



**BARBICAN CONSTRUCTION  
CO., LTD**

**Contract No. HY/2001/18**

**Sai Sha Road Widening  
between Kam Ying Road and  
Future Trunk Road T7 Junction**

**MONTHLY ENVIRONMENTAL  
MONITORING & AUDIT REPORT  
REPORT NO. 30**

**No. R/2563/041 Issue 1  
April 2005**


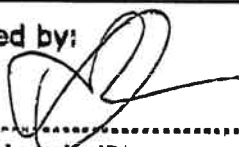
Submitted by/ Prepared by

**Babtie Asia Ltd**  
15/F Cornwall House, Taikoo Place  
979 King's Road, Quarry Bay, Hong Kong

R/2563/041  
Issue 1  
April 2005

**Contract No. HY/2001/18  
Sai Sha Road Widening between Kam Ying Road and  
Proposed Road T7 Junction**

**Monthly Environmental Monitoring & Audit Report  
Report No. 30**

Approved for Issue by:	
	
Mr Mark Cheung (Babtie Asia Ltd.)	
Position:	Environmental Team Leader
Date:	11 April 2005
Verified by:	
	
Ms. Lynn Ip (BMT Asia Pacific Limited)	
Independent	
Position:	Environmental Checker
Date:	19 April 2005

Barbican Construction Co. Ltd  
G/F Shop 11 & 1<sup>st</sup> Floor,  
2 Landale Street,  
Wanchai  
HONG KONG

Babtie Asia  
15/F, Cornwall House  
Talkoo Place, 979 King's Road  
Quarry Bay  
HONG KONG

CONTRACT NO. HY/2001/18  
SAI SHA ROAD WIDENING BETWEEN KAM YING ROAD  
AND FUTURE TRUNK ROAD T7 JUNCTION

MONTHLY ENVIRONMENTAL MONITORING & AUDIT REPORT

REPORT NO. 30

CONTENTS

EXECUTIVE SUMMARY

1.0 ENVIRONMENTAL STATUS

- 1.1 Background
- 1.2 Contact Details of Key Personnel
- 1.3 Construction Programme
- 1.4 Site Management Structure
- 1.5 Works Undertaken during the reporting period with Illustrations
- 1.6 Project Area, Sensitive Receivers & Monitoring Locations

2.0 IMPLEMENTATION STATUS

- 2.1 Advice on the Implementation Status of Environmental Protection & Pollution Control / Mitigation Measures
  - 2.1.1 Construction Noise Mitigation Measures
  - 2.1.2 Landscape and Visual Mitigation Measures

3.0 MONITORING RESULTS

- 3.1 Graphical Plots of the Monitored Parameters
- 3.2 Major Activities During the Reporting Period
- 3.3 Noise Monitoring Methodology
- 3.4 Noise Monitoring Equipment
- 3.5 Calibration Details
- 3.6 Noise Parameters
- 3.7 Monitoring Locations
- 3.8 Monitoring Date, Time, Frequency and Duration
- 3.9 Noise Monitoring Results
- 3.10 Weather Conditions
- 3.11 Influencing Factors
- 3.12 QA/QC Results and Detection Limits

4.0 RECORD OF NON-COMPLIANCE OF THE ACTION AND LIMIT LEVELS, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

- 4.1 Non-compliance of the Action and Limit Levels
  - 4.1.1 Noise
- 4.2 Written Complaints and Verbal Complaints
- 4.3 Notifications of Summons and Successful Prosecutions

## 5.0 OTHERS

5.1 Future Key Issues

5.2 Advice on the Solid and Liquid Waster Management Status

5.2.1 General Refuse

5.2.2 Liquid Waste Management

## APPENDICES

Appendix A Construction Programme

Appendix B Site Organization Chart

Appendix C Record Photos for Construction Activities in March 2005

Appendix D The Project Area, Environmental Sensitive Receivers and the Locations of the Monitoring Stations

Appendix E Calibration Certificates for Sound Level Meter

Appendix F Data of Noise Monitoring

Appendix G Graphical Representation of Construction Noise Monitoring Data

Appendix H Weather Conditions during the Monitoring Period

Appendix I Construction Noise Monitoring Limit Action Level

Appendix J Graphical Plots of Trends of Monitored Parameters

Appendix K Construction Noise Monitoring and Site Audit Schedules  
March 2005 and April 2005

Appendix L Statistics for Environmental Complaints

## EXECUTIVE SUMMARY

This is the thirtieth EM & A Report for the project of Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction.

This report mainly presents the EM & A works undertaken for the above project from 1 March 2005 to 31 March 2005 in accordance with the EM & A Manual under Appendix H.3 of the Particular Specification.

### **Noise Level**

$L_{eq(30min)}$  noise level measurement was performed at CNM 1 and CNM 2. CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village. CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate. The limit level for all the noise sensitive receivers is 75 dB(A).

Construction noise monitoring was carried out on the 3<sup>rd</sup>, 10<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup> of March 2005. All the measured noise levels recorded at the two monitoring stations were below the noise limit level.

### **Complaint log**

No written or verbal complaints were received during the reporting period.

### **Others**

No notifications of summons, no successful prosecutions were received during the reporting period.

### **Future Key Issues**

Adverse influence on both air quality and noise level is anticipated from future construction activities, such as footbridge construction work near Residential Development at Wu Kwai Sha DD206, drainage construction works near Lee Wing House, footbridge construction works near the Wu Kwai Sha New Village and the machine operation on the unpaved haul road near Lee Wing House. The Contractor should carry out good site practice to minimise the potential air pollution and noise pollution.

The Contractor should provide an effective water spraying system for watering the site area in purpose of dust suppression especially where excavation works and other earthworks are being undertaken on the unpaved haul road near Lee Wing House.

Construction vehicles should be washed out before leaving the site area. Site runoff including those from wheel washing should be properly treated through sedimentation tank before being discharged to the stormwater drainage system.

The Contractor should exert himself to prevent the accumulation of stagnant water to avoid the breeding of mosquitoes and the spread of dengue fever.

To improve the hygiene condition of the site, the Contractor should regularly remove the rubbish within the site area and provide rubbish bins as far as possible.

## 1.0 ENVIRONMENTAL STATUS

### 1.1 Background

Babtie Asia Ltd was employed by the Contractor to act as the Environmental Team for this project. The Independent Environmental Checker is BMT Asia Pacific Limited.

The purpose of this document is to report the Environmental Monitoring & Audit (EM & A) works in the period between 1 March 2005 and 31 March 2005.

### 1.2 Contact Details of Key Personnel

Titles, names and contact telephone numbers of the key personnel of the captioned project are tabulated below:

Title	Name	Contact Number
Engineer's Representative (Highways Department)	Mr. Greg Leung	2716 1043
EPD	Mr. Simon Hui	2835 1105
Project Director (Contractor)	Mr. David Kong	2137 5522
Project Manager (Contractor)	Mr. Alan Tam	9161 2991
Site Agent (Contractor)	Mr. Alan Tam	9161 2991
Environmental Team Leader (Babtie Asia Limited)	Mr. Mark Cheung	2738 3803
Independent Environmental Checker (BMT Asia Pacific Limited)	Ms. Lyn Ip	2241 9812

### 1.3 Construction Programme

The latest construction programme is attached in Appendix A. This construction programme is subject to continuous refinement.

### 1.4 Site Management Structure

The site organization chart is shown as Appendix B.

### 1.5 Works undertaken during the reporting period with illustrations

The works for this project are divided into three sections: Section 1, Section 2 and Section 3.

Section 1 comprises all the works for the completion of the subway system connecting the existing vacant subway barrel across Sai Sha Road adjacent to Kam Ying Road and the local widening of northern Kam Ying Road and all associated landscaping works.

Section 2 comprises all construction works including the new carriageways, two footbridges and all footpath, cycle tracks, subways, village access road, noise barriers, roundabout and associated works comprising drainage works, E&M works, traffic signs and aids, slope works, embankments, retaining walls, subway wing walls, cycle parks, fencing, street lighting and all associated landscaping works, except Section 1 and Section 3.

