Civil Engineering and Development Department

Contract No. ST 77/01

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

Quarterly Environmental Monitoring & Audit Report – April to June 2004

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

Quarterly Environmental Monitoring & Audit Report – April to June 2004

Checked in accordance with EML QP22 _____
Environmental Team Leader

EXECUTIVE SUMMARY

This quarterly 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 summarizes the EM&A carried out in the period from April to June 2004.

Environmental monitoring for this Project included both air quality and noise measurements. The parameters measured for air quality were 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, one exceedance in Action Level was noted for the 24-hour TSP level. The exceedance was measured at Station A2 from 09:30 to 09:30 of next day on 19 April 2004. An ad-hoc site inspection was carried out on 21 April 2004 by ET, MCAL and BCCL to investigate the matter. It was noted that at the time of the site inspection, general site work was carried out near Station A2. No particular dust issues were observed on site. The high measured levels would be caused by the dust generated by the haulage and delivery vehicles crossing Bridge C on 19 April during the backfilling works of the abutment between B1 and B2.

The Contractor was reminded that proper dust control measures should be implemented as stated in Environment Monitoring Checklist Item nos. A8, A9 and A10, in particular where a vehicle leaving and entering the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure the dusty materials do not leak from the vehicle, and all dusty materials (except for cement and PFA and for cases where the moisture content is a matter of concern) shall be sprayed with water or a dust suppression chemical immediately prior to loading or unloading or transfer operation so as to maintain the dusty materials wet. Besides, every vehicle immediately before leaving the construction site shall be washed to remove any dusty materials from its body and wheels.

The regular site inspections had been conducted in this reporting period and mitigation measures were identified and implemented. The mitigation measures implemented in this quarter covered the aspects in noise, air, water, wastewater and land contamination.

In regard to the last quarter environmental issues, it was observed that the sand and mud found at the roundabout were cleared off. Besides, watermains leakage near Retaining Wall No. 12 was rectified.

However, it was noted from site inspection in June that spots of stagnant water were observed near Contractor's Site Office, noise barrier NB1 and 4C, Bridge A1 and retaining wall RW1 which was prone to mosquito breeding. Also, construction debris and rubbish was found near Bridge A and Contractor's Site Office respectively. The Contractor was reminded to clear off any stagnant water or spray larvicide on stagnant water. Besides, the Contractor was reminded to remove the construction waste and rubbish.

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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* (Agreement No. ST77/01).

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;
- Report on EM&A results to Engineer, the ER and EPD;

This is the quarterly EM&A report for the period from April to June 2004. The report summarises the results of the impact air quality and noise monitoring in the reporting quarter as well as the environmental status and issues of the construction site for the Project. The remedial actions undertaken as a result of non-compliance with relevant environmental criteria or complaints related to the Project's construction works have also been discussed in the report.

The project area of the construction site for this Project is shown in **Figure 1.1** while the project organisation, contacts of key management for the project and EPD complaint hotline are shown in **Appendix D**.

1.2 Project Description

Road D15 Linking Lok Shun Path and Tai Po Road (hereinafter referred to as 'Road D15') is part of the development of Sha Tin New Town, Stage II by NT East Development Office/Territory Development Department. The project will provide a link between Lok Lo Ha Area (Planning Area 43 and 44) and Tai Po Road so as to relieve traffic congestion at the present access via Fo Tan Road. The construction of Road D15 includes the major components listed hereunder:

(a) Construction of approximately 0.4km a single 2-lane carriageway forming part of Road D15 at Fo Tan. About 0.2km of road is on elevated structure.

(b) Construction of vehicular bridge A, B and C with footpaths.

(c) Construction of noise barriers.

(d) Construction of associated footpaths, cycle tracks, drainage and workworks.

(e) Construction of sewerage improvement works via Lok Lo Ha Village.

(f) Slope works and landscaping works associated with the above roadworks.

1.3 Construction Activities During the Reporting Quarter

The major activities performed during the reporting period included:

- Construction of Bridges A, B and C, including pile caps (Bridge A), abutment walls (Bridge A), bridge decks (Bridges A, B and C), and installation of bridge bearings (Bridges A and B);
- Retaining walls 1, 2, 6,7 and 12;
- Noise barrier construction for noise barrier No. 1 and noise barrier No.4B;
- Box culvert extension of 1500 diameter pipe;
- Underground drainage and water pipes at Lok Shun Path Roundabout;
- Construction of staircases 4, 10 and 11; and
- Landscaping.

The work program for the current and next quarter is attached in **Appendix F**.

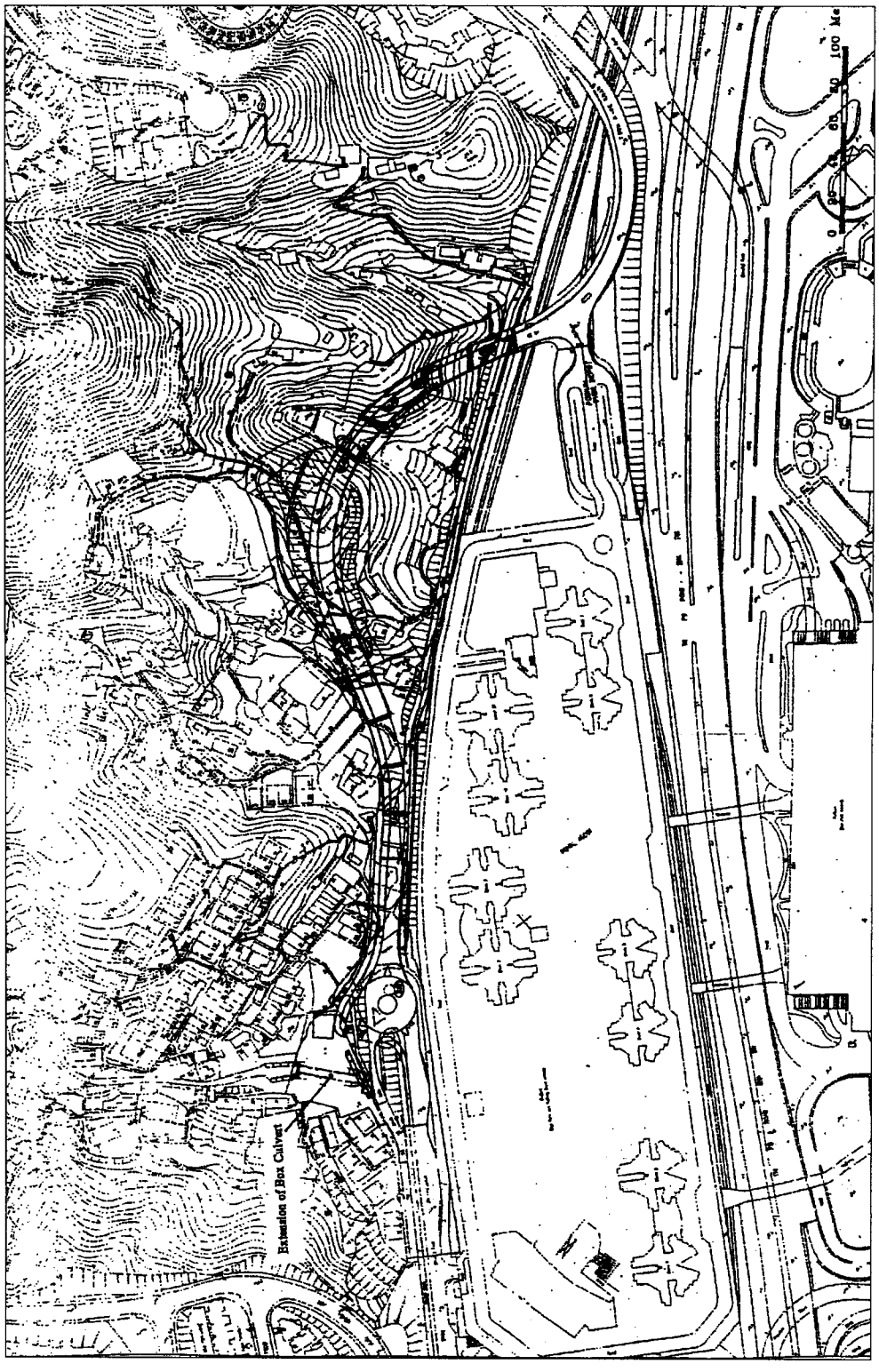


Figure 1.1 Project Area

2. ENVIRONMENTAL MONITORING & AUDIT REQUIREMENTS

2.1 Monitoring Parameters

Impact monitoring on the Road D15 Project involved both air quality and noise. For air impact monitoring, continuous 24-hour and 1-hour TSP levels were sampled. For 24-hour TSP, monitoring was performed once in every six days while for 1-hour TSP, monitoring was performed three times in every six days.

For noise monitoring, the A-weighted equivalent continuous sound pressure level (L_{eq}) was measured with duration of 30 minutes. The measured L_{eq} was used to compare with the relevant noise criteria and the monitoring was conducted once in every six days. As supplementary information for data auditing, statistical results, namely L_{10} and L_{90}, were also recorded for reference.

The monitoring parameters are summarised in **Table 2.1** below.

Table 2.1 Parameter, Frequency and Duration of Monitoring

Monitoring Type	Parameter	Duration
Air Quality	24-hour TSP	24 hours
	1-hour TSP	1 hour within 0700-1900 on working days
Noise	Leq, L_{10}, L_{90}	30 minutes

2.2 Environmental Quality Performance Limits (Action & Limit Levels)

The Action and Limit (AL) Levels set the air quality and noise criteria for construction works. For air quality, the AL levels for the parameters 24 and 1-hour TSP are shown in **Table 2.2** below.

Table 2.2 Action / Limit Levels for Air Quality

Parameters	Action	Limit
24 Hour TSP Level in $\mu g/m^3$	For baseline level < 108 $\mu g/m^3$, Action Level = average of baseline level plus 30% and Limit level; For baseline level > 108 $\mu g/m^3$, and baseline level < 154 $\mu g/m^3$, Action Level = 200 $\mu g/m^3$; For baseline level >154 $\mu g/m^3$, Action Level = 130% of baseline level.	260
1 Hour TSP Level in $\mu g/m^3$	For baseline level < 154 $\mu g/m^3$, Action Level = average of baseline level plus 30% and Limit Level; For baseline level > 154 $\mu g/m^3$, and baseline level < 269 $\mu g/m^3$, Action Level = 350 $\mu g/m^3$; For baseline level > 269 $\mu g/m^3$, Action Level = 130% of baseline level.	500

For noise monitoring, the AL levels for the parameters L_{eq} are shown in **Table 2.3** below:

Table 2.3 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.

From the baseline study carried out in the period from 9 to 27 August 2001, the AL levels for air quality as specified in **Table 2.2** were determined and are shown in **Tables 2.4** and **2.5**. Details of the baseline study were provided in the *'Baseline Environmental Monitoring Report'* by Maunsell Environmental Management Consultants Ltd., carried out prior to the preparation of this EM&A report.

Table 2.4 Action and Limit Levels for 24-hour TSP

Location	Action Level, μg/m3	Limit Level, μg/m^3
A1	156	260
A2	155	
A3	153	

Table 2.5 Action and Limit Levels for 1-hour TSP

Location	Action Level, μg/m3	Limit Level, μg/m^3
A1	371	500
A2	378	
A3	368	

2.3 Environmental Mitigation Measures During Construction Phase

In order to minimise adverse environmental impacts to the surrounding area, the environmental impact assessment report and environmental review had recommended a number of mitigation measures on the Road D15 Project. These mitigation measures cover the aspects in air, water and noise and some of the mitigation measures are listed below:

Air

- Effective dust suppression equipment and other measures should be installed to ensure the concentration of air borne dust at the site boundary and any nearby sensitive receiver are within the established standard
- Wheel washing facilities should be installed and used by all vehicles leaving the construction site.
- All motorised vehicles should be restricted to a maximum speed of 8 km/h. Haulage and delivery vehicles should be confined to designated roadway inside the site
- In the process of material handling, any material which has the potential to create dust should be treated with water or sprayed with wetting agent.

Noise

- Temporary purposed-built barrier must be installed around heavy noise generated equipment. The design of the temporary barrier must meet the requirements specified in the *Technical Memorandum on Noise from Construction Works*. This provides reduction of noise level to at least 10 dB(A).
- The number of equipment, procedure and sequence of construction should be arranged such that the noise levels generated from the plants are kept to the minimum.
- Quietened equipment shall be used for the construction works
- A noise mitigation proposal describing the above measures must be submitted to the EPD with prior verification from the Environmental Team (ET)

Water

- Temporary barrier shall be provided in order to protect the water quality of the stream course located in the site. The barrier shall be installed at the stream bank to prevent accidental dumping or spillage of materials into the stream course during construction.
- Proper mitigation measures as described in **Annex A** of the Environmental Permit will need to be implemented to mitigate environmental impacts due to site runoff and other potential water pollution caused by construction activities. A copy of **Annex A** is attached in **Appendix A** of this report.

3. ENVIRONMENTAL STATUS

3.1 Air Quality

3.1.1 *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 levels for air quality are included in **Section 2** of this report.

3.1.2 *Monitoring Locations*

The designated impact air quality monitoring stations are listed in **Table 3.1** and are shown in **Figure 3.1**.

