39.7 |
|             | 45.3      | 47.4 | 42.7 |
| 21:00-21:15 | 46.4      | 48.2 | 43.9 |
|             | 43.7      | 46.2 | 41.3 |
|             | 42.9      | 44.3 | 41.2 |
| 21:15-21:30 | 42.4      | 43.4 | 40.9 |
|             | 42.2      | 43.5 | 41.0 |
|             | 42.4      | 43.7 | 41.0 |
| 21:30-21:45 | 42.1      | 42.9 | 41.0 |
|             | 42.2      | 43.3 | 41.1 |
|             | 42.0      | 42.9 | 41.1 |
| 21:45-22:00 | 41.4      | 42.5 | 40.1 |
|             | 41.3      | 42.1 | 40.0 |
|             | 42.6      | 43.4 | 41.7 |
| 22:00-22:15 | 55.0      | 57.3 | 40.7 |
|             | 56.9      | 62.0 | 40.2 |
|             | 60.4      | 65.6 | 40.5 |
| 22:15-22:30 | 54.8      | 59.7 | 40.4 |
|             | 42.8      | 44.0 | 41.5 |
|             | 55.9      | 60.5 | 40.1 |
| 22:30-22:45 | 56.7      | 60.2 | 41.0 |
|             | 58.3      | 62.1 | 40.6 |
|             | 58.0      | 62.8 | 41.0 |
| 22:45-23:00 | 54.4      | 57.6 | 41.0 |

| Time Slot | Leq, 5min | L10  | L90  |
|-----------|-----------|------|------|
|           | 43.2      | 44.5 | 41.6 |
|           | 42.5      | 43.8 | 40.9 |
| Average   | 56.9      | 60.3 | 45.1 |
| Max       | 69.8      | 72.2 | 56.9 |
| Min       | 41.0      | 41.9 | 39.7 |

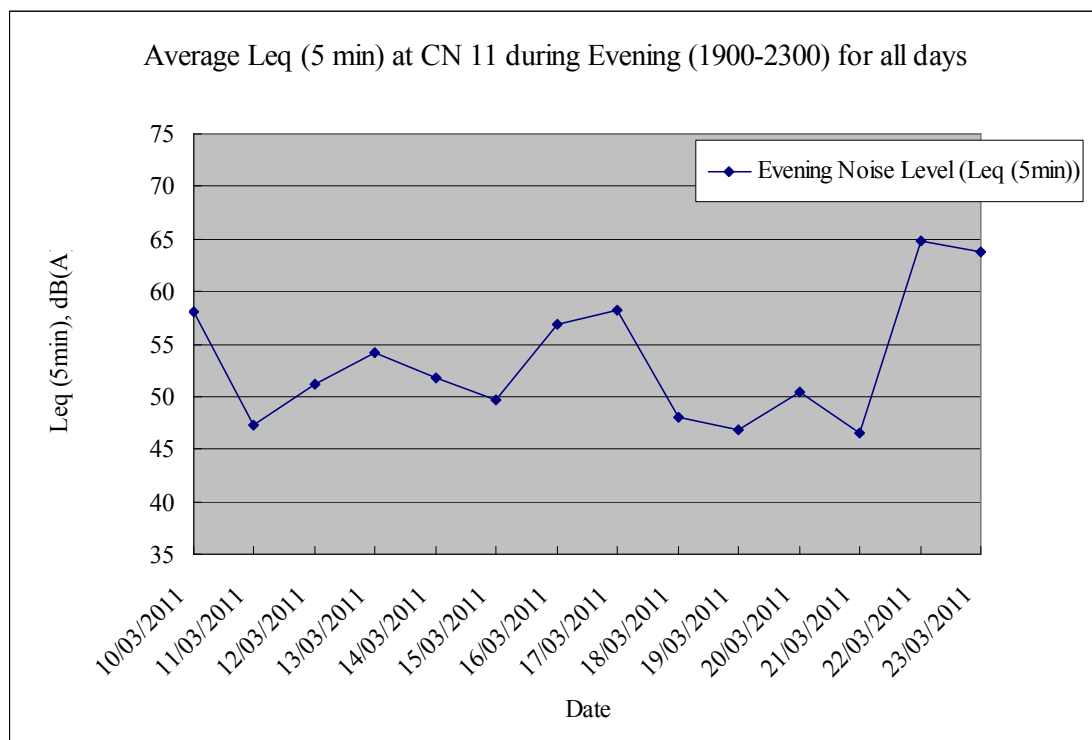
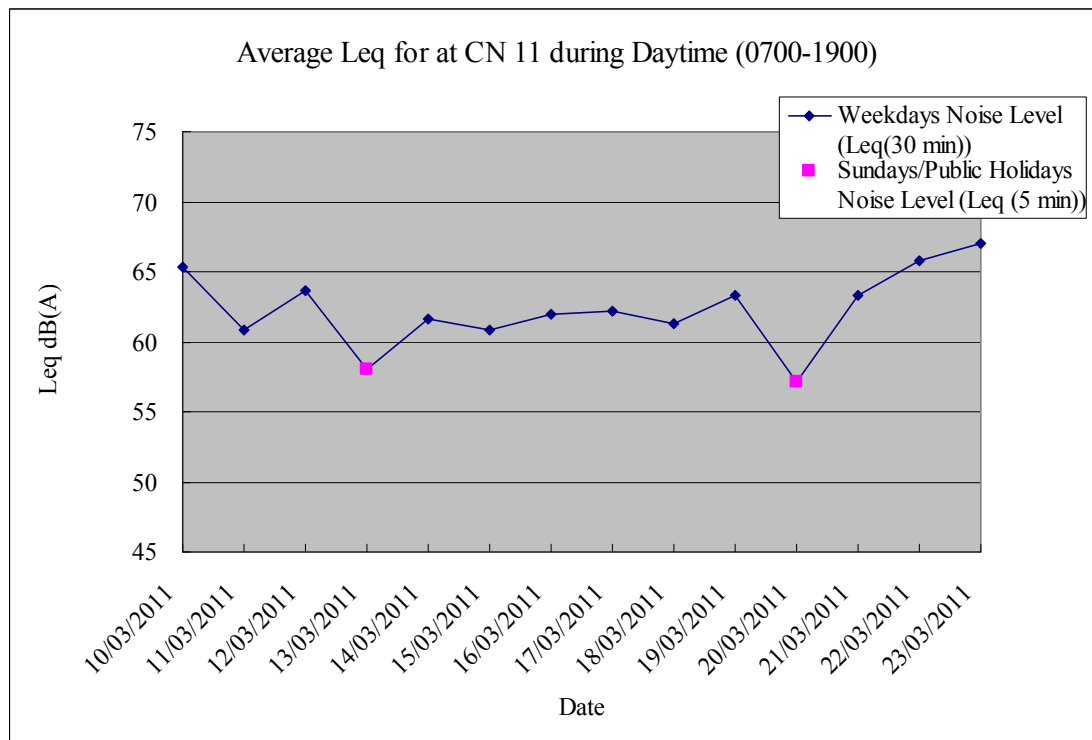
#### 4) Night-time (for all days) Noise Level, dB(A)

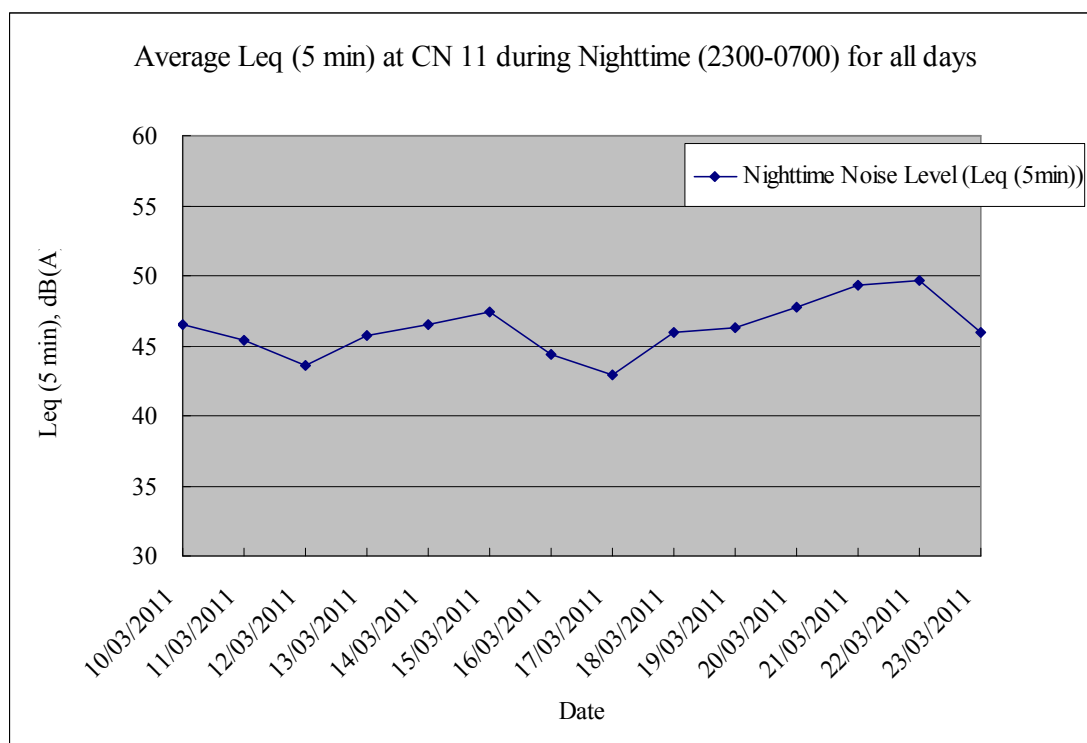
| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 23:00-23:15 | 43.9      | 45.7 | 41.6 |
|             | 44.4      | 46.1 | 41.0 |
|             | 44.2      | 45.9 | 41.3 |
| 23:15-23:30 | 46.2      | 48.7 | 40.8 |
|             | 45.1      | 48.4 | 40.9 |
|             | 43.7      | 45.8 | 40.8 |
| 23:30-23:45 | 43.4      | 45.5 | 40.1 |
|             | 45.2      | 48.5 | 39.8 |
|             | 42.9      | 44.7 | 40.2 |
| 23:45-00:00 | 42.6      | 44.2 | 40.1 |
|             | 43.8      | 46.9 | 40.1 |
|             | 43.5      | 45.3 | 40.1 |
| 00:00-00:15 | 42.9      | 44.6 | 40.6 |
|             | 42.8      | 44.4 | 40.2 |
|             | 43.2      | 45.1 | 40.5 |
| 00:15-00:30 | 42.9      | 44.8 | 39.7 |
|             | 43.9      | 45.5 | 40.3 |
|             | 43.0      | 44.4 | 39.7 |
| 00:30-00:45 | 42.5      | 44.0 | 40.4 |
|             | 43.6      | 45.3 | 40.6 |
|             | 43.0      | 44.7 | 40.6 |
| 00:45:01:00 | 45.9      | 48.4 | 40.5 |
|             | 45.0      | 47.8 | 40.2 |
|             | 43.0      | 45.2 | 39.8 |
| 01:00-01:15 | 41.8      | 43.3 | 39.7 |
|             | 42.0      | 43.7 | 39.8 |
|             | 41.8      | 43.4 | 39.7 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 01:15-01:30 | 42.2      | 43.6 | 40.4 |
|             | 44.2      | 47.5 | 40.0 |
|             | 45.5      | 48.5 | 39.9 |
| 01:30-01:45 | 43.5      | 46.0 | 39.5 |
|             | 45.2      | 48.7 | 39.6 |
|             | 41.9      | 43.5 | 39.6 |
| 01:45-02:00 | 42.9      | 45.1 | 38.5 |
|             | 44.2      | 47.9 | 38.7 |
|             | 40.9      | 42.5 | 38.9 |
| 02:00-02:15 | 40.4      | 41.8 | 38.7 |
|             | 40.6      | 42.0 | 38.7 |
|             | 44.3      | 46.2 | 38.7 |
| 02:15-02:30 | 42.5      | 44.3 | 39.8 |
|             | 41.2      | 42.9 | 39.0 |
|             | 40.4      | 41.7 | 38.4 |
| 02:30-02:45 | 46.3      | 51.6 | 38.5 |
|             | 49.7      | 55.1 | 39.3 |
|             | 47.1      | 52.0 | 38.9 |
| 02:45-03:00 | 41.8      | 44.0 | 38.8 |
|             | 40.5      | 42.2 | 38.4 |
|             | 44.6      | 49.5 | 38.1 |
| 03:00-03:15 | 44.2      | 49.2 | 37.7 |
|             | 40.3      | 41.8 | 38.0 |
|             | 40.4      | 42.5 | 37.6 |
| 03:15-03:30 | 40.6      | 42.3 | 38.2 |
|             | 40.2      | 41.3 | 38.7 |
|             | 40.0      | 41.4 | 38.2 |
| 03:30-03:45 | 42.5      | 44.5 | 38.3 |
|             | 40.7      | 42.4 | 38.5 |
|             | 40.4      | 41.8 | 38.6 |
| 03:45-04:00 | 40.6      | 42.2 | 38.5 |
|             | 40.5      | 42.1 | 38.6 |
|             | 40.8      | 42.4 | 38.7 |
| 04:00-04:15 | 40.3      | 42.0 | 38.3 |
|             | 40.1      | 41.8 | 38.2 |
|             | 39.9      | 41.5 | 38.2 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 04:15-04:30 | 41.4      | 43.0 | 38.3 |
|             | 40.7      | 42.5 | 38.3 |
|             | 46.1      | 49.1 | 37.4 |
| 04:30-04:45 | 45.7      | 49.5 | 38.2 |
|             | 45.5      | 47.6 | 38.1 |
|             | 39.7      | 41.1 | 37.7 |
| 04:45-05:00 | 40.2      | 41.9 | 38.5 |
|             | 40.2      | 41.7 | 38.6 |
|             | 39.8      | 41.3 | 38.1 |
| 05:00-05:15 | 39.5      | 41.2 | 37.8 |
|             | 40.0      | 41.9 | 37.7 |
|             | 40.2      | 41.9 | 38.3 |
| 05:15-05:30 | 40.6      | 42.5 | 38.4 |
|             | 40.2      | 41.7 | 38.3 |
|             | 46.9      | 52.3 | 38.0 |
| 05:30-05:45 | 48.3      | 53.4 | 38.3 |
|             | 50.0      | 54.9 | 38.3 |
|             | 50.1      | 54.9 | 38.7 |
| 05:45-06:00 | 49.5      | 54.2 | 38.8 |
|             | 50.6      | 54.8 | 39.2 |
|             | 51.3      | 55.7 | 40.3 |
| 06:00-06:15 | 52.1      | 55.9 | 46.4 |
|             | 51.2      | 55.7 | 42.6 |
|             | 51.1      | 55.1 | 42.6 |
| 06:15-06:30 | 52.8      | 56.8 | 43.0 |
|             | 52.6      | 56.6 | 42.9 |
|             | 53.2      | 56.2 | 42.9 |
| 06:30-06:45 | 52.6      | 56.0 | 42.7 |
|             | 51.6      | 54.0 | 42.9 |
|             | 50.4      | 53.6 | 42.7 |
| 06:45-07:00 | 54.8      | 57.5 | 43.4 |
|             | 52.5      | 56.2 | 43.6 |
|             | 52.4      | 55.7 | 44.3 |
| Average     | 46.6      | 50.0 | 40.1 |
| Max         | 54.8      | 57.5 | 46.4 |
| Min         | 39.5      | 41.1 | 37.4 |