Section 3 comprises all the works for the new access road to Whitehead and all the works except Section 1 and 2.

The works undertaken during the reporting period were as follows:

- Landscaping softwork planting
- Drainage construction at Sai Sha Road
- Wall finishing
- Footpath and cycle trench construction at Footbridge 2

The photos showing the construction works in the reporting period are shown in Appendix C.

## **1.6 Project Area, Sensitive Receivers & Monitoring Locations**

The drawings showing the project area, noise sensitive receivers (NSRs) and the locations of the monitoring stations are shown in Appendix D.

The construction noise monitoring stations are CNM 1 and CNM 2.

CNM 1 is for noise sensitive receivers (NSRs 1 & 2) Wu Kwai Sha New Village.  
CNM 2 is for (NSRs 3 & 4) Kam Lung Court/ Lee On Estate.

It is noted that the locations of the monitoring stations are the same as those adopted in the Noise Baseline Monitoring.

## 2.0 IMPLEMENTATION STATUS

According to the EIA report, the following should be implemented for the ninth construction phase quarter.

Location	Reference Section	Environmental Protection Measures	Agent
<i>Construction Noise Mitigation</i>			
Wu Kwai Sha New Village (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Wu Kwai Sha New Village (2)	EIA 3.5.23	Mitigation Option 1	Contractor
Lok Wo Sha (1)	EIA 3.5.23	Mitigation Option 1	Contractor
Lok Wo Sha (2)	EIA 3.5.23	Mitigation Option 1	Contractor
Kam Lung Court (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Kam Lung Court (2)	EIA 3.5.25	Mitigation Option 2	Contractor
Lee On Estate (1)	EIA 3.5.25	Mitigation Option 2	Contractor
Lee On Estate (2)	EIA 3.5.25	Mitigation Option 2	Contractor
Residential Development STTL446	EIA 3.5.23	Mitigation Option 1	Contractor

- Note: The locations of the noise assessment points are shown in the Figure 7 of the EIA Report.



Location	Reference Section	Environmental Protection Measures	Agent
<b><i>Landscape and Visual Mitigation Measures for the Construction Phase</i></b>			
All Scheme Roads	EIA 4.5.1	<ul style="list-style-type: none"> <li>• Conservation of topsoil;</li> <li>• Screening of site construction works by use of hoardings;</li> <li>• Surface treatment of site hoardings to enhance visual interest and harmony with surrounding landscape / townscape;</li> <li>• Locating site offices and other temporary buildings in least visually prominent locations;</li> <li>• Efficient programming of construction works to reduce duration of construction works;</li> <li>• Staging of construction works to minimise areas requiring site hoardings which creates visual intrusion;</li> <li>• Re-routing of pedestrian routes away from the work site where possible;</li> <li>• Retaining existing trees and minimising damage to vegetation where possible. Care shall be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase; and</li> <li>• Careful and efficient transplanting of existing vegetation carried out under the supervision of a professional landscape architect</li> </ul>	Contractor

## 2.1 Advice on the Implementation Status of Environmental Protection & Pollution Control / Mitigation Measures

### 2.1.1 Construction Noise Mitigation Measures

The Contractor should use silencers or mufflers on construction equipment such as pneumatic breaker and have noisy air compressor completely enclosed to avoid exceeding the noise limit level and nuisance to the nearby sensitive receivers.

Regular maintenance of the construction plant is strongly encouraged to avoid black smoke and excessive noise production. The machines and plant should be shut down or throttled down to a minimum when they are in intermittent use.

The plant known to emit noise strongly in one direction should be orientated to direct noise away from nearby noise sensitive receivers. The mobile plants should be sited as far away from the noise sensitive receivers as possible.

Care should be taken that different mitigation plans (option 1 & option 2) will be applied to different noise sensitive receivers. For mitigation option 2, more stringent environmental control will be required and implemented. The Contractor should pay particular attention to follow and carry out the mitigation measures mentioned in the EIA Report for those sensitive receivers to whom mitigation option 2 should be applied.

It is noted that for different construction phase quarters, the mitigation option will be different. The detailed environmental mitigation implementation schedule is shown in the EIA Report Annex A for different construction phases.

### 2.1.2 Landscape and Visual Mitigation Measures

Care should be taken not to damage those trees identified in the Tree Survey Report to be retained during the construction phase.

In case of conflict between the construction machine and the trees during the construction activities, the Contractor should consider adopting an alternative construction approach to protect the trees from being damaged. As the last resort, the tree transplanting method may be considered. However, prior to such action, approval from the Engineer, the Environmental Team Leader and the Independent Environmental Checker should be obtained.

Whenever tree transplanting is required, the Contractor should notify the ET in advance and should carry out the works under the supervision of a professional landscape architect as stipulated in the EM & A Manual.

## 3.0 MONITORING RESULTS

### 3.1 Graphical plots of the monitored parameters

The graphical presentations of the monitored parameters during the reporting period are shown in Appendix G.

### 3.2 Major Activities During the Reporting Period

Major activities March 2005 include the followings:

- Landscaping softwork planting
- Drainage construction at Sai Sha Road
- Wall finishing
- Footpath and cycle trench construction at Footbridge 2

### 3.3 Noise Monitoring Methodology

Construction noise monitoring was carried out by using a Sound Level Meter to ensure that exceedance in noise levels could be readily identified and timely action taken to reduce the noise levels to within allowable limits.

### 3.4 Noise Monitoring Equipment

The approved integrating Sound Level Meter, Model No. CESVA SC20-e, in compliance with the International Electrotechnical Commission (IEC) Publication 651:1979 (Type 1) and 804:1985 (Type 1) specification as referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), was used for construction noise measurement.

### 3.5 Calibration Details

A sound level calibrator, Model No. CESVA CB-5, was used to calibrate the Sound Level Meter before and after the measurement on site.

The sound level meter and calibrator have been recently taken to a laboratory for full calibration processes. A copy of calibration certificates conducted by Calibration and Testing Laboratory of Sun Creation Engineering Limited for the Sound Level Meter and the Sound Calibrator are attached in Appendix E.

### 3.6 Noise Parameters

The construction noise levels were measured in terms of equivalent A-weighted sound pressure level ( $L_{eq}$ ) measured in decibels (dB).

$L_{eq(30min)}$  was used as the monitoring parameter for the time period between (0700 to 1900) hours on normal weekdays.

$L_{eq(5min)}$  was used as the monitoring parameter for all other time period, if applicable.

The two statistical sound levels  $L_{A10}$  and  $L_{A90}$ , the level exceeded for 10 and 90 percent of the measurement time respectively, were also recorded as supplementary information for reference.

The construction noise monitoring limit and action levels are shown in Appendix I.

### 3.7 Monitoring Locations

The construction noise monitoring was conducted at two noise sensitive receivers, namely, CNM 1 (Wu Kwai Sha New Village) and CNM 2 (Kam Lung Court/ Lee On Estate).

Both measurement points for CNM 1 and CNM 2 are at façade.

Locations of construction noise monitoring stations and photos are shown in Appendix D.

### 3.8 Monitoring Date, Time, Frequency and Duration

The monitoring frequency will depend on the scale of the construction activities. The following was adopted as an initial arrangement of measurement on the regular monitoring frequency for each station on a per week basis when noise generating activities are underway:

- (a) one set of measurements between 0700 – 1900 hours on normal weekdays;
- (b) one set of measurements between 1900 – 2300 hours;
- (c) one set of measurements between 2300 – 0700 hours; and
- (d) one set of measurements between 0700 – 1900 hours on holidays

The time and duration of measurement are shown in the Appendix F. The construction noise monitoring schedule for March 2005 and April 2005 are shown in Appendix K.

### 3.9 Noise Monitoring Results

The data for noise monitoring is presented in Appendix F. Graphical representation of construction noise monitoring data is presented in Appendix G.

For CNM 1, the results show that during the reporting period, the noise level is on average 61.2 dB(A) which is below the noise limit level 75 dB(A).

