

**Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and  
Tai Po Road (Contract No. ST 77/01)**

**Monthly Environmental Monitoring & Audit Report –  
September 2003**

Checked in accordance with EML QP22  
Environmental Team Leader

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## EXECUTIVE SUMMARY

The impact environmental monitoring report was prepared by Environmental Management Limited (EML) for Environmental Monitoring & Audit (EM&A) Services of Sha Tin New Town, Stage II Road D15 Linking Lok Shun Path and Tai Po Road. This report discusses the EM&A services that had been carried out in September 2003.

Environmental monitoring for this Project included both air quality and noise measurements. The parameters measured for air quality are 24-hour and 1-hour Total Suspended Particulate (TSP) while for noise monitoring, the A-weighted continuous sound pressure level ( $L_{eq}$ ) as well as percentile levels ( $L_{10}$  and  $L_{90}$ ) were measured.

Over the reporting period, all monitored 24-hour TSP, 1-hour TSP and noise ( $L_{eq}(5min)$ ) monitoring data were below the AL Levels and no remedial actions as listed in the Event and Action Plan (**Appendix G**) were required.

The major construction activities in this reporting period included:

- Construction of Bridge A, B and C, including pile caps (Bridge B and C), abutment walls (Bridge A, B and C), H piles (Bridge B), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 5, 7, 8 and 12;
- Noise barrier construction, including bore piles, temporary shoring and excavation, pile caps and retaining wall for noise barrier No 1;
- Box culvert extension, including the construction of 1400 box culvert and 1500 diameter pipe;
- Underground drainage and water pipes at Lok Shun Path Roundabout; and
- Construction of staircase 4, 5 and 8.

Regular site inspection was conducted in this reporting month and the mitigation measures, as discussed in the relevant documents, were assessed.

In regard to the environmental issues in the last reporting month, it was noted from site inspections that the temporary drainage near Retaining Wall 12 had been maintained and sediments removed while the construction wastes had been properly disposed of.

In this month, it was noted from site inspections that sands/sediments from the construction site were observed on the public road next to Lok Lo Ha Village House No. 3B (Noise Monitoring Station N1). The sands/sediments were observed draining into the nearby drainage system without any silt/sand removal facilities installed. The Contractor was instructed to immediately remove the sands/sediments and provide all necessary mitigation measures to prevent site runoffs from entering the nearby drainage system without treatment.

In addition, due to Typhoon Dujuan and associated heavy rain and strong wind in early September, three scheduled air quality and noise monitoring (on 2-3 September 2003) were subsequently re-scheduled or cancelled.

## 1. INTRODUCTION

### 1.1 Background

Environmental Management Limited (EML) was appointed by Maunsell Consultants Asia Ltd. as the Environmental Specialist for the project *Sha Tin New Town, Stage II Road Linking Lok Shun Path and Tai Po Road* (Contract No. ST 77/01).

The responsibilities of the Environmental Team included:

- Monitor the noise and air quality data as required in the Environmental Monitoring and Audit (EM&A) Manual;
- Analyse the monitoring data and review the success of EM&A program to cost effectively confirm the adequacy of mitigatory measures implemented and validity of the Environmental Impact Assessment Study predictions and to identify any adverse environmental impacts arising;
- Carry out site inspection to investigate and audit the Contractor's site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and anticipate environmental issues for proactive action before problems arise;
- Review the proposal for mitigation measures submitted by Contractor in accordance with Event and Action Plans;
- Propose any improvement or other alternative mitigation measures should Contractor's proposal be found to be inadequate;
- Adhere to the procedures for carrying out complaint investigation;
- Audit and prepare EM&A reports on environmental monitoring data and site environmental conditions and;
- Report on EM&A results to Engineer, the ER and EPD.

This is the monthly EM&A report for September 2003. This monthly report describes the results of the impact air quality and noise monitoring works in the reporting period as well as the environmental status and issues of Road D15 Construction Site. In addition, if required, any remedial/follow-up actions undertaken as a result of non-compliance with relevant environmental criteria or complaints related to Road D15 Construction Site would also be discussed.

The project area of Road D15 Construction Site is shown in **Figure 1.1**.

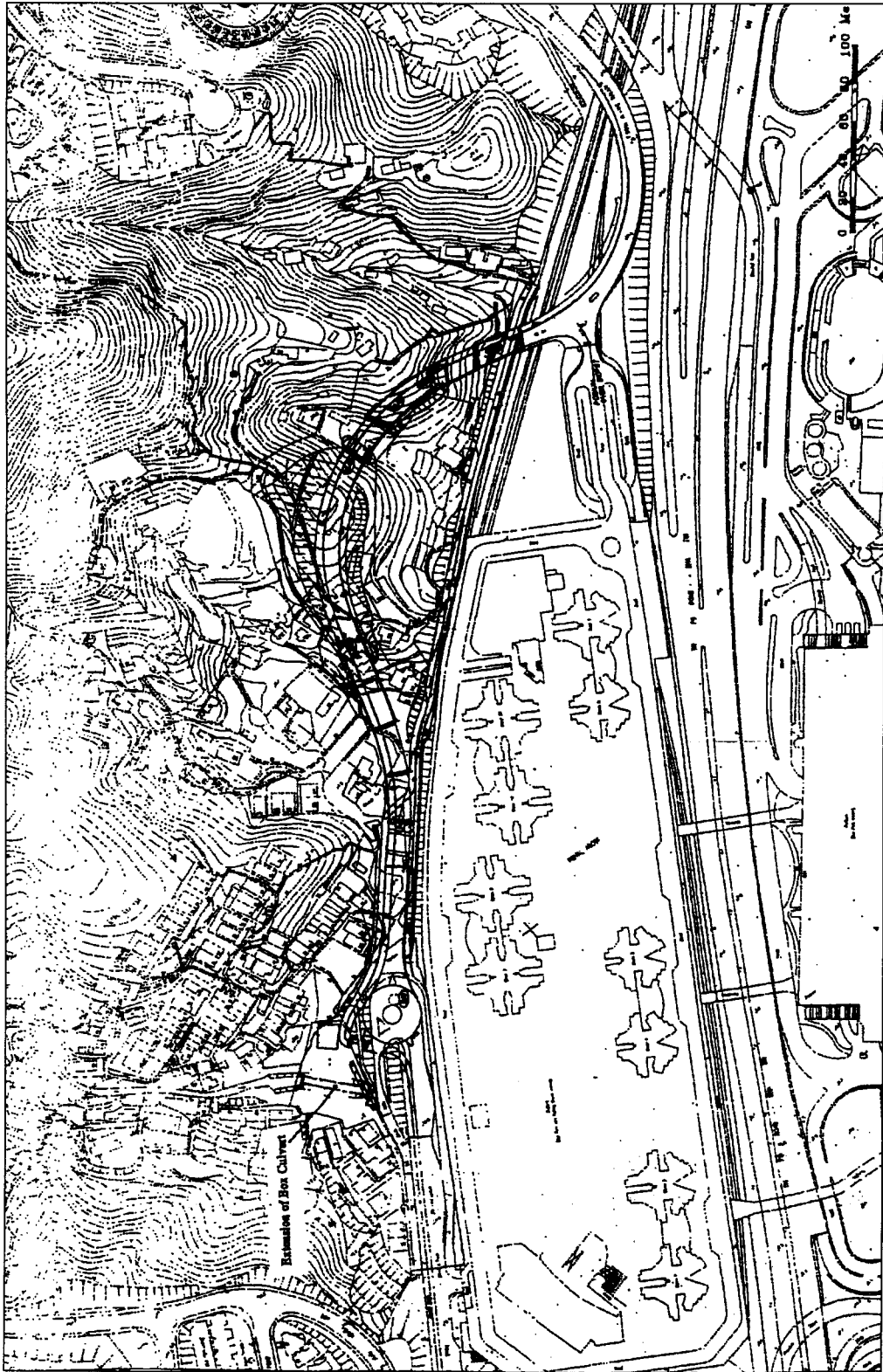


Figure 1.1 Project Area

## 2. ENVIRONMENTAL STATUS

### 2.1 Air Quality

#### 2.1.1 *Monitoring Requirements*

In accordance with the EM&A Manual, air quality impact monitoring was conducted in terms of 1-hour and 24-hour TSP at the designated monitoring locations.

Continuous 24-hour TSP monitoring was performed once in every six days while 1-hour TSP monitoring was performed 3 times in every 6 days. The Action and Limit (AL) levels for air quality is attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

#### 2.1.2 *Monitoring Locations*

The designated impact air quality monitoring stations are listed in **Table 2.1** and are shown in **Figure 2.1**.

**Table 2.1 Air Quality Monitoring Locations**

Monitoring Station	Location
A1	Village house at Lok Lo Ha Village
A2	Lok Lo Ha Village House No. 104
A3	Village House near Tsun King Road

#### 2.1.3 *Summary of Monitoring Results*

In this report, the results for the impact air quality monitoring conducted in September 2003 at the three designated locations were evaluated. **Table 2.2** summarises the ranges and mean of the 24-hour and 1-hour TSP monitoring results carried out in the reporting period. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix C** and **D**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

**Table 2.2 Summary of 24 and 1-hour TSP Monitoring Results**

Parameter	Monitoring Location	Mean TSP Levels ( $\mu\text{g}/\text{m}^3$ )	Range ( $\mu\text{g}/\text{m}^3$ )	No. of Exceedance	
				Action Levels	Limit Levels
24 – hour TSP	A1	74.7	42 – 144	0	0
	A2	83.2	58 – 129	0	0
	A3	77.5	39 – 103	0	0
1 – hour TSP	A1	155.9	92 – 243	0	0
	A2	157.1	96 – 269	0	0
	A3	140.4	89 – 194	0	0

It should be noted that as a result of Typhoon Dujan striking Hong Kong in early September, the scheduled monitoring around that time were subsequently changed. The actual monitoring times and dates are shown in **Appendix C** and **D**.