Log average was used.





## Baseline Noise Monitoring Result

Location: CN 12 DD108, Nam Hing Lei, Wing Hing Wai

Baseline monitoring period: 15/10/2010 to 28/10/2010

Parameter: Leq

Time Slot Averaged Baselines

### 1) Weekdays Daytime Noise Level, dB(A)

| Time slot   | Leq, 30 min | L10  | L90  |
|-------------|-------------|------|------|
| 07:00-07:30 | 55.7        | 59.6 | 49.5 |
| 07:30-08:00 | 54.3        | 56.2 | 48.4 |
| 08:00-08:30 | 54.6        | 56.6 | 50.2 |
| 08:30-09:00 | 56.6        | 59.2 | 51.0 |
| 09:00-09:30 | 58.1        | 61.3 | 51.9 |
| 09:30-10:00 | 59.5        | 63.0 | 52.9 |
| 10:00-10:30 | 60.8        | 64.3 | 53.6 |
| 10:30-11:00 | 60.3        | 63.4 | 52.5 |
| 11:00-11:30 | 59.7        | 62.9 | 53.0 |
| 11:30-12:00 | 56.5        | 59.4 | 51.0 |
| 12:00-12:30 | 57.7        | 59.2 | 55.4 |
| 12:30-13:00 | 61.3        | 62.3 | 60.1 |
| 13:00-13:30 | 61.4        | 62.6 | 59.5 |
| 13:30-14:00 | 61.6        | 63.8 | 58.5 |
| 14:00-14:30 | 60.4        | 62.2 | 57.1 |
| 14:30-15:00 | 62.3        | 63.4 | 60.2 |
| 15:00-15:30 | 62.8        | 64.1 | 60.7 |
| 15:30-16:00 | 62.8        | 64.7 | 56.9 |
| 16:00-16:30 | 61.8        | 64.2 | 55.1 |
| 16:30-17:00 | 58.7        | 60.5 | 55.3 |
| 17:00-17:30 | 59.2        | 61.5 | 54.5 |
| 17:30-18:00 | 55.3        | 57.0 | 51.5 |
| 18:00-18:30 | 57.2        | 59.7 | 51.1 |
| 18:30-19:00 | 56.7        | 60.5 | 51.1 |
| Average     | 59.7        | 61.9 | 55.7 |
| Max         | 62.8        | 64.7 | 60.7 |
| Min         | 54.3        | 56.2 | 48.4 |

## Noise Control Period Averaged Baselines

### 2) Weekdays Evening Noise Level, dB(A)

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 19:00-19:15 | 53.1      | 54.2 | 51.5 |
|             | 52.6      | 54.1 | 50.5 |
|             | 53.5      | 55.7 | 49.8 |
| 19:15-19:30 | 52.2      | 53.5 | 50.4 |
|             | 52.2      | 53.3 | 50.0 |
|             | 51.4      | 52.5 | 49.6 |
| 19:30-19:45 | 52.3      | 54.1 | 49.5 |
|             | 51.1      | 52.0 | 50.0 |
|             | 50.6      | 51.8 | 49.1 |
| 19:45-20:00 | 47.5      | 49.0 | 45.3 |
|             | 47.9      | 49.5 | 45.0 |
|             | 48.2      | 49.8 | 46.2 |
| 20:00-20:15 | 48.9      | 50.8 | 45.7 |
|             | 48.2      | 49.4 | 44.5 |
|             | 49.1      | 50.9 | 44.3 |
| 20:15-20:30 | 48.7      | 50.1 | 44.7 |
|             | 46.5      | 48.1 | 43.8 |
|             | 47.5      | 48.7 | 43.2 |
| 20:30-20:45 | 46.1      | 47.7 | 43.5 |
|             | 47.7      | 49.5 | 43.6 |
|             | 46.3      | 48.0 | 43.6 |
| 20:45-21:00 | 47.0      | 49.8 | 43.4 |
|             | 45.7      | 47.6 | 43.1 |
|             | 47.7      | 49.4 | 43.2 |
| 21:00-21:15 | 46.5      | 48.9 | 43.3 |
|             | 47.2      | 49.6 | 43.8 |
|             | 47.2      | 50.3 | 43.5 |
| 21:15-21:30 | 47.0      | 49.6 | 43.1 |
|             | 46.7      | 49.3 | 43.0 |
|             | 47.5      | 50.1 | 43.6 |
| 21:30-21:45 | 48.1      | 51.2 | 43.4 |
|             | 47.6      | 50.2 | 43.8 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 47.0      | 49.6 | 43.6 |
| 21:45-22:00 | 46.8      | 49.2 | 42.9 |
|             | 49.7      | 53.0 | 43.4 |
|             | 47.4      | 50.0 | 43.1 |
| 22:00-22:15 | 47.9      | 50.6 | 43.5 |
|             | 47.2      | 50.2 | 43.3 |
|             | 47.3      | 49.8 | 42.8 |
| 22:15-22:30 | 48.6      | 52.4 | 42.6 |
|             | 47.3      | 50.2 | 42.6 |
|             | 48.0      | 50.6 | 42.5 |
| 22:30-22:45 | 46.6      | 48.6 | 42.6 |
|             | 46.0      | 48.3 | 42.5 |
|             | 46.0      | 48.5 | 42.5 |
| 22:45-23:00 | 46.1      | 47.7 | 42.6 |
|             | 45.1      | 47.1 | 42.4 |
|             | 45.7      | 47.7 | 43.0 |
| Average     | 48.8      | 50.8 | 45.8 |
| Max         | 53.5      | 55.7 | 51.5 |
| Min         | 45.1      | 47.1 | 42.4 |

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

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 0700-07:15  | 48.0      | 50.3 | 44.4 |
|             | 47.3      | 49.0 | 44.7 |
|             | 50.6      | 52.4 | 45.3 |
| 07:15-07:30 | 50.2      | 51.9 | 44.8 |
|             | 52.0      | 55.0 | 46.5 |
|             | 51.1      | 54.2 | 45.3 |
| 07:30-07:45 | 54.3      | 57.1 | 45.7 |
|             | 52.4      | 54.7 | 45.7 |
|             | 55.8      | 56.9 | 46.0 |
| 07:45-08:00 | 52.2      | 55.0 | 46.9 |
|             | 53.8      | 55.0 | 46.1 |
|             | 50.5      | 52.5 | 46.0 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 08:00-08:15 | 51.0      | 53.3 | 45.9 |
|             | 49.6      | 52.0 | 46.0 |
|             | 49.2      | 50.5 | 45.5 |
| 08:15-08:30 | 49.5      | 51.2 | 45.8 |
|             | 50.1      | 52.7 | 46.3 |
|             | 48.4      | 50.3 | 45.1 |
| 08:30-08:45 | 49.2      | 51.1 | 45.9 |
|             | 52.3      | 54.8 | 45.6 |
|             | 51.3      | 52.3 | 45.5 |
| 08:45-09:00 | 51.7      | 53.8 | 46.3 |
|             | 50.0      | 51.4 | 46.0 |
|             | 50.2      | 52.0 | 46.3 |
| 09:00-09:15 | 49.6      | 51.7 | 46.2 |
|             | 50.7      | 53.2 | 46.2 |
|             | 55.5      | 60.1 | 47.1 |
| 09:15-09:30 | 56.8      | 59.5 | 48.1 |
|             | 56.9      | 57.9 | 46.8 |
|             | 56.7      | 60.2 | 46.4 |
| 09:30-09:45 | 54.0      | 57.4 | 47.2 |
|             | 55.3      | 56.8 | 49.9 |
|             | 57.2      | 59.0 | 46.3 |
| 09:45-10:00 | 59.3      | 62.1 | 46.7 |
|             | 60.7      | 65.4 | 47.7 |
|             | 60.4      | 62.6 | 46.9 |
| 10:00-10:15 | 62.7      | 64.7 | 47.2 |
|             | 60.8      | 61.8 | 47.0 |
|             | 62.7      | 65.1 | 46.6 |
| 10:15-10:30 | 60.0      | 62.2 | 45.3 |
|             | 53.0      | 55.7 | 45.8 |
|             | 56.3      | 59.9 | 45.1 |
| 10:30-10:45 | 52.2      | 53.8 | 45.4 |
|             | 49.4      | 51.7 | 44.4 |
|             | 51.8      | 54.5 | 44.6 |
| 10:45-11:00 | 57.6      | 61.4 | 51.0 |
|             | 57.0      | 61.1 | 46.0 |
|             | 59.7      | 62.5 | 45.0 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 11:00-11:15 | 57.5      | 61.6 | 46.8 |
|             | 57.3      | 61.4 | 45.5 |
|             | 60.9      | 65.7 | 48.0 |
| 11:15-11:30 | 53.8      | 56.7 | 45.5 |
|             | 57.7      | 61.6 | 46.2 |
|             | 55.5      | 56.9 | 44.7 |
| 11:30-11:45 | 55.9      | 58.0 | 45.1 |
|             | 50.1      | 53.3 | 44.7 |
|             | 52.0      | 54.2 | 45.7 |
| 11:45-12:00 | 54.7      | 58.5 | 45.6 |
|             | 62.2      | 64.6 | 46.5 |
|             | 60.3      | 62.2 | 44.7 |
| 12:00-12:15 | 58.0      | 59.7 | 48.1 |
|             | 53.2      | 56.5 | 44.6 |
|             | 53.8      | 55.8 | 43.3 |
| 12:15-12:30 | 51.2      | 53.7 | 44.0 |
|             | 49.3      | 51.9 | 43.9 |
|             | 57.4      | 59.6 | 45.3 |
| 12:30-12:45 | 56.4      | 59.7 | 44.2 |
|             | 57.5      | 60.4 | 44.6 |
|             | 51.2      | 52.1 | 43.4 |
| 12:45-13:00 | 54.3      | 57.4 | 44.4 |
|             | 54.7      | 58.0 | 43.7 |
|             | 57.4      | 61.3 | 44.8 |
| 13:00-13:15 | 59.1      | 60.0 | 45.6 |
|             | 50.7      | 51.3 | 44.9 |
|             | 48.4      | 50.3 | 43.6 |
| 13:15-13:30 | 58.6      | 62.6 | 44.7 |
|             | 58.6      | 61.7 | 45.1 |
|             | 50.8      | 52.4 | 44.5 |
| 13:30-13:45 | 50.0      | 51.6 | 44.7 |
|             | 49.8      | 52.1 | 44.2 |
|             | 46.8      | 49.3 | 43.6 |
| 13:45-14:00 | 47.7      | 49.4 | 43.7 |
|             | 48.8      | 50.1 | 44.5 |
|             | 54.2      | 56.4 | 44.8 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 14:00-14:15 | 56.3      | 57.8 | 44.5 |
|             | 60.3      | 64.2 | 45.4 |
|             | 57.2      | 60.2 | 44.4 |
| 14:15-14:30 | 60.4      | 64.0 | 45.1 |
|             | 60.1      | 62.7 | 45.1 |
|             | 59.0      | 62.7 | 44.7 |
| 14:30-14:45 | 59.7      | 60.8 | 43.8 |
|             | 59.6      | 61.1 | 44.2 |
|             | 59.9      | 61.0 | 44.3 |
| 14:45-15:00 | 60.4      | 61.6 | 44.5 |
|             | 60.9      | 63.4 | 44.3 |
|             | 51.5      | 53.8 | 44.6 |
| 15:00-15:15 | 52.9      | 56.3 | 43.8 |
|             | 54.2      | 57.6 | 44.4 |
|             | 54.8      | 58.3 | 44.3 |
| 15:15-15:30 | 55.5      | 58.5 | 45.3 |
|             | 55.4      | 59.0 | 46.0 |
|             | 52.6      | 56.0 | 44.7 |
| 15:30-15:45 | 54.8      | 59.0 | 44.5 |
|             | 56.5      | 58.7 | 48.5 |
|             | 60.5      | 63.9 | 47.7 |
| 15:45-16:00 | 57.8      | 60.5 | 45.7 |
|             | 56.9      | 60.2 | 45.9 |
|             | 60.0      | 61.8 | 45.9 |
| 16:00-16:15 | 52.6      | 54.8 | 43.9 |
|             | 51.4      | 53.9 | 44.6 |
|             | 54.9      | 56.7 | 45.5 |
| 16:15-16:30 | 59.9      | 64.5 | 47.8 |
|             | 60.4      | 63.3 | 45.1 |
|             | 56.3      | 57.9 | 45.1 |
| 16:30-16:45 | 51.4      | 54.0 | 45.1 |
|             | 53.4      | 56.2 | 44.9 |
|             | 54.2      | 56.2 | 44.2 |
| 16:45-17:00 | 59.2      | 62.7 | 43.9 |
|             | 59.7      | 62.2 | 46.3 |
|             | 56.9      | 59.7 | 46.6 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 17:00-17:15 | 57.9      | 62.5 | 46.2 |
|             | 59.5      | 63.9 | 46.8 |
|             | 63.0      | 65.1 | 48.4 |
| 17:15-17:30 | 56.9      | 60.1 | 48.1 |
|             | 59.2      | 61.5 | 50.2 |
|             | 57.0      | 60.7 | 47.1 |
| 17:30-17:45 | 51.9      | 53.3 | 45.0 |
|             | 54.4      | 56.4 | 47.7 |
|             | 51.6      | 52.9 | 48.4 |
| 17:45-18:00 | 51.7      | 53.8 | 48.6 |
|             | 54.0      | 55.2 | 47.4 |
|             | 53.8      | 55.6 | 49.5 |
| 18:00-18:15 | 51.0      | 54.9 | 46.2 |
|             | 50.1      | 51.7 | 48.1 |
|             | 55.8      | 57.2 | 48.5 |
| 18:15-18:30 | 53.5      | 54.8 | 51.7 |
|             | 49.7      | 50.9 | 47.4 |
|             | 50.7      | 51.5 | 48.4 |
| 18:30-18:45 | 51.0      | 53.3 | 48.2 |
|             | 53.5      | 54.9 | 47.5 |
|             | 50.4      | 52.1 | 48.5 |
| 18:45-19:00 | 50.0      | 51.2 | 48.5 |
|             | 52.3      | 54.1 | 48.0 |
|             | 51.4      | 54.4 | 48.6 |
| 19:00-19:15 | 49.7      | 51.2 | 47.2 |
|             | 50.0      | 52.1 | 47.8 |
|             | 50.4      | 52.2 | 47.8 |
| 19:15-19:30 | 49.8      | 51.6 | 47.5 |
|             | 49.8      | 51.4 | 47.8 |
|             | 50.9      | 52.4 | 49.3 |
| 19:30-19:45 | 49.7      | 51.4 | 47.7 |
|             | 50.4      | 51.7 | 48.8 |
|             | 50.4      | 51.8 | 48.8 |
| 19:45-20:00 | 51.6      | 54.6 | 47.2 |
|             | 49.6      | 51.7 | 46.5 |
|             | 48.6      | 50.0 | 47.0 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 20:00-20:15 | 48.9      | 50.6 | 44.6 |
|             | 45.5      | 46.4 | 43.2 |
|             | 49.0      | 51.0 | 44.0 |
| 20:15-20:30 | 48.3      | 49.6 | 45.0 |
|             | 49.0      | 50.6 | 44.4 |
|             | 47.7      | 50.0 | 42.1 |
| 20:30-20:45 | 48.0      | 50.3 | 43.0 |
|             | 49.3      | 51.0 | 44.1 |
|             | 50.1      | 51.9 | 44.6 |
| 20:45-21:00 | 49.8      | 52.1 | 43.9 |
|             | 49.8      | 52.0 | 44.0 |
|             | 47.2      | 49.4 | 43.4 |
| 21:00-21:15 | 47.1      | 49.8 | 42.7 |
|             | 47.0      | 49.2 | 43.3 |
|             | 46.6      | 48.9 | 42.8 |
| 21:15-21:30 | 44.6      | 45.7 | 42.9 |
|             | 47.5      | 49.1 | 42.9 |
|             | 45.8      | 47.9 | 42.9 |
| 21:30-21:45 | 45.5      | 48.3 | 42.4 |
|             | 47.4      | 49.9 | 43.1 |
|             | 46.1      | 47.7 | 42.9 |
| 21:45-22:00 | 47.3      | 49.4 | 41.6 |
|             | 47.6      | 49.9 | 42.3 |
|             | 47.0      | 48.8 | 41.5 |
| 22:00-22:15 | 48.5      | 51.3 | 41.6 |
|             | 50.3      | 51.7 | 41.6 |
|             | 46.8      | 49.3 | 41.5 |
| 22:15-22:30 | 47.6      | 49.7 | 40.8 |
|             | 49.2      | 51.0 | 43.5 |
|             | 49.3      | 51.2 | 44.0 |
| 22:30-22:45 | 48.1      | 50.0 | 43.0 |
|             | 46.5      | 49.3 | 42.7 |
|             | 47.3      | 49.5 | 42.7 |
| 22:45-23:00 | 46.5      | 48.5 | 42.9 |
|             | 47.3      | 48.9 | 43.2 |
|             | 47.9      | 49.9 | 42.3 |

