

# **Territory Development Department**

**Contract No. ST 77/01**

**Sha Tin New Town, Stage II  
Road D15 Linking Lok Shun Path  
and Tai Po Road**

**Monthly Environmental Monitoring & Audit Report -  
October 2003**

**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 –  
October 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 October 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 Action and Limit 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 A, B and C), abutment walls (Bridge A and B), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 7, 8 and 12;
- Noise barrier construction for noise barrier No.1 and noise barrier No. 5;
- 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.

During the site inspection in the reporting month, it was noted that the site runoffs on the public road near Lok Lo Ha Village House No.3B (near Noise Monitoring Station N1) were cleaned up and proper mitigation measures were provided.

However, it was noted from site inspections that stagnant water was observed occasionally on the site. The Contractor was instructed to remove or treat any stagnant water immediately to avoid the spread of Dengue disease. Meanwhile, rubbish and construction waste were observed at parts of the construction site and in order to improve site tidiness, the Contractor was asked to remove and properly dispose the wastes. In addition, the Contractor was asked to carry out the water spraying on unpaved road more frequently in order to prevent fugitive dust emission.

## 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 October 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**.

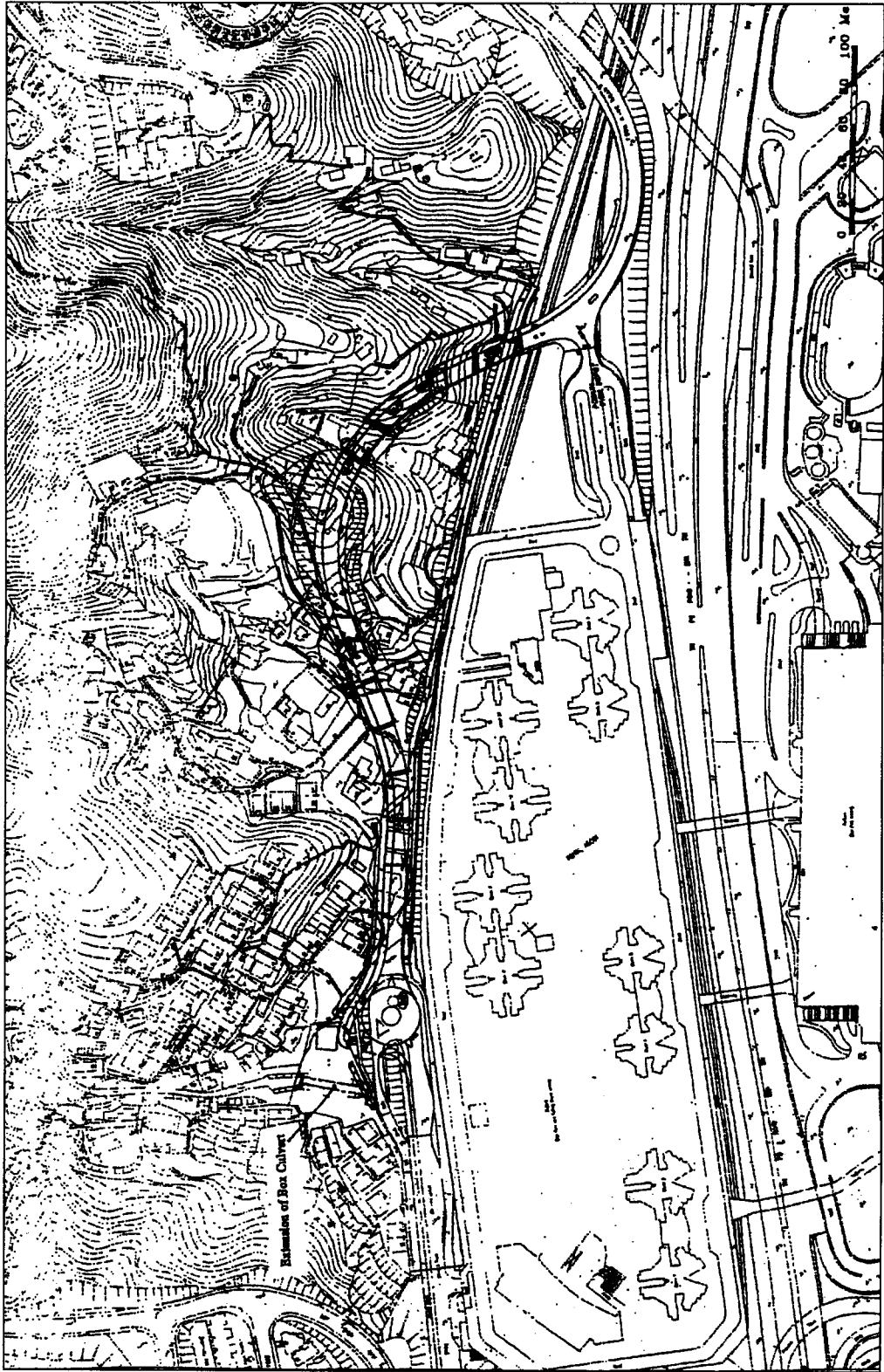


Figure 1.1 Project Area

## 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 October 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	93.0	64 – 126	0	0
	A2	95.2	45 – 142	0	0
	A3	79.8	50 – 118	0	0
1 – hour TSP	A1	181.4	102 – 290	0	0
	A2	166.8	122 – 216	0	0
	A3	175.9	96 – 276	0	0

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. 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. The highest mean TSP levels were recorded at Station A1 (1-hour TSP) with values of  $181.4\mu\text{g}/\text{m}^3$  which was relatively higher than the levels recorded in September ( $157.1\mu\text{g}/\text{m}^3$ ).





**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 October 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	65.2 – 72.2	0	0
	N2	68.4 – 72.6	0	0
	N3	57.3 – 61.9	0	0
	N4	58.3 – 62.3	0	0
	N5	59.6 – 61.2	0	0

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, while all monitoring was conducted with wind speed of below 1.5 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, excavating and carpentry, as well as operations of construction vehicles and machines including cranes, dump truck, 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 N2 (72.6dB(A)) and occurred in the morning of 3 October. According to the field log, the major noise source at that time was excavation, truck dumping, crane operation, steel bending and erection 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, only one environmental issue was raised:

- The site runoffs on the public road near Lok Lo Ha Village House No. 3B (near Noise Monitoring Station N1) was not properly cleaned up and proper mitigation measures was not provided.

It was noted from site inspections that the site runoffs on the public road near Lok Lo Ha Village House. 3B (near Noise Monitoring Station N1) had been cleaned up and sediments removed. Also, proper mitigation measures had been provided.

**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
06 October 2003 (Monday)	Regular Site Inspection
14 October 2003 (Tuesday)	Regular Site Inspection
23 October 2003 (Thursday)	Regular Site Inspection
30 October 2003 (Thursday)	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 A, B and C), abutment walls (Bridge A and B), and bridge decks (Bridge A and C);
- Retaining wall 1, 2, 3, 7, 8 and 12;
- Noise barrier construction for noise barrier No.1 and noise barrier No. 5;
- 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.

**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	01/10/03 to 31/10/03	15	0	0
2	1 – hour TSP	01/10/03 to 31/10/03	54	0	0
3	30-minute Noise Measurement (Leq)	01/10/03 to 31/10/03	30	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 stagnant water was observed occasionally on the site. The Contractor was instructed to remove or treat any stagnant water immediately to avoid the spread of Dengue disease. Meanwhile, rubbish and construction waste were observed at parts of the construction site and in order to improve site tidiness, the Contractor was asked to remove and properly dispose the wastes. In addition, the Contractor was asked to carry out the water spraying on unpaved road more frequently in order to prevent fugitive dust emission.