From **Table 2.2** above, all measured 24-TSP and 1-hour TSP monitoring data were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the monitoring were mainly sunny or cloudy, except some precipitations were recorded on 3 September. From field logs, the major dust sources during samplings near the designated stations included road dusts, vehicle emissions from traffic in Lok Shun Path and construction works at Road D15 Site. The major construction works carried out at Road D15 Site over the reporting period include construction of Bridge A, B and C, retaining wall, noise barrier, box culvert extension, underground drainage and water pipes and staircases. Meanwhile, it was also observed that there were construction activities carried out by sites that were not related to this Project in the vicinity of the monitoring stations.

Comparing with the monitoring results from last month, the calculated mean 24-hour and 1-hour TSP levels at all stations were generally higher in this reporting month except for the mean 1-hour TSP at Stations A1 and A3. The highest TSP levels were recorded at Station A2 (1-hour TSP) with values of  $157.1\mu\text{g}/\text{m}^3$  which was relatively higher than the levels recorded in August ( $151.3\mu\text{g}/\text{m}^3$ ).



**Figure 2.1 Air Quality Monitoring Locations**



## 2.2 Noise

### 2.2.1 Monitoring Requirements

Impact noise monitoring was conducted once in every six days at the five designated monitoring locations in accordance with specifications in the EM&A Manual. The duration of sampling was 30 minutes. The Action and Limit levels for noise monitoring are attached in **Appendix A** while the tentative monitoring schedules for the current and next reporting months are attached in **Appendix B**.

### 2.2.2 Monitoring Locations

The impact noise monitoring locations are presented in **Table 2.3** and shown in **Figure 2.2**.

**Table 2.3 Noise Monitoring Locations**

Monitoring Location	Measurement	Location
N1	Façade	Lok Lo Ha Village House No. 3B
N2	Façade	Lok Lo Ha Village House No. 32A
N3	Façade	Royal Ascot Block 9, Flat C
N4	Façade	Lok Lo Ha Village House No. 97
N5	Façade	Village near Royal Ascot

### 2.2.3 Summary of Monitoring Results

In this report, the results for the impact noise monitoring conducted in September 2003 at the five designated locations were evaluated. The monitoring results obtained are summarised in **Table 2.4** below. Detailed results, including graphical plots and relevant field logs, are presented in **Appendix E**. Meanwhile, **Appendix F** shows the meteorological conditions during the monitoring days.

**Table 2.4 Summary of Noise Monitoring Results**

Parameter	Monitoring Location	Range of Results dB(A)	No. of Exceedance	
			Action Levels	Limit Levels
30-minute Noise Measurement (Leq)	N1	59.8 – 70.5	0	0
	N2	61.9 – 69.0	0	0
	N3	57.2 – 63.1	0	0
	N4	57.2 – 62.2	0	0
	N5	59.8 – 62.6	0	0

It should be noted that as a result of the strong wind and heavy rain brought about by Typhoon Dujan in early September, the scheduled noise monitoring on 3 September was subsequently cancelled.

From **Table 2.4** above, all noise monitoring data recorded were below the criteria as set out in the Action and Limit Levels in **Appendix A**.

Over the reporting period, the local weather conditions during the sampling were mainly sunny or cloudy except some precipitations were recorded on 3 September, while all monitoring was conducted with wind speed of below 1.9 m/s. Traffic and construction activities were the major noise sources identified at the five monitoring locations. Meanwhile it was noted from field log

that activities of drilling, welding, piling and excavating, as well as operations of construction vehicles and machines including cranes, lorries, air compressor, hand-held breakers, electric generator were present in the vicinity of the monitoring stations during the monitoring.

Comparing with the monitoring results recorded in last reporting period, the range of measured noise level during this reporting month at all stations were similar. The highest level was recorded at Station N1 (70.5dB(A)) and occurred in the morning of 9 September. According to the field log, the major noise source at that time was vibratory piling, bore rig drilling and bar bending and sizing as well as traffic on KCR.



**Figure 2.2 Noise Monitoring Locations**

### 3. ENVIRONMENTAL AUDIT

#### 3.1 General

In the last monthly EM&A report, two environmental issues were raised:

- The temporary drainage near Retaining Wall 12 was not properly maintained;
- Wastes and rubbish around the construction site were not properly stored and disposed of.

It was noted from site inspections that the temporary drainage near Retaining Wall 12 had been maintained and sediments removed. Meanwhile, the construction wastes identified in the site inspection of the previous reporting month had been properly disposed of.

**Table 3.1** summarises the date and type of site inspections carried out during the reporting period.

**Table 3.1 Summary of Site Inspection during the Reporting Period**

Date	Type of Inspection
05 September 2003 (Wednesday)	Regular Site Inspection
11 September 2003 (Thursdays)	Regular Site Inspection
16 September 2003 (Friday)	Regular Site Inspection

Over the reporting period, the major construction work at the Site include:

- Construction of Bridge A, B and C, including pile caps (Bridge B and C), abutment walls (Bridge A, B and C), H piles (Bridge B ), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 5, 7, 8 and 12;
- Noise barrier construction, including bore piles, temporary shoring and excavation, pile caps and retaining wall for noise barrier No 1;
- Box culvert extension, including the construction of 1400 box culvert and 1500 diameter pipe;
- Underground drainage and water pipes at Lok Shun Path Roundabout; and
- Construction of staircase 4, 5 and 8.

#### 3.2 Assessment of Environmental Monitoring Results

In this reporting month, there were no exceedance recorded for both impact air quality and noise monitoring. The monitoring result was discussed in **Section 2** of the report and are summarised in **Table 3.2** below. As discussed previously, three scheduled air quality and noise monitoring were either re-schedule or cancelled in early September due to Typhoon Dujan.

**Table 3.2 Summary of Environmental Monitoring**

Item	Parameter	Monitoring Period	Total No. of Samples Taken (on all stations)	No. of Exceedance	
				Action Levels	Limit Levels
1	24 – hour TSP	01/09/03 to 30/09/03	18	0	0
2	1 – hour TSP	01/09/03 to 30/09/03	48	0	0
3	30-minute Noise Measurement (Leq)	01/09/03 to 30/09/03	20	0	0

### 3.3 Environmental Complaints

No environmental complaints had been received by the Environmental Team against the construction site in this reporting month. **Table 3.3** shows the summary record for this reporting month while **Table 3.4** summarises the complaint statistics from the commencement of the Project to date. **Appendix I** listed the details of all the complaints received on the construction site.

**Table 3.3 Environmental Complaints / Enquiry Received in the Reporting Month**

Complaint No.	Received date & Time	Description (inc. location/ nature of complaint)	Follow-up Action Taken	Recommended Mitigation Measures	Status/ Remarks
N/a	N/a	N/a	N/a	N/a	N/a

**Table 3.4 Summary of Total Number of Complaints Received to date**

Total No. of Complaints to date	No. of Complaints in this reporting period	No. of Active Complaints	No. of Inactive/Closed Complaints
2	0	N/a	2

### 3.4 Assessment of Mitigation Measures

**Table 3.5** presented the status of the major mitigation measures identified during site inspection.

**Table 3.5 Summary of Major Mitigation Measures at the Site**

Type	Mitigation Measure	Comments
Noise	Temporary purposed-built Noise Barrier	<ul style="list-style-type: none"> <li>Constructed based on the design in the Construction Noise Mitigation Proposal.</li> </ul>
Water	Wheel Washing Facility	<ul style="list-style-type: none"> <li>Installed and in operation.</li> </ul>
	Sand/Silt Removal Facilities	<ul style="list-style-type: none"> <li>Wastewater treatment systems are installed to treat site-runoffs and water from piling works</li> <li>Another treatment system was installed to treat wastewater from piling works near Bridge C.</li> </ul>
	Measures along stream-banks north-east of Lok Shun Path Roundabout	<ul style="list-style-type: none"> <li>Concrete, sandbags, sump pits and pumps were placed/installed along the banks to prevent construction debris and site run-off from entering the stream untreated.</li> </ul>
	Diversion of Stream Course via drainage pipe	<ul style="list-style-type: none"> <li>Installed at the existing channel.</li> </ul>
Wastewater	Water Reuse at wheel washing facility and site investigation drilling works.	Implemented

Type	Mitigation Measure	Comments
Land Contamination	Metal trays are placed underneath stationary machines where there are potential of oil leakage	Implemented
Air	Provide plastic sheeting covers on exposed soils	Implemented
	Regular water spraying on areas where there is likely generation of dust	Implemented
	Impervious sheeting was placed around the working area near monitoring station A1	Implemented

In this month, it was noted from site inspections that sands/sediments from the construction site were observed on the public road next to Lok Lo Ha Village House No. 3B (Noise Monitoring Station N1). The sands/sediments were observed draining into the nearby drainage system without any silt/sand removal facilities installed. The Contractor was instructed to immediately remove the sands/sediments and provide all necessary mitigation measures in order to prevent site runoffs from entering the nearby drainage system without treatment.

#### 4. FUTURE KEY ISSUE AND RECOMMENDATION

There are one environmental issue that will need to be addressed in the next reporting month:

- Cleaning up and provide proper mitigation measures for the site runoffs on the public road near Lok Lo Ha Village House No. 3B (near Noise Monitoring Station N1)

The updated work program for the following months are attached in **Appendix J** while the monitoring tentative schedule for the next reporting month are attached in **Appendix B**.