| Time Slot | Leq, 5min | L10  | L90  |
|-----------|-----------|------|------|
| Average   | 55.4      | 58.1 | 45.9 |
| Max       | 63.0      | 65.7 | 51.7 |
| Min       | 44.6      | 45.7 | 40.8 |

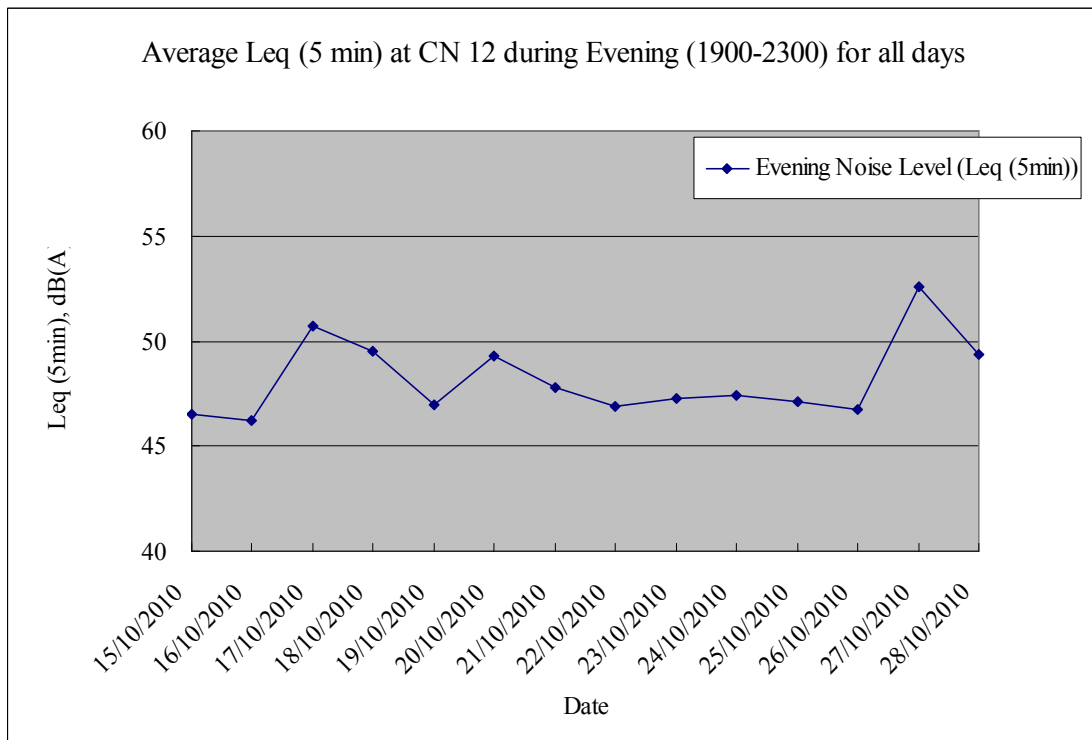
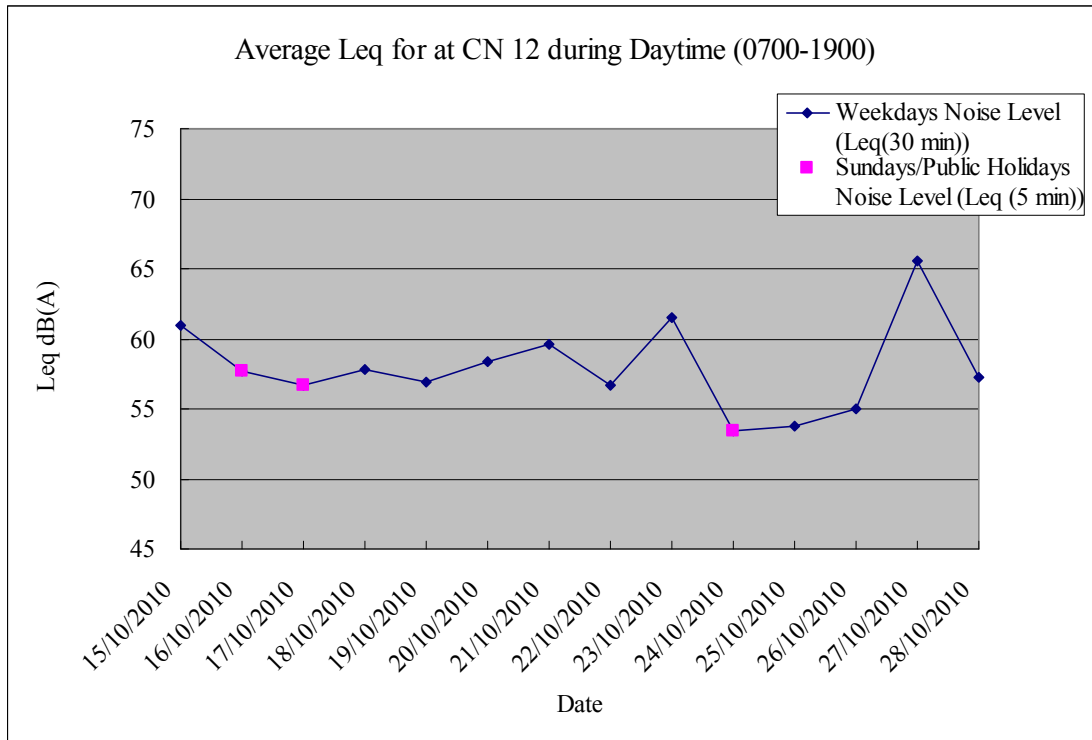
#### 4) Night-time (for all days) Noise Level, dB(A)