Table 3.1 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

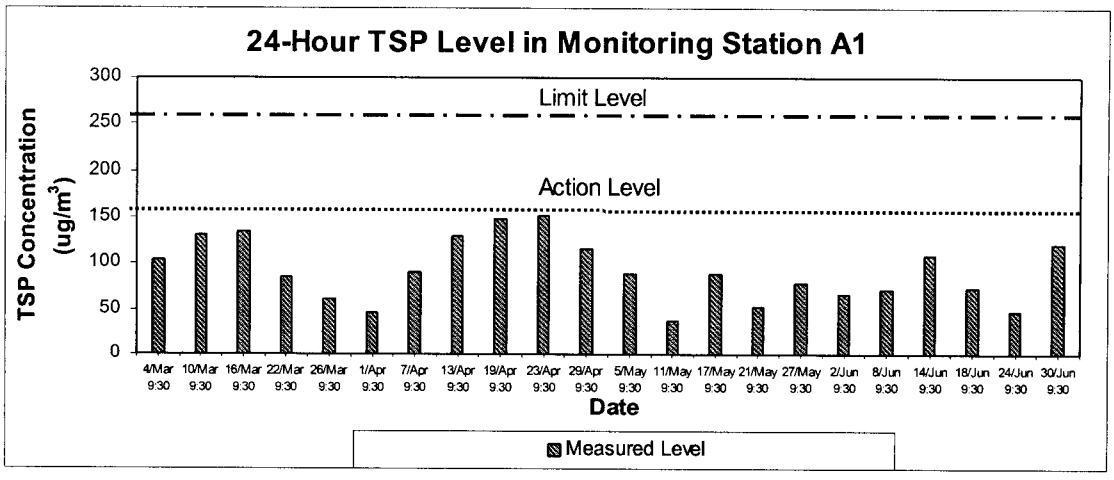
3.1.3 *Summary of Monitoring Results*

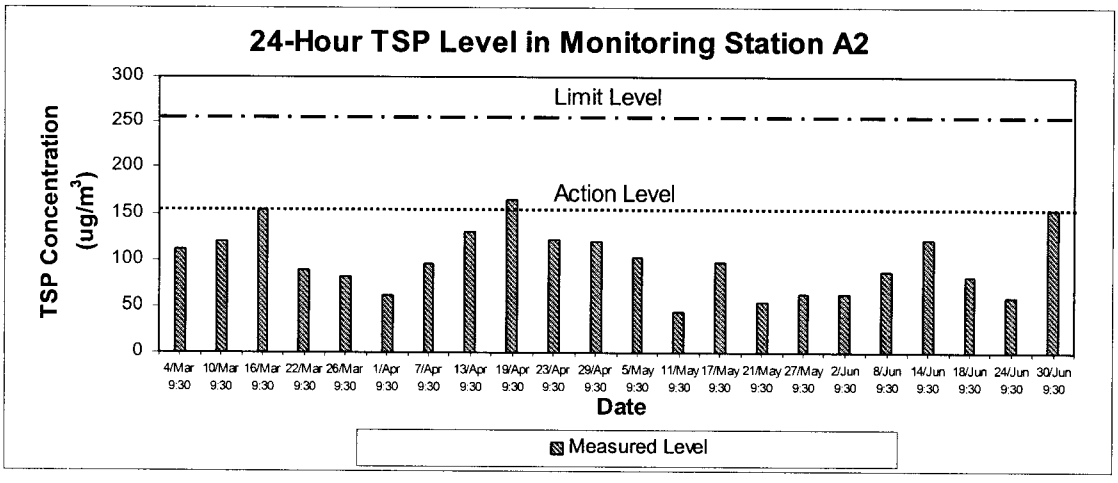
The monitoring results obtained in this quarter are summarised in **Table 3.2**. The graphical plots of the trends of 24-hour and 1-hour TSP in the quarter are presented in **Figures 3.2** and **3.3** respectively. **Appendix B** shows the meteorological conditions during the monitoring days.

Table 3.2 Summary of 24 and 1-hour TSP Monitoring Results

Parameter	Monitoring Location	Mean TSP Levels ($\mu g/m^3$)	Range ($\mu g/m^3$)	No. of Exceedance	
				Action Level	Limit Level
24 – hour TSP	A1	89.2	38 - 152	0	0
	A2	95.6	44 - 165	1	0
	A3	90.1	39 - 151	0	0
1 – hour TSP	A1	143.9	90 –251	0	0
	A2	160.8	80 – 285	0	0
	A3	156.7	74 - 273	0	0

Figure 3.1 Air Quality Monitoring Locations





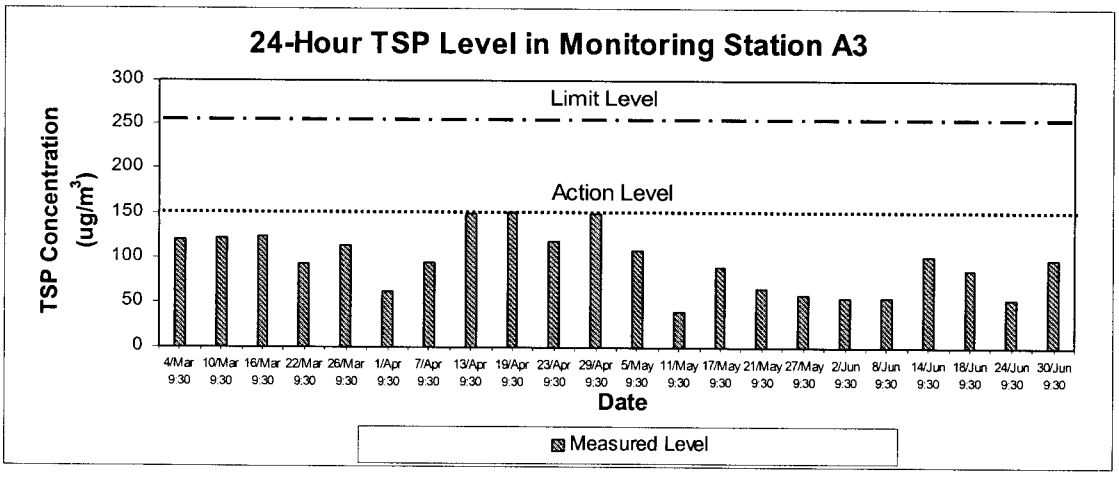
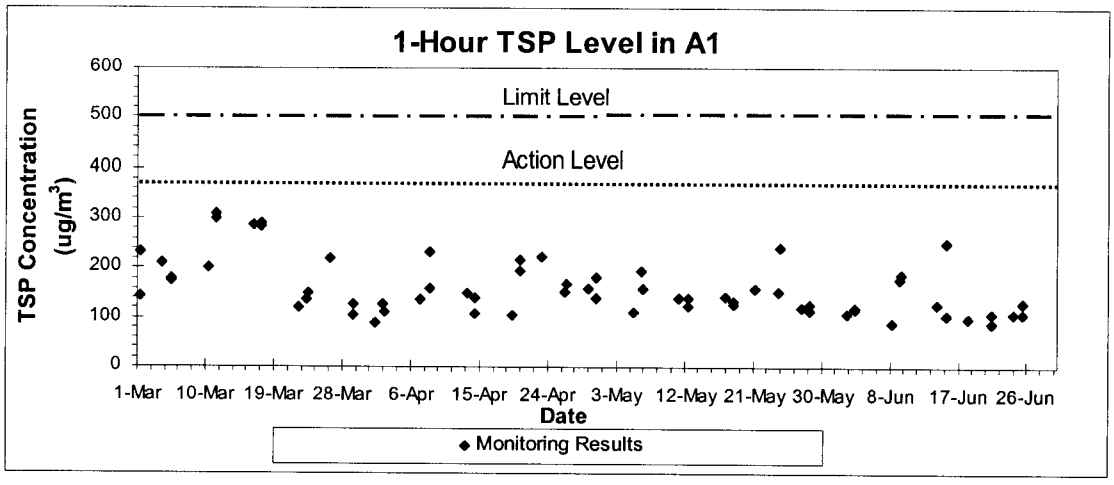
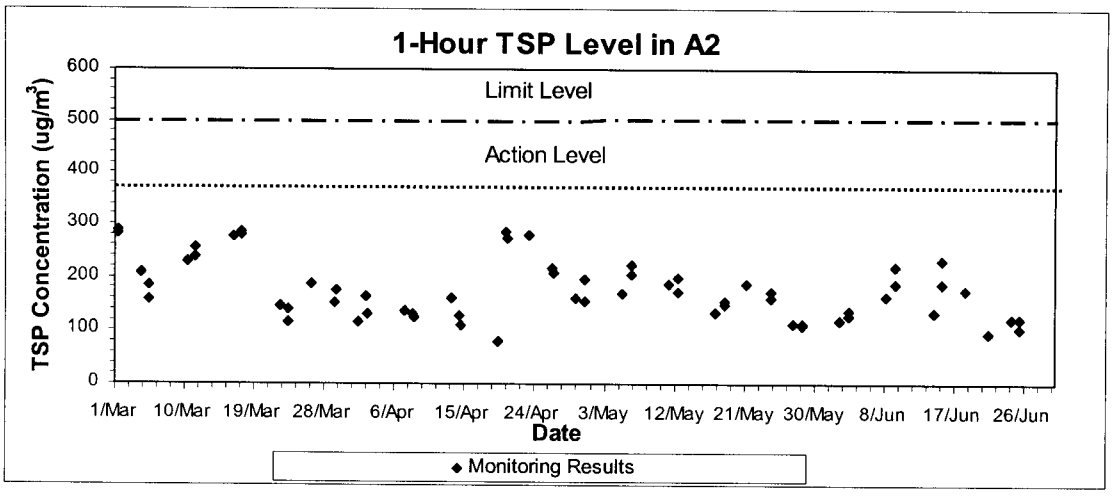


Figure 3.2 Plots of 24-hour TSP Concentration





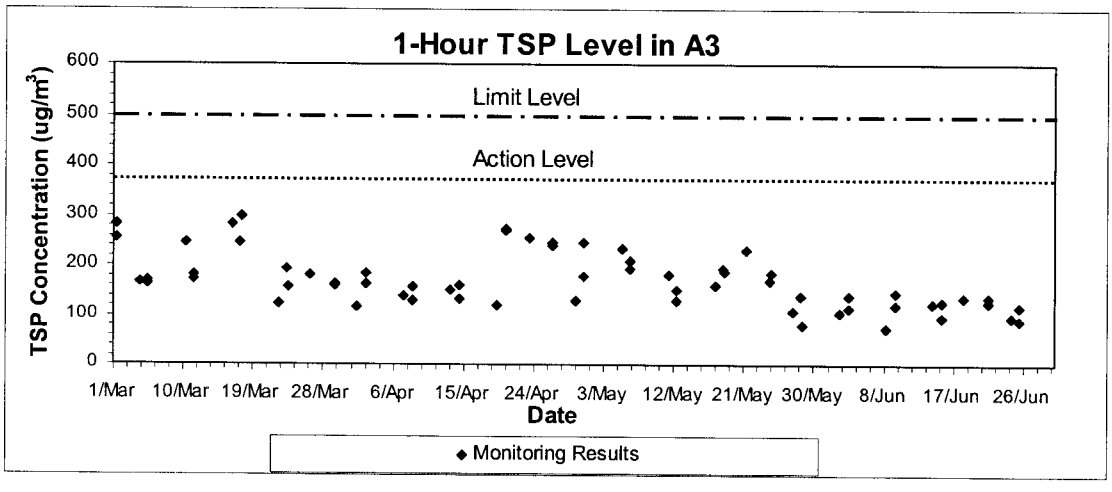


Figure 3.3 Plots of 1-hour TSP Concentrations

3.2 Noise

3.2.1 *Monitoring Requirements*

Impact noise monitoring was conducted once in every six days at the five designated monitoring locations in accordance with the specifications in the EM&A Manual. The duration of sampling was 30 minutes in the reporting period. The Action and Limit levels for noise are presented in **Section 2** of this report.

3.2.2 *Monitoring Locations*

The impact noise monitoring locations are presented in **Table 3.3** and shown in **Figure 3.4**.