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**APPENDIX A:**

**Action and Limit Levels**

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**Action and Limit Levels for 24-hour TSP**

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	156	260
A2	155	
A3	153	

**Action and Limit Levels for 1-hour TSP**

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
A1	371	500
A2	378	
A3	368	

**Action / Limit Levels for Construction Noise**

Time Period	Action Level	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		60/65/70** dB(A)
2300- 0700 hours of next day		45/50/55** dB(A)

\*\* to be selected based on Area Sensitivity Rating

Note: If works are to be carried out during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

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**APPENDIX B:**

**Tentative Schedule for Impact  
Air Quality and Noise  
Monitoring**

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**1. Tentative Schedule for Current Reporting Month – September 2003**

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for Sep 2003

Sep-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Mon	x	x
2	Tue	9:30	8:00
3	Wed	x	09:50,11:00
4	Thu	x	x
5	Fri	x	x
6	Sat	x	x
7	Sun	x	x
8	Mon	9:30	8:00
9	Tue	x	09:50,11:00
10	Wed	x	x
11	Thu	9:30	8:00
12	Fri	x	x
13	Sat	x	x
14	Sun	x	x
15	Mon	x	09:00,11:00
16	Tue	x	x
17	Wed	x	x
18	Thu	9:30	8:00
19	Fri	x	09:50,11:00
20	Sat	x	x
21	Sun	x	x
22	Mon	x	x
23	Tue	x	x
24	Wed	9:30	8:00
25	Thu	x	09:50,11:00
26	Fri	x	x
27	Sat	x	x
28	Sun	x	x
29	Mon	x	x
30	Tue	9:30	8:00

Contract No. ST77/01  
 Sha Tin New Town, Stage II  
 Road D15 Linking Lok Shun Path and Tai Po Road  
 Tentative Time Schedule for Construction Phase Noise Monitoring for Sep 2003

Sep-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Mon	x	x	x	x	x
2	Tue	x	x	x	x	x
3	Wed	09:50	10:25	13:00	11:15	09:00
4	Thu	x	x	x	x	x
5	Fri	x	x	x	x	x
6	Sat	x	x	x	x	x
7	Sun	x	x	x	x	x
8	Mon	x	x	x	x	x
9	Tue	09:50	10:25	13:00	11:15	09:00
10	Wed	x	x	x	x	x
11	Thu	x	x	x	x	x
12	Fri	x	x	x	x	x
13	Sat	x	x	x	x	x
14	Sun	x	x	x	x	x
15	Mon	09:50	10:25	13:00	11:15	09:00
16	Tue	x	x	x	x	x
17	Wed	x	x	x	x	x
18	Thu	x	x	x	x	x
19	Fri	09:50	10:25	13:00	11:15	09:00
20	Sat	x	x	x	x	x
21	Sun	x	x	x	x	x
22	Mon	x	x	x	x	x
23	Tue	x	x	x	x	x
24	Wed	x	x	x	x	x
25	Thu	09:50	10:25	13:00	11:15	09:00
26	Fri	x	x	x	x	x
27	Sat	x	x	x	x	x
28	Sun	x	x	x	x	x
29	Mon	x	x	x	x	x
30	Tue	x	x	x	x	x

2. Tentative Schedule for Next Reporting Month – October 2003

Contract No. ST77/01

Sha Tin New Town, Stage II

Road D15 Linking Lok Shun Path and Tai Po Road

Tentative Time Schedule for Construction Phase Dust Monitoring for Oct 2003

Oct-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	<i>Wed</i>	x	x
2	Thu	x	x
3	Fri	x	14:00,15:00
4	<i>Sat</i>	x	x
5	<i>Sun</i>	x	x
6	Mon	9:30	8:00
7	Tue	x	09:50,11:00
8	Wed	x	x
9	Thu	x	x
10	Fri	9:30	8:00
11	Sat	x	x
12	<i>Sun</i>	x	x
13	Mon	x	08:00,11:00
14	Tue	x	x
15	Wed	x	x
16	Thu	9:30	8:00
17	Fri	x	09:50,11:00
18	Sat	x	x
19	<i>Sun</i>	x	x
20	Mon	x	x
21	Tue	x	x
22	Wed	9:30	8:00
23	Thu	x	09:50,11:00
24	Fri	x	x
25	Sat	x	x
26	<i>Sun</i>	x	x
27	Mon	x	x
28	Tue	9:30	8:00
29	Wed	x	09:50,11:00
30	Thu	x	x
31	Fri	x	x

Contract No. ST77/01  
 Sha Tin New Town, Stage II  
 Road D15 Linking Lok Shun Path and Tai Po Road  
 Tentative Time Schedule for Construction Phase Noise Monitoring for Oct 2003

Oct-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	<i>Wed</i>	x	x	x	x	x
2	Thu	x	x	x	x	x
3	Fri	14:50	16:15	17:00	15:25	14:00
4	<i>Sat</i>	x	x	x	x	x
5	<i>Sun</i>	x	x	x	x	x
6	Mon	x	x	x	x	x
7	Tue	09:50	11:15	13:00	10:25	09:00
8	Wed	x	x	x	x	x
9	Thu	x	x	x	x	x
10	Fri	x	x	x	x	x
11	Sat	x	x	x	x	x
12	<i>Sun</i>	x	x	x	x	x
13	Mon	09:50	11:15	13:00	10:25	09:00
14	Tue	x	x	x	x	x
15	Wed	x	x	x	x	x
16	Thu	x	x	x	x	x
17	Fri	09:50	11:15	13:00	10:25	09:00
18	Sat	x	x	x	x	x
19	<i>Sun</i>	x	x	x	x	x
20	Mon	x	x	x	x	x
21	Tue	x	x	x	x	x
22	Wed	x	x	x	x	x
23	Thu	09:50	11:15	13:00	10:25	09:00
24	Fri	x	x	x	x	x
25	Sat	x	x	x	x	x
26	<i>Sun</i>	x	x	x	x	x
27	Mon	x	x	x	x	x
28	Tue	x	x	x	x	x
29	Wed	09:50	11:15	13:00	10:25	09:00
30	Thu	x	x	x	x	x
31	Fri	x	x	x	x	x

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**APPENDIX C:**

**24-Hour TSP Impact  
Monitoring Results and Plots**

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### 1. 24-hour TSP Monitoring Results

#### Monitoring Station A1 (Lok Lo Ha Village House No. 3B)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Sep-03*	2.8020	2.8687	1.11	1.11	2034.17	2058.17	1440	42	Cloudy & Rainy
8-Sep-03	2.8632	2.9482	1.11	1.11	2059.17	2083.17	1440	53	Cloudy
11-Sep-03	2.8547	2.9945	1.11	1.11	12086.17	12110.17	1440	87	Cloudy
18-Sep-03	2.7711	3.0010	1.11	1.11	12113.17	12137.17	1440	144	Sunny
24-Sep-03	2.8808	2.9683	1.11	1.11	12140.17	12164.17	1440	55	Cloudy
30-Sep-03	2.8803	2.9867	1.11	1.11	12167.17	12191.17	1440	67	Sunny
							Min	42	
							Max	144	
							Average	74.7	

#### Monitoring Station A2 (Lok Lo Ha Village House No. 104)

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Sep-03	2.8113	2.9051	1.11	1.11	2707.71	2731.71	1440	59	Cloudy & Rainy
8-Sep-03	2.8568	2.9659	1.11	1.11	2732.75	2756.75	1440	68	Cloudy
11-Sep-03	2.8684	3.0550	1.11	1.11	2759.75	2783.75	1440	117	Cloudy
18-Sep-03	2.7614	2.9686	1.11	1.11	2786.75	2810.75	1440	129	Sunny
24-Sep-03	2.9063	2.9992	1.11	1.11	2813.75	2837.75	1440	58	Cloudy
30-Sep-03	2.8722	2.9803	1.11	1.11	2840.75	2864.75	1440	68	Sunny
							Min	58	
							Max	129	
							Average	83.2	

\* Monitoring taken after all tropical cyclone warning signals were removed

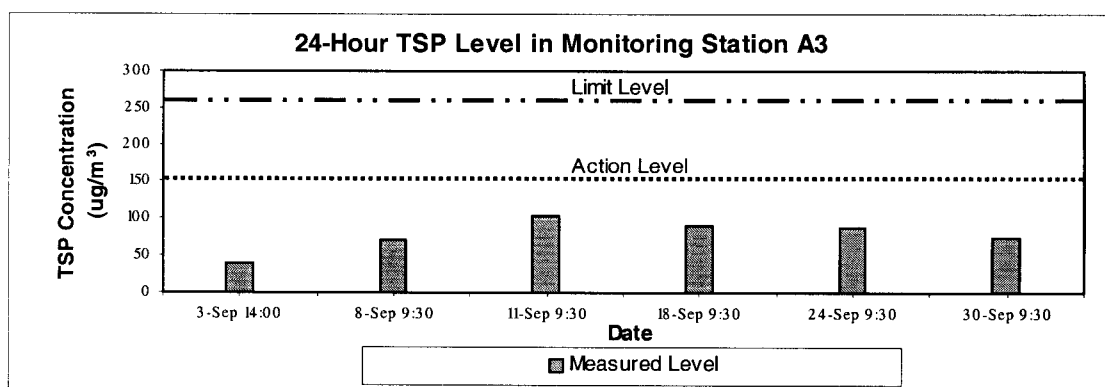
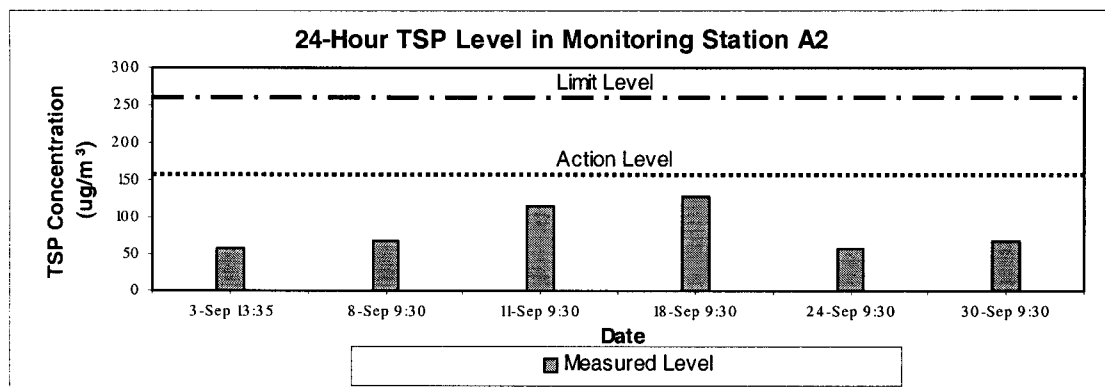
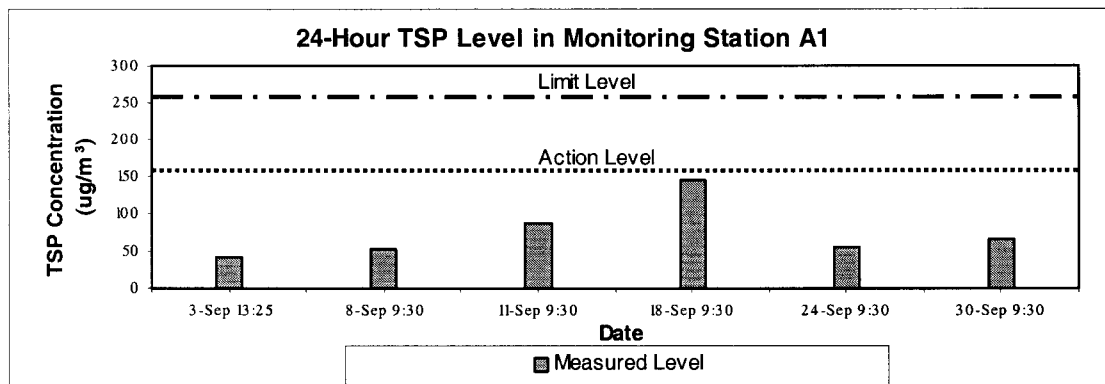