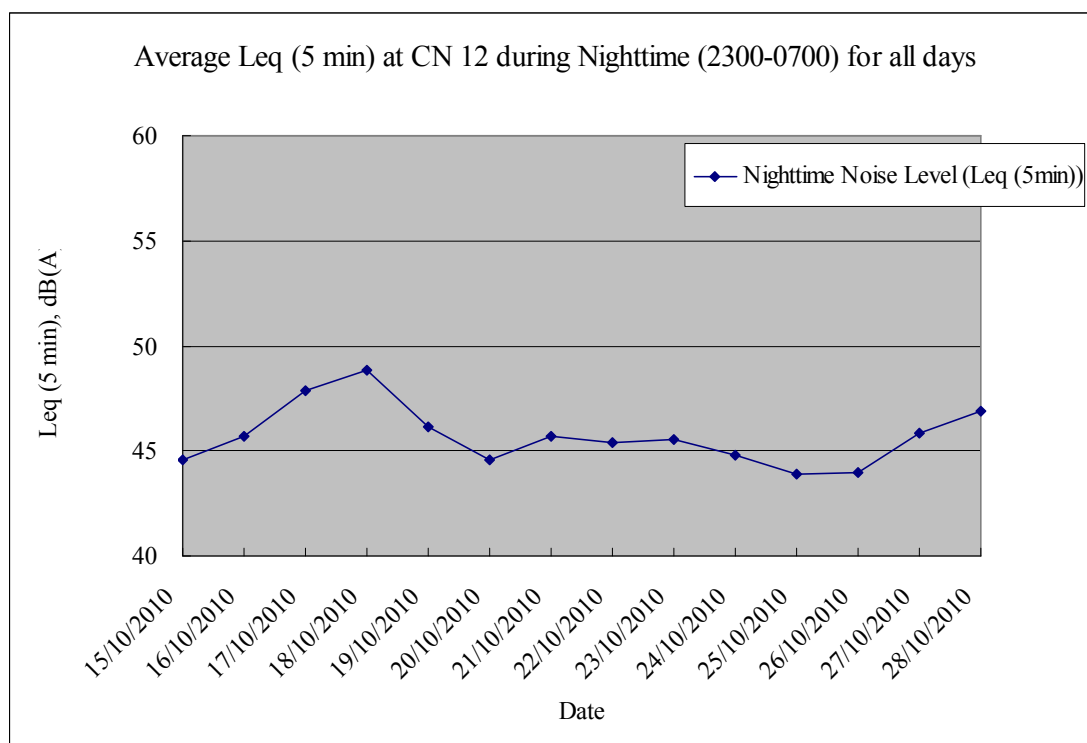
| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 23:00-23:15 | 46.2      | 48.5 | 42.4 |
|             | 44.1      | 45.8 | 41.9 |
|             | 44.1      | 45.9 | 41.3 |
| 23:15-23:30 | 44.5      | 46.4 | 41.7 |
|             | 45.8      | 48.1 | 41.9 |
|             | 45.4      | 47.7 | 41.9 |
| 23:30-23:45 | 45.1      | 47.0 | 41.5 |
|             | 46.1      | 48.7 | 42.0 |
|             | 44.6      | 46.5 | 41.7 |
| 23:45-00:00 | 44.8      | 46.6 | 42.1 |
|             | 45.9      | 48.5 | 42.4 |
|             | 46.2      | 48.4 | 42.6 |
| 00:00-00:15 | 47.5      | 50.8 | 42.1 |
|             | 46.6      | 48.5 | 43.6 |
|             | 45.8      | 47.9 | 42.2 |
| 00:15-00:30 | 44.6      | 46.5 | 41.7 |
|             | 44.2      | 46.1 | 41.4 |
|             | 45.5      | 47.8 | 41.8 |
| 00:30-00:45 | 43.3      | 44.7 | 41.3 |
|             | 43.7      | 45.5 | 41.5 |
|             | 43.7      | 45.2 | 41.2 |
| 00:45:01:00 | 44.8      | 47.0 | 41.3 |
|             | 44.6      | 47.2 | 41.1 |
|             | 43.7      | 45.3 | 40.8 |
| 01:00-01:15 | 44.4      | 46.2 | 41.2 |
|             | 44.4      | 46.5 | 41.1 |
|             | 43.9      | 45.4 | 40.5 |
| 01:15-01:30 | 43.5      | 45.9 | 40.7 |
|             | 43.2      | 45.1 | 41.0 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 46.8      | 50.4 | 41.7 |
| 01:30-01:45 | 44.2      | 46.7 | 41.2 |
|             | 44.0      | 46.4 | 41.3 |
|             | 43.6      | 45.8 | 41.0 |
| 01:45-02:00 | 43.8      | 45.8 | 40.8 |
|             | 43.4      | 45.4 | 40.6 |
|             | 43.2      | 45.0 | 40.6 |
| 02:00-02:15 | 44.1      | 47.6 | 40.7 |
|             | 43.8      | 45.5 | 40.6 |
|             | 43.0      | 45.3 | 40.2 |
| 02:15-02:30 | 42.5      | 44.5 | 40.3 |
|             | 46.7      | 49.5 | 40.3 |
|             | 47.1      | 51.2 | 40.7 |
| 02:30-02:45 | 43.2      | 45.1 | 40.9 |
|             | 43.4      | 45.5 | 40.4 |
|             | 45.0      | 46.9 | 41.3 |
| 02:45-03:00 | 45.2      | 47.7 | 41.5 |
|             | 44.1      | 46.7 | 41.0 |
|             | 45.8      | 48.9 | 41.3 |
| 03:00-03:15 | 45.1      | 46.8 | 41.4 |
|             | 45.1      | 47.0 | 41.6 |
|             | 45.5      | 47.2 | 41.7 |
| 03:15-03:30 | 44.8      | 46.7 | 40.8 |
|             | 43.9      | 45.9 | 40.2 |
|             | 45.2      | 47.3 | 41.6 |
| 03:30-03:45 | 45.2      | 47.2 | 41.2 |
|             | 45.1      | 47.0 | 41.7 |
|             | 44.3      | 46.2 | 40.6 |
| 03:45-04:00 | 44.8      | 46.4 | 42.4 |
|             | 44.8      | 46.8 | 41.1 |
|             | 44.6      | 46.7 | 41.3 |
| 04:00-04:15 | 44.4      | 47.0 | 40.6 |
|             | 43.9      | 45.7 | 41.1 |
|             | 44.4      | 46.6 | 40.2 |
| 04:15-04:30 | 44.9      | 46.8 | 41.8 |
|             | 45.3      | 47.1 | 41.4 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 45.6      | 47.5 | 42.3 |
| 04:30-04:45 | 44.7      | 46.6 | 41.6 |
|             | 45.4      | 48.6 | 41.3 |
|             | 44.8      | 46.7 | 42.1 |
| 04:45-05:00 | 45.7      | 47.6 | 42.3 |
|             | 45.8      | 47.4 | 41.5 |
|             | 45.6      | 47.2 | 41.8 |
| 05:00-05:15 | 45.9      | 48.1 | 43.4 |
|             | 45.3      | 47.0 | 43.4 |
|             | 46.1      | 47.9 | 43.4 |
| 05:15-05:30 | 45.7      | 47.2 | 42.3 |
|             | 47.7      | 49.2 | 45.9 |
|             | 46.7      | 48.7 | 40.1 |
| 05:30-05:45 | 46.4      | 47.8 | 42.3 |
|             | 46.1      | 47.8 | 43.5 |
|             | 46.1      | 47.9 | 42.5 |
| 05:45-06:00 | 46.8      | 48.7 | 43.2 |
|             | 47.3      | 48.7 | 43.7 |
|             | 47.5      | 49.1 | 44.5 |
| 06:00-06:15 | 47.9      | 49.3 | 44.5 |
|             | 47.8      | 49.6 | 42.3 |
|             | 48.3      | 50.0 | 42.2 |
| 06:15-06:30 | 48.4      | 50.9 | 42.3 |
|             | 50.2      | 52.7 | 43.7 |
|             | 49.3      | 52.1 | 43.6 |
| 06:30-06:45 | 49.1      | 51.9 | 43.1 |
|             | 51.6      | 54.9 | 44.0 |
|             | 52.0      | 55.0 | 43.9 |
| 06:45-07:00 | 50.9      | 53.6 | 43.9 |
|             | 48.8      | 51.3 | 44.1 |
|             | 49.2      | 51.9 | 44.1 |
| Average     | 46.1      | 48.3 | 42.0 |
| Max         | 52.0      | 55.0 | 45.9 |
| Min         | 42.5      | 44.5 | 40.1 |

Log average was used.





## Baseline Noise Monitoring Result

Location: CN 20 VTC Kwai Chung Training Centre Complex

Baseline monitoring period: 25/10/2010 to 7/11/2010

Parameter: Leq

Time Slot Averaged Baselines

### 1) Weekdays Daytime Noise Level, dB(A)

| Time slot   | Leq, 30 min | L10  | L90  |
|-------------|-------------|------|------|
| 07:00-07:30 | 68.3        | 70.4 | 65.6 |
| 07:30-08:00 | 69.3        | 71.1 | 66.8 |
| 08:00-08:30 | 70.5        | 72.3 | 68.4 |
| 08:30-09:00 | 71.0        | 72.5 | 69.2 |
| 09:00-09:30 | 71.0        | 72.4 | 69.1 |
| 09:30-10:00 | 71.1        | 72.8 | 69.0 |
| 10:00-10:30 | 71.1        | 72.7 | 69.0 |
| 10:30-11:00 | 71.0        | 72.4 | 69.1 |
| 11:00-11:30 | 70.9        | 72.4 | 68.9 |
| 11:30-12:00 | 70.8        | 72.3 | 68.8 |
| 12:00-12:30 | 70.4        | 72.1 | 68.3 |
| 12:30-13:00 | 70.4        | 72.0 | 68.3 |
| 13:00-13:30 | 70.4        | 71.9 | 68.3 |
| 13:30-14:00 | 70.6        | 72.1 | 68.4 |
| 14:00-14:30 | 70.9        | 72.7 | 68.7 |
| 14:30-15:00 | 70.6        | 72.2 | 68.7 |
| 15:00-15:30 | 70.5        | 71.9 | 68.6 |
| 15:30-16:00 | 70.4        | 71.9 | 68.4 |
| 16:00-16:30 | 70.3        | 71.7 | 68.4 |
| 16:30-17:00 | 70.3        | 71.8 | 68.3 |
| 17:00-17:30 | 70.2        | 71.7 | 68.1 |
| 17:30-18:00 | 69.8        | 71.5 | 67.7 |
| 18:00-18:30 | 69.6        | 71.3 | 67.4 |
| 18:30-19:00 | 69.3        | 70.9 | 67.1 |
| Average     | 70.4        | 72.0 | 68.3 |
| Max         | 71.1        | 72.8 | 69.2 |
| Min         | 68.3        | 70.4 | 65.6 |

## Noise Control Period Averaged Baselines

### 2) Weekdays Evening Noise Level, dB(A)

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 19:00-19:15 | 68.7      | 70.6 | 66.4 |
|             | 68.9      | 70.7 | 66.3 |
|             | 68.6      | 70.4 | 66.1 |
| 19:15-19:30 | 68.5      | 70.2 | 66.3 |
|             | 68.4      | 70.5 | 65.7 |
|             | 68.4      | 70.4 | 65.9 |
| 19:30-19:45 | 68.3      | 70.3 | 65.7 |
|             | 68.0      | 69.9 | 65.4 |
|             | 67.6      | 69.3 | 65.2 |
| 19:45-20:00 | 67.6      | 69.5 | 65.1 |
|             | 67.6      | 69.5 | 65.0 |
|             | 67.3      | 69.3 | 64.8 |
| 20:00-20:15 | 67.3      | 69.3 | 64.8 |
|             | 67.1      | 69.0 | 64.4 |
|             | 67.2      | 69.0 | 64.6 |
| 20:15-20:30 | 67.3      | 69.4 | 64.5 |
|             | 67.3      | 69.1 | 64.5 |
|             | 67.2      | 69.4 | 64.3 |
| 20:30-20:45 | 67.0      | 68.9 | 64.4 |
|             | 66.8      | 68.8 | 64.2 |
|             | 66.6      | 68.5 | 64.2 |
| 20:45-21:00 | 66.9      | 68.9 | 64.0 |
|             | 66.6      | 68.6 | 63.9 |
|             | 67.1      | 69.4 | 64.0 |
| 21:00-21:15 | 67.3      | 69.7 | 64.0 |
|             | 66.6      | 68.6 | 63.9 |
|             | 66.3      | 68.4 | 63.6 |
| 21:15-21:30 | 66.4      | 68.2 | 63.5 |
|             | 66.1      | 68.2 | 63.5 |
|             | 66.4      | 68.5 | 63.5 |
| 21:30-21:45 | 66.6      | 68.9 | 63.6 |
|             | 66.1      | 68.0 | 63.5 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 66.5      | 68.7 | 63.5 |
| 21:45-22:00 | 66.4      | 68.4 | 63.3 |
|             | 66.1      | 68.3 | 63.1 |
|             | 66.0      | 68.2 | 63.1 |
| 22:00-22:15 | 65.9      | 67.9 | 63.2 |
|             | 66.5      | 68.8 | 63.3 |
|             | 67.2      | 69.4 | 63.9 |
| 22:15-22:30 | 66.2      | 68.6 | 62.9 |
|             | 65.9      | 68.0 | 62.9 |
|             | 65.4      | 67.3 | 62.6 |
| 22:30-22:45 | 65.5      | 67.6 | 62.7 |
|             | 65.4      | 67.4 | 62.7 |
|             | 65.8      | 67.9 | 62.5 |
| 22:45-23:00 | 65.5      | 67.6 | 62.6 |
|             | 65.6      | 67.6 | 62.5 |
|             | 65.8      | 67.8 | 62.9 |
| Average     | 67.0      | 69.0 | 64.2 |
| Max         | 68.9      | 70.7 | 66.4 |
| Min         | 65.4      | 67.3 | 62.5 |