For CNM 2, the results show that during the reporting period, the noise level is on average 62.2 dB(A) which is below the noise limit level 75 dB(A).

Construction noise monitoring was carried out on 3<sup>rd</sup>, 10<sup>th</sup>, 17<sup>th</sup>, 24<sup>th</sup> and 31<sup>st</sup> of March 2005. All the measured noise levels recorded at the two monitoring stations were below the noise limit level.

The major noise sources during the reporting period included the machines operation in Contractor's construction activities such as drainage works and road works near Lee Wing House, and footbridge staircase construction near Residential Development at Wu Kai Sha DD 206.

Moreover, traffic noise of the heavy vehicles like trucks and buses along Sai Sha Road and residential noise are included in the measured noise level.

### 3.10 Weather Conditions

The weather conditions were mainly sunny and did not affect the environmental monitoring works during the reporting period. The weather conditions during the period are shown in the Appendix H.

### **3.11 Influencing Factors**

The traffic noise from Sai Sha Road significantly contributed to the recorded noise level.

### **3.12 QA/QC Results and Detection Limits**

The QC result(Calibration Certificates) is shown in Appendix E. The lower limit of the sound level meter for  $L_{eq}$  is 0 dB(A). The upper limit for  $L_{eq}$  is 137 dB(A).

## 4.0 RECORD OF NON-COMPLIANCE OF THE ACTION AND LIMIT LEVELS, COMPLAINTS, NOTIFICATIONS OF SUMMONS AND SUCCESSFUL PROSECUTIONS

### 4.1 Non-compliance of the Action and Limit Levels

#### 4.1.1 Noise

During the reporting period, the noise levels for the two monitoring stations were within the noise limit level.

### 4.2 Written Complaints and Verbal Complaints

No written and verbal complaints were received during the reporting period.

The following table shows the summary for all the complaints received since the commencement of the Contract.

TOTAL NO. OF COMPLAINT	NO. OF COMPLAINT RECEIVED WITHIN REPORTING PERIOD	NO. OF COMPLAINT THAT IS STILL UNDER INVESTIGATION	NO. OF CLOSED COMPLAINT
1	0	0	1

The statistics for environmental complaints on the reporting period are shown in Appendix L.

### 4.3 Notifications of Summons and Successful Prosecutions

No notifications of summons or successful prosecutions were received by the Contractor regarding the non-compliance of the environmental performance of the construction site during the reporting period.

## 5.0 OTHERS

### 5.1 Future Key Issue

In the coming month, the following activities will be undertaken.

- Retaining Wall Construction
- Noise Barrier Construction
- Footbridge Construction
- Drainage Work and Roadwork

Potential environmental impacts due to the above construction works are associated with construction dust, noise and site runoff.

The Contractor should clean out the sediments which block the stormwater U-channels within the site area. The Contractor should also remove any rubbish within the site area. In addition, the Contractor should exert himself to prevent the presence of accumulation of stagnant water to avoid the breeding of mosquitoes and the spread of dengue fever.

Nonetheless, with the implementation of the following mitigation measures, potential impacts to the surrounding sensitive receivers could be minimised.

#### *Construction Dust*

- Provide adequate water supply for the whole site area
- Regular watering of unpaved areas and the dry topsoil
- Regular watering during the demolition works such as the breaking of rigid pavement
- Cover the stockpiles with tarpaulin
- Investigate other dust sources
- Maintain onsite machinery and vehicles regularly
- Limit the speed of construction vehicles
- Maintain the water spraying system regularly

#### *Construction Noise*

- Carry out good site practice
- Use silenced plant and equipment
- Adopt quiet working methods
- Enclose powered mechanical equipment such as generators and compressors
- Shut down the machines and plant that may be in intermittent use between work periods or throttle them down to a minimum
- Provide temporary movable vertical barrier

#### *Construction Site Runoff*

- Direct the site runoff to the desilting facilities
- Desilt the site runoff before discharging it into the stormwater system.

## 5.2 Advice on the solid and liquid waste management status

### 5.2.1 *General Refuse*

General refuse may be generated by site workers. Bins shall be provided for containment prior to disposal. The Contractor should avoid the accumulation of waste materials or rubbish on site and regular waste disposal is required.

If there is any chemical waste or oil generated by the site, it should be properly treated and disposed of as chemical waste. If applicable, the Contractor should register as a chemical waste producer under the registration of the Department of Environmental Protection.

Environmental awareness shall be encouraged in the office so as to reduce volume of office waste.

### 5.2.2 *Liquid Waste Management*

The accumulation of stagnant water within the construction site should be avoided to eliminate the breeding of mosquitoes. To achieve this, the Contractor should identify potential stagnant areas on the site, inspect the site regularly and take necessary rectifying action to ensure no mosquitoes can breed.

Larvicidal Oil shall be applied to stagnant water awaiting discharge, and stagnant water shall be discharged regularly to avoid accumulation.

To properly treat the silty water, the Contractor should provide sandbags/ bunds to direct site surface runoff to the desilting facilities such as sedimentation tanks. The desilting facilities should be properly operated and maintained. To avoid the breeding of mosquitoes and other insects, water from the sedimentation tank should be discharged regularly. Care should also be taken to ensure the capacity of the desilting facilities is sufficient to handle the surface runoff and to avoid overflow of the sedimentation tanks.

The desilting facilities should be maintained properly. Regular removal of the accumulated debris with proper disposal is recommended.

For the wastewater generated from the site area, the Contractor should identify the sources and wastewater should be collected and treated prior to disposal.