**Monitoring Station A3 (Village House near Tsun King Road)**

Date	Filter Weight (g)		Flow Rate (m <sup>3</sup> /min.)		Elapse Time		Total Sampling Time (min.)	Conc. (µg/m <sup>3</sup> )	Weather Condition
	Initial	Final	Initial	Final	Initial	Final			
3-Sep-03*	2.7796	2.8414	1.11	1.11	1222.07	1246.07	1440	39	Cloudy & Rainy
8-Sep-03	2.8475	2.9633	1.11	1.11	1247.07	1271.07	1440	72	Cloudy
11-Sep-03	2.8673	3.0325	1.11	1.11	11274.07	11298.07	1440	103	Cloudy
18-Sep-03	2.7735	2.9174	1.11	1.11	11301.07	11325.07	1440	90	Sunny
24-Sep-03	2.8825	3.0196	1.11	1.11	11328.07	11352.07	1440	86	Cloudy
30-Sep-03	2.8589	2.9782	1.11	1.11	11355.07	11379.07	1440	75	Sunny
							Min	39	
							Max	103	
							Average	77.5	

\* Monitoring taken after all tropical cyclone warning signals were removed

## 2. Plots for 24-hour Monitoring Results



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**APPENDIX D:**

**1-Hour TSP Impact  
Monitoring Results and Plots**

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## 1. 1-hour TSP Monitoring Results

### Station A1 (Lok Lo Ha Village House No. 3B)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
2-Sep-03*	0825 – 0925	132
3-Sep-03	1100 – 1200	92
3-Sep-03	1215 – 1315	156
8-Sep-03	0815 – 0915	132
9-Sep-03	0950 – 1050	99
9-Sep-03	1100 – 1200	117
11-Sep-03	0800 – 0900	105
15-Sep-03	0950 – 1050	96
15-Sep-03	1100 – 1200	108
18-Sep-03	0800 – 0900	221
19-Sep-03	0950 – 1050	239
19-Sep-03	1100 – 1200	243
24-Sep-03	0800 – 0900	216
25-Sep-03	0950 – 1050	153
25-Sep-03	1100 – 1200	144
30-Sep-03	0800 – 0900	242
	Average	155.9
	Min	92
	Max	243

### Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
2-Sep-03*	0835 – 0935	144
3-Sep-03	1115 – 1215	155
3-Sep-03	1230 – 1330	132
8-Sep-03	0820 – 0920	152
9-Sep-03	0950 – 1050	105
9-Sep-03	1100 – 1200	135
11-Sep-03	0800 – 0900	123
15-Sep-03	0950 – 1050	96
15-Sep-03	1100 – 1200	135
18-Sep-03	0800 – 0900	156
19-Sep-03	0950 – 1050	251
19-Sep-03	1100 – 1200	192
24-Sep-03	0800 – 0900	269
25-Sep-03	0950 – 1050	158
25-Sep-03	1100 – 1200	122
30-Sep-03	0800 – 0900	188
	Average	157.1
	Min	96
	Max	269

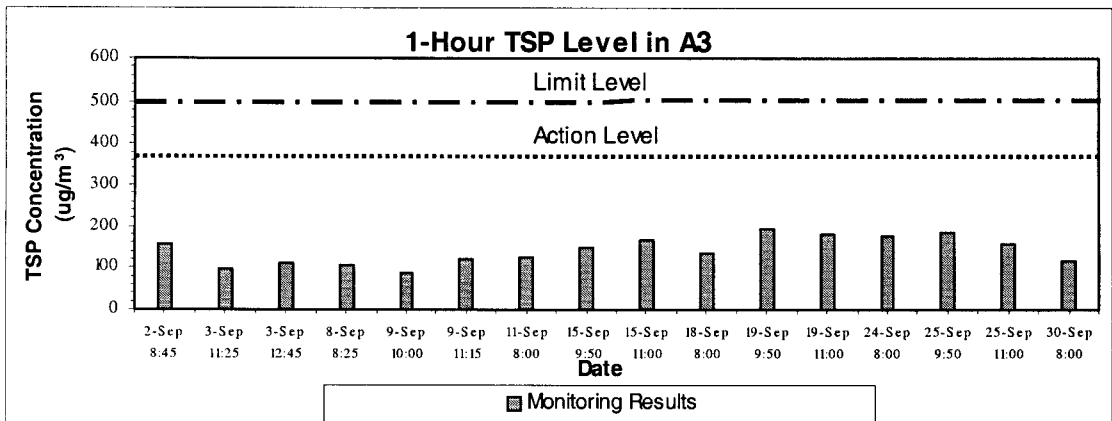
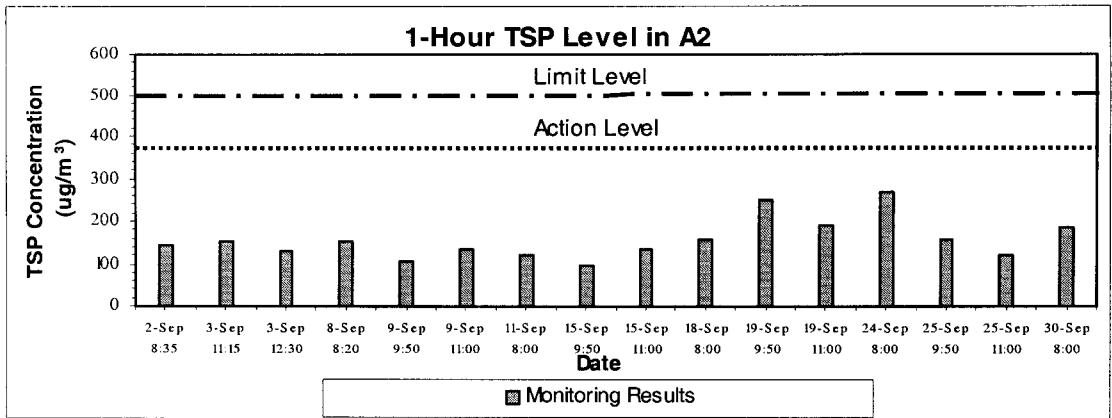
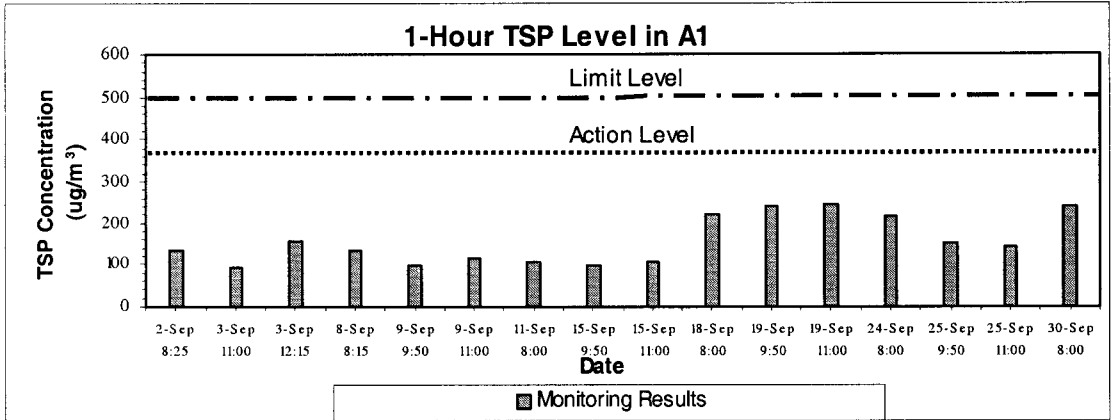
\* - Tropical cyclone warning signal No. 1

**Station A3 (Village House near Tsun King Road)**

<b>Date</b>	<b>Time of sampling</b>	<b>Concentration, <math>\mu\text{g}/\text{m}^3</math></b>
2-Sep-03*	0845 – 0945	155
3-Sep-03	1125 – 1225	98
3-Sep-03	1245 – 1345	111
8-Sep-03	0825 – 0925	104
9-Sep-03	1000 – 1150	89
9-Sep-03	1115 – 1215	122
11-Sep-03	0800 – 0900	123
15-Sep-03	0950 – 1050	146
15-Sep-03	1100 – 1200	165
18-Sep-03	0800 – 0900	132
19-Sep-03	0950 – 1050	194
19-Sep-03	1100 – 1200	180
24-Sep-03	0800 – 0900	176
25-Sep-03	0950 – 1050	183
25-Sep-03	1100 – 1200	155
30-Sep-03	0800 – 0900	114
	Average	140.4
	Min	89
	Max	194

\* - Tropical cyclone warning signal No. 1

## 2. Plots of 1-hour TSP Monitoring Results



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**APPENDIX E:**

**Daytime 07:00 -19:00Hrs  
Impact Noise Monitoring  
Results and Plots**

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## 1. Noise Monitoring Results