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

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 0700-07:15  | 65.4      | 67.7 | 62.8 |
|             | 65.7      | 67.9 | 62.7 |
|             | 65.5      | 67.6 | 62.7 |
| 07:15-07:30 | 65.5      | 68.1 | 62.5 |
|             | 66.3      | 68.5 | 63.7 |
|             | 65.4      | 67.6 | 62.7 |
| 07:30-07:45 | 65.5      | 67.5 | 63.0 |
|             | 66.0      | 68.3 | 63.0 |
|             | 65.6      | 67.4 | 63.2 |
| 07:45-08:00 | 65.8      | 67.6 | 62.7 |
|             | 65.6      | 67.5 | 63.1 |
|             | 65.7      | 67.9 | 63.2 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 08:00-08:15 | 66.1      | 68.1 | 63.5 |
|             | 66.3      | 68.7 | 63.2 |
|             | 65.9      | 68.1 | 63.1 |
| 08:15-08:30 | 66.5      | 68.4 | 64.1 |
|             | 67.0      | 68.9 | 63.9 |
|             | 65.9      | 67.8 | 63.2 |
| 08:30-08:45 | 65.5      | 67.6 | 63.1 |
|             | 66.3      | 68.5 | 63.7 |
|             | 66.3      | 68.2 | 64.0 |
| 08:45-09:00 | 65.6      | 67.6 | 63.2 |
|             | 66.1      | 68.4 | 63.4 |
|             | 65.4      | 67.6 | 62.7 |
| 09:00-09:15 | 65.9      | 68.2 | 63.2 |
|             | 65.3      | 67.3 | 62.9 |
|             | 66.6      | 68.3 | 64.0 |
| 09:15-09:30 | 66.3      | 68.3 | 63.5 |
|             | 66.1      | 67.8 | 63.6 |
|             | 66.2      | 68.2 | 63.5 |
| 09:30-09:45 | 66.2      | 68.1 | 63.7 |
|             | 66.8      | 69.4 | 63.9 |
|             | 66.2      | 68.4 | 63.6 |
| 09:45-10:00 | 65.8      | 67.6 | 63.6 |
|             | 66.1      | 68.1 | 63.4 |
|             | 66.5      | 68.1 | 63.8 |
| 10:00-10:15 | 65.8      | 67.6 | 63.6 |
|             | 66.0      | 68.1 | 63.3 |
|             | 65.6      | 67.5 | 63.1 |
| 10:15-10:30 | 65.4      | 67.3 | 63.2 |
|             | 66.0      | 67.8 | 63.6 |
|             | 65.8      | 68.1 | 62.7 |
| 10:30-10:45 | 66.0      | 68.5 | 63.2 |
|             | 66.3      | 68.4 | 63.5 |
|             | 65.7      | 68.0 | 63.3 |
| 10:45-11:00 | 65.6      | 67.6 | 63.3 |
|             | 65.7      | 67.9 | 63.1 |
|             | 66.1      | 68.3 | 63.2 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 11:00-11:15 | 66.4      | 68.8 | 63.4 |
|             | 65.8      | 68.0 | 63.4 |
|             | 66.3      | 68.3 | 63.6 |
| 11:15-11:30 | 66.3      | 68.5 | 63.8 |
|             | 65.6      | 67.3 | 63.4 |
|             | 66.0      | 68.0 | 63.7 |
| 11:30-11:45 | 66.7      | 69.1 | 63.9 |
|             | 66.2      | 68.2 | 63.7 |
|             | 66.1      | 68.4 | 63.6 |
| 11:45-12:00 | 66.0      | 68.1 | 63.7 |
|             | 66.4      | 68.4 | 63.9 |
|             | 65.8      | 67.5 | 63.6 |
| 12:00-12:15 | 70.9      | 72.5 | 69.0 |
|             | 66.2      | 68.2 | 63.9 |
|             | 66.2      | 68.1 | 63.8 |
| 12:15-12:30 | 66.0      | 67.8 | 63.7 |
|             | 67.0      | 69.5 | 63.5 |
|             | 65.6      | 67.1 | 63.9 |
| 12:30-12:45 | 66.2      | 67.9 | 63.7 |
|             | 66.2      | 68.2 | 63.7 |
|             | 66.3      | 67.9 | 64.1 |
| 12:45-13:00 | 66.9      | 69.0 | 64.4 |
|             | 67.0      | 69.1 | 64.2 |
|             | 66.4      | 68.5 | 63.8 |
| 13:00-13:15 | 66.5      | 68.6 | 64.1 |
|             | 66.4      | 68.5 | 63.9 |
|             | 66.4      | 68.1 | 63.9 |
| 13:15-13:30 | 65.7      | 67.4 | 63.6 |
|             | 66.6      | 68.5 | 63.7 |
|             | 66.7      | 68.7 | 63.9 |
| 13:30-13:45 | 66.2      | 67.9 | 64.1 |
|             | 66.8      | 68.4 | 64.6 |
|             | 67.1      | 69.1 | 64.5 |
| 13:45-14:00 | 66.1      | 67.9 | 64.1 |
|             | 66.5      | 68.5 | 64.0 |
|             | 66.0      | 68.1 | 63.7 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 14:00-14:15 | 66.0      | 67.9 | 63.9 |
|             | 66.7      | 68.8 | 63.9 |
|             | 65.9      | 67.7 | 63.5 |
| 14:15-14:30 | 66.7      | 68.5 | 64.3 |
|             | 66.4      | 68.3 | 64.0 |
|             | 66.4      | 68.2 | 63.9 |
| 14:30-14:45 | 66.0      | 67.9 | 63.5 |
|             | 66.3      | 68.2 | 63.8 |
|             | 66.5      | 68.5 | 63.5 |
| 14:45-15:00 | 66.3      | 68.5 | 63.6 |
|             | 66.3      | 68.0 | 64.0 |
|             | 66.5      | 68.1 | 64.5 |
| 15:00-15:15 | 66.1      | 67.9 | 63.4 |
|             | 66.1      | 67.5 | 64.3 |
|             | 66.3      | 68.1 | 63.9 |
| 15:15-15:30 | 66.1      | 68.0 | 63.5 |
|             | 66.0      | 67.6 | 63.9 |
|             | 65.8      | 67.8 | 63.3 |
| 15:30-15:45 | 66.0      | 67.7 | 63.7 |
|             | 66.4      | 68.4 | 63.6 |
|             | 66.5      | 68.3 | 64.1 |
| 15:45-16:00 | 66.8      | 68.5 | 64.5 |
|             | 66.4      | 68.2 | 64.3 |
|             | 67.0      | 68.9 | 64.7 |
| 16:00-16:15 | 67.3      | 69.2 | 64.4 |
|             | 66.2      | 67.9 | 64.3 |
|             | 67.1      | 68.8 | 64.8 |
| 16:15-16:30 | 67.2      | 69.0 | 65.0 |
|             | 66.9      | 68.6 | 64.4 |
|             | 66.7      | 68.4 | 64.6 |
| 16:30-16:45 | 66.4      | 67.8 | 64.6 |
|             | 66.6      | 68.1 | 64.7 |
|             | 66.7      | 68.5 | 64.1 |
| 16:45-17:00 | 66.6      | 68.6 | 64.4 |
|             | 66.4      | 67.7 | 64.5 |
|             | 66.8      | 68.8 | 64.6 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 17:00-17:15 | 67.0      | 68.6 | 64.4 |
|             | 66.7      | 68.6 | 64.1 |
|             | 66.2      | 67.7 | 63.8 |
| 17:15-17:30 | 66.3      | 68.1 | 64.1 |
|             | 66.7      | 68.8 | 64.1 |
|             | 66.4      | 67.9 | 64.2 |
| 17:30-17:45 | 68.9      | 70.3 | 67.3 |
|             | 66.5      | 68.7 | 63.8 |
|             | 66.3      | 68.0 | 64.4 |
| 17:45-18:00 | 65.7      | 67.2 | 63.5 |
|             | 65.8      | 67.5 | 63.4 |
|             | 66.3      | 68.3 | 63.5 |
| 18:00-18:15 | 65.8      | 67.6 | 63.1 |
|             | 65.4      | 67.1 | 63.2 |
|             | 66.2      | 68.2 | 63.7 |
| 18:15-18:30 | 65.8      | 67.7 | 63.3 |
|             | 68.5      | 70.1 | 66.8 |
|             | 66.0      | 68.0 | 63.5 |
| 18:30-18:45 | 65.7      | 67.6 | 63.2 |
|             | 66.0      | 67.7 | 63.7 |
|             | 64.9      | 66.7 | 62.6 |
| 18:45-19:00 | 65.6      | 67.6 | 63.1 |
|             | 65.5      | 67.5 | 62.6 |
|             | 65.5      | 67.6 | 62.9 |
| 19:00-19:15 | 65.1      | 67.2 | 62.3 |
|             | 65.4      | 67.2 | 62.7 |
|             | 66.1      | 68.3 | 63.1 |
| 19:15-19:30 | 65.8      | 68.2 | 62.6 |
|             | 65.4      | 67.7 | 62.3 |
|             | 64.9      | 67.0 | 61.9 |
| 19:30-19:45 | 65.0      | 67.2 | 62.5 |
|             | 64.8      | 66.9 | 62.0 |
|             | 64.3      | 66.1 | 62.1 |
| 19:45-20:00 | 64.8      | 67.0 | 61.5 |
|             | 64.6      | 66.9 | 61.5 |
|             | 64.5      | 66.4 | 61.9 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 20:00-20:15 | 64.7      | 66.7 | 62.1 |
|             | 64.6      | 66.5 | 62.0 |
|             | 65.0      | 67.3 | 61.8 |
| 20:15-20:30 | 65.1      | 66.9 | 62.6 |
|             | 64.7      | 66.8 | 61.8 |
|             | 64.6      | 66.8 | 61.6 |
| 20:30-20:45 | 64.5      | 66.7 | 61.9 |
|             | 64.4      | 66.4 | 61.6 |
|             | 64.8      | 66.8 | 62.1 |
| 20:45-21:00 | 65.3      | 67.6 | 62.2 |
|             | 65.1      | 67.0 | 61.8 |
|             | 64.9      | 67.0 | 61.7 |
| 21:00-21:15 | 64.8      | 67.1 | 61.7 |
|             | 64.8      | 66.8 | 62.2 |
|             | 67.0      | 68.4 | 65.2 |
| 21:15-21:30 | 64.8      | 67.0 | 61.8 |
|             | 64.2      | 66.2 | 61.8 |
|             | 64.5      | 66.4 | 61.5 |
| 21:30-21:45 | 65.1      | 67.5 | 61.7 |
|             | 65.3      | 67.6 | 62.2 |
|             | 65.0      | 67.1 | 62.1 |
| 21:45-22:00 | 64.9      | 67.3 | 61.7 |
|             | 64.8      | 66.9 | 61.7 |
|             | 64.5      | 66.8 | 61.8 |
| 22:00-22:15 | 65.3      | 67.1 | 62.4 |
|             | 65.2      | 67.4 | 62.5 |
|             | 65.0      | 67.0 | 62.1 |
| 22:15-22:30 | 65.9      | 67.8 | 62.6 |
|             | 64.9      | 67.0 | 62.0 |
|             | 64.8      | 66.9 | 62.1 |
| 22:30-22:45 | 64.8      | 66.8 | 62.0 |
|             | 64.6      | 66.7 | 61.6 |
|             | 64.9      | 67.1 | 61.9 |
| 22:45-23:00 | 65.4      | 67.9 | 62.2 |
|             | 65.8      | 67.3 | 61.5 |
|             | 64.4      | 66.7 | 61.1 |

| Time Slot | Leq, 5min | L10  | L90  |
|-----------|-----------|------|------|
| Average   | 66.0      | 68.0 | 63.5 |
| Max       | 70.9      | 72.5 | 69.0 |
| Min       | 64.2      | 66.1 | 61.1 |

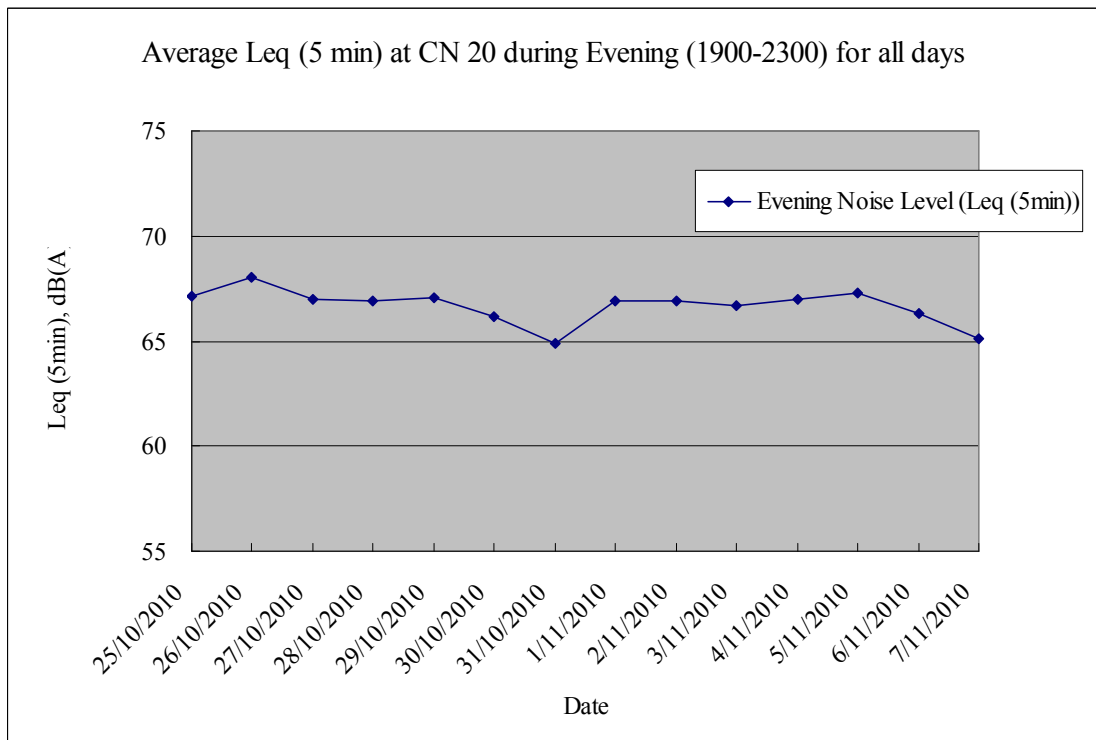
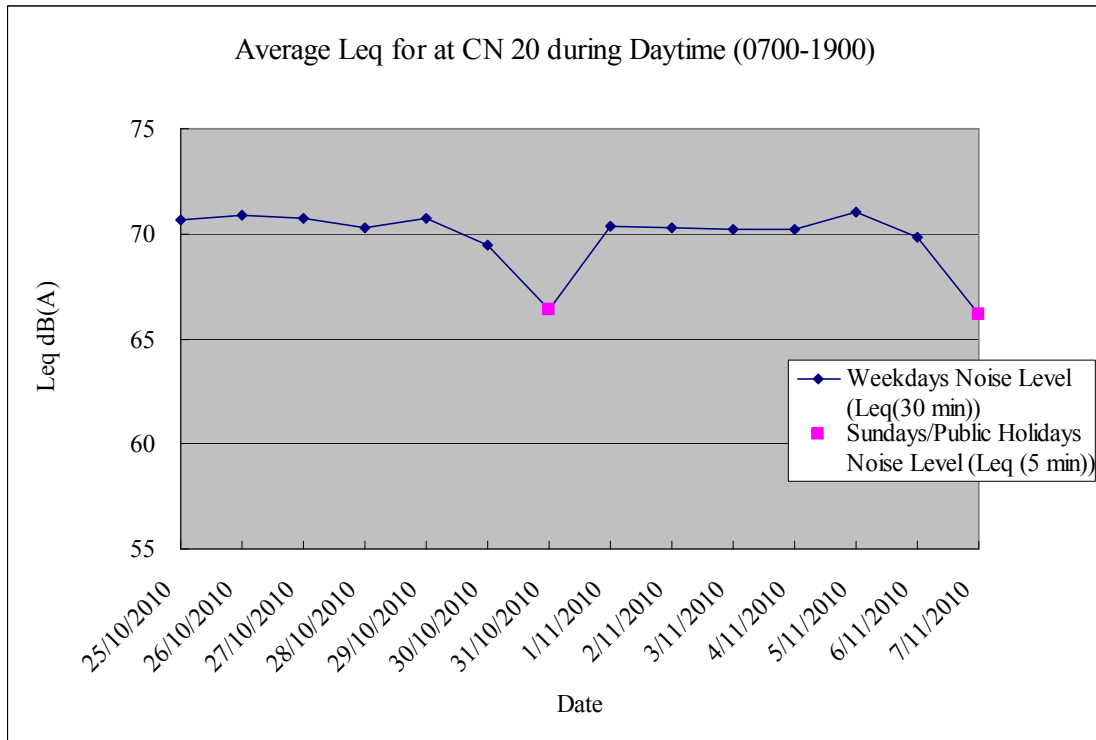
#### 4) Night-time (for all days) Noise Level, dB(A)