#### 4. FUTURE KEY ISSUE AND RECOMMENDATION

There are four environmental issues that will need to be addressed in the next reporting month:

- Stagnant water should be removed to avoid the spread of Dengue Fever.
- Rubbish and construction waste should be removed and properly disposed
- Water spraying should be carried out more frequently on unpaved road;

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

## 2. Tentative Schedule for Next Reporting Month – November 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 Nov 2003

Nov-03	Day	Start Time	
		24-hr TSP	1-hr TSP
1	Sat	x	X
2	Sun	x	X
3	Mon	09:30	08:00
4	Tue	x	09:50,11:00
5	Wed	x	X
6	Thu	x	X
7	Fri	09:30	08:00
8	Sat	x	X
9	Sun	x	X
10	Mon	x	08:00,11:00
11	Tue	x	X
12	Wed	x	X
13	Thu	09:30	08:00
14	Fri	x	09:50,11:00
15	Sat	x	X
16	Sun	x	X
17	Mon	x	X
18	Tue	x	X
19	Wed	09:30	08:00
20	Thu	x	09:50,11:00
21	Fri	x	X
22	Sat	x	X
23	Sun	x	X
24	Mon	x	X
25	Tue	09:30	08:00
26	Wed	x	09:50,11:00
27	Thu	x	X
28	Fri	x	X
29	Sat	x	X
30	Sun	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 Nov 2003

Nov-03	Day	Start Time				
		N1	N2	N3	N4	N5
1	Sat	x	x	x	x	x
2	Sun	x	x	x	x	x
3	Mon	x	x	x	x	x
4	Tue	09:50	11:15	13:00	10:25	09:00
5	Wed	x	x	x	x	x
6	Thu	x	x	x	x	x
7	Fri	x	x	x	x	x
8	Sat	x	x	x	x	x
9	Sun	x	x	x	x	x
10	Mon	09:50	11:15	13:00	10:25	09:00
11	Tue	x	x	x	x	x
12	Wed	x	x	x	x	x
13	Thu	x	x	x	x	x
14	Fri	09:50	11:15	13:00	10:25	09:00
15	Sat	x	x	x	x	x
16	Sun	x	x	x	x	x
17	Mon	x	x	x	x	x
18	Tue	x	x	x	x	x
19	Wed	x	x	x	x	x
20	Thu	09:50	11:15	13:00	10:25	09:00
21	Fri	x	x	x	x	x
22	Sat	x	x	x	x	x
23	Sun	x	x	x	x	x
24	Mon	x	x	x	x	x
25	Tue	x	x	x	x	x
26	Wed	09:50	11:15	13:00	10:25	09:00
27	Thu	x	x	x	x	x
28	Fri	x	x	x	x	x
29	Sat	x	x	x	x	x
30	Sun	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			
6-Oct-03	2.8419	2.9854	1.11	1.11	12194.17	12218.17	1440	90	Sunny
10-Oct-03	2.8443	2.9458	1.11	1.11	1221.17	12245.17	1440	64	Sunny
16-Oct-03	2.8380	2.9594	1.11	1.11	12248.17	12272.17	1440	76	Cloudy
22-Oct-03	2.8817	3.0560	1.11	1.11	12275.17	12299.17	1440	109	Sunny
28-Oct-03	2.8875	3.0892	1.11	1.11	12302.17	12326.17	1440	126	Sunny
							Min	64	
							Max	126	
							Average	93.0	

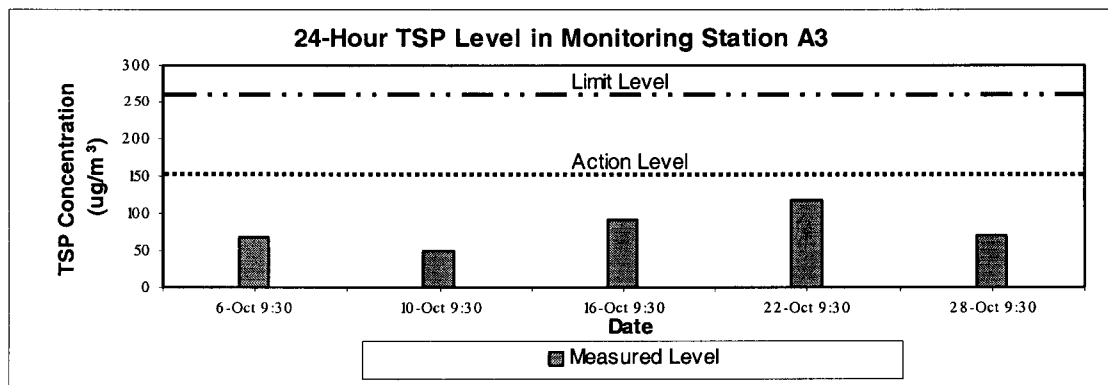
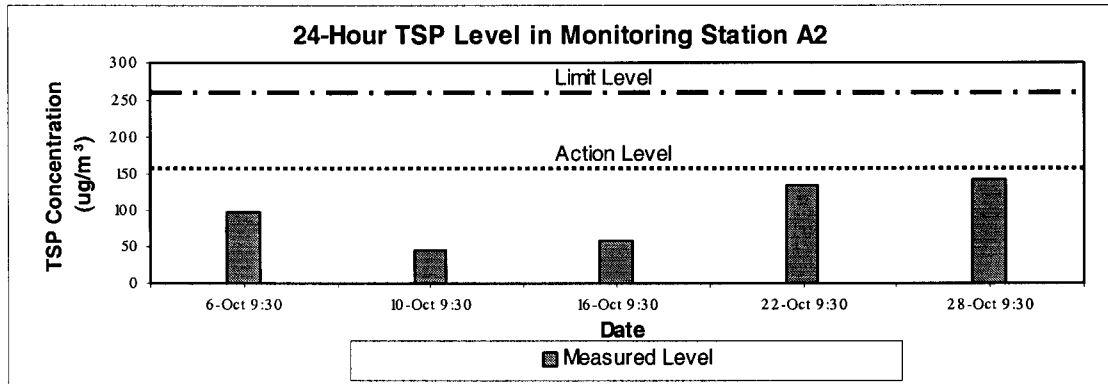
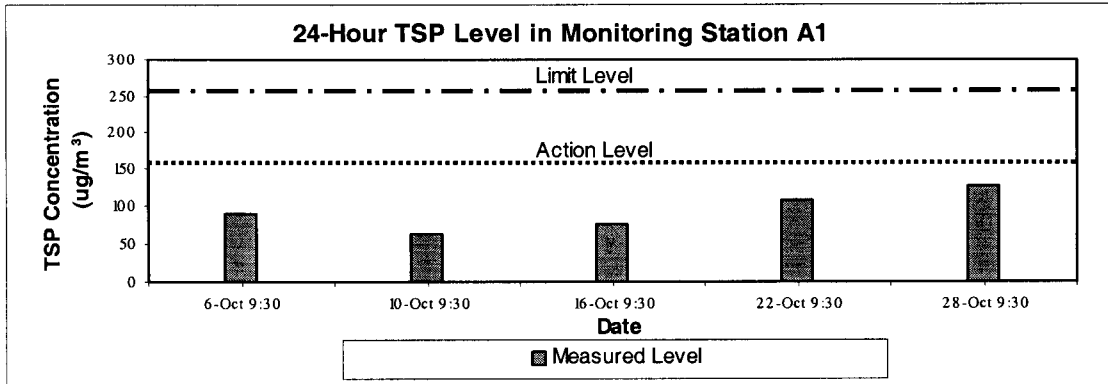
#### Monitoring Station A2 (Lok Lo Ha Village House No. 104)

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			
6-Oct-03	2.9029	3.0590	1.11	1.11	2867.75	2891.75	1440	98	Sunny
10-Oct-03	2.8267	2.8985	1.11	1.11	2894.75	2918.75	1440	45	Sunny
16-Oct-03	2.8374	2.9295	1.11	1.11	2921.75	2945.75	1440	58	Cloudy
22-Oct-03	2.8794	3.0919	1.11	1.11	2948.75	2972.75	1440	133	Sunny
28-Oct-03	2.8305	3.0576	1.11	1.11	2975.75	2999.75	1440	142	Sunny
							Min	45	
							Max	142	
							Average	95.2	

**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			
6-Oct-03	2.8932	3.0019	1.11	1.11	11382.07	11406.07	1440	68	Sunny
10-Oct-03	2.8311	2.9117	1.11	1.11	11409.07	11433.07	1440	50	Sunny
16-Oct-03	2.8347	2.9799	1.11	1.11	11436.07	11460.07	1440	91	Cloudy
22-Oct-03	2.9040	3.0924	1.11	1.11	11463.07	11487.07	1440	118	Sunny
28-Oct-03	2.8840	2.9988	1.11	1.11	11490.07	11514.07	1440	72	Sunny
							Min	50	
							Max	118	
							Average	79.8	