### Monitoring Station N1 (Lok Lo Ha Village House No.3B)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Sept-03	Cancelled due to Typhoon Dujuan			
9-Sep-03	1035 – 1105	70.5	75.2	62.1
15-Sep-03	1130 – 1200	59.8	62.5	55.9
19-Sep-03	0955 – 1025	61.6	64.0	57.2
25-Sep-03	0939 – 1009	63.0	64.6	60.3

Min	59.8	62.5	55.9
Max	70.5	75.2	62.1

### Monitoring Station N2 (Lok Lo Ha Village House No.32A)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Sept-03	Cancelled due to Typhoon Dujuan			
9-Sep-03	1130 – 1200	61.9	66.4	56.2
15-Sep-03	1055 – 1125	65.8	68.8	57.3
19-Sep-03	1125 – 1155	65.1	69.1	63.1
25-Sep-03	1125 – 1155	69.0	71.5	61.4

Min	61.9	66.4	56.2
Max	69.0	71.5	63.1

### Monitoring Station N3 (Royal Ascot Block 9, Flat C)

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Sept-03	Cancelled due to Typhoon Dujuan			
9-Sep-03	1410 – 1440	57.2	60.0	53.8
15-Sep-03	1305 – 1335	57.8	59.4	56.0
19-Sep-03	1301 – 1331	59.3	61.6	50.8
25-Sep-03	1300 – 1330	63.1	65.3	52.3

Min	57.2	59.4	50.8
Max	63.1	65.3	56.0



**Monitoring Station N4 (Lok Lo Ha Village House No.97)**

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Sept-03	Cancelled due to Typhoon Dujuan			
9-Sep-03	1315 – 1345	57.2	60.0	53.8
15-Sep-03	1018 – 1048	62.2	63.9	60.4
19-Sep-03	1032 – 1102	59.2	62.4	54.2
25-Sep-03	1027 – 1057	57.3	60.4	53.3

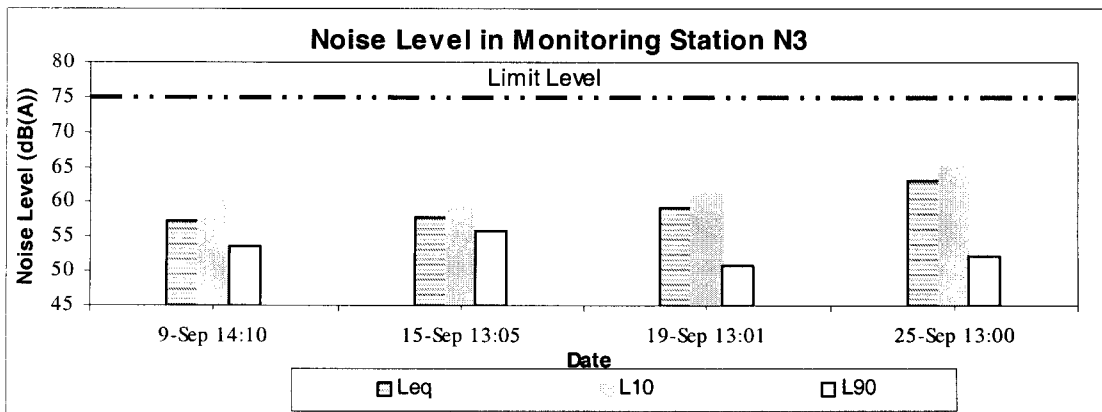
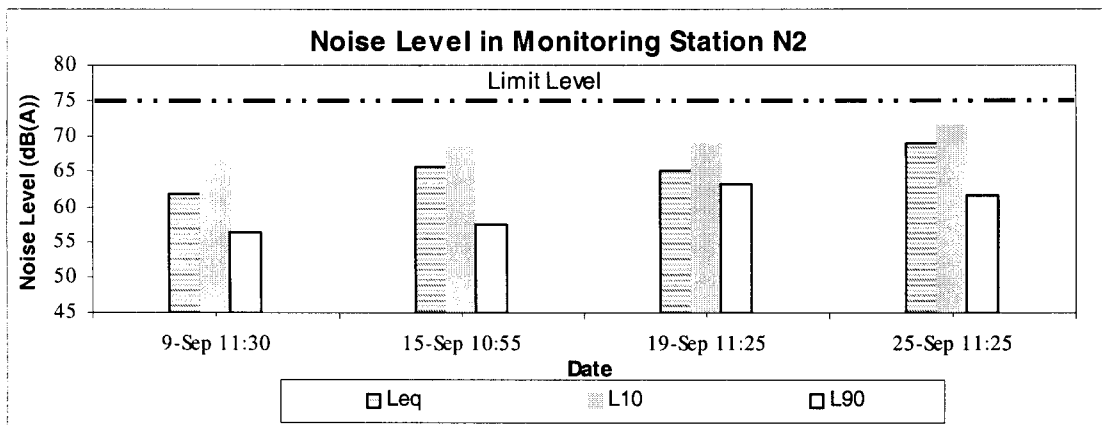
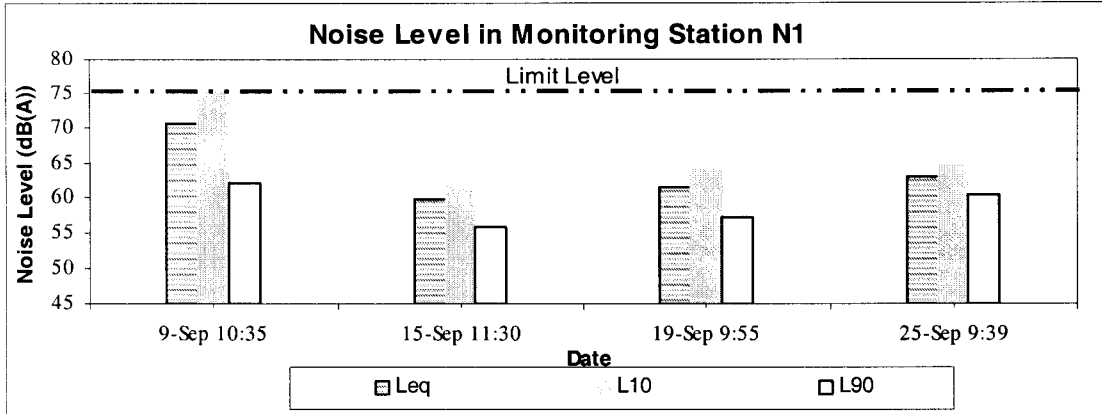
Min	57.2	60.0	53.3
Max	62.2	63.9	60.4

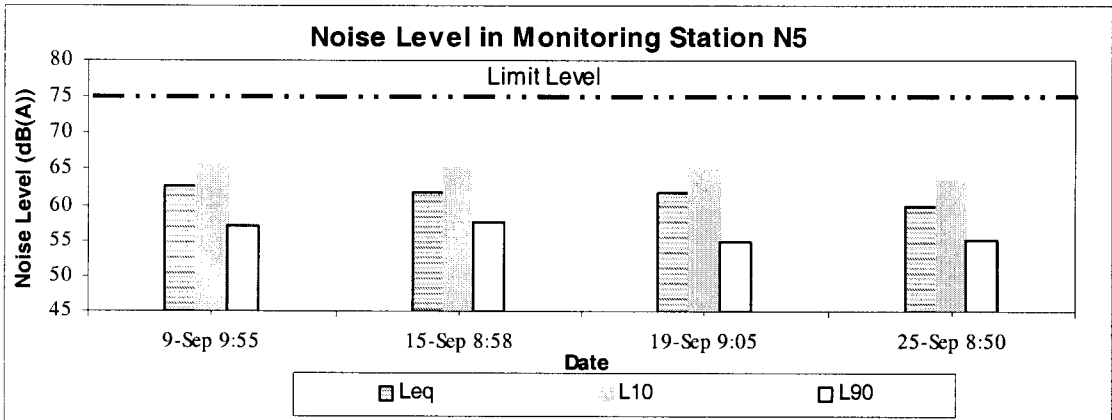
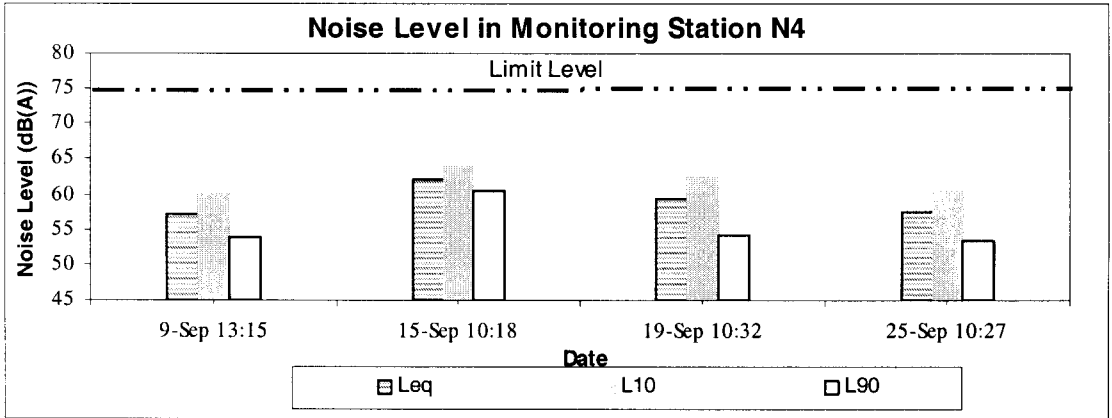
**Monitoring Station N5 (Village House near Royal Ascot)**

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Sept-03	Cancelled due to Typhoon Dujuan			
9-Sep-03	0955 – 1025	62.6	65.7	57.0
15-Sep-03	0858 – 0928	61.9	65.0	57.7
19-Sep-03	0905 – 0935	61.8	65.1	54.9
25-Sep-03	0850 – 0920	59.8	63.5	55.1

Min	59.8	63.5	54.9
Max	62.6	65.7	57.7

## 2. Plots of Noise Monitoring Results





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**APPENDIX F:**

**Weather Conditions During  
Monitoring Periods**

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**Weather Condition during Monitoring Period  
(From 1 to 30 September 2003)**