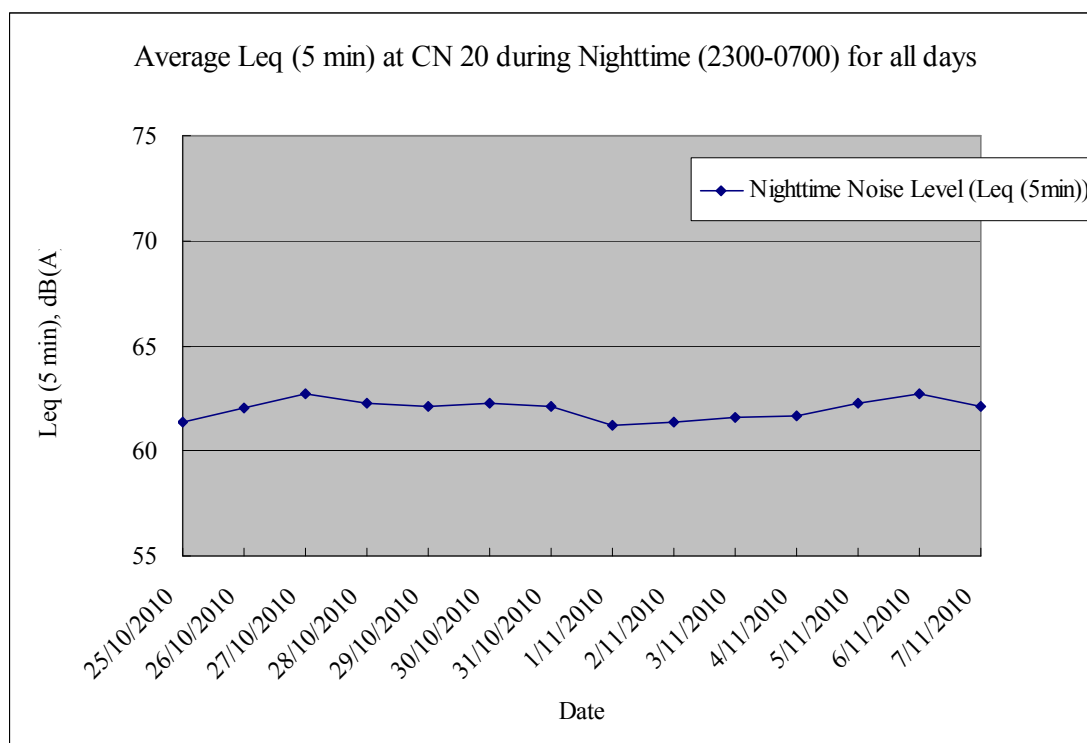
| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
| 23:00-23:15 | 65.6      | 67.7 | 62.4 |
|             | 65.1      | 67.3 | 62.0 |
|             | 65.0      | 67.2 | 62.0 |
| 23:15-23:30 | 65.3      | 67.5 | 62.4 |
|             | 65.3      | 67.4 | 62.7 |
|             | 65.0      | 67.2 | 61.7 |
| 23:30-23:45 | 64.9      | 67.2 | 61.8 |
|             | 65.1      | 67.7 | 61.6 |
|             | 64.8      | 67.2 | 61.5 |
| 23:45-00:00 | 64.4      | 66.8 | 61.2 |
|             | 64.9      | 67.3 | 61.2 |
|             | 64.3      | 66.6 | 61.0 |
| 00:00-00:15 | 64.6      | 66.8 | 61.2 |
|             | 64.4      | 66.9 | 60.9 |
|             | 64.5      | 66.7 | 60.8 |
| 00:15-00:30 | 64.6      | 67.1 | 60.9 |
|             | 63.9      | 66.3 | 60.4 |
|             | 63.8      | 66.2 | 60.4 |
| 00:30-00:45 | 63.7      | 66.2 | 59.9 |
|             | 63.8      | 66.1 | 60.0 |
|             | 63.1      | 65.4 | 59.6 |
| 00:45:01:00 | 62.7      | 65.0 | 59.4 |
|             | 62.8      | 65.2 | 59.4 |
|             | 62.7      | 65.3 | 59.0 |
| 01:00-01:15 | 62.5      | 65.2 | 58.9 |
|             | 62.8      | 65.4 | 58.8 |
|             | 62.4      | 64.7 | 58.9 |
| 01:15-01:30 | 62.7      | 65.0 | 59.0 |
|             | 62.5      | 64.5 | 58.1 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 63.0      | 65.7 | 58.5 |
| 01:30-01:45 | 61.6      | 63.9 | 58.1 |
|             | 62.0      | 64.3 | 58.3 |
|             | 61.4      | 63.9 | 57.6 |
| 01:45-02:00 | 61.6      | 63.9 | 57.9 |
|             | 62.2      | 64.6 | 58.1 |
|             | 61.2      | 63.7 | 57.8 |
| 02:00-02:15 | 61.6      | 64.0 | 57.9 |
|             | 61.8      | 64.2 | 57.8 |
|             | 61.1      | 63.3 | 57.9 |
| 02:15-02:30 | 61.3      | 63.6 | 57.4 |
|             | 60.8      | 63.1 | 57.3 |
|             | 60.9      | 63.3 | 57.2 |
| 02:30-02:45 | 60.9      | 63.2 | 57.3 |
|             | 60.8      | 63.2 | 57.3 |
|             | 60.9      | 63.3 | 57.1 |
| 02:45-03:00 | 61.5      | 64.1 | 57.3 |
|             | 60.7      | 62.9 | 57.2 |
|             | 60.5      | 63.0 | 57.0 |
| 03:00-03:15 | 61.0      | 63.2 | 57.3 |
|             | 60.6      | 62.6 | 56.9 |
|             | 60.5      | 62.9 | 57.1 |
| 03:15-03:30 | 60.4      | 62.9 | 57.1 |
|             | 60.7      | 63.1 | 57.1 |
|             | 60.5      | 62.8 | 57.0 |
| 03:30-03:45 | 60.6      | 62.9 | 57.0 |
|             | 60.6      | 63.0 | 57.0 |
|             | 60.7      | 63.0 | 57.3 |
| 03:45-04:00 | 60.3      | 62.6 | 57.1 |
|             | 60.4      | 62.7 | 57.1 |
|             | 60.6      | 63.1 | 57.3 |
| 04:00-04:15 | 61.0      | 63.1 | 57.5 |
|             | 61.0      | 63.4 | 57.4 |
|             | 61.0      | 63.5 | 57.5 |
| 04:15-04:30 | 60.8      | 63.0 | 57.7 |
|             | 61.2      | 63.5 | 57.9 |

| Time Slot   | Leq, 5min | L10  | L90  |
|-------------|-----------|------|------|
|             | 61.5      | 63.9 | 58.1 |
| 04:30-04:45 | 60.9      | 63.1 | 57.9 |
|             | 61.4      | 63.7 | 58.1 |
|             | 60.9      | 63.2 | 57.8 |
| 04:45-05:00 | 61.1      | 63.4 | 57.9 |
|             | 61.3      | 63.4 | 58.0 |
|             | 61.9      | 64.4 | 58.4 |
| 05:00-05:15 | 62.1      | 64.5 | 58.6 |
|             | 61.6      | 64.0 | 58.1 |
|             | 62.1      | 64.4 | 58.7 |
| 05:15-05:30 | 62.1      | 64.5 | 58.8 |
|             | 61.7      | 64.1 | 58.4 |
|             | 62.3      | 64.7 | 58.8 |
| 05:30-05:45 | 62.0      | 64.2 | 58.6 |
|             | 62.5      | 64.8 | 59.1 |
|             | 62.8      | 65.2 | 59.5 |
| 05:45-06:00 | 62.9      | 65.3 | 59.3 |
|             | 63.5      | 66.2 | 59.5 |
|             | 63.6      | 66.3 | 59.6 |
| 06:00-06:15 | 64.0      | 66.6 | 59.7 |
|             | 64.3      | 66.8 | 60.5 |
|             | 64.6      | 67.1 | 60.7 |
| 06:15-06:30 | 64.3      | 67.0 | 60.6 |
|             | 65.0      | 67.6 | 61.3 |
|             | 65.2      | 67.7 | 61.4 |
| 06:30-06:45 | 66.5      | 68.8 | 62.4 |
|             | 66.0      | 68.5 | 62.4 |
|             | 66.0      | 68.3 | 62.7 |
| 06:45-07:00 | 66.0      | 68.5 | 62.6 |
|             | 67.2      | 69.4 | 63.6 |
|             | 67.2      | 69.2 | 64.0 |
| Average     | 63.1      | 65.5 | 59.6 |
| Max         | 67.2      | 69.4 | 64.0 |
| Min         | 60.3      | 62.6 | 56.9 |

Log average was used.





## **Appendix C**

# **Calibration Certificates for Monitoring Equipments**

ThermoFisher  
SCIENTIFIC  
27 FORGE PARKWAY  
FRANKLIN MA 02038  
TOLL FREE: 866-282-0430  
TEL: 508-553-6949  
FAX: 508-541-8366  
[www.thermofisher.com](http://www.thermofisher.com)

## PDR1000 CALIBRATION CERTIFICATE

This calibration is traceable to the National Institute of Standards and Testing

|                                      |              |              |
|--------------------------------------|--------------|--------------|
| <u>SERIAL NUMBER:</u>                | <u>4243</u>  |              |
| <u>CALIBRATION RATIO:</u>            | <u>1</u>     |              |
| <u>AVG. PDR CONCENTRATION:</u>       | <u>1.29</u>  | <u>mg/m3</u> |
| <u>MASTER AVG CONCENTRATION:</u>     | <u>1.03</u>  | <u>mg/m3</u> |
| <u>PDR BACKGROUND CONCENTRATION:</u> | <u>0.239</u> | <u>mg/m3</u> |

|                     |           |          |
|---------------------|-----------|----------|
| <u>TEMPERATURE:</u> | <u>72</u> | <u>F</u> |
| <u>RH:</u>          | <u>39</u> | <u>%</u> |

|                     |           |
|---------------------|-----------|
| CALIBRATION MASTER: | D325      |
| LAST CALIBRATED:    | 29/7/2008 |

TECHNICIAN: R.A.