## 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, $\mu\text{g}/\text{m}^3$
3-Oct-03	1430 – 1530	131
3-Oct-03	1540 – 1640	135
6-Oct-03	0800 – 0900	209
7-Oct-03	0950 – 1050	150
7-Oct-03	1100 – 1200	128
10-Oct-03	0800 – 0900	215
13-Oct-03	0800 – 0900	140
13-Oct-03	1100 – 1200	201
16-Oct-03	0800 – 0900	290
17-Oct-03	0950 – 1050	102
17-Oct-03	1100 – 1200	158
22-Oct-03	0800 – 0900	221
23-Oct-03	0950 – 1050	221
23-Oct-03	1100 – 1200	215
28-Oct-03	0800 – 0900	270
29-Oct-03	0950 – 1050	168
29-Oct-03	1100 – 1200	129
	Average	181.4
	Min	102
	Max	290

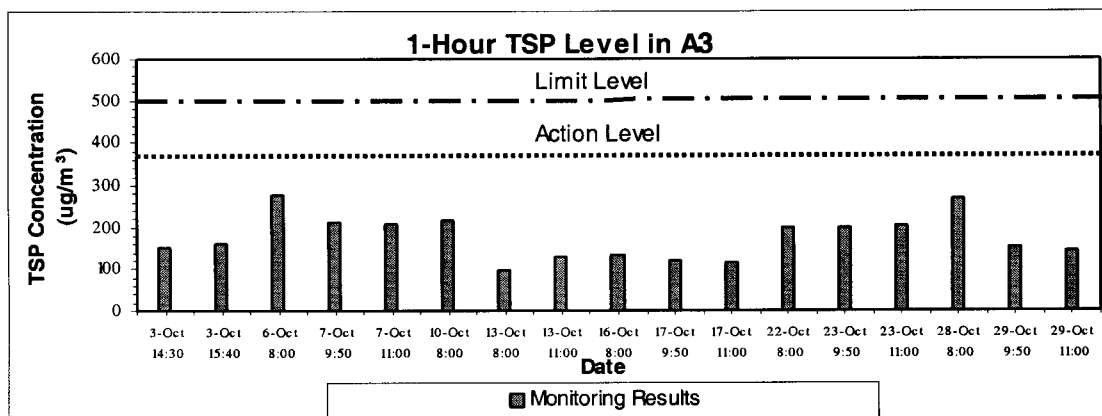
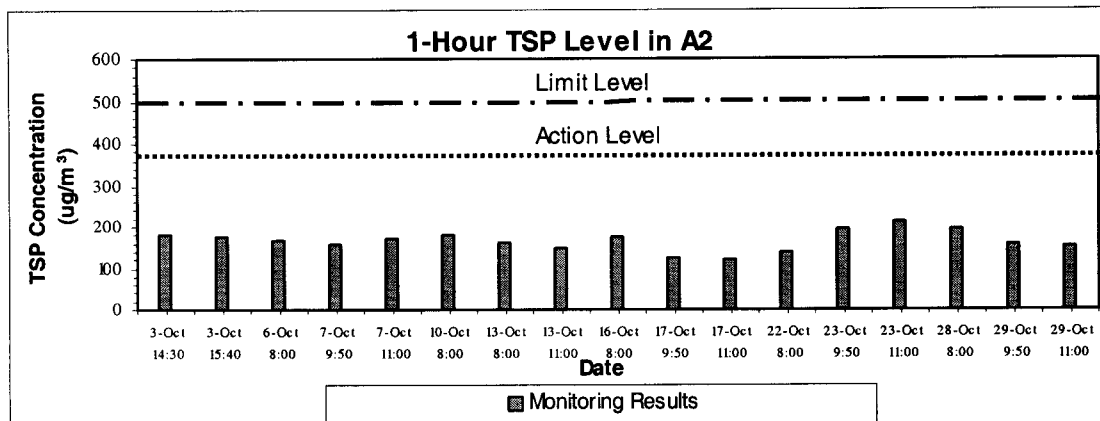
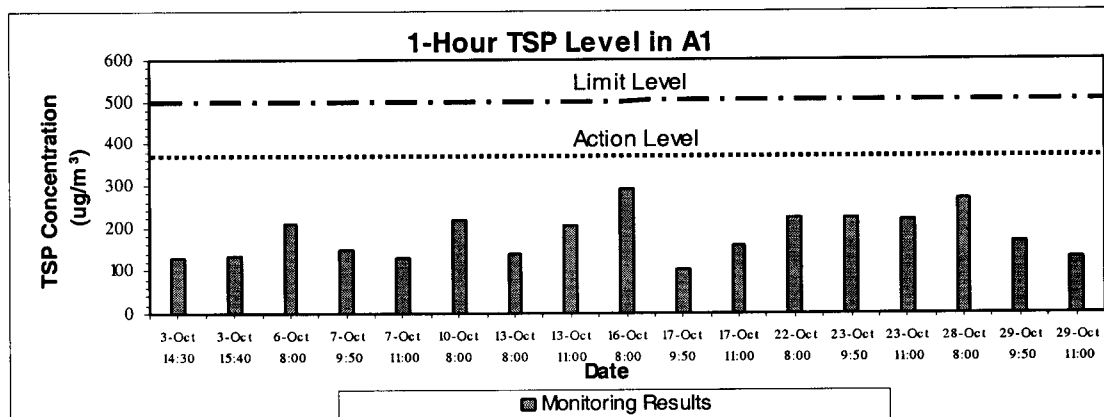
### Station A2 (Lok Lo Ha Village House No. 104)

Date	Time of sampling	Concentration, $\mu\text{g}/\text{m}^3$
3-Oct-03	1430 – 1530	182
3-Oct-03	1540 – 1640	177
6-Oct-03	0800 – 0900	167
7-Oct-03	0950 – 1050	158
7-Oct-03	1100 – 1200	170
10-Oct-03	0800 – 0900	183
13-Oct-03	0800 – 0900	164
13-Oct-03	1100 – 1200	149
16-Oct-03	0800 – 0900	179
17-Oct-03	0950 – 1050	126
17-Oct-03	1100 – 1200	122
22-Oct-03	0800 – 0900	138
23-Oct-03	0950 – 1050	195
23-Oct-03	1100 – 1200	216
28-Oct-03	0800 – 0900	197
29-Oct-03	0950 – 1050	159
29-Oct-03	1100 – 1200	153
	Average	166.8
	Min	122
	Max	216

**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>
3-Oct-03	1430 – 1530	152
3-Oct-03	1540 – 1640	161
6-Oct-03	0800 – 0900	276
7-Oct-03	0950 – 1050	213
7-Oct-03	1100 – 1200	207
10-Oct-03	0800 – 0900	219
13-Oct-03	0800 – 0900	96
13-Oct-03	1100 – 1200	131
16-Oct-03	0800 – 0900	132
17-Oct-03	0950 – 1050	122
17-Oct-03	1100 – 1200	117
22-Oct-03	0800 – 0900	198
23-Oct-03	0950 – 1050	197
23-Oct-03	1100 – 1200	204
28-Oct-03	0800 – 0900	269
29-Oct-03	0950 – 1050	153
29-Oct-03	1100 – 1200	144
	<b>Average</b>	<b>175.9</b>
	<b>Min</b>	<b>96</b>
	<b>Max</b>	<b>276</b>

## 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-Oct-03	1502 – 1532	66.7	68.8	60.2
7-Oct-03	0950 – 1020	65.9	68.7	61.1
13-Oct-03	0950 – 1020	65.2	67.7	61.5
17-Oct-03	0945 – 1015	67.6	71.8	59.1
23-Oct-03	0950 – 1020	69.6	73.6	59.3
29-Oct-03	0950 – 1020	72.2	76.0	64.1

Min	65.2	67.7	59.1
Max	72.2	76.0	64.1

### 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-Oct-03	1623 – 1653	72.6	74.1	67.4
7-Oct-03	1120 – 1150	69.0	72.0	64.5
13-Oct-03	1115 – 1145	71.8	74.3	67.3
17-Oct-03	1125 – 1155	70.9	73.5	63.9
23-Oct-03	1128 – 1158	71.3	74.1	62.5
29-Oct-03	1125 – 1155	68.4	71.5	62.0

Min	68.4	71.5	62.0
Max	72.6	74.3	67.4

### 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-Oct-03	1703 – 1733	58.8	60.9	55.0
7-Oct-03	1300 – 1330	60.5	62.8	52.9
13-Oct-03	1300 – 1330	59.7	62.3	50.9
17-Oct-03	1300 – 1330	57.3	61.6	51.9
23-Oct-03	1300 – 1330	61.9	64.1	53.2
29-Oct-03	1300 – 1330	60.3	61.5	53.9