**Appendix A**  
**CONSTRUCTION PROGRAMME**



Activity ID	Description of Activity	Start	End	Duration	Predecessors	Relationships	Notes
100	Initiation of Work	00:00	00:00	00:00			
101	Definition of Work Package (WP)	00:00	00:00	00:00			
102	Assignment of Resources	00:00	00:00	00:00			
103	Estimation of Activity Duration	00:00	00:00	00:00			
104	Construction of Network Diagram	00:00	00:00	00:00			
105	Calculation of Earliest Start (ES)	00:00	00:00	00:00			
106	Calculation of Earliest Finish (EF)	00:00	00:00	00:00			
107	Calculation of Latest Start (LS)	00:00	00:00	00:00			
108	Calculation of Latest Finish (LF)	00:00	00:00	00:00			
109	Calculation of Total Float (TF)	00:00	00:00	00:00			
110	Calculation of Free Float (FF)	00:00	00:00	00:00			
111	Calculation of Slack (S)	00:00	00:00	00:00			
112	Calculation of Critical Path (CP)	00:00	00:00	00:00			
113	Calculation of Project Duration	00:00	00:00	00:00			
114	Calculation of Resource Requirements	00:00	00:00	00:00			
115	Calculation of Cost Estimates	00:00	00:00	00:00			
116	Calculation of Risk Assessment	00:00	00:00	00:00			
117	Calculation of Quality Control	00:00	00:00	00:00			
118	Calculation of Safety Measures	00:00	00:00	00:00			
119	Calculation of Environmental Impact	00:00	00:00	00:00			
120	Calculation of Social Responsibility	00:00	00:00	00:00			
121	Calculation of Stakeholder Engagement	00:00	00:00	00:00			
122	Calculation of Communication Plan	00:00	00:00	00:00			
123	Calculation of Risk Management	00:00	00:00	00:00			
124	Calculation of Change Management	00:00	00:00	00:00			
125	Calculation of Project Closure	00:00	00:00	00:00			
126	Calculation of Post-Project Evaluation	00:00	00:00	00:00			
127	Calculation of Project Archiving	00:00	00:00	00:00			
128	Calculation of Project Reporting	00:00	00:00	00:00			
129	Calculation of Project Handover	00:00	00:00	00:00			
130	Calculation of Project Termination	00:00	00:00	00:00			
131	Calculation of Project Success	00:00	00:00	00:00			
132	Calculation of Project Sustainability	00:00	00:00	00:00			
133	Calculation of Project Innovation	00:00	00:00	00:00			
134	Calculation of Project Leadership	00:00	00:00	00:00			
135	Calculation of Project Teamwork	00:00	00:00	00:00			
136	Calculation of Project Accountability	00:00	00:00	00:00			
137	Calculation of Project Transparency	00:00	00:00	00:00			
138	Calculation of Project Integrity	00:00	00:00	00:00			
139	Calculation of Project Honesty	00:00	00:00	00:00			
140	Calculation of Project Fairness	00:00	00:00	00:00			
141	Calculation of Project Respect	00:00	00:00	00:00			
142	Calculation of Project Compassion	00:00	00:00	00:00			
143	Calculation of Project Kindness	00:00	00:00	00:00			
144	Calculation of Project Generosity	00:00	00:00	00:00			
145	Calculation of Project Gratitude	00:00	00:00	00:00			
146	Calculation of Project Humility	00:00	00:00	00:00			
147	Calculation of Project Modesty	00:00	00:00	00:00			
148	Calculation of Project Simplicity	00:00	00:00	00:00			
149	Calculation of Project Clarity	00:00	00:00	00:00			
150	Calculation of Project Focus	00:00	00:00	00:00			
151	Calculation of Project Determination	00:00	00:00	00:00			
152	Calculation of Project Persistence	00:00	00:00	00:00			
153	Calculation of Project Perseverance	00:00	00:00	00:00			
154	Calculation of Project Endurance	00:00	00:00	00:00			
155	Calculation of Project Fortitude	00:00	00:00	00:00			
156	Calculation of Project Resilience	00:00	00:00	00:00			
157	Calculation of Project Flexibility	00:00	00:00	00:00			
158	Calculation of Project Adaptability	00:00	00:00	00:00			
159	Calculation of Project Versatility	00:00	00:00	00:00			
160	Calculation of Project Creativity	00:00	00:00	00:00			
161	Calculation of Project Innovation	00:00	00:00	00:00			
162	Calculation of Project Imagination	00:00	00:00	00:00			
163	Calculation of Project Vision	00:00	00:00	00:00			
164	Calculation of Project Inspiration	00:00	00:00	00:00			
165	Calculation of Project Motivation	00:00	00:00	00:00			
166	Calculation of Project Commitment	00:00	00:00	00:00			
167	Calculation of Project Dedication	00:00	00:00	00:00			
168	Calculation of Project Devotion	00:00	00:00	00:00			
169	Calculation of Project Loyalty	00:00	00:00	00:00			
170	Calculation of Project Fidelity	00:00	00:00	00:00			
171	Calculation of Project Faithfulness	00:00	00:00	00:00			
172	Calculation of Project Trustworthiness	00:00	00:00	00:00			
173	Calculation of Project Reliability	00:00	00:00	00:00			
174	Calculation of Project Dependability	00:00	00:00	00:00			
175	Calculation of Project Accountability	00:00	00:00	00:00			
176	Calculation of Project Responsibility	00:00	00:00	00:00			
177	Calculation of Project Obligation	00:00	00:00	00:00			
178	Calculation of Project Duty	00:00	00:00	00:00			
179	Calculation of Project Responsibility	00:00	00:00	00:00			
180	Calculation of Project Accountability	00:00	00:00	00:00			
181	Calculation of Project Responsibility	00:00	00:00	00:00			
182	Calculation of Project Obligation	00:00	00:00	00:00			
183	Calculation of Project Duty	00:00	00:00	00:00			
184	Calculation of Project Responsibility	00:00	00:00	00:00			
185	Calculation of Project Accountability	00:00	00:00	00:00			
186	Calculation of Project Responsibility	00:00	00:00	00:00			
187	Calculation of Project Obligation	00:00	00:00	00:00			
188	Calculation of Project Duty	00:00	00:00	00:00			
189	Calculation of Project Responsibility	00:00	00:00	00:00			
190	Calculation of Project Accountability	00:00	00:00	00:00			
191	Calculation of Project Responsibility	00:00	00:00	00:00			
192	Calculation of Project Obligation	00:00	00:00	00:00			
193	Calculation of Project Duty	00:00	00:00	00:00			
194	Calculation of Project Responsibility	00:00	00:00	00:00			
195	Calculation of Project Accountability	00:00	00:00	00:00			
196	Calculation of Project Responsibility	00:00	00:00	00:00			
197	Calculation of Project Obligation	00:00	00:00	00:00			
198	Calculation of Project Duty	00:00	00:00	00:00			
199	Calculation of Project Responsibility	00:00	00:00	00:00			
200	Calculation of Project Accountability	00:00	00:00	00:00			



**Appendix B**  
**SITE ORGANIZATION CHART**

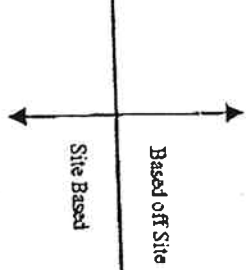
Contract No. : HY/2001/18  
 Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction  
**Project Organization Chart**

The most updated Project Organization Chart is always maintained by PMS/A at File 10.01  
 The O-chart in this appendix is just for record purpose

Position
Name
Contact Telephone

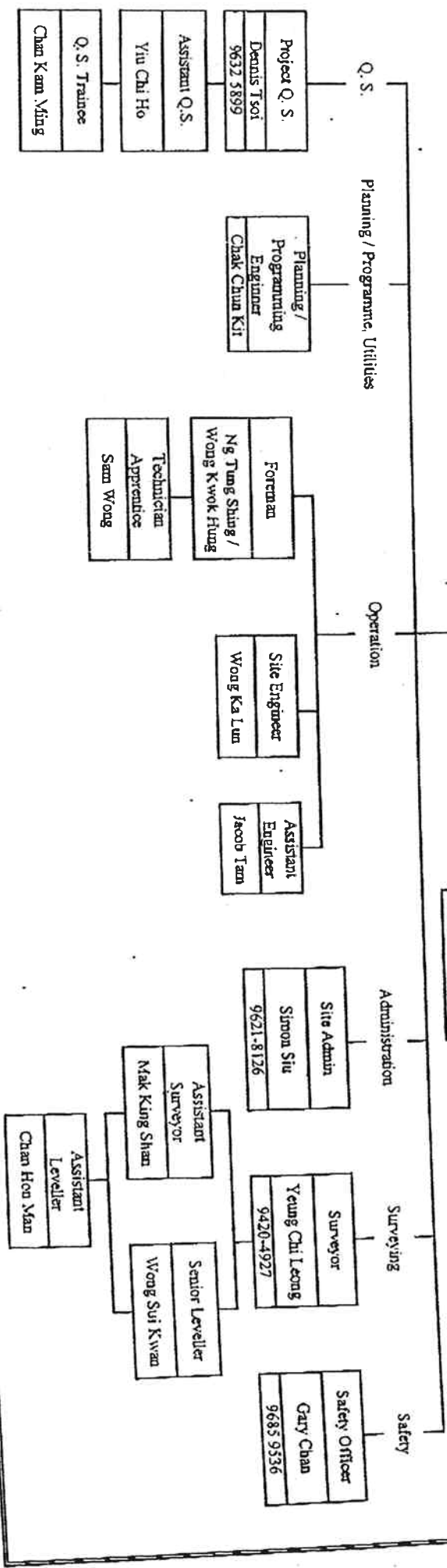
Contracts Manager
David Kong
2137 5522

Project Manager / Site Agent
Alan Tam
9161 2991



Barbican Construction Co., Ltd (H.O.)
Telephone : 2388 6041
Facsimile : 2782 2730
Barbican's Sai Sha Road Site Office
Telephone : 2631 4851
Facsimile : 2631 7914

Date : 1st September 2004  
 Rev : K



Project Q.S.
Dennis Tsoi
9632 5899

Assistant Q.S.
Yiu Chi Ho

Q.S. Trainee
Chan Kam Ying

**Appendix C**  
**RECORD PHOTOS FOR CONSTRUCTION ACTIVITIES**  
**IN MARCH 2005**



Date: 3 March 2005  
Location: Near DD206 Wu Kai Sha

Works: Road Works



Date: 17 March 2005  
Location: Near DD206 Wu Kai Sha

Works: Construction of footpath





Date: 24 March 05                      Works: Concreting work  
Location: Proposed Residential Development at DD206