<b>Date</b>	<b>Weather</b>	<b>Mean Air Temperature (°C)</b>	<b>Wind Speed (m/s)</b>	<b>Mean Relative Humidity (%)</b>
2-Sep-03	Cloudy & Windy	27.1	N/A	81
3-Sep-03	Cloudy & Rainy	26.1	N/A	90
8-Sep-03	Cloudy	27.4	N/A	88
9-Sep-03	Sunny	28.3	0.7 – 1.7	82
11-Sep-03	Cloudy	29.0	0.5 – 1.1	74
15-Sep-03	Cloudy	25.6	0.9 – 1.1	95
18-Sep-03	Sunny	29.1	1.0	75
19-Sep-03	Sunny	29.3	1.0 – 1.4	78
24-Sep-03	Cloudy	26.8	1.0	77
25-Sep-03	Sunny	27.3	1.1 – 1.9	69
30-Sep-03	Sunny	27.6	1.0 – 1.3	78

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**APPENDIX G:**

**Event and Action Plan for Air  
Quality and Noise**

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## Event / Action Plan for Air Quality

EVENT	ACTION		
	ET	Engineer	CONTRACTOR
<b>ACTION LEVEL</b>			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform the Engineer and Contractor;</li> <li>3. Repeat measurement to confirm finding; and</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor; and</li> <li>2. Check monitoring data and Contractor's working methods.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice, if any; and</li> <li>2. Amend working methods if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform the Engineer and Contractor;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily.</li> <li>5. Discuss with Engineer for remedial actions required;</li> <li>6. If exceedance continues, arrange meeting with the engineer; and</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Check monitoring data and Contractor's working methods;</li> <li>4. Discuss with ET and Contractor on potential remedial actions; and</li> <li>5. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for mitigation measures to the Engineer within 3 working days of notification;</li> <li>2. Implement the agreed proposals; and</li> <li>3. Amend proposal if appropriate.</li> </ol>
<b>LIMIT LEVEL</b>			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform the Engineer and Contractor;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Check monitoring data and Contractor's working methods;</li> <li>4. Discuss with ET and Contractor on potential remedial actions; and</li> <li>5. Ensure remedial action properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to the Engineer within 3 working days of notification;</li> <li>3. Implement the agreed proposals; and</li> <li>4. Amend proposal if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform the Engineer and Contractor;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily.</li> <li>5. Investigate the causes of exceedance;</li> <li>6. Arrange meeting with EPD and the Engineer to discuss the remedial actions to be taken;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of the results; and</li> <li>8. If exceedance stops, cease additional monitoring</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</li> <li>4. Discuss among ET and Contractor on potential remedial actions;</li> <li>5. Review Contractor's remedial action whenever necessary to assure their effectiveness; and</li> <li>6. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop portion of work until the exceedance is abated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to the Engineer within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Resubmit proposals if problem still not under control;</li> <li>5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated.</li> </ol>

**Event / Action Plan for Construction Noise**

EVENT	ACTION	
	ET	Contractor
Action Level	<ol style="list-style-type: none"> <li>1. Notify the Engineer and Contractor;</li> <li>2. Analyze investigation;</li> <li>3. Require Contractor to propose measures for the analyzed noise problem; and</li> <li>4. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to Environmental Team and the Engineer; and</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Notify the Engineer and Contractor;</li> <li>2. Notify EPD; and</li> <li>3. Require Contractor to implement mitigation measures; and increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Implement mitigation measures; and</li> <li>2. Prove to Environmental Team and the Engineer effectiveness of measures applied.</li> </ol>



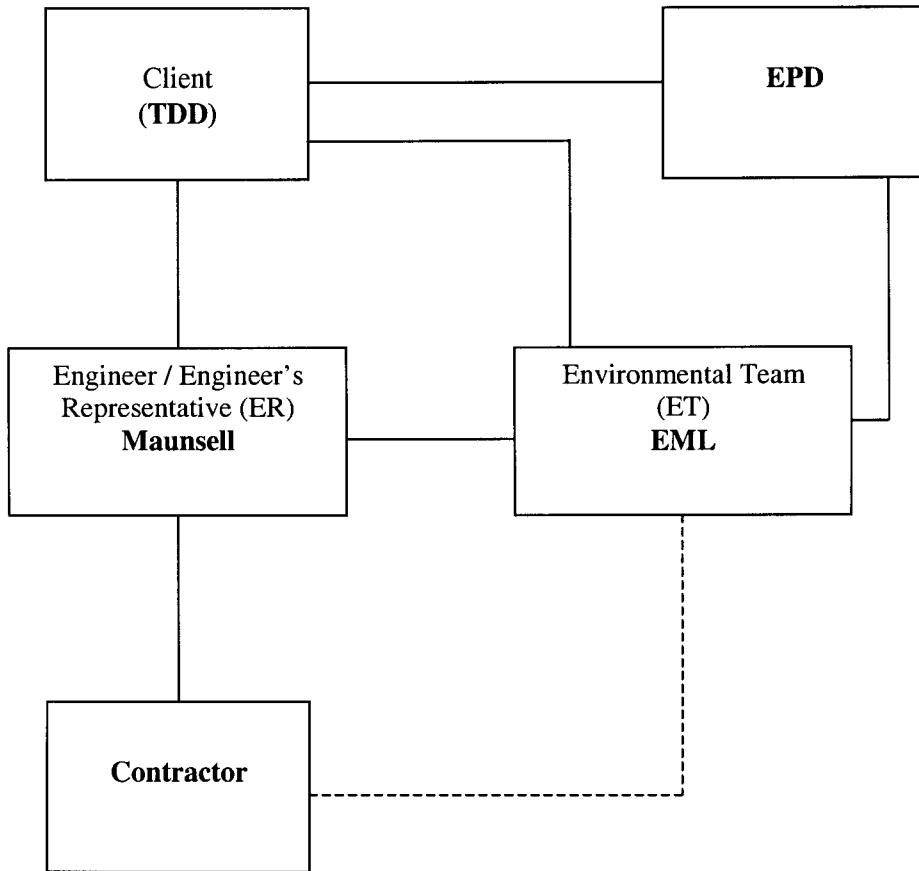
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**APPENDIX H:**

**Project Organisation and  
Contacts of Key Personnel**

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**Figure H.1: Project Management Structure**



**Contacts of Key Personnel:**

Organisation	Nature of Duty	Contact Personnel	Contact Number	
			Telephone	Fax
Territory Development Department (TDD)	Client	Mr. Stephen Wong	2301-1376	2721-8630
Maunsell Consultants Asia Ltd. (MCAL)	Engineer	Mr. Alan Kwong	2602-3433	2691-2649
Environmental Management Ltd. (EML)	Environmental Team	Mr. Lawrence Tso	2890-1090	2890-6901

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**APPENDIX I:**

**Summary Records of  
Complaints Received**

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Complaint No.	Received date & Time	Description (inc. location/nature of complaint)	Follow-up Action Taken	Recommended Measures	Mitigation	Status/ Remarks
C02-N1	Morning, 29/7/2002	Around 9:30am on 29/7/02, police came on site to investigate a complaint of noise pollution emitted during rock breaking which carried out by the Contractor near the Site Office (near the box culvert and north Lok Shun Path Roundabout). The Contractor immediately halted the activity in response to police's advice	<ul style="list-style-type: none"> <li>Ad hoc site inspection was carried out on 31/7/02, jointly with the Engineer and Contractor</li> <li>The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor.</li> <li>A letter, addressing to the complainant, will be sent to the police.</li> </ul>	<p>Mitigation actions:</p> <ul style="list-style-type: none"> <li>Excavator-mounted breaker shall not be carried out within 125m from any nearby noise sensitive receivers and;</li> <li>Temporary purposed built barrier should be installed whenever there are high noise level construction activities.</li> </ul>	<p>The complaint was considered as ad hoc rather than continuous. It is therefore considered not necessary to increase the noise monitoring frequency</p> <p>File Closed.</p>	
C02-N2	Night-time, 7 September, 2002	<ul style="list-style-type: none"> <li>Nearby residents complained to police that a generator in Road D15 Site was operating in night-time near Lok Lo Ha Village.</li> <li>Police came to the site to investigate the complaint and inform watchmen to turn off the operating generator at around 8:30pm.</li> <li>The complaint was valid as it concerned with construction noise during the restricted hours.</li> </ul>	<ul style="list-style-type: none"> <li>Ad hoc site inspection was carried out on 8 September 02, jointly with the Engineer and Contractor and ET.</li> <li>The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor.</li> <li>A letter in both English and Chinese, addressing to the complainant, has been sent to the police.</li> </ul>	<p>Mitigation actions:</p> <ul style="list-style-type: none"> <li>Under the Noise Control Ordinance, the carrying out of general construction work using powered mechanical equipment (including generators) during the restricted hours (between 7 p.m. and 7 a.m. or at any time on a general holiday (including Sunday) is prohibited unless a valid Construction Noise Permit is in force;</li> <li>A watchmen or site staff should be employed to check daily that all generators and plats are switched off after the permissible working hours.</li> </ul>	<p>File Closed.</p>	

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**APPENDIX J:**

**Updated Construction  
Program**

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MASTER PROGRAMME (ST77/01/MP/12)