Table 3.3 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

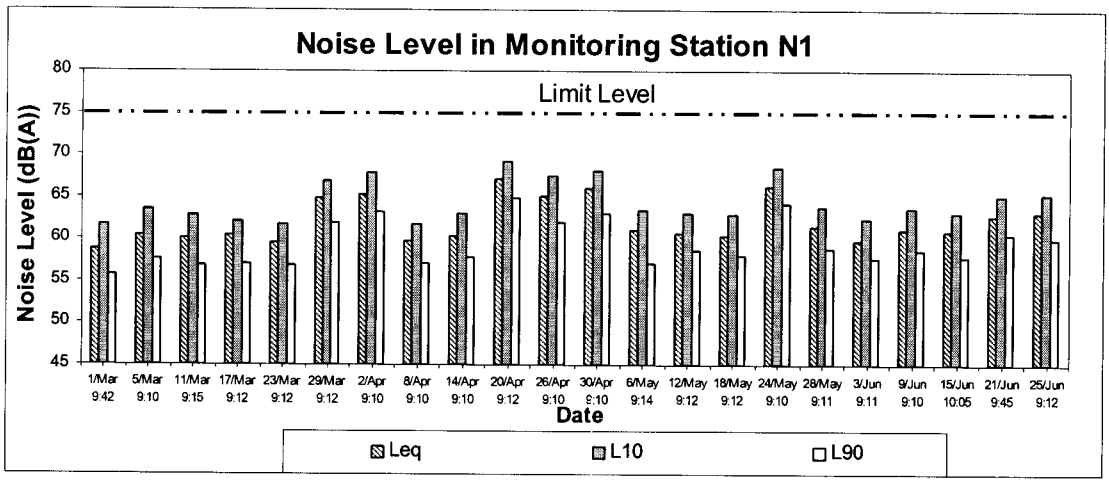
3.2.3 *Summary of Monitoring Results*

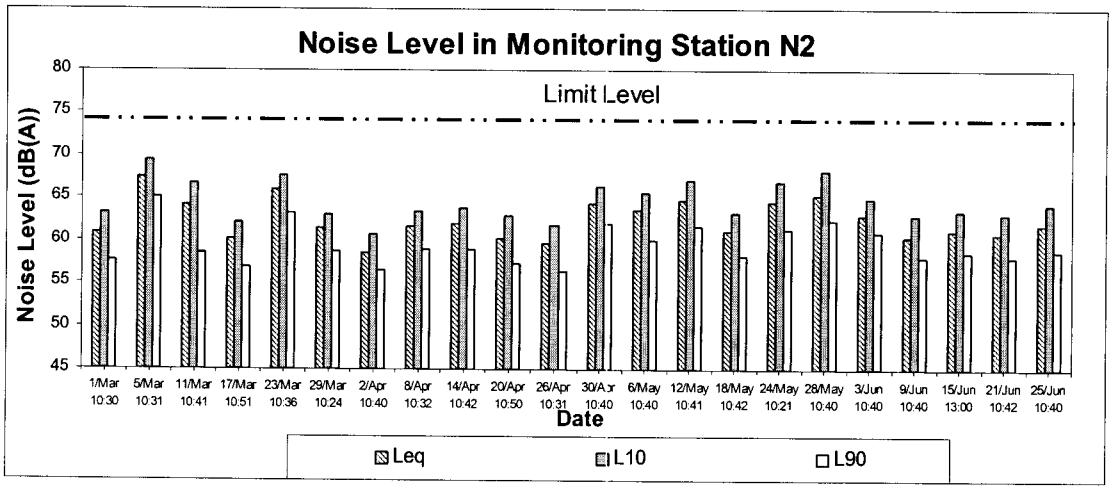
The monitoring results obtained in this quarter are summarised in **Table 3.4**. Graphical plots of the noise level trends in the quarter are presented in **Figure 3.5**. **Appendix B** shows the meteorological conditions during the monitoring days.

Table 3.4 Summary of Noise Monitoring Results

Parameter	Monitoring Location	Range of Results dB(A)	No. of Exceedance	
			Action Levels	Limit Levels
30-minute Noise Measurement (L_{eq})	N1	59.6 – 67.1	0	0
	N2	58.4– 65.3	0	0
	N3	54.0 – 56.9	0	0
	N4	57.5 – 68.4	0	0
	N5	56.1 – 61.0	0	0

Figure 3.4 Noise Monitoring Locations





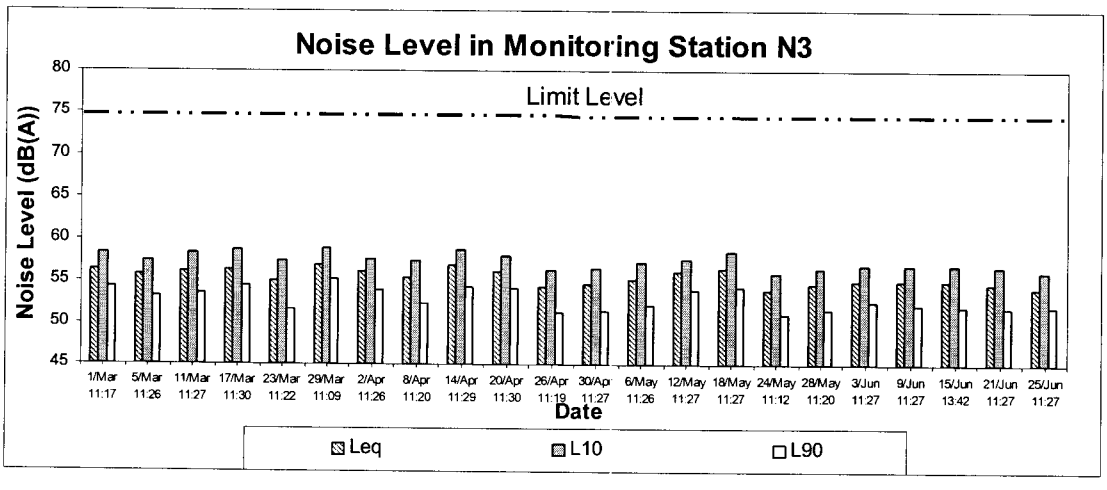
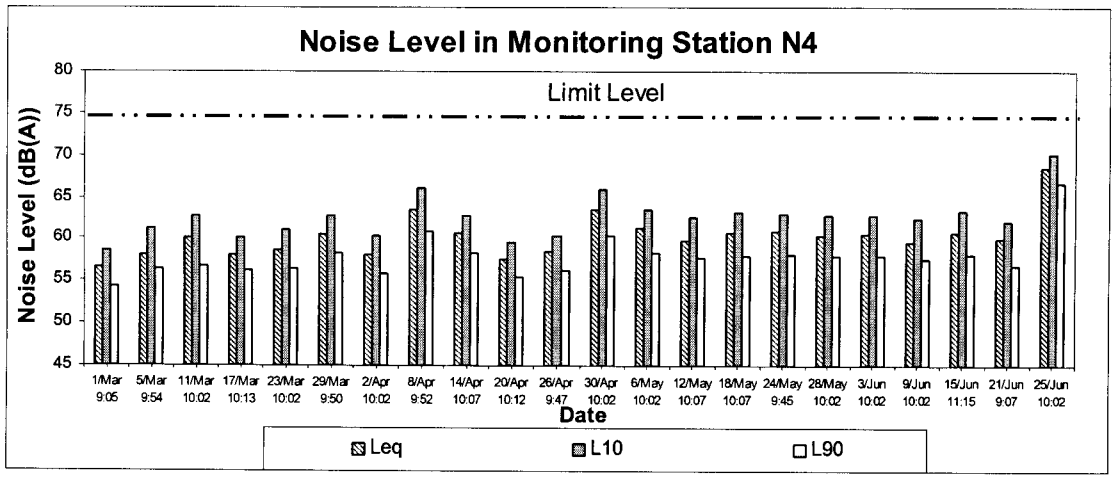


Figure 3.5 Plots of Noise Levels



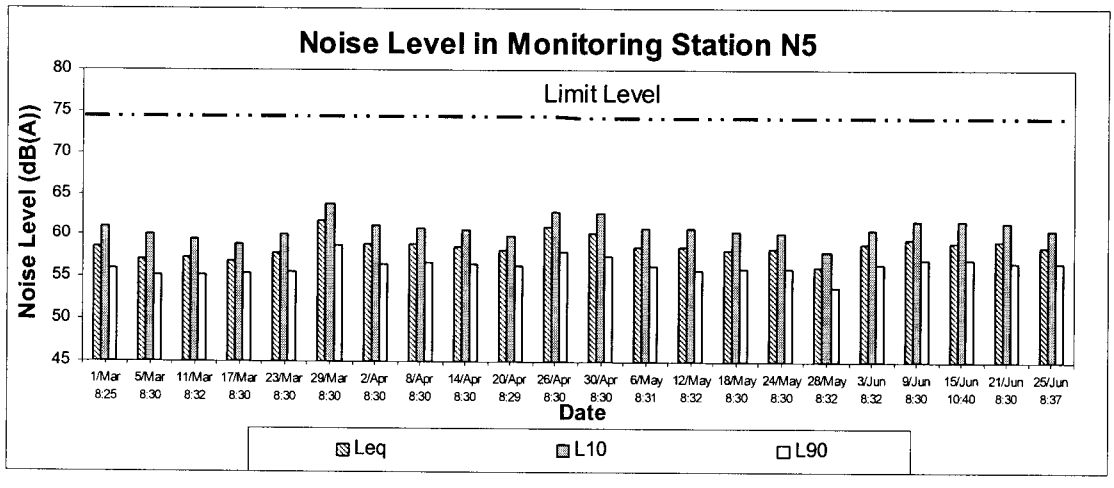


Figure 3.5 Plots of Noise Levels (con't)

4. ENVIRONMENTAL AUDIT

4.1 Summary of Environmental Monitoring Results

The monitoring work undertaken in this reporting quarter is summarised in **Table 4.1**.

Table 4.1 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	01/04/04 to 30/06/04	51	1	0
2	1 – hour TSP	01/04/04 to 30/06/04	147	0	0
3	30-minute Noise Measurement (Leq)	01/04/04 to 30/06/04	48	0	0

In this reporting quarter, there was in total one incident of Action Level exceedance for 24-hour TSP while no exceedance was recorded for noise and 1-hour TSP monitoring. The exceedances recorded in this reporting period are summarized in **Table 4.2**.

Table 4.2 Summary of Non-Compliance with Relevant Criteria

Location	Parameter	Data & Time of Exceedance	Measured Level ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Type of Exceedance
Lok Lo Ha Village House No. 104 (Station A2)	24 – hour TSP Measurement ($\mu g/m^3$)	19 April (09:30 to 09:30 of next day)	165	155.0	Action Level (by 10 $\mu g/m^3$)

Since exceedances in Action Levels had occurred, the Event and Action Plan for Air Quality attached in **Appendix C** was triggered. An ad-hoc site inspection was carried out on 21 April 2004 by ET, MCAL and BCCL to investigate the matter. It was noted that at the time of the site inspection, general site work was carried out near Station A2. No particular dust issues were observed on site. The high measured levels would be caused by the dust generated by the haulage and delivery vehicles crossing Bridge C on 19 April during the backfilling works of the abutment between B1 and B2.

The Contractor was reminded that proper dust control measures should be implemented as stated in Environment Monitoring Checklist Item nos. A8, A9 and A10, in particular where a vehicle leaving and entering the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure the dusty materials do not leak from the vehicle, and all dusty materials (except for cement and PFA and for cases where the moisture content is a matter of concern) shall be sprayed with water or a dust suppression chemical immediately prior to loading or unloading or transfer operation so as to maintain the dusty materials wet. Besides, every vehicle immediately before leaving the construction site shall be washed to remove any dusty materials from its body and wheels.

4.2 Environmental Complaints

No environmental complaint was received against the construction site in this reporting quarter.

Table 4.3 shows the complaint summary record for this reporting quarter while **Table 4.4** summarises the complaint statistics from the commencement of the project to date.

Table 4.3 Environmental Complaints / Enquiry Received in the Reporting Quarter

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 4.4 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	N/a	N/a	2

4.3 Assessment of Mitigation Measures

The mitigation measures listed in **Table 4.5** below had been implemented in this reporting period.

Table 4.5 Summary of Major Mitigation Measures at the Site

Type	Mitigation Measure	Comments
Noise	Temporary purposed-built Noise Barrier	No longer required
Water	Wheel Washing Facility	Installed and in operation.
	Sand/Silt Removal Facilities	No longer required
	Measures along stream-banks north-east of Lok Shun Path Roundabout	No longer required
	Diversion of Stream Course via drainage pipe	Installed at the existing channel.
Wastewater	Water Reuse at wheel washing facility and site investigation drilling works.	Implemented
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 regard to the last quarter environmental issues, it was observed that the sand and mud found at the roundabout were cleared off. Besides, watermains leakage near Retaining Wall No. 12 was rectified.

However, it was noted from site inspection in June that spots of stagnant water were observed near Contractor's Site Office, noise barrier NB1 and 4C, Bridge A1 and retaining wall RW1 which was prone to mosquito breeding. Also, construction debris and rubbish were found near Bridge A and Contractor's Site Office respectively. The Contractor was reminded to clear off any stagnant water or spray larvicide on stagnant water. Besides, the Contractor was reminded to remove the construction waste and rubbish.

5. COMMENTS & CONCLUSION

Weekly site inspection had been carried out in this quarter in order to investigate the implementation and effectiveness of the mitigation measures. The major mitigation measures were identified and were implemented as indicated in **Table 4.5**.

In respect to environmental monitoring for both air quality and noise, there was one exceedance in Action Level on 24-hour TSP in this reporting period. Therefore the Event and Action Plan for Air Quality as set out in **Appendix C** was triggered.

No environmental complaint on the construction site was received in this reporting period.

The updated work program for the current and next quarters are attached in **Appendix F**.

APPENDIX A:

Water Mitigation Measures – Extract from Annex A of the Environmental Permit

EIAO V.L.
EPD

Annex A (as referred to in Condition 3.3)

Measures to Mitigate Environmental Impacts due to Site Run-off and Other Potential Water Pollution During Construction

(a) Surface Runoff

(i) Surface run-off from the construction site shall be directed into adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins before discharge into storm drains. Channels, earth bunds or sand bag barriers shall be provided on site to properly direct stormwater to such silt removal facilities.