Min	57.3	60.9	50.9
Max	61.9	64.1	55.0

**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-Oct-03	1546 – 1616	58.3	62.1	53.8
7-Oct-03	1025 – 1055	59.7	62.2	51.7
13-Oct-03	1025 – 1055	59.7	62.7	54.1
17-Oct-03	1040 – 1110	62.3	64.4	56.2
23-Oct-03	1032 – 1102	60.8	63.9	54.7
29-Oct-03	1025 – 1055	58.3	60.6	54.1

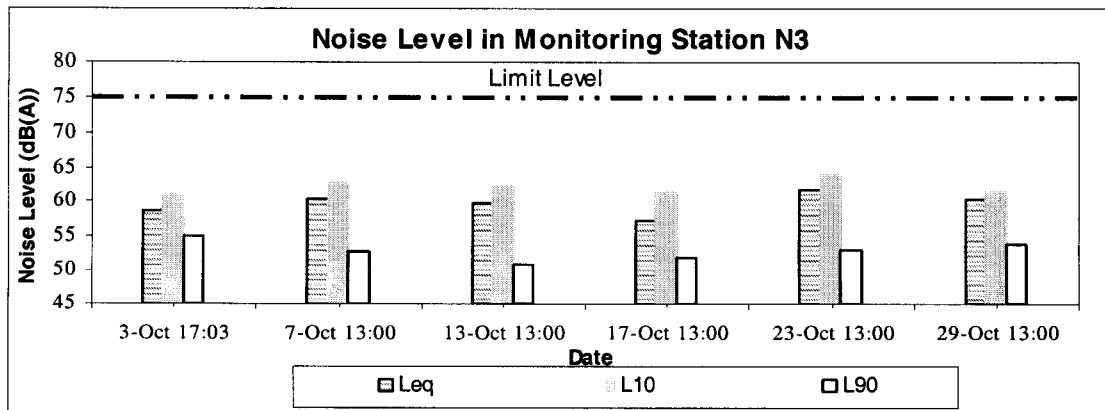
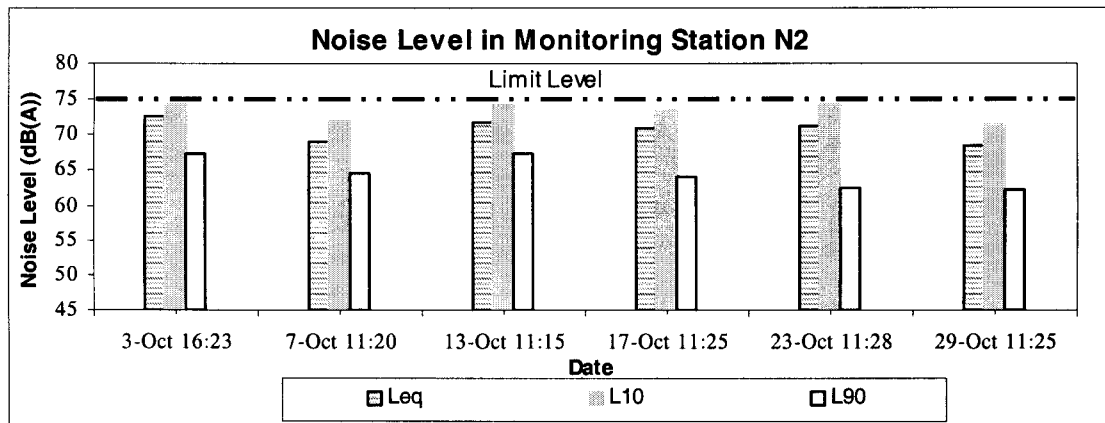
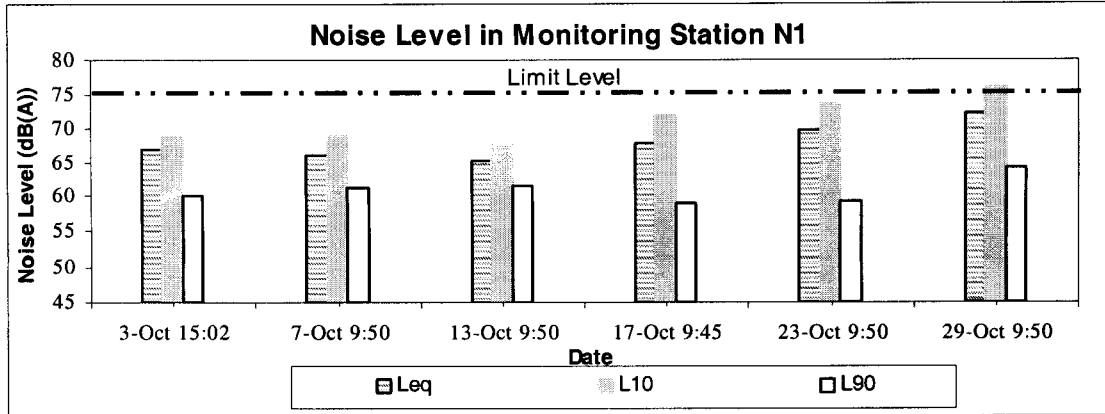
Min	58.3	60.6	51.7
Max	62.3	64.4	56.2

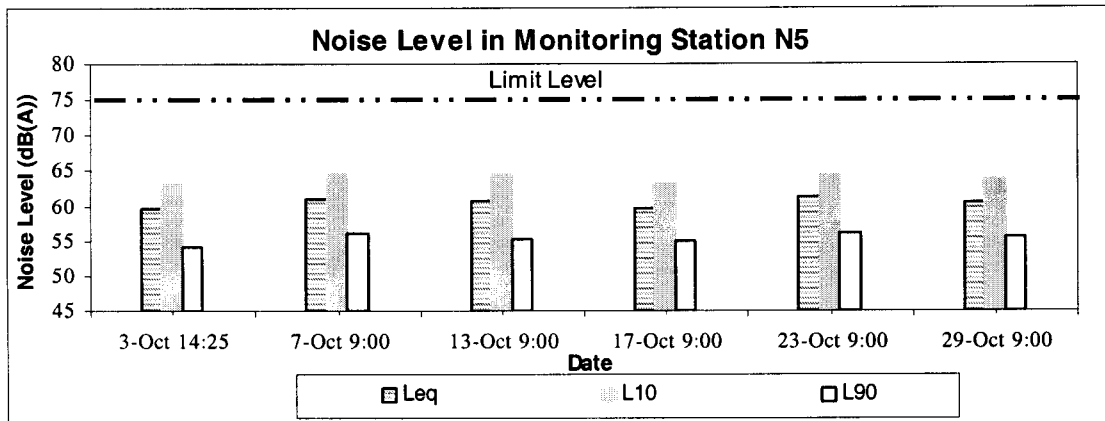
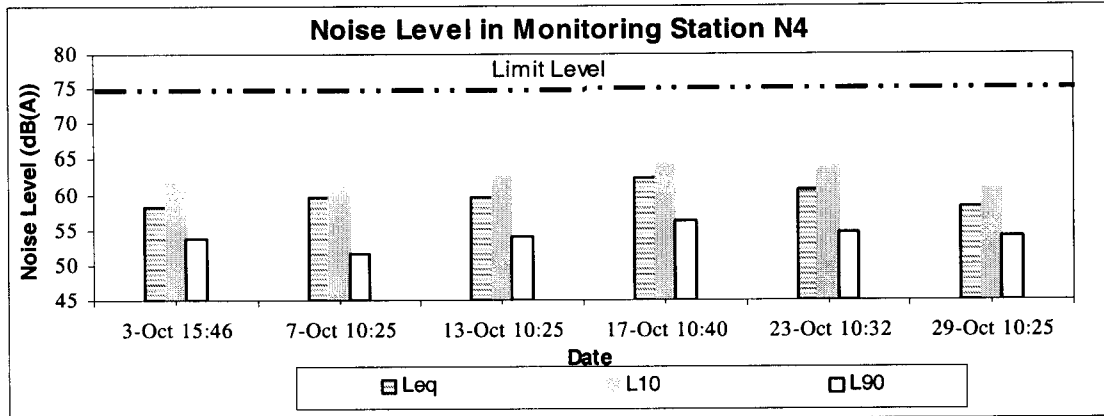
**Monitoring Station N5 (Village House near Royal Ascot)**