Date: 31 March 05                      Works: Landscaping works  
Location: Proposed Residential Development at DD206

**Appendix D**  
**THE PROJECT AREA, ENVIRONMENTAL SENSITIVE**  
**RECEIVERS AND THE LOCATIONS OF THE MONITORING**  
**STATIONS**

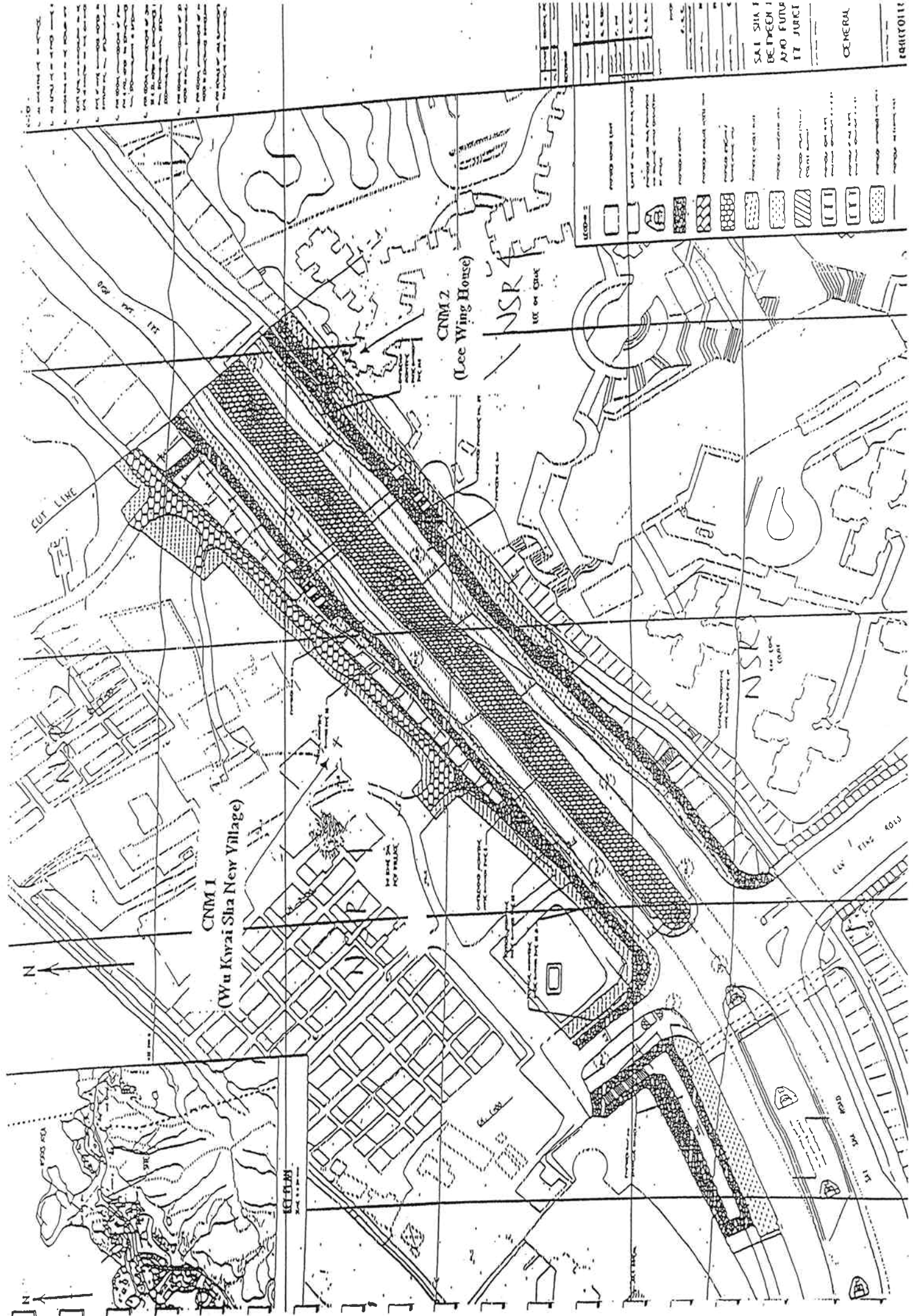


Monitoring Point CNM 1 – Wu Kwai Sha New Village



Monitoring Point CNM 2 – Lee Wing House of Lee On Estate

LEGEND	
[Symbol]	Proposed Main Road
[Symbol]	Proposed Main Road (with drainage)
[Symbol]	Proposed Main Road (with drainage and sewerage)
[Symbol]	Proposed Main Road (with drainage, sewerage and water supply)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply and electricity)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity and telephone)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone and gas)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas and cable television)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television and fire hydrant)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant and street lighting)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting and sound barrier)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier and bicycle lane)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane and pedestrian crossing)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing and bus stop)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop and parking area)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area and utility poles)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area, utility poles and street furniture)
[Symbol]	Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area, utility poles, street furniture and landscaping)



1. The proposed main roads are shown with the following hatching patterns: (a) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area, utility poles, street furniture and landscaping); (b) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area, utility poles, street furniture); (c) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop, parking area); (d) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing, bus stop); (e) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane, pedestrian crossing); (f) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier, bicycle lane); (g) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier); (h) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant, street lighting, sound barrier); (i) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television, fire hydrant); (j) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone, gas, cable television); (k) Proposed Main Road (with drainage, sewerage, water supply, electricity, telephone); (l) Proposed Main Road (with drainage, sewerage, water supply, electricity); (m) Proposed Main Road (with drainage, sewerage, water supply); (n) Proposed Main Road (with drainage, sewerage); (o) Proposed Main Road (with drainage); (p) Proposed Main Road (with sewerage); (q) Proposed Main Road (with water supply); (r) Proposed Main Road (with electricity); (s) Proposed Main Road (with telephone); (t) Proposed Main Road (with gas); (u) Proposed Main Road (with cable television); (v) Proposed Main Road (with fire hydrant); (w) Proposed Main Road (with street lighting); (x) Proposed Main Road (with sound barrier); (y) Proposed Main Road (with bicycle lane); (z) Proposed Main Road (with pedestrian crossing); (aa) Proposed Main Road (with bus stop); (ab) Proposed Main Road (with parking area); (ac) Proposed Main Road (with utility poles); (ad) Proposed Main Road (with street furniture); (ae) Proposed Main Road (with landscaping).

**Appendix E**  
**CALIBRATION CERTIFICATES FOR SOUND LEVEL METER**



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C044089

## Certificate of Calibration

*This is to certify that the equipment*

*Description : Sound Level Calibrator (E01-011)*

*Manufacturer : Cesva*

*Model No. : CB-5*

*Serial No. : 031198*

*has been calibrated for the specific items and ranges.  
The results are shown in the Calibration Report No. C044089.*

*The equipment is supplied by*

*Co. Name : HONKEITECHNOLOGY*

*Address : Rm. 2501, 25/F., Ho King Comm. Centre, 2-16 Fa Yuen St.,  
Mongkok, Kowloon*

*Date of Issue : 14 September 2004*

*Certified by : Chan Hui Si  
H C Chan*

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

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o G/F, LCK Telephone Exchange Building, 2 Yuet Lun Street, Lai Chi Kok, Kowloon, Hong Kong.