(ii) Catchpits and perimeter channels shall be constructed in advance of site formation works and earthworks.

(iii) Silt removal facilities, channels and manholes shall be suitably maintained with the deposited silt and grit being removed at least once a week, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.

(iv) Earthworks final surfaces shall be well compacted and the subsequent permanent work or surface protection shall be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate intercepting channels shall be provided along the site boundary or at the locations agreed with the ET Leader. Rainwater pumped out from trenches or foundation excavations shall be discharged into silt removal facilities before discharge into storm drains.

(v) Open stockpiles of construction materials (e.g. aggregates and sand) on site shall be covered with tarpaulin or similar fabric during rainstorms. Measures such as providing sand bag barriers shall be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.

(vi) All generators, fuel and oil storage shall be within bunded areas. Drainage from the areas shall be connected to storm drains via a petrol interceptor.

(b) General Construction Activities

At all parts of all works areas and construction sites, and throughout the full duration of the construction contract(s), debris and rubbish on site shall be handled and disposed of to avoid entering the water column and causing water quality impacts. Temporary on-site storage of excavated materials from construction works shall be covered with tarpaulin or similar fabric during rainstorms. Any washout of construction or excavated materials should be diverted to the drainage system via sediment traps. Stockpiling of the excavated material shall be minimised by scheduling the construction programme in a way that one section of the alignment can be constructed and completed before the excavation works of the next section commence.

To mitigate environmental impacts from wastewater due to construction activities, water used for water testing, boring, drilling works, concrete batching and precast concrete casting shall be

recirculated and reused; wastewater from concrete batching and precast concrete casting shall be treated for pH adjustment and silt removed prior to discharge into stormwater drains and washwater from wheel washing facilities shall have sand, silt or other materials removed before discharge into stormwater drains; the access road sections between site exits and the public roads shall be paved with backfall to prevent site run-off from entering the public roads.

APPENDIX B:

Weather Conditions During Monitoring Periods

Weather Condition During Monitoring Period
(From 1 March to 30 June 2004)

Date	Weather	Mean Air Temperature (°C)	Wind Speed (m/s)	Mean Relative Humidity (%)
1-Mar-04	Cloudy	24.2	0.5	83
4-Mar-04	Fine	15.5	0.5	58
5-Mar-04	Fine	17.8	0.5	70
10-Mar-04	Fine	20.1	0.5	79
11-Mar-04	Sunny	22.5	0.5	76
16-Mar-04	Cloudy	20.2	0.5	84
17-Mar-04	Cloudy	22.3	0.5	91
22-Mar-04	Fine	19.8	0.5	74
23-Mar-04	Cloudy	18.8	0.5	81
26-Mar-04	Cloudy	16.7	0.5	91
29-Mar-04	Cloudy	18.4	0.5	94
1-Apr-04	Cloudy	20.2	0.5	93
2-Apr-04	Fine – Cloudy	19.9	0.5	79
7-Apr-04	Cloudy	22.8	0.5	90
8-Apr-04	Cloudy	19.0	0.5	76
13-Apr-04	Cloudy	25.5	0.5	84
14-Apr-04	Cloudy	22.4	0.5	93
19-Apr-04	Sunny	25.4	0.5	69
20-Apr-04	Sunny	25.2	0.5	79
23-Apr-04	Fine	27.4	0.5	80
26-Apr-04	Cloudy – Fine	24.8	0.5	87
29-Apr-04	Cloudy	22.9	0.5	89
30-Apr-04	Fine	25.2	0.5	86
02-Jun-04	Fine	27.9	0 – 0.5	84
03-Jun-04	Fine	28.1	0 – 0.5	82
08-Jun-04	Cloudy	27.1	0	78
09-Jun-04	Sunny	27.9	0 – 0.5	77
14-Jun-04	Fine	27.6	0	74
15-Jun-04	Rainy	27.0	0	88
18-Jun-04	Fine	29.1	0	79
21-Jun-04	Cloudy	28.6	0	85
24-Jun-04	Fine	30.2	0	76
25-Jun-04	Fine	30.2	0 – 0.5	75
30-Jun-04	Fine	30.4	0	81

APPENDIX C:

Event and Action Plan for Air Quality and Noise

Event / Action Plan for Air Quality

EVENT	ACTION		
	ET	Engineer	CONTRACTOR
ACTION LEVEL			
1. Exceedance for one sample	1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm finding; and 4. Increase monitoring frequency to daily.	1. Notify Contractor; and 2. Check monitoring data and Contractor's working methods.	1. Rectify any unacceptable practice, if any; and 2. Amend working methods if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Discuss with Engineer for remedial actions required; 6. If exceedance continues, arrange meeting with the engineer; and 7. If exceedance stops, cease additional monitoring.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial measures properly implemented.	1. Submit proposals for mitigation measures to the Engineer within 3 working days of notification; 2. Implement the agreed proposals; and 3. Amend proposal if appropriate.
LIMIT LEVEL			
1. Exceedance for one sample	1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of results.	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Check monitoring data and Contractor's working methods; 4. Discuss with ET and Contractor on potential remedial actions; and 5. Ensure remedial action properly implemented.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; and 4. Amend proposal if appropriate.
2. Exceedance for two or more consecutive samples	1. Identify source; 2. Inform the Engineer and Contractor; 3. Repeat measurement to confirm findings; 4. Increase monitoring frequency to daily. 5. Investigate the causes of exceedance; 6. Arrange meeting with EPD and the Engineer to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep EPD and the Engineer informed of the results; and 8. If exceedance stops, cease additional monitoring	1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; 4. Discuss among ET and Contractor on potential remedial actions; 5. Review Contractor's remedial action whenever necessary to assure their effectiveness; and 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.	1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to the Engineer within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by the Engineer until the exceedance is abated.

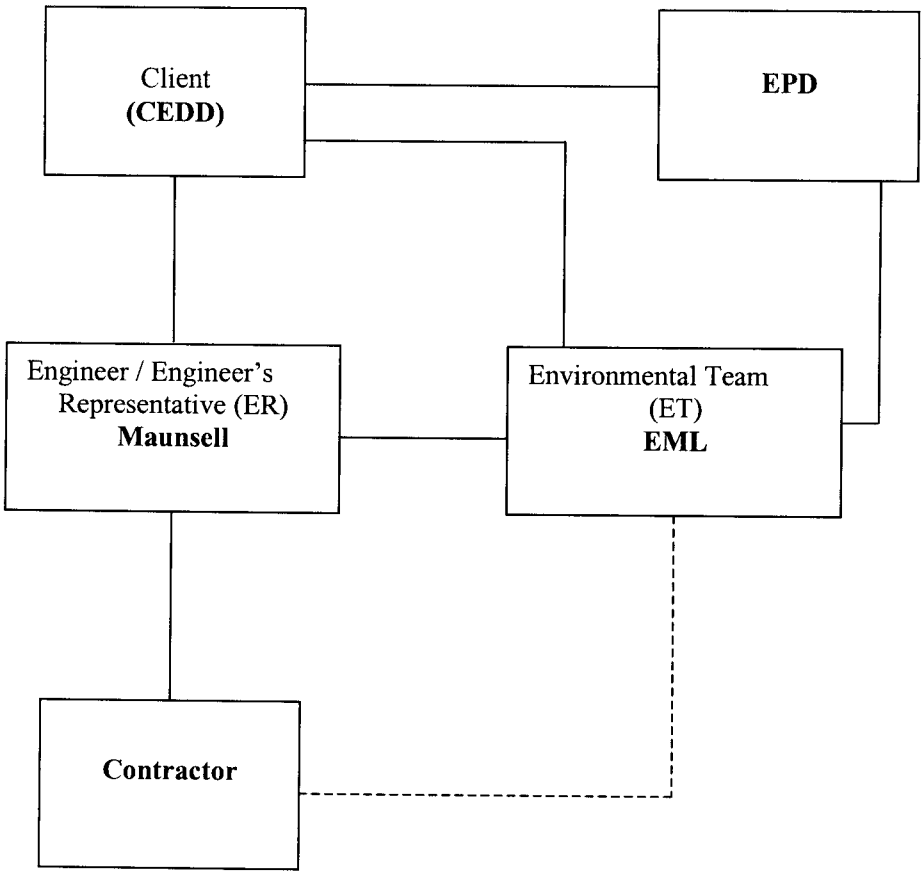
Event / Action Plan for Construction Noise

EVENT	ACTION	
	ET	Contractor
Action Level	1. Notify the Engineer and Contractor; 2. Analyze investigation; 3. Require Contractor to propose measures for the analyzed noise problem; and 4. Increase monitoring frequency to check mitigation effectiveness.	1. Submit noise mitigation proposals to Environmental Team and the Engineer; and 2. Implement noise mitigation proposals.
Limit Level	1. Notify the Engineer and Contractor; 2. Notify EPD; and 3. Require Contractor to implement mitigation measures; and increase monitoring frequency to check mitigation effectiveness.	1. Implement mitigation measures; and 2. Prove to Environmental Team and the Engineer effectiveness of measures applied.

APPENDIX D:

Project Organisation and Contacts of Key Personnel

Figure D.1: Project Management Structure



Contacts of Key Personnel:

Organisation	Nature of Duty	Contact Personnel	Contact Number	
			Telephone	Fax
Civil Engineering and Development Department (CEDD)	Client	Mr. K.K. Law	2301-1397	2739-0076
Maunsell Consultants Asia Ltd. (MCAL)	Engineer	Mr. Conrad Ng	2685-6107	2691-2649
Environmental Management Ltd. (EML)	Environmental Team	Mr. W. K. Ng	2839-2800	2890-6901
EPD Complaint Hotline	24-hour Complaint Hotline	-	1823	

APPENDIX E:

Summary Record of Complaints Received

Complaint No.	Received date & Time	Description (inc. location/ nature of complaint)	Follow-up Action Taken	Recommended Mitigation 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	• Ad hoc site inspection was carried out on 31/7/02, jointly with the Engineer and Contractor • The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. • A letter, addressing to the complainant, will be sent to the police.	Mitigation actions: • Excavator-mounted breaker shall not be carried out within 125m from any nearby noise sensitive receivers and; • Temporary purposed built barrier should be installed whenever there are high noise level construction activities.	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 August, 2002	• Nearby residents complained to police that a generator in Road D15 Site was operating in night-time near Lok Lo Ha Village. • Police came to the site to investigate the complaint and inform watchmen to turn off the operating generator at around 8:30pm. • The complaint was valid as it concerned with construction noise during the restricted hours.	• Ad hoc site inspection was carried out on 8 August 02, jointly with the Engineer and Contractor and ET. • The complaint log sheet, the investigation findings and recommendations on mitigation measures were submitted to the Engineer and Contractor. • A letter in both English and Chinese, addressing to the complainant, has been sent to the police.	Mitigation actions: • 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; • A watchmen or site staff should be employed to check daily that all generators and plats are switched off after the permissible working hours.	File Closed.

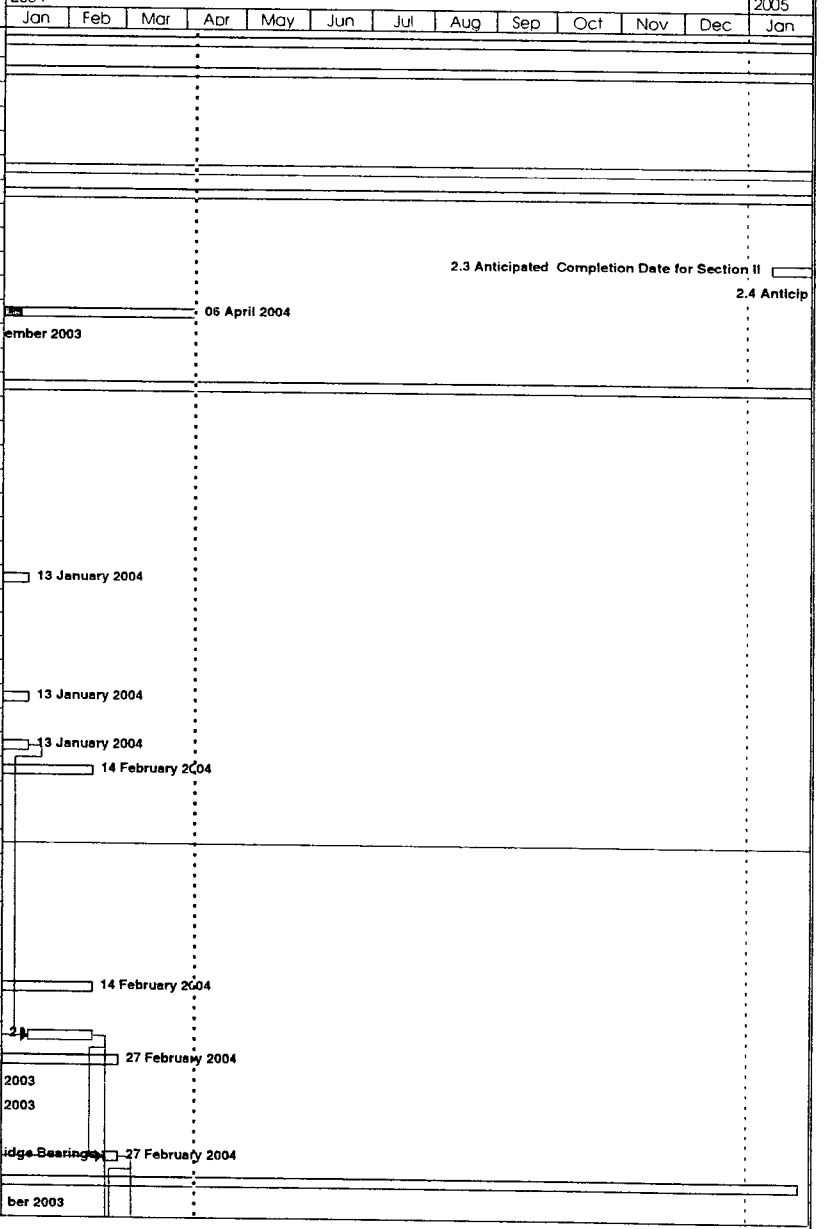
APPENDIX F:

Construction Program for Current and Next Quarter

MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
0	**Road D15 Master Programme**	**1326 days**	**Wed 12/12/01**	**Fri 02/06/06**
1	**1.0 Original Contract Period**	**1187 days**	**Wed 12/12/01**	**Sat 12/03/05**
2	1.1 Works in Section I (345 days)	345 days	Wed 12/12/01	Thu 21/11/02
3	1.2 Works in Section IA (475 Days)	475 days	Wed 12/12/01	Mon 31/03/03
4	1.3 Works in Section II (822 days)	822 days	Wed 12/12/01	Fri 12/03/04
5	1.4 Landscape Work in Section III (1187 Days)	1187 days	Wed 12/12/01	Sat 12/03/05
6	**2.0 Anticipated Dates**	**1289 days**	**Fri 22/11/02**	**Fri 02/06/06**
7	2.1 Anticipated EOT for Section I	249.5 days	Fri 22/11/02	Tue 29/07/03
8	2.2 Anticipated Completion Date for Section IA	0 days	Mon 31/03/03	Mon 31/03/03
9	2.3 Anticipated Completion Date for Section II	141 days	Thu 13/01/05	Thu 02/06/05
10	2.4 Anticipated Completion Date for Section III	365 days	Fri 03/06/05	Fri 02/06/06
11	**3 Preliminary & Site Establishment**	**689 days**	**Wed 12/12/01**	**Tue 06/04/04**
29	**4 Earthworks**	**473 days**	**Fri 10/05/02**	**Fri 05/12/03**
35	**5 Entrustment Works (Section I & 1A)**	**455 days**	**Wed 12/12/01**	**Thu 26/06/03**
45	**6 Bridge A & General**	**1007 days**	**Wed 12/12/01**	**Fri 06/05/05**
46	6.1 Design Submission of Alternative Design (I Beam)	180 days	Wed 12/12/01	Wed 24/07/02
47	6.2 Procurement,manufacturing and testing of bridge bearing	63.2 days	Thu 25/07/02	Tue 08/10/02
48	6.3 Engineer's Approval of Off Site Casting Yard	180 days	Sat 19/01/02	Wed 28/08/02
49	6.4 Fabrication of precast beams	150 days	Thu 29/08/02	Thu 27/02/03
50	6.5 Fabrication PC panel permanent formwork	200 days	Thu 29/08/02	Fri 02/05/03
51	6.6 Ground Investigation	62 days	Wed 12/12/01	Thu 28/02/02
52	**6.7 Piling Works at A1 to A5**	**121 days**	**Wed 12/12/01**	**Mon 13/05/02**
58	**6.8 Pile Caps Construction A1 to A5**	**546 days**	**Sat 16/03/02**	**Tue 13/01/04**
59	6.8.1 A1 Pile Cap	50 days	Mon 25/03/02	Mon 27/05/02
60	6.8.2 A2 Pile Cap	24 days	Sat 16/03/02	Tue 16/04/02
61	6.8.3 A3 Pile Cap	22 days	Wed 08/05/02	Mon 03/06/02
62	6.8.4 A4 Pile Cap	24 days	Fri 19/04/02	Fri 17/05/02
63	**6.8.5 A5 Pile Cap**	**247 days**	**Mon 17/03/03**	**Tue 13/01/04**
64	6.8.5.1 A5 Pile Cap (1st Portion)	110 days	Mon 17/03/03	Thu 31/07/03
65	6.8.5.2 A5 Pile Cap (2nd Portion)	22 days	Tue 16/12/03	Tue 13/01/04
66	**6.9 Abutment Wall A1 to A5**	**547 days**	**Wed 17/04/02**	**Sat 14/02/04**
67	**6.9.1 A1 Abutment Wall**	**427 days**	**Tue 28/05/02**	**Wed 29/10/03**
68	6.9.1.2 A1 (1st portion to allow site access to C2)	30 days	Tue 28/05/02	Wed 03/07/02
69	6.9.1.2 A1 (upper Portion)	55 days	Mon 25/08/03	Wed 29/10/03
70	**6.9.2 A2 Pier & Cross Head**	**434 days**	**Wed 17/04/02**	**Sat 27/09/03**
71	6.9.2.1 Pier only To allow access to C2	22 days	Wed 17/04/02	Mon 13/05/02
72	6.9.2.2 A2 Crosshead	29 days	Mon 25/08/03	Sat 27/09/03
73	6.9.3 A3 Pier & Cross Head	30 days	Tue 04/06/02	Wed 10/07/02
74	6.9.4 A4 Pier & Cross Head	12 days	Thu 11/07/02	Wed 24/07/02
75	**6.9.5 A5 Abutment Wall**	**148 days**	**Mon 18/08/03**	**Sat 14/02/04**
76	6.9.5.1 A5 Abutment wall (Portion 1 to allow site access)	50 days	Mon 18/08/03	Thu 16/10/03
77	6.9.5.2 A5 Abutment wall (Portion 2)	25 days	Wed 14/01/04	Sat 14/02/04
78	**6.10 Install bridge bearings A1 to A5**	**474 days**	**Mon 29/07/02**	**Fri 27/02/04**
79	6.10.1 A1 - A2 Bridge Bearings	6 days	Wed 05/11/03	Wed 12/11/03
80	6.10.2 A2 - A3 Bridge Bearings	6 days	Wed 05/11/03	Wed 12/11/03
81	6.10.3 A3 - A4 Bridge Bearings	6 days	Mon 29/07/02	Mon 05/08/02
82	6.10.4 A4 - A5 Bridge Bearings	6 days	Fri 20/02/04	Fri 27/02/04
83	**6.11 Install Precast Beams A1 to A5**	**352 days**	**Thu 20/11/03**	**Wed 26/01/05**
84	6.11.1 A1 to A2 PC Beams	6 days	Thu 20/11/03	Thu 27/11/03



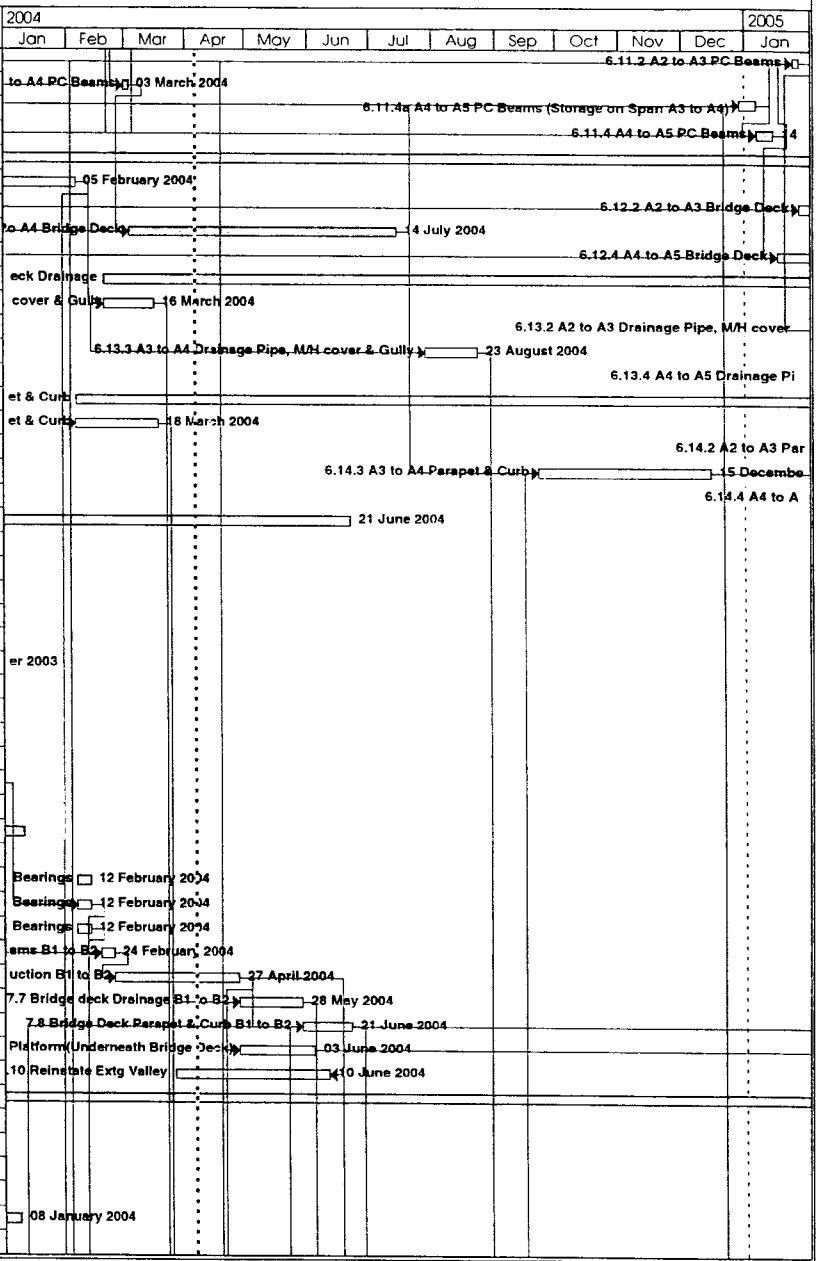
Date: 18/10/2003

Task
Task Progress
Critical Task
Critical Task Progress
Milestone
Summary
Rolled Up Task
Rolled Up Critical Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary

MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
85	6.11.2 A2 to A3 PC Beams	3 days	Mon 24/01/05	Wed 26/01/05
86	6.11.3 A3 to A4 PC Beams	3 days	Mon 01/03/04	Wed 03/03/04
87	6.11.4a A4 to A5 PC Beams (Storage on Span A3 to A4)	6 days	Thu 30/12/04	Thu 06/01/05
88	6.11.4 A4 to A5 PC Beams	6 days	Fri 07/01/05	Fri 14/01/05
89	**6.12 Bridge Deck Construction A1 to A5**	**392 days**	**Fri 28/11/03**	**Fri 25/03/05**
90	6.12.1 A1 to A2 Bridge Deck	50 days	Fri 28/11/03	Thu 05/02/04
91	6.12.2 A2 to A3 Bridge Deck	32 days	Thu 27/01/05	Fri 11/03/05
92	6.12.3 A3 to A4 Bridge Deck	95 days	Thu 04/03/04	Wed 14/07/04
93	6.12.4 A4 to A5 Bridge Deck	50 days	Mon 17/01/05	Fri 25/03/05
94	**6.13 Bridge Deck Drainage**	**355 days**	**Fri 20/02/04**	**Wed 04/05/05**
95	6.13.1 A1 to A2 Drainage Pipe, M/H cover & Gully	18 days	Fri 20/02/04	Tue 16/03/04
96	6.13.2 A2 to A3 Drainage Pipe, M/H cover & Gully	18 days	Wed 23/02/05	Fri 18/03/05
97	6.13.3 A3 to A4 Drainage Pipe, M/H cover & Gully	18 days	Thu 29/07/04	Mon 23/08/04
98	6.13.4 A4 to A5 Drainage Pipe, M/H cover & Gully	18 days	Mon 11/04/05	Wed 04/05/05
99	**6.14 Bridge deck Parapet & Curb**	**369 days**	**Fri 06/02/04**	**Fri 06/05/05**
100	6.14.1 A1 to A2 Parapet & Curb	30 days	Fri 06/02/04	Thu 18/03/04
101	6.14.2 A2 to A3 Parapet & Curb	27 days	Mon 14/03/05	Tue 19/04/05
102	6.14.3 A3 to A4 Parapet & Curb	60 days	Thu 23/09/04	Wed 15/12/04
103	6.14.4 A4 to A5 Parapet & Curb	30 days	Mon 28/03/05	Fri 06/05/05
104	**7 Bridge B**	**749 days**	**Wed 12/12/01**	**Mon 21/06/04**
105	7.1 Ground Investigation	36 days	Fri 01/03/02	Mon 15/04/02
106	**7.2 Pre Bore H-Piles**	**431 days**	**Tue 16/04/02**	**Tue 23/09/03**
107	7.2.1 B1 H Piles	29 days	Tue 16/04/02	Tue 21/05/02
108	7.2.2 B2 H Piles	27 days	Mon 11/08/03	Wed 10/09/03
109	7.2.3 Loading test on Pile	12 days	Tue 09/09/03	Tue 23/09/03
110	7.3 Pile Cap & Abutment Wall B1 & B2	51 days	Wed 24/09/03	Sat 22/11/03
111	7.3.1 Temp. works for B1 Pile Cap	35 days	Wed 24/09/03	Tue 04/11/03
118	7.3.2 Construct B1 Pile Cap	16 days	Wed 05/11/03	Sat 22/11/03
127				
128	7.3.3 B1 Abutment	19 days	Mon 24/11/03	Mon 15/12/03
135	Remove temp work and backfilling at B1 Abutment	10 days	Tue 16/12/03	Mon 29/12/03
136				
137	**7.3.4 Temp. works for B2 Pile Cap**	**619 days**	**Wed 12/12/01**	**Sat 10/01/04**
159				
168	**7.4 Install Bridge Bearings**	**6 days**	**Fri 06/02/04**	**Thu 12/02/04**
169	7.4.1 B1 bridge Bearings	6 days	Fri 06/02/04	Thu 12/02/04
170	7.4.2 B2 bridge Bearings	6 days	Fri 06/02/04	Thu 12/02/04
171	7.5 Install Precast Beams B1 to B2	6 days	Wed 18/02/04	Tue 24/02/04
172	7.6 Bridge Deck Construction B1 to B2	50 days	Wed 25/02/04	Tue 27/04/04
173	7.7 Bridge deck Drainage B1 to B2	25 days	Wed 28/04/04	Fri 28/05/04
174	7.8 Bridge Deck Parapet & Curb B1 to B2	20 days	Sat 29/05/04	Mon 21/06/04
175	7.9 Remove Temp Platform(Underneath Bridge Deck)	30 days	Wed 28/04/04	Thu 03/06/04
176	7.10 Reinstate Extg Valley	60 days	Sat 27/03/04	Thu 10/06/04
177	8 Bridge C	1014 days	Wed 12/12/01	Sat 14/05/05
178	8.1 Ground Investigation	62 days	Wed 12/12/01	Thu 28/02/02
179	8.2 Pre Bore H-Piles	321 days	Thu 25/07/02	Wed 20/08/03
180	8.2.1 C1 H Piles	35 days	Fri 11/07/03	Wed 20/08/03
181	8.2.2 C2 H Piles	52 days	Thu 25/07/02	Mon 23/09/02
182	8.3 Pile Cap & Abutment Wall C1 & C2	385 days	Tue 24/09/02	Thu 08/01/04
183	8.3.1 Temp. works and Construct C1 Pile Cap	39 days	Mon 29/09/03	Thu 13/11/03