Date	Noise Level for 30 min, dB(A)			
	Time of Sampling	L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>
3-Oct-03	1425 – 1455	59.6	63.3	54.1
7-Oct-03	0900 – 0930	60.9	64.7	55.9
13-Oct-03	0900 – 0930	60.8	64.5	55.1
17-Oct-03	0900 – 0930	59.7	63.2	54.8
23-Oct-03	0900 – 0930	61.2	64.3	56.0
29-Oct-03	0900 – 0930	60.4	63.7	55.5

Min	59.6	63.2	54.1
Max	61.2	64.7	56.0

## 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 31 October 2003)**

<b>Date</b>	<b>Weather</b>	<b>Mean Air Temperature (°C)</b>	<b>Wind Speed (m/s)</b>	<b>Mean Relative Humidity (%)</b>
3-Oct-03	Sunny	27.9	1.2 - 1.3	73
6-Oct-03	Sunny	26.5	1.3	64
7-Oct-03	Sunny	25.9	1.3	67
10-Oct-03	Cloudy	26.8	1.3 - 1.4	84
13-Oct-03	Cloudy	27.2	0.9 - 1.3	79
16-Oct-03	Cloudy	23.7	1.0 - 1.3	64
17-Oct-03	Sunny	24.1	1.0 - 1.3	68
22-Oct-03	Sunny	24.7	1.2	72
23-Oct-03	Sunny	24.4	1.2 - 1.3	71
28-Oct-03	Sunny	25.0	1.2	68
29-Oct-03	Sunny	24.7	1.1 - 1.5	65

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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>

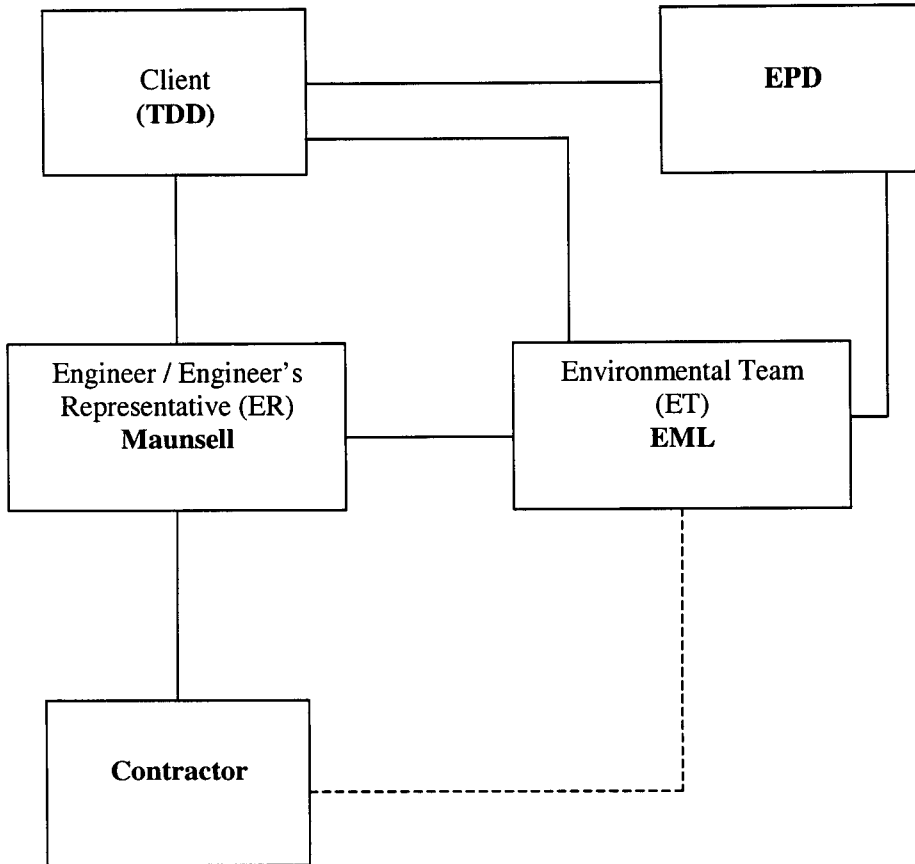
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**APPENDIX H:**

**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	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>	The complaint was considered as ad hoc rather than continuous. It is therefore considered not necessary to increase the noise monitoring frequency  File Closed.
C02-N2	Night-time, 7 October, 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 October 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>	File Closed.

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**APPENDIX J:**

**Updated Construction  
Program**

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MASTER PROGRAMME (ST77/01/MP/13)

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	End
0	Road D15 Acceleration Programme	1081 days	Wed 12/12/01	Wed 12/12/01
1	1.0 Original Contract Period	1187 days	Wed 12/12/01	Wed 12/12/01
4	1.3 Works in Section II (822 days)	822 days	Wed 12/12/01	Wed 12/12/01
5	1.4 Landscape Work in Section III (1187 Days)	1187 days	Wed 12/12/01	Wed 12/12/01
6	2.0 Anticipated Dates	998 days	Fri 22/11/02	Fri 22/11/02
7	2.1 Anticipated EOT for Section I	249.5 days	Fri 22/11/02	Fri 22/11/02
9	2.3 Anticipated EOT for Section II	157 days	Sat 13/03/04	Sat 13/03/04
10	2.4 Anticipated Completion Date for Section III	335 days	Tue 17/08/04	Tue 17/08/04
11	3 Preliminary & Site Establishment	653 days	Wed 12/12/01	Wed 12/12/01
45	6 Bridge A & General	772 days	Wed 12/12/01	Wed 12/12/01
50	6.5 Fabrication PC panel permanent formwork	200 days	Fri 24/01/03	Fri 24/01/03
58	6.8 Pile Caps Construction A1 to A5	387 days	Sat 19/10/02	Sat 19/10/02
63	6.8.5 A5 Pile Cap	245 days	Mon 17/03/03	Mon 17/03/03
64	6.8.5.2 A5 Pile Cap (2nd Portion)	20 days	Tue 16/12/03	Tue 16/12/03
65	6.8 Abutment Wall A1 to A5	359 days	Fri 20/11/02	Fri 20/11/02
67	6.8.1 A1 Abutment Wall	162 days	Mon 14/04/03	Mon 14/04/03
69	6.9.1.2 A1 (Upper Portion)	55 days	Mon 25/08/03	Mon 25/08/03
75	6.9.5 A5 Abutment Wall	144 days	Mon 18/08/03	Mon 18/08/03
76	6.9.5.1 A5 Abutment wall (Portion 1 to allow site access)	50 days	Mon 18/08/03	Mon 18/08/03
77	6.9.5.2 A5 Abutment wall (Portion 2)	25 days	Wed 14/01/04	Wed 14/01/04
78	6.10 Install bridge bearings A1 to A5	325 days	Thu 23/01/03	Thu 23/01/03
79	6.10.1 A1 - A2 Bridge Bearings	6 days	Wed 05/11/03	Wed 05/11/03
80	6.10.2 A2 - A3 Bridge Bearings	6 days	Wed 05/11/03	Wed 05/11/03
82	6.10.4 A4 - A5 Bridge Bearings	6 days	Fri 20/02/04	Fri 20/02/04
83	6.11 Install Precast Beams A1 to A5	351 days	Fri 14/02/03	Fri 14/02/03
84	6.11.1 A1 to A2 PC Beams	6 days	Thu 20/11/03	Thu 20/11/03
85	6.11.2 A2 to A3 PC Beams	6 days	Thu 18/03/04	Thu 18/03/04
87	6.11.4A4 to A5 PC Beams (Storage on Span A3 to A4)	6 days	Thu 15/01/04	Thu 15/01/04
88	6.11.4 A4 to A5 PC Beams	6 days	Tue 02/03/04	Tue 02/03/04
89	6.12 Bridge Deck Construction A1 to A5	378 days	Mon 24/02/03	Mon 24/02/03
90	6.12.1 A1 to A2 Bridge Deck	50 days	Fri 28/11/03	Fri 28/11/03
91	6.12.2 A2 to A3 Bridge Deck	50 days	Fri 26/03/04	Fri 26/03/04
93	6.12.4 A4 to A5 Bridge Deck	50 days	Wed 10/03/04	Wed 10/03/04
94	6.13 Bridge Deck Drainage	116 days	Fri 20/02/04	Fri 20/02/04
95	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	Fri 20/02/04	Fri 20/02/04
96	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	Fri 18/09/04	Fri 18/09/04
97	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	Wed 03/03/04	Wed 03/03/04
98	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	Thu 03/03/04	Thu 03/03/04
99	6.14 Bridge deck Parapet & Curb	251 days	Mon 15/08/03	Mon 15/08/03
100	6.14.1 A1 to A2 Parapet & Curb	30 days	Fri 05/02/04	Fri 05/02/04
101	6.14.2 A2 to A3 Parapet & Curb	30 days	Wed 09/06/04	Wed 09/06/04
102	6.14.3 A3 to A4 Parapet & Curb	60 days	Mon 15/09/03	Mon 15/09/03
103	6.14.4 A4 to A5 Parapet & Curb	30 days	Wed 19/05/04	Wed 19/05/04
104	7 Bridge B	628 days	Wed 11/06/02	Wed 11/06/02
106	7.2 Pre Bore-H-Pile	230 days	Fri 13/12/02	Fri 13/12/02
110	7.3 Pile Cap & Abutment Wall B1	43 days	Wed 24/09/03	Wed 24/09/03
111	7.3.1 Temp. works for B1 Pile Cap	30 days	Wed 24/09/03	Wed 24/09/03