Sha Tin New Town Stage II Contract No. ST77/01 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Aug	Sep	Oct	Nov	Dec
0	Road D15 Acceleration Programme	1081 days	12/12/01					
1	1.0 Original Contract Period	1187 days	12/12/01					
4	1.2 Works in Section II (822 days)	822 days	12/12/01					
5	1.3 Landscape Work in Section III (1187 Days)	1187 days	12/12/01					
6	2.0 Anticipated Dates	999 days	22/11/02					
7	2.1 Anticipated EOT for Section I	249.5 days	22/11/02					17/2/2003
9	2.3 Anticipated EOT for Section II	157 days	13/03/04					
10	2.4 Anticipated Completion Date for Section III	365 days	17/08/04					
11	3 Preliminary & Site Establishment	658 days	12/12/01					
12	3.1 Waste Mgt & Envir Control Manual for EPD approval	600 days	12/12/01					16/12/2003
13	3.2 Submission of mitigation proposal	600 days	12/12/01					16/12/2003
14	3.3 Method Statement/ICE/Material Submission & Approval	600 days	12/12/01					16/12/2003
17	3.6 Utilities undertakers Co-ordination	500 days	10/05/02					
20	3.10 Erection of Fencing & Hoarding	658 days	12/12/01					
24	3.10.4 Reprovision of Exlg KCRC Fence	20 days	06/02/04					
45	6 Bridge A & General	771 days	12/12/01					
50	6.5 Fabrication PC panel permanent formwork	200 days	24/01/03					26/09/2003
58	6.8 Pile Caps Construction A1 to A5	364 days	19/10/02					
63	6.8.5 A5 Pile Cap	242 days	17/03/03					
65	6.8.5.2 A5 Pile Cap (2nd Portion)	50 days	07/11/03					6.8.5.2 A5 Pile Cap (2nd Portion)
66	6.8 Abutment Wall A1 to A5	371 days	29/11/02					
67	6.8.1 A1 Abutment Wall	137 days	14/04/03					
69	6.9.1.2 A1 (Upper Portion)	30 days	25/08/03					29/09/2003
70	6.9.2 A2 Pier & Cross Head	192 days	29/01/03					29/09/2003
72	6.9.2.2 A2 Crosshead	24 days	25/08/03					22/09/2003
75	6.9.5 A5 Abutment Wall	180 days	18/08/03					22/09/2003
76	6.9.5.1 A5 Abutment wall (Portion 1 to allow site access)	50 days	18/08/03					6.9.5.1 A5 Abutment wall (Portion 1 to allow site access)
77	6.9.5.2 A5 Abutment wall (Portion 2)	40 days	10/01/04					16/10/2003
78	6.10 Install bridge bearings A1 to A5	338 days	23/01/03					
79	6.10.1 A1 - A2 Bridge Bearings	6 days	06/10/03					6.10.1 A1 - A2 Bridge Bearings 13/10/2003
80	6.10.2 A2 - A3 Bridge Bearings	6 days	26/09/03					6.10.2 A2 - A3 Bridge Bearings 08/10/2003
82	6.10.4 A4 - A5 Bridge Bearings	6 days	05/03/04					
83	6.11 Install Precast Beams A1 to A5	335 days	14/02/03					
84	6.11.1 A1 to A2 PC Beams	6 days	27/10/03					6.11.1 A1 to A2 PC Beams 03/11/2003
85	6.11.2 A2 to A3 PC Beams	6 days	23/03/04					
87	6.11.4 A4 to A5 PC Beams	6 days	15/03/04					
88	6.12 Bridge Deck Construction A1 to A5	362 days	24/02/03					
89	6.12.1 A1 to A2 Bridge Deck	50 days	04/11/03					6.12.1 A1 to A2 Bridge Deck
90	6.12.2 A2 to A3 Bridge Deck	50 days	31/03/04					
92	6.12.4 A4 to A5 Bridge Deck	50 days	23/03/04					
93	6.13 Bridge Deck Drainage	139 days	30/01/04					
94	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	30/01/04					
95	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	24/06/04					
96	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	11/02/04					
97	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	15/06/04					
98	6.14 Bridge deck Parapet & Curb	247 days	15/09/03					6.14 Bridge deck Parapet & Curb
99	6.14.1 A1 to A2 Parapet & Curb	24 days	13/01/04					6.14.1 A1 to

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Task Progress:

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MASTER PROGRAMME (ST77/01/MP/12)

Sha Tin New Town Stage II Contract No. ST77/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Aug	Sep	Oct	Nov	Dec
100	6.1.4.2 A2 to A3 Parapet & Curb	24 days	14/06/04					
101	6.1.4.3 A3 to A4 Parapet & Curb	24 days	15/09/03					
102	6.1.4.4 A4 to A5 Parapet & Curb	24 days	01/06/04					
103	7 Bridge B	496 days	11/06/02					
105	7.2 Pre Bore H-Piles	220 days	19/12/02					
107	7.2.2 B2 H Piles	27 days	11/08/03					
108	7.2.3 Loading test on Pile	12 days	18/09/03					
109	7.3 Pile Cap & Abutment Wall B1 & B2	56 days	01/09/03					
110	7.3.1 Temp. works for B1 Pile Cap	20 days	01/09/03					
111	7.3.2 B1 Pile Cap & Abutment	30 days	25/09/03					
112	7.3.3 Temp. works for B2 Pile Cap	17 days	11/09/03					
113	7.3.4 B2 Pile Cap & Abutment	30 days	03/10/03					
114	7.4 Install Bridge Bearings	12 days	04/11/03					
115	7.4.1 B1 bridge Bearings	6 days	04/11/03					
116	7.4.2 B2 bridge Bearings	6 days	11/11/03					
117	7.5 Install Precast Beams B1 to B2	6 days	20/01/04					
118	7.6 Bridge Deck Construction B1 to B2	50 days	30/01/04					
119	7.7 Bridge deck Drainage B1 to B2	18 days	30/03/04					
120	7.8 Bridge Deck Parapet & Curb B1 to B2	18 days	30/03/04					
121	7.9 Remove Temp Platform(Underneath Bridge Deck)	60 days	27/08/03					
122	7.10 Reinstate Exit Valley	60 days	01/03/04					
123	8 Bridge C	584 days	01/06/02					
125	8.2 Pre Bore H-Piles	224 days	18/11/02					
126	8.2.1 C1 H Piles	35 days	11/07/03					
128	8.3 Pile Cap & Abutment Wall C1 & C2	192 days	25/02/03					
129	8.3.1 Temp. works for C1 Pile Cap	20 days	21/08/03					
130	8.3.1 C1 Pile Cap & Abutment Wall	28 days	15/09/03					
132	8.4 Install Bridge Bearings	373.8 days	02/06/02					
133	8.4.1 C1 Bridge Bearings	6 days	25/10/03					
136	8.5 Install Precast Beams C1 to C2	139 days	22/05/03					
137	8.5.1 C1 to C2 PC Beams	3 days	01/11/03					
139	8.6 Bridge Deck Construction C1 to C3	223 days	26/05/03					
140	8.6.1 C1 to C2 Bridge Deck (1st portion)	50 days	05/11/03					
141	8.6.2 C1 to C2 Bridge Deck (2nd portion)	30 days	14/01/04					
142	8.6.3 C2 to C3 Bridge Deck (1st portion)	66 days	26/05/03					
143	8.6.3 C2 to C3 Bridge Deck (2nd portion)	30 days	21/08/03					
144	8.7 Bridge deck Drainage C1 to C3	36 days	06/01/04					
145	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	18 days	06/01/04					
146	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	18 days	30/01/04					
147	8.8 Bridge Deck Parapet & Curb C1 to C3	144 days	26/06/03					
148	8.8.1 C1 to C2 Parapet & Curb	24 days	21/02/04					
149	8.8.2 C2 to C3 Parapet & Curb	24 days	26/09/03					
150	8.9 Bridge A, B & C Movement Joints Installation (10 nos)	14 days	14/07/04					
151	9 Road works, Pavement & Cycle Track	149 days	16/02/04					
152	9.1 Drainage to on Grade Road	70 days	16/02/04					
153	9.2 Utilities at on Grade Road	70 days	04/03/04					
154	9.3 Carriageway Flexible Pavement	136 days	28/02/04					

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Task Progress:

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MASTER PROGRAMME (S17701/MP/12)

Sha Tin New Town Stage II Contract No. S17701 - Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	Aug	Sep	Oct	Nov	Dec
155	9.3.1 Sub base & DBM Course	80 days	28/02/04					
156	9.3.2 Bituminous Base Course	80 days	06/03/04					
157	9.3.3 Wearing Course to On grade road	80 days	13/03/04					
158	9.3.4 Base Course & Wearing Course to Bridges A, B & C	12 days	30/07/04					
159	9.4 Road Marking & road furniture	3 days	13/08/04					
160	9.5 Foot path	90 days	04/03/04					
161	9.6 Cycle Track	90 days	04/03/04					
162	9.7 Light Poles	60 days	20/04/04					
163	9.8 Road Work Finishings	24 days	24/06/04					
164	10 Retaining Walls	758 days	12/12/01					
165	10.1 RW1	147 days	01/08/03					
166	10.1 Temp. diversion of 150mm dia water main	30 days	01/08/03					
167	10.1.1 RW1 Bay 1	24 days	24/09/03					
168	10.1.2 RW1 Bay 2	24 days	08/11/03					
169	10.1.3 RW1 Bay 3	24 days	02/12/03					
170	10.1.4 RW1 Bay 4	24 days	27/12/03					
171	10.1.5 RW1 Bay 5	24 days	15/10/03					
172	10.1.6 RW1 Bay 6	24 days	20/09/03					
173	10.2 RW2	72 days	19/08/03					
174	10.2.1 RW2 Bay 1	24 days	16/10/03					
175	10.2.2 RW2 Bay 2	24 days	26/09/03					
176	10.2.3 RW2 Bay 3	24 days	06/09/03					
177	10.2.4 RW2 Bay 4	24 days	19/08/03					
178	10.2.5 RW2 Bay 5	24 days	22/08/03					
179	10.2.6 RW2 Bay 6	24 days	26/09/03					
180	10.2.7 RW2 Bay 7	24 days	16/10/03					
181	10.3 RW3	244 days	16/12/02					
182	10.3.1 RW3 Bay 4	30 days	30/08/03					
186	10.3.5 RW3 Bay 8	40 days	07/07/03					
192	10.5 RW5	30 days	01/08/03					
193	10.6 RW6	60 days	20/01/04					
194	10.6.1 Sheet pile wall	9 days	20/01/04					
195	10.6.2 Excavation to +1.65	10 days	03/02/04					
196	10.6.3 Bay 1	24 days	14/02/04					
197	10.6.4 Bay 2	24 days	21/02/04					
198	10.6.5 Backfill to +2.2	8 days	20/03/04					
199	10.6.6 Remove sheet piles	3 days	31/03/04					
200	10.7 RW7	532 days	16/08/02					
203	10.7.3 Install bored pile (2inse)	510 days	15/10/02					
207	10.7.4 Bore Pile Sonic Test	14 days	18/08/03					
208	10.7.5 Bore Pile Core Test	24 days	03/09/03					
209	10.7.5 Construct lagging/concrete decorative wall	80 days	03/10/03					
210	10.7.6 Construct extension section above bored pile	48 days	03/04/04					
211	10.7.7 Construct Capping Beam	24 days	04/06/04					
212	10.8 RW8	268 days	06/10/02					
217	10.8.5 RW8 Bay 5	80 days	02/07/03					
221	10.10 RW12	82 days	21/07/03					