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited Calibration and Testing Laboratory

Certificate No. : C044090

## Certificate of Calibration

*This is to certify that the equipment*

*Description : Sound Level Meter (E01-010)*

*Manufacturer : Cesva*

*Model No. : SC-20e*

*Serial No. : T214258*

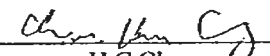
*has been calibrated for the specific items and ranges.  
The results are shown in the Calibration Report No. C044090.*

*The equipment is supplied by*

*Co. Name : HONKEI TECHNOLOGY*

*Address : Rm. 2501, 25/F., Ho King Comm. Centre, 2-16 Fa Yuen St.,  
Mongkok, Kowloon*

*Date of Issue : 14 September 2004*

*Certified by :   
H C Chan*

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

Calibration and Testing Laboratory of Sun Creation Engineering Limited

c/o G/F, LCK Telephone Exchange Building, 2 Yuet Lun Street, Lai Chi Kok, Kowloon, Hong Kong.

Tel: 2927 2606

Fax: 2744 8986

E-mail: callab@suncreation.com

Website: www.suncreation.com

**Appendix F**  
**DATA OF NOISE MONITORING**



Contract No. HY/2001/18  
 Sai Sha Road Widening between Kam Ying Road  
 and Future Trunk Road T7 Junction  
 Monitoring Location: Wu Kwai Sha New Village (CNM 1)  
 Time Period 7:00-19:00

Date	Start Time	Duration (min)	Measurement Results								
			L <sub>90</sub> (dB(A))	L <sub>10</sub> (dB(A))	L <sub>eq</sub> (dB(A)) (5 mins)			L <sub>eq</sub> (dB(A)) (30 mins)			
03/03/05	11:05	30	59.7	64.9	60.6	60.5	60.4	61.4	62.0	62.1	61.2
03/10/05	11:10	30	57.0	69.2	70.5	68.7	64.1	63.1	63.5	61.2	65.2
03/17/05	11:05	30	55.9	64.0	58.6	58.5	58.3	58.6	58.6	58.6	58.5
03/24/05	11:00	30	57.5	63.6	60.6	62.0	60.5	62.0	61.4	61.3	61.3
03/31/05	11:10	30	54.3	61.8	60.6	58.9	59.7	59.3	58.9	60.0	59.6

Contract No. HY/2001/18

Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction

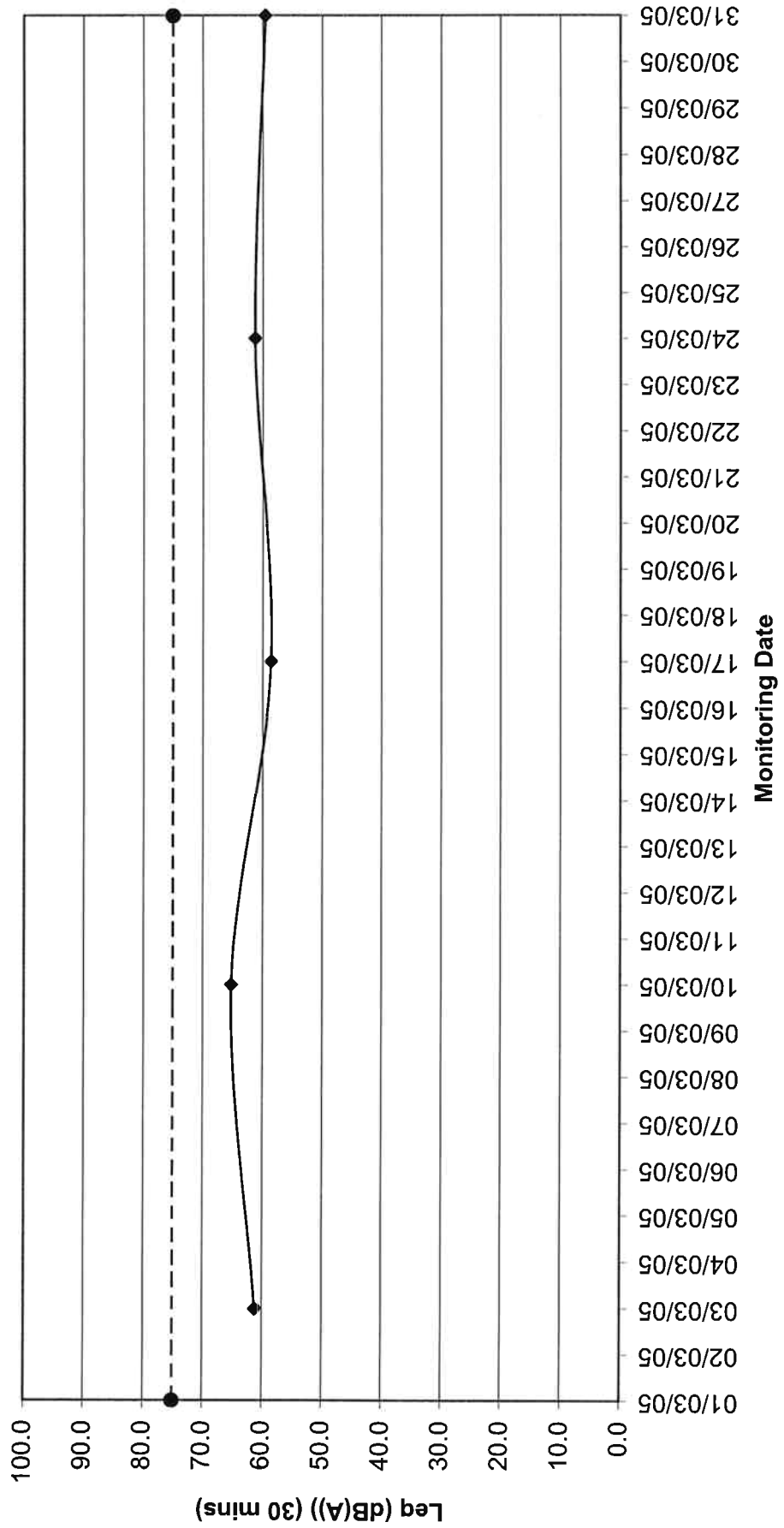
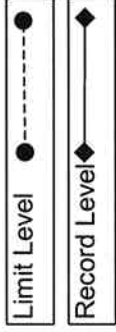
Monitoring Location: Kam Lung Court (CNM 2)