Date: 18/10/2003

Task Progress:

Task Legend:

Project Summary:

MASTER PROGRAMME (ST77/01/MP/13)

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

ID	Task Name	Duration	Start	2003	2004
118	7.3.2 Construct B1 Pile Cap	13 days	Thu 30/10/03	Oct 03	Jan 04
128	7.3.3 B1 Abutment	27 days	Fri 14/11/03	Nov 03	Dec 03
129	a) Erect outer formwork	6 days	Fri 14/11/03		
130	b) Fix steel rebar	6 days	Fri 21/11/03		
131	c) Erect inner formwork	6 days	Fri 28/11/03		
132	d) Checking	1 day	Fri 05/12/03		
133	e) Concreting	1 day	Sat 06/12/03		
134	f) Curbing & Remove formwork	7 days	Mon 08/12/03		
135	Remove temp work and backfilling at B1 Abutment	10 days	Tue 16/12/03		
137	7.3.4 Temp. works for B2 Pile Cap	97 days	Wed 15/10/03		
138	7.3.4.1 Excavate down to +14.7 mPD and install concrete block	25 days	Wed 15/10/03		
139	7.3.4.2 Construct back portion of pile cap	14 days	Thu 13/11/03		
148	7.3.4.3 Install walling and strutting	4 days	Sat 29/11/03		
149	7.3.4.4 Remove the temp earth berm	3 days	Thu 04/12/03		
150	7.3.4.5 Construct the remaining portion of B2 pile cap	14 days	Mon 08/12/03		
160	7.3.5 B2 Abutment	27 days	Wed 24/12/03		
167	Remove temp work and backfilling at Abutment B2	10 days	Sat 31/01/04		
168	7.4 Install Bridge Bearings	6 days	Mon 16/02/04		
169	7.4.1 B1 bridge Bearings	6 days	Mon 16/02/04		
170	7.4.2 B2 bridge Bearings	6 days	Mon 16/02/04		
171	7.5 Install Precast Beams B1 to B2	6 days	Mon 01/03/04		
172	7.6 Bridge Deck Construction B1 to B2	50 days	Mon 08/03/04		
173	7.7 Bridge deck Drainage B1 to B2	25 days	Tue 11/05/04		
174	7.8 Bridge Deck Parapet & Curb B1 to B2	20 days	Tue 25/05/04		
176	7.10 Reinststate btxg Valley	60 days	Thu 08/04/04		
177	8 Bridge C	580 days	Thu 01/06/02		
182	8.3 Pile Cap & Abutment Wall C1 & C2	276 days	Tue 26/06/03		
183	8.3.1 Temp. works and Construct C1 Pile Cap	44 days	Mon 29/09/03		
184	8.3.1.1 Excavate down to +14.7 mPD and install concrete block	10 days	Mon 29/09/03		
185	8.3.1.2 Construct back portion of pile cap C1	13 days	Sat 11/10/03		
194	8.3.1.3 Install walling and strutting	4 days	Mon 27/10/03		
195	8.3.1.4 Remove the temp earth berm	3 days	Fri 31/10/03		
196	8.3.1.5 Construct the remaining portion of pile cap C1	14 days	Tue 04/11/03		
197	a) Formation and concrete blinding	1 day	Tue 04/11/03		
198	b) Trim pile head	3 days	Wed 05/11/03		
199	b) Erect outer formwork	1 day	Sat 08/11/03		
200	c) Fix steel rebar	4 days	Mon 10/11/03		
201	e) Erect kicker formwork	1 day	Fri 14/11/03		
202	f) Checking	1 day	Sat 15/11/03		
203	g) Concreting	1 day	Mon 17/11/03		
204	h) Curbing & Remove formwork	2 days	Tue 18/11/03		
205	8.3.2 C1 Abutment Wall	30 days	Thu 20/11/03		
206	a) Erect outer formwork	7 days	Thu 20/11/03		
207	b) Fix steel rebar	7 days	Fri 28/11/03		
208	c) Erect inner formwork	7 days	Sat 06/12/03		
209	d) Checking	1 day	Mon 15/12/03		
210	e) Concreting	1 day	Tue 16/12/03		

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Task Progress:

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MASTER PROGRAMME (ST77/01/MP/13)

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	2004	2004	2004
				Sep 03	Oct 03	Nov 03
211	1)Curing & Remove formwork	7 days	Wed 17/12/03			
212	Remove temp work and backfilling at Abutment C1	20 days	Sat 27/12/03			
214	8.4 Install Bridge Bearings	427.8 days	Fri 02/01/04			
215	8.4.1 C1 Bridge Bearings	6 days	Tue 30/12/03			
218	8.5 Install Precast Beams C1 to C2	185 days	Thu 22/01/04			
219	8.5.1 C1 to C2 PC Beams	3 days	Fri 09/01/04			
221	8.6 Bridge Deck Construction C1 to C3	272 days	Mon 26/01/04			
222	8.6.1 C1 to C2 Bridge Deck (1st portion)	26 days	Tue 19/01/04			
223	8.6.2 C1 to C2 Bridge Deck (2nd portion)	7 days	Tue 19/01/04			
224	8.6.3 C2 to C3 Bridge Deck (2nd portion)	8 days	Wed 21/01/04			
225	8.7 Bridge Deck Drainage C1 to C3	2 days	Tue 03/02/04			
226	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	1 day	Thu 05/02/04			
227	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	1 day	Fri 06/02/04			
228	8.8 Bridge Deck Parapet & Curb C1 to C3	7 days	Sat 07/02/04			
229	8.8.1 C1 to C2 Parapet & Curb	54 days	Mon 16/02/04			
239	8.8.2 C2 to C3 Parapet & Curb	40 days	Thu 21/02/04			
240	8.8.3 C1 to C2 Parapet & Curb	56 days	Mon 16/02/04			
241	8.9 Bridges A, B & C Movement Joints Installation (10 nos)	18 days	Mon 16/02/04			
242	8.9.1 Drainage to on Grade Road	19 days	Mon 08/03/04			
243	8.9.2 Utilities at on Grade Road	183 days	Thu 09/03/04			
244	8.9.3 Bituminous Base Course	24 days	Fri 23/04/04			
245	8.9.3.1 Sub base & DBM Course	24 days	Fri 23/04/04			
246	8.9.3.2 Bituminous Base Course	24 days	Thu 07/10/03			
247	8.9.3.3 Waiting Course to On grade road	14 days	Fri 09/07/04			
248	8.9.3.4 Base Course & Wearing Course to bridges A, B & C	117 days	Fri 12/03/04			
249	9 Road works, Pavement & Cycle Track	40 days	Fri 12/03/04			
250	9.1 Drainage to on Grade Road	40 days	Fri 12/03/04			
251	9.2 Utilities at on Grade Road	40 days	Thu 25/03/04			
252	9.3 Carriageway Flexible Pavement	64 days	Sat 15/06/04			
253	9.3.1 Sub base & DBM Course	30 days	Sat 15/06/04			
254	9.3.2 Bituminous Base Course	30 days	Fri 28/05/04			
255	9.3.3 Waiting Course to On grade road	20 days	Fri 04/06/04			
256	9.3.4 Base Course & Wearing Course to bridges A, B & C	6 days	Mon 26/07/04			
257	9.4 Road Marking & road furniture	3 days	Mon 02/08/04			
258	9.5 Foot path	30 days	Fri 04/06/04			
259	9.6 Cycle Track	60 days	Thu 26/03/04			
260	9.7 Light Poles	40 days	Mon 31/05/04			
261	9.8 Road Work Finishings	24 days	Tue 29/06/04			
262	10 Retaining Walls	768 days	Wed 12/12/01			
263	10.1 RW1	181 days	Fri 01/08/03			
264	10.1.1 RW1 Bay 1	30 days	Fri 01/08/03			
265	10.1.1 RW1 Bay 2	41 days	Sat 27/08/03			
266	Base Slab	7 days	Sat 27/08/03			
267	Wall stem	14 days	Thu 30/10/03			
268	8.5.1 C1 to C2 PC Beams	5 days	Thu 30/10/03			
269	8.5.1 C1 to C2 PC Beams	3 days	Wed 05/11/03			
270	8.5.1 C1 to C2 PC Beams	5 days	Sat 08/11/03			
271	8.5.1 C1 to C2 PC Beams	1 day	Fri 14/11/03			
272	8.5.1 C1 to C2 PC Beams	93 days	Wed 24/11/03			
273	8.5.1 C1 to C2 PC Beams					
274	8.5.1 C1 to C2 PC Beams					