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Sha Tin New Town Stage II Contract No. ST77/01, Road D15 Linking Lok Shun Path and Tai Po Road

MASTER PROGRAMME (S177/01/MP/12)

ID	Task Name	Duration	Start	Aug	Sep	Oct	Nov	Dec
222	Temp. diversion of 150mm dia water main	21 days	01/08/03					
223	10.10.1 RW12 Bay 1	24 days	27/09/03					
224	10.10.2 RW12 Bay 2	24 days	29/08/03					
225	10.10.3 RW12 Bay 3	35 days	21/07/03					
226	11.0 Noise Barriers Preliminary	780 days	12/12/01					
228	11.2 Noise Barrier Structures	420 days	11/10/02					
229	11.2.1 Noise Barrier No. 1	400 days	11/10/02					
235	11.2.1.5 Bore Piles Coring Test (4nos)	10 days	21/08/03					
236	11.2.1.6 Temporary Shoring & Excavation	50 days	10/09/03					
237	11.2.1.7 Construct Pile Caps	60 days	17/09/03					
238	11.2.1.8 RW Panel 1	40 days	10/12/03					
239	11.2.1.9 RW Panel 2	40 days	24/12/03					
240	11.2.1.10 RW Panel 3	40 days	22/10/03					
241	11.2.1.11 RW Panel 4	40 days	08/12/03					
242	11.2.1.12 RW Panel 5	40 days	08/10/03					
243	11.2.1.13 RW Panel 6	40 days	08/10/03					
244	11.2.1.14 RW Panel 7	40 days	03/09/03					
245	11.2.2 Additional Bore Piles	88 days	10/07/03					
259	11.2.2.2 ABP2	18 days	02/08/03					
271	11.2.2.3 Bore Piles Tests	12 days	16/06/03					
272	11.2.2.3.1 Sonic Test	1 day	16/09/03					
273	11.2.2.3.2 Core Test (2nos)	7 days	19/09/03					
274	11.2.2.3.3 Grouting Sonic Tubes and core holes	2 days	27/09/03					
275	11.2.3 Noise Barrier No. 4B	120 days	15/10/03					
276	11.2.3.1 Sheet pile wall	0 days	15/10/03					
277	11.2.3.2 Excavation	12 days	15/10/03					
278	11.2.3.3 Construct Footing and Walls	40 days	29/10/03					
279	11.2.3.4 Backfill and remove sheet piles	8 days	15/12/03					
280	11.2.3.5 Granite Cladding	60 days	24/12/03					
281	11.2.4 Noise Barrier No. 5	94 days	06/10/03					
282	11.2.4.1 Excavation	12 days	06/10/03					
283	11.2.4.2 Construct Footing and Walls	70 days	20/10/03					
284	11.2.4.3 Backfill	12 days	13/01/04					
285	11.3 Noise Barrier Steel Post & Panels	780 days	12/12/01					
287	11.4.1 Design, Submission for approval	250 days	19/06/02					
288	11.4.2 Fabrication and Delivery	200 days	17/04/03					
289	11.4.3 Noise Barrier Installation	178 days	18/12/03					
290	11.4.3.1 Noise Barrier No.1	60 days	16/02/04					
291	11.4.3.2 Noise Barrier No.2	60 days	18/12/03					
292	11.4.3.3 Noise Barrier No.3	60 days	29/01/04					
293	11.4.3.4 Noise Barrier No. 4A	60 days	18/05/04					
294	11.4.3.5 Noise Barrier No. 4B	60 days	18/05/04					
295	11.4.3.6 Noise Barrier No. 4C	30 days	15/01/04					
296	11.4.3.7 Noise Barrier No. 5	60 days	23/02/04					
297	12 Box Culvert Extension	467 days	27/06/02					
301	12.4 Construct 1400 box culvert (5 bays)	166 days	10/04/03					
302	12.5 Construct 1500 pipe	221 days	24/04/03					

Date: 13/8/2003

Task Progress:

Critical Task Progress:

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Rolled Up Critical Task:

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External Tasks:

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11.2.1.9 RW Panel 1

11.2.1.10 RW Panel 2

11.2.1.11 RW Panel 3

11.2.1.12 RW Panel 4

11.2.1.13 RW Panel 5

11.2.1.14 RW Panel 6

11.2.1.15 RW Panel 7

11.2.2 Bore Piles Tests

11.2.2.3.1 Sonic Test

11.2.2.3.2 Core Test (2nos)

11.2.2.3.3 Grouting Sonic Tubes and core holes

11.2.3 Noise Barrier No. 4B

11.2.3.2 Excavation

11.2.3.3 Construct Footing and Walls

11.2.3.4 Backfill and remove sheet piles

11.2.3.5 Granite Cladding

11.2.4 Noise Barrier No. 5

11.2.4.1 Excavation

11.2.4.2 Construct Footing and Walls

11.4.3 Noise Barrier Installation

11.4.3.2 Noise Barrier No. 2

11.4.3.7 Noise Barrier No. 5

MASTER PROGRAMME (S177/01/MP/12)

Sha Tin New Town Stage II Contract No. S177/01, Road D15 Linking Lok Shun Path and Tai Po Road

ID	Task Name	Duration	Start	End	Notes
304	12.5.2 Construct 1500 pipe CH 30 to CH 60	44 days	02/09/03	24/10/2003	
305	12.5.3 Construct 1500 pipe CH 60 to CH 82	44 days	24/10/03	17/09/2003	
308	12.8 Construct 1400 Box Culvert Extension (bay A, B & manhole)	90 days	02/06/03		
309	13.0 Underground Drainage & Utilities	471 days	15/01/03		
310	13.1 Drainage works at Lok He Lo roundabout	471 days	15/01/03		
311	13.1.1 Drainage works at stage 2 & 2A of ITM	231 days	15/01/03		
312	13.1.2 Drainage works at stage 3 of ITM	54 days	24/11/03		
313	13.1.3 Drainage works at stage 4 of ITM	54 days	02/02/04		
314	13.1.3 Drainage works at stage 5 of ITM	54 days	06/04/04		
315	13.1.4 Drainage works at stage 6 of ITM	53 days	14/06/04		
316	13.2 CLP Cable Ducts	30 days	24/11/03		13.2 CLP Cable Ducts
317	13.3 Water mains and associated works	194 days	16/06/03		
318	13.3.1 Water Mains for irrigation system	120 days	03/11/03		13.3.1 Water Mains for irrigation system
319	13.3.2 Fire Service Pipe & Hydrant	60 days	29/01/04		
320	13.3.3 Water Main Diversion(1400 Box Culvert)	45 days	12/12/03		13.3.3 Water Main Diversion(1400 Box Culvert)
321	13.3.4 Along stair 8	25 days	16/08/03		13.3.4 Along stair 8
322	13.4 Telephone Ducts	40 days	29/11/03		13.4 Telephone Ducts
323	13.5 Existing Utilities Diversion	147 days	17/10/03		13.5 Existing Utilities Diversion
324	13.5.1 RW1, RW2 and 1400 Box Culvert	90 days	13/11/03		13.5.1 RW1, RW2 and 1400 Box Culvert
325	13.5.2 Abutment A1 to RW11	100 days	17/10/03		13.5.2 Abutment A1 to RW11
326	13.5.3 RW11 to C2	100 days	27/10/03		13.5.3 RW11 to C2
327	13.5.4 At Lok King Street	100 days	11/12/03		13.5.4 At Lok King Street
328	14 Staircases	450 days	28/01/03		
329	14.1 Stair (NB 4C)	12 days	24/12/03		14.1 Stair (NB 4C)
330	14.2 Stair 2 (RW6)	50 days	29/06/03		
331	14.3 Stair 3 (RW3)	90 days	15/05/03		
332	14.4 Stair 4 (RW11)	75 days	04/09/03		
333	14.4.1 Stair 4 Bay 1 (to allow access Bridge C PC beams)	24 days	04/09/03		14.4.1 Stair 4 Bay 1 (to allow access Bridge C PC beams)
334	14.4.2 Stair 4 Bay 2	24 days	05/11/03		14.4.2 Stair 4 Bay 2
335	14.5 Stair 5 (RW5)	40 days	05/09/03		
336	14.6 Stair 6 (Abutment B1)	24 days	31/10/03		14.6 Stair 6 (Abutment B1)
337	14.7 Stair 7 (RW7)	24 days	08/07/04		
338	14.8 Stair 8 (Level +39)	40 days	16/09/03		14.8 Stair 8 (Level +39)
340	14.10 Stair 10 (RW12)	20 days	05/11/03		14.10 Stair 10 (RW12)
341	14.11 Stair 11 (Abutment A5)	12 days	31/10/03		14.11 Stair 11 (Abutment A5)
342	14.12 Stair 12 (House 102)	24 days	28/11/03		14.12 Stair 12 (House 102)
344	15 Standard Refuse Collection Point	60 days	22/10/03		15 Standard Refuse Collection Point
345	16 Rain Shelter no.1&2	60 days	01/03/04		
346	17 Landscaping	104 days	08/06/04		
347	17.1 Tree Planting	90 days	09/04/04		
348	17.2 Turfing	88 days	03/05/04		
349	18 Project Completion & Handover	879 days	12/12/01		

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