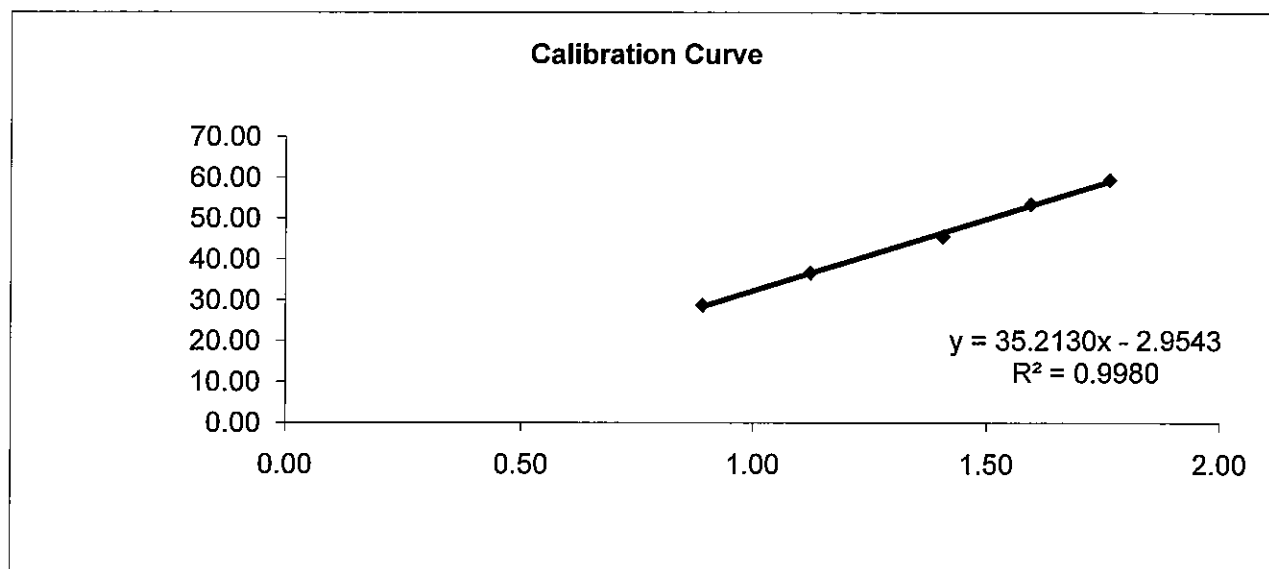
DATE: 26/8/2008

# Ove Arup Partners (Hong Kong) Limited

## High Volume Air Sampler Calibration Worksheet

|                                                 |                        |                     |             |
|-------------------------------------------------|------------------------|---------------------|-------------|
| Calibration date                                | 7-Jul-10               | Barometric pressure | 754.5 mm Hg |
| Next Calibration date                           | 3-Jan-11               | Temperature (°C)    | 28.8 °C     |
| Sampler location                                | AM6 - 630 Sheung Tsuen | Temperature (K)     | 301.8 K     |
| Sampler model                                   | TE-5170                | P <sub>std</sub>    | 760 mm Hg   |
| Sampler serial number                           | 469                    | T <sub>std</sub>    | 298 K       |
|                                                 |                        |                     |             |
| Calibrator model                                | GMW-2535               |                     |             |
| Calibrator serial number                        | 1378                   |                     |             |
| Slope of the standard curve, m <sub>s</sub>     | 2.00078                |                     |             |
| Intercept of the standard curve, b <sub>s</sub> | -0.01075               |                     |             |

| Resistance Plate No. | Manometer Reading (inch H <sub>2</sub> O) | Flow Recorder Reading (CFM) | Calculated Q <sub>std</sub> (m <sup>3</sup> /min) | Continuous Flow Recorder Reading IC (CFM) |
|----------------------|-------------------------------------------|-----------------------------|---------------------------------------------------|-------------------------------------------|
| 5                    | 3.20                                      | 29.00                       | 0.89                                              | 28.71                                     |
| 7                    | 5.10                                      | 37.00                       | 1.12                                              | 36.63                                     |
| 10                   | 8.00                                      | 46.00                       | 1.41                                              | 45.54                                     |
| 13                   | 10.30                                     | 54.00                       | 1.59                                              | 53.46                                     |
| 18                   | 12.60                                     | 60.00                       | 1.76                                              | 59.40                                     |



### Linear Regression

Sampler slope (m) : **35.2130**  
 Sampler intercept (b) : **-2.9543**  
 Correlation coefficient (R<sup>2</sup>) : **0.9980**

Correlation coefficient is greater than 0.9900 and the calibration result is accepted.

Performed by:   
 Checked by:   
 Approved by: 

Date: 7 July 2010  
 Date: 7 July 2010  
 Date: 7 July 2010

**CERTIFICATE OF CALIBRATION**

Certificate No. : 2KS100612-5

Page 1 of 2

**Calibration of :**

|                      |                   |   |            |
|----------------------|-------------------|---|------------|
| <b>Description :</b> | Sound Level Meter | , | Microphone |
| <b>Manufacture :</b> | Brüel & Kjær      |   |            |
| <b>Type No. :</b>    | 2250              | , | 4950       |
| <b>Serial No. :</b>  | 2718884           |   | 2698644    |

**Client :**

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

**Calibration Conditions :**

|                            |       |     |
|----------------------------|-------|-----|
| <b>Air Temperature :</b>   | 23    | °C  |
| <b>Air Pressure :</b>      | 101.9 | kPa |
| <b>Relative Humidity :</b> | 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 : 21 June, 2010

Calibrated By :



Dai Bin

Certificate issued : 22 June, 2010

Approved signatory :



Jacky Leung

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

# CERTIFICATE OF CALIBRATION

**Certificate No. :** 2KS100612-5

**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.

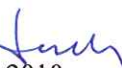
| Test :              | Subtest :             | Status : |
|---------------------|-----------------------|----------|
| Noise               | A                     | OK       |
| Noise               | C                     | OK       |
| Noise               | Lin                   | OK       |
| Frequency 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 &amp; Kjær's Sound Level Meter Calibration System B&amp;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      | 11 Aug 2009      | NPL via B&K (DANAK) |

 Calibrated By :   
 Date : 21 June 2010

 Checked By :   
 Date : 22 June, 2010



## CERTIFICATE OF CALIBRATION

Certificate No. : 2KS100612-13

Page 1 of 2

### Calibration of :

|               |                   |   |            |
|---------------|-------------------|---|------------|
| Description : | Sound Level Meter | , | Microphone |
| Manufacture : | Brüel & Kjær      |   |            |
| Type No. :    | 2250              | , | 4950       |
| Serial No. :  | 2718892           |   | 2698652    |

### 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 : 21 June, 2010

Calibrated By :

Certificate issued : 22 June, 2010

Approved signatory :

Dai Bin

Jacky Leung

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# CERTIFICATE OF CALIBRATION

**Certificate No. :** 2KS100612-13

**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.

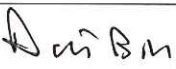
" - " Means the result of the (sub)test is Outside these tolerances.

| 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 &amp; Kjær's Sound Level Meter Calibration System B&amp;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       | 1843103      | 11 Aug 2009      | NPL via B&K (DANAK) |

 Calibrated By :   
 Date : 21 June 2010

 Checked By :   
 Date : 22 June, 2010

**CERTIFICATE OF CALIBRATION****Certificate No. :** 2KS100612-15**Page 1 of 2****Calibration of :**

|                      |                   |   |            |
|----------------------|-------------------|---|------------|
| <b>Description :</b> | Sound Level Meter | , | Microphone |
| <b>Manufacture :</b> | Brüel & Kjær      |   |            |
| <b>Type No. :</b>    | 2250              | , | 4950       |
| <b>Serial No. :</b>  | 2718894           |   | 2698654    |

**Client :**

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

**Calibration Conditions :**

|                            |       |     |
|----------------------------|-------|-----|
| <b>Air Temperature :</b>   | 23    | °C  |
| <b>Air Pressure :</b>      | 101.9 | kPa |
| <b>Relative Humidity :</b> | 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 :**

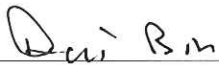
A list of the performed (sub) tests is stated on page 2 of this certificate. Actual Measurement are documented on worksheet.

Date of Calibration : 21 June, 2010

Calibrated By :

Certificate issued : 22 June, 2010

Approved signatory :

  
Dai Bin  
Jacky Leung

Reproduction of the complete certificate is allowed. Parts of the certificate may only be reproduced after written permission.