Time Period 7:00-19:00

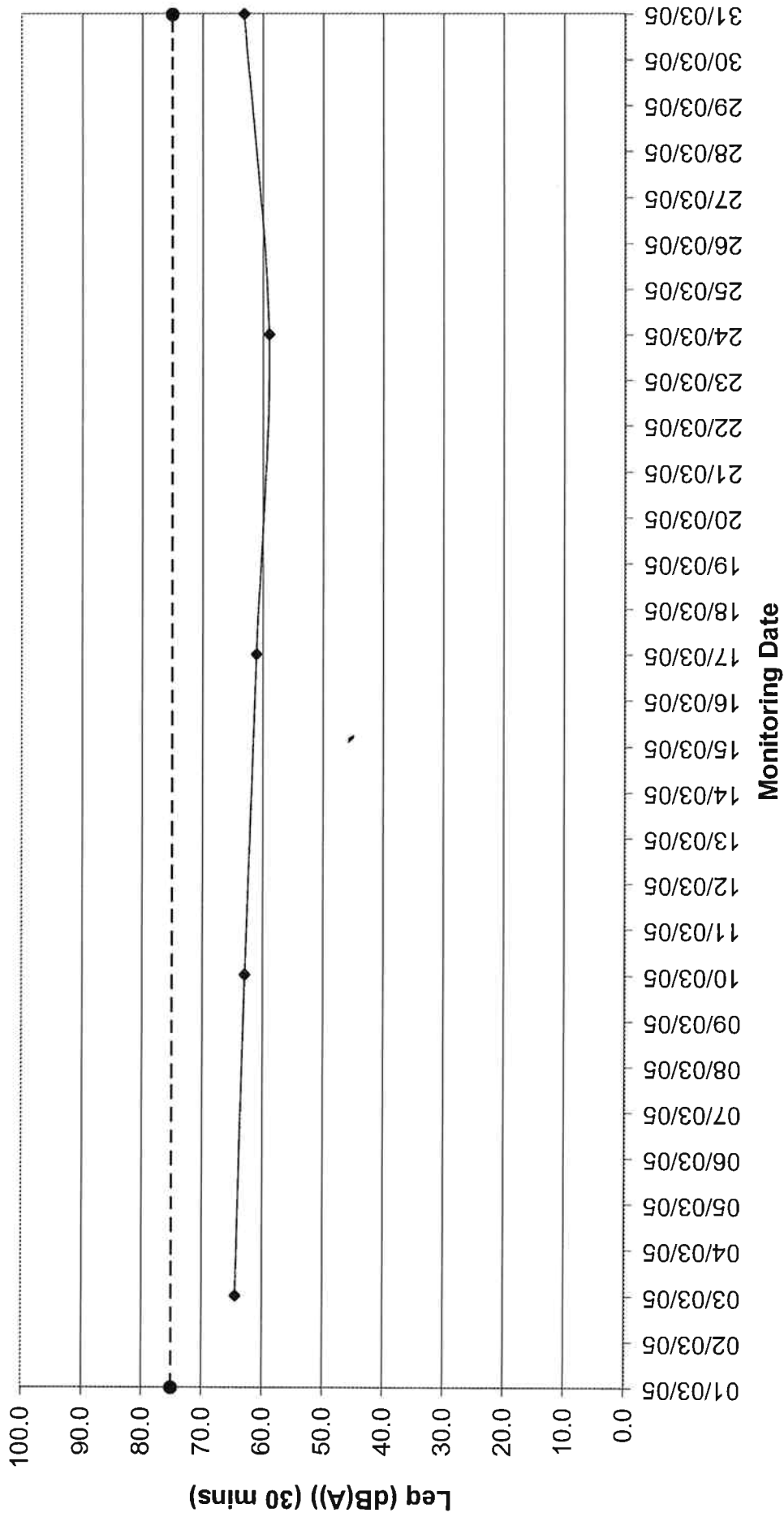
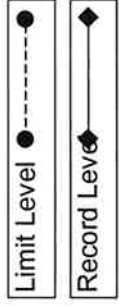
Date	Start Time	Duration (min)	Measurement Results								
			L <sub>90</sub> (dB(A))	L <sub>10</sub> (dB(A))	L <sub>eq</sub> (dB(A)) (5 mins)				L <sub>eq</sub> (dB(A)) (30 mins)		
03/03/05	11:45	30	55.9	69.4	61.8	60.8	59.9	65.7	69.8	68.9	64.5
03/10/05	11:40	30	56.4	65.0	60.3	60.1	60.5	63.5	64.1	69.8	63.1
03/17/05	11:40	30	55.6	64.8	59.1	59.3	59.0	58.1	64.2	64.9	61.1
03/24/05	11:50	30	55.2	61.7	59.0	58.1	58.4	59.7	60.8	58.3	59.1
03/31/05	11:45	30	60.3	65.3	63.5	64.6	64.2	62.0	62.9	61.9	63.2

**Appendix G**  
**GRAPHICAL REPRESENTATION OF**  
**CONSTRUCTION NOISE MONITORING DATA**

# Construction Noise Monitoring Results Wu Kwai Sha New Village (CNM 1)



# Construction Noise Monitoring Results Kam Lung Court (CNM 2)



**Appendix H**  
**WEATHER CONDITIONS**  
**DURING THE MONITORING PERIOD**

**Contract No. HY/2001/18**  
**Sai Sha Road Widening between Kam Ying Road**  
**and Future Trunk Road T7 Junction**  
**Major Activity and Weather Condition During Baseline Monitoring**  
**Monitoring Location: Wu Kwai Sha New Village (CNM 1)**

Date	Start Time	Weather Condition	Major Activities	Other Activities
03/03/05	11:05	Sunny	Nil	Traffic , Pedestrian
03/10/05	11:10	Sunny	Nil	Traffic , Pedestrian
03/17/05	11:05	Sunny	Nil	Traffic , Pedestrian
03/24/05	11:00	Sunny	Nil	Traffic , Pedestrian
03/31/05	11:10	Sunny	Nil	Traffic , Pedestrian

**Contract No. HY/2001/18**  
**Sai Sha Road Widening between Kam Ying Road**  
**and Future Trunk Road T7 Junction**  
**Major Activity and Weather Condition During Baseline Monitoring**  
**Monitoring Location: Kam Lung Court (CNM 2)**

<b>Date</b>	<b>Start Time</b>	<b>Weather Condition</b>	<b>Major Activities</b>	<b>Other Activities</b>
03/03/05	11:45	Sunny	Nil	Traffic , Pedestrian
03/10/05	11:40	Sunny	Nil	Traffic , Pedestrian
03/17/05	11:40	Sunny	Nil	Traffic , Pedestrian
03/24/05	11:50	Sunny	Nil	Traffic , Pedestrian
03/31/05	11:45	Sunny	Nil	Traffic , Pedestrian



**Appendix I**  
**CONSTRUCTION NOISE MONITORING LIMIT ACTION LEVEL**

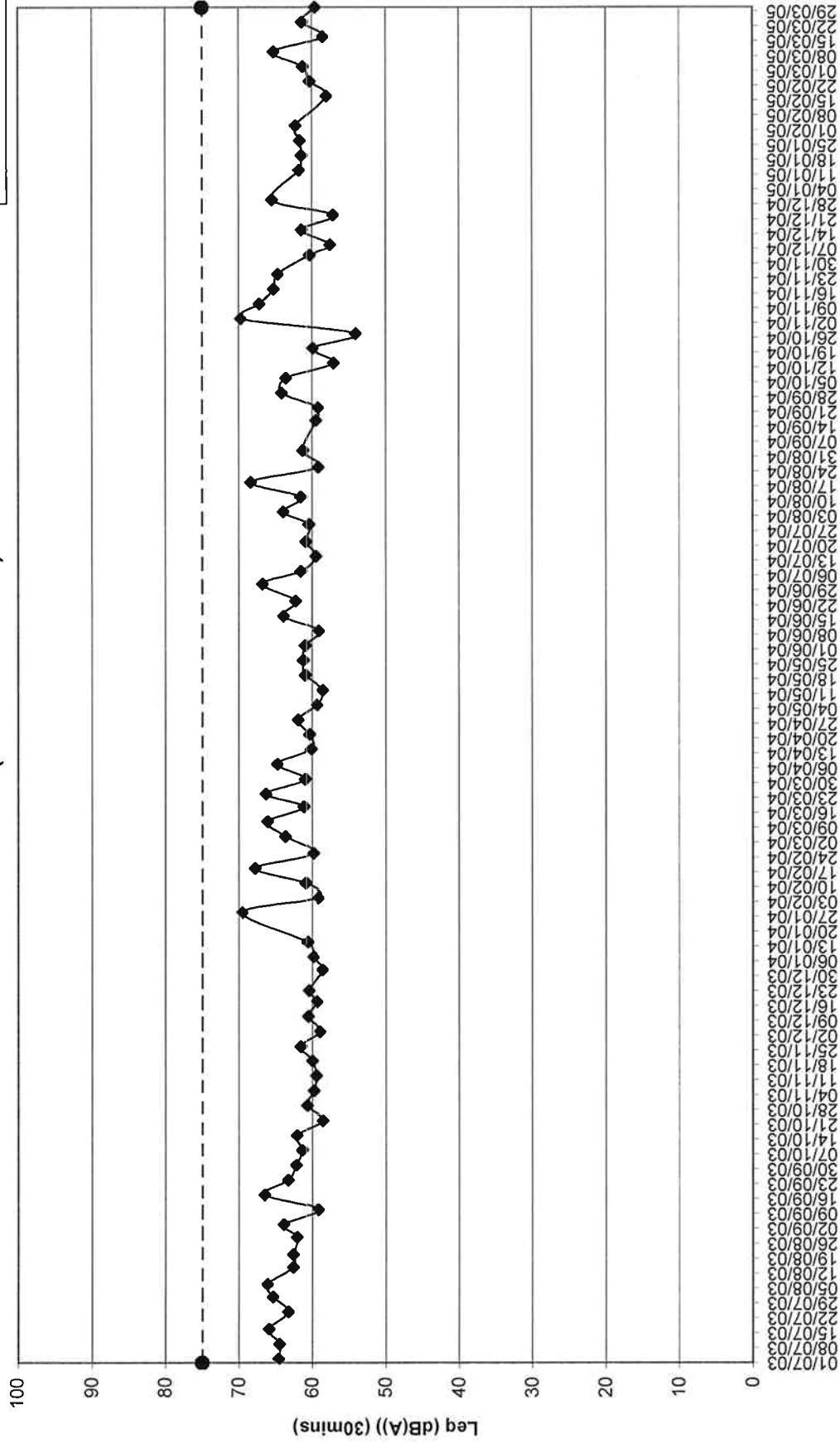
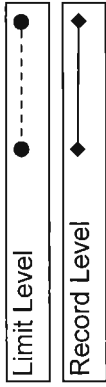
According to Section 2.7 of the *EM & A Manual*, the Action and Limit Noise Levels are summarised in the following table:

Time Period	Action	Limit Level
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)
0700-2300 hours on holidays; and 1900-2300 hours on all other days		70 dB(A)
2300-0700 hours of next day		55 dB(A)

*Note: The noise limit level for all the NSRs within this contract is 75dB(A).*

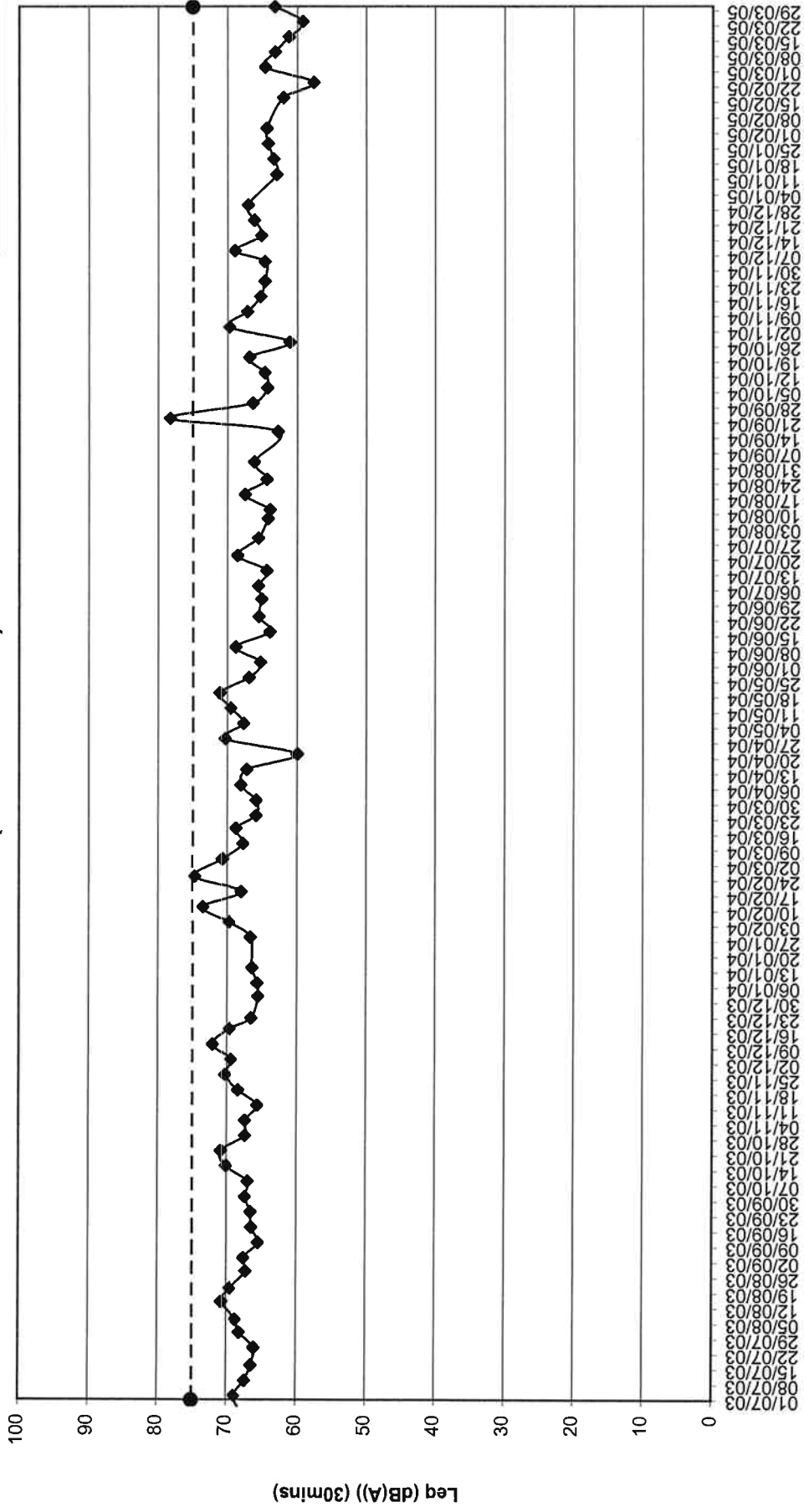
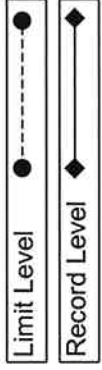
**Appendix J**  
**GRAPHICAL PLOTS OF TRENDS OF MONITORED**  
**PARAMETERS**

# Graphical Noise Parameters for Wu Kwai Sha New Village (CNM 1) (Jul 03 - Mar 05)



Monitoring Date

### Graphical Noise Parameters for Kam Lung Court (CNM 2) (Jul 03 - Mar 05)



Monitoring Date

**Appendix K**  
**CONSTRUCTION NOISE MONITORING AND SITE AUDIT SCHEDULES**  
**MARCH 2005 AND APRIL 2005**

Job No. : G/2563.01  
 Contract No. HY/2001/18  
 Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction

**Construction Noise Monitoring Schedule**

**March 2005 - April 2005**

Location Point	Monitoring Parameter	Measurement Start Time			
		3/3/2005 (Thursday)	10/3/2005 (Thursday)	17/3/2005 (Thursday)	24/03/2005 (Thursday)
CNM 1	L <sub>eq</sub> (30 min)	11:05	11:10	11:05	11:00
CNM 2	L <sub>eq</sub> (30 min)	11:45	11:40	11:40	11:50
					31/03/2005 (Thursday)
					11:10
					11:45

Location Point	Monitoring Parameter	Measurement Start Time		
		7/04/2005 (Thursday)	14/03/2005 (Thursday)	17/04/2005 (Thursday)
CNM 1	L <sub>eq</sub> (30 min)	10:00	10:00	10:00
CNM 2	L <sub>eq</sub> (30 min)	10:40	10:40	10:40
				24/04/2005 (Thursday)
				10:00
				10:40

\* Note: In case of poor weather condition on the monitoring date, we will inform the Contractor to arrange another construction noise impact monitoring in a day in the same week.

Job No. : G/2563.01  
 Contract No. HY/2001/18  
 Sai Sha Road Widening between Kam Ying Road and Future Trunk Road T7 Junction

**Schedule for Site Environmental Audit**

**Apr 2005**

Audit Start Time		
07/4/2005 (Thursday) 10:00	14/4/2005 (Thursday) 10:00	21/4/2005 (Thursday) 10:00
		28/4/2005 (Thursday) 10:00

Audit Start Time		

\* Note: In case of poor weather condition that the audit is found inappropriate, we will inform the Contractor to arrange another day for site environmental audit within the same week if feasible. In case of continuous poor weather, the ET will liaise with the Contractor for proper arrangement



**Appendix L**  
**STATISTICS FOR ENVIRONMENTAL COMPLAINTS**

**Contract No. HY/2001/18  
Sai Sha Road Widening between Kam Ying Road  
and Future Trunk Road T7 Junction**

**Statistic for Environmental Complaint  
March 2005**