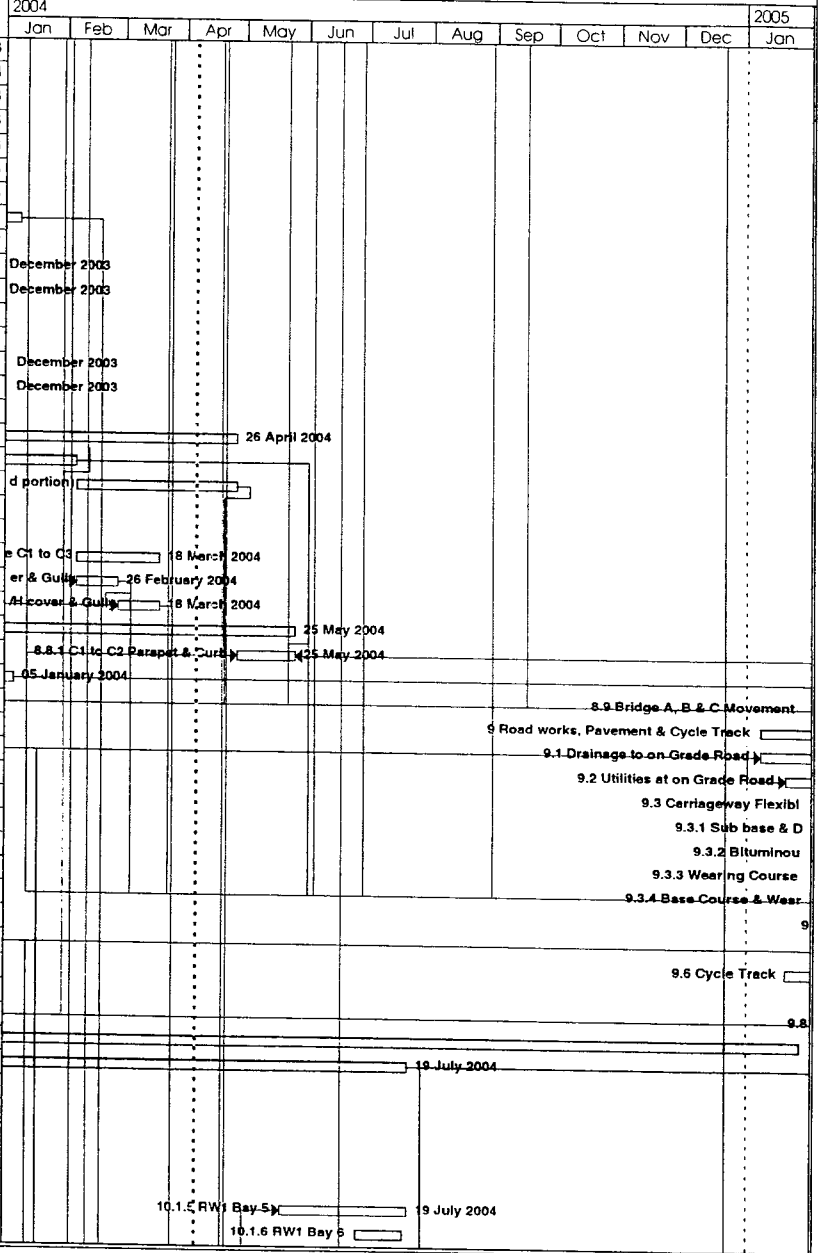
Date: 18/10/2003

Task | Task Progress | Critical Task | Critical Task Progress | Milestone | Summary | Rolled Up Task | Rolled Up Critical Task | Rolled Up Milestone | Rolled Up Progress | Split | External Tasks | Project Summary

MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
205	8.3.2 C1 Abutment Wall	25 days	Fri 14/11/03	Fri 12/12/03
206	a)Erect outer formwork	5 days	Fri 14/11/03	Wed 19/11/03
207	b)Fix steel rebar	5 days	Thu 20/11/03	Tue 25/11/03
208	c)Erect inner formwork	6 days	Wed 26/11/03	Tue 02/12/03
209	d)Checking	1 day	Wed 03/12/03	Wed 03/12/03
210	e)Concreting	1 day	Thu 04/12/03	Thu 04/12/03
211	f)Curing & Remove formwork	7 days	Fri 05/12/03	Fri 12/12/03
212	Remove temp work and backfilling at Abutment C1	20 days	Sat 13/12/03	Thu 08/01/04
213	8.3.3 C2 Pile Cap & Pier	50 days	Tue 24/09/02	Fri 22/11/02
214	**8.4 Install Bridge Bearings**	**356.8 days**	**Fri 11/10/02**	**Fri 19/12/03**
215	8.4.1 C1 Bridge Bearings	6 days	Sat 13/12/03	Fri 19/12/03
216	8.4.2 C2 Bridge Bearings	6 days	Wed 27/11/02	Tue 03/12/02
217	8.4.3 C3 Bridge Bearings	234.8 days	Fri 11/10/02	Mon 28/07/03
218	8.5 Install Precast Beams C1 to C2	125 days	Tue 29/07/03	Tue 23/12/03
219	8.5.1 C1 to C2 PC Beams	3 days	Sat 20/12/03	Tue 23/12/03
220	8.5.2 C2 to C3 PC Beams	3 days	Tue 29/07/03	Thu 31/07/03
221	**8.6 Bridge Deck Construction C1 to C3**	**219 days**	**Fri 01/08/03**	**Mon 26/04/04**
222	**8.6.1 C1 to C2 Bridge Deck (1st portion)**	**32 days**	**Wed 24/12/03**	**Thu 05/02/04**
229	8.6.2 C1 to C2 Bridge Deck (2nd portion)	65 days	Fri 06/02/04	Mon 26/04/04
238	8.6.3 C2 to C3 Bridge Deck (1st portion)	66 days	Fri 01/08/03	Sat 18/10/03
239	8.6.3 C2 to C3 Bridge Deck (2nd portion)	40 days	Mon 20/10/03	Thu 04/12/03
240	**8.7 Bridge deck Drainage C1 to C3**	**36 days**	**Fri 06/02/04**	**Thu 18/03/04**
241	8.7.1 C1 to C2 Drainage Pipe, M/H cover & Gully	18 days	Fri 06/02/04	Thu 26/02/04
242	8.7.2 C2 to C3 Drainage Pipe, M/H cover & Gully	18 days	Fri 27/02/04	Thu 18/03/04
243	**8.8 Bridge Deck Parapet & Curb C1 to C3**	**137 days**	**Fri 05/12/03**	**Tue 25/05/04**
244	8.8.1 C1 to C2 Parapet & Curb	24 days	Tue 27/04/04	Tue 25/05/04
245	8.8.2 C2 to C3 Parapet & Curb	24 days	Fri 05/12/03	Mon 05/01/04
246	8.9 Bridge A, B & C Movement Joints Installation (10 nos)	13 days	Fri 29/04/05	Sat 14/05/05
247	**9 Road works, Pavement & Cycle Track**	**110 days**	**Sat 08/01/05**	**Thu 26/05/05**
248	9.1 Drainage to on Grade Road	40 days	Sat 08/01/05	Sat 26/02/05
249	9.2 Utilities at on Grade Road	40 days	Thu 20/01/05	Thu 10/03/05
250	**9.3 Carriageway Flexible Pavement**	**57 days**	**Fri 11/03/05**	**Mon 23/05/05**
251	9.3.1 Sub base & DBM Course	30 days	Fri 11/03/05	Tue 19/04/05
252	9.3.2 Bituminous Base Course	30 days	Wed 23/03/05	Sat 30/04/05
253	9.3.3 Wearing Course to On grade road	20 days	Wed 30/03/05	Tue 26/04/05
254	9.3.4 Base Course & Wearing Course to Bridges A, B & C	6 days	Tue 17/05/05	Mon 23/05/05
255	9.4 Road Marking & road furniture	3 days	Tue 24/05/05	Thu 26/05/05
256	9.5 Foot path	30 days	Wed 30/03/05	Mon 09/05/05
257	9.6 Cycle Track	60 days	Thu 20/01/05	Sat 02/04/05
258	9.7 Light Poles	40 days	Fri 25/03/05	Tue 17/05/05
259	9.8 Road Work Finishings	21 days	Thu 21/04/05	Tue 17/05/05
260	**10 Retaining Walls**	**929 days**	**Wed 12/12/01**	**Wed 26/01/05**
261	**10.1 RW1**	**504 days**	**Wed 06/11/02**	**Mon 19/07/04**
262	10.1 Temp. diversion of 150mm dia water main	30 days	Fri 01/08/03	Thu 04/09/03
263	**10.1.1 RW1 Bay 1**	**313 days**	**Wed 06/11/02**	**Sat 22/11/03**
274	**10.1.2 RW1 Bay 2**	**51 days**	**Tue 21/10/03**	**Thu 18/12/03**
285	**10.1.3 RW1 Bay 3**	**21 days**	**Sat 28/12/02**	**Wed 22/01/03**
296	**10.1.4 RW1 Bay 4**	**29 days**	**Fri 07/11/03**	**Wed 10/12/03**
308	10.1.5 RW1 Bay 5	50 days	Wed 19/05/04	Mon 19/07/04
309	**10.1.6 RW1 Bay 6**	**19 days**	**Fri 25/06/04**	**Sat 17/07/04**