# CERTIFICATE OF CALIBRATION

**Certificate No. :** 2KS100612-15

**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      | 11 Aug 2009      | NPL via B&K (DANAK) |

 Calibrated By : *Dai R.m*  
 Date : 21 June 2010

 Checked By : *Andy*  
 Date : 22 June, 2010

## **Appendix D**

### **Figures**

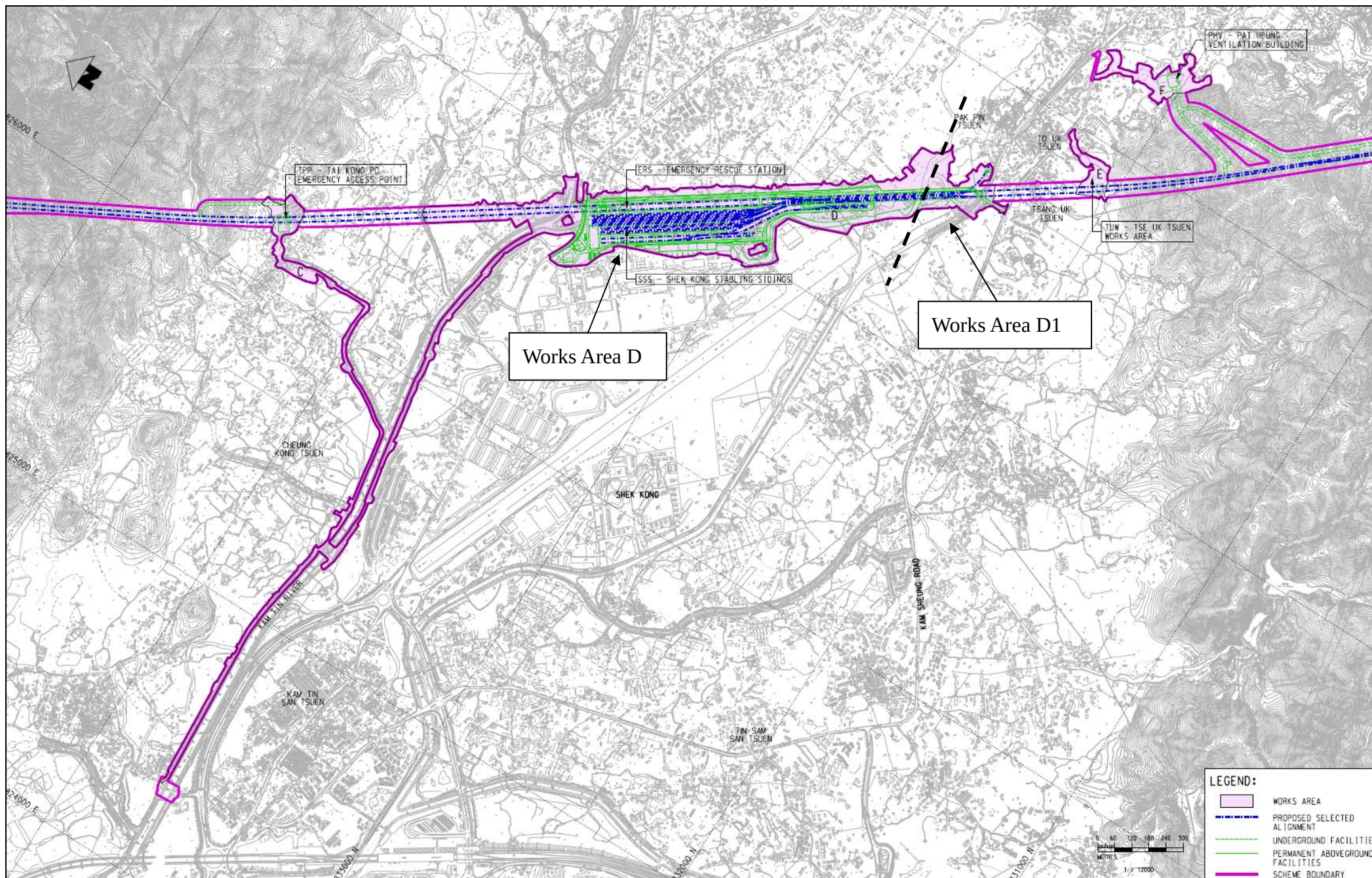


**Figure 1 – Works Areas D and D1**

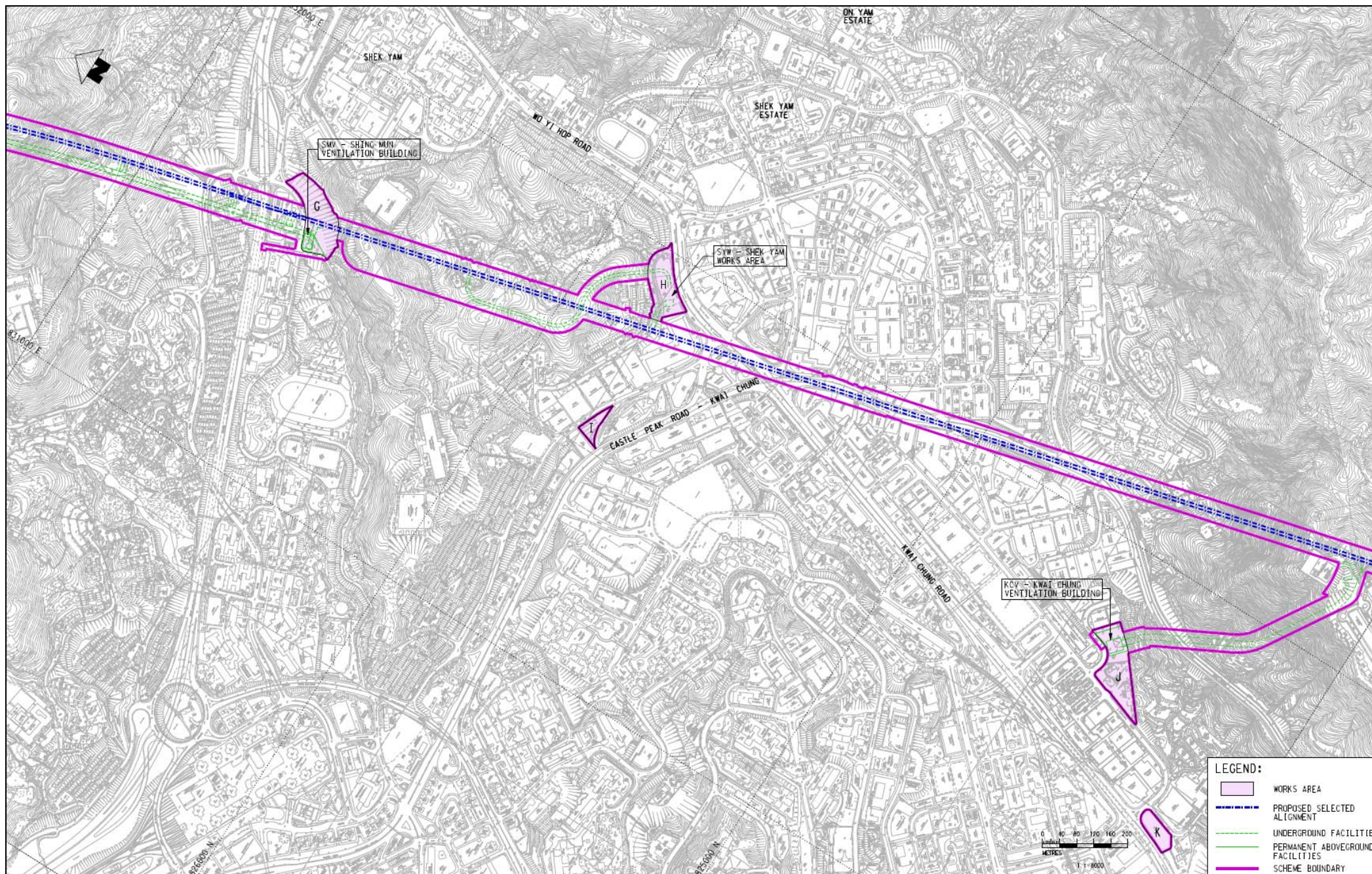


Figure 1 – Works Area K

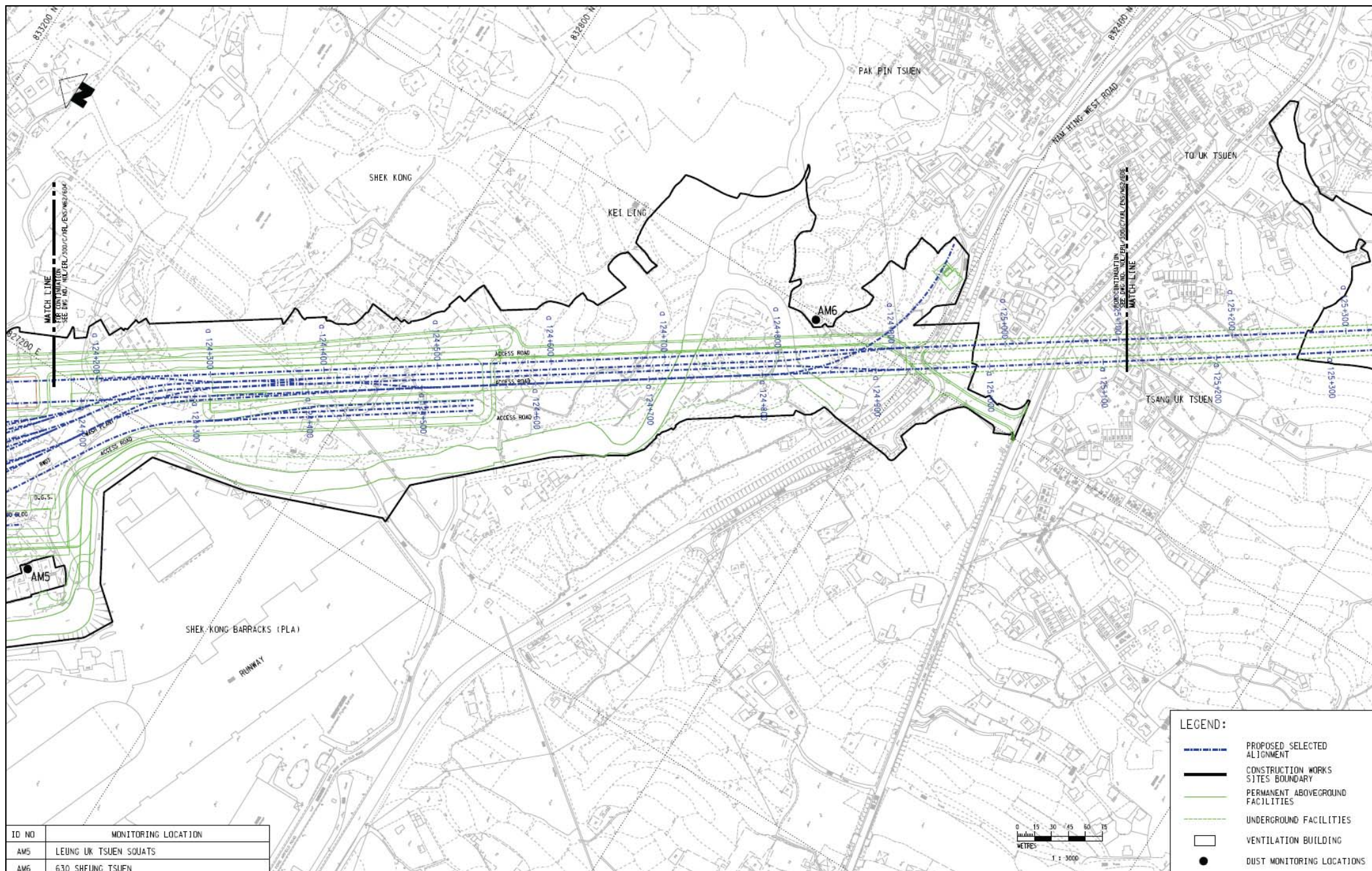


Figure 2 – Dust Monitoring Location

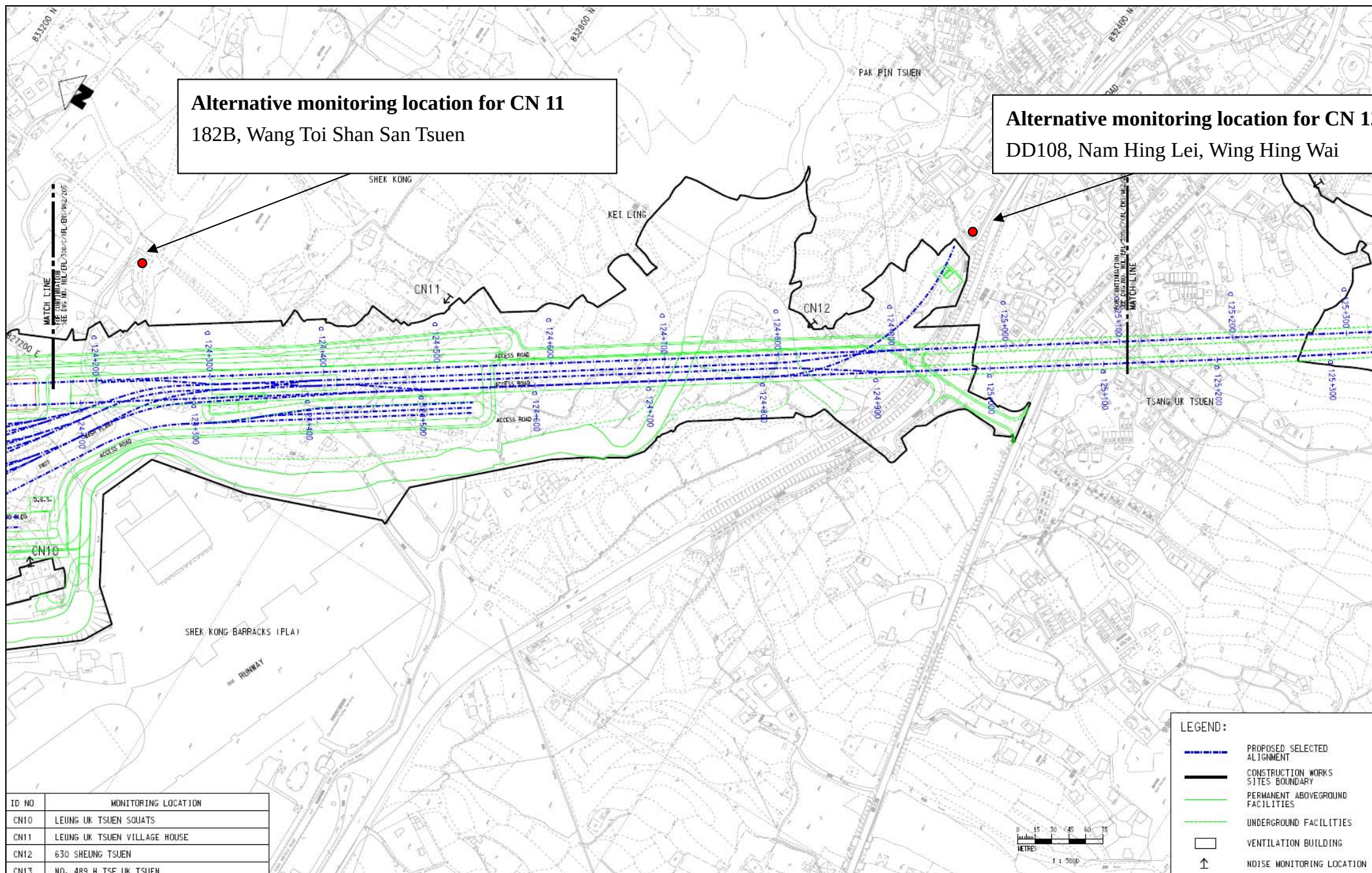


**Figure 3 – Noise Monitoring Location**

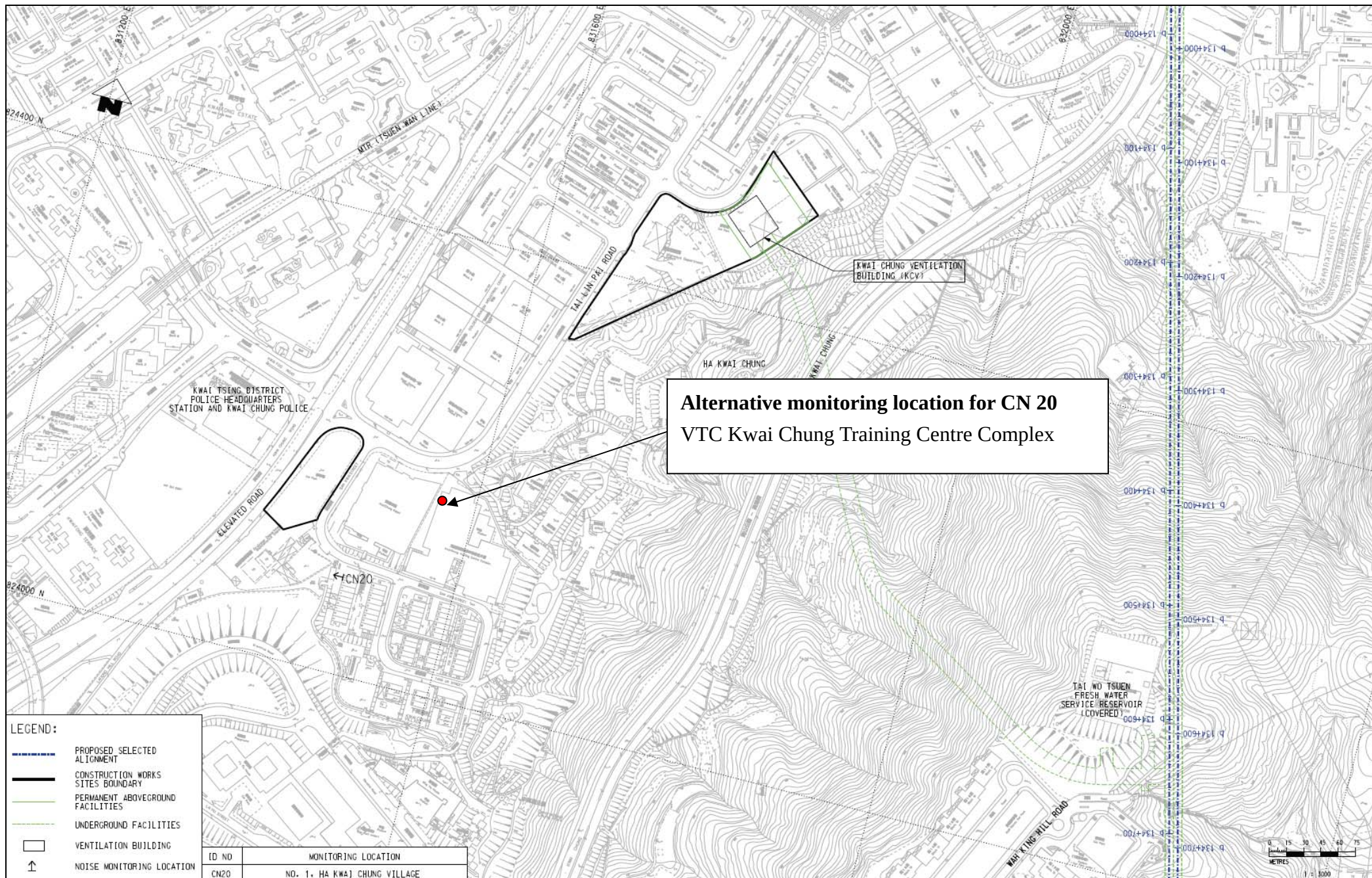


**Figure 3 – Noise Monitoring Location**