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Task Progress:  Task

Critical Task Progress:  Critical Task

Milestone:  Milestone

Summary:  Summary

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Rollled Up Critical Task:  Rollled Up Critical Task

Rollled Up Milestone:  Rollled Up Milestone

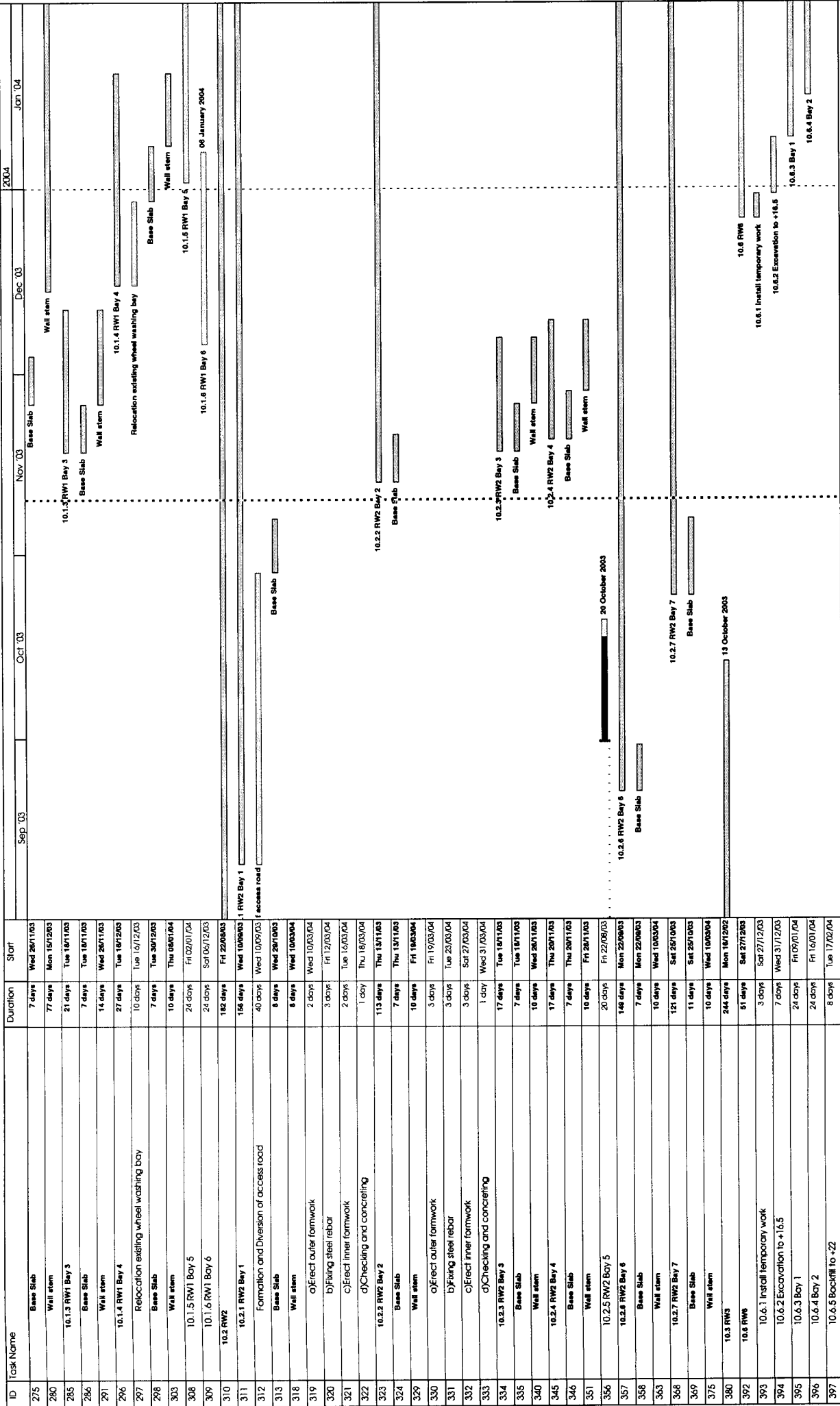
Project Summary:  Project Summary

Spill:  Spill

External Tasks:  External Tasks

MASTER PROGRAMME (ST77/01/MP/13)

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



Date: 18/10/2003

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MASTER PROGRAMME (S177/01/MP/13)

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	2004	2003	2004
				Sep 03	Oct 03	Nov 03
398	10.6.6 Remove temporary work	3 days	Thu 25/02/04			
399	10.7 RW7	542 days	Mon 16/06/02			
402	10.7.3 install bored pile (21nos)	520 days	Tue 15/10/02			
406	10.7.4 Bore Pile Sonic Test	14 days	Mon 18/06/03			
407	10.7.5 Bore Pile Core Test	28 days	Wed 03/09/03			
408	10.7.6 Remedial works defective zone of bore piles	60 days	Sat 01/11/03			
409	10.7.7 Trimming Pile cut off for construction of logging wall	30 days	Wed 14/01/04			
410	10.7.7 Construct logging/concrete decorative wall	39 days	Mon 08/03/04			
411	10.7.8 Construct extension section above bored pile	41 days	Tue 27/04/04			
412	10.7.9 Construct Capping Beam	24 days	Wed 16/06/04			
422	10.10 RW12	263 days	Mon 21/07/03			
423	Temp. diversion of 150mm dia water main	90 days	Fri 01/08/03			
424	10.10.1 RW12 Bay 1	24 days	Tue 09/12/03			
425	10.10.2 RW12 Bay 2	24 days	Mon 17/11/03			
427	10.10.4 Drainage works in vicinity of RW12	30 days	Fri 09/01/04			
428	10.10.5 Water works in vicinity of RW 12	30 days	Tue 17/02/04			
429	10.10.6 Laying new utilities	30 days	Tue 23/03/04			
430	10.10.7 Roadworks	30 days	Mon 03/05/04			
431	11.0 Noise Barriers Preliminary	784 days	Wed 12/12/01			
433	11.2 Noise Barrier Structures	446 days	Fri 11/01/02			
434	11.2.1 Noise Barrier No. 1	446 days	Fri 11/01/02			
440	11.2.1.5 Bore Piles Coiling Test (4nos)	10 days	Thu 21/06/03			
441	11.2.1.8 RW Panel 1	87 days	Wed 10/12/03			
449	11.2.1.8 RW Panel 2	87 days	Mon 22/12/03			
461	11.2.1.10 RW Panel 3	34 days	Wed 03/12/03			
476	11.2.1.11 RW Panel 4	47 days	Thu 06/10/03			
492	11.2.1.12 RW Panel 5	49 days	Sat 27/08/03			
507	11.2.1.13 RW Panel 6	40 days	Mon 27/10/03			
522	11.2.1.14 RW Panel 7	37 days	Thu 13/11/03			
537	11.2.2 Additional Bore Piles	66 days	Thu 10/07/03			
567	11.2.3 Noise Barrier No. 4B	120 days	Mon 05/01/04			
573	11.2.3a Concrete Footing for Noise Barrier 4C	45 days	Thu 29/05/03			
574	11.2.4 Noise Barrier No. 5	68 days	Mon 06/10/03			
578	11.3 Noise Barrier Steel Post & Panels	784 days	Wed 12/12/01			
580	11.4.1 Design, Submission for approval	250 days	Wed 19/06/02			
581	11.4.2 Fabrication and Delivery	200 days	Thu 17/04/03			
582	11.4.3 Noise Barrier Installation	94 days	Thu 08/04/04			
583	11.4.3.1 Noise Barrier No.1	60 days	Fri 09/04/04			
584	11.4.3.2 Noise Barrier No.2	40 days	Tue 11/05/04			
585	11.4.3.3 Noise Barrier No. 3	40 days	Wed 16/06/04			
586	11.4.3.4 Noise Barrier No. 4A	22 days	Fri 09/07/04			
587	11.4.3.5 Noise Barrier No. 4B	30 days	Fri 04/08/04			
588	11.4.3.6 Noise Barrier No. 4C	30 days	Thu 08/04/04			
589	11.4.3.7 Noise Barrier No. 5	60 days	Tue 16/05/04			
590	12 Box Culvert Estimation	468 days	Thu 27/04/02			
594	12.4 Construct 1400 box culvert (5 bays)	156 days	Thu 10/04/03			
595	12.5 Construct 1500 pipe	212 days	Thu 24/04/03			