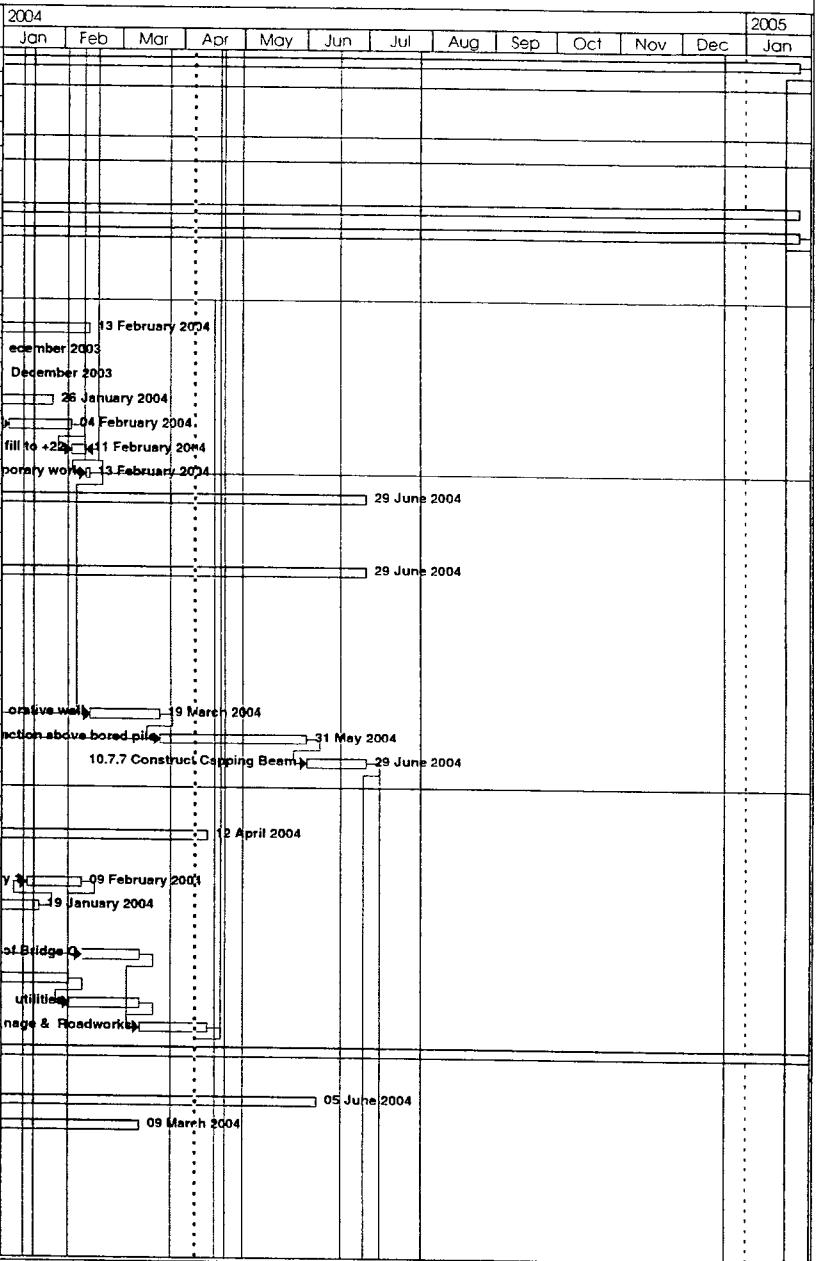
Date: 18/10/2003

Task
Task Progress
Critical Task
Critical Task Progress
Milestone
Summary
Rolled Up Task
Rolled Up Critical Task
Rolled Up Milestone
Rolled Up Progress
Split
External Tasks
Project Summary

MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
320	**10.2 RW2**	**929 days**	**Wed 12/12/01**	**Wed 26/01/05**
321	**10.2.1 RW2 Bay 1**	**60 days**	**Wed 10/09/03**	**Thu 20/11/03**
333	**10.2.2 RW2 Bay 2**	**28 days**	**Mon 10/11/03**	**Thu 11/12/03**
344	**10.2.3 RW2 Bay 3**	**17 days**	**Sat 01/11/03**	**Thu 20/11/03**
355	**10.2.4 RW2 Bay 4**	**23 days**	**Tue 04/11/03**	**Sat 29/11/03**
366	10.2.5 RW2 Bay 5	20 days	Wed 12/12/01	Sat 09/02/02
367	**10.2.6 RW2 Bay 6**	**605 days**	**Wed 15/01/03**	**Wed 26/01/05**
378	**10.2.7 RW2 Bay 7**	**374 days**	**Sat 25/10/03**	**Wed 26/01/05**
390	**10.3 RW3**	**545 days**	**Wed 12/12/01**	**Mon 13/10/03**
397	10.4 RW4	**100 days**	**Wed 12/12/01**	**Wed 17/04/02**
401	10.5 RW5	115 days	Fri 01/08/03	Mon 15/12/03
402	10.6 RW6	48 days	Sat 13/12/03	Fri 13/02/04
403	10.6.1 Install temporary work	3 days	Sat 13/12/03	Tue 16/12/03
404	10.6.2 Excavation to +16.5	5 days	Wed 17/12/03	Mon 22/12/03
405	10.6.3 Bay 1	24 days	Tue 23/12/03	Mon 26/01/04
406	10.6.4 Bay 2	24 days	Mon 05/01/04	Wed 04/02/04
407	10.6.5 Backfill to +22	6 days	Thu 05/02/04	Wed 11/02/04
408	10.6.6 Remove temporary work	2 days	Thu 12/02/04	Fri 13/02/04
409	**10.7 RW7**	**615 days**	**Thu 06/06/02**	**Tue 29/06/04**
410	10.7.1 Pre-drill holes (21 nos)	47 days	Thu 06/06/02	Thu 01/08/02
411	10.7.2 Forming working platform	24 days	Fri 02/08/02	Thu 29/08/02
412	**10.7.3 Install bored pile (21nos)**	**544 days**	**Fri 30/08/02**	**Tue 29/06/04**
413	10.7.3.0 Completed Bore Piles	183 days	Fri 30/08/02	Fri 28/02/03
414	10.7.3.1 B4 Bore Pile	6 days	Mon 14/04/03	Wed 23/04/03
415	10.7.3.2 B10,B11,B13,B14	61 days	Mon 31/03/03	Tue 17/06/03
416	10.7.4 Bore Pile Sonic Test	14 days	Mon 18/08/03	Tue 02/09/03
417	10.7.5 Bore Pile Core Test	28 days	Wed 03/09/03	Tue 07/10/03
418	10.7.5 Construct lagging/concrete decorative wall	30 days	Sat 14/02/04	Fri 19/03/04
419	10.7.6 Construct extension section above bored pile	56 days	Sat 20/03/04	Mon 31/05/04
420	10.7.7 Construct Capping Beam	24 days	Tue 01/06/04	Tue 29/06/04
421	10.8 RW8	**218 days**	**Tue 08/10/02**	**Fri 04/07/03**
427	**10.9 RW11**	**190 days**	**Wed 12/12/01**	**Mon 05/08/02**
430	**10.10 RW12**	**220 days**	**Mon 21/07/03**	**Mon 12/04/04**
431	Temp. diversion of 150mm dia water main	107 days	Fri 01/08/03	Fri 05/12/03
432	10.10.1 RW12 Bay 1	20 days	Wed 14/01/04	Mon 09/02/04
433	10.10.2 RW12 Bay 2	20 days	Wed 24/12/03	Mon 19/01/04
434	10.10.3 RW12 Bay 3	35 days	Mon 21/07/03	Fri 29/08/03
435	10.10.4 Drainage works in vicinity of pier C2 of Bridge C	25 days	Tue 10/02/04	Tue 09/03/04
436	10.10.5 Water works in vicinity of RW 12	30 days	Wed 24/12/03	Tue 03/02/04
437	10.10.6 Laying new utilities	30 days	Wed 04/02/04	Tue 09/03/04
438	10.10.7 Drainage & Roadworks	28 days	Wed 10/03/04	Mon 12/04/04
439	**11.0 Noise Barriers Preliminary**	**1029 days**	**Wed 12/12/01**	**Thu 02/06/05**
440	11.1 Temporary Work Submission & Approval	300 days	Wed 12/12/01	Fri 13/12/02
441	**11.2 Noise Barrier Structures**	**736 days**	**Wed 12/12/01**	**Sat 05/06/04**
442	**11.2.1 Noise Barrier No. 1**	**666 days**	**Wed 12/12/01**	**Tue 09/03/04**
443	11.2.1.1 Site Investigation	30 days	Wed 12/12/01	Tue 22/01/02
444	11.2.1.2 Traffic Diversion at Lok Shun Path	1 day	Wed 21/05/03	Wed 21/05/03
445	11.2.1.3 Demolish Extg Retaining Wall Footing	60 days	Mon 17/02/03	Fri 09/05/03
446	11.2.1.4 Temporary earth platform for Bore Pile Equipment	6 days	Thu 22/05/03	Thu 29/05/03
447	11.2.1.5 Bore Piles SP1 to SP4	35 days	Fri 30/05/03	Thu 17/07/03



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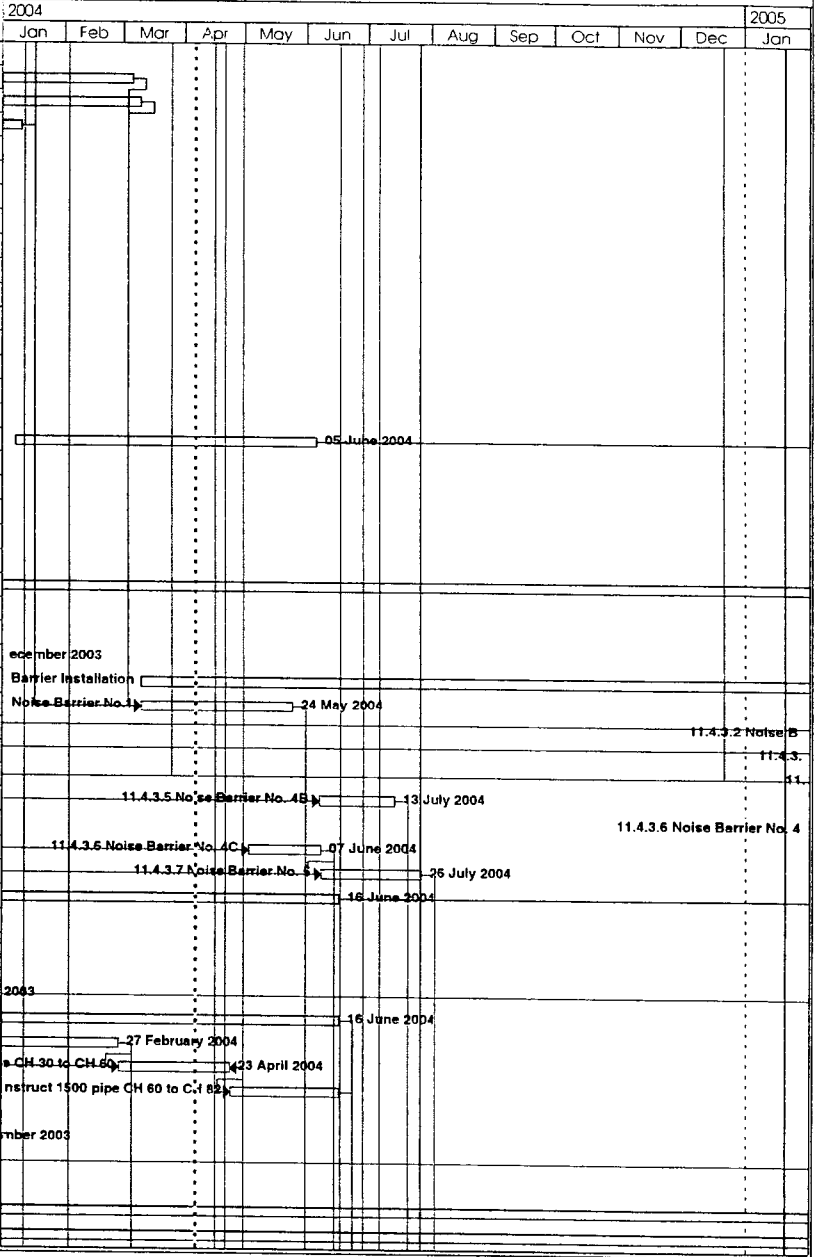
MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
448	11.2.1.6 Bore Piles Coring Test (4nos)	10 days	Fri 22/08/03	Thu 04/09/03
449	**11.2.1.8 RW Panel 1**	**80 days**	**Thu 27/11/03**	**Fri 05/03/04**
457	**11..2.1.9 RW Panel 2**	**80 days**	**Mon 01/12/03**	**Tue 09/03/04**
469	**11.2.1.10 RW Panel 3**	**34 days**	**Sat 29/11/03**	**Sat 10/01/04**
484	**11.2.1.11 RW Panel 4**	**65 days**	**Fri 10/10/03**	**Wed 24/12/03**
500	**11.2.1.12 RW Panel 5**	**49 days**	**Mon 29/09/03**	**Tue 25/11/03**
515	**11.2.1.13 RW Panel 6**	**49 days**	**Tue 28/10/03**	**Tue 23/12/03**
530	**11.2.1.14 RW Panel 7**	**46 days**	**Wed 27/08/03**	**Tue 21/10/03**
545	**11.2.2 Additional Bore Piles**	**70 days**	**Thu 10/07/03**	**Tue 30/09/03**
546	11.2.2.1 Mobilisation of RCD	9 days	Thu 10/07/03	Sat 19/07/03
547	**11.2.2.1 ABP1**	**11 days**	**Mon 21/07/03**	**Fri 01/08/03**
559	**11.2.2.2 ABP2**	**17 days**	**Sat 02/08/03**	**Thu 21/08/03**
571	**11.2.2.3 Bore Piles Tests**	**12 days**	**Wed 17/09/03**	**Tue 30/09/03**
572	11.2.2.3.1 Sonic Test	1 day	Wed 17/09/03	Wed 17/09/03
573	11.2.2.3.2 Core Test (2nos)	7 days	Sat 20/09/03	Sat 27/09/03
574	11.2.2.3.3 Grouting Sonic Tubes and core holes	2 days	Mon 29/09/03	Tue 30/09/03
575	**11.2.3 Noise Barrier No. 4B**	**120 days**	**Thu 08/01/04**	**Sat 05/06/04**
581	**11.2.3a Concrete Footing for Noise Barrier 4C**	45 days	Wed 20/03/02	Wed 15/05/02
582	**11.2.4 Noise Barrier No. 5**	**69 days**	**Thu 16/05/02**	**Wed 07/08/02**
583	11.2.4.1 Excavation	12 days	Thu 16/05/02	Thu 30/05/02
584	11.2.4.2 Construct Footing and Walls	45 days	Fri 31/05/02	Wed 24/07/02
585	11.2.4.3 Backfill to Foundation of Noise Barrier No 5	12 days	Thu 25/07/02	Wed 07/08/02
586	**11.3 Noise Barrier Steel Post & Panels**	**1029 days**	**Wed 12/12/01**	**Thu 02/06/05**
587	11.3.1 Procurement and Fabrication of Noise barrier	150 days	Wed 12/12/01	Tue 18/06/02
588	11.4.1 Design, Submission for approval	250 days	Wed 19/06/02	Wed 16/04/03
589	11.4.2 Fabrication and Delivery	200 days	Thu 17/04/03	Tue 16/12/03
590	**11.4.3 Noise Barrier Installation**	**363 days**	**Wed 10/03/04**	**Thu 02/06/05**
591	11.4.3.1 Noise Barrier No.1	60 days	Wed 10/03/04	Mon 24/05/04
592	11.4.3.2 Noise Barrier No 2	40 days	Mon 07/03/05	Tue 26/04/05
593	11.4.3.3 Noise Barrier No. 3	40 days	Mon 11/04/05	Thu 02/06/05
594	11.4.3.4 Noise Barrier No. 4A	18 days	Fri 29/04/05	Sat 21/05/05
595	11.4.3.5 Noise Barrier No. 4B	30 days	Mon 07/06/04	Tue 13/07/04
596	11.4.3.6 Noise Barrier No. 4B at Bridge A , A2 to A3	10 days	Wed 20/04/05	Sat 30/04/05
597	11.4.3.6 Noise Barrier No. 4C	30 days	Mon 03/05/04	Mon 07/06/04
598	11.4.3.7 Noise Barrier No. 5	40 days	Tue 08/06/04	Mon 26/07/04
599	**12 Box Culvert Extension**	**745 days**	**Wed 12/12/01**	**Wed 16/06/04**
600	12.1 Remove existing inlet, water diversion	158 days	Wed 12/12/01	Thu 27/06/02
601	12.2 Box culvert	156 days	Mon 31/12/01	Fri 12/07/02
602	12.3 Flood Wall	29 days	Thu 30/05/02	Thu 04/07/02
603	12.4 Construct 1400 box culvert (5 bays)	166 days	Thu 10/04/03	Wed 12/11/03
604	**12.5 Construct 1500 pipe**	**188 days**	**Tue 28/10/03**	**Wed 16/06/04**
605	12.5.1 Construct 1500 pipe CH 0 to CH 30 (MHA64 to MH31)	100 days	Tue 28/10/03	Fri 27/02/04
606	12.5.2 Construct 1500 pipe CH 30 to CH 60	44 days	Sat 28/02/04	Fri 23/04/04
607	12.5.3 Construct 1500 pipe CH 60 to CH 82	44 days	Sat 24/04/04	Wed 16/06/04
608	12.6 Construct CP15 (Deleted)	0 days	Sat 15/03/03	Sat 15/03/03
609	12.7 Construct M/H31	60 days	Mon 22/09/03	Mon 01/12/03
610	12.8 Construct 1400 Box Culvert Extension (bay A, B & manhole)	90 days	Mon 14/04/03	Mon 04/08/03
611				
612	**13.0 Underground Drainage & Utilities**	**655 days**	**Wed 15/01/03**	**Tue 29/03/05**
613	**13.1 Drainage & Roadworks at Lok Ha Lo roundabout**	**651 days**	**Wed 15/01/03**	**Thu 24/03/05**