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MASTER PROGRAMME (S177/01/MP/13)

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
597	12.5.2 Construct 1500 pipe CH 30 to CH 60	44 days	Mon 22/09/03	Mon 22/09/03	2004
598	12.5.3 Construct 1500 pipe CH 60 to CH 82	44 days	Thu 13/11/03	Thu 13/11/03	Nov '03
600	13.0 Underground Drainage & Utilities	471 days	Wed 15/01/03	Wed 15/01/03	12 November 2003
604	13.1 Drainage works at Lok He Lo roundabout	471 days	Wed 15/01/03	Wed 15/01/03	12 November 2003
605	13.1.1 Drainage works at stage 2 & 2A of TTM	20 days	Wed 15/01/03	Wed 15/01/03	17 January 2004
606	13.1.2 Drainage works at stage 3 of TTM	54 days	Thu 13/11/03	Thu 13/11/03	13.1.3 Drainage works at
607	13.1.3 Drainage works at stage 4 of TTM	54 days	Tue 10/02/04	Tue 10/02/04	
608	13.1.3 Drainage works at stage 5 of TTM	54 days	Wed 14/04/04	Wed 14/04/04	
609	13.1.4 Drainage works at stage 6 of TTM	46 days	Wed 23/06/04	Wed 23/06/04	
610	13.2 New Utilities and Drainage Near Noise Barrier NO 1	97 days	Mon 28/12/03	Mon 28/12/03	13.2 New Utilities and Drainage Near Noise Barrier NO 1
611	13.2.1 Construct MH/24 pipe 225 dia and MH10 of stage 3 & 4 of TTM	19 days	Mon 29/12/03	Mon 29/12/03	13.2.1 Construct MH/24 pipe 225 dia and MH10 of stage 3 & 4 of TTM
612	13.2.2 Construct MH/12 & 2nd portion pipe 450 dia at stage 3 & 4 of TTM	19 days	Mon 29/12/03	Mon 29/12/03	13.2.2 Construct MH/12 & 2nd portion pipe 450 dia at stage 3 & 4 of TTM
613	13.2.1 PCCW -At Stage 3 & 4 TTM Lay cable duct near Noise Barrier No 1 Panel 7	7 days	Wed 21/01/04	Wed 21/01/04	13.2.1 PCCW -At Stage 3 & 4 TTM Lay cable duct near Noise Barrier No 1 Panel 7 & 8
614	13.2.2 CABLE TV -At Stage 3 & 4 TTM Lay cable duct near Noise Barrier No 1 panel 1-5	7 days	Mon 02/02/04	Mon 02/02/04	13.2.2 CABLE TV -At Stage 3 & 4 TTM Lay cable duct near Noise Barrier No 1 panel 1-5
615	13.3 Water pipes and associated works	14 days	Fri 09/04/04	Fri 09/04/04	13.3 Water pipes and associated works
616	13.3.1 Water Mains for irrigation system	237 days	Sat 16/09/03	Sat 16/09/03	13.3.1 Water Mains for irrigation system
617	13.3.2 Fire Service Pipe & Hydrant	120 days	Fri 14/11/03	Fri 14/11/03	13.3.2 Fire Service Pipe & Hydrant
618	13.3.3 Water Main Diversion(1400 Box Culvert)	50 days	Thu 01/04/04	Thu 01/04/04	13.3.3 Water Main Diversion(1400 Box Culvert)
619	13.3.4 Along stair 8	45 days	Wed 17/12/03	Wed 17/12/03	13.3.4 Along stair 8
620	13.4 Existing Utilities Diversion	26 days	Sat 16/09/03	Sat 16/09/03	13.4 Existing Utilities Diversion
621	13.5.1 RW1, RW2 and 1400 Box Culvert	40 days	Fri 21/11/03	Fri 21/11/03	13.5.1 RW1, RW2 and 1400 Box Culvert
622	13.5.2 Abutment A1 to RW11	178 days	Sat 08/09/03	Sat 08/09/03	13.5.2 Abutment A1 to RW11
623	13.5.3 RW11 to C2	90 days	Wed 10/12/03	Wed 10/12/03	13.5.3 RW11 to C2
624	13.5.4 At Lok King Street	130 days	Sat 06/09/03	Sat 06/09/03	13.5.4 At Lok King Street
625	13.5.5 Stair 4 Bay 1 (to allow access bridge C PC beams)	103 days	Wed 10/09/03	Wed 10/09/03	13.5.5 Stair 4 Bay 1 (to allow access bridge C PC beams)
626	14.1 Stair 4 (RW4)	100 days	Wed 03/12/03	Wed 03/12/03	14.1 Stair 4 (RW4)
627	14.2 Stair 4 (RW5)	460 days	Tue 24/01/03	Tue 24/01/03	14.2 Stair 4 (RW5)
628	14.3 Stair 4 (RW6)	12 days	Fri 19/03/04	Fri 19/03/04	14.3 Stair 4 (RW6)
631	14.4 Stair 4 (RW7)	131 days	Thu 04/09/03	Thu 04/09/03	14.4 Stair 4 (RW7)
632	14.4.1 Stair 4 Bay 1 (to allow access bridge C PC beams)	24 days	Thu 04/09/03	Thu 04/09/03	14.4.1 Stair 4 Bay 1 (to allow access bridge C PC beams)
633	14.4.2 Stair 4 Bay 2	24 days	Tue 13/01/04	Tue 13/01/04	14.4.2 Stair 4 Bay 2
634	14.5 Stair 5 (RW8)	69 days	Fri 05/09/03	Fri 05/09/03	14.5 Stair 5 (RW8)
635	14.6 Stair 6 (Abutment B1)	24 days	Tue 11/05/04	Tue 11/05/04	14.6 Stair 6 (Abutment B1)
636	14.7 Stair 7 (RW7)	24 days	Tue 20/07/04	Tue 20/07/04	14.7 Stair 7 (RW7)
637	14.8 Stair 8 (Level +39)	50 days	Tue 16/09/03	Tue 16/09/03	14.8 Stair 8 (Level +39)
639	14.10 Stair 10 (RW12)	20 days	Fri 13/01/04	Fri 13/01/04	14.10 Stair 10 (RW12)
640	14.11 Stair 11 (Abutment A5)	12 days	Fri 31/10/03	Fri 31/10/03	14.11 Stair 11 (Abutment A5)
641	14.12 Stair 12 (House 102)	24 days	Mon 09/02/04	Mon 09/02/04	14.12 Stair 12 (House 102)
643	15 Standard Refuse Collection Point	45 days	Tue 04/06/04	Tue 04/06/04	15 Standard Refuse Collection Point
644	16 Rain Shelter no.1&2	60 days	Mon 01/03/04	Mon 01/03/04	16 Rain Shelter no.1&2
645	17 Landscaping	59 days	Mon 07/06/04	Mon 07/06/04	17 Landscaping
646	17.1 Tree Planting	45 days	Mon 07/06/04	Mon 07/06/04	17.1 Tree Planting
647	17.2 Tinting	45 days	Thu 24/06/04	Thu 24/06/04	17.2 Tinting
648	17.3 Hard Landscaping	50 days	Tue 08/06/04	Tue 08/06/04	17.3 Hard Landscaping
649	18 Project Completion & Handover	978 days	Wed 12/12/01	Wed 12/12/01	18 Project Completion & Handover

Date: 18/10/2003

Task Progress:

Critical Task Progress:

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