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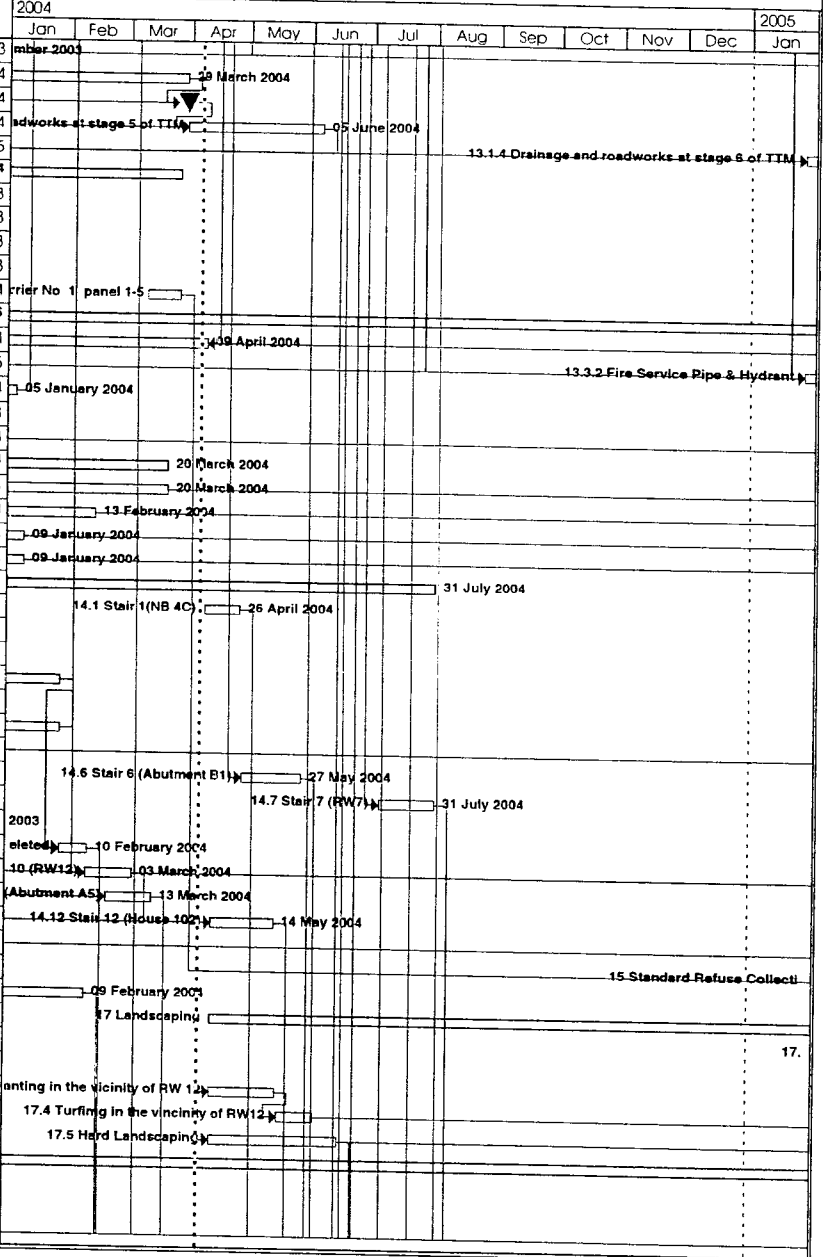
MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
614	13.1.1 Drainage & roadworks at stage 2 & 2A of TTM	263 days	Wed 15/01/03	Mon 01/12/03
615	13.1.2 Drainage and roadworks at stage 2b of TTM	95 days	Tue 02/12/03	Mon 29/03/04
616	13.1.3 Drainage and roadworks at stage 4 of TTM(Deleted)	0 days	Mon 29/03/04	Mon 29/03/04
617	13.1.3 Drainage and roadworks at stage 5 of TTM	54 days	Tue 30/03/04	Sat 05/06/04
618	13.1.4 Drainage and roadworks at stage 6 of TTM	46 days	Thu 27/01/05	Thu 24/03/05
619	**13.2 New Utilities and Dranage Near Noise Barrier NO 1**	**128 days**	**Wed 22/10/03**	**Fri 26/03/04**
620	13.2.1 Construct M/H24 pipe 225 dia and MH10 at stage 2b TTM	19 days	Wed 22/10/03	Wed 12/11/03
621	13.2.2 Construct M/H 12 & 2nd portion pipe 450 dia at stage 2b of TTM	19 days	Wed 22/10/03	Wed 12/11/03
622	13.2.1 PCCW -At Stage 2b TTM Lay cable duct near Noise Barrier No 1 Panel 7 &6	7 days	Thu 13/11/03	Thu 20/11/03
623	13.2.2 CABLE TV -At Stage 2b TTM Lay cable duct near Noise Barrier No 6 & 7	7 days	Fri 21/11/03	Fri 28/11/03
624	13.2.3 CABLE TV -After Completion of Noise Barrier No 1 panel 1-5	14 days	Wed 10/03/04	Fri 26/03/04
625	**13.3 Water pipes and associated Works**	**482 days**	**Sat 16/08/03**	**Tue 29/03/05**
626	13.3.1 Water Mains for irrigation system	120 days	Fri 14/11/03	Fri 09/04/04
627	13.3.2 Fire Service Pipe & Hydrant	50 days	Thu 27/01/05	Tue 29/03/05
628	13.3.3 Water Main Diversion(1400 Box Culvert)	45 days	Tue 11/11/03	Mon 05/01/04
629	13.3.4 Along stair 8	25 days	Sat 16/08/03	Mon 15/09/03
630	13.4 Telephone Ducts	40 days	Thu 21/08/03	Wed 08/10/03
631	**13.5 Existing Utilities Diversion**	**161 days**	**Sat 06/09/03**	**Sat 20/03/04**
632	13.5.1 RW1, RW2 and 1400 Box Culvert	90 days	Mon 01/12/03	Sat 20/03/04
633	13.5.2 Abutment A1 to RW11	130 days	Sat 06/09/03	Fri 13/02/04
634	13.5.3 RW11 to C2	100 days	Wed 10/09/03	Fri 09/01/04
635	13.5.4 At Lok King Street	100 days	Wed 10/09/03	Fri 09/01/04
636	**14 Staircases**	**782 days**	**Wed 12/12/01**	**Sat 31/07/04**
637	14.1 Stair 1(NB 4C)	12 days	Fri 09/04/04	Mon 26/04/04
638	14.2 Stair 2 (RW8)	50 days	Thu 13/03/03	Fri 16/05/03
639	14.3 Stair 3 (RW3)	90 days	Thu 24/04/03	Fri 15/08/03
640	**14.4 Stair 4 (RW11)**	**117 days**	**Thu 04/09/03**	**Tue 27/01/04**
641	14.4.1 Stair 4 Bay 1 (to allow access Bridge C PC beams)	24 days	Thu 04/09/03	Fri 03/10/03
642	14.4.2 Stair 4 Bay 2	24 days	Wed 24/12/03	Tue 27/01/04
643	14.5 Stair 5 (RW5)	69 days	Fri 01/08/03	Wed 22/10/03
644	14.6 Stair 6 (Abutment B1)	24 days	Wed 28/04/04	Thu 27/05/04
645	14.7 Stair 7 (RW7)	24 days	Mon 05/07/04	Sat 31/07/04
646	14.8 Stair 8 (Level +39)	50 days	Tue 16/09/03	Thu 13/11/03
647	14.9 Stair 9 (CH300) (deleted)	12 days	Wed 28/01/04	Tue 10/02/04
648	14.10 Stair 10 (RW12)	20 days	Tue 10/02/04	Wed 03/03/04
649	14.11 Stair 11 (Abutment A5)	20 days	Fri 20/02/04	Sat 13/03/04
650	14.12 Stair 12 (House 102)	24 days	Tue 13/04/04	Fri 14/05/04
651	14.13 Stair 13 (Slope CH350 - 400)	18 days	Wed 12/12/01	Fri 04/01/02
652	15 Standard Refuse Collection Point	45 days	Mon 28/02/05	Mon 25/04/05
653	16 Rain Shelter no.1&2	60 days	Tue 25/11/03	Mon 09/02/04
654	**17 Landscaping**	**329 days**	**Tue 13/04/04**	**Thu 26/05/05**
655	17.1 Tree Planting	42 days	Wed 23/03/05	Tue 17/05/05
656	17.2 Turfing	42 days	Fri 01/04/05	Thu 26/05/05
657	17.3 Tree Planting in the vicinity of RW 12	25 days	Tue 13/04/04	Sat 15/05/04
658	17.4 Turfimg In the vincinity of RW12	15 days	Mon 17/05/04	Thu 03/06/04
659	17.5 Hard Landscaping	50 days	Tue 13/04/04	Tue 15/06/04
660	**18 Project Completion & Handover**	**1269 days**	**Wed 12/12/01**	**Thu 02/06/05**
661	18.1 Section I Completion	0 days	Tue 04/02/03	Tue 04/02/03
662	18.2 Section IA Completion	0 days	Thu 26/06/03	Thu 26/06/03
663	18.3 Section II Completion	0 days	Thu 02/06/05	Thu 02/06/05



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MASTER PROGRAMME (ST77/01/MP/13B)

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	Finish
664	18.4 Section III Completion	0 days	Wed 12/12/01	Wed 12/12/01

2004: Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

2005: Jan

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